

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
1	07	1	HSGPA	0.0000	0.2612	13.1792	14.3552	14.5755	0.0416	0.1581	8.5165	9.4276	9.0094
1	07	2	SAT-CR	0.0000	13.1792	7,963.3625	4,615.1975	6,174.9591	0.2856	8.5165	5,184.3773	3,052.5466	4,044.4304
1	07	3	SAT-M	0.0000	14.3552	4,615.1975	7,416.3204	4,666.2342	-6.4294	9.4276	3,052.5466	4,671.3561	3,111.5854
1	07	4	SAT-W	0.0000	14.5755	6,174.9591	4,666.2342	7,960.5021	3.9685	9.0094	4,044.4304	3,111.5854	5,103.0720
1	07	5	Female	0.6458	0.0416	0.2856	-6.4294	3.9685	0.2288	0.0147	0.1012	-2.2772	1.4056
1	07	6	Female*HSGPA	0.0416	0.1581	8.5165	9.4276	9.0094	0.0147	0.1564	8.5046	9.6952	8.8443
1	07	7	Female*SAT-CR	0.2856	8.5165	5,184.3773	3,052.5466	4,044.4304	0.1012	8.5046	5,184.2957	3,054.3826	4,043.2971
1	07	8	Female*SAT-M	-6.4289	9.4276	3,052.5466	4,671.3561	3,111.5854	-2.2772	9.6952	3,054.3826	4,630.0221	3,137.0985
1	07	9	Female*SAT-W	3.9682	9.0094	4,044.4304	3,111.5854	5,103.0720	1.4056	8.8443	4,043.2971	3,137.0985	5,087.3243
1	08	1	HSGPA	0.0000	0.2420	12.3502	13.5793	13.6740	0.0378	0.1453	8.2173	8.9052	8.4818
1	08	2	SAT-CR	0.0000	12.3502	8,019.9170	4,720.6460	6,282.9803	-0.9249	8.2173	5,132.1655	3,035.3910	4,117.5862
1	08	3	SAT-M	0.0000	13.5793	4,720.6460	7,572.0614	4,884.8092	-6.8528	8.9052	3,035.3910	4,741.5899	3,252.3284
1	08	4	SAT-W	0.0000	13.6740	6,282.9803	4,884.8092	8,189.6638	3.8180	8.4818	4,117.5862	3,252.3284	5,367.8286
1	08	5	Female	0.6467	0.0378	-0.9249	-6.8528	3.8180	0.2285	0.0133	-0.3267	-2.4209	1.3488
1	08	6	Female*HSGPA	0.0377	0.1453	8.2173	8.9052	8.4818	0.0133	0.1439	8.2522	9.1639	8.3376
1	08	7	Female*SAT-CR	-0.9248	8.2173	5,132.1655	3,035.3910	4,117.5862	-0.3267	8.2522	5,131.3101	3,029.0535	4,121.1171
1	08	8	Female*SAT-M	-6.8522	8.9052	3,035.3910	4,741.5899	3,252.3284	-2.4209	9.1639	3,029.0535	4,694.6333	3,278.4903
1	08	9	Female*SAT-W	3.8177	8.4818	4,117.5862	3,252.3284	5,367.8286	1.3488	8.3376	4,121.1171	3,278.4903	5,353.2525
2	08	1	HSGPA	0.0000	0.2292	13.8426	14.2660	14.7315	0.0434	0.1280	7.4907	7.6862	7.5118
2	08	2	SAT-CR	0.0000	13.8426	7,931.4222	4,610.1115	6,340.1687	2.2394	7.4907	4,501.9092	2,527.2140	3,538.2257
2	08	3	SAT-M	0.0000	14.2660	4,610.1115	7,459.6172	4,952.2794	-4.3766	7.6862	2,527.2140	4,203.5331	2,758.2894
2	08	4	SAT-W	0.0000	14.7315	6,340.1687	4,952.2794	8,420.8853	6.7353	7.5118	3,538.2257	2,758.2894	4,770.1993
2	08	5	Female	0.6209	0.0434	2.2394	-4.3766	6.7353	0.2354	0.0164	0.8489	-1.6591	2.5532
2	08	6	Female*HSGPA	0.0434	0.1280	7.4907	7.6862	7.5118	0.0164	0.1261	7.3936	7.8760	7.2198
2	08	7	Female*SAT-CR	2.2392	7.4907	4,501.9092	2,527.2140	3,538.2257	0.8489	7.3936	4,496.8946	2,537.0141	3,523.1439
2	08	8	Female*SAT-M	-4.3762	7.6862	2,527.2140	4,203.5331	2,758.2894	-1.6591	7.8760	2,537.0141	4,184.3805	2,787.7640
2	08	9	Female*SAT-W	6.7346	7.5118	3,538.2257	2,758.2894	4,770.1993	2.5532	7.2198	3,523.1439	2,787.7640	4,724.8398
3	08	1	HSGPA	0.0000	0.2728	17.4566	19.2380	18.7377	0.0369	0.1410	9.3654	10.0006	10.0574
3	08	2	SAT-CR	0.0000	17.4566	8,736.8794	5,676.5056	6,937.6733	-0.1502	9.3654	4,701.5716	3,037.5973	3,830.8667
3	08	3	SAT-M	0.0000	19.2380	5,676.5056	8,763.0723	5,776.3509	-6.9619	10.0006	3,037.5973	4,572.5926	3,176.8567
3	08	4	SAT-W	0.0000	18.7377	6,937.6733	5,776.3509	8,823.3831	5.2686	10.0574	3,830.8667	3,176.8567	4,894.3046
3	08	5	Female	0.5597	0.0369	-0.1502	-6.9619	5.2686	0.2465	0.0162	-0.0661	-3.0654	2.3198
3	08	6	Female*HSGPA	0.0369	0.1410	9.3654	10.0006	10.0574	0.0162	0.1397	9.3710	10.2573	9.8631
3	08	7	Female*SAT-CR	-0.1502	9.3654	4,701.5716	3,037.5973	3,830.8667	-0.0661	9.3710	4,701.5491	3,036.5515	3,831.6581
3	08	8	Female*SAT-M	-6.9615	10.0006	3,037.5973	4,572.5926	3,176.8567	-3.0654	10.2573	3,036.5515	4,524.1276	3,213.5338
3	08	9	Female*SAT-W	5.2683	10.0574	3,830.8667	3,176.8567	4,894.3046	2.3198	9.8631	3,831.6581	3,213.5338	4,866.5482
4	06	1	HSGPA	0.0000	0.2453	14.4298	15.0775	14.7391	0.0560	0.1284	8.0759	8.1486	7.7346
4	06	2	SAT-CR	0.0000	14.4298	6,737.1164	3,792.8694	4,845.5621	-0.4647	8.0759	3,649.4390	2,068.8277	2,625.6083
4	06	3	SAT-M	0.0000	15.0775	3,792.8694	6,839.9489	3,706.4804	-4.7460	8.1486	2,068.8277	3,824.8380	2,087.0818
4	06	4	SAT-W	0.0000	14.7391	4,845.5621	3,706.4804	6,770.3915	2.9155	7.7346	2,625.6083	2,087.0818	3,666.4340
4	06	5	Female	0.5625	0.0560	-0.4647	-4.7460	2.9155	0.2462	0.0245	-0.2033	-2.0763	1.2754
4	06	6	Female*HSGPA	0.0560	0.1284	8.0759	8.1486	7.7346	0.0245	0.1253	8.1019	8.4143	7.5714
4	06	7	Female*SAT-CR	-0.4645	8.0759	3,649.4390	2,068.8277	2,625.6083	-0.2033	8.1019	3,649.2231	2,066.6230	2,626.9626
4	06	8	Female*SAT-M	-4.7441	8.1486	2,068.8277	3,824.8380	2,087.0818	-2.0763	8.4143	2,066.6230	3,802.3225	2,100.9131
4	06	9	Female*SAT-W	2.9143	7.7346	2,625.6083	2,087.0818	3,666.4340	1.2754	7.5714	2,626.9626	2,100.9131	3,657.9374

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
4	07	1	HSGPA	0.0000	0.2475	15.3154	13.4339	16.2765	0.0589	0.1286	8.5129	7.1358	8.3199
4	07	2	SAT-CR	0.0000	15.3154	7,353.3972	3,849.3429	5,249.0251	1.7002	8.5129	4,067.9536	2,139.5307	2,936.6335
4	07	3	SAT-M	0.0000	13.4339	3,849.3429	6,738.5786	3,764.9460	-4.8814	7.1358	2,139.5307	3,670.2698	2,115.2029
4	07	4	SAT-W	0.0000	16.2765	5,249.0251	3,764.9460	6,776.5001	5.2672	8.3199	2,936.6335	2,115.2029	3,744.8219
4	07	5	Female	0.5560	0.0589	1.7002	-4.8814	5.2672	0.2469	0.0262	0.7548	-2.1671	2.3384
4	07	6	Female*HSGPA	0.0589	0.1286	8.5129	7.1358	8.3199	0.0262	0.1252	8.4128	7.4234	8.0096
4	07	7	Female*SAT-CR	1.6997	8.5129	4,067.9536	2,139.5307	2,936.6335	0.7548	8.4128	4,065.0638	2,147.8273	2,927.6811
4	07	8	Female*SAT-M	-4.8797	7.1358	2,139.5307	3,670.2698	2,115.2029	-2.1671	7.4234	2,147.8273	3,646.4503	2,140.9051
4	07	9	Female*SAT-W	5.2654	8.3199	2,936.6335	2,115.2029	3,744.8219	2.3384	8.0096	2,927.6811	2,140.9051	3,717.0882
4	08	1	HSGPA	0.0000	0.2233	12.0881	11.8882	14.3340	0.0547	0.1185	7.1493	6.4153	7.5116
4	08	2	SAT-CR	0.0000	12.0881	6,739.9101	3,576.6849	4,866.4687	-1.3724	7.1493	3,529.0045	1,919.1271	2,613.1261
4	08	3	SAT-M	0.0000	11.8882	3,576.6849	6,554.6777	3,805.4520	-5.7522	6.4153	1,919.1271	3,488.0473	2,106.2000
4	08	4	SAT-W	0.0000	14.3340	4,866.4687	3,805.4520	6,688.5273	3.1088	7.5116	2,613.1261	2,106.2000	3,692.4509
4	08	5	Female	0.5601	0.0547	-1.3724	-5.7522	3.1088	0.2465	0.0241	-0.6037	-2.5301	1.3674
4	08	6	Female*HSGPA	0.0547	0.1185	7.1493	6.4153	7.5116	0.0241	0.1155	7.2244	6.7300	7.3415
4	08	7	Female*SAT-CR	-1.3720	7.1493	3,529.0045	1,919.1271	2,613.1261	-0.6037	7.2244	3,527.1215	1,911.2351	2,617.3913
4	08	8	Female*SAT-M	-5.7503	6.4153	1,919.1271	3,488.0473	2,106.2000	-2.5301	6.7300	1,911.2351	3,454.9701	2,124.0767
4	08	9	Female*SAT-W	3.1078	7.5116	2,613.1261	2,106.2000	3,692.4509	1.3674	7.3415	2,617.3913	2,124.0767	3,682.7894
5	08	1	HSGPA	0.0000	0.4058	23.9030	24.7784	26.4630	0.0668	0.2209	13.1648	13.9994	14.8110
5	08	2	SAT-CR	0.0000	23.9030	9,452.6348	5,886.9901	7,515.3886	3.7273	13.1648	5,203.5907	3,199.6226	4,175.3368
5	08	3	SAT-M	0.0000	24.7784	5,886.9901	8,498.5817	5,851.4860	-3.8359	13.9994	3,199.6226	4,490.2746	3,281.4637
5	08	4	SAT-W	0.0000	26.4630	7,515.3886	5,851.4860	8,994.8971	6.5536	14.8110	4,175.3368	3,281.4637	5,054.7354
5	08	5	Female	0.5729	0.0668	3.7273	-3.8359	6.5536	0.2448	0.0285	1.5920	-1.6384	2.7992
5	08	6	Female*HSGPA	0.0668	0.2209	13.1648	13.9994	14.8110	0.0285	0.2164	12.9160	14.2555	14.3735
5	08	7	Female*SAT-CR	3.7250	13.1648	5,203.5907	3,199.6226	4,175.3368	1.5920	12.9160	5,189.7066	3,213.9113	4,150.9243
5	08	8	Female*SAT-M	-3.8336	13.9994	3,199.6226	4,490.2746	3,281.4637	-1.6384	14.2555	3,213.9113	4,475.5694	3,306.5877
5	08	9	Female*SAT-W	6.5497	14.8110	4,175.3368	3,281.4637	5,054.7354	2.7992	14.3735	4,150.9243	3,306.5877	5,011.8108
6	06	1	HSGPA	0.0000	0.2482	14.1018	14.1371	14.3773	0.0493	0.1306	8.7784	8.4455	8.3937
6	06	2	SAT-CR	0.0000	14.1018	8,967.0459	5,301.6116	6,845.9129	0.4545	8.7784	5,161.2178	3,030.8647	3,937.6183
6	06	3	SAT-M	0.0000	14.1371	5,301.6116	8,454.9919	5,182.4910	-6.9980	8.4455	3,030.8647	4,683.9250	2,950.6136
6	06	4	SAT-W	0.0000	14.3773	6,845.9129	5,182.4910	8,504.6277	4.2092	8.3937	3,937.6183	2,950.6136	4,788.7465
6	06	5	Female	0.5827	0.0493	0.4545	-6.9980	4.2092	0.2432	0.0206	0.1896	-2.9200	1.7563
6	06	6	Female*HSGPA	0.0493	0.1306	8.7784	8.4455	8.3937	0.0206	0.1281	8.7560	8.7906	8.1861
6	06	7	Female*SAT-CR	0.4544	8.7784	5,161.2178	3,030.8647	3,937.6183	0.1896	8.7560	5,161.0112	3,034.0446	3,935.7056
6	06	8	Female*SAT-M	-6.9964	8.4455	3,030.8647	4,683.9250	2,950.6136	-2.9200	8.7906	3,034.0446	4,634.9640	2,980.0625
6	06	9	Female*SAT-W	4.2082	8.3937	3,937.6183	2,950.6136	4,788.7465	1.7563	8.1861	3,935.7056	2,980.0625	4,771.0336
6	07	1	HSGPA	0.0000	0.2520	14.5452	14.0114	15.0972	0.0487	0.1381	9.5485	9.2040	9.5164
6	07	2	SAT-CR	0.0000	14.5452	9,192.3056	5,223.1455	6,946.4866	-0.2634	9.5485	5,458.5639	3,222.7550	4,187.0485
6	07	3	SAT-M	0.0000	14.0114	5,223.1455	8,176.5125	5,111.2302	-7.2113	9.2040	3,222.7550	4,877.9790	3,146.0302
6	07	4	SAT-W	0.0000	15.0972	6,946.4866	5,111.2302	8,447.2871	3.0961	9.5164	4,187.0485	3,146.0302	5,036.6476
6	07	5	Female	0.5860	0.0487	-0.2634	-7.2113	3.0961	0.2427	0.0202	-0.1091	-2.9857	1.2819
6	07	6	Female*HSGPA	0.0487	0.1381	9.5485	9.2040	9.5164	0.0202	0.1357	9.5613	9.5551	9.3657
6	07	7	Female*SAT-CR	-0.2633	9.5485	5,458.5639	3,222.7550	4,187.0485	-0.1091	9.5613	5,458.4945	3,220.8560	4,187.8638
6	07	8	Female*SAT-M	-7.2097	9.2040	3,222.7550	4,877.9790	3,146.0302	-2.9857	9.5551	3,220.8560	4,825.9874	3,168.3523
6	07	9	Female*SAT-W	3.0954	9.5164	4,187.0485	3,146.0302	5,036.6476	1.2819	9.3657	4,187.8638	3,168.3523	5,027.0638

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## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
6	08	1	HSGPA	0.0000	0.2377	11.8223	13.4713	12.7715	0.0361	0.1268	7.0487	7.6815	6.7941
6	08	2	SAT-CR	0.0000	11.8223	8,710.0770	4,829.7668	6,564.0520	0.0811	7.0487	5,107.4995	2,881.8920	3,875.0164
6	08	3	SAT-M	0.0000	13.4713	4,829.7668	7,818.5737	4,903.5154	-6.9420	7.6815	2,881.8920	4,575.8767	2,910.4337
6	08	4	SAT-W	0.0000	12.7715	6,564.0520	4,903.5154	8,344.7452	3.8521	6.7941	3,875.0164	2,910.4337	4,853.5146
6	08	5	Female	0.5937	0.0361	0.0811	-6.9420	3.8521	0.2413	0.0147	0.0330	-2.8206	1.5652
6	08	6	Female*HSGPA	0.0360	0.1268	7.0487	7.6815	6.7941	0.0147	0.1255	7.0457	7.9317	6.6552
6	08	7	Female*SAT-CR	0.0811	7.0487	5,107.4995	2,881.8920	3,875.0164	0.0330	7.0457	5,107.4929	2,882.4550	3,874.7040
6	08	8	Female*SAT-M	-6.9403	7.6815	2,881.8920	4,575.8767	2,910.4337	-2.8206	7.9317	2,882.4550	4,527.6971	2,937.1687
6	08	9	Female*SAT-W	3.8512	6.7941	3,875.0164	2,910.4337	4,853.5146	1.5652	6.6552	3,874.7040	2,937.1687	4,838.6793
7	07	1	HSGPA	0.0000	0.3028	12.5522	13.9782	14.5032	0.0525	0.1706	7.8752	8.9908	9.0265
7	07	2	SAT-CR	0.0000	12.5522	7,613.2909	4,724.7756	5,604.9307	-0.8801	7.8752	4,420.8355	2,663.9854	3,301.3862
7	07	3	SAT-M	0.0000	13.9782	4,724.7756	7,901.1253	4,534.4813	-7.2688	8.9908	2,663.9854	4,336.9787	2,637.4247
7	07	4	SAT-W	0.0000	14.5032	5,604.9307	4,534.4813	7,128.3580	2.4430	9.0265	3,301.3862	2,637.4247	4,186.3472
7	07	5	Female	0.5959	0.0525	-0.8801	-7.2688	2.4430	0.2409	0.0212	-0.3557	-2.9376	0.9873
7	07	6	Female*HSGPA	0.0525	0.1706	7.8752	8.9908	9.0265	0.0212	0.1679	7.9214	9.3726	8.8982
7	07	7	Female*SAT-CR	-0.8799	7.8752	4,420.8355	2,663.9854	3,301.3862	-0.3557	7.9214	4,420.0611	2,657.5898	3,303.5357
7	07	8	Female*SAT-M	-7.2673	8.9908	2,663.9854	4,336.9787	2,637.4247	-2.9376	9.3726	2,657.5898	4,284.1547	2,655.1785
7	07	9	Female*SAT-W	2.4425	9.0265	3,301.3862	2,637.4247	4,186.3472	0.9873	8.8982	3,303.5357	2,655.1785	4,180.3803
8	06	1	HSGPA	0.0000	0.1763	10.7203	9.8238	11.7819	0.0182	0.0969	6.9357	6.3125	7.1247
8	06	2	SAT-CR	0.0000	10.7203	8,281.0989	4,536.9419	6,009.5668	-2.0590	6.9357	4,995.0233	2,869.6816	3,724.0688
8	06	3	SAT-M	0.0000	9.8238	4,536.9419	7,549.8576	4,482.8155	-9.5607	6.3125	2,869.6816	4,491.0443	2,851.6798
8	06	4	SAT-W	0.0000	11.7819	6,009.5668	4,482.8155	7,433.3046	0.3849	7.1247	3,724.0688	2,851.6798	4,503.1752
8	06	5	Female	0.5693	0.0182	-2.0590	-9.5607	0.3849	0.2453	0.0079	-0.8868	-4.1176	0.1658
8	06	6	Female*HSGPA	0.0182	0.0969	6.9357	6.3125	7.1247	0.0079	0.0966	6.9732	6.4868	7.1177
8	06	7	Female*SAT-CR	-2.0585	6.9357	4,995.0233	2,869.6816	3,724.0688	-0.8868	6.9732	4,990.7848	2,850.0006	3,724.8612
8	06	8	Female*SAT-M	-9.5585	6.3125	2,869.6816	4,491.0443	2,851.6798	-4.1176	6.4868	2,850.0006	4,399.6583	2,855.3592
8	06	9	Female*SAT-W	0.3849	7.1247	3,724.0688	2,851.6798	4,503.1752	0.1658	7.1177	3,724.8612	2,855.3592	4,503.0271
8	07	1	HSGPA	0.0000	0.1774	11.0811	10.8075	11.8984	0.0201	0.0958	6.9338	6.7665	6.9974
8	07	2	SAT-CR	0.0000	11.0811	8,397.9882	4,710.9129	6,124.8985	-2.7045	6.9338	4,928.9086	2,884.0433	3,615.2424
8	07	3	SAT-M	0.0000	10.8075	4,710.9129	7,870.2612	4,818.8863	-8.5245	6.7665	2,884.0433	4,744.0491	2,966.6016
8	07	4	SAT-W	0.0000	11.8984	6,124.8985	4,818.8863	7,798.9389	-0.4435	6.9974	3,615.2424	2,966.6016	4,556.7082
8	07	5	Female	0.5643	0.0201	-2.7045	-8.5245	-0.4435	0.2459	0.0087	-1.1783	-3.7138	-0.1932
8	07	6	Female*HSGPA	0.0201	0.0958	6.9338	6.7665	6.9974	0.0087	0.0954	6.9881	6.9374	7.0063
8	07	7	Female*SAT-CR	-2.7040	6.9338	4,928.9086	2,884.0433	3,615.2424	-1.1783	6.9881	4,921.5957	2,860.9934	3,614.0433
8	07	8	Female*SAT-M	-8.5228	6.7665	2,884.0433	4,744.0491	2,966.6016	-3.7138	6.9374	2,860.9934	4,671.3970	2,962.8222
8	07	9	Female*SAT-W	-0.4434	6.9974	3,615.2424	2,966.6016	4,556.7082	-0.1932	7.0063	3,614.0433	2,962.8222	4,556.5116
8	08	1	HSGPA	0.0000	0.1751	11.1033	11.1532	11.4250	0.0141	0.1024	7.6595	7.7621	7.3595
8	08	2	SAT-CR	0.0000	11.1033	8,992.8904	5,398.2919	6,700.3051	-3.8580	7.6595	5,471.7301	3,540.5080	4,150.1934
8	08	3	SAT-M	0.0000	11.1532	5,398.2919	8,677.5985	5,465.2472	-9.2965	7.7621	3,540.5080	5,500.6082	3,610.6673
8	08	4	SAT-W	0.0000	11.4250	6,700.3051	5,465.2472	8,457.7125	0.1818	7.3595	4,150.1934	3,610.6673	5,055.5874
8	08	5	Female	0.5779	0.0141	-3.8580	-9.2965	0.1818	0.2440	0.0059	-1.6285	-3.9241	0.0767
8	08	6	Female*HSGPA	0.0141	0.1024	7.6595	7.7621	7.3595	0.0059	0.1022	7.7138	7.8929	7.3569
8	08	7	Female*SAT-CR	-3.8569	7.6595	5,471.7301	3,540.5080	4,150.1934	-1.6285	7.7138	5,456.8502	3,504.6520	4,150.8947
8	08	8	Female*SAT-M	-9.2940	7.7621	3,540.5080	5,500.6082	3,610.6673	-3.9241	7.8929	3,504.6520	5,414.2067	3,612.3572
8	08	9	Female*SAT-W	0.1818	7.3595	4,150.1934	3,610.6673	5,055.5874	0.0767	7.3569	4,150.8947	3,612.3572	5,055.5543

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
9	07	1	HSGPA	0.0000	0.2406	15.6516	17.5701	17.1805	0.0337	0.1280	8.3900	9.3369	9.0904
9	07	2	SAT-CR	0.0000	15.6516	7,797.5390	4,961.6055	6,015.5305	-0.7555	8.3900	4,375.1175	2,789.7363	3,397.2687
9	07	3	SAT-M	0.0000	17.5701	4,961.6055	8,340.8989	5,022.5312	-8.4521	9.3369	2,789.7363	4,611.1110	2,866.5331
9	07	4	SAT-W	0.0000	17.1805	6,015.5305	5,022.5312	7,736.3508	3.0718	9.0904	3,397.2687	2,866.5331	4,330.5939
9	07	5	Female	0.5806	0.0337	-0.7555	-8.4521	3.0718	0.2435	0.0141	-0.3169	-3.5451	1.2884
9	07	6	Female*HSGPA	0.0337	0.1280	8.3900	9.3369	9.0904	0.0141	0.1269	8.4155	9.6217	8.9869
9	07	7	Female*SAT-CR	-0.7555	8.3900	4,375.1175	2,789.7363	3,397.2687	-0.3169	8.4155	4,374.5468	2,783.3509	3,399.5894
9	07	8	Female*SAT-M	-8.4517	9.3369	2,789.7363	4,611.1110	2,866.5331	-3.5451	9.6217	2,783.3509	4,539.6763	2,892.4950
9	07	9	Female*SAT-W	3.0717	9.0904	3,397.2687	2,866.5331	4,330.5939	1.2884	8.9869	3,399.5894	2,892.4950	4,321.1584
9	08	1	HSGPA	0.0000	0.2302	15.4360	17.5218	17.0907	0.0287	0.1213	8.6927	9.5197	9.3605
9	08	2	SAT-CR	0.0000	15.4360	7,665.0101	4,939.3397	5,996.9916	-0.7324	8.6927	4,185.5172	2,694.8592	3,320.7166
9	08	3	SAT-M	0.0000	17.5218	4,939.3397	8,347.0645	5,069.1535	-8.5985	9.5197	2,694.8592	4,514.0306	2,850.1137
9	08	4	SAT-W	0.0000	17.0907	5,996.9916	5,069.1535	7,950.7673	4.2093	9.3605	3,320.7166	2,850.1137	4,405.6063
9	08	5	Female	0.5738	0.0287	-0.7324	-8.5985	4.2093	0.2446	0.0122	-0.3121	-3.6645	1.7939
9	08	6	Female*HSGPA	0.0287	0.1213	8.6927	9.5197	9.3605	0.0122	0.1205	8.7138	9.7667	9.2396
9	08	7	Female*SAT-CR	-0.7324	8.6927	4,185.5172	2,694.8592	3,320.7166	-0.3121	8.7138	4,184.9808	2,688.5618	3,323.7994
9	08	8	Female*SAT-M	-8.5981	9.5197	2,694.8592	4,514.0306	2,850.1137	-3.6645	9.7667	2,688.5618	4,440.0995	2,886.3060
9	08	9	Female*SAT-W	4.2091	9.3605	3,320.7166	2,850.1137	4,405.6063	1.7939	9.2396	3,323.7994	2,886.3060	4,387.8888
10	06	1	HSGPA	0.0000	0.1479	10.2122	8.6471	10.5926	0.0223	0.0806	6.1808	5.3036	6.0354
10	06	2	SAT-CR	0.0000	10.2122	8,033.0172	3,702.0541	5,870.0778	0.3174	6.1808	4,730.7707	2,321.9697	3,479.4690
10	06	3	SAT-M	0.0000	8.6471	3,702.0541	6,578.9929	3,826.3721	-8.0839	5.3036	2,321.9697	3,931.2992	2,378.5402
10	06	4	SAT-W	0.0000	10.5926	5,870.0778	3,826.3721	7,447.9698	2.2352	6.0354	3,479.4690	2,378.5402	4,341.8100
10	06	5	Female	0.5779	0.0223	0.3174	-8.0839	2.2352	0.2439	0.0094	0.1340	-3.4121	0.9434
10	06	6	Female*HSGPA	0.0223	0.0806	6.1808	5.3036	6.0354	0.0094	0.0801	6.1737	5.4843	5.9854
10	06	7	Female*SAT-CR	0.3173	6.1808	4,730.7707	2,321.9697	3,479.4690	0.1340	6.1737	4,730.6700	2,324.5350	3,478.7597
10	06	8	Female*SAT-M	-8.0833	5.3036	2,321.9697	3,931.2992	2,378.5402	-3.4121	5.4843	2,324.5350	3,865.9546	2,396.6076
10	06	9	Female*SAT-W	2.2350	6.0354	3,479.4690	2,378.5402	4,341.8100	0.9434	5.9854	3,478.7597	2,396.6076	4,336.8145
10	07	1	HSGPA	0.0000	0.1568	10.9317	9.8750	11.1275	0.0179	0.0805	6.2608	5.7183	6.0184
10	07	2	SAT-CR	0.0000	10.9317	7,992.4718	3,892.0042	5,775.0631	0.2293	6.2608	4,621.6294	2,435.9782	3,346.1837
10	07	3	SAT-M	0.0000	9.8750	3,892.0042	7,017.5095	3,977.1967	-7.7412	5.7183	2,435.9782	4,252.7328	2,468.3486
10	07	4	SAT-W	0.0000	11.1275	5,775.0631	3,977.1967	7,350.9365	1.9381	6.0184	3,346.1837	2,468.3486	4,214.8990
10	07	5	Female	0.5792	0.0179	0.2293	-7.7412	1.9381	0.2437	0.0076	0.0965	-3.2576	0.8156
10	07	6	Female*HSGPA	0.0179	0.0805	6.2608	5.7183	6.0184	0.0076	0.0802	6.2567	5.8573	5.9836
10	07	7	Female*SAT-CR	0.2293	6.2608	4,621.6294	2,435.9782	3,346.1837	0.0965	6.2567	4,621.5769	2,437.7529	3,345.7394
10	07	8	Female*SAT-M	-7.7408	5.7183	2,435.9782	4,252.7328	2,468.3486	-3.2576	5.8573	2,437.7529	4,192.8098	2,483.3507
10	07	9	Female*SAT-W	1.9379	6.0184	3,346.1837	2,468.3486	4,214.8990	0.8156	5.9836	3,345.7394	2,483.3507	4,211.1431
10	08	1	HSGPA	0.0000	0.1663	11.0600	11.0164	11.7297	0.0168	0.0894	6.3365	6.6661	6.5550
10	08	2	SAT-CR	0.0000	11.0600	8,625.1424	4,316.5785	6,455.1687	-0.5176	6.3365	5,016.4196	2,685.3828	3,785.7437
10	08	3	SAT-M	0.0000	11.0164	4,316.5785	7,583.7614	4,494.7920	-8.4634	6.6661	2,685.3828	4,610.9143	2,782.4235
10	08	4	SAT-W	0.0000	11.7297	6,455.1687	4,494.7920	8,172.5115	2.4568	6.5550	3,785.7437	2,782.4235	4,673.8989
10	08	5	Female	0.5720	0.0168	-0.5176	-8.4634	2.4568	0.2448	0.0072	-0.2215	-3.6224	1.0515
10	08	6	Female*HSGPA	0.0168	0.0894	6.3365	6.6661	6.5550	0.0072	0.0891	6.3452	6.8084	6.5137
10	08	7	Female*SAT-CR	-0.5175	6.3365	5,016.4196	2,685.3828	3,785.7437	-0.2215	6.3452	5,016.1517	2,681.0028	3,787.0152
10	08	8	Female*SAT-M	-8.4627	6.6661	2,685.3828	4,610.9143	2,782.4235	-3.6224	6.8084	2,681.0028	4,539.2908	2,803.2150
10	08	9	Female*SAT-W	2.4566	6.5550	3,785.7437	2,782.4235	4,673.8989	1.0515	6.5137	3,787.0152	2,803.2150	4,667.8633

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
11	06	1	HSGPA	0.0000	0.3474	18.8094	21.1360	19.6599	0.0460	0.1767	10.3594	11.0533	10.2636
11	06	2	SAT-CR	0.0000	18.8094	10,386.8842	7,081.4867	7,859.3557	-1.1068	10.3594	5,723.1652	3,811.5011	4,330.4225
11	06	3	SAT-M	0.0000	21.1360	7,081.4867	11,030.8677	6,554.0165	-7.4455	11.0533	3,811.5011	5,779.7528	3,550.1738
11	06	4	SAT-W	0.0000	19.6599	7,859.3557	6,554.0165	9,061.4040	2.3254	10.2636	4,330.4225	3,550.1738	4,955.4840
11	06	5	Female	0.5496	0.0460	-1.1068	-7.4455	2.3254	0.2476	0.0207	-0.4985	-3.3535	1.0474
11	06	6	Female*HSGPA	0.0460	0.1767	10.3594	11.0533	10.2636	0.0207	0.1746	10.4104	11.3959	10.1566
11	06	7	Female*SAT-CR	-1.1067	10.3594	5,723.1652	3,811.5011	4,330.4225	-0.4985	10.4104	5,721.9403	3,803.2613	4,332.9960
11	06	8	Female*SAT-M	-7.4446	11.0533	3,811.5011	5,779.7528	3,550.1738	-3.3535	11.3959	3,803.2613	5,724.3237	3,567.4858
11	06	9	Female*SAT-W	2.3252	10.2636	4,330.4225	3,550.1738	4,955.4840	1.0474	10.1566	4,332.9960	3,567.4858	4,950.0770
11	07	1	HSGPA	0.0000	0.3476	19.2378	20.7920	20.0489	0.0390	0.1836	10.8042	11.1827	11.2055
11	07	2	SAT-CR	0.0000	19.2378	10,010.8266	6,613.3146	7,716.4041	0.7555	10.8042	5,468.8359	3,544.2115	4,187.3518
11	07	3	SAT-M	0.0000	20.7920	6,613.3146	10,319.9205	6,362.9239	-6.4205	11.1827	3,544.2115	5,447.6913	3,457.9389
11	07	4	SAT-W	0.0000	20.0489	7,716.4041	6,362.9239	8,890.4293	3.7160	11.2055	4,187.3518	3,457.9389	4,809.8306
11	07	5	Female	0.5462	0.0390	0.7555	-6.4205	3.7160	0.2479	0.0177	0.3429	-2.9139	1.6865
11	07	6	Female*HSGPA	0.0390	0.1836	10.8042	11.1827	11.2055	0.0177	0.1820	10.7747	11.4329	11.0607
11	07	7	Female*SAT-CR	0.7554	10.8042	5,468.8359	3,544.2115	4,187.3518	0.3429	10.7747	5,468.2651	3,549.0618	4,184.5446
11	07	8	Female*SAT-M	-6.4197	11.1827	3,544.2115	5,447.6913	3,457.9389	-2.9139	11.4329	3,549.0618	5,406.4740	3,481.7942
11	07	9	Female*SAT-W	3.7155	11.2055	4,187.3518	3,457.9389	4,809.8306	1.6865	11.0607	4,184.5446	3,481.7942	4,796.0239
11	08	1	HSGPA	0.0000	0.3436	17.3719	21.1008	19.7004	0.0475	0.1631	8.1779	9.8705	9.4537
11	08	2	SAT-CR	0.0000	17.3719	9,565.3070	6,699.2553	7,316.0131	0.4504	8.1779	4,737.0964	3,218.9962	3,678.6635
11	08	3	SAT-M	0.0000	21.1008	6,699.2553	10,696.3505	6,539.9408	-6.3103	9.8705	3,218.9962	5,146.8945	3,252.1556
11	08	4	SAT-W	0.0000	19.7004	7,316.0131	6,539.9408	8,820.0962	3.9059	9.4537	3,678.6635	3,252.1556	4,467.9388
11	08	5	Female	0.5090	0.0475	0.4504	-6.3103	3.9059	0.2500	0.0233	0.2212	-3.0986	1.9180
11	08	6	Female*HSGPA	0.0475	0.1631	8.1779	9.8705	9.4537	0.0233	0.1608	8.1565	10.1704	9.2680
11	08	7	Female*SAT-CR	0.4504	8.1779	4,737.0964	3,218.9962	3,678.6635	0.2212	8.1565	4,736.8935	3,221.8383	3,676.9043
11	08	8	Female*SAT-M	-6.3095	9.8705	3,218.9962	5,146.8945	3,252.1556	-3.0986	10.1704	3,221.8383	5,107.0802	3,276.8000
11	08	9	Female*SAT-W	3.9055	9.4537	3,678.6635	3,252.1556	4,467.9388	1.9180	9.2680	3,676.9043	3,276.8000	4,452.6843
12	07	1	HSGPA	0.0000	0.4219	22.6999	23.8674	23.4871	0.0456	0.2265	13.1805	12.5657	13.3525
12	07	2	SAT-CR	0.0000	22.6999	8,809.3278	5,174.6330	6,290.1367	-2.5082	13.1805	4,864.9902	2,736.4724	3,580.9899
12	07	3	SAT-M	0.0000	23.8674	5,174.6330	8,161.2784	4,499.8593	-8.8101	12.5657	2,736.4724	4,259.0838	2,528.5529
12	07	4	SAT-W	0.0000	23.4871	6,290.1367	4,499.8593	7,330.8425	1.5792	13.3525	3,580.9899	2,528.5529	4,247.4081
12	07	5	Female	0.5892	0.0456	-2.5082	-8.8101	1.5792	0.2423	0.0188	-1.0304	-3.6192	0.6487
12	07	6	Female*HSGPA	0.0456	0.2265	13.1805	12.5657	13.3525	0.0188	0.2244	13.2949	12.9674	13.2805
12	07	7	Female*SAT-CR	-2.5057	13.1805	4,864.9902	2,736.4724	3,580.9899	-1.0304	13.2949	4,858.7053	2,714.3971	3,584.9468
12	07	8	Female*SAT-M	-8.8011	12.5657	2,736.4724	4,259.0838	2,528.5529	-3.6192	12.9674	2,714.3971	4,181.5451	2,542.4514
12	07	9	Female*SAT-W	1.5776	13.3525	3,580.9899	2,528.5529	4,247.4081	0.6487	13.2805	3,584.9468	2,542.4514	4,244.9168
12	08	1	HSGPA	0.0000	0.4143	19.9324	23.5109	23.8088	0.0316	0.2281	13.9564	14.1392	15.2955
12	08	2	SAT-CR	0.0000	19.9324	8,140.7110	4,784.7369	5,805.5748	-4.5453	13.9564	4,617.5950	2,652.9202	3,499.5032
12	08	3	SAT-M	0.0000	23.5109	4,784.7369	7,888.8484	4,594.5635	-10.9722	14.1392	2,652.9202	4,205.6477	2,645.9533
12	08	4	SAT-W	0.0000	23.8088	5,805.5748	4,594.5635	7,361.3036	0.2030	15.2955	3,499.5032	2,645.9533	4,473.7320
12	08	5	Female	0.5821	0.0316	-4.5453	-10.9722	0.2030	0.2435	0.0132	-1.8996	-4.5856	0.0849
12	08	6	Female*HSGPA	0.0315	0.2281	13.9564	14.1392	15.2955	0.0132	0.2271	14.0997	14.4851	15.2891
12	08	7	Female*SAT-CR	-4.5413	13.9564	4,617.5950	2,652.9202	3,499.5032	-1.8996	14.0997	4,596.9533	2,603.0920	3,500.4252
12	08	8	Female*SAT-M	-10.9625	14.1392	2,652.9202	4,205.6477	2,645.9533	-4.5856	14.4851	2,603.0920	4,085.3648	2,648.1791
12	08	9	Female*SAT-W	0.2029	15.2955	3,499.5032	2,645.9533	4,473.7320	0.0849	15.2891	3,500.4252	2,648.1791	4,473.6908

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
13	06	1	HSGPA	0.0000	0.3131	16.7500	19.8161	18.8050	0.0461	0.1891	11.4244	12.9043	12.0219
13	06	2	SAT-CR	0.0000	16.7500	7,610.5429	5,093.1262	5,741.9562	-0.8252	11.4244	4,786.3776	3,172.2353	3,649.5305
13	06	3	SAT-M	0.0000	19.8161	5,093.1262	8,774.3979	5,090.5842	-6.4790	12.9043	3,172.2353	5,215.1643	3,215.8751
13	06	4	SAT-W	0.0000	18.8050	5,741.9562	5,090.5842	7,547.6064	3.7784	12.0219	3,649.5305	3,215.8751	4,704.6337
13	06	5	Female	0.6193	0.0461	-0.8252	-6.4790	3.7784	0.2358	0.0176	-0.3141	-2.4663	1.4383
13	06	6	Female*HSGPA	0.0461	0.1891	11.4244	12.9043	12.0219	0.0176	0.1870	11.4624	13.2031	11.8476
13	06	7	Female*SAT-CR	-0.8251	11.4244	4,786.3776	3,172.2353	3,649.5305	-0.3141	11.4624	4,785.6967	3,166.8893	3,652.6481
13	06	8	Female*SAT-M	-6.4784	12.9043	3,172.2353	5,215.1643	3,215.8751	-2.4663	13.2031	3,166.8893	5,173.1910	3,240.3528
13	06	9	Female*SAT-W	3.7780	12.0219	3,649.5305	3,215.8751	4,704.6337	1.4383	11.8476	3,652.6481	3,240.3528	4,690.3589
14	06	1	HSGPA	0.0000	0.2694	20.5104	21.5314	21.4485	0.0316	0.1550	12.1906	13.0144	12.6585
14	06	2	SAT-CR	0.0000	20.5104	9,214.5465	5,695.6206	7,313.3780	-0.5492	12.1906	5,584.5581	3,441.7228	4,426.4785
14	06	3	SAT-M	0.0000	21.5314	5,695.6206	9,088.3023	5,842.6439	-7.1402	13.0144	3,441.7228	5,420.8826	3,546.5939
14	06	4	SAT-W	0.0000	21.4485	7,313.3780	5,842.6439	9,188.3710	1.7165	12.6585	4,426.4785	3,546.5939	5,512.7772
14	06	5	Female	0.6185	0.0316	-0.5492	-7.1402	1.7165	0.2360	0.0121	-0.2095	-2.7237	0.6548
14	06	6	Female*HSGPA	0.0316	0.1550	12.1906	13.0144	12.6585	0.0121	0.1540	12.2079	13.2402	12.6042
14	06	7	Female*SAT-CR	-0.5492	12.1906	5,584.5581	3,441.7228	4,426.4785	-0.2095	12.2079	5,584.2565	3,437.8015	4,427.4211
14	06	8	Female*SAT-M	-7.1397	13.0144	3,441.7228	5,420.8826	3,546.5939	-2.7237	13.2402	3,437.8015	5,369.9040	3,558.8488
14	06	9	Female*SAT-W	1.7163	12.6585	4,426.4785	3,546.5939	5,512.7772	0.6548	12.6042	4,427.4211	3,558.8488	5,509.8312
14	07	1	HSGPA	0.0000	0.2566	18.2639	19.2291	20.0359	0.0279	0.1490	11.0124	11.9476	11.9581
14	07	2	SAT-CR	0.0000	18.2639	9,005.9152	5,343.4650	7,093.3869	-0.7450	11.0124	5,403.9736	3,240.3108	4,294.0235
14	07	3	SAT-M	0.0000	19.2291	5,343.4650	8,689.9915	5,481.1934	-7.6382	11.9476	3,240.3108	5,191.5661	3,376.0106
14	07	4	SAT-W	0.0000	20.0359	7,093.3869	5,481.1934	8,874.6477	1.8929	11.9581	4,294.0235	3,376.0106	5,365.4430
14	07	5	Female	0.6049	0.0279	-0.7450	-7.6382	1.8929	0.2390	0.0110	-0.2943	-3.0179	0.7479
14	07	6	Female*HSGPA	0.0279	0.1490	11.0124	11.9476	11.9581	0.0110	0.1482	11.0332	12.1608	11.9053
14	07	7	Female*SAT-CR	-0.7449	11.0124	5,403.9736	3,240.3108	4,294.0235	-0.2943	11.0332	5,403.4186	3,234.6209	4,295.4336
14	07	8	Female*SAT-M	-7.6378	11.9476	3,240.3108	5,191.5661	3,376.0106	-3.0179	12.1608	3,234.6209	5,133.2267	3,390.4684
14	07	9	Female*SAT-W	1.8928	11.9581	4,294.0235	3,376.0106	5,365.4430	0.7479	11.9053	4,295.4336	3,390.4684	5,361.8600
14	08	1	HSGPA	0.0000	0.2597	18.2566	19.6231	20.7634	0.0286	0.1457	11.0665	11.8182	12.4261
14	08	2	SAT-CR	0.0000	18.2566	9,352.0288	5,586.6956	7,473.6555	-2.0552	11.0665	5,584.1603	3,435.1666	4,574.0063
14	08	3	SAT-M	0.0000	19.6231	5,586.6956	9,197.3484	5,918.3689	-8.9844	11.8182	3,435.1666	5,405.2769	3,689.7682
14	08	4	SAT-W	0.0000	20.7634	7,473.6555	5,918.3689	9,420.3122	1.7015	12.4261	4,574.0063	3,689.7682	5,714.5621
14	08	5	Female	0.5944	0.0286	-2.0552	-8.9844	1.7015	0.2411	0.0116	-0.8335	-3.6437	0.6901
14	08	6	Female*HSGPA	0.0286	0.1457	11.0665	11.8182	12.4261	0.0116	0.1449	11.1253	12.0754	12.3774
14	08	7	Female*SAT-CR	-2.0551	11.0665	5,584.1603	3,435.1666	4,574.0063	-0.8335	11.1253	5,579.9365	3,416.7026	4,577.5032
14	08	8	Female*SAT-M	-8.9839	11.8182	3,435.1666	5,405.2769	3,689.7682	-3.6437	12.0754	3,416.7026	5,324.5626	3,705.0545
14	08	9	Female*SAT-W	1.7014	12.4261	4,574.0063	3,689.7682	5,714.5621	0.6901	12.3774	4,577.5032	3,705.0545	5,711.6671
15	06	1	HSGPA	0.0000	0.2983	22.5653	23.9400	23.4522	0.0415	0.1692	14.2094	14.4141	14.1743
15	06	2	SAT-CR	0.0000	22.5653	11,565.7121	7,504.2929	9,093.3046	-1.6917	14.2094	7,185.9027	4,627.4074	5,698.7133
15	06	3	SAT-M	0.0000	23.9400	7,504.2929	10,463.3139	7,177.9091	-7.7660	14.4141	4,627.4074	6,268.1710	4,464.8744
15	06	4	SAT-W	0.0000	23.4522	9,093.3046	7,177.9091	10,593.4855	1.7449	14.1743	5,698.7133	4,464.8744	6,553.0669
15	06	5	Female	0.6159	0.0415	-1.6917	-7.7660	1.7449	0.2366	0.0159	-0.6497	-2.9826	0.6701
15	06	6	Female*HSGPA	0.0415	0.1692	14.2094	14.4141	14.1743	0.0159	0.1675	14.2796	14.7363	14.1019
15	06	7	Female*SAT-CR	-1.6912	14.2094	7,185.9027	4,627.4074	5,698.7133	-0.6497	14.2796	7,183.0416	4,614.2732	5,701.6643
15	06	8	Female*SAT-M	-7.7639	14.4141	4,627.4074	6,268.1710	4,464.8744	-2.9826	14.7363	4,614.2732	6,207.8765	4,478.4213
15	06	9	Female*SAT-W	1.7444	14.1743	5,698.7133	4,464.8744	6,553.0669	0.6701	14.1019	5,701.6643	4,478.4213	6,550.0232

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
15	07	1	HSGPA	0.0000	0.2950	20.5243	22.2683	21.4380	0.0412	0.1793	13.1903	14.0367	13.8710
15	07	2	SAT-CR	0.0000	20.5243	11,406.3615	7,392.1764	9,032.1999	-1.3791	13.1903	7,128.5764	4,652.1659	5,825.3840
15	07	3	SAT-M	0.0000	22.2683	7,392.1764	10,441.0885	7,161.3970	-7.6535	14.0367	4,652.1659	6,324.8262	4,605.7000
15	07	4	SAT-W	0.0000	21.4380	9,032.1999	7,161.3970	10,392.5770	1.9479	13.8710	5,825.3840	4,605.7000	6,720.4309
15	07	5	Female	0.6229	0.0412	-1.3791	-7.6535	1.9479	0.2350	0.0155	-0.5201	-2.8860	0.7345
15	07	6	Female*HSGPA	0.0412	0.1793	13.1903	14.0367	13.8710	0.0155	0.1776	13.2471	14.3518	13.7907
15	07	7	Female*SAT-CR	-1.3788	13.1903	7,128.5764	4,652.1659	5,825.3840	-0.5201	13.2471	7,126.6749	4,641.6135	5,828.0697
15	07	8	Female*SAT-M	-7.6514	14.0367	4,652.1659	6,324.8262	4,605.7000	-2.8860	14.3518	4,641.6135	6,266.2658	4,620.6042
15	07	9	Female*SAT-W	1.9474	13.8710	5,825.3840	4,605.7000	6,720.4309	0.7345	13.7907	5,828.0697	4,620.6042	6,716.6377
15	08	1	HSGPA	0.0000	0.3014	19.2945	22.1587	21.9161	0.0339	0.1794	11.7972	13.9000	13.6783
15	08	2	SAT-CR	0.0000	19.2945	11,269.1957	7,479.1051	9,252.8419	-1.6512	11.7972	6,819.9893	4,541.5206	5,671.4705
15	08	3	SAT-M	0.0000	22.1587	7,479.1051	10,759.3699	7,604.4587	-7.2810	13.9000	4,541.5206	6,491.4188	4,777.4071
15	08	4	SAT-W	0.0000	21.9161	9,252.8419	7,604.4587	11,106.0285	2.6107	13.6783	5,671.4705	4,777.4071	6,802.6016
15	08	5	Female	0.6213	0.0339	-1.6512	-7.2810	2.6107	0.2354	0.0128	-0.6253	-2.7573	0.9887
15	08	6	Female*HSGPA	0.0339	0.1794	11.7972	13.9000	13.6783	0.0128	0.1783	11.8532	14.1469	13.5897
15	08	7	Female*SAT-CR	-1.6508	11.7972	6,819.9893	4,541.5206	5,671.4705	-0.6253	11.8532	6,817.2635	4,529.5014	5,675.7801
15	08	8	Female*SAT-M	-7.2789	13.9000	4,541.5206	6,491.4188	4,777.4071	-2.7573	14.1469	4,529.5014	6,438.4209	4,796.4100
15	08	9	Female*SAT-W	2.6099	13.6783	5,671.4705	4,777.4071	6,802.6016	0.9887	13.5897	5,675.7801	4,796.4100	6,795.7879
16	07	1	HSGPA	0.0000	0.4322	22.3196	32.3224	28.7644	0.0278	0.2707	14.6408	21.5304	18.5333
16	07	2	SAT-CR	0.0000	22.3196	8,387.1071	5,877.8832	6,813.0877	-1.1774	14.6408	5,453.3273	3,796.8706	4,444.7985
16	07	3	SAT-M	0.0000	32.3224	5,877.8832	11,095.2841	6,512.0571	-7.1220	21.5304	3,796.8706	7,115.9226	4,223.6613
16	07	4	SAT-W	0.0000	28.7644	6,813.0877	6,512.0571	8,933.6199	2.4778	18.5333	4,444.7985	4,223.6613	5,746.8981
16	07	5	Female	0.6630	0.0278	-1.1774	-7.1220	2.4778	0.2235	0.0094	-0.3968	-2.4000	0.8350
16	07	6	Female*HSGPA	0.0278	0.2707	14.6408	21.5304	18.5333	0.0094	0.2699	14.6736	21.7286	18.4643
16	07	7	Female*SAT-CR	-1.1769	14.6408	5,453.3273	3,796.8706	4,444.7985	-0.3968	14.6736	5,451.9416	3,788.4884	4,447.7147
16	07	8	Female*SAT-M	-7.1195	21.5304	3,796.8706	7,115.9226	4,223.6613	-2.4000	21.7286	3,788.4884	7,065.2174	4,241.3021
16	07	9	Female*SAT-W	2.4769	18.5333	4,444.7985	4,223.6613	5,746.8981	0.8350	18.4643	4,447.7147	4,241.3021	5,740.7607
16	08	1	HSGPA	0.0000	0.4414	23.0292	34.8132	28.2521	0.0352	0.2913	15.1036	23.5676	18.4531
16	08	2	SAT-CR	0.0000	23.0292	8,414.2948	6,139.6193	6,792.4248	0.1604	15.1036	5,591.2885	3,991.1872	4,551.4303
16	08	3	SAT-M	0.0000	34.8132	6,139.6193	11,757.1650	6,807.0270	-6.8742	23.5676	3,991.1872	7,497.4515	4,499.4033
16	08	4	SAT-W	0.0000	28.2521	6,792.4248	6,807.0270	8,929.4941	2.1059	18.4531	4,551.4303	4,499.4033	5,985.3083
16	08	5	Female	0.6858	0.0352	0.1604	-6.8742	2.1059	0.2155	0.0111	0.0504	-2.1598	0.6616
16	08	6	Female*HSGPA	0.0352	0.2913	15.1036	23.5676	18.4531	0.0111	0.2901	15.0979	23.8094	18.3790
16	08	7	Female*SAT-CR	0.1604	15.1036	5,591.2885	3,991.1872	4,551.4303	0.0504	15.0979	5,591.2628	3,992.2897	4,551.0926
16	08	8	Female*SAT-M	-6.8718	23.5676	3,991.1872	7,497.4515	4,499.4033	-2.1598	23.8094	3,992.2897	7,450.2139	4,513.8744
16	08	9	Female*SAT-W	2.1052	18.4531	4,551.4303	4,499.4033	5,985.3083	0.6616	18.3790	4,551.0926	4,513.8744	5,980.8750
17	06	1	HSGPA	0.0000	0.2925	11.1480	14.0695	11.9923	0.0406	0.2118	9.2039	10.5333	8.2988
17	06	2	SAT-CR	0.0000	11.1480	6,433.8720	3,618.5040	4,647.3891	-1.9669	9.2039	4,511.4096	2,532.0072	3,203.4153
17	06	3	SAT-M	0.0000	14.0695	3,618.5040	6,601.1134	3,338.2755	-5.5481	10.5333	2,532.0072	4,235.2925	2,339.3207
17	06	4	SAT-W	0.0000	11.9923	4,647.3891	3,338.2755	6,261.0372	2.0586	8.2988	3,203.4153	2,339.3207	4,314.5404
17	06	5	Female	0.7067	0.0406	-1.9669	-5.5481	2.0586	0.2075	0.0119	-0.5769	-1.6273	0.6038
17	06	6	Female*HSGPA	0.0405	0.2118	9.2039	10.5333	8.2988	0.0119	0.2102	9.2837	10.7581	8.2154
17	06	7	Female*SAT-CR	-1.9651	9.2039	4,511.4096	2,532.0072	3,203.4153	-0.5769	9.2837	4,507.5443	2,521.1045	3,207.4607
17	06	8	Female*SAT-M	-5.5430	10.5333	2,532.0072	4,235.2925	2,339.3207	-1.6273	10.7581	2,521.1045	4,204.5394	2,350.7316
17	06	9	Female*SAT-W	2.0567	8.2988	3,203.4153	2,339.3207	4,314.5404	0.6038	8.2154	3,207.4607	2,350.7316	4,310.3064

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
17	07	1	HSGPA	0.0000	0.3227	10.8172	13.7881	13.1440	0.0424	0.2291	8.9795	11.6726	10.0273
17	07	2	SAT-CR	0.0000	10.8172	6,366.9469	3,585.7749	4,558.0517	-0.8564	8.9795	4,513.4994	2,466.3307	3,196.9928
17	07	3	SAT-M	0.0000	13.7881	3,585.7749	6,609.7133	3,531.0048	-5.5946	11.6726	2,466.3307	4,644.3431	2,551.8025
17	07	4	SAT-W	0.0000	13.1440	4,558.0517	3,531.0048	6,094.0427	1.9366	10.0273	3,196.9928	2,551.8025	4,340.2702
17	07	5	Female	0.7513	0.0424	-0.8564	-5.5946	1.9366	0.1870	0.0105	-0.2130	-1.3914	0.4816
17	07	6	Female*HSGPA	0.0424	0.2291	8.9795	11.6726	10.0273	0.0105	0.2273	9.0158	11.9097	9.9452
17	07	7	Female*SAT-CR	-0.8557	8.9795	4,513.4994	2,466.3307	3,196.9928	-0.2130	9.0158	4,512.7666	2,461.5433	3,198.6500
17	07	8	Female*SAT-M	-5.5905	11.6726	2,466.3307	4,644.3431	2,551.8025	-1.3914	11.9097	2,461.5433	4,613.0664	2,562.6292
17	07	9	Female*SAT-W	1.9352	10.0273	3,196.9928	2,551.8025	4,340.2702	0.4816	9.9452	3,198.6500	2,562.6292	4,336.5224
17	08	1	HSGPA	0.0000	0.3109	15.0294	16.3945	16.1870	0.0421	0.2207	11.9924	13.8249	12.2433
17	08	2	SAT-CR	0.0000	15.0294	6,463.0118	3,935.6278	4,833.7526	1.5138	11.9924	4,631.2477	2,830.8716	3,492.3482
17	08	3	SAT-M	0.0000	16.3945	3,935.6278	7,601.2341	3,918.7850	-5.3540	13.8249	2,830.8716	5,169.8292	2,876.5974
17	08	4	SAT-W	0.0000	16.1870	4,833.7526	3,918.7850	6,417.3433	4.2200	12.2433	3,492.3482	2,876.5974	4,645.0812
17	08	5	Female	0.7182	0.0421	1.5138	-5.3540	4.2200	0.2025	0.0119	0.4266	-1.5089	1.1893
17	08	6	Female*HSGPA	0.0421	0.2207	11.9924	13.8249	12.2433	0.0119	0.2189	11.9287	14.0503	12.0657
17	08	7	Female*SAT-CR	1.5129	11.9924	4,631.2477	2,830.8716	3,492.3482	0.4266	11.9287	4,628.9575	2,838.9718	3,485.9636
17	08	8	Female*SAT-M	-5.3509	13.8249	2,830.8716	5,169.8292	2,876.5974	-1.5089	14.0503	2,838.9718	5,141.1805	2,899.1785
17	08	9	Female*SAT-W	4.2176	12.2433	3,492.3482	2,876.5974	4,645.0812	1.1893	12.0657	3,485.9636	2,899.1785	4,627.2827
18	07	1	HSGPA	0.0000	0.3450	15.3318	16.9141	15.2895	0.0533	0.2357	11.1527	12.3696	10.2832
18	07	2	SAT-CR	0.0000	15.3318	7,284.4157	4,536.4605	5,474.2890	3.3370	11.1527	5,014.6606	3,063.8414	3,699.6085
18	07	3	SAT-M	0.0000	16.9141	4,536.4605	7,150.7658	4,365.4897	-0.5874	12.3696	3,063.8414	4,738.1010	2,973.4226
18	07	4	SAT-W	0.0000	15.2895	5,474.2890	4,365.4897	7,302.8427	7.0186	10.2832	3,699.6085	2,973.4226	4,918.4730
18	07	5	Female	0.7129	0.0533	3.3370	-0.5874	7.0186	0.2049	0.0153	0.9581	-0.1687	2.0151
18	07	6	Female*HSGPA	0.0533	0.2357	11.1527	12.3696	10.2832	0.0153	0.2328	10.9748	12.4009	9.9092
18	07	7	Female*SAT-CR	3.3340	11.1527	5,014.6606	3,063.8414	3,699.6085	0.9581	10.9748	5,003.5352	3,065.8000	3,676.2087
18	07	8	Female*SAT-M	-0.5869	12.3696	3,063.8414	4,738.1010	2,973.4226	-0.1687	12.4009	3,065.8000	4,737.7562	2,977.5420
18	07	9	Female*SAT-W	7.0123	10.2832	3,699.6085	2,973.4226	4,918.4730	2.0151	9.9092	3,676.2087	2,977.5420	4,869.2567
18	08	1	HSGPA	0.0000	0.3407	13.1301	13.4333	14.9523	0.0720	0.2423	9.4762	12.0766	10.6952
18	08	2	SAT-CR	0.0000	13.1301	6,895.2086	4,291.5935	5,015.1067	3.4088	9.4762	4,731.3828	3,051.8014	3,452.2082
18	08	3	SAT-M	0.0000	13.4333	4,291.5935	8,054.6257	4,295.1907	0.1997	12.0766	3,051.8014	5,627.0095	3,132.4331
18	08	4	SAT-W	0.0000	14.9523	5,015.1067	4,295.1907	6,674.4565	7.5142	10.6952	3,452.2082	3,132.4331	4,587.5462
18	08	5	Female	0.7226	0.0720	3.4088	0.1997	7.5142	0.2006	0.0200	0.9456	0.0554	2.0845
18	08	6	Female*HSGPA	0.0719	0.2423	9.4762	12.0766	10.6952	0.0200	0.2371	9.2311	12.0623	10.1550
18	08	7	Female*SAT-CR	3.4060	9.4762	4,731.3828	3,051.8014	3,452.2082	0.9456	9.2311	4,719.7727	3,051.1211	3,426.6152
18	08	8	Female*SAT-M	0.1996	12.0766	3,051.8014	5,627.0095	3,132.4331	0.0554	12.0623	3,051.1211	5,626.9696	3,130.9336
18	08	9	Female*SAT-W	7.5080	10.6952	3,452.2082	3,132.4331	4,587.5462	2.0845	10.1550	3,426.6152	3,130.9336	4,531.1296
19	06	1	HSGPA	0.0000	0.3319	16.9215	21.4898	18.5871	0.0524	0.1764	9.8133	12.4109	10.6743
19	06	2	SAT-CR	0.0000	16.9215	7,716.8479	5,305.5917	5,755.0068	-1.0061	9.8133	4,129.1387	2,897.5809	3,112.4886
19	06	3	SAT-M	0.0000	21.4898	5,305.5917	9,626.7005	5,182.7102	-7.5117	12.4109	2,897.5809	4,952.6750	2,859.7576
19	06	4	SAT-W	0.0000	18.5871	5,755.0068	5,182.7102	7,416.5729	2.1303	10.6743	3,112.4886	2,859.7576	3,916.1286
19	06	5	Female	0.5148	0.0524	-1.0061	-7.5117	2.1303	0.2499	0.0254	-0.4881	-3.6443	1.0335
19	06	6	Female*HSGPA	0.0524	0.1764	9.8133	12.4109	10.6743	0.0254	0.1736	9.8660	12.8043	10.5628
19	06	7	Female*SAT-CR	-1.0057	9.8133	4,129.1387	2,897.5809	3,112.4886	-0.4881	9.8660	4,128.1267	2,890.0262	3,114.6311
19	06	8	Female*SAT-M	-7.5087	12.4109	2,897.5809	4,952.6750	2,859.7576	-3.6443	12.8043	2,890.0262	4,896.2717	2,875.7534
19	06	9	Female*SAT-W	2.1294	10.6743	3,112.4886	2,859.7576	3,916.1286	1.0335	10.5628	3,114.6311	2,875.7534	3,911.5922



## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
19	07	1	HSGPA	0.0000	0.3468	17.9895	21.1821	18.3965	0.0411	0.1772	10.6015	12.0210	11.3102
19	07	2	SAT-CR	0.0000	17.9895	8,017.7028	5,582.8732	6,087.6656	-1.6423	10.6015	4,346.4201	3,011.5041	3,396.7024
19	07	3	SAT-M	0.0000	21.1821	5,582.8732	9,431.3711	5,402.3745	-9.5447	12.0210	3,011.5041	4,854.3428	3,036.1945
19	07	4	SAT-W	0.0000	18.3965	6,087.6656	5,402.3745	7,684.3936	1.1194	11.3102	3,396.7024	3,036.1945	4,274.2853
19	07	5	Female	0.5174	0.0411	-1.6423	-9.5447	1.1194	0.2498	0.0198	-0.7926	-4.6067	0.5403
19	07	6	Female*HSGPA	0.0411	0.1772	10.6015	12.0210	11.3102	0.0198	0.1755	10.6689	12.4130	11.2642
19	07	7	Female*SAT-CR	-1.6417	10.6015	4,346.4201	3,011.5041	3,396.7024	-0.7926	10.6689	4,343.7240	2,995.8346	3,398.5402
19	07	8	Female*SAT-M	-9.5412	12.0210	3,011.5041	4,854.3428	3,036.1945	-4.6067	12.4130	2,995.8346	4,763.2746	3,046.8749
19	07	9	Female*SAT-W	1.1190	11.3102	3,396.7024	3,036.1945	4,274.2853	0.5403	11.2642	3,398.5402	3,046.8749	4,273.0327
19	08	1	HSGPA	0.0000	0.3519	17.6027	22.2985	19.6702	0.0572	0.1872	11.0702	13.6232	12.0285
19	08	2	SAT-CR	0.0000	17.6027	8,138.0813	5,783.7663	6,077.4874	-0.2647	11.0702	4,253.4673	3,058.4990	3,223.5035
19	08	3	SAT-M	0.0000	22.2985	5,783.7663	9,813.3306	5,529.7883	-7.3536	13.6232	3,058.4990	5,186.3011	3,008.9880
19	08	4	SAT-W	0.0000	19.6702	6,077.4874	5,529.7883	7,618.6812	3.3662	12.0285	3,223.5035	3,008.9880	4,058.4577
19	08	5	Female	0.5439	0.0572	-0.2647	-7.3536	3.3662	0.2481	0.0261	-0.1208	-3.3543	1.5355
19	08	6	Female*HSGPA	0.0572	0.1872	11.0702	13.6232	12.0285	0.0261	0.1840	11.0853	14.0438	11.8359
19	08	7	Female*SAT-CR	-0.2647	11.0702	4,253.4673	3,058.4990	3,223.5035	-0.1208	11.0853	4,253.3972	3,056.5527	3,224.3945
19	08	8	Female*SAT-M	-7.3518	13.6232	3,058.4990	5,186.3011	3,008.9880	-3.3543	14.0438	3,056.5527	5,132.2386	3,033.7358
19	08	9	Female*SAT-W	3.3654	12.0285	3,223.5035	3,008.9880	4,058.4577	1.5355	11.8359	3,224.3945	3,033.7358	4,047.1291
20	08	1	HSGPA	0.0000	0.2040	16.7119	17.1200	17.4505	0.0225	0.0969	9.1768	9.1901	9.5092
20	08	2	SAT-CR	0.0000	16.7119	10,745.6436	5,556.8860	8,325.5461	-2.0945	9.1768	5,607.6840	3,107.9746	4,475.9389
20	08	3	SAT-M	0.0000	17.1200	5,556.8860	10,010.5765	6,129.7897	-9.9255	9.1901	3,107.9746	5,521.1150	3,437.8695
20	08	4	SAT-W	0.0000	17.4505	8,325.5461	6,129.7897	10,165.4969	1.7620	9.5092	4,475.9389	3,437.8695	5,351.7899
20	08	5	Female	0.5029	0.0225	-2.0945	-9.9255	1.7620	0.2500	0.0112	-1.0411	-4.9336	0.8758
20	08	6	Female*HSGPA	0.0225	0.0969	9.1768	9.1901	9.5092	0.0112	0.0964	9.2239	9.4133	9.4696
20	08	7	Female*SAT-CR	-2.0943	9.1768	5,607.6840	3,107.9746	4,475.9389	-1.0411	9.2239	5,603.2975	3,087.1880	4,479.6290
20	08	8	Female*SAT-M	-9.9242	9.1901	3,107.9746	5,521.1150	3,437.8695	-4.9336	9.4133	3,087.1880	5,422.6123	3,455.3562
20	08	9	Female*SAT-W	1.7618	9.5092	4,475.9389	3,437.8695	5,351.7899	0.8758	9.4696	4,479.6290	3,455.3562	5,348.6856
21	07	1	HSGPA	0.0000	0.3502	21.4683	23.7537	21.3526	0.0334	0.1923	11.3376	12.8103	11.7333
21	07	2	SAT-CR	0.0000	21.4683	9,278.9794	6,310.9681	6,970.3665	-0.9997	11.3376	5,001.7502	3,409.4475	3,827.8066
21	07	3	SAT-M	0.0000	23.7537	6,310.9681	9,049.1861	5,765.8129	-8.3088	12.8103	3,409.4475	4,920.9874	3,206.3249
21	07	4	SAT-W	0.0000	21.3526	6,970.3665	5,765.8129	8,037.6639	1.9833	11.7333	3,827.8066	3,206.3249	4,466.4236
21	07	5	Female	0.5687	0.0334	-0.9997	-8.3088	1.9833	0.2454	0.0144	-0.4311	-3.5832	0.8553
21	07	6	Female*HSGPA	0.0334	0.1923	11.3376	12.8103	11.7333	0.0144	0.1912	11.3709	13.0874	11.6671
21	07	7	Female*SAT-CR	-0.9993	11.3376	5,001.7502	3,409.4475	3,827.8066	-0.4311	11.3709	5,000.7512	3,401.1447	3,829.7885
21	07	8	Female*SAT-M	-8.3050	12.8103	3,409.4475	4,920.9874	3,206.3249	-3.5832	13.0874	3,401.1447	4,851.9828	3,222.7966
21	07	9	Female*SAT-W	1.9824	11.7333	3,827.8066	3,206.3249	4,466.4236	0.8553	11.6671	3,829.7885	3,222.7966	4,462.4918
21	08	1	HSGPA	0.0000	0.3151	19.4795	20.4320	19.0374	0.0265	0.1868	12.0139	12.0734	11.3705
21	08	2	SAT-CR	0.0000	19.4795	8,803.2895	5,652.9694	6,247.2878	-0.7910	12.0139	4,862.1522	3,178.5775	3,498.4342
21	08	3	SAT-M	0.0000	20.4320	5,652.9694	8,397.3585	4,988.1336	-6.8360	12.0734	3,178.5775	4,558.0081	2,840.7198
21	08	4	SAT-W	0.0000	19.0374	6,247.2878	4,988.1336	7,228.2557	2.7088	11.3705	3,498.4342	2,840.7198	4,222.6865
21	08	5	Female	0.5999	0.0265	-0.7910	-6.8360	2.7088	0.2401	0.0106	-0.3165	-2.7350	1.0837
21	08	6	Female*HSGPA	0.0265	0.1868	12.0139	12.0734	11.3705	0.0106	0.1861	12.0349	12.2545	11.2987
21	08	7	Female*SAT-CR	-0.7906	12.0139	4,862.1522	3,178.5775	3,498.4342	-0.3165	12.0349	4,861.5268	3,173.1728	3,500.5758
21	08	8	Female*SAT-M	-6.8330	12.0734	3,178.5775	4,558.0081	2,840.7198	-2.7350	12.2545	3,173.1728	4,511.2979	2,859.2289
21	08	9	Female*SAT-W	2.7076	11.3705	3,498.4342	2,840.7198	4,222.6865	1.0837	11.2987	3,500.5758	2,859.2289	4,215.3522

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
22	06	1	HSGPA	0.0000	0.1903	15.5484	15.4184	16.6948	0.0281	0.0715	5.6862	5.4867	6.1287
22	06	2	SAT-CR	0.0000	15.5484	8,702.0336	5,194.7216	6,855.6031	2.2895	5.6862	3,688.3644	2,094.8899	2,856.8100
22	06	3	SAT-M	0.0000	15.4184	5,194.7216	8,292.7022	5,228.7922	-6.8015	5.4867	2,094.8899	3,462.6525	2,071.9842
22	06	4	SAT-W	0.0000	16.6948	6,855.6031	5,228.7922	8,714.8990	5.2407	6.1287	2,856.8100	2,071.9842	3,651.7474
22	06	5	Female	0.4528	0.0281	2.2895	-6.8015	5.2407	0.2478	0.0154	1.2529	-3.7221	2.8680
22	06	6	Female*HSGPA	0.0281	0.0715	5.6862	5.4867	6.1287	0.0154	0.0707	5.6218	5.6781	5.9812
22	06	7	Female*SAT-CR	2.2893	5.6862	3,688.3644	2,094.8899	2,856.8100	1.2529	5.6218	3,683.1230	2,110.4608	2,844.8121
22	06	8	Female*SAT-M	-6.8010	5.4867	2,094.8899	3,462.6525	2,071.9842	-3.7221	5.6781	2,110.4608	3,416.3955	2,107.6265
22	06	9	Female*SAT-W	5.2404	6.1287	2,856.8100	2,071.9842	3,651.7474	2.8680	5.9812	2,844.8121	2,107.6265	3,624.2841
23	06	1	HSGPA	0.0000	0.2722	18.4445	21.4730	20.1216	0.0454	0.1510	11.8514	13.0306	12.4827
23	06	2	SAT-CR	0.0000	18.4445	7,119.4605	4,570.5385	5,496.2759	0.6238	11.8514	4,125.4572	2,734.7245	3,203.0683
23	06	3	SAT-M	0.0000	21.4730	4,570.5385	8,116.3824	4,871.3268	-6.1300	13.0306	2,734.7245	4,747.1115	2,934.8776
23	06	4	SAT-W	0.0000	20.1216	5,496.2759	4,871.3268	7,508.0571	3.2878	12.4827	3,203.0683	2,934.8776	4,294.7099
23	06	5	Female	0.5809	0.0454	0.6238	-6.1300	3.2878	0.2435	0.0190	0.2614	-2.5694	1.3781
23	06	6	Female*HSGPA	0.0454	0.1510	11.8514	13.0306	12.4827	0.0190	0.1489	11.8231	13.3089	12.3335
23	06	7	Female*SAT-CR	0.6236	11.8514	4,125.4572	2,734.7245	3,203.0683	0.2614	11.8231	4,125.0682	2,738.5469	3,201.0181
23	06	8	Female*SAT-M	-6.1280	13.0306	2,734.7245	4,747.1115	2,934.8776	-2.5694	13.3089	2,738.5469	4,709.5472	2,955.0254
23	06	9	Female*SAT-W	3.2868	12.4827	3,203.0683	2,934.8776	4,294.7099	1.3781	12.3335	3,201.0181	2,955.0254	4,283.9035
23	08	1	HSGPA	0.0000	0.2573	17.1185	19.6222	19.0609	0.0400	0.1442	10.7386	12.2703	11.7821
23	08	2	SAT-CR	0.0000	17.1185	7,193.0940	4,568.6161	5,583.8092	-0.7806	10.7386	4,197.9001	2,725.9080	3,358.5918
23	08	3	SAT-M	0.0000	19.6222	4,568.6161	7,893.7685	4,637.7955	-7.5195	12.2703	2,725.9080	4,546.7395	2,855.8024
23	08	4	SAT-W	0.0000	19.0609	5,583.8092	4,637.7955	7,485.9096	3.9534	11.7821	3,358.5918	2,855.8024	4,449.1055
23	08	5	Female	0.5731	0.0400	-0.7806	-7.5195	3.9534	0.2447	0.0171	-0.3333	-3.2102	1.6878
23	08	6	Female*HSGPA	0.0400	0.1442	10.7386	12.2703	11.7821	0.0171	0.1426	10.7698	12.5708	11.6241
23	08	7	Female*SAT-CR	-0.7804	10.7386	4,197.9001	2,725.9080	3,358.5918	-0.3333	10.7698	4,197.2908	2,720.0396	3,361.6772
23	08	8	Female*SAT-M	-7.5175	12.2703	2,725.9080	4,546.7395	2,855.8024	-3.2102	12.5708	2,720.0396	4,490.2118	2,885.5222
23	08	9	Female*SAT-W	3.9524	11.7821	3,358.5918	2,855.8024	4,449.1055	1.6878	11.6241	3,361.6772	2,885.5222	4,433.4802
24	06	1	HSGPA	0.0000	0.2784	21.4379	20.8621	22.5247	0.0477	0.1592	14.3925	14.4553	15.0087
24	06	2	SAT-CR	0.0000	21.4379	8,139.2519	4,708.1265	6,293.7479	1.2930	14.3925	5,451.6521	3,232.8064	4,208.6507
24	06	3	SAT-M	0.0000	20.8621	4,708.1265	7,750.9210	4,837.6253	-5.3855	14.4553	3,232.8064	5,147.3852	3,423.4407
24	06	4	SAT-W	0.0000	22.5247	6,293.7479	4,837.6253	7,908.5370	2.9693	15.0087	4,208.6507	3,423.4407	5,234.9315
24	06	5	Female	0.6655	0.0477	1.2930	-5.3855	2.9693	0.2227	0.0160	0.4325	-1.8012	0.9931
24	06	6	Female*HSGPA	0.0477	0.1592	14.3925	14.4553	15.0087	0.0160	0.1570	14.3308	14.7122	14.8671
24	06	7	Female*SAT-CR	1.2922	14.3925	5,451.6521	3,232.8064	4,208.6507	0.4325	14.3308	5,449.9813	3,239.7653	4,204.8138
24	06	8	Female*SAT-M	-5.3818	14.4553	3,232.8064	5,147.3852	3,423.4407	-1.8012	14.7122	3,239.7653	5,118.4014	3,439.4210
24	06	9	Female*SAT-W	2.9673	15.0087	4,208.6507	3,423.4407	5,234.9315	0.9931	14.8671	4,204.8138	3,439.4210	5,226.1207
24	07	1	HSGPA	0.0000	0.2731	21.4138	18.3180	21.5704	0.0341	0.1706	14.0707	12.6277	14.0130
24	07	2	SAT-CR	0.0000	21.4138	8,658.4159	4,926.2728	6,534.9866	0.1703	14.0707	5,677.5479	3,253.4424	4,246.3320
24	07	3	SAT-M	0.0000	18.3180	4,926.2728	7,729.7881	4,874.4895	-5.5993	12.6277	3,253.4424	5,107.2931	3,388.4888
24	07	4	SAT-W	0.0000	21.5704	6,534.9866	4,874.4895	8,178.1261	4.6040	14.0130	4,246.3320	3,388.4888	5,367.4331
24	07	5	Female	0.6719	0.0341	0.1703	-5.5993	4.6040	0.2206	0.0112	0.0559	-1.8372	1.5106
24	07	6	Female*HSGPA	0.0341	0.1706	14.0707	12.6277	14.0130	0.0112	0.1695	14.0649	12.8187	13.8560
24	07	7	Female*SAT-CR	0.1701	14.0707	5,677.5479	3,253.4424	4,246.3320	0.0559	14.0649	5,677.5190	3,254.3951	4,245.5486
24	07	8	Female*SAT-M	-5.5958	12.6277	3,253.4424	5,107.2931	3,388.4888	-1.8372	12.8187	3,254.3951	5,075.9601	3,414.2517
24	07	9	Female*SAT-W	4.6011	14.0130	4,246.3320	3,388.4888	5,367.4331	1.5106	13.8560	4,245.5486	3,414.2517	5,346.2499

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
25	06	1	HSGPA	0.0000	0.2074	12.7836	13.0941	13.5124	0.0311	0.1141	8.5377	8.4197	8.3357
25	06	2	SAT-CR	0.0000	12.7836	9,017.4880	4,866.3769	6,766.6578	-0.6694	8.5377	5,526.0001	3,016.8207	4,125.7847
25	06	3	SAT-M	0.0000	13.0941	4,866.3769	7,743.9898	4,765.2136	-7.7196	8.4197	3,016.8207	4,685.9417	2,922.7764
25	06	4	SAT-W	0.0000	13.5124	6,766.6578	4,765.2136	8,351.3296	2.2356	8.3357	4,125.7847	2,922.7764	4,915.7837
25	06	5	Female	0.6059	0.0311	-0.6694	-7.7196	2.2356	0.2389	0.0123	-0.2638	-3.0419	0.8809
25	06	6	Female*HSGPA	0.0311	0.1141	8.5377	8.4197	8.3357	0.0123	0.1131	8.5586	8.6600	8.2661
25	06	7	Female*SAT-CR	-0.6691	8.5377	5,526.0001	3,016.8207	4,125.7847	-0.2638	8.5586	5,525.5522	3,011.6551	4,127.2806
25	06	8	Female*SAT-M	-7.7169	8.4197	3,016.8207	4,685.9417	2,922.7764	-3.0419	8.6600	3,011.6551	4,626.3702	2,940.0283
25	06	9	Female*SAT-W	2.2348	8.3357	4,125.7847	2,922.7764	4,915.7837	0.8809	8.2661	4,127.2806	2,940.0283	4,910.7876
26	06	1	HSGPA	0.0000	0.2541	19.6793	21.7297	20.4141	0.0317	0.1118	9.0881	9.7278	9.2660
26	06	2	SAT-CR	0.0000	19.6793	11,294.8425	7,999.3846	8,930.2375	-0.4154	9.0881	5,496.1926	3,809.7694	4,330.2466
26	06	3	SAT-M	0.0000	21.7297	7,999.3846	11,699.9553	7,717.9850	-8.2279	9.7278	3,809.7694	5,455.4539	3,663.2978
26	06	4	SAT-W	0.0000	20.4141	8,930.2375	7,717.9850	10,280.6765	3.1671	9.2660	4,330.2466	3,663.2978	4,951.4021
26	06	5	Female	0.4976	0.0317	-0.4154	-8.2279	3.1671	0.2500	0.0159	-0.2087	-4.1335	1.5911
26	06	6	Female*HSGPA	0.0317	0.1118	9.0881	9.7278	9.2660	0.0159	0.1107	9.1013	9.9889	9.1655
26	06	7	Female*SAT-CR	-0.4154	9.0881	5,496.1926	3,809.7694	4,330.2466	-0.2087	9.1013	5,496.0201	3,806.3514	4,331.5623
26	06	8	Female*SAT-M	-8.2278	9.7278	3,809.7694	5,455.4539	3,663.2978	-4.1335	9.9889	3,806.3514	5,387.7565	3,689.3560
26	06	9	Female*SAT-W	3.1670	9.2660	4,330.2466	3,663.2978	4,951.4021	1.5911	9.1655	4,331.5623	3,689.3560	4,941.3718
26	07	1	HSGPA	0.0000	0.2557	19.7898	21.7857	20.5785	0.0298	0.1130	9.0915	9.5025	9.3325
26	07	2	SAT-CR	0.0000	19.7898	11,165.7907	7,666.8377	9,023.2432	-0.5666	9.0915	5,309.2870	3,586.9289	4,314.3270
26	07	3	SAT-M	0.0000	21.7857	7,666.8377	11,310.8540	7,640.6961	-8.4009	9.5025	3,586.9289	5,241.4013	3,604.2363
26	07	4	SAT-W	0.0000	20.5785	9,023.2432	7,640.6961	10,525.5553	2.7205	9.3325	4,314.3270	3,604.2363	5,025.8109
26	07	5	Female	0.4941	0.0298	-0.5666	-8.4009	2.7205	0.2500	0.0151	-0.2867	-4.2504	1.3764
26	07	6	Female*HSGPA	0.0298	0.1130	9.0915	9.5025	9.3325	0.0151	0.1121	9.1084	9.7528	9.2515
26	07	7	Female*SAT-CR	-0.5666	9.0915	5,309.2870	3,586.9289	4,314.3270	-0.2867	9.1084	5,308.9660	3,582.1688	4,315.8685
26	07	8	Female*SAT-M	-8.4007	9.5025	3,586.9289	5,241.4013	3,604.2363	-4.2504	9.7528	3,582.1688	5,170.8274	3,627.0901
26	07	9	Female*SAT-W	2.7204	9.3325	4,314.3270	3,604.2363	5,025.8109	1.3764	9.2515	4,315.8685	3,627.0901	5,018.4102
26	08	1	HSGPA	0.0000	0.2465	18.9818	21.6013	20.1596	0.0254	0.1113	9.0499	9.9761	9.4298
26	08	2	SAT-CR	0.0000	18.9818	11,276.5256	7,810.0786	9,089.4791	-1.2228	9.0499	5,415.3440	3,733.5211	4,436.7520
26	08	3	SAT-M	0.0000	21.6013	7,810.0786	11,734.0897	7,895.0807	-9.0002	9.9761	3,733.5211	5,584.1959	3,823.5878
26	08	4	SAT-W	0.0000	20.1596	9,089.4791	7,895.0807	10,732.1529	2.6572	9.4298	4,436.7520	3,823.5878	5,288.4842
26	08	5	Female	0.4986	0.0254	-1.2228	-9.0002	2.6572	0.2500	0.0127	-0.6131	-4.5126	1.3323
26	08	6	Female*HSGPA	0.0254	0.1113	9.0499	9.9761	9.4298	0.0127	0.1107	9.0810	10.2050	9.3622
26	08	7	Female*SAT-CR	-1.2228	9.0499	5,415.3440	3,733.5211	4,436.7520	-0.6131	9.0810	5,413.8488	3,722.5158	4,440.0012
26	08	8	Female*SAT-M	-9.0000	9.9761	3,733.5211	5,584.1959	3,823.5878	-4.5126	10.2050	3,722.5158	5,503.1942	3,847.5026
26	08	9	Female*SAT-W	2.6571	9.4298	4,436.7520	3,823.5878	5,288.4842	1.3323	9.3622	4,440.0012	3,847.5026	5,281.4236
27	06	1	HSGPA	0.0000	0.2292	15.5886	14.6414	16.4093	0.0202	0.0784	5.2741	5.0000	5.6330
27	06	2	SAT-CR	0.0000	15.5886	9,990.5928	4,182.6990	7,229.2944	-0.5575	5.2741	3,900.8429	1,670.4245	2,835.0414
27	06	3	SAT-M	0.0000	14.6414	4,182.6990	8,620.1951	4,462.6608	-9.5157	5.0000	1,670.4245	3,728.0557	1,767.4749
27	06	4	SAT-W	0.0000	16.4093	7,229.2944	4,462.6608	8,568.8972	2.3265	5.6330	2,835.0414	1,767.4749	3,325.4963
27	06	5	Female	0.3933	0.0202	-0.5575	-9.5157	2.3265	0.2386	0.0123	-0.3382	-5.7735	1.4116
27	06	6	Female*HSGPA	0.0202	0.0784	5.2741	5.0000	5.6330	0.0123	0.0780	5.2854	5.1922	5.5860
27	06	7	Female*SAT-CR	-0.5574	5.2741	3,900.8429	1,670.4245	2,835.0414	-0.3382	5.2854	3,900.5322	1,665.1206	2,836.3382
27	06	8	Female*SAT-M	-9.5146	5.0000	1,670.4245	3,728.0557	1,767.4749	-5.7735	5.1922	1,665.1206	3,637.5178	1,789.6107
27	06	9	Female*SAT-W	2.3262	5.6330	2,835.0414	1,767.4749	3,325.4963	1.4116	5.5860	2,836.3382	1,789.6107	3,320.0842

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
27	07	1	HSGPA	0.0000	0.2538	17.6119	16.4415	18.3304	0.0167	0.0948	6.7173	6.1186	6.9786
27	07	2	SAT-CR	0.0000	17.6119	11,021.4338	4,454.4229	8,017.2472	-1.4883	6.7173	4,481.7878	1,824.3031	3,295.0288
27	07	3	SAT-M	0.0000	16.4415	4,454.4229	8,982.8383	4,768.8856	-9.3824	6.1186	1,824.3031	4,068.0166	1,961.5267
27	07	4	SAT-W	0.0000	18.3304	8,017.2472	4,768.8856	9,238.5402	0.8344	6.9786	3,295.0288	1,961.5267	3,715.8336
27	07	5	Female	0.3981	0.0167	-1.4883	-9.3824	0.8344	0.2397	0.0101	-0.8957	-5.6468	0.5022
27	07	6	Female*HSGPA	0.0167	0.0948	6.7173	6.1186	6.9786	0.0101	0.0945	6.7422	6.2755	6.9647
27	07	7	Female*SAT-CR	-1.4881	6.7173	4,481.7878	1,824.3031	3,295.0288	-0.8957	6.7422	4,479.5731	1,810.3410	3,296.2704
27	07	8	Female*SAT-M	-9.3813	6.1186	1,824.3031	4,068.0166	1,961.5267	-5.6468	6.2755	1,810.3410	3,979.9971	1,969.3542
27	07	9	Female*SAT-W	0.8343	6.9786	3,295.0288	1,961.5267	3,715.8336	0.5022	6.9647	3,296.2704	1,969.3542	3,715.1375
27	08	1	HSGPA	0.0000	0.2379	15.1204	15.4157	16.2114	0.0203	0.0859	5.5582	5.6737	6.0246
27	08	2	SAT-CR	0.0000	15.1204	11,065.2441	4,064.9836	7,930.1662	-0.7502	5.5582	4,510.9703	1,625.0208	3,305.0435
27	08	3	SAT-M	0.0000	15.4157	4,064.9836	9,044.5031	4,603.6304	-8.4569	5.6737	1,625.0208	4,034.6754	1,843.0921
27	08	4	SAT-W	0.0000	16.2114	7,930.1662	4,603.6304	9,241.9839	2.4036	6.0246	3,305.0435	1,843.0921	3,826.6635
27	08	5	Female	0.4090	0.0203	-0.7502	-8.4569	2.4036	0.2417	0.0120	-0.4434	-4.9985	1.4207
27	08	6	Female*HSGPA	0.0203	0.0859	5.5582	5.6737	6.0246	0.0120	0.0855	5.5734	5.8450	5.9759
27	08	7	Female*SAT-CR	-0.7501	5.5582	4,510.9703	1,625.0208	3,305.0435	-0.4434	5.5734	4,510.4075	1,618.6772	3,306.8465
27	08	8	Female*SAT-M	-8.4559	5.6737	1,625.0208	4,034.6754	1,843.0921	-4.9985	5.8450	1,618.6772	3,963.1639	1,863.4172
27	08	9	Female*SAT-W	2.4034	6.0246	3,305.0435	1,843.0921	3,826.6635	1.4207	5.9759	3,306.8465	1,863.4172	3,820.8867
28	07	1	HSGPA	0.0000	0.4549	25.0351	27.0503	26.5997	0.0684	0.2697	15.6762	17.4542	16.8298
28	07	2	SAT-CR	0.0000	25.0351	8,133.4164	5,699.1082	5,846.4774	-0.9099	15.6762	4,440.8335	3,055.0555	3,297.7340
28	07	3	SAT-M	0.0000	27.0503	5,699.1082	8,574.3503	5,146.2336	-5.2328	17.4542	3,055.0555	4,751.9167	2,867.0005
28	07	4	SAT-W	0.0000	26.5997	5,846.4774	5,146.2336	7,237.0015	3.5050	16.8298	3,297.7340	2,867.0005	4,141.4349
28	07	5	Female	0.6240	0.0684	-0.9099	-5.2328	3.5050	0.2350	0.0257	-0.3421	-1.9675	1.3179
28	07	6	Female*HSGPA	0.0683	0.2697	15.6762	17.4542	16.8298	0.0257	0.2650	15.7384	17.8117	16.5904
28	07	7	Female*SAT-CR	-0.9084	15.6762	4,440.8335	3,055.0555	3,297.7340	-0.3421	15.7384	4,440.0070	3,050.3019	3,300.9180
28	07	8	Female*SAT-M	-5.2244	17.4542	3,055.0555	4,751.9167	2,867.0005	-1.9675	17.8117	3,050.3019	4,724.5781	2,885.3122
28	07	9	Female*SAT-W	3.4994	16.8298	3,297.7340	2,867.0005	4,141.4349	1.3179	16.5904	3,300.9180	2,885.3122	4,129.1695
28	08	1	HSGPA	0.0000	0.4487	22.3720	23.5892	22.7923	0.0653	0.2694	13.1870	14.4668	13.7223
28	08	2	SAT-CR	0.0000	22.3720	6,835.1207	4,554.1043	5,190.5689	-0.9617	13.1870	4,056.6673	2,674.8540	3,147.9141
28	08	3	SAT-M	0.0000	23.5892	4,554.1043	8,083.2030	4,579.8702	-6.5486	14.4668	2,674.8540	4,749.2208	2,706.9692
28	08	4	SAT-W	0.0000	22.7923	5,190.5689	4,579.8702	6,925.0474	3.4159	13.7223	3,147.9141	2,706.9692	4,151.3271
28	08	5	Female	0.6192	0.0653	-0.9617	-6.5486	3.4159	0.2361	0.0249	-0.3662	-2.4938	1.3008
28	08	6	Female*HSGPA	0.0652	0.2694	13.1870	14.4668	13.7223	0.0249	0.2651	13.2497	14.8939	13.4995
28	08	7	Female*SAT-CR	-0.9602	13.1870	4,056.6673	2,674.8540	3,147.9141	-0.3662	13.2497	4,055.7439	2,668.5659	3,151.1941
28	08	8	Female*SAT-M	-6.5388	14.4668	2,674.8540	4,749.2208	2,706.9692	-2.4938	14.8939	2,668.5659	4,706.4013	2,729.3048
28	08	9	Female*SAT-W	3.4108	13.7223	3,147.9141	2,706.9692	4,151.3271	1.3008	13.4995	3,151.1941	2,729.3048	4,139.6763
29	06	1	HSGPA	0.0000	0.3538	17.1487	18.1102	18.3548	0.0620	0.1799	10.0620	10.0925	10.5010
29	06	2	SAT-CR	0.0000	17.1487	8,216.3689	5,046.0266	6,054.0272	0.4335	10.0620	4,609.2666	2,815.9314	3,464.2668
29	06	3	SAT-M	0.0000	18.1102	5,046.0266	8,376.7425	4,733.6401	-7.8671	10.0925	2,815.9314	4,462.6282	2,700.6218
29	06	4	SAT-W	0.0000	18.3548	6,054.0272	4,733.6401	7,547.4239	4.0551	10.5010	3,464.2668	2,700.6218	4,288.5976
29	06	5	Female	0.5617	0.0620	0.4335	-7.8671	4.0551	0.2462	0.0272	0.1900	-3.4480	1.7772
29	06	6	Female*HSGPA	0.0620	0.1799	10.0620	10.0925	10.5010	0.0272	0.1760	10.0352	10.5799	10.2498
29	06	7	Female*SAT-CR	0.4334	10.0620	4,609.2666	2,815.9314	3,464.2668	0.1900	10.0352	4,609.0787	2,819.3411	3,462.5093
29	06	8	Female*SAT-M	-7.8661	10.0925	2,815.9314	4,462.6282	2,700.6218	-3.4480	10.5799	2,819.3411	4,400.7445	2,732.5194
29	06	9	Female*SAT-W	4.0545	10.5010	3,464.2668	2,700.6218	4,288.5976	1.7772	10.2498	3,462.5093	2,732.5194	4,272.1562

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
29	07	1	HSGPA	0.0000	0.3523	17.0650	18.8208	18.6162	0.0568	0.1798	9.7720	10.1206	10.2941
29	07	2	SAT-CR	0.0000	17.0650	8,466.5029	5,135.4033	6,309.5451	-0.2680	9.7720	4,534.6561	2,690.9573	3,468.9592
29	07	3	SAT-M	0.0000	18.8208	5,135.4033	8,428.2827	4,820.5176	-7.7577	10.1206	2,690.9573	4,371.4000	2,634.3688
29	07	4	SAT-W	0.0000	18.6162	6,309.5451	4,820.5176	7,695.4067	3.7386	10.2941	3,468.9592	2,634.3688	4,204.0840
29	07	5	Female	0.5525	0.0568	-0.2680	-7.7577	3.7386	0.2473	0.0254	-0.1199	-3.4715	1.6730
29	07	6	Female*HSGPA	0.0568	0.1798	9.7720	10.1206	10.2941	0.0254	0.1766	9.7872	10.5610	10.0818
29	07	7	Female*SAT-CR	-0.2680	9.7720	4,534.6561	2,690.9573	3,468.9592	-0.1199	9.7872	4,534.5843	2,688.8781	3,469.9612
29	07	8	Female*SAT-M	-7.7568	10.1206	2,690.9573	4,371.4000	2,634.3688	-3.4715	10.5610	2,688.8781	4,311.2250	2,663.3687
29	07	9	Female*SAT-W	3.7382	10.2941	3,468.9592	2,634.3688	4,204.0840	1.6730	10.0818	3,469.9612	2,663.3687	4,190.1081
29	08	1	HSGPA	0.0000	0.3469	15.3661	18.5694	18.0222	0.0566	0.1788	8.3384	10.2798	9.8751
29	08	2	SAT-CR	0.0000	15.3661	8,124.3365	5,119.3047	6,052.0969	0.3233	8.3384	4,457.7308	2,857.8534	3,433.5100
29	08	3	SAT-M	0.0000	18.5694	5,119.3047	8,555.5827	4,917.4648	-7.5116	10.2798	2,857.8534	4,731.6797	2,869.0497
29	08	4	SAT-W	0.0000	18.0222	6,052.0969	4,917.4648	7,613.0720	4.6856	9.8751	3,433.5100	2,869.0497	4,352.4897
29	08	5	Female	0.5646	0.0566	0.3233	-7.5116	4.6856	0.2458	0.0246	0.1408	-3.2704	2.0400
29	08	6	Female*HSGPA	0.0566	0.1788	8.3384	10.2798	9.8751	0.0246	0.1756	8.3201	10.7049	9.6099
29	08	7	Female*SAT-CR	0.3233	8.3384	4,457.7308	2,857.8534	3,433.5100	0.1408	8.3201	4,457.6263	2,860.2819	3,431.9951
29	08	8	Female*SAT-M	-7.5109	10.2798	2,857.8534	4,731.6797	2,869.0497	-3.2704	10.7049	2,860.2819	4,675.2605	2,904.2429
29	08	9	Female*SAT-W	4.6852	9.8751	3,433.5100	2,869.0497	4,352.4897	2.0400	9.6099	3,431.9951	2,904.2429	4,330.5368
30	06	1	HSGPA	0.0000	0.4321	33.7288	33.9469	33.2577	0.0861	0.2005	18.4265	18.3672	17.2835
30	06	2	SAT-CR	0.0000	33.7288	8,972.5089	5,797.1414	6,474.5535	3.1738	18.4265	5,119.8134	3,288.4525	3,687.9959
30	06	3	SAT-M	0.0000	33.9469	5,797.1414	8,643.5392	5,380.3088	-3.7860	18.3672	3,288.4525	4,749.5821	3,058.4362
30	06	4	SAT-W	0.0000	33.2577	6,474.5535	5,380.3088	7,695.1503	5.8498	17.2835	3,687.9959	3,058.4362	4,216.2054
30	06	5	Female	0.5571	0.0861	3.1738	-3.7860	5.8498	0.2471	0.0381	1.4057	-1.6768	2.5908
30	06	6	Female*HSGPA	0.0860	0.2005	18.4265	18.3672	17.2835	0.0381	0.1930	18.1534	18.6929	16.7802
30	06	7	Female*SAT-CR	3.1698	18.4265	5,119.8134	3,288.4525	3,687.9959	1.4057	18.1534	5,109.7529	3,300.4533	3,669.4530
30	06	8	Female*SAT-M	-3.7812	18.3672	3,288.4525	4,749.5821	3,058.4362	-1.6768	18.6929	3,300.4533	4,735.2667	3,080.5553
30	06	9	Female*SAT-W	5.8424	17.2835	3,687.9959	3,058.4362	4,216.2054	2.5908	16.7802	3,669.4530	3,080.5553	4,182.0284
31	07	1	HSGPA	0.0000	0.2838	15.9180	17.6244	17.1394	0.0459	0.1571	9.4477	10.1294	9.9683
31	07	2	SAT-CR	0.0000	15.9180	7,996.8228	4,973.6078	5,907.7071	0.3027	9.4477	4,504.8225	2,769.2709	3,379.2964
31	07	3	SAT-M	0.0000	17.6244	4,973.6078	7,709.1477	4,777.3933	-4.7860	10.1294	2,769.2709	4,228.0415	2,707.9883
31	07	4	SAT-W	0.0000	17.1394	5,907.7071	4,777.3933	7,336.7129	4.6505	9.9683	3,379.2964	2,707.9883	4,172.6761
31	07	5	Female	0.5885	0.0459	0.3027	-4.7860	4.6505	0.2422	0.0189	0.1246	-1.9694	1.9137
31	07	6	Female*HSGPA	0.0459	0.1571	9.4477	10.1294	9.9683	0.0189	0.1550	9.4338	10.3489	9.7549
31	07	7	Female*SAT-CR	0.3027	9.4477	4,504.8225	2,769.2709	3,379.2964	0.1246	9.4338	4,504.7309	2,770.7194	3,377.8889
31	07	8	Female*SAT-M	-4.7854	10.1294	2,769.2709	4,228.0415	2,707.9883	-1.9694	10.3489	2,770.7194	4,205.1384	2,730.2430
31	07	9	Female*SAT-W	4.6499	9.9683	3,379.2964	2,707.9883	4,172.6761	1.9137	9.7549	3,377.8889	2,730.2430	4,151.0514
31	08	1	HSGPA	0.0000	0.2817	15.1753	17.6782	16.0466	0.0364	0.1618	9.0893	10.2185	9.5034
31	08	2	SAT-CR	0.0000	15.1753	8,126.6300	5,259.6091	5,988.8457	0.9445	9.0893	4,812.2646	3,004.5064	3,611.7727
31	08	3	SAT-M	0.0000	17.6782	5,259.6091	8,044.9086	4,900.0959	-4.0518	10.2185	3,004.5064	4,490.1162	2,872.8056
31	08	4	SAT-W	0.0000	16.0466	5,988.8457	4,900.0959	7,352.4789	5.0977	9.5034	3,611.7727	2,872.8056	4,458.0693
31	08	5	Female	0.6116	0.0364	0.9445	-4.0518	5.0977	0.2376	0.0141	0.3668	-1.5735	1.9797
31	08	6	Female*HSGPA	0.0364	0.1618	9.0893	10.2185	9.5034	0.0141	0.1605	9.0550	10.3658	9.3179
31	08	7	Female*SAT-CR	0.9444	9.0893	4,812.2646	3,004.5064	3,611.7727	0.3668	9.0550	4,811.3725	3,008.3330	3,606.9584
31	08	8	Female*SAT-M	-4.0513	10.2185	3,004.5064	4,490.1162	2,872.8056	-1.5735	10.3658	3,008.3330	4,473.7010	2,893.4579
31	08	9	Female*SAT-W	5.0970	9.5034	3,611.7727	2,872.8056	4,458.0693	1.9797	9.3179	3,606.9584	2,893.4579	4,432.0862

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
32	08	1	HSGPA	0.0000	0.2537	14.2105	15.3565	16.9907	0.0491	0.1252	7.6656	8.4997	8.7777
32	08	2	SAT-CR	0.0000	14.2105	6,672.7309	3,986.9201	5,095.6961	-1.7450	7.6656	3,630.5080	2,310.2364	2,889.6528
32	08	3	SAT-M	0.0000	15.3565	3,986.9201	7,207.9691	4,146.4880	-7.2810	8.4997	2,310.2364	4,006.7447	2,446.3927
32	08	4	SAT-W	0.0000	16.9907	5,095.6961	4,146.4880	6,998.9710	3.3297	8.7777	2,889.6528	2,446.3927	3,964.6945
32	08	5	Female	0.5588	0.0491	-1.7450	-7.2810	3.3297	0.2466	0.0217	-0.7699	-3.2126	1.4692
32	08	6	Female*HSGPA	0.0491	0.1252	7.6656	8.4997	8.7777	0.0217	0.1228	7.7514	8.8573	8.6142
32	08	7	Female*SAT-CR	-1.7447	7.6656	3,630.5080	2,310.2364	2,889.6528	-0.7699	7.7514	3,627.4636	2,297.5334	2,895.4620
32	08	8	Female*SAT-M	-7.2798	8.4997	2,310.2364	4,006.7447	2,446.3927	-3.2126	8.8573	2,297.5334	3,953.7400	2,470.6323
32	08	9	Female*SAT-W	3.3292	8.7777	2,889.6528	2,446.3927	3,964.6945	1.4692	8.6142	2,895.4620	2,470.6323	3,953.6094
33	06	1	HSGPA	0.0000	0.2908	23.3442	26.8049	25.3604	0.0335	0.1324	10.6801	12.0098	11.3261
33	06	2	SAT-CR	0.0000	23.3442	10,640.4035	7,745.2210	8,698.3925	0.4774	10.6801	5,138.7182	3,643.5809	4,166.8873
33	06	3	SAT-M	0.0000	26.8049	7,745.2210	11,746.7891	7,836.7350	-8.3919	12.0098	3,643.5809	5,509.9108	3,699.7309
33	06	4	SAT-W	0.0000	25.3604	8,698.3925	7,836.7350	10,519.2557	4.0303	11.3261	4,166.8873	3,699.7309	5,013.5913
33	06	5	Female	0.4974	0.0335	0.4774	-8.3919	4.0303	0.2500	0.0168	0.2400	-4.2181	2.0258
33	06	6	Female*HSGPA	0.0335	0.1324	10.6801	12.0098	11.3261	0.0168	0.1313	10.6641	12.2905	11.1913
33	06	7	Female*SAT-CR	0.4774	10.6801	5,138.7182	3,643.5809	4,166.8873	0.2400	10.6641	5,138.4903	3,647.5873	4,164.9632
33	06	8	Female*SAT-M	-8.3916	12.0098	3,643.5809	5,509.9108	3,699.7309	-4.2181	12.2905	3,647.5873	5,439.4895	3,733.5518
33	06	9	Female*SAT-W	4.0302	11.3261	4,166.8873	3,699.7309	5,013.5913	2.0258	11.1913	4,164.9632	3,733.5518	4,997.3483
34	06	1	HSGPA	0.0000	0.2797	17.1101	19.5413	18.7973	0.0150	0.0775	5.5985	6.0960	5.9051
34	06	2	SAT-CR	0.0000	17.1101	8,992.1640	5,159.5739	6,896.8617	-1.9019	5.5985	2,730.8181	1,635.6692	2,106.7223
34	06	3	SAT-M	0.0000	19.5413	5,159.5739	8,917.5097	5,191.0935	-10.2109	6.0960	1,635.6692	2,921.3537	1,625.0906
34	06	4	SAT-W	0.0000	18.7973	6,896.8617	5,191.0935	8,678.6126	0.9751	5.9051	2,106.7223	1,625.0906	2,544.9583
34	06	5	Female	0.2727	0.0150	-1.9019	-10.2109	0.9751	0.1984	0.0109	-1.3832	-7.4262	0.7092
34	06	6	Female*HSGPA	0.0150	0.0775	5.5985	6.0960	5.9051	0.0109	0.0772	5.6270	6.2491	5.8905
34	06	7	Female*SAT-CR	-1.9016	5.5985	2,730.8181	1,635.6692	2,106.7223	-1.3832	5.6270	2,727.2014	1,616.2518	2,108.5767
34	06	8	Female*SAT-M	-10.2095	6.0960	1,635.6692	2,921.3537	1,625.0906	-7.4262	6.2491	1,616.2518	2,817.1055	1,635.0463
34	06	9	Female*SAT-W	0.9750	5.9051	2,106.7223	1,625.0906	2,544.9583	0.7092	5.8905	2,108.5767	1,635.0463	2,544.0075
34	07	1	HSGPA	0.0000	0.2864	16.6213	18.3753	17.9819	0.0225	0.0823	5.9256	6.0503	6.4666
34	07	2	SAT-CR	0.0000	16.6213	8,780.4097	5,017.8782	6,605.7165	-2.1466	5.9256	2,736.8124	1,769.9331	2,168.2549
34	07	3	SAT-M	0.0000	18.3753	5,017.8782	8,853.4634	5,077.4901	-9.7213	6.0503	1,769.9331	3,064.0105	1,730.1131
34	07	4	SAT-W	0.0000	17.9819	6,605.7165	5,077.4901	8,403.9406	0.7464	6.4666	2,168.2549	1,730.1131	2,640.9916
34	07	5	Female	0.2815	0.0225	-2.1466	-9.7213	0.7464	0.2023	0.0162	-1.5423	-6.9849	0.5363
34	07	6	Female*HSGPA	0.0225	0.0823	5.9256	6.0503	6.4666	0.0162	0.0817	5.9740	6.2693	6.4498
34	07	7	Female*SAT-CR	-2.1463	5.9256	2,736.8124	1,769.9331	2,168.2549	-1.5423	5.9740	2,732.2052	1,749.0683	2,169.8570
34	07	8	Female*SAT-M	-9.7201	6.0503	1,769.9331	3,064.0105	1,730.1131	-6.9849	6.2693	1,749.0683	2,969.5184	1,737.3684
34	07	9	Female*SAT-W	0.7463	6.4666	2,168.2549	1,730.1131	2,640.9916	0.5363	6.4498	2,169.8570	1,737.3684	2,640.4346
34	08	1	HSGPA	0.0000	0.2801	17.5079	19.6437	18.6432	0.0258	0.0832	5.6695	5.8930	6.1525
34	08	2	SAT-CR	0.0000	17.5079	9,301.2733	5,499.4344	7,045.6991	-1.6786	5.6695	2,863.8051	1,868.5895	2,220.2694
34	08	3	SAT-M	0.0000	19.6437	5,499.4344	9,229.9621	5,500.0315	-9.2493	5.8930	1,868.5895	3,250.0970	1,834.3847
34	08	4	SAT-W	0.0000	18.6432	7,045.6991	5,500.0315	8,820.3847	2.6092	6.1525	2,220.2694	1,834.3847	2,758.6221
34	08	5	Female	0.3077	0.0258	-1.6786	-9.2493	2.6092	0.2131	0.0179	-1.1620	-6.4030	1.8063
34	08	6	Female*HSGPA	0.0258	0.0832	5.6695	5.8930	6.1525	0.0179	0.0825	5.7129	6.1320	6.0851
34	08	7	Female*SAT-CR	-1.6783	5.6695	2,863.8051	1,868.5895	2,220.2694	-1.1620	5.7129	2,860.9879	1,853.0660	2,224.6486
34	08	8	Female*SAT-M	-9.2482	5.8930	1,868.5895	3,250.0970	1,834.3847	-6.4030	6.1320	1,853.0660	3,164.5579	1,858.5151
34	08	9	Female*SAT-W	2.6089	6.1525	2,220.2694	1,834.3847	2,758.6221	1.8063	6.0851	2,224.6486	1,858.5151	2,751.8150

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
35	06	1	HSGPA	0.0000	0.1915	12.2720	12.7562	13.3643	0.0265	0.0689	4.5729	4.4747	4.9386
35	06	2	SAT-CR	0.0000	12.2720	7,792.9733	4,475.9523	6,027.2887	1.5939	4.5729	3,086.0370	1,729.7173	2,359.6028
35	06	3	SAT-M	0.0000	12.7562	4,475.9523	8,072.9062	4,736.9277	-7.1951	4.4747	1,729.7173	3,274.0689	1,811.3050
35	06	4	SAT-W	0.0000	13.3643	6,027.2887	4,736.9277	8,105.7641	5.1622	4.9386	2,359.6028	1,811.3050	3,174.8463
35	06	5	Female	0.4137	0.0265	1.5939	-7.1951	5.1622	0.2426	0.0155	0.9344	-4.2181	3.0263
35	06	6	Female*HSGPA	0.0265	0.0689	4.5729	4.4747	4.9386	0.0155	0.0682	4.5307	4.6652	4.8019
35	06	7	Female*SAT-CR	1.5937	4.5729	3,086.0370	1,729.7173	2,359.6028	0.9344	4.5307	3,083.4967	1,741.1845	2,351.3756
35	06	8	Female*SAT-M	-7.1945	4.4747	1,729.7173	3,274.0689	1,811.3050	-4.2181	4.6652	1,741.1845	3,222.3036	1,848.4444
35	06	9	Female*SAT-W	5.1617	4.9386	2,359.6028	1,811.3050	3,174.8463	3.0263	4.8019	2,351.3756	1,848.4444	3,148.2004
35	07	1	HSGPA	0.0000	0.1947	12.0318	13.2323	13.5100	0.0224	0.0728	4.6720	4.9160	5.1394
35	07	2	SAT-CR	0.0000	12.0318	7,936.6446	4,486.8101	6,081.3599	0.8770	4.6720	3,138.7876	1,798.5993	2,403.8741
35	07	3	SAT-M	0.0000	13.2323	4,486.8101	8,055.8351	4,730.9699	-6.2547	4.9160	1,798.5993	3,406.3635	1,877.6788
35	07	4	SAT-W	0.0000	13.5100	6,081.3599	4,730.9699	8,101.4907	4.9127	5.1394	2,403.8741	1,877.6788	3,192.3525
35	07	5	Female	0.4111	0.0224	0.8770	-6.2547	4.9127	0.2421	0.0132	0.5165	-3.6836	2.8932
35	07	6	Female*HSGPA	0.0224	0.0728	4.6720	4.9160	5.1394	0.0132	0.0723	4.6523	5.0559	5.0296
35	07	7	Female*SAT-CR	0.8770	4.6720	3,138.7876	1,798.5993	2,403.8741	0.5165	4.6523	3,138.0185	1,804.0845	2,399.5659
35	07	8	Female*SAT-M	-6.2543	4.9160	1,798.5993	3,406.3635	1,877.6788	-3.6836	5.0559	1,804.0845	3,367.2445	1,908.4042
35	07	9	Female*SAT-W	4.9123	5.1394	2,403.8741	1,877.6788	3,192.3525	2.8932	5.0296	2,399.5659	1,908.4042	3,168.2197
35	08	1	HSGPA	0.0000	0.1928	12.1264	13.4015	13.5314	0.0262	0.0698	4.3551	4.7736	4.9853
35	08	2	SAT-CR	0.0000	12.1264	7,984.8008	4,294.0211	6,147.5310	0.3425	4.3551	3,113.9873	1,613.9065	2,404.6860
35	08	3	SAT-M	0.0000	13.4015	4,294.0211	8,059.2093	4,646.1154	-6.4051	4.7736	1,613.9065	3,375.5721	1,768.0188
35	08	4	SAT-W	0.0000	13.5314	6,147.5310	4,646.1154	8,318.7469	5.4721	4.9853	2,404.6860	1,768.0188	3,263.3727
35	08	5	Female	0.4132	0.0262	0.3425	-6.4051	5.4721	0.2425	0.0153	0.2010	-3.7586	3.2111
35	08	6	Female*HSGPA	0.0262	0.0698	4.3551	4.7736	4.9853	0.0153	0.0692	4.3461	4.9412	4.8422
35	08	7	Female*SAT-CR	0.3425	4.3551	3,113.9873	1,613.9065	2,404.6860	0.2010	4.3461	3,113.8700	1,616.1001	2,402.8119
35	08	8	Female*SAT-M	-6.4046	4.7736	1,613.9065	3,375.5721	1,768.0188	-3.7586	4.9412	1,616.1001	3,334.5501	1,803.0650
35	08	9	Female*SAT-W	5.4716	4.9853	2,404.6860	1,768.0188	3,263.3727	3.2111	4.8422	2,402.8119	1,803.0650	3,233.4317
36	07	1	HSGPA	0.0000	0.2892	16.8811	16.9415	16.2188	0.0590	0.1439	9.0625	8.6905	8.9952
36	07	2	SAT-CR	0.0000	16.8811	9,391.4104	5,344.6152	6,916.3672	2.5625	9.0625	5,196.1227	2,918.4484	3,813.9620
36	07	3	SAT-M	0.0000	16.9415	5,344.6152	8,214.0040	4,858.4068	-5.5801	8.6905	2,918.4484	4,413.0851	2,667.0058
36	07	4	SAT-W	0.0000	16.2188	6,916.3672	4,858.4068	8,088.4649	5.4782	8.9952	3,813.9620	2,667.0058	4,456.8385
36	07	5	Female	0.5488	0.0590	2.5625	-5.5801	5.4782	0.2477	0.0266	1.1562	-2.5177	2.4717
36	07	6	Female*HSGPA	0.0590	0.1439	9.0625	8.6905	8.9952	0.0266	0.1404	8.9114	9.0195	8.6722
36	07	7	Female*SAT-CR	2.5612	9.0625	5,196.1227	2,918.4484	3,813.9620	1.1562	8.9114	5,189.5595	2,932.7403	3,799.9312
36	07	8	Female*SAT-M	-5.5773	8.6905	2,918.4484	4,413.0851	2,667.0058	-2.5177	9.0195	2,932.7403	4,381.9636	2,697.5590
36	07	9	Female*SAT-W	5.4754	8.9952	3,813.9620	2,667.0058	4,456.8385	2.4717	8.6722	3,799.9312	2,697.5590	4,426.8433
36	08	1	HSGPA	0.0000	0.2885	16.1123	16.0581	17.2689	0.0563	0.1404	9.2169	8.8796	9.0699
36	08	2	SAT-CR	0.0000	16.1123	8,768.5967	4,818.6964	6,624.9321	3.4507	9.2169	4,892.4199	2,644.4033	3,797.8920
36	08	3	SAT-M	0.0000	16.0581	4,818.6964	7,611.5606	4,788.6670	-4.3198	8.8796	2,644.4033	4,019.0241	2,667.0353
36	08	4	SAT-W	0.0000	17.2689	6,624.9321	4,788.6670	8,265.2992	6.5925	9.0699	3,797.8920	2,667.0353	4,715.9221
36	08	5	Female	0.5429	0.0563	3.4507	-4.3198	6.5925	0.2483	0.0258	1.5773	-1.9746	3.0135
36	08	6	Female*HSGPA	0.0563	0.1404	9.2169	8.8796	9.0699	0.0258	0.1372	9.0226	9.1228	8.6988
36	08	7	Female*SAT-CR	3.4488	9.2169	4,892.4199	2,644.4033	3,797.8920	1.5773	9.0226	4,880.5193	2,659.3013	3,775.1561
36	08	8	Female*SAT-M	-4.3174	8.8796	2,644.4033	4,019.0241	2,667.0353	-1.9746	9.1228	2,659.3013	4,000.3738	2,695.4978
36	08	9	Female*SAT-W	6.5888	9.0699	3,797.8920	2,667.0353	4,715.9221	3.0135	8.6988	3,775.1561	2,695.4978	4,672.4853

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
37	07	1	HSGPA	0.0000	0.3404	17.6441	22.4613	19.9330	0.0429	0.1656	9.2009	11.6463	10.0421
37	07	2	SAT-CR	0.0000	17.6441	8,377.2513	5,793.6813	6,369.6581	-2.4337	9.2009	4,231.2787	2,859.6594	3,273.7190
37	07	3	SAT-M	0.0000	22.4613	5,793.6813	9,617.7987	5,559.1626	-8.9208	11.6463	2,859.6594	4,744.9739	2,752.7821
37	07	4	SAT-W	0.0000	19.9330	6,369.6581	5,559.1626	7,806.2427	1.0250	10.0421	3,273.7190	2,752.7821	4,094.9878
37	07	5	Female	0.5367	0.0429	-2.4337	-8.9208	1.0250	0.2488	0.0199	-1.1275	-4.1328	0.4748
37	07	6	Female*HSGPA	0.0429	0.1656	9.2009	11.6463	10.0421	0.0199	0.1637	9.3054	12.0292	9.9981
37	07	7	Female*SAT-CR	-2.4323	9.2009	4,231.2787	2,859.6594	3,273.7190	-1.1275	9.3054	4,225.3591	2,837.9611	3,276.2121
37	07	8	Female*SAT-M	-8.9157	11.6463	2,859.6594	4,744.9739	2,752.7821	-4.1328	12.0292	2,837.9611	4,665.4389	2,761.9204
37	07	9	Female*SAT-W	1.0244	10.0421	3,273.7190	2,752.7821	4,094.9878	0.4748	9.9981	3,276.2121	2,761.9204	4,093.9379
37	08	1	HSGPA	0.0000	0.3425	20.2333	26.0087	20.4993	0.0362	0.1729	10.7630	12.2941	10.4375
37	08	2	SAT-CR	0.0000	20.2333	8,076.0874	5,639.6162	6,019.5715	-1.9546	10.7630	3,972.9851	2,561.7091	2,929.0114
37	08	3	SAT-M	0.0000	26.0087	5,639.6162	9,391.8015	5,431.0312	-5.5912	12.2941	2,561.7091	4,162.0299	2,451.9168
37	08	4	SAT-W	0.0000	20.4993	6,019.5715	5,431.0312	7,432.4297	0.5088	10.4375	2,929.0114	2,451.9168	3,670.1688
37	08	5	Female	0.5311	0.0362	-1.9546	-5.5912	0.5088	0.2492	0.0170	-0.9166	-2.6220	0.2386
37	08	6	Female*HSGPA	0.0361	0.1729	10.7630	12.2941	10.4375	0.0170	0.1716	10.8337	12.4962	10.4191
37	08	7	Female*SAT-CR	-1.9536	10.7630	3,972.9851	2,561.7091	2,929.0114	-0.9166	10.8337	3,969.1665	2,550.7861	2,930.0054
37	08	8	Female*SAT-M	-5.5883	12.2941	2,561.7091	4,162.0299	2,451.9168	-2.6220	12.4962	2,550.7861	4,130.7847	2,454.7601
37	08	9	Female*SAT-W	0.5085	10.4375	2,929.0114	2,451.9168	3,670.1688	0.2386	10.4191	2,930.0054	2,454.7601	3,669.9101
38	07	1	HSGPA	0.0000	0.2295	13.2432	12.8549	15.0601	0.0295	0.1070	7.2829	7.4832	8.0711
38	07	2	SAT-CR	0.0000	13.2432	8,493.0388	3,767.0807	6,060.6839	0.9338	7.2829	4,561.1800	1,990.5728	3,247.7539
38	07	3	SAT-M	0.0000	12.8549	3,767.0807	7,490.3598	3,949.3954	-7.0364	7.4832	1,990.5728	4,004.1236	2,154.5905
38	07	4	SAT-W	0.0000	15.0601	6,060.6839	3,949.3954	7,561.8315	3.4392	8.0711	3,247.7539	2,154.5905	4,042.1870
38	07	5	Female	0.5516	0.0295	0.9338	-7.0364	3.4392	0.2476	0.0132	0.4187	-3.1550	1.5420
38	07	6	Female*HSGPA	0.0295	0.1070	7.2829	7.4832	8.0711	0.0132	0.1061	7.2554	7.6909	7.9696
38	07	7	Female*SAT-CR	0.9329	7.2829	4,561.1800	1,990.5728	3,247.7539	0.4187	7.2554	4,560.3089	1,997.1371	3,244.5455
38	07	8	Female*SAT-M	-7.0295	7.4832	1,990.5728	4,004.1236	2,154.5905	-3.1550	7.6909	1,997.1371	3,954.6612	2,178.7660
38	07	9	Female*SAT-W	3.4358	8.0711	3,247.7539	2,154.5905	4,042.1870	1.5420	7.9696	3,244.5455	2,178.7660	4,030.3708
38	08	1	HSGPA	0.0000	0.2225	11.6901	12.2496	12.8599	0.0486	0.0992	7.2817	6.6191	7.4251
38	08	2	SAT-CR	0.0000	11.6901	8,274.0056	3,484.4030	5,892.2580	0.2419	7.2817	4,787.3670	2,310.1263	3,622.0948
38	08	3	SAT-M	0.0000	12.2496	3,484.4030	7,507.1883	3,783.4760	-5.7964	6.6191	2,310.1263	4,061.0497	2,383.5144
38	08	4	SAT-W	0.0000	12.8599	5,892.2580	3,783.4760	7,419.5423	5.0907	7.4251	3,622.0948	2,383.5144	4,327.0710
38	08	5	Female	0.5445	0.0486	0.2419	-5.7964	5.0907	0.2483	0.0221	0.1102	-2.6405	2.3190
38	08	6	Female*HSGPA	0.0486	0.0992	7.2817	6.6191	7.4251	0.0221	0.0968	7.2699	6.9005	7.1779
38	08	7	Female*SAT-CR	0.2417	7.2817	4,787.3670	2,310.1263	3,622.0948	0.1102	7.2699	4,787.3085	2,311.5271	3,620.8645
38	08	8	Female*SAT-M	-5.7900	6.6191	2,310.1263	4,061.0497	2,383.5144	-2.6405	6.9005	2,311.5271	4,027.4883	2,412.9897
38	08	9	Female*SAT-W	5.0851	7.4251	3,622.0948	2,383.5144	4,327.0710	2.3190	7.1779	3,620.8645	2,412.9897	4,301.1843
39	07	1	HSGPA	0.0000	0.2470	11.5704	11.5246	12.8498	0.0272	0.0849	4.0751	3.7138	4.2916
39	07	2	SAT-CR	0.0000	11.5704	7,527.0781	3,786.0771	5,433.0738	-2.8416	4.0751	2,599.5802	1,372.9979	1,914.7512
39	07	3	SAT-M	0.0000	11.5246	3,786.0771	7,320.6520	3,854.9115	-6.9844	3.7138	1,372.9979	2,836.2172	1,423.1325
39	07	4	SAT-W	0.0000	12.8498	5,433.0738	3,854.9115	7,111.7892	-0.3356	4.2916	1,914.7512	1,423.1325	2,456.3925
39	07	5	Female	0.3517	0.0272	-2.8416	-6.9844	-0.3356	0.2281	0.0177	-1.8421	-4.5278	-0.2176
39	07	6	Female*HSGPA	0.0272	0.0849	4.0751	3.7138	4.2916	0.0177	0.0842	4.1525	3.9040	4.3008
39	07	7	Female*SAT-CR	-2.8408	4.0751	2,599.5802	1,372.9979	1,914.7512	-1.8421	4.1525	2,591.5075	1,353.1561	1,913.7977
39	07	8	Female*SAT-M	-6.9825	3.7138	1,372.9979	2,836.2172	1,423.1325	-4.5278	3.9040	1,353.1561	2,787.4484	1,420.7890
39	07	9	Female*SAT-W	-0.3355	4.2916	1,914.7512	1,423.1325	2,456.3925	-0.2176	4.3008	1,913.7977	1,420.7890	2,456.2799



## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
40	06	1	HSGPA	0.0000	0.2782	20.5018	22.1261	22.1593	0.0409	0.1261	9.0329	9.3194	9.6152
40	06	2	SAT-CR	0.0000	20.5018	9,415.5358	6,117.8715	7,664.2442	2.5255	9.0329	4,424.8060	2,709.8451	3,523.1173
40	06	3	SAT-M	0.0000	22.1261	6,117.8715	10,049.0458	6,446.1986	-5.7789	9.3194	2,709.8451	4,514.1688	2,821.4821
40	06	4	SAT-W	0.0000	22.1593	7,664.2442	6,446.1986	9,717.6208	5.8058	9.6152	3,523.1173	2,821.4821	4,450.5209
40	06	5	Female	0.5051	0.0409	2.5255	-5.7789	5.8058	0.2500	0.0203	1.2499	-2.8601	2.8734
40	06	6	Female*HSGPA	0.0409	0.1261	9.0329	9.3194	9.6152	0.0203	0.1245	8.9295	9.5560	9.3775
40	06	7	Female*SAT-CR	2.5254	9.0329	4,424.8060	2,709.8451	3,523.1173	1.2499	8.9295	4,418.4281	2,724.4392	3,508.4553
40	06	8	Female*SAT-M	-5.7787	9.3194	2,709.8451	4,514.1688	2,821.4821	-2.8601	9.5560	2,724.4392	4,480.7741	2,855.0322
40	06	9	Female*SAT-W	5.8056	9.6152	3,523.1173	2,821.4821	4,450.5209	2.8734	9.3775	3,508.4553	2,855.0322	4,416.8147
40	07	1	HSGPA	0.0000	0.2704	19.2312	20.9810	21.0176	0.0369	0.1254	8.4575	9.1396	9.1930
40	07	2	SAT-CR	0.0000	19.2312	9,113.8262	5,623.8633	7,450.0037	1.9531	8.4575	4,395.9756	2,588.1510	3,549.0182
40	07	3	SAT-M	0.0000	20.9810	5,623.8633	9,655.8431	6,019.8677	-6.1649	9.1396	2,588.1510	4,586.0572	2,811.3163
40	07	4	SAT-W	0.0000	21.0176	7,450.0037	6,019.8677	9,463.5645	4.8375	9.1930	3,549.0182	2,811.3163	4,515.3498
40	07	5	Female	0.5156	0.0369	1.9531	-6.1649	4.8375	0.2498	0.0179	0.9461	-2.9864	2.3434
40	07	6	Female*HSGPA	0.0369	0.1254	8.4575	9.1396	9.1930	0.0179	0.1240	8.3855	9.3670	9.0146
40	07	7	Female*SAT-CR	1.9530	8.4575	4,395.9756	2,588.1510	3,549.0182	0.9461	8.3855	4,392.1611	2,600.1911	3,539.5704
40	07	8	Female*SAT-M	-6.1646	9.1396	2,588.1510	4,586.0572	2,811.3163	-2.9864	9.3670	2,600.1911	4,548.0534	2,841.1376
40	07	9	Female*SAT-W	4.8373	9.1930	3,549.0182	2,811.3163	4,515.3498	2.3434	9.0146	3,539.5704	2,841.1376	4,491.9493
40	08	1	HSGPA	0.0000	0.2669	18.3388	20.5867	20.5538	0.0394	0.1257	8.5528	9.4352	9.4488
40	08	2	SAT-CR	0.0000	18.3388	9,372.9160	5,667.5717	7,635.9872	2.0058	8.5528	4,516.4459	2,673.4168	3,704.5328
40	08	3	SAT-M	0.0000	20.5867	5,667.5717	10,010.1748	6,189.0890	-6.2400	9.4352	2,673.4168	4,881.1922	2,978.4267
40	08	4	SAT-W	0.0000	20.5538	7,635.9872	6,189.0890	9,776.2884	5.9427	9.4488	3,704.5328	2,978.4267	4,781.3677
40	08	5	Female	0.5220	0.0394	2.0058	-6.2400	5.9427	0.2495	0.0188	0.9588	-2.9828	2.8406
40	08	6	Female*HSGPA	0.0394	0.1257	8.5528	9.4352	9.4488	0.0188	0.1241	8.4738	9.6808	9.2150
40	08	7	Female*SAT-CR	2.0057	8.5528	4,516.4459	2,673.4168	3,704.5328	0.9588	8.4738	4,512.4228	2,685.9327	3,692.6134
40	08	8	Female*SAT-M	-6.2397	9.4352	2,673.4168	4,881.1922	2,978.4267	-2.9828	9.6808	2,685.9327	4,842.2559	3,015.5074
40	08	9	Female*SAT-W	5.9424	9.4488	3,704.5328	2,978.4267	4,781.3677	2.8406	9.2150	3,692.6134	3,015.5074	4,746.0541
41	07	1	HSGPA	0.0000	0.3267	19.8439	21.9443	20.9425	0.0370	0.1644	10.1179	11.0706	10.8289
41	07	2	SAT-CR	0.0000	19.8439	9,040.6294	6,119.4584	7,007.9429	0.0402	10.1179	4,633.0972	3,104.0511	3,620.9505
41	07	3	SAT-M	0.0000	21.9443	6,119.4584	9,527.8100	5,843.1761	-7.6149	11.0706	3,104.0511	4,798.8156	3,020.0956
41	07	4	SAT-W	0.0000	20.9425	7,007.9429	5,843.1761	8,595.2121	3.8873	10.8289	3,620.9505	3,020.0956	4,452.8151
41	07	5	Female	0.5417	0.0370	0.0402	-7.6149	3.8873	0.2483	0.0169	0.0184	-3.4897	1.7814
41	07	6	Female*HSGPA	0.0370	0.1644	10.1179	11.0706	10.8289	0.0169	0.1630	10.1165	11.3521	10.6852
41	07	7	Female*SAT-CR	0.0402	10.1179	4,633.0972	3,104.0511	3,620.9505	0.0184	10.1165	4,633.0956	3,104.3573	3,620.7942
41	07	8	Female*SAT-M	-7.6147	11.0706	3,104.0511	4,798.8156	3,020.0956	-3.4897	11.3521	3,104.3573	4,740.8303	3,049.6965
41	07	9	Female*SAT-W	3.8872	10.8289	3,620.9505	3,020.0956	4,452.8151	1.7814	10.6852	3,620.7942	3,049.6965	4,437.7041
41	08	1	HSGPA	0.0000	0.3118	19.6302	21.7162	20.6082	0.0385	0.1580	10.2612	10.9821	10.6862
41	08	2	SAT-CR	0.0000	19.6302	9,212.8564	6,348.2131	7,113.2157	-0.0085	10.2612	4,803.1054	3,249.8130	3,779.8978
41	08	3	SAT-M	0.0000	21.7162	6,348.2131	9,680.2127	6,091.1457	-7.4593	10.9821	3,249.8130	4,913.8984	3,211.0999
41	08	4	SAT-W	0.0000	20.6082	7,113.2157	6,091.1457	8,792.4328	4.5098	10.6862	3,779.8978	3,211.0999	4,694.5139
41	08	5	Female	0.5496	0.0385	-0.0085	-7.4593	4.5098	0.2475	0.0173	-0.0038	-3.3594	2.0310
41	08	6	Female*HSGPA	0.0385	0.1580	10.2612	10.9821	10.6862	0.0173	0.1565	10.2615	11.2691	10.5127
41	08	7	Female*SAT-CR	-0.0085	10.2612	4,803.1054	3,249.8130	3,779.8978	-0.0038	10.2615	4,803.1053	3,249.7499	3,779.9359
41	08	8	Female*SAT-M	-7.4591	10.9821	3,249.8130	4,913.8984	3,211.0999	-3.3594	11.2691	3,249.7499	4,858.2583	3,244.7389
41	08	9	Female*SAT-W	4.5096	10.6862	3,779.8978	3,211.0999	4,694.5139	2.0310	10.5127	3,779.9359	3,244.7389	4,674.1765

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
42	07	1	HSGPA	0.0000	0.2002	17.2294	17.9951	17.7187	0.0077	0.1185	11.4968	11.9674	11.4116
42	07	2	SAT-CR	0.0000	17.2294	10,813.9814	7,151.0658	8,618.5635	-5.0299	11.4968	6,792.9028	4,742.2316	5,529.4722
42	07	3	SAT-M	0.0000	17.9951	7,151.0658	11,389.7477	7,577.6286	-12.6398	11.9674	4,742.2316	7,240.9451	4,969.2581
42	07	4	SAT-W	0.0000	17.7187	8,618.5635	7,577.6286	10,442.0095	-3.2022	11.4116	5,529.4722	4,969.2581	6,533.5522
42	07	5	Female	0.5984	0.0077	-5.0299	-12.6398	-3.2022	0.2403	0.0031	-2.0202	-5.0767	-1.2862
42	07	6	Female*HSGPA	0.0077	0.1185	11.4968	11.9674	11.4116	0.0031	0.1184	11.5355	12.0648	11.4362
42	07	7	Female*SAT-CR	-5.0296	11.4968	6,792.9028	4,742.2316	5,529.4722	-2.0202	11.5355	6,767.6049	4,678.6590	5,513.3664
42	07	8	Female*SAT-M	-12.6391	11.9674	4,742.2316	7,240.9451	4,969.2581	-5.0767	12.0648	4,678.6590	7,081.1896	4,928.7849
42	07	9	Female*SAT-W	-3.2020	11.4116	5,529.4722	4,969.2581	6,533.5522	-1.2862	11.4362	5,513.3664	4,928.7849	6,523.2986
42	08	1	HSGPA	0.0000	0.1944	15.9349	17.1851	16.6471	0.0090	0.1118	10.3146	11.2140	10.5237
42	08	2	SAT-CR	0.0000	15.9349	10,652.8339	7,040.5656	8,580.8616	-5.7544	10.3146	6,663.5609	4,702.3510	5,545.1295
42	08	3	SAT-M	0.0000	17.1851	7,040.5656	11,595.1189	7,730.0027	-13.3483	11.2140	4,702.3510	7,426.4899	5,147.2612
42	08	4	SAT-W	0.0000	16.6471	8,580.8616	7,730.0027	10,597.3213	-3.2090	10.5237	5,545.1295	5,147.2612	6,735.2856
42	08	5	Female	0.5966	0.0090	-5.7544	-13.3483	-3.2090	0.2407	0.0036	-2.3212	-5.3844	-1.2944
42	08	6	Female*HSGPA	0.0090	0.1118	10.3146	11.2140	10.5237	0.0036	0.1117	10.3667	11.3347	10.5527
42	08	7	Female*SAT-CR	-5.7540	10.3146	6,663.5609	4,702.3510	5,545.1295	-2.3212	10.3667	6,630.4500	4,625.5448	5,526.6649
42	08	8	Female*SAT-M	-13.3474	11.2140	4,702.3510	7,426.4899	5,147.2612	-5.3844	11.3347	4,625.5448	7,248.3249	5,104.4293
42	08	9	Female*SAT-W	-3.2088	10.5237	5,545.1295	5,147.2612	6,735.2856	-1.2944	10.5527	5,526.6649	5,104.4293	6,724.9886
43	06	1	HSGPA	0.0000	0.1394	8.4292	8.1657	9.0397	0.0168	0.0678	4.4663	4.1387	4.4578
43	06	2	SAT-CR	0.0000	8.4292	7,205.4020	3,081.2874	4,951.8208	1.1817	4.4663	3,849.7449	1,669.4559	2,611.6542
43	06	3	SAT-M	0.0000	8.1657	3,081.2874	6,255.5651	3,178.1253	-7.5007	4.1387	1,669.4559	3,510.3315	1,746.3244
43	06	4	SAT-W	0.0000	9.0397	4,951.8208	3,178.1253	6,393.9798	2.4192	4.4578	2,611.6542	1,746.3244	3,305.4589
43	06	5	Female	0.5252	0.0168	1.1817	-7.5007	2.4192	0.2494	0.0080	0.5610	-3.5612	1.1486
43	06	6	Female*HSGPA	0.0168	0.0678	4.4663	4.1387	4.4578	0.0080	0.0675	4.4465	4.2646	4.4172
43	06	7	Female*SAT-CR	1.1815	4.4663	3,849.7449	1,669.4559	2,611.6542	0.5610	4.4465	3,848.3487	1,678.3178	2,608.7960
43	06	8	Female*SAT-M	-7.4995	4.1387	1,669.4559	3,510.3315	1,746.3244	-3.5612	4.2646	1,678.3178	3,454.0800	1,764.4671
43	06	9	Female*SAT-W	2.4188	4.4578	2,611.6542	1,746.3244	3,305.4589	1.1486	4.4172	2,608.7960	1,764.4671	3,299.6073
43	07	1	HSGPA	0.0000	0.1397	8.6628	9.3719	8.6315	0.0152	0.0664	4.1586	4.1632	4.0513
43	07	2	SAT-CR	0.0000	8.6628	7,293.4542	3,317.8656	5,046.4876	0.9979	4.1586	3,877.8416	1,778.1432	2,656.8249
43	07	3	SAT-M	0.0000	9.3719	3,317.8656	6,628.9424	3,438.7346	-5.7039	4.1632	1,778.1432	3,675.6812	1,875.5860
43	07	4	SAT-W	0.0000	8.6315	5,046.4876	3,438.7346	6,545.7224	1.7716	4.0513	2,656.8249	1,875.5860	3,470.6793
43	07	5	Female	0.5394	0.0152	0.9979	-5.7039	1.7716	0.2485	0.0070	0.4597	-2.6274	0.8161
43	07	6	Female*HSGPA	0.0152	0.0664	4.1586	4.1632	4.0513	0.0070	0.0661	4.1434	4.2501	4.0243
43	07	7	Female*SAT-CR	0.9978	4.1586	3,877.8416	1,778.1432	2,656.8249	0.4597	4.1434	3,876.8459	1,783.8345	2,655.0572
43	07	8	Female*SAT-M	-5.7030	4.1632	1,778.1432	3,675.6812	1,875.5860	-2.6274	4.2501	1,783.8345	3,643.1518	1,885.6896
43	07	9	Female*SAT-W	1.7714	4.0513	2,656.8249	1,875.5860	3,470.6793	0.8161	4.0243	2,655.0572	1,885.6896	3,467.5411
43	08	1	HSGPA	0.0000	0.1466	8.9368	9.9893	9.9875	0.0183	0.0726	4.6260	5.0672	4.8137
43	08	2	SAT-CR	0.0000	8.9368	7,826.9768	3,383.0579	5,573.2079	-0.3950	4.6260	4,333.3796	1,930.1900	3,145.5642
43	08	3	SAT-M	0.0000	9.9893	3,383.0579	7,038.4696	3,780.3920	-6.2010	5.0672	1,930.1900	4,221.3550	2,215.7949
43	08	4	SAT-W	0.0000	9.9875	5,573.2079	3,780.3920	7,267.8960	2.3577	4.8137	3,145.5642	2,215.7949	4,032.2419
43	08	5	Female	0.5535	0.0183	-0.3950	-6.2010	2.3577	0.2472	0.0082	-0.1764	-2.7690	1.0528
43	08	6	Female*HSGPA	0.0183	0.0726	4.6260	5.0672	4.8137	0.0082	0.0722	4.6332	5.1809	4.7705
43	08	7	Female*SAT-CR	-0.3949	4.6260	4,333.3796	1,930.1900	3,145.5642	-0.1764	4.6332	4,333.2236	1,927.7412	3,146.4953
43	08	8	Female*SAT-M	-6.1999	5.0672	1,930.1900	4,221.3550	2,215.7949	-2.7690	5.1809	1,927.7412	4,182.9099	2,230.4125
43	08	9	Female*SAT-W	2.3573	4.8137	3,145.5642	2,215.7949	4,032.2419	1.0528	4.7705	3,146.4953	2,230.4125	4,026.6840

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
44	06	1	HSGPA	0.0000	0.3919	22.2210	22.4505	21.9897	0.0524	0.2188	12.5326	12.0156	13.3118
44	06	2	SAT-CR	0.0000	22.2210	8,785.1538	5,760.5384	6,675.8179	2.2885	12.5326	5,174.2999	3,311.5363	4,031.9042
44	06	3	SAT-M	0.0000	22.4505	5,760.5384	8,929.8604	5,469.3901	-4.7811	12.0156	3,311.5363	4,997.3486	3,248.8216
44	06	4	SAT-W	0.0000	21.9897	6,675.8179	5,469.3901	8,309.7018	5.1306	13.3118	4,031.9042	3,248.8216	5,030.1891
44	06	5	Female	0.6027	0.0524	2.2885	-4.7811	5.1306	0.2396	0.0208	0.9091	-1.8994	2.0382
44	06	6	Female*HSGPA	0.0523	0.2188	12.5326	12.0156	13.3118	0.0208	0.2161	12.4128	12.2659	13.0433
44	06	7	Female*SAT-CR	2.2874	12.5326	5,174.2999	3,311.5363	4,031.9042	0.9091	12.4128	5,169.0653	3,322.4726	4,020.1686
44	06	8	Female*SAT-M	-4.7789	12.0156	3,311.5363	4,997.3486	3,248.8216	-1.8994	12.2659	3,322.4726	4,974.5002	3,273.3399
44	06	9	Female*SAT-W	5.1281	13.3118	4,031.9042	3,248.8216	5,030.1891	2.0382	13.0433	4,020.1686	3,273.3399	5,003.8788
45	06	1	HSGPA	0.0000	0.3384	14.6707	18.8666	16.3648	0.0492	0.1595	6.6857	8.5116	7.6547
45	06	2	SAT-CR	0.0000	14.6707	6,783.9227	4,206.5136	4,865.5659	1.1065	6.6857	3,315.2913	1,984.2649	2,420.2187
45	06	3	SAT-M	0.0000	18.8666	4,206.5136	7,500.7132	4,050.4286	-6.4718	8.5116	1,984.2649	3,512.7626	1,982.6404
45	06	4	SAT-W	0.0000	16.3648	4,865.5659	4,050.4286	6,536.5441	5.1609	7.6547	2,420.2187	1,982.6404	3,271.6182
45	06	5	Female	0.5104	0.0492	1.1065	-6.4718	5.1609	0.2499	0.0241	0.5418	-3.1688	2.5270
45	06	6	Female*HSGPA	0.0492	0.1595	6.6857	8.5116	7.6547	0.0241	0.1570	6.6312	8.8300	7.4008
45	06	7	Female*SAT-CR	1.1063	6.6857	3,315.2913	1,984.2649	2,420.2187	0.5418	6.6312	3,314.0672	1,991.4247	2,414.5091
45	06	8	Female*SAT-M	-6.4708	8.5116	1,984.2649	3,512.7626	1,982.6404	-3.1688	8.8300	1,991.4247	3,470.8849	2,016.0358
45	06	9	Female*SAT-W	5.1602	7.6547	2,420.2187	1,982.6404	3,271.6182	2.5270	7.4008	2,414.5091	2,016.0358	3,244.9868
45	07	1	HSGPA	0.0000	0.3268	14.5214	16.8501	15.5128	0.0431	0.1607	6.8678	7.6882	7.0046
45	07	2	SAT-CR	0.0000	14.5214	7,016.1932	4,153.3817	5,168.7360	1.7053	6.8678	3,395.0412	1,951.0544	2,539.7349
45	07	3	SAT-M	0.0000	16.8501	4,153.3817	7,079.5343	4,034.1443	-6.1041	7.6882	1,951.0544	3,310.9721	1,894.8525
45	07	4	SAT-W	0.0000	15.5128	5,168.7360	4,034.1443	6,763.7944	4.7880	7.0046	2,539.7349	1,894.8525	3,324.1020
45	07	5	Female	0.5160	0.0431	1.7053	-6.1041	4.7880	0.2498	0.0208	0.8254	-2.9545	2.3175
45	07	6	Female*HSGPA	0.0431	0.1607	6.8678	7.6882	7.0046	0.0208	0.1589	6.7944	7.9510	6.7984
45	07	7	Female*SAT-CR	1.7051	6.8678	3,395.0412	1,951.0544	2,539.7349	0.8254	6.7944	3,392.1334	1,961.4627	2,531.5707
45	07	8	Female*SAT-M	-6.1033	7.6882	1,951.0544	3,310.9721	1,894.8525	-2.9545	7.9510	1,961.4627	3,273.7166	1,924.0756
45	07	9	Female*SAT-W	4.7874	7.0046	2,539.7349	1,894.8525	3,324.1020	2.3175	6.7984	2,531.5707	1,924.0756	3,301.1796
45	08	1	HSGPA	0.0000	0.3231	14.6288	16.6124	15.5111	0.0470	0.1640	7.7600	8.4635	8.0944
45	08	2	SAT-CR	0.0000	14.6288	7,057.0288	4,239.4007	5,198.9492	0.9747	7.7600	3,670.7522	2,131.9610	2,751.0721
45	08	3	SAT-M	0.0000	16.6124	4,239.4007	7,158.4489	4,128.1876	-6.1024	8.4635	2,131.9610	3,482.2203	2,098.9402
45	08	4	SAT-W	0.0000	15.5111	5,198.9492	4,128.1876	6,846.7314	5.1806	8.0944	2,751.0721	2,098.9402	3,600.6951
45	08	5	Female	0.5272	0.0470	0.9747	-6.1024	5.1806	0.2493	0.0222	0.4609	-2.8855	2.4496
45	08	6	Female*HSGPA	0.0470	0.1640	7.7600	8.4635	8.0944	0.0222	0.1618	7.7141	8.7502	7.8510
45	08	7	Female*SAT-CR	0.9746	7.7600	3,670.7522	2,131.9610	2,751.0721	0.4609	7.7141	3,669.8023	2,137.9084	2,746.0232
45	08	8	Female*SAT-M	-6.1017	8.4635	2,131.9610	3,482.2203	2,098.9402	-2.8855	8.7502	2,137.9084	3,444.9852	2,130.5502
45	08	9	Female*SAT-W	5.1799	8.0944	2,751.0721	2,098.9402	3,600.6951	2.4496	7.8510	2,746.0232	2,130.5502	3,573.8603
46	08	1	HSGPA	0.0000	0.2711	19.7583	19.5476	20.4041	0.0299	0.1746	13.6371	13.2683	13.5969
46	08	2	SAT-CR	0.0000	19.7583	8,293.3313	5,447.3189	6,272.7999	-1.2388	13.6371	5,528.7522	3,649.9417	4,306.6636
46	08	3	SAT-M	0.0000	19.5476	5,447.3189	8,590.7721	5,287.5026	-7.0472	13.2683	3,649.9417	5,569.2171	3,622.4586
46	08	4	SAT-W	0.0000	20.4041	6,272.7999	5,287.5026	7,814.7697	2.6435	13.5969	4,306.6636	3,622.4586	5,424.4665
46	08	5	Female	0.6749	0.0299	-1.2388	-7.0472	2.6435	0.2195	0.0097	-0.4027	-2.2909	0.8593
46	08	6	Female*HSGPA	0.0299	0.1746	13.6371	13.2683	13.5969	0.0097	0.1737	13.6741	13.4787	13.5180
46	08	7	Female*SAT-CR	-1.2384	13.6371	5,528.7522	3,649.9417	4,306.6636	-0.4027	13.6741	5,527.2181	3,641.2147	4,309.9372
46	08	8	Female*SAT-M	-7.0446	13.2683	3,649.9417	5,569.2171	3,622.4586	-2.2909	13.4787	3,641.2147	5,519.5725	3,641.0808
46	08	9	Female*SAT-W	2.6425	13.5969	4,306.6636	3,622.4586	5,424.4665	0.8593	13.5180	4,309.9372	3,641.0808	5,417.4812

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
47	08	1	HSGPA	0.0000	0.3834	18.5204	21.7516	20.3939	0.0554	0.2169	11.4554	13.4136	12.4120
47	08	2	SAT-CR	0.0000	18.5204	7,093.9854	4,531.8676	5,207.3604	0.3844	11.4554	3,985.7262	2,459.5962	2,949.9769
47	08	3	SAT-M	0.0000	21.7516	4,531.8676	7,873.6041	4,482.2320	-4.9911	13.4136	2,459.5962	4,196.6143	2,501.5698
47	08	4	SAT-W	0.0000	20.3939	5,207.3604	4,482.2320	6,836.1848	4.9848	12.4120	2,949.9769	2,501.5698	3,874.8959
47	08	5	Female	0.5792	0.0554	0.3844	-4.9911	4.9848	0.2438	0.0233	0.1618	-2.1005	2.0978
47	08	6	Female*HSGPA	0.0554	0.2169	11.4554	13.4136	12.4120	0.0233	0.2138	11.4341	13.6900	12.1359
47	08	7	Female*SAT-CR	0.3843	11.4554	3,985.7262	2,459.5962	2,949.9769	0.1618	11.4341	3,985.5785	2,461.5144	2,948.0612
47	08	8	Female*SAT-M	-4.9898	13.4136	2,459.5962	4,196.6143	2,501.5698	-2.1005	13.6900	2,461.5144	4,171.7096	2,526.4434
47	08	9	Female*SAT-W	4.9836	12.4120	2,949.9769	2,501.5698	3,874.8959	2.0978	12.1359	2,948.0612	2,526.4434	3,850.0535
48	06	1	HSGPA	0.0000	0.2861	16.6751	17.6857	17.6139	0.0379	0.1608	9.9273	10.7697	10.2201
48	06	2	SAT-CR	0.0000	16.6751	8,647.2031	5,282.8892	6,538.4129	-1.8508	9.9273	5,139.2208	3,204.1565	3,883.8318
48	06	3	SAT-M	0.0000	17.6857	5,282.8892	8,872.7139	5,175.0683	-8.9582	10.7697	3,204.1565	5,235.5368	3,166.9880
48	06	4	SAT-W	0.0000	17.6139	6,538.4129	5,175.0683	8,097.5719	1.2746	10.2201	3,883.8318	3,166.9880	4,776.3439
48	06	5	Female	0.6033	0.0379	-1.8508	-8.9582	1.2746	0.2394	0.0150	-0.7343	-3.5541	0.5057
48	06	6	Female*HSGPA	0.0379	0.1608	9.9273	10.7697	10.2201	0.0150	0.1594	9.9974	11.1089	10.1718
48	06	7	Female*SAT-CR	-1.8505	9.9273	5,139.2208	3,204.1565	3,883.8318	-0.7343	9.9974	5,135.7958	3,187.5792	3,886.1905
48	06	8	Female*SAT-M	-8.9566	10.7697	3,204.1565	5,235.5368	3,166.9880	-3.5541	11.1089	3,187.5792	5,155.3009	3,178.4041
48	06	9	Female*SAT-W	1.2744	10.2201	3,883.8318	3,166.9880	4,776.3439	0.5057	10.1718	3,886.1905	3,178.4041	4,774.7196
48	07	1	HSGPA	0.0000	0.2844	16.0207	17.3776	17.8195	0.0328	0.1629	9.8649	10.7652	10.7427
48	07	2	SAT-CR	0.0000	16.0207	8,488.1117	5,222.1723	6,489.4073	-2.1126	9.8649	5,006.6796	3,144.9152	3,870.0095
48	07	3	SAT-M	0.0000	17.3776	5,222.1723	8,646.6351	5,215.0899	-7.8649	10.7652	3,144.9152	5,148.7330	3,197.6095
48	07	4	SAT-W	0.0000	17.8195	6,489.4073	5,215.0899	8,085.9768	1.1347	10.7427	3,870.0095	3,197.6095	4,841.7621
48	07	5	Female	0.6127	0.0328	-2.1126	-7.8649	1.1347	0.2373	0.0127	-0.8183	-3.0464	0.4395
48	07	6	Female*HSGPA	0.0328	0.1629	9.8649	10.7652	10.7427	0.0127	0.1618	9.9342	11.0233	10.7055
48	07	7	Female*SAT-CR	-2.1123	9.8649	5,006.6796	3,144.9152	3,870.0095	-0.8183	9.9342	5,002.2170	3,128.3021	3,872.4064
48	07	8	Female*SAT-M	-7.8637	10.7652	3,144.9152	5,148.7330	3,197.6095	-3.0464	11.0233	3,128.3021	5,086.8857	3,206.5328
48	07	9	Female*SAT-W	1.1346	10.7427	3,870.0095	3,197.6095	4,841.7621	0.4395	10.7055	3,872.4064	3,206.5328	4,840.4746
48	08	1	HSGPA	0.0000	0.2660	15.0733	15.7556	16.3216	0.0311	0.1549	9.4024	9.8509	9.8825
48	08	2	SAT-CR	0.0000	15.0733	8,403.1812	5,102.9218	6,447.9512	-1.7827	9.4024	4,952.4075	3,075.6409	3,878.2127
48	08	3	SAT-M	0.0000	15.7556	5,102.9218	8,562.2864	5,258.8217	-7.6724	9.8509	3,075.6409	5,091.4217	3,244.4897
48	08	4	SAT-W	0.0000	16.3216	6,447.9512	5,258.8217	8,251.6469	1.8608	9.8825	3,878.2127	3,244.4897	5,012.8737
48	08	5	Female	0.6159	0.0311	-1.7827	-7.6724	1.8608	0.2366	0.0119	-0.6848	-2.9472	0.7148
48	08	6	Female*HSGPA	0.0310	0.1549	9.4024	9.8509	9.8825	0.0119	0.1540	9.4577	10.0891	9.8247
48	08	7	Female*SAT-CR	-1.7824	9.4024	4,952.4075	3,075.6409	3,878.2127	-0.6848	9.4577	4,949.2299	3,061.9656	3,881.5293
48	08	8	Female*SAT-M	-7.6710	9.8509	3,075.6409	5,091.4217	3,244.4897	-2.9472	10.0891	3,061.9656	5,032.5669	3,258.7637
48	08	9	Female*SAT-W	1.8604	9.8825	3,878.2127	3,244.4897	5,012.8737	0.7148	9.8247	3,881.5293	3,258.7637	5,009.4119
49	06	1	HSGPA	0.0000	0.2701	15.3591	17.5259	17.1517	0.0451	0.1480	9.3988	10.4477	9.9266
49	06	2	SAT-CR	0.0000	15.3591	7,419.8137	4,770.5839	5,521.6185	-1.4208	9.3988	4,303.5205	2,743.9614	3,212.6625
49	06	3	SAT-M	0.0000	17.5259	4,770.5839	8,226.9161	4,699.3879	-7.7792	10.4477	2,743.9614	4,622.7140	2,772.9806
49	06	4	SAT-W	0.0000	17.1517	5,521.6185	4,699.3879	7,243.1091	3.1567	9.9266	3,212.6625	2,772.9806	4,195.1422
49	06	5	Female	0.5868	0.0451	-1.4208	-7.7792	3.1567	0.2425	0.0186	-0.5870	-3.2140	1.3042
49	06	6	Female*HSGPA	0.0451	0.1480	9.3988	10.4477	9.9266	0.0186	0.1459	9.4629	10.7986	9.7842
49	06	7	Female*SAT-CR	-1.4207	9.3988	4,303.5205	2,743.9614	3,212.6625	-0.5870	9.4629	4,301.5020	2,732.9098	3,217.1471
49	06	8	Female*SAT-M	-7.7786	10.4477	2,743.9614	4,622.7140	2,772.9806	-3.2140	10.7986	2,732.9098	4,562.2026	2,797.5353
49	06	9	Female*SAT-W	3.1564	9.9266	3,212.6625	2,772.9806	4,195.1422	1.3042	9.7842	3,217.1471	2,797.5353	4,185.1783

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
49	07	1	HSGPA	0.0000	0.2727	15.5161	18.5580	17.2654	0.0398	0.1523	9.4371	11.3657	10.2755
49	07	2	SAT-CR	0.0000	15.5161	7,109.7548	4,609.0427	5,489.5525	-0.9648	9.4371	4,098.7227	2,684.4318	3,222.5731
49	07	3	SAT-M	0.0000	18.5580	4,609.0427	8,179.0200	4,706.7713	-7.5107	11.3657	2,684.4318	4,657.4998	2,825.6366
49	07	4	SAT-W	0.0000	17.2654	5,489.5525	4,706.7713	7,213.3435	2.7134	10.2755	3,222.5731	2,825.6366	4,230.7324
49	07	5	Female	0.5898	0.0398	-0.9648	-7.5107	2.7134	0.2420	0.0163	-0.3958	-3.0809	1.1131
49	07	6	Female*HSGPA	0.0398	0.1523	9.4371	11.3657	10.2755	0.0163	0.1507	9.4756	11.6649	10.1674
49	07	7	Female*SAT-CR	-0.9647	9.4371	4,098.7227	2,684.4318	3,222.5731	-0.3958	9.4756	4,097.7920	2,677.1860	3,225.1909
49	07	8	Female*SAT-M	-7.5102	11.3657	2,684.4318	4,657.4998	2,825.6366	-3.0809	11.6649	2,677.1860	4,601.0929	2,846.0149
49	07	9	Female*SAT-W	2.7132	10.2755	3,222.5731	2,825.6366	4,230.7324	1.1131	10.1674	3,225.1909	2,846.0149	4,223.3702
49	08	1	HSGPA	0.0000	0.2606	15.0883	17.4221	17.3638	0.0429	0.1437	9.0651	10.5947	10.1311
49	08	2	SAT-CR	0.0000	15.0883	7,295.5957	4,747.9005	5,636.1116	-1.4299	9.0651	4,180.4028	2,755.5467	3,297.1325
49	08	3	SAT-M	0.0000	17.4221	4,747.9005	8,281.9902	4,868.3778	-8.2960	10.5947	2,755.5467	4,688.9941	2,895.9799
49	08	4	SAT-W	0.0000	17.3638	5,636.1116	4,868.3778	7,475.7568	3.2718	10.1311	3,297.1325	2,895.9799	4,331.4648
49	08	5	Female	0.5873	0.0429	-1.4299	-8.2960	3.2718	0.2424	0.0177	-0.5901	-3.4239	1.3503
49	08	6	Female*HSGPA	0.0429	0.1437	9.0651	10.5947	10.1311	0.0177	0.1418	9.1265	10.9507	9.9906
49	08	7	Female*SAT-CR	-1.4298	9.0651	4,180.4028	2,755.5467	3,297.1325	-0.5901	9.1265	4,178.3584	2,743.6854	3,301.8104
49	08	8	Female*SAT-M	-8.2955	10.5947	2,755.5467	4,688.9941	2,895.9799	-3.4239	10.9507	2,743.6854	4,620.1746	2,923.1210
49	08	9	Female*SAT-W	3.2716	10.1311	3,297.1325	2,895.9799	4,331.4648	1.3503	9.9906	3,301.8104	2,923.1210	4,320.7609
50	06	1	HSGPA	0.0000	0.3117	18.2406	17.2804	20.8528	0.0391	0.0807	5.8349	4.7156	6.4014
50	06	2	SAT-CR	0.0000	18.2406	10,282.2981	5,060.7244	7,642.4060	2.2226	5.8349	3,045.5540	1,581.0577	2,238.4852
50	06	3	SAT-M	0.0000	17.2804	5,060.7244	8,661.3838	5,302.4814	-4.5416	4.7156	1,581.0577	2,736.5975	1,633.2555
50	06	4	SAT-W	0.0000	20.8528	7,642.4060	5,302.4814	9,299.9060	4.8102	6.4014	2,238.4852	1,633.2555	2,674.0658
50	06	5	Female	0.2832	0.0391	2.2226	-4.5416	4.8102	0.2031	0.0280	1.5931	-3.2552	3.4478
50	06	6	Female*HSGPA	0.0391	0.0807	5.8349	4.7156	6.4014	0.0280	0.0791	5.7480	4.8931	6.2134
50	06	7	Female*SAT-CR	2.2213	5.8349	3,045.5540	1,581.0577	2,238.4852	1.5931	5.7480	3,040.6169	1,591.1459	2,227.8003
50	06	8	Female*SAT-M	-4.5388	4.7156	1,581.0577	2,736.5975	1,633.2555	-3.2552	4.8931	1,591.1459	2,715.9841	1,655.0885
50	06	9	Female*SAT-W	4.8074	6.4014	2,238.4852	1,633.2555	2,674.0658	3.4478	6.2134	2,227.8003	1,655.0885	2,650.9412
53	06	1	HSGPA	0.0000	0.2601	17.4155	19.1871	18.7400	0.0388	0.1156	8.0339	8.3590	8.2353
53	06	2	SAT-CR	0.0000	17.4155	9,119.5174	5,947.1788	7,277.9825	0.2953	8.0339	4,496.3952	2,865.5628	3,576.5012
53	06	3	SAT-M	0.0000	19.1871	5,947.1788	9,574.3542	6,018.8960	-8.1587	8.3590	2,865.5628	4,521.1103	2,900.1948
53	06	4	SAT-W	0.0000	18.7400	7,277.9825	6,018.8960	9,086.8521	3.8123	8.2353	3,576.5012	2,900.1948	4,415.5047
53	06	5	Female	0.5004	0.0388	0.2953	-8.1587	3.8123	0.2500	0.0194	0.1475	-4.0763	1.9047
53	06	6	Female*HSGPA	0.0388	0.1156	8.0339	8.3590	8.2353	0.0194	0.1141	8.0224	8.6758	8.0873
53	06	7	Female*SAT-CR	0.2953	8.0339	4,496.3952	2,865.5628	3,576.5012	0.1475	8.0224	4,496.3080	2,867.9718	3,575.3755
53	06	8	Female*SAT-M	-8.1582	8.3590	2,865.5628	4,521.1103	2,900.1948	-4.0763	8.6758	2,867.9718	4,454.5501	2,931.2966
53	06	9	Female*SAT-W	3.8121	8.2353	3,576.5012	2,900.1948	4,415.5047	1.9047	8.0873	3,575.3755	2,931.2966	4,400.9717
53	07	1	HSGPA	0.0000	0.2544	17.5837	19.2886	19.0559	0.0350	0.1166	8.1583	8.9189	8.5910
53	07	2	SAT-CR	0.0000	17.5837	9,270.2997	5,909.1770	7,432.5978	-0.1911	8.1583	4,636.5585	2,920.8793	3,690.9355
53	07	3	SAT-M	0.0000	19.2886	5,909.1770	9,550.7558	5,992.2030	-8.7532	8.9189	2,920.8793	4,635.9587	2,927.1839
53	07	4	SAT-W	0.0000	19.0559	7,432.5978	5,992.2030	9,220.2118	4.0007	8.5910	3,690.9355	2,927.1839	4,503.3941
53	07	5	Female	0.5095	0.0350	-0.1911	-8.7532	4.0007	0.2499	0.0172	-0.0937	-4.2937	1.9624
53	07	6	Female*HSGPA	0.0350	0.1166	8.1583	8.9189	8.5910	0.0172	0.1154	8.1650	9.2253	8.4510
53	07	7	Female*SAT-CR	-0.1911	8.1583	4,636.5585	2,920.8793	3,690.9355	-0.0937	8.1650	4,636.5220	2,919.2068	3,691.7000
53	07	8	Female*SAT-M	-8.7528	8.9189	2,920.8793	4,635.9587	2,927.1839	-4.2937	9.2253	2,919.2068	4,559.3439	2,962.2007
53	07	9	Female*SAT-W	4.0005	8.5910	3,690.9355	2,927.1839	4,503.3941	1.9624	8.4510	3,691.7000	2,962.2007	4,487.3896

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
53	08	1	HSGPA	0.0000	0.2484	16.2005	18.2174	17.8429	0.0321	0.1126	7.4913	8.4807	8.4089
53	08	2	SAT-CR	0.0000	16.2005	9,089.8842	5,692.3959	7,270.2012	-0.8310	7.4913	4,442.1377	2,837.9504	3,618.7665
53	08	3	SAT-M	0.0000	18.2174	5,692.3959	9,337.5483	5,914.6954	-8.7203	8.4807	2,837.9504	4,650.0946	2,992.4621
53	08	4	SAT-W	0.0000	17.8429	7,270.2012	5,914.6954	9,216.1771	3.8264	8.4089	3,618.7665	2,992.4621	4,594.3843
53	08	5	Female	0.5042	0.0321	-0.8310	-8.7203	3.8264	0.2500	0.0159	-0.4120	-4.3231	1.8969
53	08	6	Female*HSGPA	0.0321	0.1126	7.4913	8.4807	8.4089	0.0159	0.1116	7.5180	8.7606	8.2861
53	08	7	Female*SAT-CR	-0.8309	7.4913	4,442.1377	2,837.9504	3,618.7665	-0.4120	7.5180	4,441.4472	2,830.7044	3,621.9460
53	08	8	Female*SAT-M	-8.7199	8.4807	2,837.9504	4,650.0946	2,992.4621	-4.3231	8.7606	2,830.7044	4,574.0545	3,025.8278
53	08	9	Female*SAT-W	3.8262	8.4089	3,618.7665	2,992.4621	4,594.3843	1.8969	8.2861	3,621.9460	3,025.8278	4,579.7438
54	06	1	HSGPA	0.0000	0.3345	23.5844	25.1871	26.0796	0.0693	0.1761	13.0969	14.7298	14.7958
54	06	2	SAT-CR	0.0000	23.5844	9,572.9412	5,907.1714	7,016.1158	6.5371	13.0969	4,823.0320	2,947.9358	3,611.6442
54	06	3	SAT-M	0.0000	25.1871	5,907.1714	9,150.8986	5,592.7221	0.4210	14.7298	2,947.9358	4,804.1074	2,984.5784
54	06	4	SAT-W	0.0000	26.0796	7,016.1158	5,592.7221	8,189.7370	10.2544	14.7958	3,611.6442	2,984.5784	4,448.0662
54	06	5	Female	0.5702	0.0693	6.5371	0.4210	10.2544	0.2454	0.0298	2.8097	0.1810	4.4075
54	06	6	Female*HSGPA	0.0693	0.1761	13.0969	14.7298	14.7958	0.0298	0.1713	12.6441	14.7007	14.0856
54	06	7	Female*SAT-CR	6.5290	13.0969	4,823.0320	2,947.9358	3,611.6442	2.8097	12.6441	4,780.3512	2,945.1870	3,544.6930
54	06	8	Female*SAT-M	0.4205	14.7298	2,947.9358	4,804.1074	2,984.5784	0.1810	14.7007	2,945.1870	4,803.9304	2,980.2666
54	06	9	Female*SAT-W	10.2417	14.7958	3,611.6442	2,984.5784	4,448.0662	4.4075	14.0856	3,544.6930	2,980.2666	4,343.0432
55	07	1	HSGPA	0.0000	0.4182	11.6578	13.3859	13.5690	0.0357	0.2796	8.0165	8.7511	9.2403
55	07	2	SAT-CR	0.0000	11.6578	6,981.1723	4,456.6961	4,989.5794	2.2409	8.0165	4,146.0633	2,575.2696	3,075.6750
55	07	3	SAT-M	0.0000	13.3859	4,456.6961	7,759.9312	4,428.9945	-2.8445	8.7511	2,575.2696	4,628.2231	2,779.4995
55	07	4	SAT-W	0.0000	13.5690	4,989.5794	4,428.9945	6,749.4376	5.7966	9.2403	3,075.6750	2,779.4995	4,279.9645
55	07	5	Female	0.6591	0.0357	2.2409	-2.8445	5.7966	0.2248	0.0122	0.7639	-0.9697	1.9760
55	07	6	Female*HSGPA	0.0357	0.2796	8.0165	8.7511	9.2403	0.0122	0.2783	7.9364	8.8527	9.0333
55	07	7	Female*SAT-CR	2.2393	8.0165	4,146.0633	2,575.2696	3,075.6750	0.7639	7.9364	4,141.0453	2,581.6394	3,062.6945
55	07	8	Female*SAT-M	-2.8426	8.7511	2,575.2696	4,628.2231	2,779.4995	-0.9697	8.8527	2,581.6394	4,620.1374	2,795.9765
55	07	9	Female*SAT-W	5.7926	9.2403	3,075.6750	2,779.4995	4,279.9645	1.9760	9.0333	3,062.6945	2,795.9765	4,246.3876
55	08	1	HSGPA	0.0000	0.4433	11.4746	12.6294	13.1420	0.0438	0.2868	7.0214	7.9554	7.6544
55	08	2	SAT-CR	0.0000	11.4746	7,060.1122	4,333.5884	4,715.9031	2.7433	7.0214	4,342.7857	2,621.5549	2,866.1451
55	08	3	SAT-M	0.0000	12.6294	4,333.5884	7,108.9964	4,135.9271	-0.9764	7.9554	2,621.5549	4,180.0925	2,427.6014
55	08	4	SAT-W	0.0000	13.1420	4,715.9031	4,135.9271	6,341.1768	4.5686	7.6544	2,866.1451	2,427.6014	3,847.9685
55	08	5	Female	0.6452	0.0438	2.7433	-0.9764	4.5686	0.2290	0.0155	0.9732	-0.3464	1.6208
55	08	6	Female*HSGPA	0.0438	0.2868	7.0214	7.9554	7.6544	0.0155	0.2849	6.9013	7.9981	7.4543
55	08	7	Female*SAT-CR	2.7417	7.0214	4,342.7857	2,621.5549	2,866.1451	0.9732	6.9013	4,335.2644	2,624.2320	2,853.6192
55	08	8	Female*SAT-M	-0.9759	7.9554	2,621.5549	4,180.0925	2,427.6014	-0.3464	7.9981	2,624.2320	4,179.1396	2,432.0599
55	08	9	Female*SAT-W	4.5660	7.6544	2,866.1451	2,427.6014	3,847.9685	1.6208	7.4543	2,853.6192	2,432.0599	3,827.1080
56	06	1	HSGPA	0.0000	0.2081	11.0543	9.9988	11.4985	0.0478	0.1060	6.5956	5.4579	6.1814
56	06	2	SAT-CR	0.0000	11.0543	7,705.1621	3,315.5466	5,490.4412	1.9321	6.5956	4,436.5065	1,992.5507	3,124.9486
56	06	3	SAT-M	0.0000	9.9988	3,315.5466	6,310.9450	3,493.0500	-5.1144	5.4579	1,992.5507	3,578.8798	2,014.6194
56	06	4	SAT-W	0.0000	11.4985	5,490.4412	3,493.0500	7,115.9018	4.4020	6.1814	3,124.9486	2,014.6194	3,949.9428
56	06	5	Female	0.5803	0.0478	1.9321	-5.1144	4.4020	0.2436	0.0201	0.8109	-2.1466	1.8476
56	06	6	Female*HSGPA	0.0478	0.1060	6.5956	5.4579	6.1814	0.0201	0.1037	6.5033	5.7023	5.9711
56	06	7	Female*SAT-CR	1.9315	6.5956	4,436.5065	1,992.5507	3,124.9486	0.8109	6.5033	4,432.7747	2,002.4289	3,116.4464
56	06	8	Female*SAT-M	-5.1126	5.4579	1,992.5507	3,578.8798	2,014.6194	-2.1466	5.7023	2,002.4289	3,552.7319	2,037.1251
56	06	9	Female*SAT-W	4.4005	6.1814	3,124.9486	2,014.6194	3,949.9428	1.8476	5.9711	3,116.4464	2,037.1251	3,930.5721

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
56	07	1	HSGPA	0.0000	0.2037	9.0628	8.4662	9.6456	0.0436	0.0971	4.1098	3.5400	4.1337
56	07	2	SAT-CR	0.0000	9.0628	7,494.1160	2,999.0982	5,218.4335	2.4470	4.1098	4,082.6434	1,494.9821	2,824.8540
56	07	3	SAT-M	0.0000	8.4662	2,999.0982	6,253.0080	3,173.0064	-4.7222	3.5400	1,494.9821	3,422.5519	1,667.2836
56	07	4	SAT-W	0.0000	9.6456	5,218.4335	3,173.0064	7,052.5183	5.4042	4.1337	2,824.8540	1,667.2836	3,836.6264
56	07	5	Female	0.5854	0.0436	2.4470	-4.7222	5.4042	0.2428	0.0181	1.0144	-1.9577	2.2404
56	07	6	Female*HSGPA	0.0436	0.0971	4.1098	3.5400	4.1337	0.0181	0.0952	4.0032	3.7457	3.8983
56	07	7	Female*SAT-CR	2.4463	4.1098	4,082.6434	1,494.9821	2,824.8540	1.0144	4.0032	4,076.6574	1,506.5340	2,811.6338
56	07	8	Female*SAT-M	-4.7209	3.5400	1,494.9821	3,422.5519	1,667.2836	-1.9577	3.7457	1,506.5340	3,400.2587	1,692.7962
56	07	9	Female*SAT-W	5.4027	4.1337	2,824.8540	1,667.2836	3,836.6264	2.2404	3.8983	2,811.6338	1,692.7962	3,807.4294
56	08	1	HSGPA	0.0000	0.1941	10.7257	10.1960	10.3484	0.0301	0.1055	6.5272	6.1053	5.4236
56	08	2	SAT-CR	0.0000	10.7257	7,765.6048	3,361.5192	5,709.2961	2.0644	6.5272	4,346.2739	1,919.1531	3,182.4313
56	08	3	SAT-M	0.0000	10.1960	3,361.5192	6,765.0412	3,658.7122	-4.8714	6.1053	1,919.1531	4,009.7636	2,096.6050
56	08	4	SAT-W	0.0000	10.3484	5,709.2961	3,658.7122	7,871.0505	6.2412	5.4236	3,182.4313	2,096.6050	4,468.7669
56	08	5	Female	0.6005	0.0301	2.0644	-4.8714	6.2412	0.2400	0.0120	0.8248	-1.9462	2.4934
56	08	6	Female*HSGPA	0.0301	0.1055	6.5272	6.1053	5.4236	0.0120	0.1046	6.4650	6.2518	5.2357
56	08	7	Female*SAT-CR	2.0637	6.5272	4,346.2739	1,919.1531	3,182.4313	0.8248	6.4650	4,342.0136	1,929.2061	3,169.5513
56	08	8	Female*SAT-M	-4.8697	6.1053	1,919.1531	4,009.7636	2,096.6050	-1.9462	6.2518	1,929.2061	3,986.0418	2,126.9974
56	08	9	Female*SAT-W	6.2390	5.4236	3,182.4313	2,096.6050	4,468.7669	2.4934	5.2357	3,169.5513	2,126.9974	4,429.8282
57	07	1	HSGPA	0.0000	0.2534	15.6191	15.8473	16.2168	0.0498	0.1330	8.8020	8.6605	8.8620
57	07	2	SAT-CR	0.0000	15.6191	9,576.0852	5,402.8030	7,233.8658	0.5670	8.8020	5,386.1627	3,088.9498	4,067.2160
57	07	3	SAT-M	0.0000	15.8473	5,402.8030	8,609.7581	5,357.5397	-6.3393	8.6605	3,088.9498	4,631.6307	2,987.2847
57	07	4	SAT-W	0.0000	16.2168	7,233.8658	5,357.5397	8,789.8577	4.5673	8.8620	4,067.2160	2,987.2847	4,801.0581
57	07	5	Female	0.5505	0.0498	0.5670	-6.3393	4.5673	0.2475	0.0224	0.2548	-2.8493	2.0529
57	07	6	Female*HSGPA	0.0498	0.1330	8.8020	8.6605	8.8620	0.0224	0.1306	8.7738	8.9760	8.6347
57	07	7	Female*SAT-CR	0.5668	8.8020	5,386.1627	3,088.9498	4,067.2160	0.2548	8.7738	5,385.8413	3,092.5430	4,064.6272
57	07	8	Female*SAT-M	-6.3372	8.6605	3,088.9498	4,631.6307	2,987.2847	-2.8493	8.9760	3,092.5430	4,591.4572	3,016.2286
57	07	9	Female*SAT-W	4.5658	8.8620	4,067.2160	2,987.2847	4,801.0581	2.0529	8.6347	4,064.6272	3,016.2286	4,780.2049
58	06	1	HSGPA	0.0000	0.2829	17.5286	20.4507	17.9790	0.0416	0.1422	9.4115	10.6442	9.2438
58	06	2	SAT-CR	0.0000	17.5286	9,650.8314	6,507.0481	7,143.5372	-1.3281	9.4115	5,116.4355	3,324.6498	3,752.5341
58	06	3	SAT-M	0.0000	20.4507	6,507.0481	9,614.9545	5,912.1277	-6.8537	10.6442	3,324.6498	4,878.1259	3,011.1003
58	06	4	SAT-W	0.0000	17.9790	7,143.5372	5,912.1277	8,249.1807	2.4731	9.2438	3,752.5341	3,011.1003	4,304.0275
58	06	5	Female	0.5480	0.0416	-1.3281	-6.8537	2.4731	0.2477	0.0188	-0.6004	-3.0981	1.1179
58	06	6	Female*HSGPA	0.0416	0.1422	9.4115	10.6442	9.2438	0.0188	0.1404	9.4668	10.9296	9.1408
58	06	7	Female*SAT-CR	-1.3280	9.4115	5,116.4355	3,324.6498	3,752.5341	-0.6004	9.4668	5,114.6717	3,315.5479	3,755.8185
58	06	8	Female*SAT-M	-6.8532	10.6442	3,324.6498	4,878.1259	3,011.1003	-3.0981	10.9296	3,315.5479	4,831.1566	3,028.0492
58	06	9	Female*SAT-W	2.4730	9.2438	3,752.5341	3,011.1003	4,304.0275	1.1179	9.1408	3,755.8185	3,028.0492	4,297.9114
58	07	1	HSGPA	0.0000	0.2836	17.7738	19.9654	18.6676	0.0397	0.1464	9.9839	10.4668	10.1389
58	07	2	SAT-CR	0.0000	17.7738	9,534.1037	6,051.9932	7,255.4693	-0.6626	9.9839	5,114.5106	3,156.0033	3,934.0362
58	07	3	SAT-M	0.0000	19.9654	6,051.9932	8,875.4310	5,686.1574	-6.8742	10.4668	3,156.0033	4,542.4138	3,031.0593
58	07	4	SAT-W	0.0000	18.6676	7,255.4693	5,686.1574	8,461.0498	3.2184	10.1389	3,934.0362	3,031.0593	4,576.3289
58	07	5	Female	0.5544	0.0397	-0.6626	-6.8742	3.2184	0.2471	0.0177	-0.2953	-3.0632	1.4341
58	07	6	Female*HSGPA	0.0397	0.1464	9.9839	10.4668	10.1389	0.0177	0.1448	10.0103	10.7399	10.0111
58	07	7	Female*SAT-CR	-0.6626	9.9839	5,114.5106	3,156.0033	3,934.0362	-0.2953	10.0103	5,114.0715	3,151.4485	3,936.1686
58	07	8	Female*SAT-M	-6.8737	10.4668	3,156.0033	4,542.4138	3,031.0593	-3.0632	10.7399	3,151.4485	4,495.1622	3,053.1817
58	07	9	Female*SAT-W	3.2182	10.1389	3,934.0362	3,031.0593	4,576.3289	1.4341	10.0111	3,936.1686	3,053.1817	4,565.9715

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
58	08	1	HSGPA	0.0000	0.2766	17.8455	19.9394	18.0187	0.0331	0.1407	9.5284	10.1170	9.2967
58	08	2	SAT-CR	0.0000	17.8455	9,561.4125	6,151.8874	7,058.5396	-0.6534	9.5284	4,993.9399	3,056.0235	3,674.7277
58	08	3	SAT-M	0.0000	19.9394	6,151.8874	9,146.1021	5,639.6069	-7.1019	10.1170	3,056.0235	4,509.4312	2,847.9196
58	08	4	SAT-W	0.0000	18.0187	7,058.5396	5,639.6069	8,252.2816	3.3906	9.2967	3,674.7277	2,847.9196	4,319.5662
58	08	5	Female	0.5494	0.0331	-0.6534	-7.1019	3.3906	0.2476	0.0149	-0.2944	-3.2003	1.5279
58	08	6	Female*HSGPA	0.0331	0.1407	9.5284	10.1170	9.2967	0.0149	0.1396	9.5500	10.3522	9.1844
58	08	7	Female*SAT-CR	-0.6534	9.5284	4,993.9399	3,056.0235	3,674.7277	-0.2944	9.5500	4,993.5130	3,051.3833	3,676.9430
58	08	8	Female*SAT-M	-7.1015	10.1170	3,056.0235	4,509.4312	2,847.9196	-3.2003	10.3522	3,051.3833	4,458.9971	2,871.9980
58	08	9	Female*SAT-W	3.3904	9.2967	3,674.7277	2,847.9196	4,319.5662	1.5279	9.1844	3,676.9430	2,871.9980	4,308.0706
59	06	1	HSGPA	0.0000	0.3340	22.9519	25.0717	24.4763	0.0392	0.1405	10.2429	10.7138	10.7770
59	06	2	SAT-CR	0.0000	22.9519	9,607.7589	6,291.3628	7,550.8183	-1.0228	10.2429	4,346.5736	2,861.6486	3,435.1315
59	06	3	SAT-M	0.0000	25.0717	6,291.3628	10,418.0632	6,366.1553	-9.4386	10.7138	2,861.6486	4,721.9031	2,915.2670
59	06	4	SAT-W	0.0000	24.4763	7,550.8183	6,366.1553	9,247.1354	2.3050	10.7770	3,435.1315	2,915.2670	4,192.5084
59	06	5	Female	0.4661	0.0392	-1.0228	-9.4386	2.3050	0.2489	0.0209	-0.5461	-5.0396	1.2307
59	06	6	Female*HSGPA	0.0392	0.1405	10.2429	10.7138	10.7770	0.0209	0.1390	10.2830	11.0837	10.6866
59	06	7	Female*SAT-CR	-1.0228	10.2429	4,346.5736	2,861.6486	3,435.1315	-0.5461	10.2830	4,345.5274	2,851.9949	3,437.4891
59	06	8	Female*SAT-M	-9.4380	10.7138	2,861.6486	4,721.9031	2,915.2670	-5.0396	11.0837	2,851.9949	4,632.8211	2,937.0221
59	06	9	Female*SAT-W	2.3049	10.7770	3,435.1315	2,915.2670	4,192.5084	1.2307	10.6866	3,437.4891	2,937.0221	4,187.1955
59	07	1	HSGPA	0.0000	0.3291	23.0915	25.4228	24.7894	0.0369	0.1384	10.1615	10.5727	10.6599
59	07	2	SAT-CR	0.0000	23.0915	9,781.5166	6,315.7400	7,727.5558	-0.8240	10.1615	4,427.9380	2,913.9770	3,567.1004
59	07	3	SAT-M	0.0000	25.4228	6,315.7400	10,544.3905	6,422.6727	-9.9047	10.5727	2,913.9770	4,770.9997	2,990.4530
59	07	4	SAT-W	0.0000	24.7894	7,727.5558	6,422.6727	9,378.2512	2.3859	10.6599	3,567.1004	2,990.4530	4,294.0398
59	07	5	Female	0.4607	0.0369	-0.8240	-9.9047	2.3859	0.2485	0.0199	-0.4444	-5.3421	1.2868
59	07	6	Female*HSGPA	0.0369	0.1384	10.1615	10.5727	10.6599	0.0199	0.1370	10.1918	10.9378	10.5720
59	07	7	Female*SAT-CR	-0.8239	10.1615	4,427.9380	2,913.9770	3,567.1004	-0.4444	10.1918	4,427.2591	2,905.8163	3,569.0662
59	07	8	Female*SAT-M	-9.9042	10.5727	2,913.9770	4,770.9997	2,990.4530	-5.3421	10.9378	2,905.8163	4,672.9013	3,014.0833
59	07	9	Female*SAT-W	2.3858	10.6599	3,567.1004	2,990.4530	4,294.0398	1.2868	10.5720	3,569.0662	3,014.0833	4,288.3476
59	08	1	HSGPA	0.0000	0.3086	21.0631	24.5802	23.1426	0.0389	0.1254	9.1518	10.2266	10.1226
59	08	2	SAT-CR	0.0000	21.0631	9,859.3310	6,091.6833	7,657.9221	-1.0377	9.1518	4,385.0002	2,734.8850	3,500.3778
59	08	3	SAT-M	0.0000	24.5802	6,091.6833	10,840.6031	6,403.8559	-9.0936	10.2266	2,734.8850	4,915.6941	2,917.5535
59	08	4	SAT-W	0.0000	23.1426	7,657.9221	6,403.8559	9,370.0271	2.9761	10.1226	3,500.3778	2,917.5535	4,325.2247
59	08	5	Female	0.4593	0.0389	-1.0377	-9.0936	2.9761	0.2484	0.0210	-0.5610	-4.9165	1.6091
59	08	6	Female*HSGPA	0.0389	0.1254	9.1518	10.2266	10.1226	0.0210	0.1239	9.1922	10.5806	10.0067
59	08	7	Female*SAT-CR	-1.0376	9.1518	4,385.0002	2,734.8850	3,500.3778	-0.5610	9.1922	4,383.9235	2,725.4493	3,503.4659
59	08	8	Female*SAT-M	-9.0932	10.2266	2,734.8850	4,915.6941	2,917.5535	-4.9165	10.5806	2,725.4493	4,833.0044	2,944.6160
59	08	9	Female*SAT-W	2.9760	10.1226	3,500.3778	2,917.5535	4,325.2247	1.6091	10.0067	3,503.4659	2,944.6160	4,316.3678
60	06	1	HSGPA	0.0000	0.3188	14.5570	17.3346	16.2575	0.0420	0.1634	8.8421	9.8430	9.0401
60	06	2	SAT-CR	0.0000	14.5570	7,853.0766	4,955.8056	5,816.8285	-2.3539	8.8421	4,051.2290	2,609.5153	3,056.3307
60	06	3	SAT-M	0.0000	17.3346	4,955.8056	8,581.8193	4,768.4155	-9.6931	9.8430	2,609.5153	4,392.0597	2,549.8395
60	06	4	SAT-W	0.0000	16.2575	5,816.8285	4,768.4155	7,467.1995	2.0730	9.0401	3,056.3307	2,549.8395	3,897.8315
60	06	5	Female	0.5229	0.0420	-2.3539	-9.6931	2.0730	0.2495	0.0200	-1.1231	-4.6247	0.9890
60	06	6	Female*HSGPA	0.0419	0.1634	8.8421	9.8430	9.0401	0.0200	0.1617	8.9409	10.2496	8.9532
60	06	7	Female*SAT-CR	-2.3535	8.8421	4,051.2290	2,609.5153	3,056.3307	-1.1231	8.9409	4,045.6892	2,586.7027	3,061.2093
60	06	8	Female*SAT-M	-9.6915	9.8430	2,609.5153	4,392.0597	2,549.8395	-4.6247	10.2496	2,586.7027	4,298.1183	2,569.9296
60	06	9	Female*SAT-W	2.0726	9.0401	3,056.3307	2,549.8395	3,897.8315	0.9890	8.9532	3,061.2093	2,569.9296	3,893.5351



## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
60	07	1	HSGPA	0.0000	0.3089	14.7440	16.1635	16.1681	0.0406	0.1534	8.2729	8.2165	8.5260
60	07	2	SAT-CR	0.0000	14.7440	7,852.7085	4,782.7203	5,895.5102	-1.3853	8.2729	4,071.4358	2,531.1516	3,125.4418
60	07	3	SAT-M	0.0000	16.1635	4,782.7203	8,312.9612	4,667.0077	-10.4328	8.2165	2,531.1516	4,100.5984	2,481.9266
60	07	4	SAT-W	0.0000	16.1681	5,895.5102	4,667.0077	7,449.0401	2.4183	8.5260	3,125.4418	2,481.9266	3,895.3801
60	07	5	Female	0.5149	0.0406	-1.3853	-10.4328	2.4183	0.2498	0.0197	-0.6719	-5.0606	1.1731
60	07	6	Female*HSGPA	0.0406	0.1534	8.2729	8.2165	8.5260	0.0197	0.1517	8.3291	8.6398	8.4278
60	07	7	Female*SAT-CR	-1.3851	8.2729	4,071.4358	2,531.1516	3,125.4418	-0.6719	8.3291	4,069.5171	2,516.7016	3,128.7914
60	07	8	Female*SAT-M	-10.4313	8.2165	2,531.1516	4,100.5984	2,481.9266	-5.0606	8.6398	2,516.7016	3,991.7702	2,507.1530
60	07	9	Female*SAT-W	2.4180	8.5260	3,125.4418	2,481.9266	3,895.3801	1.1731	8.4278	3,128.7914	2,507.1530	3,889.5327
60	08	1	HSGPA	0.0000	0.3070	12.2474	15.1264	14.6251	0.0404	0.1553	6.6493	8.4189	7.8450
60	08	2	SAT-CR	0.0000	12.2474	7,717.5165	4,762.0009	5,708.8400	-3.0433	6.6493	3,919.2861	2,431.5386	2,960.9627
60	08	3	SAT-M	0.0000	15.1264	4,762.0009	8,406.7662	4,668.8421	-11.2681	8.4189	2,431.5386	4,141.7628	2,450.5235
60	08	4	SAT-W	0.0000	14.6251	5,708.8400	4,668.8421	7,269.2532	1.3780	7.8450	2,960.9627	2,450.5235	3,751.8791
60	08	5	Female	0.5120	0.0404	-3.0433	-11.2681	1.3780	0.2499	0.0197	-1.4851	-5.4985	0.6725
60	08	6	Female*HSGPA	0.0404	0.1553	6.6493	8.4189	7.8450	0.0197	0.1537	6.7722	8.8737	7.7894
60	08	7	Female*SAT-CR	-3.0429	6.6493	3,919.2861	2,431.5386	2,960.9627	-1.4851	6.7722	3,910.0257	2,397.2512	2,965.1559
60	08	8	Female*SAT-M	-11.2665	8.4189	2,431.5386	4,141.7628	2,450.5235	-5.4985	8.8737	2,397.2512	4,014.8109	2,466.0492
60	08	9	Female*SAT-W	1.3779	7.8450	2,960.9627	2,450.5235	3,751.8791	0.6725	7.7894	2,965.1559	2,466.0492	3,749.9803
61	06	1	HSGPA	0.0000	0.2821	11.1464	14.7292	12.3725	0.0395	0.1514	7.0430	8.8739	7.3990
61	06	2	SAT-CR	0.0000	11.1464	7,118.3483	4,422.8256	4,937.9935	-1.7020	7.0430	3,746.2772	2,386.2954	2,660.8890
61	06	3	SAT-M	0.0000	14.7292	4,422.8256	8,335.8273	4,066.0889	-10.5779	8.8739	2,386.2954	4,417.6277	2,241.3453
61	06	4	SAT-W	0.0000	12.3725	4,937.9935	4,066.0889	6,418.9067	1.4486	7.3990	2,660.8890	2,241.3453	3,472.2482
61	06	5	Female	0.5503	0.0395	-1.7020	-10.5779	1.4486	0.2475	0.0178	-0.7654	-4.7568	0.6514
61	06	6	Female*HSGPA	0.0395	0.1514	7.0430	8.8739	7.3990	0.0178	0.1498	7.1103	9.2918	7.3418
61	06	7	Female*SAT-CR	-1.7015	7.0430	3,746.2772	2,386.2954	2,660.8890	-0.7654	7.1103	3,743.3812	2,368.2970	2,663.3539
61	06	8	Female*SAT-M	-10.5745	8.8739	2,386.2954	4,417.6277	2,241.3453	-4.7568	9.2918	2,368.2970	4,305.7707	2,256.6640
61	06	9	Female*SAT-W	1.4482	7.3990	2,660.8890	2,241.3453	3,472.2482	0.6514	7.3418	2,663.3539	2,256.6640	3,470.1503
61	07	1	HSGPA	0.0000	0.2917	12.2354	14.7505	14.6734	0.0533	0.1498	7.2902	8.7848	8.5311
61	07	2	SAT-CR	0.0000	12.2354	7,119.8815	4,349.6222	5,159.3122	-0.3715	7.2902	3,785.8891	2,353.8818	2,794.5272
61	07	3	SAT-M	0.0000	14.7505	4,349.6222	7,777.8904	4,123.6824	-7.5538	8.7848	2,353.8818	4,030.5329	2,313.6420
61	07	4	SAT-W	0.0000	14.6734	5,159.3122	4,123.6824	6,699.7169	2.8704	8.5311	2,794.5272	2,313.6420	3,655.1385
61	07	5	Female	0.5414	0.0533	-0.3715	-7.5538	2.8704	0.2484	0.0244	-0.1703	-3.4639	1.3163
61	07	6	Female*HSGPA	0.0533	0.1498	7.2902	8.7848	8.5311	0.0244	0.1470	7.3100	9.1873	8.3781
61	07	7	Female*SAT-CR	-0.3714	7.2902	3,785.8891	2,353.8818	2,794.5272	-0.1703	7.3100	3,785.7512	2,351.0765	2,795.5931
61	07	8	Female*SAT-M	-7.5516	8.7848	2,353.8818	4,030.5329	2,313.6420	-3.4639	9.1873	2,351.0765	3,973.4901	2,335.3183
61	07	9	Female*SAT-W	2.8696	8.5311	2,794.5272	2,313.6420	3,655.1385	1.3163	8.3781	2,795.5931	2,335.3183	3,646.9015
61	08	1	HSGPA	0.0000	0.2882	13.6561	16.5598	15.6353	0.0400	0.1490	7.9091	9.1078	8.4057
61	08	2	SAT-CR	0.0000	13.6561	7,133.0522	4,675.4728	5,396.9680	-0.9669	7.9091	3,766.9643	2,473.3243	2,901.6645
61	08	3	SAT-M	0.0000	16.5598	4,675.4728	8,282.7549	4,634.2966	-9.2102	9.1078	2,473.3243	4,117.3784	2,433.1284
61	08	4	SAT-W	0.0000	15.6353	5,396.9680	4,634.2966	7,066.9496	2.0453	8.4057	2,901.6645	2,433.1284	3,740.4418
61	08	5	Female	0.5265	0.0400	-0.9669	-9.2102	2.0453	0.2494	0.0189	-0.4578	-4.3607	0.9684
61	08	6	Female*HSGPA	0.0400	0.1490	7.9091	9.1078	8.4057	0.0189	0.1474	7.9478	9.4761	8.3240
61	08	7	Female*SAT-CR	-0.9667	7.9091	3,766.9643	2,473.3243	2,901.6645	-0.4578	7.9478	3,766.0296	2,464.4211	2,903.6416
61	08	8	Female*SAT-M	-9.2077	9.1078	2,473.3243	4,117.3784	2,433.1284	-4.3607	9.4761	2,464.4211	4,032.5733	2,451.9609
61	08	9	Female*SAT-W	2.0447	8.4057	2,901.6645	2,433.1284	3,740.4418	0.9684	8.3240	2,903.6416	2,451.9609	3,736.2596

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
62	06	1	HSGPA	0.0000	0.2822	18.0287	19.7284	20.0453	0.0444	0.1353	9.2792	9.7015	9.9821
62	06	2	SAT-CR	0.0000	18.0287	9,190.1690	5,448.1088	7,125.0727	-0.1955	9.2792	4,687.7576	2,729.6605	3,651.1827
62	06	3	SAT-M	0.0000	19.7284	5,448.1088	9,012.2285	5,471.5701	-8.2554	9.7015	2,729.6605	4,428.0608	2,783.3520
62	06	4	SAT-W	0.0000	20.0453	7,125.0727	5,471.5701	8,802.8483	3.7261	9.9821	3,651.1827	2,783.3520	4,475.2699
62	06	5	Female	0.5163	0.0444	-0.1955	-8.2554	3.7261	0.2497	0.0215	-0.0945	-3.9932	1.8023
62	06	6	Female*HSGPA	0.0444	0.1353	9.2792	9.7015	9.9821	0.0215	0.1333	9.2879	10.0680	9.8167
62	06	7	Female*SAT-CR	-0.1954	9.2792	4,687.7576	2,729.6605	3,651.1827	-0.0945	9.2879	4,687.7194	2,728.0470	3,651.9109
62	06	8	Female*SAT-M	-8.2550	9.7015	2,729.6605	4,428.0608	2,783.3520	-3.9932	10.0680	2,728.0470	4,359.9124	2,814.1107
62	06	9	Female*SAT-W	3.7259	9.9821	3,651.1827	2,783.3520	4,475.2699	1.8023	9.8167	3,651.9109	2,814.1107	4,461.3870
64	06	1	HSGPA	0.0000	0.3008	14.6308	17.9423	15.7109	0.0380	0.1582	8.5718	9.6841	8.7733
64	06	2	SAT-CR	0.0000	14.6308	8,811.9776	5,866.4495	6,376.7518	-1.5792	8.5718	4,717.8684	3,024.8492	3,398.3757
64	06	3	SAT-M	0.0000	17.9423	5,866.4495	9,103.2589	5,332.0918	-8.0901	9.6841	3,024.8492	4,615.6722	2,773.9926
64	06	4	SAT-W	0.0000	15.7109	6,376.7518	5,332.0918	7,537.1586	2.3115	8.7733	3,398.3757	2,773.9926	4,033.6783
64	06	5	Female	0.5567	0.0380	-1.5792	-8.0901	2.3115	0.2468	0.0169	-0.7000	-3.5859	1.0246
64	06	6	Female*HSGPA	0.0380	0.1582	8.5718	9.6841	8.7733	0.0169	0.1567	8.6319	9.9918	8.6854
64	06	7	Female*SAT-CR	-1.5791	8.5718	4,717.8684	3,024.8492	3,398.3757	-0.7000	8.6319	4,715.3747	3,012.0744	3,402.0257
64	06	8	Female*SAT-M	-8.0895	9.6841	3,024.8492	4,615.6722	2,773.9926	-3.5859	9.9918	3,012.0744	4,550.2271	2,792.6912
64	06	9	Female*SAT-W	2.3113	8.7733	3,398.3757	2,773.9926	4,033.6783	1.0246	8.6854	3,402.0257	2,792.6912	4,028.3359
65	08	1	HSGPA	0.0000	0.2744	17.2722	18.3728	18.2720	0.0420	0.1480	9.1776	9.5557	9.5398
65	08	2	SAT-CR	0.0000	17.2722	7,678.3927	4,932.0654	5,954.8176	-1.4349	9.1776	4,035.6283	2,481.9389	3,252.9639
65	08	3	SAT-M	0.0000	18.3728	4,932.0654	8,054.0932	4,919.3844	-7.6625	9.5557	2,481.9389	4,360.5860	2,711.0530
65	08	4	SAT-W	0.0000	18.2720	5,954.8176	4,919.3844	7,800.3634	3.4105	9.5398	3,252.9639	2,711.0530	4,416.3938
65	08	5	Female	0.5725	0.0420	-1.4349	-7.6625	3.4105	0.2449	0.0180	-0.6134	-3.2753	1.4578
65	08	6	Female*HSGPA	0.0420	0.1480	9.1776	9.5557	9.5398	0.0180	0.1462	9.2379	9.8774	9.3966
65	08	7	Female*SAT-CR	-1.4342	9.1776	4,035.6283	2,481.9389	3,252.9639	-0.6134	9.2379	4,033.5704	2,470.9496	3,257.8552
65	08	8	Female*SAT-M	-7.6585	9.5557	2,481.9389	4,360.5860	2,711.0530	-3.2753	9.8774	2,470.9496	4,301.9034	2,737.1724
65	08	9	Female*SAT-W	3.4087	9.5398	3,252.9639	2,711.0530	4,416.3938	1.4578	9.3966	3,257.8552	2,737.1724	4,404.7682
66	06	1	HSGPA	0.0000	0.2832	18.1036	21.2889	18.5688	0.0406	0.1119	7.1785	8.1288	7.3983
66	06	2	SAT-CR	0.0000	18.1036	8,719.4348	6,082.2463	6,455.1896	1.2406	7.1785	3,651.6868	2,388.3630	2,690.3727
66	06	3	SAT-M	0.0000	21.2889	6,082.2463	9,495.8777	5,582.2981	-5.9564	8.1288	2,388.3630	3,744.5181	2,204.4442
66	06	4	SAT-W	0.0000	18.5688	6,455.1896	5,582.2981	7,778.2323	5.2811	7.3983	2,690.3727	2,204.4442	3,287.1671
66	06	5	Female	0.4427	0.0406	1.2406	-5.9564	5.2811	0.2467	0.0226	0.6913	-3.3193	2.9430
66	06	6	Female*HSGPA	0.0406	0.1119	7.1785	8.1288	7.3983	0.0226	0.1102	7.1282	8.3706	7.1839
66	06	7	Female*SAT-CR	1.2406	7.1785	3,651.6868	2,388.3630	2,690.3727	0.6913	7.1282	3,650.1477	2,395.7522	2,683.8211
66	06	8	Female*SAT-M	-5.9561	8.1288	2,388.3630	3,744.5181	2,204.4442	-3.3193	8.3706	2,395.7522	3,709.0411	2,235.8991
66	06	9	Female*SAT-W	5.2808	7.3983	2,690.3727	2,204.4442	3,287.1671	2.9430	7.1839	2,683.8211	2,235.8991	3,259.2783
66	07	1	HSGPA	0.0000	0.2790	16.9253	20.0829	18.1146	0.0379	0.1130	7.0892	7.8992	7.6541
66	07	2	SAT-CR	0.0000	16.9253	8,561.6099	5,678.5493	6,542.7227	0.7961	7.0892	3,546.5175	2,257.2579	2,731.9364
66	07	3	SAT-M	0.0000	20.0829	5,678.5493	8,974.2935	5,493.4391	-5.9488	7.8992	2,257.2579	3,625.2856	2,228.5927
66	07	4	SAT-W	0.0000	18.1146	6,542.7227	5,493.4391	7,934.4355	4.6405	7.6541	2,731.9364	2,228.5927	3,371.3342
66	07	5	Female	0.4434	0.0379	0.7961	-5.9488	4.6405	0.2468	0.0211	0.4431	-3.3111	2.5829
66	07	6	Female*HSGPA	0.0379	0.1130	7.0892	7.8992	7.6541	0.0211	0.1116	7.0590	8.1250	7.4780
66	07	7	Female*SAT-CR	0.7961	7.0892	3,546.5175	2,257.2579	2,731.9364	0.4431	7.0590	3,545.8838	2,261.9936	2,728.2422
66	07	8	Female*SAT-M	-5.9485	7.8992	2,257.2579	3,625.2856	2,228.5927	-3.3111	8.1250	2,261.9936	3,589.8996	2,256.1965
66	07	9	Female*SAT-W	4.6403	7.6541	2,731.9364	2,228.5927	3,371.3342	2.5829	7.4780	2,728.2422	2,256.1965	3,349.8011

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
67	08	1	HSGPA	0.0000	0.3567	26.7310	26.2697	26.8968	0.0442	0.1836	12.5230	14.1175	14.2846
67	08	2	SAT-CR	0.0000	26.7310	9,605.4132	6,472.6836	7,312.9004	0.1598	12.5230	4,999.2608	3,410.1006	3,973.4879
67	08	3	SAT-M	0.0000	26.2697	6,472.6836	9,728.1178	6,081.0631	-4.8774	14.1175	3,410.1006	5,332.3227	3,473.6083
67	08	4	SAT-W	0.0000	26.8968	7,312.9004	6,081.0631	8,793.9034	4.4441	14.2846	3,973.4879	3,473.6083	5,038.4104
67	08	5	Female	0.5881	0.0442	0.1598	-4.8774	4.4441	0.2426	0.0182	0.0658	-2.0091	1.8306
67	08	6	Female*HSGPA	0.0441	0.1836	12.5230	14.1175	14.2846	0.0182	0.1816	12.5159	14.3326	14.0886
67	08	7	Female*SAT-CR	0.1596	12.5230	4,999.2608	3,410.1006	3,973.4879	0.0658	12.5159	4,999.2353	3,410.8791	3,972.7786
67	08	8	Female*SAT-M	-4.8710	14.1175	3,410.1006	5,332.3227	3,473.6083	-2.0091	14.3326	3,410.8791	5,308.5650	3,495.2553
67	08	9	Female*SAT-W	4.4382	14.2846	3,973.4879	3,473.6083	5,038.4104	1.8306	14.0886	3,972.7786	3,495.2553	5,018.6866
68	06	1	HSGPA	0.0000	0.3814	20.9197	21.0096	20.3558	0.0472	0.2118	11.6969	11.3906	12.5817
68	06	2	SAT-CR	0.0000	20.9197	7,618.7282	5,012.4428	5,361.5900	1.1775	11.6969	4,168.1169	2,777.8921	3,027.5274
68	06	3	SAT-M	0.0000	21.0096	5,012.4428	9,097.8733	4,688.7287	-7.9045	11.3906	2,777.8921	5,117.5433	2,725.7311
68	06	4	SAT-W	0.0000	20.3558	5,361.5900	4,688.7287	6,782.3804	3.9686	12.5817	3,027.5274	2,725.7311	3,926.5947
68	06	5	Female	0.5603	0.0472	1.1775	-7.9045	3.9686	0.2468	0.0208	0.5177	-3.4757	1.7451
68	06	6	Female*HSGPA	0.0471	0.2118	11.6969	11.3906	12.5817	0.0208	0.2096	11.6414	11.7630	12.3947
68	06	7	Female*SAT-CR	1.1754	11.6969	4,168.1169	2,777.8921	3,027.5274	0.5177	11.6414	4,166.7330	2,787.1827	3,022.8629
68	06	8	Female*SAT-M	-7.8904	11.3906	2,777.8921	5,117.5433	2,725.7311	-3.4757	11.7630	2,787.1827	5,055.1735	2,757.0452
68	06	9	Female*SAT-W	3.9616	12.5817	3,027.5274	2,725.7311	3,926.5947	1.7451	12.3947	3,022.8629	2,757.0452	3,910.8728
68	07	1	HSGPA	0.0000	0.3861	16.1562	19.6620	21.2492	0.0630	0.2126	10.8729	12.1836	13.0934
68	07	2	SAT-CR	0.0000	16.1562	7,762.1387	4,951.6980	5,689.5441	0.2053	10.8729	4,666.0476	2,941.6740	3,480.0756
68	07	3	SAT-M	0.0000	19.6620	4,951.6980	8,317.5507	4,763.4210	-7.3582	12.1836	2,941.6740	4,886.7561	2,901.5515
68	07	4	SAT-W	0.0000	21.2492	5,689.5441	4,763.4210	7,512.1204	3.5361	13.0934	3,480.0756	2,901.5515	4,571.4598
68	07	5	Female	0.5990	0.0630	0.2053	-7.3582	3.5361	0.2406	0.0253	0.0823	-2.9506	1.4180
68	07	6	Female*HSGPA	0.0629	0.2126	10.8729	12.1836	13.0934	0.0253	0.2086	10.8600	12.6466	12.8709
68	07	7	Female*SAT-CR	0.2050	10.8729	4,666.0476	2,941.6740	3,480.0756	0.0823	10.8600	4,666.0055	2,943.1821	3,479.3509
68	07	8	Female*SAT-M	-7.3460	12.1836	2,941.6740	4,886.7561	2,901.5515	-2.9506	12.6466	2,943.1821	4,832.7025	2,927.5273
68	07	9	Female*SAT-W	3.5302	13.0934	3,480.0756	2,901.5515	4,571.4598	1.4180	12.8709	3,479.3509	2,927.5273	4,558.9769
69	07	1	HSGPA	0.0000	0.4054	24.3868	29.6758	26.5557	0.0343	0.2311	15.3050	17.8429	16.1755
69	07	2	SAT-CR	0.0000	24.3868	8,308.1803	5,322.7697	6,182.1848	-3.0979	15.3050	4,889.5586	3,114.0711	3,697.7414
69	07	3	SAT-M	0.0000	29.6758	5,322.7697	8,902.4697	5,106.0947	-10.8433	17.8429	3,114.0711	4,965.3501	3,104.5695
69	07	4	SAT-W	0.0000	26.5557	6,182.1848	5,106.0947	7,587.5090	0.7147	16.1755	3,697.7414	3,104.5695	4,538.0863
69	07	5	Female	0.5976	0.0343	-3.0979	-10.8433	0.7147	0.2405	0.0138	-1.2465	-4.3631	0.2876
69	07	6	Female*HSGPA	0.0343	0.2311	15.3050	17.8429	16.1755	0.0138	0.2299	15.4112	18.2147	16.1510
69	07	7	Female*SAT-CR	-3.0974	15.3050	4,889.5586	3,114.0711	3,697.7414	-1.2465	15.4112	4,879.9632	3,080.4850	3,699.9551
69	07	8	Female*SAT-M	-10.8416	17.8429	3,114.0711	4,965.3501	3,104.5695	-4.3631	18.2147	3,080.4850	4,847.7911	3,112.3178
69	07	9	Female*SAT-W	0.7146	16.1755	3,697.7414	3,104.5695	4,538.0863	0.2876	16.1510	3,699.9551	3,112.3178	4,537.5756
69	08	1	HSGPA	0.0000	0.4094	22.8875	28.2456	25.8124	0.0357	0.2314	14.0997	17.0192	15.6536
69	08	2	SAT-CR	0.0000	22.8875	8,080.7245	4,998.5615	5,937.3861	-3.7608	14.0997	4,581.1685	2,831.8082	3,477.5858
69	08	3	SAT-M	0.0000	28.2456	4,998.5615	8,610.1178	4,930.1381	-10.9765	17.0192	2,831.8082	4,718.2579	2,915.0597
69	08	4	SAT-W	0.0000	25.8124	5,937.3861	4,930.1381	7,444.2589	1.0502	15.6536	3,477.5858	2,915.0597	4,410.1346
69	08	5	Female	0.5942	0.0357	-3.7608	-10.9765	1.0502	0.2412	0.0145	-1.5260	-4.4540	0.4261
69	08	6	Female*HSGPA	0.0357	0.2314	14.0997	17.0192	15.6536	0.0145	0.2302	14.2339	17.4110	15.6161
69	08	7	Female*SAT-CR	-3.7603	14.0997	4,581.1685	2,831.8082	3,477.5858	-1.5260	14.2339	4,567.0268	2,790.5333	3,481.5347
69	08	8	Female*SAT-M	-10.9751	17.0192	2,831.8082	4,718.2579	2,915.0597	-4.4540	17.4110	2,790.5333	4,597.7897	2,926.5853
69	08	9	Female*SAT-W	1.0500	15.6536	3,477.5858	2,915.0597	4,410.1346	0.4261	15.6161	3,481.5347	2,926.5853	4,409.0320

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
70	08	1	HSGPA	0.0000	0.2657	19.1348	21.7972	21.9783	0.0286	0.1302	10.2690	11.7847	11.8024
70	08	2	SAT-CR	0.0000	19.1348	9,889.6385	5,469.0623	7,900.0875	-3.6220	10.2690	5,158.1266	2,936.0210	4,261.4111
70	08	3	SAT-M	0.0000	21.7972	5,469.0623	9,834.4642	5,864.4735	-10.6352	11.7847	2,936.0210	5,241.9238	3,227.7039
70	08	4	SAT-W	0.0000	21.9783	7,900.0875	5,864.4735	9,885.3788	1.4809	11.8024	4,261.4111	3,227.7039	5,305.5966
70	08	5	Female	0.5185	0.0286	-3.6220	-10.6352	1.4809	0.2497	0.0138	-1.7440	-5.1208	0.7131
70	08	6	Female*HSGPA	0.0286	0.1302	10.2690	11.7847	11.8024	0.0138	0.1293	10.3727	12.0892	11.7600
70	08	7	Female*SAT-CR	-3.6218	10.2690	5,158.1266	2,936.0210	4,261.4111	-1.7440	10.3727	5,145.0081	2,897.5021	4,266.7748
70	08	8	Female*SAT-M	-10.6346	11.7847	2,936.0210	5,241.9238	3,227.7039	-5.1208	12.0892	2,897.5021	5,128.8231	3,243.4529
70	08	9	Female*SAT-W	1.4808	11.8024	4,261.4111	3,227.7039	5,305.5966	0.7131	11.7600	4,266.7748	3,243.4529	5,303.4036
71	06	1	HSGPA	0.0000	0.1940	9.6427	10.2184	10.8257	0.0373	0.0904	4.7663	5.1495	5.2629
71	06	2	SAT-CR	0.0000	9.6427	7,951.6248	3,883.3862	5,843.2314	0.4597	4.7663	4,235.9265	2,187.3509	3,130.7350
71	06	3	SAT-M	0.0000	10.2184	3,883.3862	7,357.4270	4,147.2729	-6.4906	5.1495	2,187.3509	4,089.9700	2,294.8883
71	06	4	SAT-W	0.0000	10.8257	5,843.2314	4,147.2729	7,589.7644	3.2972	5.2629	3,130.7350	2,294.8883	4,009.4937
71	06	5	Female	0.5378	0.0373	0.4597	-6.4906	3.2972	0.2486	0.0173	0.2125	-3.0001	1.5240
71	06	6	Female*HSGPA	0.0373	0.0904	4.7663	5.1495	5.2629	0.0173	0.0890	4.7491	5.3919	5.1398
71	06	7	Female*SAT-CR	0.4596	4.7663	4,235.9265	2,187.3509	3,130.7350	0.2125	4.7491	4,235.7152	2,190.3338	3,129.2197
71	06	8	Female*SAT-M	-6.4888	5.1495	2,187.3509	4,089.9700	2,294.8883	-3.0001	5.3919	2,190.3338	4,047.8535	2,316.2832
71	06	9	Female*SAT-W	3.2963	5.2629	3,130.7350	2,294.8883	4,009.4937	1.5240	5.1398	3,129.2197	2,316.2832	3,998.6252
71	08	1	HSGPA	0.0000	0.2099	11.8163	13.8461	13.4856	0.0288	0.1048	6.1337	6.7562	6.5589
71	08	2	SAT-CR	0.0000	11.8163	8,850.5901	4,730.3276	6,657.4984	-0.0608	6.1337	4,587.7756	2,492.0468	3,553.2306
71	08	3	SAT-M	0.0000	13.8461	4,730.3276	8,581.4241	5,119.1300	-6.5736	6.7562	2,492.0468	4,765.8302	2,705.1207
71	08	4	SAT-W	0.0000	13.4856	6,657.4984	5,119.1300	8,624.5293	3.4447	6.5589	3,553.2306	2,705.1207	4,574.8393
71	08	5	Female	0.5383	0.0288	-0.0608	-6.5736	3.4447	0.2486	0.0133	-0.0281	-3.0353	1.5906
71	08	6	Female*HSGPA	0.0288	0.1048	6.1337	6.7562	6.5589	0.0133	0.1039	6.1355	6.9455	6.4598
71	08	7	Female*SAT-CR	-0.0608	6.1337	4,587.7756	2,492.0468	3,553.2306	-0.0281	6.1355	4,587.7719	2,491.6470	3,553.4401
71	08	8	Female*SAT-M	-6.5717	6.7562	2,492.0468	4,765.8302	2,705.1207	-3.0353	6.9455	2,491.6470	4,722.6304	2,727.7585
71	08	9	Female*SAT-W	3.4437	6.5589	3,553.2306	2,705.1207	4,574.8393	1.5906	6.4598	3,553.4401	2,727.7585	4,562.9765
72	06	1	HSGPA	0.0000	0.3011	17.9682	21.9537	20.2669	0.0372	0.1450	9.3216	10.9436	10.3933
72	06	2	SAT-CR	0.0000	17.9682	8,313.1084	4,725.2153	6,337.8128	-1.0299	9.3216	4,075.6728	2,299.9585	3,137.5291
72	06	3	SAT-M	0.0000	21.9537	4,725.2153	9,005.1116	4,956.0358	-8.1480	10.9436	2,299.9585	4,274.2172	2,439.8761
72	06	4	SAT-W	0.0000	20.2669	6,337.8128	4,956.0358	8,152.2352	2.5099	10.3933	3,137.5291	2,439.8761	4,006.4408
72	06	5	Female	0.4973	0.0372	-1.0299	-8.1480	2.5099	0.2500	0.0187	-0.5177	-4.0962	1.2618
72	06	6	Female*HSGPA	0.0372	0.1450	9.3216	10.9436	10.3933	0.0187	0.1436	9.3599	11.2464	10.3000
72	06	7	Female*SAT-CR	-1.0298	9.3216	4,075.6728	2,299.9585	3,137.5291	-0.5177	9.3599	4,074.6122	2,291.5678	3,140.1138
72	06	8	Female*SAT-M	-8.1472	10.9436	2,299.9585	4,274.2172	2,439.8761	-4.0962	11.2464	2,291.5678	4,207.8341	2,460.3244
72	06	9	Female*SAT-W	2.5096	10.3933	3,137.5291	2,439.8761	4,006.4408	1.2618	10.3000	3,140.1138	2,460.3244	4,000.1420
73	06	1	HSGPA	0.0000	0.3451	17.2022	19.2657	18.9628	0.0583	0.2016	11.0315	12.0002	11.4991
73	06	2	SAT-CR	0.0000	17.2022	7,684.2885	4,937.2724	5,571.6634	-0.0968	11.0315	4,578.9199	2,878.1452	3,370.8018
73	06	3	SAT-M	0.0000	19.2657	4,937.2724	8,288.7799	4,639.0362	-5.6102	12.0002	2,878.1452	4,681.4619	2,787.4781
73	06	4	SAT-W	0.0000	18.9628	5,571.6634	4,639.0362	7,097.7821	4.8121	11.4991	3,370.8018	2,787.4781	4,242.0159
73	06	5	Female	0.5964	0.0583	-0.0968	-5.6102	4.8121	0.2407	0.0235	-0.0391	-2.2643	1.9422
73	06	6	Female*HSGPA	0.0583	0.2016	11.0315	12.0002	11.4991	0.0235	0.1982	11.0372	12.3273	11.2185
73	06	7	Female*SAT-CR	-0.0968	11.0315	4,578.9199	2,878.1452	3,370.8018	-0.0391	11.0372	4,578.9106	2,877.6023	3,371.2675
73	06	8	Female*SAT-M	-5.6093	12.0002	2,878.1452	4,681.4619	2,787.4781	-2.2643	12.3273	2,877.6023	4,649.9929	2,814.4706
73	06	9	Female*SAT-W	4.8113	11.4991	3,370.8018	2,787.4781	4,242.0159	1.9422	11.2185	3,371.2675	2,814.4706	4,218.8633

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
73	07	1	HSGPA	0.0000	0.3378	16.2351	18.2893	18.2289	0.0506	0.1971	10.2778	11.8789	11.4099
73	07	2	SAT-CR	0.0000	16.2351	7,401.9107	4,637.9956	5,571.1560	-0.2977	10.2778	4,398.7933	2,738.0309	3,363.4697
73	07	3	SAT-M	0.0000	18.2893	4,637.9956	8,076.2338	4,662.0149	-6.7199	11.8789	2,738.0309	4,557.6838	2,824.0744
73	07	4	SAT-W	0.0000	18.2289	5,571.1560	4,662.0149	7,157.9236	3.1272	11.4099	3,363.4697	2,824.0744	4,305.6590
73	07	5	Female	0.5888	0.0506	-0.2977	-6.7199	3.1272	0.2421	0.0208	-0.1224	-2.7629	1.2858
73	07	6	Female*HSGPA	0.0506	0.1971	10.2778	11.8789	11.4099	0.0208	0.1945	10.2928	12.2191	11.2516
73	07	7	Female*SAT-CR	-0.2976	10.2778	4,398.7933	2,738.0309	3,363.4697	-0.1224	10.2928	4,398.7047	2,736.0309	3,364.4004
73	07	8	Female*SAT-M	-6.7189	11.8789	2,738.0309	4,557.6838	2,824.0744	-2.7629	12.2191	2,736.0309	4,512.5335	2,845.0857
73	07	9	Female*SAT-W	3.1267	11.4099	3,363.4697	2,824.0744	4,305.6590	1.2858	11.2516	3,364.4004	2,845.0857	4,295.8811
73	08	1	HSGPA	0.0000	0.3401	16.8283	19.4152	18.6767	0.0462	0.1962	10.1884	11.8755	11.0645
73	08	2	SAT-CR	0.0000	16.8283	7,569.8345	4,777.1155	5,711.8885	-0.7477	10.1884	4,233.2105	2,669.3749	3,274.7002
73	08	3	SAT-M	0.0000	19.4152	4,777.1155	8,112.8827	4,707.5737	-7.1992	11.8755	2,669.3749	4,426.3181	2,705.5275
73	08	4	SAT-W	0.0000	18.6767	5,711.8885	4,707.5737	7,318.7313	3.5380	11.0645	3,274.7002	2,705.5275	4,204.4575
73	08	5	Female	0.5798	0.0462	-0.7477	-7.1992	3.5380	0.2437	0.0194	-0.3142	-3.0252	1.4867
73	08	6	Female*HSGPA	0.0461	0.1962	10.1884	11.8755	11.0645	0.0194	0.1941	10.2229	12.2077	10.9013
73	08	7	Female*SAT-CR	-0.7476	10.1884	4,233.2105	2,669.3749	3,274.7002	-0.3142	10.2229	4,232.6516	2,663.9931	3,277.3450
73	08	8	Female*SAT-M	-7.1983	11.8755	2,669.3749	4,426.3181	2,705.5275	-3.0252	12.2077	2,663.9931	4,374.4962	2,730.9947
73	08	9	Female*SAT-W	3.5375	11.0645	3,274.7002	2,705.5275	4,204.4575	1.4867	10.9013	3,277.3450	2,730.9947	4,191.9420
74	07	1	HSGPA	0.0000	0.2980	16.8371	20.9405	18.1093	0.0353	0.1443	8.6517	10.4295	9.2301
74	07	2	SAT-CR	0.0000	16.8371	9,529.9837	6,488.8406	7,484.8766	-2.2596	8.6517	4,732.4684	3,177.8720	3,781.6494
74	07	3	SAT-M	0.0000	20.9405	6,488.8406	10,193.5134	6,384.7934	-8.1942	10.4295	3,177.8720	4,938.8286	3,171.7944
74	07	4	SAT-W	0.0000	18.1093	7,484.8766	6,384.7934	8,937.6769	1.2471	9.2301	3,781.6494	3,171.7944	4,552.7282
74	07	5	Female	0.5174	0.0353	-2.2596	-8.1942	1.2471	0.2497	0.0170	-1.0906	-3.9549	0.6019
74	07	6	Female*HSGPA	0.0353	0.1443	8.6517	10.4295	9.2301	0.0170	0.1431	8.7314	10.7186	9.1861
74	07	7	Female*SAT-CR	-2.2594	8.6517	4,732.4684	3,177.8720	3,781.6494	-1.0906	8.7314	4,727.3630	3,159.3577	3,784.4671
74	07	8	Female*SAT-M	-8.1937	10.4295	3,177.8720	4,938.8286	3,171.7944	-3.9549	10.7186	3,159.3577	4,871.6880	3,182.0126
74	07	9	Female*SAT-W	1.2470	9.2301	3,781.6494	3,171.7944	4,552.7282	0.6019	9.1861	3,784.4671	3,182.0126	4,551.1731
74	08	1	HSGPA	0.0000	0.2883	16.4089	21.1458	17.8220	0.0314	0.1428	8.0871	10.1267	8.6539
74	08	2	SAT-CR	0.0000	16.4089	9,673.4434	6,733.2233	7,360.6573	-2.2106	8.0871	4,789.4862	3,276.4391	3,695.1794
74	08	3	SAT-M	0.0000	21.1458	6,733.2233	10,625.8516	6,515.8101	-8.7249	10.1267	3,276.4391	5,137.6286	3,226.6014
74	08	4	SAT-W	0.0000	17.8220	7,360.6573	6,515.8101	8,784.0663	2.0873	8.6539	3,695.1794	3,226.6014	4,452.8558
74	08	5	Female	0.5242	0.0314	-2.2106	-8.7249	2.0873	0.2494	0.0149	-1.0517	-4.1510	0.9931
74	08	6	Female*HSGPA	0.0314	0.1428	8.0871	10.1267	8.6539	0.0149	0.1418	8.1565	10.4003	8.5885
74	08	7	Female*SAT-CR	-2.2104	8.0871	4,789.4862	3,276.4391	3,695.1794	-1.0517	8.1565	4,784.5999	3,257.1534	3,699.7933
74	08	8	Female*SAT-M	-8.7244	10.1267	3,276.4391	5,137.6286	3,226.6014	-4.1510	10.4003	3,257.1534	5,061.5093	3,244.8122
74	08	9	Female*SAT-W	2.0872	8.6539	3,695.1794	3,226.6014	4,452.8558	0.9931	8.5885	3,699.7933	3,244.8122	4,448.4991
75	06	1	HSGPA	0.0000	0.3399	24.8407	28.8165	26.9278	0.0237	0.1360	10.6178	11.9016	11.2730
75	06	2	SAT-CR	0.0000	24.8407	9,257.9737	6,074.7912	7,172.3994	-2.9199	10.6178	3,814.0924	2,611.5396	2,941.8043
75	06	3	SAT-M	0.0000	28.8165	6,074.7912	10,841.3966	6,271.3456	-12.8813	11.9016	2,611.5396	4,588.1033	2,590.5397
75	06	4	SAT-W	0.0000	26.9278	7,172.3994	6,271.3456	8,819.8956	0.4184	11.2730	2,941.8043	2,590.5397	3,531.2505
75	06	5	Female	0.4214	0.0237	-2.9199	-12.8813	0.4184	0.2438	0.0137	-1.6894	-7.4529	0.2421
75	06	6	Female*HSGPA	0.0237	0.1360	10.6178	11.9016	11.2730	0.0137	0.1354	10.6871	12.2075	11.2630
75	06	7	Female*SAT-CR	-2.9198	10.6178	3,814.0924	2,611.5396	2,941.8043	-1.6894	10.6871	3,805.5668	2,573.9288	2,943.0261
75	06	8	Female*SAT-M	-12.8807	11.9016	2,611.5396	4,588.1033	2,590.5397	-7.4529	12.2075	2,573.9288	4,422.1837	2,595.9294
75	06	9	Female*SAT-W	0.4184	11.2730	2,941.8043	2,590.5397	3,531.2505	0.2421	11.2630	2,943.0261	2,595.9294	3,531.0754

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
75	08	1	HSGPA	0.0000	0.3308	23.3711	27.6227	25.7877	0.0235	0.1323	10.0281	11.6717	11.0731
75	08	2	SAT-CR	0.0000	23.3711	9,552.0600	5,654.4888	7,280.9056	-3.1994	10.0281	3,904.3207	2,460.8164	3,073.7730
75	08	3	SAT-M	0.0000	27.6227	5,654.4888	10,847.1184	6,170.0840	-12.5706	11.6717	2,460.8164	4,830.3844	2,671.5783
75	08	4	SAT-W	0.0000	25.7877	7,280.9056	6,170.0840	9,057.0618	0.9706	11.0731	3,073.7730	2,671.5783	3,854.6935
75	08	5	Female	0.4295	0.0235	-3.1994	-12.5706	0.9706	0.2450	0.0134	-1.8253	-7.1716	0.5538
75	08	6	Female*HSGPA	0.0235	0.1323	10.0281	11.6717	11.0731	0.0134	0.1317	10.1033	11.9671	11.0503
75	08	7	Female*SAT-CR	-3.1993	10.0281	3,904.3207	2,460.8164	3,073.7730	-1.8253	10.1033	3,894.0850	2,420.6000	3,076.8783
75	08	8	Female*SAT-M	-12.5700	11.6717	2,460.8164	4,830.3844	2,671.5783	-7.1716	11.9671	2,420.6000	4,672.3726	2,683.7792
75	08	9	Female*SAT-W	0.9706	11.0731	3,073.7730	2,671.5783	3,854.6935	0.5538	11.0503	3,076.8783	2,683.7792	3,853.7514
76	08	1	HSGPA	0.0000	0.2971	7.6236	14.4402	10.4237	0.0268	0.1367	3.3135	8.3546	4.3692
76	08	2	SAT-CR	0.0000	7.6236	9,363.8463	3,994.4231	6,327.8399	-2.9341	3.3135	4,796.0462	2,029.9079	3,257.0358
76	08	3	SAT-M	0.0000	14.4402	3,994.4231	9,021.2322	4,027.6207	-11.2368	8.3546	2,029.9079	4,444.1455	2,051.0363
76	08	4	SAT-W	0.0000	10.4237	6,327.8399	4,027.6207	7,536.5724	0.6687	4.3692	3,257.0358	2,051.0363	3,845.4311
76	08	5	Female	0.5037	0.0268	-2.9341	-11.2368	0.6687	0.2503	0.0133	-1.4561	-5.5763	0.3318
76	08	6	Female*HSGPA	0.0267	0.1367	3.3135	8.3546	4.3692	0.0133	0.1360	3.3919	8.6549	4.3513
76	08	7	Female*SAT-CR	-2.9304	3.3135	4,796.0462	2,029.9079	3,257.0358	-1.4561	3.3919	4,787.4481	1,996.9794	3,258.9953
76	08	8	Female*SAT-M	-11.2228	8.3546	2,029.9079	4,444.1455	2,051.0363	-5.5763	8.6549	1,996.9794	4,318.0381	2,058.5407
76	08	9	Female*SAT-W	0.6678	4.3692	3,257.0358	2,051.0363	3,845.4311	0.3318	4.3513	3,258.9953	2,058.5407	3,844.9845
77	06	1	HSGPA	0.0000	0.3877	27.1726	31.1931	28.7035	0.0413	0.1682	12.7329	13.9278	13.3569
77	06	2	SAT-CR	0.0000	27.1726	9,806.9227	6,827.5217	7,832.2207	-0.4339	12.7329	4,695.8934	3,182.3399	3,786.1878
77	06	3	SAT-M	0.0000	31.1931	6,827.5217	10,682.6523	6,769.6801	-9.2283	13.9278	3,182.3399	4,894.9780	3,194.9103
77	06	4	SAT-W	0.0000	28.7035	7,832.2207	6,769.6801	9,418.6992	2.6627	13.3569	3,786.1878	3,194.9103	4,513.5533
77	06	5	Female	0.4759	0.0413	-0.4339	-9.2283	2.6627	0.2495	0.0216	-0.2274	-4.8368	1.3956
77	06	6	Female*HSGPA	0.0413	0.1682	12.7329	13.9278	13.3569	0.0216	0.1665	12.7508	14.3089	13.2470
77	06	7	Female*SAT-CR	-0.4338	12.7329	4,695.8934	3,182.3399	3,786.1878	-0.2274	12.7508	4,695.7052	3,178.3364	3,787.3429
77	06	8	Female*SAT-M	-9.2270	13.9278	3,182.3399	4,894.9780	3,194.9103	-4.8368	14.3089	3,178.3364	4,809.8286	3,219.4789
77	06	9	Female*SAT-W	2.6623	13.3569	3,786.1878	3,194.9103	4,513.5533	1.3956	13.2470	3,787.3429	3,219.4789	4,506.4644
77	07	1	HSGPA	0.0000	0.3713	26.9124	32.0929	29.0095	0.0285	0.1727	13.2151	14.7747	14.1343
77	07	2	SAT-CR	0.0000	26.9124	9,948.0277	6,887.4258	7,929.6647	-1.8625	13.2151	4,832.3588	3,291.2400	3,917.1105
77	07	3	SAT-M	0.0000	32.0929	6,887.4258	10,962.8298	6,853.9396	-10.7470	14.7747	3,291.2400	5,032.1138	3,318.9108
77	07	4	SAT-W	0.0000	29.0095	7,929.6647	6,853.9396	9,447.6874	1.6141	14.1343	3,917.1105	3,318.9108	4,558.8360
77	07	5	Female	0.4673	0.0285	-1.8625	-10.7470	1.6141	0.2490	0.0152	-0.9921	-5.7249	0.8598
77	07	6	Female*HSGPA	0.0285	0.1727	13.2151	14.7747	14.1343	0.0152	0.1719	13.2683	15.0813	14.0883
77	07	7	Female*SAT-CR	-1.8622	13.2151	4,832.3588	3,291.2400	3,917.1105	-0.9921	13.2683	4,828.8906	3,271.2274	3,920.1163
77	07	8	Female*SAT-M	-10.7451	14.7747	3,291.2400	5,032.1138	3,318.9108	-5.7249	15.0813	3,271.2274	4,916.6361	3,336.2546
77	07	9	Female*SAT-W	1.6138	14.1343	3,917.1105	3,318.9108	4,558.8360	0.8598	14.0883	3,920.1163	3,336.2546	4,556.2311
77	08	1	HSGPA	0.0000	0.3598	25.3162	29.8887	27.9219	0.0424	0.1566	11.7512	13.2249	12.9097
77	08	2	SAT-CR	0.0000	25.3162	9,651.6188	6,570.3677	7,667.5159	-0.7007	11.7512	4,658.7408	3,169.1681	3,789.2714
77	08	3	SAT-M	0.0000	29.8887	6,570.3677	10,475.3503	6,477.6253	-9.3820	13.2249	3,169.1681	4,957.3718	3,168.3841
77	08	4	SAT-W	0.0000	27.9219	7,667.5159	6,477.6253	9,411.0731	3.6125	12.9097	3,789.2714	3,168.3841	4,648.8601
77	08	5	Female	0.4820	0.0424	-0.7007	-9.3820	3.6125	0.2497	0.0220	-0.3629	-4.8594	1.8711
77	08	6	Female*HSGPA	0.0424	0.1566	11.7512	13.2249	12.9097	0.0220	0.1548	11.7809	13.6227	12.7565
77	08	7	Female*SAT-CR	-0.7006	11.7512	4,658.7408	3,169.1681	3,789.2714	-0.3629	11.7809	4,658.2498	3,162.5950	3,791.8023
77	08	8	Female*SAT-M	-9.3808	13.2249	3,169.1681	4,957.3718	3,168.3841	-4.8594	13.6227	3,162.5950	4,869.3607	3,202.2722
77	08	9	Female*SAT-W	3.6120	12.9097	3,789.2714	3,168.3841	4,648.8601	1.8711	12.7565	3,791.8023	3,202.2722	4,635.8117

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
78	06	1	HSGPA	0.0000	0.2295	16.1078	16.4091	17.2132	0.0267	0.1255	9.4854	9.5482	9.6275
78	06	2	SAT-CR	0.0000	16.1078	9,735.4577	5,405.1693	7,587.7407	0.1215	9.4854	5,677.6294	3,230.3029	4,428.3084
78	06	3	SAT-M	0.0000	16.4091	5,405.1693	9,191.5743	5,641.2464	-8.9257	9.5482	3,230.3029	5,337.0725	3,365.0058
78	06	4	SAT-W	0.0000	17.2132	7,587.7407	5,641.2464	9,303.1760	2.1953	9.6275	4,428.3084	3,365.0058	5,378.8471
78	06	5	Female	0.5905	0.0267	0.1215	-8.9257	2.1953	0.2418	0.0109	0.0498	-3.6554	0.8990
78	06	6	Female*HSGPA	0.0267	0.1255	9.4854	9.5482	9.6275	0.0109	0.1248	9.4821	9.7867	9.5688
78	06	7	Female*SAT-CR	0.1215	9.4854	5,677.6294	3,230.3029	4,428.3084	0.0498	9.4821	5,677.6146	3,231.3876	4,428.0416
78	06	8	Female*SAT-M	-8.9254	9.5482	3,230.3029	5,337.0725	3,365.0058	-3.6554	9.7867	3,231.3876	5,257.4072	3,384.5996
78	06	9	Female*SAT-W	2.1952	9.6275	4,428.3084	3,365.0058	5,378.8471	0.8990	9.5688	4,428.0416	3,384.5996	5,374.0279
78	07	1	HSGPA	0.0000	0.2295	15.9364	16.4035	16.9007	0.0259	0.1244	9.0819	9.4352	9.3488
78	07	2	SAT-CR	0.0000	15.9364	9,501.0476	5,250.6272	7,349.8161	0.0615	9.0819	5,507.0996	3,135.2653	4,248.6613
78	07	3	SAT-M	0.0000	16.4035	5,250.6272	9,178.1616	5,441.8810	-8.7969	9.4352	3,135.2653	5,407.3036	3,250.1421
78	07	4	SAT-W	0.0000	16.9007	7,349.8161	5,441.8810	9,033.2560	2.0671	9.3488	4,248.6613	3,250.1421	5,215.5260
78	07	5	Female	0.5933	0.0259	0.0615	-8.7969	2.0671	0.2413	0.0105	0.0250	-3.5779	0.8407
78	07	6	Female*HSGPA	0.0259	0.1244	9.0819	9.4352	9.3488	0.0105	0.1237	9.0803	9.6626	9.2954
78	07	7	Female*SAT-CR	0.0615	9.0819	5,507.0996	3,135.2653	4,248.6613	0.0250	9.0803	5,507.0958	3,135.8063	4,248.5342
78	07	8	Female*SAT-M	-8.7967	9.4352	3,135.2653	5,407.3036	3,250.1421	-3.5779	9.6626	3,135.8063	5,329.9195	3,268.3255
78	07	9	Female*SAT-W	2.0670	9.3488	4,248.6613	3,250.1421	5,215.5260	0.8407	9.2954	4,248.5342	3,268.3255	5,211.2533
78	08	1	HSGPA	0.0000	0.2272	14.4370	15.7694	15.7865	0.0254	0.1250	8.3572	9.1701	8.8236
78	08	2	SAT-CR	0.0000	14.4370	9,352.7453	4,937.0061	7,237.0347	-0.2885	8.3572	5,321.6418	2,905.6403	4,152.9553
78	08	3	SAT-M	0.0000	15.7694	4,937.0061	9,069.4678	5,312.2287	-8.8369	9.1701	2,905.6403	5,305.2538	3,163.0973
78	08	4	SAT-W	0.0000	15.7865	7,237.0347	5,312.2287	9,061.5791	2.7290	8.8236	4,152.9553	3,163.0973	5,222.3007
78	08	5	Female	0.5938	0.0254	-0.2885	-8.8369	2.7290	0.2412	0.0103	-0.1172	-3.5894	1.1085
78	08	6	Female*HSGPA	0.0253	0.1250	8.3572	9.1701	8.8236	0.0103	0.1244	8.3645	9.3942	8.7544
78	08	7	Female*SAT-CR	-0.2884	8.3572	5,321.6418	2,905.6403	4,152.9553	-0.1172	8.3645	5,321.5586	2,903.0913	4,153.7425
78	08	8	Female*SAT-M	-8.8367	9.1701	2,905.6403	5,305.2538	3,163.0973	-3.5894	9.3942	2,903.0913	5,227.1646	3,187.2123
78	08	9	Female*SAT-W	2.7289	8.8236	4,152.9553	3,163.0973	5,222.3007	1.1085	8.7544	4,153.7425	3,187.2123	5,214.8537
79	08	1	HSGPA	0.0000	0.3050	17.5122	19.7590	19.8958	0.0385	0.1988	12.5494	13.4146	13.5370
79	08	2	SAT-CR	0.0000	17.5122	7,089.8624	4,402.1815	5,570.4121	-0.5708	12.5494	5,049.5754	3,019.7499	3,974.7378
79	08	3	SAT-M	0.0000	19.7590	4,402.1815	7,675.3899	4,699.5855	-4.5844	13.4146	3,019.7499	5,009.1121	3,269.0944
79	08	4	SAT-W	0.0000	19.8958	5,570.4121	4,699.5855	7,543.1839	2.7376	13.5370	3,974.7378	3,269.0944	5,263.8910
79	08	5	Female	0.7117	0.0385	-0.5708	-4.5844	2.7376	0.2053	0.0111	-0.1645	-1.3215	0.7891
79	08	6	Female*HSGPA	0.0385	0.1988	12.5494	13.4146	13.5370	0.0111	0.1973	12.5713	13.5912	13.4315
79	08	7	Female*SAT-CR	-0.5705	12.5494	5,049.5754	3,019.7499	3,974.7378	-0.1645	12.5713	5,049.2497	3,017.1345	3,976.2996
79	08	8	Female*SAT-M	-4.5815	13.4146	3,019.7499	5,009.1121	3,269.0944	-1.3215	13.5912	3,017.1345	4,988.1088	3,281.6369
79	08	9	Female*SAT-W	2.7359	13.5370	3,974.7378	3,269.0944	5,263.8910	0.7891	13.4315	3,976.2996	3,281.6369	5,256.4011
80	07	1	HSGPA	0.0000	0.2304	13.5743	14.0541	14.5842	0.0444	0.1086	7.0997	6.9661	7.3689
80	07	2	SAT-CR	0.0000	13.5743	7,796.4760	4,208.0980	5,836.2303	0.2319	7.0997	4,087.2903	2,228.4290	3,042.3412
80	07	3	SAT-M	0.0000	14.0541	4,208.0980	7,372.0142	4,250.2599	-7.3515	6.9661	2,228.4290	3,740.0594	2,258.6063
80	07	4	SAT-W	0.0000	14.5842	5,836.2303	4,250.2599	7,557.7509	3.6705	7.3689	3,042.3412	2,258.6063	3,871.8902
80	07	5	Female	0.5209	0.0444	0.2319	-7.3515	3.6705	0.2496	0.0213	0.1111	-3.5218	1.7584
80	07	6	Female*HSGPA	0.0444	0.1086	7.0997	6.9661	7.3689	0.0213	0.1066	7.0894	7.2925	7.2059
80	07	7	Female*SAT-CR	0.2319	7.0997	4,087.2903	2,228.4290	3,042.3412	0.1111	7.0894	4,087.2365	2,230.1338	3,041.4900
80	07	8	Female*SAT-M	-7.3510	6.9661	2,228.4290	3,740.0594	2,258.6063	-3.5218	7.2925	2,230.1338	3,686.0182	2,285.5881
80	07	9	Female*SAT-W	3.6702	7.3689	3,042.3412	2,258.6063	3,871.8902	1.7584	7.2059	3,041.4900	2,285.5881	3,858.4187

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
81	07	1	HSGPA	0.0000	0.3372	18.9686	21.0158	19.1919	0.0270	0.2077	11.7432	12.5845	11.6771
81	07	2	SAT-CR	0.0000	18.9686	8,580.9087	5,316.9110	6,117.7429	-0.7011	11.7432	4,860.2956	3,017.4793	3,645.1976
81	07	3	SAT-M	0.0000	21.0158	5,316.9110	7,742.0374	4,800.0997	-6.5347	12.5845	3,017.4793	4,429.3219	2,849.0858
81	07	4	SAT-W	0.0000	19.1919	6,117.7429	4,800.0997	7,337.7737	2.2515	11.6771	3,645.1976	2,849.0858	4,437.9252
81	07	5	Female	0.5932	0.0270	-0.7011	-6.5347	2.2515	0.2416	0.0110	-0.2852	-2.6583	0.9159
81	07	6	Female*HSGPA	0.0270	0.2077	11.7432	12.5845	11.6771	0.0110	0.2069	11.7621	12.7608	11.6164
81	07	7	Female*SAT-CR	-0.7003	11.7432	4,860.2956	3,017.4793	3,645.1976	-0.2852	11.7621	4,859.8046	3,012.9030	3,646.7743
81	07	8	Female*SAT-M	-6.5275	12.5845	3,017.4793	4,429.3219	2,849.0858	-2.6583	12.7608	3,012.9030	4,386.6667	2,863.7825
81	07	9	Female*SAT-W	2.2490	11.6771	3,645.1976	2,849.0858	4,437.9252	0.9159	11.6164	3,646.7743	2,863.7825	4,432.8615
82	06	1	HSGPA	0.0000	0.3324	18.6018	21.0521	20.2953	0.0455	0.1927	11.8370	13.5404	12.5330
82	06	2	SAT-CR	0.0000	18.6018	9,064.2243	6,001.9670	6,944.8609	-0.9917	11.8370	5,356.7969	3,478.6480	4,163.3641
82	06	3	SAT-M	0.0000	21.0521	6,001.9670	9,696.0795	5,912.1911	-7.5188	13.5404	3,478.6480	5,461.9021	3,478.1396
82	06	4	SAT-W	0.0000	20.2953	6,944.8609	5,912.1911	8,600.1438	2.4951	12.5330	4,163.3641	3,478.1396	5,118.4662
82	06	5	Female	0.5883	0.0455	-0.9917	-7.5188	2.4951	0.2422	0.0187	-0.4083	-3.0959	1.0274
82	06	6	Female*HSGPA	0.0455	0.1927	11.8370	13.5404	12.5330	0.0187	0.1906	11.8821	13.8822	12.4195
82	06	7	Female*SAT-CR	-0.9916	11.8370	5,356.7969	3,478.6480	4,163.3641	-0.4083	11.8821	5,355.8135	3,471.1922	4,165.8384
82	06	8	Female*SAT-M	-7.5181	13.5404	3,478.6480	5,461.9021	3,478.1396	-3.0959	13.8822	3,471.1922	5,405.3750	3,496.8982
82	06	9	Female*SAT-W	2.4949	12.5330	4,163.3641	3,478.1396	5,118.4662	1.0274	12.4195	4,165.8384	3,496.8982	5,112.2411
83	06	1	HSGPA	0.0000	0.3137	17.0349	20.4896	18.1000	0.0409	0.1488	9.0262	10.0411	9.1308
83	06	2	SAT-CR	0.0000	17.0349	8,975.4470	5,560.7624	6,678.9236	-1.1384	9.0262	4,615.9855	2,816.9399	3,423.1298
83	06	3	SAT-M	0.0000	20.4896	5,560.7624	9,229.1755	5,149.3384	-9.3754	10.0411	2,816.9399	4,553.5246	2,615.7078
83	06	4	SAT-W	0.0000	18.1000	6,678.9236	5,149.3384	8,032.0931	2.8304	9.1308	3,423.1298	2,615.7078	4,042.0968
83	06	5	Female	0.5160	0.0409	-1.1384	-9.3754	2.8304	0.2498	0.0198	-0.5510	-4.5380	1.3700
83	06	6	Female*HSGPA	0.0409	0.1488	9.0262	10.0411	9.1308	0.0198	0.1471	9.0728	10.4248	9.0150
83	06	7	Female*SAT-CR	-1.1383	9.0262	4,615.9855	2,816.9399	3,423.1298	-0.5510	9.0728	4,614.6897	2,806.2678	3,426.3517
83	06	8	Female*SAT-M	-9.3747	10.0411	2,816.9399	4,553.5246	2,615.7078	-4.5380	10.4248	2,806.2678	4,465.6325	2,642.2418
83	06	9	Female*SAT-W	2.8302	9.1308	3,423.1298	2,615.7078	4,042.0968	1.3700	9.0150	3,426.3517	2,642.2418	4,034.0864
83	07	1	HSGPA	0.0000	0.3171	17.1730	20.0633	18.7164	0.0450	0.1498	9.0003	10.2534	9.6412
83	07	2	SAT-CR	0.0000	17.1730	9,101.1101	5,405.3381	6,780.7692	-0.4343	9.0003	4,632.8127	2,727.6868	3,498.4897
83	07	3	SAT-M	0.0000	20.0633	5,405.3381	9,196.6246	5,172.7404	-8.3871	10.2534	2,727.6868	4,624.5413	2,628.5317
83	07	4	SAT-W	0.0000	18.7164	6,780.7692	5,172.7404	8,064.7906	3.3812	9.6412	3,498.4897	2,628.5317	4,161.5740
83	07	5	Female	0.5180	0.0450	-0.4343	-8.3871	3.3812	0.2497	0.0217	-0.2093	-4.0427	1.6298
83	07	6	Female*HSGPA	0.0450	0.1498	9.0003	10.2534	9.6412	0.0217	0.1478	9.0198	10.6307	9.4891
83	07	7	Female*SAT-CR	-0.4343	9.0003	4,632.8127	2,727.6868	3,498.4897	-0.2093	9.0198	4,632.6241	2,724.0445	3,499.9581
83	07	8	Female*SAT-M	-8.3866	10.2534	2,727.6868	4,624.5413	2,628.5317	-4.0427	10.6307	2,724.0445	4,554.2019	2,656.8880
83	07	9	Female*SAT-W	3.3809	9.6412	3,498.4897	2,628.5317	4,161.5740	1.6298	9.4891	3,499.9581	2,656.8880	4,150.1425
83	08	1	HSGPA	0.0000	0.3043	15.9354	19.0052	17.2647	0.0374	0.1439	8.1040	9.3242	8.5466
83	08	2	SAT-CR	0.0000	15.9354	8,843.1609	5,243.4061	6,526.6015	-0.9554	8.1040	4,497.8234	2,564.0091	3,366.6200
83	08	3	SAT-M	0.0000	19.0052	5,243.4061	8,840.1181	4,983.5430	-9.1007	9.3242	2,564.0091	4,272.1670	2,497.6402
83	08	4	SAT-W	0.0000	17.2647	6,526.6015	4,983.5430	7,848.9174	2.8559	8.5466	3,366.6200	2,497.6402	4,022.0171
83	08	5	Female	0.5173	0.0374	-0.9554	-9.1007	2.8559	0.2497	0.0181	-0.4612	-4.3934	1.3787
83	08	6	Female*HSGPA	0.0374	0.1439	8.1040	9.3242	8.5466	0.0181	0.1425	8.1397	9.6646	8.4398
83	08	7	Female*SAT-CR	-0.9554	8.1040	4,497.8234	2,564.0091	3,366.6200	-0.4612	8.1397	4,496.9106	2,555.3147	3,369.3483
83	08	8	Female*SAT-M	-9.1001	9.3242	2,564.0091	4,272.1670	2,497.6402	-4.3934	9.6646	2,555.3147	4,189.3495	2,523.6288
83	08	9	Female*SAT-W	2.8557	8.5466	3,366.6200	2,497.6402	4,022.0171	1.3787	8.4398	3,369.3483	2,523.6288	4,013.8617



## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
84	06	1	HSGPA	0.0000	0.3342	21.9940	23.5572	23.8805	0.0452	0.1736	12.3254	13.0149	12.9638
84	06	2	SAT-CR	0.0000	21.9940	9,161.2310	6,274.9571	7,101.1322	-1.0958	12.3254	4,974.2759	3,345.7428	3,917.9728
84	06	3	SAT-M	0.0000	23.5572	6,274.9571	9,895.4210	6,157.7140	-8.3256	13.0149	3,345.7428	5,205.7941	3,344.2458
84	06	4	SAT-W	0.0000	23.8805	7,101.1322	6,157.7140	8,756.4072	2.4419	12.9638	3,917.9728	3,344.2458	4,789.4177
84	06	5	Female	0.5546	0.0452	-1.0958	-8.3256	2.4419	0.2471	0.0202	-0.4880	-3.7079	1.0875
84	06	6	Female*HSGPA	0.0452	0.1736	12.3254	13.0149	12.9638	0.0202	0.1715	12.3750	13.3916	12.8533
84	06	7	Female*SAT-CR	-1.0956	12.3254	4,974.2759	3,345.7428	3,917.9728	-0.4880	12.3750	4,973.0753	3,336.6210	3,920.6483
84	06	8	Female*SAT-M	-8.3243	13.0149	3,345.7428	5,205.7941	3,344.2458	-3.7079	13.3916	3,336.6210	5,136.4888	3,364.5731
84	06	9	Female*SAT-W	2.4415	12.9638	3,917.9728	3,344.2458	4,789.4177	1.0875	12.8533	3,920.6483	3,364.5731	4,783.4557
85	06	1	HSGPA	0.0000	0.2522	18.2783	19.9724	19.0135	0.0333	0.1088	8.1544	8.7083	8.4855
85	06	2	SAT-CR	0.0000	18.2783	9,782.4908	6,713.2471	7,454.4046	0.0015	8.1544	4,579.4542	3,074.7416	3,490.7003
85	06	3	SAT-M	0.0000	19.9724	6,713.2471	10,117.8325	6,325.5984	-7.8943	8.7083	3,074.7416	4,597.2398	2,919.6764
85	06	4	SAT-W	0.0000	19.0135	7,454.4046	6,325.5984	8,828.1914	4.1305	8.4855	3,490.7003	2,919.6764	4,142.4732
85	06	5	Female	0.4861	0.0333	0.0015	-7.8943	4.1305	0.2498	0.0171	0.0008	-4.0569	2.1226
85	06	6	Female*HSGPA	0.0333	0.1088	8.1544	8.7083	8.4855	0.0171	0.1077	8.1544	8.9711	8.3480
85	06	7	Female*SAT-CR	0.0015	8.1544	4,579.4542	3,074.7416	3,490.7003	0.0008	8.1544	4,579.4542	3,074.7532	3,490.6942
85	06	8	Female*SAT-M	-7.8941	8.7083	3,074.7416	4,597.2398	2,919.6764	-4.0569	8.9711	3,074.7532	4,534.9212	2,952.2826
85	06	9	Female*SAT-W	4.1303	8.4855	3,490.7003	2,919.6764	4,142.4732	2.1226	8.3480	3,490.6942	2,952.2826	4,125.4132
85	07	1	HSGPA	0.0000	0.2505	17.7834	19.8257	19.0592	0.0342	0.1087	8.3420	8.5891	8.7756
85	07	2	SAT-CR	0.0000	17.7834	9,767.3940	6,512.3771	7,632.2748	-0.6096	8.3420	4,543.2416	2,987.9217	3,593.3410
85	07	3	SAT-M	0.0000	19.8257	6,512.3771	9,960.9772	6,380.7714	-8.1218	8.5891	2,987.9217	4,529.5069	2,959.8413
85	07	4	SAT-W	0.0000	19.0592	7,632.2748	6,380.7714	9,112.2265	3.3690	8.7756	3,593.3410	2,959.8413	4,292.2352
85	07	5	Female	0.4856	0.0342	-0.6096	-8.1218	3.3690	0.2498	0.0176	-0.3136	-4.1783	1.7332
85	07	6	Female*HSGPA	0.0342	0.1087	8.3420	8.5891	8.7756	0.0176	0.1075	8.3628	8.8668	8.6604
85	07	7	Female*SAT-CR	-0.6096	8.3420	4,543.2416	2,987.9217	3,593.3410	-0.3136	8.3628	4,542.8700	2,982.9709	3,595.3946
85	07	8	Female*SAT-M	-8.1216	8.5891	2,987.9217	4,529.5069	2,959.8413	-4.1783	8.8668	2,982.9709	4,463.5444	2,987.2028
85	07	9	Female*SAT-W	3.3689	8.7756	3,593.3410	2,959.8413	4,292.2352	1.7332	8.6604	3,595.3946	2,987.2028	4,280.8855
85	08	1	HSGPA	0.0000	0.2413	16.9389	19.0554	17.9551	0.0272	0.1071	7.8617	8.5161	8.2900
85	08	2	SAT-CR	0.0000	16.9389	9,813.7933	6,680.5503	7,625.9252	-1.2484	7.8617	4,517.5377	3,049.7963	3,573.3243
85	08	3	SAT-M	0.0000	19.0554	6,680.5503	10,145.1029	6,516.6858	-8.6358	8.5161	3,049.7963	4,626.6409	3,034.8102
85	08	4	SAT-W	0.0000	17.9551	7,625.9252	6,516.6858	9,190.2349	3.3621	8.2900	3,573.3243	3,034.8102	4,354.7305
85	08	5	Female	0.4860	0.0272	-1.2484	-8.6358	3.3621	0.2498	0.0140	-0.6417	-4.4391	1.7283
85	08	6	Female*HSGPA	0.0272	0.1071	7.8617	8.5161	8.2900	0.0140	0.1064	7.8956	8.7508	8.1987
85	08	7	Female*SAT-CR	-1.2484	7.8617	4,517.5377	3,049.7963	3,573.3243	-0.6417	7.8956	4,515.9793	3,039.0157	3,577.5215
85	08	8	Female*SAT-M	-8.6355	8.5161	3,049.7963	4,626.6409	3,034.8102	-4.4391	8.7508	3,039.0157	4,552.0665	3,063.8440
85	08	9	Female*SAT-W	3.3620	8.2900	3,573.3243	3,034.8102	4,354.7305	1.7283	8.1987	3,577.5215	3,063.8440	4,343.4269
86	08	1	HSGPA	0.0000	0.3548	22.7612	19.0337	21.6162	0.0548	0.2165	16.1128	12.3079	13.8660
86	08	2	SAT-CR	0.0000	22.7612	8,649.4570	4,834.9024	6,297.8585	3.1182	16.1128	5,693.3578	3,099.3604	4,108.7703
86	08	3	SAT-M	0.0000	19.0337	4,834.9024	7,596.9751	4,495.9005	-5.1633	12.3079	3,099.3604	4,282.8440	2,815.0696
86	08	4	SAT-W	0.0000	21.6162	6,297.8585	4,495.9005	7,340.7037	6.5152	13.8660	4,108.7703	2,815.0696	4,571.2700
86	08	5	Female	0.6390	0.0548	3.1182	-5.1633	6.5152	0.2310	0.0198	1.1255	-1.8637	2.3517
86	08	6	Female*HSGPA	0.0547	0.2165	16.1128	12.3079	13.8660	0.0198	0.2135	15.9421	12.5905	13.5094
86	08	7	Female*SAT-CR	3.1138	16.1128	5,693.3578	3,099.3604	4,108.7703	1.1255	15.9421	5,683.6486	3,115.4376	4,088.4835
86	08	8	Female*SAT-M	-5.1560	12.3079	3,099.3604	4,282.8440	2,815.0696	-1.8637	12.5905	3,115.4376	4,256.2221	2,848.6619
86	08	9	Female*SAT-W	6.5060	13.8660	4,108.7703	2,815.0696	4,571.2700	2.3517	13.5094	4,088.4835	2,848.6619	4,528.8821

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
87	08	1	HSGPA	0.0000	0.3587	31.1839	26.1989	30.5241	0.0644	0.1581	13.9406	9.6521	12.2253
87	08	2	SAT-CR	0.0000	31.1839	11,556.9791	6,639.1305	8,737.7382	-1.1669	13.9406	5,659.2705	3,356.7847	4,046.8730
87	08	3	SAT-M	0.0000	26.1989	6,639.1305	10,026.8977	5,977.9359	-5.2354	9.6521	3,356.7847	4,991.2361	3,069.0557
87	08	4	SAT-W	0.0000	30.5241	8,737.7382	5,977.9359	9,876.1026	3.6094	12.2253	4,046.8730	3,069.0557	4,730.9079
87	08	5	Female	0.5694	0.0644	-1.1669	-5.2354	3.6094	0.2459	0.0277	-0.5024	-2.2543	1.5542
87	08	6	Female*HSGPA	0.0643	0.1581	13.9406	9.6521	12.2253	0.0277	0.1539	14.0156	9.9885	11.9934
87	08	7	Female*SAT-CR	-1.1636	13.9406	5,659.2705	3,356.7847	4,046.8730	-0.5024	14.0156	5,657.9128	3,350.6930	4,051.0727
87	08	8	Female*SAT-M	-5.2206	9.6521	3,356.7847	4,991.2361	3,069.0557	-2.2543	9.9885	3,350.6930	4,963.9043	3,087.8988
87	08	9	Female*SAT-W	3.5992	12.2253	4,046.8730	3,069.0557	4,730.9079	1.5542	11.9934	4,051.0727	3,087.8988	4,717.9170
88	06	1	HSGPA	0.0000	0.2891	16.5829	17.5944	17.8290	0.0514	0.1262	7.6841	7.9122	8.0314
88	06	2	SAT-CR	0.0000	16.5829	9,492.8153	5,583.5390	7,449.5369	1.5883	7.6841	4,459.8348	2,511.7588	3,499.5319
88	06	3	SAT-M	0.0000	17.5944	5,583.5390	8,769.1428	5,548.2080	-6.2208	7.9122	2,511.7588	4,027.6091	2,523.1830
88	06	4	SAT-W	0.0000	17.8290	7,449.5369	5,548.2080	9,186.9820	5.1195	8.0314	3,499.5319	2,523.1830	4,352.1508
88	06	5	Female	0.4972	0.0514	1.5883	-6.2208	5.1195	0.2500	0.0258	0.7986	-3.1278	2.5740
88	06	6	Female*HSGPA	0.0514	0.1262	7.6841	7.9122	8.0314	0.0258	0.1235	7.6025	8.2317	7.7685
88	06	7	Female*SAT-CR	1.5881	7.6841	4,459.8348	2,511.7588	3,499.5319	0.7986	7.6025	4,457.3124	2,521.6383	3,491.4014
88	06	8	Female*SAT-M	-6.2203	7.9122	2,511.7588	4,027.6091	2,523.1830	-3.1278	8.2317	2,521.6383	3,988.9141	2,555.0275
88	06	9	Female*SAT-W	5.1190	8.0314	3,499.5319	2,523.1830	4,352.1508	2.5740	7.7685	3,491.4014	2,555.0275	4,325.9440
88	07	1	HSGPA	0.0000	0.2869	16.2718	16.8404	17.3930	0.0505	0.1220	7.3113	7.2450	7.7914
88	07	2	SAT-CR	0.0000	16.2718	9,458.9746	5,387.4556	7,399.8678	2.2134	7.3113	4,422.2364	2,430.4292	3,460.6863
88	07	3	SAT-M	0.0000	16.8404	5,387.4556	8,632.4141	5,427.2124	-5.9186	7.2450	2,430.4292	3,969.1767	2,488.0736
88	07	4	SAT-W	0.0000	17.3930	7,399.8678	5,427.2124	9,061.6790	5.5975	7.7914	3,460.6863	2,488.0736	4,253.1015
88	07	5	Female	0.4868	0.0505	2.2134	-5.9186	5.5975	0.2498	0.0259	1.1359	-3.0373	2.8725
88	07	6	Female*HSGPA	0.0505	0.1220	7.3113	7.2450	7.7914	0.0259	0.1195	7.1995	7.5440	7.5086
88	07	7	Female*SAT-CR	2.2133	7.3113	4,422.2364	2,430.4292	3,460.6863	1.1359	7.1995	4,417.3375	2,443.5286	3,448.2975
88	07	8	Female*SAT-M	-5.9181	7.2450	2,430.4292	3,969.1767	2,488.0736	-3.0373	7.5440	2,443.5286	3,934.1498	2,521.2006
88	07	9	Female*SAT-W	5.5971	7.7914	3,460.6863	2,488.0736	4,253.1015	2.8725	7.5086	3,448.2975	2,521.2006	4,221.7713
88	08	1	HSGPA	0.0000	0.2766	15.4233	17.3771	16.8015	0.0449	0.1193	6.7446	6.8898	7.1029
88	08	2	SAT-CR	0.0000	15.4233	9,174.9492	5,241.3997	7,177.6657	2.7584	6.7446	4,092.2783	2,240.8318	3,201.7367
88	08	3	SAT-M	0.0000	17.3771	5,241.3997	8,672.8472	5,410.5612	-5.3936	6.8898	2,240.8318	3,818.3727	2,358.8666
88	08	4	SAT-W	0.0000	16.8015	7,177.6657	5,410.5612	8,999.4360	6.4305	7.1029	3,201.7367	2,358.8666	4,097.0733
88	08	5	Female	0.4799	0.0449	2.7584	-5.3936	6.4305	0.2496	0.0234	1.4347	-2.8053	3.3447
88	08	6	Female*HSGPA	0.0449	0.1193	6.7446	6.8898	7.1029	0.0234	0.1173	6.6207	7.1320	6.8142
88	08	7	Female*SAT-CR	2.7583	6.7446	4,092.2783	2,240.8318	3,201.7367	1.4347	6.6207	4,084.6697	2,255.7088	3,183.9996
88	08	8	Female*SAT-M	-5.3933	6.8898	2,240.8318	3,818.3727	2,358.8666	-2.8053	7.1320	2,255.7088	3,789.2836	2,393.5481
88	08	9	Female*SAT-W	6.4301	7.1029	3,201.7367	2,358.8666	4,097.0733	3.3447	6.8142	3,183.9996	2,393.5481	4,055.7241
89	06	1	HSGPA	0.0000	0.4297	25.8648	29.1322	28.0067	0.0537	0.2575	17.0506	18.3711	17.4645
89	06	2	SAT-CR	0.0000	25.8648	7,836.8785	4,946.0758	5,562.5406	-0.5279	17.0506	4,749.4149	3,053.6847	3,393.1655
89	06	3	SAT-M	0.0000	29.1322	4,946.0758	7,922.8929	4,590.6530	-7.0864	18.3711	3,053.6847	4,671.9708	2,822.7972
89	06	4	SAT-W	0.0000	28.0067	5,562.5406	4,590.6530	6,938.1651	3.7459	17.4645	3,393.1655	2,822.7972	4,192.4419
89	06	5	Female	0.6223	0.0537	-0.5279	-7.0864	3.7459	0.2351	0.0203	-0.1994	-2.6764	1.4147
89	06	6	Female*HSGPA	0.0537	0.2575	17.0506	18.3711	17.4645	0.0203	0.2546	17.0790	18.7513	17.2635
89	06	7	Female*SAT-CR	-0.5278	17.0506	4,749.4149	3,053.6847	3,393.1655	-0.1994	17.0790	4,749.1363	3,049.9448	3,395.1424
89	06	8	Female*SAT-M	-7.0839	18.3711	3,053.6847	4,671.9708	2,822.7972	-2.6764	18.7513	3,049.9448	4,621.7715	2,849.3326
89	06	9	Female*SAT-W	3.7445	17.4645	3,393.1655	2,822.7972	4,192.4419	1.4147	17.2635	3,395.1424	2,849.3326	4,178.4152

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
89	07	1	HSGPA	0.0000	0.4215	22.7296	27.8112	25.1075	0.0438	0.2481	14.9542	17.7176	15.7800
89	07	2	SAT-CR	0.0000	22.7296	7,658.1840	4,889.8926	5,485.7785	-2.2263	14.9542	4,581.7372	2,915.4330	3,329.6744
89	07	3	SAT-M	0.0000	27.8112	4,889.8926	8,098.5150	4,525.8015	-8.6823	17.7176	2,915.4330	4,658.4778	2,743.3811
89	07	4	SAT-W	0.0000	25.1075	5,485.7785	4,525.8015	6,712.5327	1.8057	15.7800	3,329.6744	2,743.3811	4,060.8356
89	07	5	Female	0.6096	0.0438	-2.2263	-8.6823	1.8057	0.2381	0.0171	-0.8692	-3.3900	0.7050
89	07	6	Female*HSGPA	0.0438	0.2481	14.9542	17.7176	15.7800	0.0171	0.2462	15.0516	18.0976	15.7010
89	07	7	Female*SAT-CR	-2.2255	14.9542	4,581.7372	2,915.4330	3,329.6744	-0.8692	15.0516	4,576.7825	2,896.1104	3,333.6931
89	07	8	Female*SAT-M	-8.6793	17.7176	2,915.4330	4,658.4778	2,743.3811	-3.3900	18.0976	2,896.1104	4,583.1222	2,759.0536
89	07	9	Female*SAT-W	1.8051	15.7800	3,329.6744	2,743.3811	4,060.8356	0.7050	15.7010	3,333.6931	2,759.0536	4,057.5761
89	08	1	HSGPA	0.0000	0.4225	22.2732	28.4594	25.2515	0.0505	0.2368	13.6420	17.1734	15.6646
89	08	2	SAT-CR	0.0000	22.2732	7,382.3305	4,402.9788	5,300.4542	-1.4587	13.6420	4,132.6680	2,441.6988	3,099.0805
89	08	3	SAT-M	0.0000	28.4594	4,402.9788	7,603.5017	4,380.1642	-7.8037	17.1734	2,441.6988	4,249.4311	2,576.1547
89	08	4	SAT-W	0.0000	25.2515	5,300.4542	4,380.1642	6,962.5897	3.2885	15.6646	3,099.0805	2,576.1547	4,166.5559
89	08	5	Female	0.5946	0.0505	-1.4587	-7.8037	3.2885	0.2411	0.0205	-0.5913	-3.1633	1.3331
89	08	6	Female*HSGPA	0.0505	0.2368	13.6420	17.1734	15.6646	0.0205	0.2343	13.7157	17.5676	15.4984
89	08	7	Female*SAT-CR	-1.4582	13.6420	4,132.6680	2,441.6988	3,099.0805	-0.5913	13.7157	4,130.5410	2,430.3194	3,103.8758
89	08	8	Female*SAT-M	-7.8013	17.1734	2,441.6988	4,249.4311	2,576.1547	-3.1633	17.5676	2,430.3194	4,188.5522	2,601.8095
89	08	9	Female*SAT-W	3.2875	15.6646	3,099.0805	2,576.1547	4,166.5559	1.3331	15.4984	3,103.8758	2,601.8095	4,155.7448
90	08	1	HSGPA	0.0000	0.2470	19.5137	21.6716	20.2184	0.0246	0.1343	10.8330	11.8142	11.1582
90	08	2	SAT-CR	0.0000	19.5137	9,954.3655	6,992.3922	7,925.8910	-1.0560	10.8330	5,701.2167	3,887.6132	4,604.0048
90	08	3	SAT-M	0.0000	21.6716	6,992.3922	10,338.2904	6,939.1314	-7.7081	11.8142	3,887.6132	5,735.1726	3,973.0678
90	08	4	SAT-W	0.0000	20.2184	7,925.8910	6,939.1314	9,538.2044	2.8183	11.1582	4,604.0048	3,973.0678	5,605.0321
90	08	5	Female	0.5990	0.0246	-1.0560	-7.7081	2.8183	0.2402	0.0099	-0.4235	-3.0912	1.1302
90	08	6	Female*HSGPA	0.0246	0.1343	10.8330	11.8142	11.1582	0.0099	0.1337	10.8590	12.0038	11.0888
90	08	7	Female*SAT-CR	-1.0560	10.8330	5,701.2167	3,887.6132	4,604.0048	-0.4235	10.8590	5,700.1015	3,879.4736	4,606.9808
90	08	8	Female*SAT-M	-7.7078	11.8142	3,887.6132	5,735.1726	3,973.0678	-3.0912	12.0038	3,879.4736	5,675.7599	3,994.7904
90	08	9	Female*SAT-W	2.8181	11.1582	4,604.0048	3,973.0678	5,605.0321	1.1302	11.0888	4,606.9808	3,994.7904	5,597.0898
91	06	1	HSGPA	0.0000	0.2616	20.0129	21.0104	21.2060	0.0438	0.1312	10.4304	10.6236	10.6992
91	06	2	SAT-CR	0.0000	20.0129	9,776.0093	6,666.5290	7,730.1461	1.0683	10.4304	5,305.6457	3,531.6965	4,153.4568
91	06	3	SAT-M	0.0000	21.0104	6,666.5290	10,043.2576	6,621.9832	-6.3945	10.6236	3,531.6965	5,183.3162	3,505.5044
91	06	4	SAT-W	0.0000	21.2060	7,730.1461	6,621.9832	9,319.4634	4.3848	10.6992	4,153.4568	3,505.5044	4,966.4940
91	06	5	Female	0.5591	0.0438	1.0683	-6.3945	4.3848	0.2465	0.0193	0.4711	-2.8195	1.9334
91	06	6	Female*HSGPA	0.0438	0.1312	10.4304	10.6236	10.6992	0.0193	0.1292	10.3837	10.9034	10.5073
91	06	7	Female*SAT-CR	1.0683	10.4304	5,305.6457	3,531.6965	4,153.4568	0.4711	10.3837	5,304.5044	3,538.5278	4,148.7725
91	06	8	Female*SAT-M	-6.3943	10.6236	3,531.6965	5,183.3162	3,505.5044	-2.8195	10.9034	3,538.5278	5,142.4276	3,533.5421
91	06	9	Female*SAT-W	4.3846	10.6992	4,153.4568	3,505.5044	4,966.4940	1.9334	10.5073	4,148.7725	3,533.5421	4,947.2683
91	07	1	HSGPA	0.0000	0.2641	19.5178	20.5513	20.7180	0.0409	0.1327	9.8085	10.1287	10.3712
91	07	2	SAT-CR	0.0000	19.5178	9,622.9376	6,429.7373	7,736.1147	0.4871	9.8085	5,150.1075	3,374.2409	4,157.7708
91	07	3	SAT-M	0.0000	20.5513	6,429.7373	9,804.5455	6,491.8240	-6.7510	10.1287	3,374.2409	5,112.3364	3,463.3149
91	07	4	SAT-W	0.0000	20.7180	7,736.1147	6,491.8240	9,444.3311	4.2300	10.3712	4,157.7708	3,463.3149	5,089.7672
91	07	5	Female	0.5636	0.0409	0.4871	-6.7510	4.2300	0.2460	0.0178	0.2126	-2.9462	1.8460
91	07	6	Female*HSGPA	0.0409	0.1327	9.8085	10.1287	10.3712	0.0178	0.1310	9.7886	10.4047	10.1983
91	07	7	Female*SAT-CR	0.4871	9.8085	5,150.1075	3,374.2409	4,157.7708	0.2126	9.7886	5,149.8702	3,377.5293	4,155.7104
91	07	8	Female*SAT-M	-6.7508	10.1287	3,374.2409	5,112.3364	3,463.3149	-2.9462	10.4047	3,377.5293	5,066.7621	3,491.8706
91	07	9	Female*SAT-W	4.2299	10.3712	4,157.7708	3,463.3149	5,089.7672	1.8460	10.1983	4,155.7104	3,491.8706	5,071.8749

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
92	06	1	HSGPA	0.0000	0.3130	15.2224	14.9403	15.5289	0.0547	0.1457	8.7775	7.9196	8.0836
92	06	2	SAT-CR	0.0000	15.2224	8,010.0116	4,615.5770	5,944.4788	0.6125	8.7775	4,050.8021	2,330.9402	2,955.0318
92	06	3	SAT-M	0.0000	14.9403	4,615.5770	8,219.6009	4,628.3292	-8.1239	7.9196	2,330.9402	4,082.9042	2,277.4643
92	06	4	SAT-W	0.0000	15.5289	5,944.4788	4,628.3292	7,586.2924	3.9684	8.0836	2,955.0318	2,277.4643	3,676.0209
92	06	5	Female	0.5019	0.0547	0.6125	-8.1239	3.9684	0.2501	0.0272	0.3051	-4.0463	1.9765
92	06	6	Female*HSGPA	0.0547	0.1457	8.7775	7.9196	8.0836	0.0272	0.1427	8.7441	8.3636	7.8667
92	06	7	Female*SAT-CR	0.6123	8.7775	4,050.8021	2,330.9402	2,955.0318	0.3051	8.7441	4,050.4271	2,335.9147	2,952.6019
92	06	8	Female*SAT-M	-8.1220	7.9196	2,330.9402	4,082.9042	2,277.4643	-4.0463	8.3636	2,335.9147	4,016.9216	2,309.6954
92	06	9	Female*SAT-W	3.9674	8.0836	2,955.0318	2,277.4643	3,676.0209	1.9765	7.8667	2,952.6019	2,309.6954	3,660.2767
92	07	1	HSGPA	0.0000	0.3073	15.4994	15.5502	16.0656	0.0628	0.1393	7.9138	7.6536	8.1892
92	07	2	SAT-CR	0.0000	15.4994	8,478.2068	4,695.1019	6,282.9016	1.4621	7.9138	4,059.8747	2,343.2639	3,037.3198
92	07	3	SAT-M	0.0000	15.5502	4,695.1019	8,020.1223	4,674.1022	-6.8586	7.6536	2,343.2639	3,844.8037	2,328.1244
92	07	4	SAT-W	0.0000	16.0656	6,282.9016	4,674.1022	7,859.7302	4.2383	8.1892	3,037.3198	2,328.1244	3,810.7711
92	07	5	Female	0.4872	0.0628	1.4621	-6.8586	4.2383	0.2499	0.0322	0.7497	-3.5168	2.1732
92	07	6	Female*HSGPA	0.0628	0.1393	7.9138	7.6536	8.1892	0.0322	0.1354	7.8219	8.0844	7.9230
92	07	7	Female*SAT-CR	1.4618	7.9138	4,059.8747	2,343.2639	3,037.3198	0.7497	7.8219	4,057.7374	2,353.2898	3,031.1242
92	07	8	Female*SAT-M	-6.8572	7.6536	2,343.2639	3,844.8037	2,328.1244	-3.5168	8.0844	2,353.2898	3,797.7731	2,357.1873
92	07	9	Female*SAT-W	4.2374	8.1892	3,037.3198	2,328.1244	3,810.7711	2.1732	7.9230	3,031.1242	2,357.1873	3,792.8115
92	08	1	HSGPA	0.0000	0.2834	14.0799	15.9113	15.0795	0.0466	0.1435	8.4655	9.1114	8.5049
92	08	2	SAT-CR	0.0000	14.0799	8,169.8281	4,538.1420	6,091.2109	0.2402	8.4655	4,145.0304	2,333.7209	3,145.2098
92	08	3	SAT-M	0.0000	15.9113	4,538.1420	8,274.5532	4,710.9576	-7.3675	9.1114	2,333.7209	4,336.8792	2,523.2520
92	08	4	SAT-W	0.0000	15.0795	6,091.2109	4,710.9576	7,916.4885	3.9772	8.5049	3,145.2098	2,523.2520	4,080.9611
92	08	5	Female	0.5115	0.0466	0.2402	-7.3675	3.9772	0.2499	0.0228	0.1173	-3.5994	1.9430
92	08	6	Female*HSGPA	0.0466	0.1435	8.4655	9.1114	8.5049	0.0228	0.1413	8.4543	9.4547	8.3195
92	08	7	Female*SAT-CR	0.2401	8.4655	4,145.0304	2,333.7209	3,145.2098	0.1173	8.4543	4,144.9727	2,335.4898	3,144.2549
92	08	8	Female*SAT-M	-7.3660	9.1114	2,333.7209	4,336.8792	2,523.2520	-3.5994	9.4547	2,335.4898	4,282.6104	2,552.5477
92	08	9	Female*SAT-W	3.9763	8.5049	3,145.2098	2,523.2520	4,080.9611	1.9430	8.3195	3,144.2549	2,552.5477	4,065.1466
93	07	1	HSGPA	0.0000	0.4113	20.3730	23.5374	26.1121	0.0410	0.2283	12.8582	13.9552	14.9305
93	07	2	SAT-CR	0.0000	20.3730	7,925.1880	4,178.7335	6,094.4389	-1.0168	12.8582	4,400.2436	2,373.1749	3,257.3463
93	07	3	SAT-M	0.0000	23.5374	4,178.7335	7,362.6034	4,497.3315	-8.2188	13.9552	2,373.1749	4,295.9342	2,604.0140
93	07	4	SAT-W	0.0000	26.1121	6,094.4389	4,497.3315	7,637.0352	3.9784	14.9305	3,257.3463	2,604.0140	4,184.0138
93	07	5	Female	0.5753	0.0410	-1.0168	-8.2188	3.9784	0.2447	0.0174	-0.4318	-3.4903	1.6895
93	07	6	Female*HSGPA	0.0410	0.2283	12.8582	13.9552	14.9305	0.0174	0.2267	12.8999	14.2920	14.7674
93	07	7	Female*SAT-CR	-1.0152	12.8582	4,400.2436	2,373.1749	3,257.3463	-0.4318	12.8999	4,399.2114	2,364.8313	3,261.3851
93	07	8	Female*SAT-M	-8.2056	13.9552	2,373.1749	4,295.9342	2,604.0140	-3.4903	14.2920	2,364.8313	4,228.4944	2,636.6591
93	07	9	Female*SAT-W	3.9720	14.9305	3,257.3463	2,604.0140	4,184.0138	1.6895	14.7674	3,261.3851	2,636.6591	4,168.2115
93	08	1	HSGPA	0.0000	0.4441	21.2874	25.4003	24.1148	0.0529	0.2739	16.8979	18.1311	17.2599
93	08	2	SAT-CR	0.0000	21.2874	7,817.5893	4,203.6008	5,751.0354	-0.5466	16.8979	4,746.4150	2,776.8049	3,812.7326
93	08	3	SAT-M	0.0000	25.4003	4,203.6008	7,709.1258	4,421.1492	-6.9075	18.1311	2,776.8049	4,497.2519	2,925.7268
93	08	4	SAT-W	0.0000	24.1148	5,751.0354	4,421.1492	7,327.1820	4.0015	17.2599	3,812.7326	2,925.7268	4,744.1603
93	08	5	Female	0.5931	0.0529	-0.5466	-6.9075	4.0015	0.2416	0.0215	-0.2224	-2.8109	1.6283
93	08	6	Female*HSGPA	0.0528	0.2739	16.8979	18.1311	17.2599	0.0215	0.2711	16.9267	18.4959	17.0485
93	08	7	Female*SAT-CR	-0.5459	16.8979	4,746.4150	2,776.8049	3,812.7326	-0.2224	16.9267	4,746.1167	2,773.0343	3,814.9169
93	08	8	Female*SAT-M	-6.8987	18.1311	2,776.8049	4,497.2519	2,925.7268	-2.8109	18.4959	2,773.0343	4,449.5989	2,953.3320
93	08	9	Female*SAT-W	3.9964	17.2599	3,812.7326	2,925.7268	4,744.1603	1.6283	17.0485	3,814.9169	2,953.3320	4,728.1687

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
94	07	1	HSGPA	0.0000	0.3045	12.3772	13.4473	14.1184	0.0502	0.1824	8.9156	9.3805	9.3398
94	07	2	SAT-CR	0.0000	12.3772	8,141.1523	4,190.9574	6,194.5306	1.1638	8.9156	4,914.4324	2,549.2298	3,721.5879
94	07	3	SAT-M	0.0000	13.4473	4,190.9574	7,515.3537	4,224.5662	-6.9218	9.3805	2,549.2298	4,362.8645	2,600.4416
94	07	4	SAT-W	0.0000	14.1184	6,194.5306	4,224.5662	7,759.1512	3.2366	9.3398	3,721.5879	2,600.4416	4,647.3415
94	07	5	Female	0.6157	0.0502	1.1638	-6.9218	3.2366	0.2367	0.0193	0.4473	-2.6601	1.2439
94	07	6	Female*HSGPA	0.0502	0.1824	8.9156	9.3805	9.3398	0.0193	0.1799	8.8573	9.7278	9.1774
94	07	7	Female*SAT-CR	1.1636	8.9156	4,914.4324	2,549.2298	3,721.5879	0.4473	8.8573	4,913.0782	2,557.2838	3,717.8218
94	07	8	Female*SAT-M	-6.9206	9.3805	2,549.2298	4,362.8645	2,600.4416	-2.6601	9.7278	2,557.2838	4,314.9619	2,622.8408
94	07	9	Female*SAT-W	3.2361	9.3398	3,721.5879	2,600.4416	4,647.3415	1.2439	9.1774	3,717.8218	2,622.8408	4,636.8677
95	06	1	HSGPA	0.0000	0.2807	16.3491	15.5191	17.2372	0.0603	0.1242	8.5340	7.6746	8.3733
95	06	2	SAT-CR	0.0000	16.3491	7,412.4637	4,022.7214	5,253.1554	0.7422	8.5340	3,651.4640	1,876.7351	2,518.2562
95	06	3	SAT-M	0.0000	15.5191	4,022.7214	7,206.0267	3,876.5458	-6.2323	7.6746	1,876.7351	3,342.2092	1,859.1864
95	06	4	SAT-W	0.0000	17.2372	5,253.1554	3,876.5458	6,947.3343	3.9148	8.3733	2,518.2562	1,859.1864	3,255.7819
95	06	5	Female	0.4926	0.0603	0.7422	-6.2323	3.9148	0.2501	0.0306	0.3766	-3.1622	1.9863
95	06	6	Female*HSGPA	0.0602	0.1242	8.5340	7.6746	8.3733	0.0306	0.1206	8.4893	8.0500	8.1375
95	06	7	Female*SAT-CR	0.7419	8.5340	3,651.4640	1,876.7351	2,518.2562	0.3766	8.4893	3,650.9134	1,881.3588	2,515.3518
95	06	8	Female*SAT-M	-6.2296	7.6746	1,876.7351	3,342.2092	1,859.1864	-3.1622	8.0500	1,881.3588	3,303.3845	1,883.5740
95	06	9	Female*SAT-W	3.9131	8.3733	2,518.2562	1,859.1864	3,255.7819	1.9863	8.1375	2,515.3518	1,883.5740	3,240.4629
95	07	1	HSGPA	0.0000	0.2582	14.9129	14.2133	16.5571	0.0566	0.1190	7.4674	6.7531	8.2862
95	07	2	SAT-CR	0.0000	14.9129	7,253.1810	3,829.5537	5,523.1451	1.3147	7.4674	3,508.4738	1,838.7828	2,762.8452
95	07	3	SAT-M	0.0000	14.2133	3,829.5537	7,013.1331	3,835.5613	-5.5185	6.7531	1,838.7828	3,239.4736	1,859.1529
95	07	4	SAT-W	0.0000	16.5571	5,523.1451	3,835.5613	7,339.3320	5.4266	8.2862	2,762.8452	1,859.1529	3,642.7108
95	07	5	Female	0.5015	0.0566	1.3147	-5.5185	5.4266	0.2501	0.0282	0.6554	-2.7509	2.7051
95	07	6	Female*HSGPA	0.0566	0.1190	7.4674	6.7531	8.2862	0.0282	0.1158	7.3930	7.0653	7.9792
95	07	7	Female*SAT-CR	1.3142	7.4674	3,508.4738	1,838.7828	2,762.8452	0.6554	7.3930	3,506.7460	1,846.0352	2,755.7136
95	07	8	Female*SAT-M	-5.5164	6.7531	1,838.7828	3,239.4736	1,859.1529	-2.7509	7.0653	1,846.0352	3,209.0317	1,889.0879
95	07	9	Female*SAT-W	5.4245	8.2862	2,762.8452	1,859.1529	3,642.7108	2.7051	7.9792	2,755.7136	1,889.0879	3,613.2743
95	08	1	HSGPA	0.0000	0.2384	13.0777	12.1247	14.4799	0.0561	0.1200	7.5182	7.2204	8.0568
95	08	2	SAT-CR	0.0000	13.0777	6,653.7778	3,455.6241	4,888.8404	1.0576	7.5182	3,475.3212	1,856.6432	2,649.7640
95	08	3	SAT-M	0.0000	12.1247	3,455.6241	6,426.8524	3,657.0381	-5.6939	7.2204	1,856.6432	3,363.7290	1,985.2027
95	08	4	SAT-W	0.0000	14.4799	4,888.8404	3,657.0381	6,761.4692	4.3187	8.0568	2,649.7640	1,985.2027	3,655.7676
95	08	5	Female	0.5109	0.0561	1.0576	-5.6939	4.3187	0.2500	0.0275	0.5173	-2.7847	2.1121
95	08	6	Female*HSGPA	0.0561	0.1200	7.5182	7.2204	8.0568	0.0275	0.1169	7.4588	7.5399	7.8145
95	08	7	Female*SAT-CR	1.0572	7.5182	3,475.3212	1,856.6432	2,649.7640	0.5173	7.4588	3,474.2030	1,862.6631	2,645.1981
95	08	8	Female*SAT-M	-5.6918	7.2204	1,856.6432	3,363.7290	1,985.2027	-2.7847	7.5399	1,862.6631	3,331.3201	2,009.7839
95	08	9	Female*SAT-W	4.3171	8.0568	2,649.7640	1,985.2027	3,655.7676	2.1121	7.8145	2,645.1981	2,009.7839	3,637.1234
96	07	1	HSGPA	0.0000	0.3168	18.8281	18.5567	19.1050	0.0571	0.1751	11.0520	9.8908	11.3537
96	07	2	SAT-CR	0.0000	18.8281	10,990.6912	5,609.0386	8,050.7337	1.4024	11.0520	6,065.8733	2,935.8211	4,286.2708
96	07	3	SAT-M	0.0000	18.5567	5,609.0386	8,792.9316	5,320.6095	-4.4154	9.8908	2,935.8211	4,589.3567	2,796.0260
96	07	4	SAT-W	0.0000	19.1050	8,050.7337	5,320.6095	9,268.3042	4.7784	11.3537	4,286.2708	2,796.0260	5,004.4928
96	07	5	Female	0.5823	0.0571	1.4024	-4.4154	4.7784	0.2434	0.0239	0.5858	-1.8443	1.9959
96	07	6	Female*HSGPA	0.0571	0.1751	11.0520	9.8908	11.3537	0.0239	0.1718	10.9719	10.1428	11.0809
96	07	7	Female*SAT-CR	1.4012	11.0520	6,065.8733	2,935.8211	4,286.2708	0.5858	10.9719	6,063.9083	2,942.0078	4,279.5755
96	07	8	Female*SAT-M	-4.4115	9.8908	2,935.8211	4,589.3567	2,796.0260	-1.8443	10.1428	2,942.0078	4,569.8783	2,817.1057
96	07	9	Female*SAT-W	4.7741	11.3537	4,286.2708	2,796.0260	5,004.4928	1.9959	11.0809	4,279.5755	2,817.1057	4,981.6802

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
96	08	1	HSGPA	0.0000	0.3116	20.0636	21.0888	22.9678	0.0685	0.1515	11.5246	10.5128	12.1060
96	08	2	SAT-CR	0.0000	20.0636	11,860.9971	5,893.6095	9,289.4917	4.6518	11.5246	6,177.0146	3,023.5300	4,951.9332
96	08	3	SAT-M	0.0000	21.0888	5,893.6095	9,791.1205	6,332.2997	-1.9532	10.5128	3,023.5300	5,138.1834	3,297.4859
96	08	4	SAT-W	0.0000	22.9678	9,289.4917	6,332.2997	11,027.5400	9.3243	12.1060	4,951.9332	3,297.4859	6,005.1156
96	08	5	Female	0.5693	0.0685	4.6518	-1.9532	9.3243	0.2454	0.0295	2.0033	-0.8412	4.0156
96	08	6	Female*HSGPA	0.0684	0.1515	11.5246	10.5128	12.1060	0.0295	0.1469	11.2063	10.6465	11.4681
96	08	7	Female*SAT-CR	4.6472	11.5246	6,177.0146	3,023.5300	4,951.9332	2.0033	11.2063	6,155.3969	3,032.6070	4,908.6014
96	08	8	Female*SAT-M	-1.9513	10.5128	3,023.5300	5,138.1834	3,297.4859	-0.8412	10.6465	3,032.6070	5,134.3720	3,315.6806
96	08	9	Female*SAT-W	9.3151	12.1060	4,951.9332	3,297.4859	6,005.1156	4.0156	11.4681	4,908.6014	3,315.6806	5,918.2588
97	06	1	HSGPA	0.0000	0.1759	13.0802	11.9020	13.6770	0.0279	0.0918	7.3309	6.6090	7.1367
97	06	2	SAT-CR	0.0000	13.0802	8,862.6511	4,084.5699	6,594.2429	0.8412	7.3309	5,224.4592	2,474.9475	3,828.7131
97	06	3	SAT-M	0.0000	11.9020	4,084.5699	7,336.5713	4,193.1697	-7.6494	6.6090	2,474.9475	4,409.2618	2,448.5519
97	06	4	SAT-W	0.0000	13.6770	6,594.2429	4,193.1697	8,080.4682	2.7955	7.1367	3,828.7131	2,448.5519	4,585.2232
97	06	5	Female	0.5887	0.0279	0.8412	-7.6494	2.7955	0.2422	0.0115	0.3460	-3.1465	1.1499
97	06	6	Female*HSGPA	0.0279	0.0918	7.3309	6.6090	7.1367	0.0115	0.0910	7.3074	6.8227	7.0585
97	06	7	Female*SAT-CR	0.8410	7.3309	5,224.4592	2,474.9475	3,828.7131	0.3460	7.3074	5,223.7517	2,481.3810	3,826.3619
97	06	8	Female*SAT-M	-7.6481	6.6090	2,474.9475	4,409.2618	2,448.5519	-3.1465	6.8227	2,481.3810	4,350.7585	2,469.9326
97	06	9	Female*SAT-W	2.7951	7.1367	3,828.7131	2,448.5519	4,585.2232	1.1499	7.0585	3,826.3619	2,469.9326	4,577.4095
98	06	1	HSGPA	0.0000	0.2554	15.0712	16.7651	16.3405	0.0384	0.1181	7.3016	7.9179	7.4142
98	06	2	SAT-CR	0.0000	15.0712	7,583.3540	4,564.2532	5,776.7559	-0.3634	7.3016	3,780.9219	2,283.7689	2,843.0510
98	06	3	SAT-M	0.0000	16.7651	4,564.2532	7,886.1621	4,624.7646	-8.0965	7.9179	2,283.7689	3,922.5054	2,299.6917
98	06	4	SAT-W	0.0000	16.3405	5,776.7559	4,624.7646	7,727.7048	3.7538	7.4142	2,843.0510	2,299.6917	3,768.3309
98	06	5	Female	0.5156	0.0384	-0.3634	-8.0965	3.7538	0.2498	0.0186	-0.1760	-3.9219	1.8183
98	06	6	Female*HSGPA	0.0384	0.1181	7.3016	7.9179	7.4142	0.0186	0.1166	7.3156	8.2290	7.2700
98	06	7	Female*SAT-CR	-0.3633	7.3016	3,780.9219	2,283.7689	2,843.0510	-0.1760	7.3156	3,780.7898	2,280.8273	2,844.4149
98	06	8	Female*SAT-M	-8.0958	7.9179	2,283.7689	3,922.5054	2,299.6917	-3.9219	8.2290	2,280.8273	3,856.9571	2,330.0817
98	06	9	Female*SAT-W	3.7535	7.4142	2,843.0510	2,299.6917	3,768.3309	1.8183	7.2700	2,844.4149	2,330.0817	3,754.2412
99	08	1	HSGPA	0.0000	0.2476	19.9310	19.3629	20.4915	0.0362	0.1410	11.8995	11.6661	11.8730
99	08	2	SAT-CR	0.0000	19.9310	8,904.1748	5,429.9110	6,821.9913	-0.2047	11.8995	5,526.5545	3,228.2311	4,232.0662
99	08	3	SAT-M	0.0000	19.3629	5,429.9110	8,697.2403	5,335.9318	-8.3140	11.6661	3,228.2311	5,069.1198	3,211.2928
99	08	4	SAT-W	0.0000	20.4915	6,821.9913	5,335.9318	8,729.3218	4.0869	11.8730	4,232.0662	3,211.2928	5,420.4102
99	08	5	Female	0.6283	0.0362	-0.2047	-8.3140	4.0869	0.2336	0.0135	-0.0761	-3.0903	1.5191
99	08	6	Female*HSGPA	0.0362	0.1410	11.8995	11.6661	11.8730	0.0135	0.1397	11.9069	11.9672	11.7250
99	08	7	Female*SAT-CR	-0.2046	11.8995	5,526.5545	3,228.2311	4,232.0662	-0.0761	11.9069	5,526.5127	3,226.5301	4,232.9024
99	08	8	Female*SAT-M	-8.3108	11.6661	3,228.2311	5,069.1198	3,211.2928	-3.0903	11.9672	3,226.5301	5,000.0240	3,245.2580
99	08	9	Female*SAT-W	4.0853	11.8730	4,232.0662	3,211.2928	5,420.4102	1.5191	11.7250	4,232.9024	3,245.2580	5,403.7140
100	06	1	HSGPA	0.0000	0.2725	24.1979	25.6198	25.4796	0.0332	0.0682	6.6938	6.3032	7.0867
100	06	2	SAT-CR	0.0000	24.1979	10,847.3784	7,773.2680	8,709.0236	1.5304	6.6938	3,163.9582	2,208.3315	2,499.2494
100	06	3	SAT-M	0.0000	25.6198	7,773.2680	11,984.3585	7,843.1788	-6.0871	6.3032	2,208.3315	3,451.5753	2,144.8130
100	06	4	SAT-W	0.0000	25.4796	8,709.0236	7,843.1788	10,472.4935	4.0896	7.0867	2,499.2494	2,144.8130	2,964.4058
100	06	5	Female	0.2923	0.0332	1.5304	-6.0871	4.0896	0.2069	0.0235	1.0830	-4.3078	2.8942
100	06	6	Female*HSGPA	0.0332	0.0682	6.6938	6.3032	7.0867	0.0235	0.0671	6.6430	6.5053	6.9509
100	06	7	Female*SAT-CR	1.5303	6.6938	3,163.9582	2,208.3315	2,499.2494	1.0830	6.6430	3,161.6163	2,217.6465	2,492.9911
100	06	8	Female*SAT-M	-6.0867	6.3032	2,208.3315	3,451.5753	2,144.8130	-4.3078	6.5053	2,217.6465	3,414.5245	2,169.7055
100	06	9	Female*SAT-W	4.0894	7.0867	2,499.2494	2,144.8130	2,964.4058	2.8942	6.9509	2,492.9911	2,169.7055	2,947.6819

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
100	07	1	HSGPA	0.0000	0.2762	24.3968	26.3585	25.7598	0.0270	0.0732	6.5872	6.6174	6.8185
100	07	2	SAT-CR	0.0000	24.3968	11,002.7055	7,558.0421	8,846.8169	0.5753	6.5872	3,219.8211	2,115.4325	2,575.3657
100	07	3	SAT-M	0.0000	26.3585	7,558.0421	11,642.5091	7,662.6696	-6.0580	6.6174	2,115.4325	3,343.2170	2,078.6528
100	07	4	SAT-W	0.0000	25.7598	8,846.8169	7,662.6696	10,678.9418	3.8512	6.8185	2,575.3657	2,078.6528	3,086.7175
100	07	5	Female	0.3005	0.0270	0.5753	-6.0580	3.8512	0.2102	0.0189	0.4025	-4.2377	2.6940
100	07	6	Female*HSGPA	0.0270	0.0732	6.5872	6.6174	6.8185	0.0189	0.0725	6.5716	6.7812	6.7144
100	07	7	Female*SAT-CR	0.5753	6.5872	3,219.8211	2,115.4325	2,575.3657	0.4025	6.5716	3,219.4901	2,118.9176	2,573.1501
100	07	8	Female*SAT-M	-6.0576	6.6174	2,115.4325	3,343.2170	2,078.6528	-4.2377	6.7812	2,118.9176	3,306.5199	2,101.9821
100	07	9	Female*SAT-W	3.8510	6.8185	2,575.3657	2,078.6528	3,086.7175	2.6940	6.7144	2,573.1501	2,101.9821	3,071.8864
100	08	1	HSGPA	0.0000	0.2687	22.7969	26.1638	24.5828	0.0284	0.0698	5.8785	6.5876	6.7794
100	08	2	SAT-CR	0.0000	22.7969	11,076.6833	7,793.8868	8,853.2701	0.1403	5.8785	3,167.1798	2,176.9240	2,593.1574
100	08	3	SAT-M	0.0000	26.1638	7,793.8868	12,230.8316	8,025.6263	-5.8785	6.5876	2,176.9240	3,610.9726	2,263.0533
100	08	4	SAT-W	0.0000	24.5828	8,853.2701	8,025.6263	10,750.9899	4.3665	6.7794	2,593.1574	2,263.0533	3,197.5968
100	08	5	Female	0.3028	0.0284	0.1403	-5.8785	4.3665	0.2111	0.0198	0.0978	-4.0988	3.0445
100	08	6	Female*HSGPA	0.0284	0.0698	5.8785	6.5876	6.7794	0.0198	0.0690	5.8746	6.7545	6.6554
100	08	7	Female*SAT-CR	0.1403	5.8785	3,167.1798	2,176.9240	2,593.1574	0.0978	5.8746	3,167.1601	2,177.7490	2,592.5447
100	08	8	Female*SAT-M	-5.8782	6.5876	2,176.9240	3,610.9726	2,263.0533	-4.0988	6.7545	2,177.7490	3,576.4177	2,288.7202
100	08	9	Female*SAT-W	4.3662	6.7794	2,593.1574	2,263.0533	3,197.5968	3.0445	6.6554	2,592.5447	2,288.7202	3,178.5318
101	07	1	HSGPA	0.0000	0.1981	14.6672	14.7715	15.5098	0.0207	0.0756	5.1432	5.0293	5.2684
101	07	2	SAT-CR	0.0000	14.6672	9,743.0381	5,059.9768	7,519.1906	0.7247	5.1432	4,129.4896	2,113.1129	3,165.7499
101	07	3	SAT-M	0.0000	14.7715	5,059.9768	9,013.5348	5,432.4977	-7.1980	5.0293	2,113.1129	4,026.1079	2,257.9086
101	07	4	SAT-W	0.0000	15.5098	7,519.1906	5,432.4977	9,291.9639	3.0917	5.2684	3,165.7499	2,257.9086	3,880.1322
101	07	5	Female	0.4392	0.0207	0.7247	-7.1980	3.0917	0.2463	0.0116	0.4064	-4.0366	1.7338
101	07	6	Female*HSGPA	0.0207	0.0756	5.1432	5.0293	5.2684	0.0116	0.0752	5.1282	5.1783	5.2044
101	07	7	Female*SAT-CR	0.7247	5.1432	4,129.4896	2,113.1129	3,165.7499	0.4064	5.1282	4,128.9644	2,118.3293	3,163.5094
101	07	8	Female*SAT-M	-7.1978	5.0293	2,113.1129	4,026.1079	2,257.9086	-4.0366	5.1783	2,118.3293	3,974.2980	2,280.1618
101	07	9	Female*SAT-W	3.0916	5.2684	3,165.7499	2,257.9086	3,880.1322	1.7338	5.2044	3,163.5094	2,280.1618	3,870.5741
101	08	1	HSGPA	0.0000	0.1932	13.2878	14.3154	14.4766	0.0205	0.0702	4.4431	4.6105	4.8797
101	08	2	SAT-CR	0.0000	13.2878	9,606.4016	4,616.0103	7,384.3376	1.1636	4.4431	3,952.8721	1,791.5381	3,040.1849
101	08	3	SAT-M	0.0000	14.3154	4,616.0103	8,973.5442	5,199.0330	-7.0300	4.6105	1,791.5381	3,911.4254	2,041.6977
101	08	4	SAT-W	0.0000	14.4766	7,384.3376	5,199.0330	9,277.4411	4.4897	4.8797	3,040.1849	2,041.6977	3,825.6352
101	08	5	Female	0.4334	0.0205	1.1636	-7.0300	4.4897	0.2456	0.0116	0.6593	-3.9830	2.5437
101	08	6	Female*HSGPA	0.0205	0.0702	4.4431	4.6105	4.8797	0.0116	0.0698	4.4192	4.7548	4.7875
101	08	7	Female*SAT-CR	1.1636	4.4431	3,952.8721	1,791.5381	3,040.1849	0.6593	4.4192	3,951.5182	1,799.7180	3,034.9608
101	08	8	Female*SAT-M	-7.0297	4.6105	1,791.5381	3,911.4254	2,041.6977	-3.9830	4.7548	1,799.7180	3,862.0067	2,073.2588
101	08	9	Female*SAT-W	4.4895	4.8797	3,040.1849	2,041.6977	3,825.6352	2.5437	4.7875	3,034.9608	2,073.2588	3,805.4789
102	06	1	HSGPA	0.0000	0.2571	16.5512	18.9788	18.0638	0.0325	0.1197	8.6472	9.4192	9.0519
102	06	2	SAT-CR	0.0000	16.5512	10,616.3748	6,159.4220	8,346.0138	-0.8680	8.6472	5,529.5989	3,237.4310	4,366.6134
102	06	3	SAT-M	0.0000	18.9788	6,159.4220	10,393.8751	6,275.3652	-9.8361	9.4192	3,237.4310	5,320.4635	3,290.2441
102	06	4	SAT-W	0.0000	18.0638	8,346.0138	6,275.3652	9,926.3398	2.3524	9.0519	4,366.6134	3,290.2441	5,083.7283
102	06	5	Female	0.5192	0.0325	-0.8680	-9.8361	2.3524	0.2496	0.0156	-0.4173	-4.7288	1.1310
102	06	6	Female*HSGPA	0.0325	0.1197	8.6472	9.4192	9.0519	0.0156	0.1187	8.6754	9.7390	8.9754
102	06	7	Female*SAT-CR	-0.8680	8.6472	5,529.5989	3,237.4310	4,366.6134	-0.4173	8.6754	5,528.8455	3,228.8937	4,368.6553
102	06	8	Female*SAT-M	-9.8357	9.4192	3,237.4310	5,320.4635	3,290.2441	-4.7288	9.7390	3,228.8937	5,223.7193	3,313.3819
102	06	9	Female*SAT-W	2.3523	9.0519	4,366.6134	3,290.2441	5,083.7283	1.1310	8.9754	4,368.6553	3,313.3819	5,078.1946

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
102	08	1	HSGPA	0.0000	0.2439	14.4897	17.7485	16.3119	0.0283	0.1130	7.3447	8.6512	7.9829
102	08	2	SAT-CR	0.0000	14.4897	10,201.5272	5,372.3539	7,713.9586	-1.0010	7.3447	5,176.1725	2,746.6079	3,983.9254
102	08	3	SAT-M	0.0000	17.7485	5,372.3539	10,060.7500	5,724.7603	-9.7344	8.6512	2,746.6079	5,152.1314	2,959.0649
102	08	4	SAT-W	0.0000	16.3119	7,713.9586	5,724.7603	9,303.5137	2.5893	7.9829	3,983.9254	2,959.0649	4,786.1705
102	08	5	Female	0.5223	0.0283	-1.0010	-9.7344	2.5893	0.2495	0.0135	-0.4781	-4.6497	1.2368
102	08	6	Female*HSGPA	0.0283	0.1130	7.3447	8.6512	7.9829	0.0135	0.1122	7.3730	8.9268	7.9095
102	08	7	Female*SAT-CR	-1.0010	7.3447	5,176.1725	2,746.6079	3,983.9254	-0.4781	7.3730	5,175.1705	2,736.8640	3,986.5172
102	08	8	Female*SAT-M	-9.7341	8.6512	2,746.6079	5,152.1314	2,959.0649	-4.6497	8.9268	2,736.8640	5,057.3756	2,984.2689
102	08	9	Female*SAT-W	2.5892	7.9829	3,983.9254	2,959.0649	4,786.1705	1.2368	7.9095	3,986.5172	2,984.2689	4,779.4665
103	06	1	HSGPA	0.0000	0.2971	19.6232	23.2918	17.4246	0.0353	0.1492	11.4902	12.4486	9.3422
103	06	2	SAT-CR	0.0000	19.6232	9,478.1295	6,784.8472	6,746.3349	-1.0682	11.4902	5,158.9020	3,675.2326	3,699.4074
103	06	3	SAT-M	0.0000	23.2918	6,784.8472	9,926.8740	5,754.6771	-7.2104	12.4486	3,675.2326	5,220.9712	3,096.6575
103	06	4	SAT-W	0.0000	17.4246	6,746.3349	5,754.6771	7,687.7580	3.7539	9.3422	3,699.4074	3,096.6575	4,141.5688
103	06	5	Female	0.5517	0.0353	-1.0682	-7.2104	3.7539	0.2475	0.0158	-0.4789	-3.2327	1.6831
103	06	6	Female*HSGPA	0.0353	0.1492	11.4902	12.4486	9.3422	0.0158	0.1480	11.5279	12.7032	9.2096
103	06	7	Female*SAT-CR	-1.0675	11.4902	5,158.9020	3,675.2326	3,699.4074	-0.4789	11.5279	5,157.7617	3,667.5357	3,703.4146
103	06	8	Female*SAT-M	-7.2055	12.4486	3,675.2326	5,220.9712	3,096.6575	-3.2327	12.7032	3,667.5357	5,169.0168	3,123.7065
103	06	9	Female*SAT-W	3.7514	9.3422	3,699.4074	3,096.6575	4,141.5688	1.6831	9.2096	3,703.4146	3,123.7065	4,127.4863
103	07	1	HSGPA	0.0000	0.2997	18.3539	21.6003	19.0463	0.0414	0.1628	10.8935	12.0885	10.7297
103	07	2	SAT-CR	0.0000	18.3539	9,156.9815	5,992.0595	6,450.7628	-2.9233	10.8935	4,921.0624	3,112.8312	3,516.0336
103	07	3	SAT-M	0.0000	21.6003	5,992.0595	8,928.8442	5,324.6994	-7.2528	12.0885	3,112.8312	4,659.0402	2,881.8561
103	07	4	SAT-W	0.0000	19.0463	6,450.7628	5,324.6994	7,534.5526	2.8917	10.7297	3,516.0336	2,881.8561	4,121.1860
103	07	5	Female	0.5811	0.0414	-2.9233	-7.2528	2.8917	0.2436	0.0173	-1.2247	-3.0385	1.2115
103	07	6	Female*HSGPA	0.0413	0.1628	10.8935	12.0885	10.7297	0.0173	0.1611	11.0144	12.3882	10.6102
103	07	7	Female*SAT-CR	-2.9214	10.8935	4,921.0624	3,112.8312	3,516.0336	-1.2247	11.0144	4,912.5222	3,091.6426	3,524.4816
103	07	8	Female*SAT-M	-7.2482	12.0885	3,112.8312	4,659.0402	2,881.8561	-3.0385	12.3882	3,091.6426	4,606.4701	2,902.8160
103	07	9	Female*SAT-W	2.8899	10.7297	3,516.0336	2,881.8561	4,121.1860	1.2115	10.6102	3,524.4816	2,902.8160	4,112.8293
103	08	1	HSGPA	0.0000	0.2999	20.9204	23.1310	19.6011	0.0378	0.1625	11.9939	12.6248	10.8834
103	08	2	SAT-CR	0.0000	20.9204	9,654.9143	6,378.1320	6,907.3920	-0.8487	11.9939	5,063.6244	3,149.6271	3,593.7373
103	08	3	SAT-M	0.0000	23.1310	6,378.1320	9,597.3753	5,793.3330	-6.6369	12.6248	3,149.6271	4,651.4908	2,909.9762
103	08	4	SAT-W	0.0000	19.6011	6,907.3920	5,793.3330	7,972.9908	3.7189	10.8834	3,593.7373	2,909.9762	4,260.4247
103	08	5	Female	0.5742	0.0378	-0.8487	-6.6369	3.7189	0.2446	0.0161	-0.3614	-2.8259	1.5834
103	08	6	Female*HSGPA	0.0378	0.1625	11.9939	12.6248	10.8834	0.0161	0.1610	12.0260	12.8758	10.7428
103	08	7	Female*SAT-CR	-0.8483	11.9939	5,063.6244	3,149.6271	3,593.7373	-0.3614	12.0260	5,062.9044	3,143.9973	3,596.8918
103	08	8	Female*SAT-M	-6.6332	12.6248	3,149.6271	4,651.4908	2,909.9762	-2.8259	12.8758	3,143.9973	4,607.4668	2,934.6444
103	08	9	Female*SAT-W	3.7168	10.8834	3,593.7373	2,909.9762	4,260.4247	1.5834	10.7428	3,596.8918	2,934.6444	4,246.6022
104	07	1	HSGPA	0.0000	0.1906	10.2563	9.7638	10.7206	0.0318	0.0847	5.3894	4.4301	5.4456
104	07	2	SAT-CR	0.0000	10.2563	7,078.9837	3,479.5881	4,831.3651	0.0420	5.3894	3,676.4525	1,884.1224	2,543.1187
104	07	3	SAT-M	0.0000	9.7638	3,479.5881	6,680.6687	3,491.6177	-6.3367	4.4301	1,884.1224	3,502.5978	1,914.6665
104	07	4	SAT-W	0.0000	10.7206	4,831.3651	3,491.6177	6,669.2999	3.4862	5.4456	2,543.1187	1,914.6665	3,421.7567
104	07	5	Female	0.5084	0.0318	0.0420	-6.3367	3.4862	0.2500	0.0156	0.0206	-3.1149	1.7137
104	07	6	Female*HSGPA	0.0318	0.0847	5.3894	4.4301	5.4456	0.0156	0.0837	5.3880	4.6318	5.3347
104	07	7	Female*SAT-CR	0.0420	5.3894	3,676.4525	1,884.1224	2,543.1187	0.0206	5.3880	3,676.4507	1,884.3883	2,542.9724
104	07	8	Female*SAT-M	-6.3353	4.4301	1,884.1224	3,502.5978	1,914.6665	-3.1149	4.6318	1,884.3883	3,462.4531	1,936.7524
104	07	9	Female*SAT-W	3.4854	5.4456	2,543.1187	1,914.6665	3,421.7567	1.7137	5.3347	2,542.9724	1,936.7524	3,409.6059



## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
105	08	1	HSGPA	0.0000	0.2939	20.5308	24.1764	21.9399	0.0494	0.1412	11.2182	12.7701	11.8718
105	08	2	SAT-CR	0.0000	20.5308	7,364.8003	5,116.3086	5,527.2495	-0.8772	11.2182	3,694.4349	2,639.3076	2,924.3660
105	08	3	SAT-M	0.0000	24.1764	5,116.3086	8,634.5034	4,860.4031	-7.0360	12.7701	2,639.3076	4,446.1063	2,611.7840
105	08	4	SAT-W	0.0000	21.9399	5,527.2495	4,860.4031	7,298.6113	5.0538	11.8718	2,924.3660	2,611.7840	3,821.7301
105	08	5	Female	0.5141	0.0494	-0.8772	-7.0360	5.0538	0.2499	0.0240	-0.4263	-3.4188	2.4557
105	08	6	Female*HSGPA	0.0494	0.1412	11.2182	12.7701	11.8718	0.0240	0.1387	11.2615	13.1177	11.6221
105	08	7	Female*SAT-CR	-0.8768	11.2182	3,694.4349	2,639.3076	2,924.3660	-0.4263	11.2615	3,693.6657	2,633.1385	2,928.7972
105	08	8	Female*SAT-M	-7.0324	12.7701	2,639.3076	4,446.1063	2,611.7840	-3.4188	13.1177	2,633.1385	4,396.6266	2,647.3246
105	08	9	Female*SAT-W	5.0513	11.8718	2,924.3660	2,611.7840	3,821.7301	2.4557	11.6221	2,928.7972	2,647.3246	3,796.2017
106	06	1	HSGPA	0.0000	0.2611	16.8784	18.2089	17.5361	0.0447	0.1150	7.3059	7.2860	7.5822
106	06	2	SAT-CR	0.0000	16.8784	8,399.6178	5,465.9203	6,429.2675	1.9730	7.3059	4,017.9595	2,497.9188	3,050.0980
106	06	3	SAT-M	0.0000	18.2089	5,465.9203	8,758.1901	5,353.5357	-6.2467	7.2860	2,497.9188	3,945.0277	2,473.7767
106	06	4	SAT-W	0.0000	17.5361	6,429.2675	5,353.5357	8,169.5320	6.2943	7.5822	3,050.0980	2,473.7767	3,884.1730
106	06	5	Female	0.4997	0.0447	1.9730	-6.2467	6.2943	0.2500	0.0224	0.9871	-3.1254	3.1492
106	06	6	Female*HSGPA	0.0447	0.1150	7.3059	7.2860	7.5822	0.0224	0.1130	7.2177	7.5653	7.3007
106	06	7	Female*SAT-CR	1.9729	7.3059	4,017.9595	2,497.9188	3,050.0980	0.9871	7.2177	4,014.0671	2,510.2426	3,037.6802
106	06	8	Female*SAT-M	-6.2464	7.2860	2,497.9188	3,945.0277	2,473.7767	-3.1254	7.5653	2,510.2426	3,906.0085	2,513.0934
106	06	9	Female*SAT-W	6.2940	7.5822	3,050.0980	2,473.7767	3,884.1730	3.1492	7.3007	3,037.6802	2,513.0934	3,844.5566
106	07	1	HSGPA	0.0000	0.2694	18.4793	19.8937	19.6021	0.0446	0.1112	7.3805	7.4179	7.8237
106	07	2	SAT-CR	0.0000	18.4793	8,778.7337	5,750.2638	6,963.6499	2.3809	7.3805	3,945.5600	2,424.5032	3,114.7157
106	07	3	SAT-M	0.0000	19.8937	5,750.2638	8,935.0939	5,711.4991	-5.6492	7.4179	2,424.5032	3,875.2136	2,454.2423
106	07	4	SAT-W	0.0000	19.6021	6,963.6499	5,711.4991	8,741.8475	6.0126	7.8237	3,114.7157	2,454.2423	3,969.0607
106	07	5	Female	0.4892	0.0446	2.3809	-5.6492	6.0126	0.2499	0.0228	1.2162	-2.8857	3.0713
106	07	6	Female*HSGPA	0.0446	0.1112	7.3805	7.4179	7.8237	0.0228	0.1092	7.2742	7.6699	7.5554
106	07	7	Female*SAT-CR	2.3808	7.3805	3,945.5600	2,424.5032	3,114.7157	1.2162	7.2742	3,939.8915	2,437.9529	3,100.4009
106	07	8	Female*SAT-M	-5.6489	7.4179	2,424.5032	3,875.2136	2,454.2423	-2.8857	7.6699	2,437.9529	3,843.3015	2,488.2072
106	07	9	Female*SAT-W	6.0123	7.8237	3,114.7157	2,454.2423	3,969.0607	3.0713	7.5554	3,100.4009	2,488.2072	3,932.9109
106	08	1	HSGPA	0.0000	0.2583	17.8973	19.5233	19.0510	0.0415	0.1038	6.7678	6.9938	7.3650
106	08	2	SAT-CR	0.0000	17.8973	8,745.6313	5,836.6165	6,982.0460	2.4489	6.7678	3,808.8307	2,396.2663	3,062.6609
106	08	3	SAT-M	0.0000	19.5233	5,836.6165	9,095.1962	5,896.8859	-5.3846	6.9938	2,396.2663	3,802.1102	2,457.1431
106	08	4	SAT-W	0.0000	19.0510	6,982.0460	5,896.8859	8,933.9620	7.6673	7.3650	3,062.6609	2,457.1431	3,977.5720
106	08	5	Female	0.4793	0.0415	2.4489	-5.3846	7.6673	0.2496	0.0216	1.2752	-2.8038	3.9925
106	08	6	Female*HSGPA	0.0415	0.1038	6.7678	6.9938	7.3650	0.0216	0.1021	6.6663	7.2171	7.0471
106	08	7	Female*SAT-CR	2.4488	6.7678	3,808.8307	2,396.2663	3,062.6609	1.2752	6.6663	3,802.8337	2,409.4522	3,043.8850
106	08	8	Female*SAT-M	-5.3843	6.9938	2,396.2663	3,802.1102	2,457.1431	-2.8038	7.2171	2,409.4522	3,773.1180	2,498.4264
106	08	9	Female*SAT-W	7.6669	7.3650	3,062.6609	2,457.1431	3,977.5720	3.9925	7.0471	3,043.8850	2,498.4264	3,918.7869
107	08	1	HSGPA	0.0000	0.3297	14.8111	14.9541	17.1937	0.0703	0.1555	9.0179	8.9281	10.0478
107	08	2	SAT-CR	0.0000	14.8111	7,042.2765	4,082.5867	5,294.7671	1.6348	9.0179	3,523.6491	2,081.8935	2,691.3909
107	08	3	SAT-M	0.0000	14.9541	4,082.5867	7,548.0753	4,220.7329	-6.0300	8.9281	2,081.8935	3,692.2846	2,161.3299
107	08	4	SAT-W	0.0000	17.1937	5,294.7671	4,220.7329	7,138.2618	5.3045	10.0478	2,691.3909	2,161.3299	3,642.6495
107	08	5	Female	0.4832	0.0703	1.6348	-6.0300	5.3045	0.2498	0.0363	0.8449	-3.1163	2.7414
107	08	6	Female*HSGPA	0.0702	0.1555	9.0179	8.9281	10.0478	0.0363	0.1506	8.9031	9.3516	9.6753
107	08	7	Female*SAT-CR	1.6341	9.0179	3,523.6491	2,081.8935	2,691.3909	0.8449	8.9031	3,520.9777	2,091.7468	2,682.7230
107	08	8	Female*SAT-M	-6.0272	8.9281	2,081.8935	3,692.2846	2,161.3299	-3.1163	9.3516	2,091.7468	3,655.9405	2,193.3017
107	08	9	Female*SAT-W	5.3021	10.0478	2,691.3909	2,161.3299	3,642.6495	2.7414	9.6753	2,682.7230	2,193.3017	3,614.5240

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
108	06	1	HSGPA	0.0000	0.3219	21.8054	21.6527	20.3701	0.0586	0.1702	12.4088	12.8581	11.8876
108	06	2	SAT-CR	0.0000	21.8054	8,770.6806	5,638.6374	6,636.3013	3.4493	12.4088	4,812.2612	3,070.5786	3,706.2399
108	06	3	SAT-M	0.0000	21.6527	5,638.6374	9,413.5067	5,464.2745	-4.7540	12.8581	3,070.5786	5,041.3887	3,121.5883
108	06	4	SAT-W	0.0000	20.3701	6,636.3013	5,464.2745	8,052.0361	6.9175	11.8876	3,706.2399	3,121.5883	4,456.8451
108	06	5	Female	0.5608	0.0586	3.4493	-4.7540	6.9175	0.2465	0.0258	1.5149	-2.0879	3.0380
108	06	6	Female*HSGPA	0.0586	0.1702	12.4088	12.8581	11.8876	0.0258	0.1668	12.2067	13.1366	11.4823
108	06	7	Female*SAT-CR	3.4470	12.4088	4,812.2612	3,070.5786	3,706.2399	1.5149	12.2067	4,800.3715	3,086.9656	3,682.3954
108	06	8	Female*SAT-M	-4.7509	12.8581	3,070.5786	5,041.3887	3,121.5883	-2.0879	13.1366	3,086.9656	5,018.8032	3,154.4522
108	06	9	Female*SAT-W	6.9129	11.8876	3,706.2399	3,121.5883	4,456.8451	3.0380	11.4823	3,682.3954	3,154.4522	4,409.0251
108	07	1	HSGPA	0.0000	0.3179	17.8205	17.5660	18.7730	0.0446	0.1769	10.6701	11.0999	11.4888
108	07	2	SAT-CR	0.0000	17.8205	8,592.1008	5,460.0607	6,485.4608	-1.5081	10.6701	5,029.5406	3,276.8431	3,950.9043
108	07	3	SAT-M	0.0000	17.5660	5,460.0607	8,906.7452	5,279.5301	-7.9020	11.0999	3,276.8431	4,980.9111	3,280.2668
108	07	4	SAT-W	0.0000	18.7730	6,485.4608	5,279.5301	8,067.7571	2.9006	11.4888	3,950.9043	3,280.2668	4,939.4131
108	07	5	Female	0.5862	0.0446	-1.5081	-7.9020	2.9006	0.2427	0.0185	-0.6240	-3.2697	1.2002
108	07	6	Female*HSGPA	0.0446	0.1769	10.6701	11.0999	11.4888	0.0185	0.1749	10.7374	11.4522	11.3595
108	07	7	Female*SAT-CR	-1.5073	10.6701	5,029.5406	3,276.8431	3,950.9043	-0.6240	10.7374	5,027.2674	3,264.9324	3,955.2764
108	07	8	Female*SAT-M	-7.8976	11.0999	3,276.8431	4,980.9111	3,280.2668	-3.2697	11.4522	3,264.9324	4,918.5039	3,303.1748
108	07	9	Female*SAT-W	2.8990	11.4888	3,950.9043	3,280.2668	4,939.4131	1.2002	11.3595	3,955.2764	3,303.1748	4,931.0042
109	06	1	HSGPA	0.0000	0.2699	23.2606	25.4450	24.5072	0.0273	0.1249	11.1157	11.8458	11.3626
109	06	2	SAT-CR	0.0000	23.2606	11,946.1956	8,755.7791	9,869.7764	-0.7671	11.1157	6,107.4445	4,461.6552	5,013.0083
109	06	3	SAT-M	0.0000	25.4450	8,755.7791	13,001.1866	8,865.2051	-8.4943	11.8458	4,461.6552	6,567.9882	4,474.6094
109	06	4	SAT-W	0.0000	24.5072	9,869.7764	8,865.2051	11,565.8070	2.3782	11.3626	5,013.0083	4,474.6094	5,809.6140
109	06	5	Female	0.5153	0.0273	-0.7671	-8.4943	2.3782	0.2498	0.0133	-0.3718	-4.1169	1.1526
109	06	6	Female*HSGPA	0.0273	0.1249	11.1157	11.8458	11.3626	0.0133	0.1241	11.1367	12.0780	11.2976
109	06	7	Female*SAT-CR	-0.7671	11.1157	6,107.4445	4,461.6552	5,013.0083	-0.3718	11.1367	6,106.8561	4,455.1395	5,014.8326
109	06	8	Female*SAT-M	-8.4941	11.8458	4,461.6552	6,567.9882	4,474.6094	-4.1169	12.0780	4,455.1395	6,495.8376	4,494.8097
109	06	9	Female*SAT-W	2.3781	11.3626	5,013.0083	4,474.6094	5,809.6140	1.1526	11.2976	5,014.8326	4,494.8097	5,803.9584
109	07	1	HSGPA	0.0000	0.2700	23.3349	25.1191	24.3928	0.0198	0.1252	11.2138	11.8606	11.5025
109	07	2	SAT-CR	0.0000	23.3349	11,913.7332	8,613.0283	9,889.4937	-1.5688	11.2138	6,008.1779	4,353.3047	4,980.5089
109	07	3	SAT-M	0.0000	25.1191	8,613.0283	12,892.7453	8,805.0279	-8.4342	11.8606	4,353.3047	6,557.0001	4,440.6348
109	07	4	SAT-W	0.0000	24.3928	9,889.4937	8,805.0279	11,605.2905	1.3535	11.5025	4,980.5089	4,440.6348	5,810.5516
109	07	5	Female	0.5180	0.0198	-1.5688	-8.4342	1.3535	0.2497	0.0095	-0.7562	-4.0651	0.6524
109	07	6	Female*HSGPA	0.0198	0.1252	11.2138	11.8606	11.5025	0.0095	0.1248	11.2449	12.0276	11.4756
109	07	7	Female*SAT-CR	-1.5688	11.2138	6,008.1779	4,353.3047	4,980.5089	-0.7562	11.2449	6,005.7167	4,340.0731	4,982.6323
109	07	8	Female*SAT-M	-8.4340	11.8606	4,353.3047	6,557.0001	4,440.6348	-4.0651	12.0276	4,340.0731	6,485.8667	4,452.0503
109	07	9	Female*SAT-W	1.3535	11.5025	4,980.5089	4,440.6348	5,810.5516	0.6524	11.4756	4,982.6323	4,452.0503	5,808.7197
109	08	1	HSGPA	0.0000	0.2664	21.9288	24.8001	23.5425	0.0224	0.1255	10.4549	11.7045	11.1019
109	08	2	SAT-CR	0.0000	21.9288	11,680.2362	8,709.6212	9,785.4715	-1.7480	10.4549	5,835.6052	4,395.8738	4,957.8834
109	08	3	SAT-M	0.0000	24.8001	8,709.6212	13,539.7941	9,211.3702	-8.6469	11.7045	4,395.8738	6,921.1109	4,736.4614
109	08	4	SAT-W	0.0000	23.5425	9,785.4715	9,211.3702	11,770.4255	1.6539	11.1019	4,957.8834	4,736.4614	6,003.0749
109	08	5	Female	0.5172	0.0224	-1.7480	-8.6469	1.6539	0.2497	0.0108	-0.8440	-4.1751	0.7986
109	08	6	Female*HSGPA	0.0224	0.1255	10.4549	11.7045	11.1019	0.0108	0.1250	10.4940	11.8980	11.0649
109	08	7	Female*SAT-CR	-1.7479	10.4549	5,835.6052	4,395.8738	4,957.8834	-0.8440	10.4940	5,832.5498	4,380.7594	4,960.7743
109	08	8	Female*SAT-M	-8.6467	11.7045	4,395.8738	6,921.1109	4,736.4614	-4.1751	11.8980	4,380.7594	6,846.3432	4,750.7619
109	08	9	Female*SAT-W	1.6538	11.1019	4,957.8834	4,736.4614	6,003.0749	0.7986	11.0649	4,960.7743	4,750.7619	6,000.3397

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
110	07	1	HSGPA	0.0000	0.2164	17.7325	16.8854	18.2465	0.0422	0.1014	8.9389	8.1338	8.9788
110	07	2	SAT-CR	0.0000	17.7325	9,678.4594	5,814.3107	7,700.8420	3.4518	8.9389	5,225.4894	3,064.5102	4,103.5130
110	07	3	SAT-M	0.0000	16.8854	5,814.3107	8,499.4516	5,827.4593	-3.6353	8.1338	3,064.5102	4,523.8993	3,104.1199
110	07	4	SAT-W	0.0000	18.2465	7,700.8420	5,827.4593	9,595.0002	7.7448	8.9788	4,103.5130	3,104.1199	5,028.6938
110	07	5	Female	0.5634	0.0422	3.4518	-3.6353	7.7448	0.2460	0.0184	1.5070	-1.5872	3.3813
110	07	6	Female*HSGPA	0.0422	0.1014	8.9389	8.1338	8.9788	0.0184	0.0996	8.7933	8.2871	8.6522
110	07	7	Female*SAT-CR	3.4512	8.9389	5,225.4894	3,064.5102	4,103.5130	1.5070	8.7933	5,213.5766	3,077.0565	4,076.7844
110	07	8	Female*SAT-M	-3.6347	8.1338	3,064.5102	4,523.8993	3,104.1199	-1.5872	8.2871	3,077.0565	4,510.6858	3,132.2700
110	07	9	Female*SAT-W	7.7434	8.9788	4,103.5130	3,104.1199	5,028.6938	3.3813	8.6522	4,076.7844	3,132.2700	4,968.7228
110	08	1	HSGPA	0.0000	0.2132	15.8368	15.8209	17.0259	0.0358	0.1001	7.4400	7.2694	7.9800
110	08	2	SAT-CR	0.0000	15.8368	8,977.9200	5,425.4695	7,224.3074	1.1046	7.4400	4,924.3052	2,908.0038	3,951.6409
110	08	3	SAT-M	0.0000	15.8209	5,425.4695	8,448.6851	5,635.8146	-5.8088	7.2694	2,908.0038	4,482.5204	3,039.0879
110	08	4	SAT-W	0.0000	17.0259	7,224.3074	5,635.8146	9,304.7137	6.5151	7.9800	3,951.6409	3,039.0879	5,078.8945
110	08	5	Female	0.5658	0.0358	1.1046	-5.8088	6.5151	0.2457	0.0156	0.4797	-2.5225	2.8292
110	08	6	Female*HSGPA	0.0358	0.1001	7.4400	7.2694	7.9800	0.0156	0.0988	7.4005	7.4774	7.7466
110	08	7	Female*SAT-CR	1.1044	7.4400	4,924.3052	2,908.0038	3,951.6409	0.4797	7.4005	4,923.0852	2,914.4190	3,944.4456
110	08	8	Female*SAT-M	-5.8077	7.2694	2,908.0038	4,482.5204	3,039.0879	-2.5225	7.4774	2,914.4190	4,448.7845	3,076.9257
110	08	9	Female*SAT-W	6.5138	7.9800	3,951.6409	3,039.0879	5,078.8945	2.8292	7.7466	3,944.4456	3,076.9257	5,036.4560
111	06	1	HSGPA	0.0000	0.2479	13.3786	12.7418	13.6349	0.0517	0.1733	10.1693	10.4219	9.7756
111	06	2	SAT-CR	0.0000	13.3786	6,101.6134	3,327.9222	4,350.8065	1.6555	10.1693	4,501.9650	2,495.8952	3,187.3062
111	06	3	SAT-M	0.0000	12.7418	3,327.9222	6,244.5145	3,277.6775	-4.2376	10.4219	2,495.8952	4,517.2194	2,482.9116
111	06	4	SAT-W	0.0000	13.6349	4,350.8065	3,277.6775	5,907.4157	4.3864	9.7756	3,187.3062	2,482.9116	4,254.9230
111	06	5	Female	0.7375	0.0517	1.6555	-4.2376	4.3864	0.1936	0.0136	0.4346	-1.1124	1.1515
111	06	6	Female*HSGPA	0.0517	0.1733	10.1693	10.4219	9.7756	0.0136	0.1706	10.0837	10.6409	9.5489
111	06	7	Female*SAT-CR	1.6551	10.1693	4,501.9650	2,495.8952	3,187.3062	0.4346	10.0837	4,499.2249	2,502.9088	3,180.0463
111	06	8	Female*SAT-M	-4.2366	10.4219	2,495.8952	4,517.2194	2,482.9116	-1.1124	10.6409	2,502.9088	4,499.2667	2,501.4947
111	06	9	Female*SAT-W	4.3853	9.7756	3,187.3062	2,482.9116	4,254.9230	1.1515	9.5489	3,180.0463	2,501.4947	4,235.6875
111	07	1	HSGPA	0.0000	0.2624	13.9490	13.7454	15.5526	0.0497	0.1798	10.4588	11.0803	11.1234
111	07	2	SAT-CR	0.0000	13.9490	6,303.2177	3,349.9093	4,618.8027	2.6240	10.4588	4,517.8048	2,457.8537	3,369.1779
111	07	3	SAT-M	0.0000	13.7454	3,349.9093	6,233.1579	3,305.6280	-3.5628	11.0803	2,457.8537	4,419.8925	2,517.5060
111	07	4	SAT-W	0.0000	15.5526	4,618.8027	3,305.6280	6,302.4422	5.7367	11.1234	3,369.1779	2,517.5060	4,512.7863
111	07	5	Female	0.7174	0.0497	2.6240	-3.5628	5.7367	0.2028	0.0141	0.7416	-1.0069	1.6213
111	07	6	Female*HSGPA	0.0497	0.1798	10.4588	11.0803	11.1234	0.0141	0.1773	10.3283	11.2575	10.8380
111	07	7	Female*SAT-CR	2.6234	10.4588	4,517.8048	2,457.8537	3,369.1779	0.7416	10.3283	4,510.9209	2,467.2005	3,354.1280
111	07	8	Female*SAT-M	-3.5620	11.0803	2,457.8537	4,419.8925	2,517.5060	-1.0069	11.2575	2,467.2005	4,407.2017	2,537.9404
111	07	9	Female*SAT-W	5.7355	11.1234	3,369.1779	2,517.5060	4,512.7863	1.6213	10.8380	3,354.1280	2,537.9404	4,479.8835
111	08	1	HSGPA	0.0000	0.2305	12.5491	12.2362	14.8445	0.0539	0.1616	9.8002	10.0672	10.8441
111	08	2	SAT-CR	0.0000	12.5491	6,183.2036	3,419.5791	4,660.5355	1.7959	9.8002	4,450.2339	2,480.7902	3,405.5474
111	08	3	SAT-M	0.0000	12.2362	3,419.5791	6,218.7591	3,561.4059	-3.3613	10.0672	2,480.7902	4,332.6996	2,684.1470
111	08	4	SAT-W	0.0000	14.8445	4,660.5355	3,561.4059	6,594.8673	6.0204	10.8441	3,405.5474	2,684.1470	4,755.3109
111	08	5	Female	0.7172	0.0539	1.7959	-3.3613	6.0204	0.2029	0.0152	0.5079	-0.9506	1.7026
111	08	6	Female*HSGPA	0.0539	0.1616	9.8002	10.0672	10.8441	0.0152	0.1587	9.7034	10.2483	10.5196
111	08	7	Female*SAT-CR	1.7956	9.8002	4,450.2339	2,480.7902	3,405.5474	0.5079	9.7034	4,447.0092	2,486.8257	3,394.7374
111	08	8	Female*SAT-M	-3.3606	10.0672	2,480.7902	4,332.6996	2,684.1470	-0.9506	10.2483	2,486.8257	4,321.4034	2,704.3793
111	08	9	Female*SAT-W	6.0191	10.8441	3,405.5474	2,684.1470	4,755.3109	1.7026	10.5196	3,394.7374	2,704.3793	4,719.0735

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
112	07	1	HSGPA	0.0000	0.2742	19.1562	20.8008	19.7174	0.0449	0.1324	9.5360	9.8994	10.0797
112	07	2	SAT-CR	0.0000	19.1562	9,266.1830	6,124.5986	7,318.4295	2.9056	9.5360	4,819.3767	3,065.0269	3,837.2785
112	07	3	SAT-M	0.0000	20.8008	6,124.5986	9,101.7195	6,062.0340	-4.0277	9.8994	3,065.0269	4,558.6386	3,119.7847
112	07	4	SAT-W	0.0000	19.7174	7,318.4295	6,062.0340	8,847.4649	6.1567	10.0797	3,837.2785	3,119.7847	4,695.3198
112	07	5	Female	0.5507	0.0449	2.9056	-4.0277	6.1567	0.2474	0.0202	1.3054	-1.8095	2.7659
112	07	6	Female*HSGPA	0.0449	0.1324	9.5360	9.8994	10.0797	0.0202	0.1303	9.4055	10.0803	9.8032
112	07	7	Female*SAT-CR	2.9054	9.5360	4,819.3767	3,065.0269	3,837.2785	1.3054	9.4055	4,810.9347	3,076.7291	3,819.3909
112	07	8	Female*SAT-M	-4.0274	9.8994	3,065.0269	4,558.6386	3,119.7847	-1.8095	10.0803	3,076.7291	4,542.4173	3,144.5801
112	07	9	Female*SAT-W	6.1562	10.0797	3,837.2785	3,119.7847	4,695.3198	2.7659	9.8032	3,819.3909	3,144.5801	4,657.4182
112	08	1	HSGPA	0.0000	0.2617	18.3332	20.4051	19.2054	0.0379	0.1299	8.8189	9.5577	9.2721
112	08	2	SAT-CR	0.0000	18.3332	9,179.2413	6,181.9448	7,346.7344	3.2900	8.8189	4,634.3473	2,972.4281	3,691.7927
112	08	3	SAT-M	0.0000	20.4051	6,181.9448	9,304.1515	6,212.5590	-3.5861	9.5577	2,972.4281	4,660.8700	3,101.0359
112	08	4	SAT-W	0.0000	19.2054	7,346.7344	6,212.5590	9,077.1908	7.2716	9.2721	3,691.7927	3,101.0359	4,723.7806
112	08	5	Female	0.5642	0.0379	3.2900	-3.5861	7.2716	0.2459	0.0165	1.4339	-1.5629	3.1692
112	08	6	Female*HSGPA	0.0379	0.1299	8.8189	9.5577	9.2721	0.0165	0.1285	8.6940	9.6938	8.9962
112	08	7	Female*SAT-CR	3.2897	8.8189	4,634.3473	2,972.4281	3,691.7927	1.4339	8.6940	4,623.5243	2,984.2251	3,667.8716
112	08	8	Female*SAT-M	-3.5858	9.5577	2,972.4281	4,660.8700	3,101.0359	-1.5629	9.6938	2,984.2251	4,648.0113	3,127.1101
112	08	9	Female*SAT-W	7.2710	9.2721	3,691.7927	3,101.0359	4,723.7806	3.1692	8.9962	3,667.8716	3,127.1101	4,670.9093
113	06	1	HSGPA	0.0000	0.2778	14.9571	17.3592	16.0945	0.0364	0.1580	9.5560	11.1552	9.7604
113	06	2	SAT-CR	0.0000	14.9571	10,478.2985	5,984.4158	8,104.0361	-2.2645	9.5560	6,458.0963	3,823.9076	5,050.0303
113	06	3	SAT-M	0.0000	17.3592	5,984.4158	9,493.8877	5,906.3827	-9.5462	11.1552	3,823.9076	5,821.7654	3,803.9594
113	06	4	SAT-W	0.0000	16.0945	8,104.0361	5,906.3827	9,439.0839	0.9764	9.7604	5,050.0303	3,803.9594	5,780.1365
113	06	5	Female	0.6182	0.0364	-2.2645	-9.5462	0.9764	0.2361	0.0139	-0.8646	-3.6449	0.3728
113	06	6	Female*HSGPA	0.0364	0.1580	9.5560	11.1552	9.7604	0.0139	0.1566	9.6383	11.5024	9.7248
113	06	7	Female*SAT-CR	-2.2640	9.5560	6,458.0963	3,823.9076	5,050.0303	-0.8646	9.6383	6,452.9694	3,802.2946	5,052.2409
113	06	8	Female*SAT-M	-9.5444	11.1552	3,823.9076	5,821.7654	3,803.9594	-3.6449	11.5024	3,802.2946	5,730.6523	3,813.2787
113	06	9	Female*SAT-W	0.9762	9.7604	5,050.0303	3,803.9594	5,780.1365	0.3728	9.7248	5,052.2409	3,813.2787	5,779.1834
113	07	1	HSGPA	0.0000	0.2778	14.4152	16.5945	15.6619	0.0358	0.1642	9.6385	10.9714	9.9737
113	07	2	SAT-CR	0.0000	14.4152	9,944.2935	5,573.6156	7,499.8408	-1.1470	9.6385	6,388.4473	3,621.0238	4,780.6862
113	07	3	SAT-M	0.0000	16.5945	5,573.6156	9,269.2265	5,358.8270	-7.7378	10.9714	3,621.0238	5,825.1247	3,482.5165
113	07	4	SAT-W	0.0000	15.6619	7,499.8408	5,358.8270	8,717.5167	2.1066	9.9737	4,780.6862	3,482.5165	5,495.2498
113	07	5	Female	0.6326	0.0358	-1.1470	-7.7378	2.1066	0.2325	0.0131	-0.4214	-2.8428	0.7739
113	07	6	Female*HSGPA	0.0357	0.1642	9.6385	10.9714	9.9737	0.0131	0.1630	9.6795	11.2480	9.8984
113	07	7	Female*SAT-CR	-1.1468	9.6385	6,388.4473	3,621.0238	4,780.6862	-0.4214	9.6795	6,387.1319	3,612.1498	4,783.1020
113	07	8	Female*SAT-M	-7.7365	10.9714	3,621.0238	5,825.1247	3,482.5165	-2.8428	11.2480	3,612.1498	5,765.2613	3,498.8141
113	07	9	Female*SAT-W	2.1062	9.9737	4,780.6862	3,482.5165	5,495.2498	0.7739	9.8984	4,783.1020	3,498.8141	5,490.8129
113	08	1	HSGPA	0.0000	0.2868	14.7914	18.1038	16.9178	0.0339	0.1665	9.8783	11.6549	10.5639
113	08	2	SAT-CR	0.0000	14.7914	10,121.7250	5,571.6610	7,695.2791	-1.1962	9.8783	6,224.8788	3,432.6063	4,747.1809
113	08	3	SAT-M	0.0000	18.1038	5,571.6610	9,224.8796	5,543.0384	-8.7928	11.6549	3,432.6063	5,487.2250	3,410.0316
113	08	4	SAT-W	0.0000	16.9178	7,695.2791	5,543.0384	9,056.9097	2.4955	10.5639	4,747.1809	3,410.0316	5,518.2641
113	08	5	Female	0.6143	0.0339	-1.1962	-8.7928	2.4955	0.2370	0.0131	-0.4613	-3.3912	0.9625
113	08	6	Female*HSGPA	0.0339	0.1665	9.8783	11.6549	10.5639	0.0131	0.1654	9.9189	11.9528	10.4793
113	08	7	Female*SAT-CR	-1.1959	9.8783	6,224.8788	3,432.6063	4,747.1809	-0.4613	9.9189	6,223.4482	3,422.0906	4,750.1655
113	08	8	Female*SAT-M	-8.7913	11.6549	3,432.6063	5,487.2250	3,410.0316	-3.3912	11.9528	3,422.0906	5,409.9248	3,431.9706
113	08	9	Female*SAT-W	2.4951	10.5639	4,747.1809	3,410.0316	5,518.2641	0.9625	10.4793	4,750.1655	3,431.9706	5,512.0375

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
114	06	1	HSGPA	0.0000	0.3494	21.1932	25.3843	23.0608	0.0287	0.1950	12.3334	14.6707	13.2959
114	06	2	SAT-CR	0.0000	21.1932	10,429.8984	7,318.5759	8,278.4347	-2.5554	12.3334	5,758.6683	3,993.7704	4,630.5404
114	06	3	SAT-M	0.0000	25.3843	7,318.5759	11,476.0574	7,285.9398	-9.4668	14.6707	3,993.7704	6,144.4702	4,034.6433
114	06	4	SAT-W	0.0000	23.0608	8,278.4347	7,285.9398	9,870.2593	0.7143	13.2959	4,630.5404	4,034.6433	5,511.9147
114	06	5	Female	0.5618	0.0287	-2.5554	-9.4668	0.7143	0.2462	0.0126	-1.1198	-4.1483	0.3130
114	06	6	Female*HSGPA	0.0287	0.1950	12.3334	14.6707	13.2959	0.0126	0.1942	12.4068	14.9426	13.2754
114	06	7	Female*SAT-CR	-2.5553	12.3334	5,758.6683	3,993.7704	4,630.5404	-1.1198	12.4068	5,752.1384	3,969.5797	4,632.3657
114	06	8	Female*SAT-M	-9.4664	14.6707	3,993.7704	6,144.4702	4,034.6433	-4.1483	14.9426	3,969.5797	6,054.8541	4,041.4052
114	06	9	Female*SAT-W	0.7143	13.2959	4,630.5404	4,034.6433	5,511.9147	0.3130	13.2754	4,632.3657	4,041.4052	5,511.4045
114	07	1	HSGPA	0.0000	0.3395	20.1942	23.9888	22.3364	0.0324	0.1837	11.6419	13.3813	12.5742
114	07	2	SAT-CR	0.0000	20.1942	9,934.4806	6,750.7821	8,043.1323	-1.7238	11.6419	5,423.3145	3,685.7453	4,421.0864
114	07	3	SAT-M	0.0000	23.9888	6,750.7821	10,848.4795	6,906.1673	-8.9443	13.3813	3,685.7453	5,712.2717	3,796.5911
114	07	4	SAT-W	0.0000	22.3364	8,043.1323	6,906.1673	9,698.0608	1.4776	12.5742	4,421.0864	3,796.5911	5,310.6896
114	07	5	Female	0.5564	0.0324	-1.7238	-8.9443	1.4776	0.2468	0.0144	-0.7647	-3.9681	0.6555
114	07	6	Female*HSGPA	0.0324	0.1837	11.6419	13.3813	12.5742	0.0144	0.1827	11.6977	13.6710	12.5264
114	07	7	Female*SAT-CR	-1.7237	11.6419	5,423.3145	3,685.7453	4,421.0864	-0.7647	11.6977	5,420.3433	3,670.3283	4,423.6333
114	07	8	Female*SAT-M	-8.9439	13.3813	3,685.7453	5,712.2717	3,796.5911	-3.9681	13.6710	3,670.3283	5,632.2751	3,809.8066
114	07	9	Female*SAT-W	1.4775	12.5742	4,421.0864	3,796.5911	5,310.6896	0.6555	12.5264	4,423.6333	3,809.8066	5,308.5064
114	08	1	HSGPA	0.0000	0.3495	20.7268	24.7905	23.0994	0.0322	0.1884	11.4877	13.3133	12.6281
114	08	2	SAT-CR	0.0000	20.7268	9,981.9525	6,875.7633	8,122.2243	-2.3249	11.4877	5,317.4200	3,659.9158	4,392.6599
114	08	3	SAT-M	0.0000	24.7905	6,875.7633	10,942.0697	6,973.6940	-9.4816	13.3133	3,659.9158	5,746.6259	3,792.5365
114	08	4	SAT-W	0.0000	23.0994	8,122.2243	6,973.6940	9,921.0066	1.8395	12.6281	4,392.6599	3,792.5365	5,385.5106
114	08	5	Female	0.5556	0.0322	-2.3249	-9.4816	1.8395	0.2469	0.0143	-1.0331	-4.2134	0.8174
114	08	6	Female*HSGPA	0.0322	0.1884	11.4877	13.3133	12.6281	0.0143	0.1874	11.5625	13.6185	12.5689
114	08	7	Female*SAT-CR	-2.3248	11.4877	5,317.4200	3,659.9158	4,392.6599	-1.0331	11.5625	5,312.0149	3,637.8729	4,396.9364
114	08	8	Female*SAT-M	-9.4811	13.3133	3,659.9158	5,746.6259	3,792.5365	-4.2134	13.6185	3,637.8729	5,656.7300	3,809.9770
114	08	9	Female*SAT-W	1.8394	12.6281	4,392.6599	3,792.5365	5,385.5106	0.8174	12.5689	4,396.9364	3,809.9770	5,382.1270
115	06	1	HSGPA	0.0000	0.1494	9.5742	9.9852	10.3824	0.0127	0.0718	4.8736	5.1445	4.9812
115	06	2	SAT-CR	0.0000	9.5742	7,522.1401	3,707.1220	5,464.6729	-0.1658	4.8736	3,948.6189	2,043.4789	2,841.3320
115	06	3	SAT-M	0.0000	9.9852	3,707.1220	7,331.4891	3,929.2104	-9.3874	5.1445	2,043.4789	4,021.5399	2,136.6973
115	06	4	SAT-W	0.0000	10.3824	5,464.6729	3,929.2104	7,178.0693	1.8669	4.9812	2,841.3320	2,136.6973	3,669.9505
115	06	5	Female	0.5276	0.0127	-0.1658	-9.3874	1.8669	0.2493	0.0060	-0.0783	-4.4349	0.8820
115	06	6	Female*HSGPA	0.0127	0.0718	4.8736	5.1445	4.9812	0.0060	0.0716	4.8757	5.2636	4.9575
115	06	7	Female*SAT-CR	-0.1658	4.8736	3,948.6189	2,043.4789	2,841.3320	-0.0783	4.8757	3,948.5914	2,041.9228	2,841.6415
115	06	8	Female*SAT-M	-9.3869	5.1445	2,043.4789	4,021.5399	2,136.6973	-4.4349	5.2636	2,041.9228	3,933.4207	2,154.2220
115	06	9	Female*SAT-W	1.8668	4.9812	2,841.3320	2,136.6973	3,669.9505	0.8820	4.9575	2,841.6415	2,154.2220	3,666.4652
115	07	1	HSGPA	0.0000	0.1472	9.7352	10.3552	10.1439	0.0110	0.0721	4.7859	4.9900	4.7524
115	07	2	SAT-CR	0.0000	9.7352	7,530.1098	3,792.2804	5,359.6395	-0.4436	4.7859	3,906.1021	2,010.4531	2,751.8067
115	07	3	SAT-M	0.0000	10.3552	3,792.2804	7,582.1571	3,983.7969	-8.7644	4.9900	2,010.4531	4,115.9297	2,100.2044
115	07	4	SAT-W	0.0000	10.1439	5,359.6395	3,983.7969	7,066.3502	1.5912	4.7524	2,751.8067	2,100.2044	3,570.9324
115	07	5	Female	0.5225	0.0110	-0.4436	-8.7644	1.5912	0.2495	0.0053	-0.2118	-4.1850	0.7598
115	07	6	Female*HSGPA	0.0110	0.0721	4.7859	4.9900	4.7524	0.0053	0.0720	4.7908	5.0866	4.7349
115	07	7	Female*SAT-CR	-0.4436	4.7859	3,906.1021	2,010.4531	2,751.8067	-0.2118	4.7908	3,905.9054	2,006.5656	2,752.5125
115	07	8	Female*SAT-M	-8.7640	4.9900	2,010.4531	4,115.9297	2,100.2044	-4.1850	5.0866	2,006.5656	4,039.1182	2,114.1502
115	07	9	Female*SAT-W	1.5912	4.7524	2,751.8067	2,100.2044	3,570.9324	0.7598	4.7349	2,752.5125	2,114.1502	3,568.4004

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
115	08	1	HSGPA	0.0000	0.1488	9.0140	9.4036	9.6012	0.0130	0.0722	4.5241	4.6766	4.6869
115	08	2	SAT-CR	0.0000	9.0140	7,630.1081	3,646.8668	5,565.2993	-1.1703	4.5241	4,075.9373	2,048.9650	2,980.6177
115	08	3	SAT-M	0.0000	9.4036	3,646.8668	7,638.0487	4,041.2109	-9.6290	4.6766	2,048.9650	4,296.2033	2,255.8143
115	08	4	SAT-W	0.0000	9.6012	5,565.2993	4,041.2109	7,475.4310	2.3440	4.6869	2,980.6177	2,255.8143	3,938.4225
115	08	5	Female	0.5355	0.0130	-1.1703	-9.6290	2.3440	0.2488	0.0060	-0.5437	-4.4729	1.0888
115	08	6	Female*HSGPA	0.0130	0.0722	4.5241	4.6766	4.6869	0.0060	0.0720	4.5393	4.8015	4.6565
115	08	7	Female*SAT-CR	-1.1703	4.5241	4,075.9373	2,048.9650	2,980.6177	-0.5437	4.5393	4,074.5677	2,037.6964	2,983.3608
115	08	8	Female*SAT-M	-9.6284	4.6766	2,048.9650	4,296.2033	2,255.8143	-4.4729	4.8015	2,037.6964	4,203.4914	2,278.3830
115	08	9	Female*SAT-W	2.3438	4.6869	2,980.6177	2,255.8143	3,938.4225	1.0888	4.6565	2,983.3608	2,278.3830	3,932.9287
116	07	1	HSGPA	0.0000	0.3002	14.5902	14.9933	14.9935	0.0580	0.1509	7.7006	8.5138	8.2707
116	07	2	SAT-CR	0.0000	14.5902	11,420.8551	6,356.8831	8,702.0539	4.2622	7.7006	5,622.2635	3,188.6252	4,177.1911
116	07	3	SAT-M	0.0000	14.9933	6,356.8831	9,517.7446	6,024.2808	-2.7481	8.5138	3,188.6252	5,368.3708	3,184.6585
116	07	4	SAT-W	0.0000	14.9935	8,702.0539	6,024.2808	9,855.7941	6.4498	8.2707	4,177.1911	3,184.6585	4,927.9146
116	07	5	Female	0.5189	0.0580	4.2622	-2.7481	6.4498	0.2501	0.0279	2.0503	-1.3220	3.1027
116	07	6	Female*HSGPA	0.0579	0.1509	7.7006	8.5138	8.2707	0.0279	0.1475	7.4538	8.6729	7.8972
116	07	7	Female*SAT-CR	4.2552	7.7006	5,622.2635	3,188.6252	4,177.1911	2.0503	7.4538	5,604.1272	3,200.3186	4,149.7462
116	07	8	Female*SAT-M	-2.7435	8.5138	3,188.6252	5,368.3708	3,184.6585	-1.3220	8.6729	3,200.3186	5,360.8314	3,202.3537
116	07	9	Female*SAT-W	6.4392	8.2707	4,177.1911	3,184.6585	4,927.9146	3.1027	7.8972	4,149.7462	3,202.3537	4,886.3831
116	08	1	HSGPA	0.0000	0.3403	17.1291	21.0887	19.4364	0.0547	0.1533	8.9829	9.3699	10.0818
116	08	2	SAT-CR	0.0000	17.1291	12,657.5471	6,812.8097	9,205.9748	2.4654	8.9829	5,877.3764	3,356.5510	4,302.0150
116	08	3	SAT-M	0.0000	21.0887	6,812.8097	11,432.3212	6,827.6765	-4.9806	9.3699	3,356.5510	5,772.6634	3,380.4692
116	08	4	SAT-W	0.0000	19.4364	9,205.9748	6,827.6765	10,107.6592	5.4312	10.0818	4,302.0150	3,380.4692	4,785.5815
116	08	5	Female	0.5047	0.0547	2.4654	-4.9806	5.4312	0.2504	0.0271	1.2210	-2.4667	2.6899
116	08	6	Female*HSGPA	0.0547	0.1533	8.9829	9.3699	10.0818	0.0271	0.1503	8.8481	9.6422	9.7849
116	08	7	Female*SAT-CR	2.4615	8.9829	5,877.3764	3,356.5510	4,302.0150	1.2210	8.8481	5,871.3081	3,368.8106	4,288.6463
116	08	8	Female*SAT-M	-4.9727	9.3699	3,356.5510	5,772.6634	3,380.4692	-2.4667	9.6422	3,368.8106	5,747.8963	3,407.4771
116	08	9	Female*SAT-W	5.4226	10.0818	4,302.0150	3,380.4692	4,785.5815	2.6899	9.7849	4,288.6463	3,407.4771	4,756.1301
117	06	1	HSGPA	0.0000	0.1724	10.0283	9.3596	10.1678	0.0231	0.0825	4.9636	4.7348	4.7957
117	06	2	SAT-CR	0.0000	10.0283	7,398.1009	4,006.1653	5,344.5166	-0.7182	4.9636	3,830.4163	2,156.4574	2,713.2674
117	06	3	SAT-M	0.0000	9.3596	4,006.1653	7,163.5457	4,088.9237	-9.1036	4.7348	2,156.4574	3,787.5273	2,168.5967
117	06	4	SAT-W	0.0000	10.1678	5,344.5166	4,088.9237	7,175.9497	1.9152	4.7957	2,713.2674	2,168.5967	3,606.5282
117	06	5	Female	0.5293	0.0231	-0.7182	-9.1036	1.9152	0.2492	0.0109	-0.3381	-4.2854	0.9016
117	06	6	Female*HSGPA	0.0231	0.0825	4.9636	4.7348	4.7957	0.0109	0.0820	4.9802	4.9450	4.7515
117	06	7	Female*SAT-CR	-0.7181	4.9636	3,830.4163	2,156.4574	2,713.2674	-0.3381	4.9802	3,829.9005	2,149.9197	2,714.6428
117	06	8	Female*SAT-M	-9.1028	4.7348	2,156.4574	3,787.5273	2,168.5967	-4.2854	4.9450	2,149.9197	3,704.6590	2,186.0304
117	06	9	Female*SAT-W	1.9150	4.7957	2,713.2674	2,168.5967	3,606.5282	0.9016	4.7515	2,714.6428	2,186.0304	3,602.8606
117	07	1	HSGPA	0.0000	0.1672	10.5494	10.4652	10.8156	0.0181	0.0811	5.1381	5.2054	5.0464
117	07	2	SAT-CR	0.0000	10.5494	7,491.6202	4,228.9807	5,595.3708	-1.2551	5.1381	3,889.6117	2,245.8998	2,864.6955
117	07	3	SAT-M	0.0000	10.4652	4,228.9807	7,511.7871	4,429.7758	-8.8613	5.2054	2,245.8998	3,993.7710	2,313.1464
117	07	4	SAT-W	0.0000	10.8156	5,595.3708	4,429.7758	7,507.3269	1.7332	5.0464	2,864.6955	2,313.1464	3,802.5890
117	07	5	Female	0.5297	0.0181	-1.2551	-8.8613	1.7332	0.2491	0.0085	-0.5903	-4.1674	0.8151
117	07	6	Female*HSGPA	0.0181	0.0811	5.1381	5.2054	5.0464	0.0085	0.0808	5.1608	5.3654	5.0151
117	07	7	Female*SAT-CR	-1.2550	5.1381	3,889.6117	2,245.8998	2,864.6955	-0.5903	5.1608	3,888.0365	2,234.7785	2,866.8708
117	07	8	Female*SAT-M	-8.8607	5.2054	2,245.8998	3,993.7710	2,313.1464	-4.1674	5.3654	2,234.7785	3,915.2535	2,328.5039
117	07	9	Female*SAT-W	1.7331	5.0464	2,864.6955	2,313.1464	3,802.5890	0.8151	5.0151	2,866.8708	2,328.5039	3,799.5852

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
117	08	1	HSGPA	0.0000	0.1693	11.1498	11.5432	11.7296	0.0214	0.0798	5.0869	5.3515	5.4268
117	08	2	SAT-CR	0.0000	11.1498	8,134.4393	4,760.6737	6,282.5712	-1.7640	5.0869	4,169.6925	2,439.6823	3,222.9093
117	08	3	SAT-M	0.0000	11.5432	4,760.6737	8,209.1516	5,086.1211	-8.8346	5.3515	2,439.6823	4,302.0034	2,647.9870
117	08	4	SAT-W	0.0000	11.7296	6,282.5712	5,086.1211	8,424.8582	2.8869	5.4268	3,222.9093	2,647.9870	4,272.0493
117	08	5	Female	0.5296	0.0214	-1.7640	-8.8346	2.8869	0.2491	0.0101	-0.8298	-4.1556	1.3579
117	08	6	Female*HSGPA	0.0214	0.0798	5.0869	5.3515	5.4268	0.0101	0.0794	5.1247	5.5404	5.3651
117	08	7	Female*SAT-CR	-1.7639	5.0869	4,169.6925	2,439.6823	3,222.9093	-0.8298	5.1247	4,166.5809	2,424.0990	3,228.0015
117	08	8	Female*SAT-M	-8.8339	5.3515	2,439.6823	4,302.0034	2,647.9870	-4.1556	5.5404	2,424.0990	4,223.9593	2,673.4897
117	08	9	Female*SAT-W	2.8867	5.4268	3,222.9093	2,647.9870	4,272.0493	1.3579	5.3651	3,228.0015	2,673.4897	4,263.7158
118	06	1	HSGPA	0.0000	0.3597	19.5479	25.0256	22.6546	0.0510	0.1816	10.6037	13.0831	11.7602
118	06	2	SAT-CR	0.0000	19.5479	9,662.7289	6,473.4510	7,407.9354	-2.4463	10.6037	5,069.7578	3,350.8132	3,910.2644
118	06	3	SAT-M	0.0000	25.0256	6,473.4510	10,433.6607	6,678.6424	-6.4854	13.0831	3,350.8132	5,246.1750	3,371.2746
118	06	4	SAT-W	0.0000	22.6546	7,407.9354	6,678.6424	9,348.5386	0.4860	11.7602	3,910.2644	3,371.2746	4,850.2899
118	06	5	Female	0.5392	0.0510	-2.4463	-6.4854	0.4860	0.2486	0.0235	-1.1273	-2.9887	0.2240
118	06	6	Female*HSGPA	0.0510	0.1816	10.6037	13.0831	11.7602	0.0235	0.1790	10.7284	13.4137	11.7355
118	06	7	Female*SAT-CR	-2.4449	10.6037	5,069.7578	3,350.8132	3,910.2644	-1.1273	10.7284	5,063.7770	3,334.9572	3,911.4527
118	06	8	Female*SAT-M	-6.4817	13.0831	3,350.8132	5,246.1750	3,371.2746	-2.9887	13.4137	3,334.9572	5,204.1383	3,374.4250
118	06	9	Female*SAT-W	0.4858	11.7602	3,910.2644	3,371.2746	4,850.2899	0.2240	11.7355	3,911.4527	3,374.4250	4,850.0539
119	07	1	HSGPA	0.0000	0.3392	23.4245	26.3935	25.6147	0.0371	0.1646	12.5495	13.4419	13.0407
119	07	2	SAT-CR	0.0000	23.4245	9,437.2305	5,754.2521	7,515.5891	-1.5498	12.5495	4,864.6733	3,005.6366	3,908.0914
119	07	3	SAT-M	0.0000	26.3935	5,754.2521	9,662.7239	6,023.9477	-9.5621	13.4419	3,005.6366	4,930.3892	3,153.4627
119	07	4	SAT-W	0.0000	25.6147	7,515.5891	6,023.9477	9,230.4355	1.9241	13.0407	3,908.0914	3,153.4627	4,724.8662
119	07	5	Female	0.5236	0.0371	-1.5498	-9.5621	1.9241	0.2495	0.0177	-0.7383	-4.5551	0.9166
119	07	6	Female*HSGPA	0.0371	0.1646	12.5495	13.4419	13.0407	0.0177	0.1633	12.6070	13.7967	12.9693
119	07	7	Female*SAT-CR	-1.5497	12.5495	4,864.6733	3,005.6366	3,908.0914	-0.7383	12.6070	4,862.2716	2,990.8179	3,911.0733
119	07	8	Female*SAT-M	-9.5617	13.4419	3,005.6366	4,930.3892	3,153.4627	-4.5551	13.7967	2,990.8179	4,838.9596	3,171.8605
119	07	9	Female*SAT-W	1.9240	13.0407	3,908.0914	3,153.4627	4,724.8662	0.9166	12.9693	3,911.0733	3,171.8605	4,721.1641
119	08	1	HSGPA	0.0000	0.3279	22.1061	26.0524	25.1106	0.0354	0.1640	12.0176	13.7329	13.3987
119	08	2	SAT-CR	0.0000	22.1061	9,232.1046	5,476.8932	7,318.5062	-2.0721	12.0176	4,737.6100	2,913.7581	3,873.0890
119	08	3	SAT-M	0.0000	26.0524	5,476.8932	9,673.6670	5,960.4331	-9.8451	13.7329	2,913.7581	5,022.3309	3,202.4753
119	08	4	SAT-W	0.0000	25.1106	7,318.5062	5,960.4331	9,314.4660	2.4930	13.3987	3,873.0890	3,202.4753	4,899.5284
119	08	5	Female	0.5254	0.0354	-2.0721	-9.8451	2.4930	0.2494	0.0168	-0.9835	-4.6729	1.1833
119	08	6	Female*HSGPA	0.0354	0.1640	12.0176	13.7329	13.3987	0.0168	0.1628	12.0910	14.0816	13.3104
119	08	7	Female*SAT-CR	-2.0720	12.0176	4,737.6100	2,913.7581	3,873.0890	-0.9835	12.0910	4,733.3168	2,893.3593	3,878.2544
119	08	8	Female*SAT-M	-9.8446	13.7329	2,913.7581	5,022.3309	3,202.4753	-4.6729	14.0816	2,893.3593	4,925.4099	3,227.0178
119	08	9	Female*SAT-W	2.4929	13.3987	3,873.0890	3,202.4753	4,899.5284	1.1833	13.3104	3,878.2544	3,227.0178	4,893.3137
120	07	1	HSGPA	0.0000	0.2993	17.7403	18.1579	17.4771	0.0592	0.1520	10.1511	10.5549	9.8689
120	07	2	SAT-CR	0.0000	17.7403	8,838.7548	5,096.1424	6,646.3379	2.2427	10.1511	5,172.0767	2,961.8650	3,954.0551
120	07	3	SAT-M	0.0000	18.1579	5,096.1424	8,568.9176	5,090.7849	-4.7544	10.5549	2,961.8650	4,801.0157	3,035.9386
120	07	4	SAT-W	0.0000	17.4771	6,646.3379	5,090.7849	8,039.1463	6.0724	9.8689	3,954.0551	3,035.9386	4,721.6819
120	07	5	Female	0.5709	0.0592	2.2427	-4.7544	6.0724	0.2451	0.0254	0.9623	-2.0401	2.6057
120	07	6	Female*HSGPA	0.0592	0.1520	10.1511	10.5549	9.8689	0.0254	0.1485	10.0184	10.8361	9.5097
120	07	7	Female*SAT-CR	2.2413	10.1511	5,172.0767	2,961.8650	3,954.0551	0.9623	10.0184	5,167.0502	2,972.5212	3,940.4448
120	07	8	Female*SAT-M	-4.7515	10.5549	2,961.8650	4,801.0157	3,035.9386	-2.0401	10.8361	2,972.5212	4,778.4248	3,064.7920
120	07	9	Female*SAT-W	6.0687	9.8689	3,954.0551	3,035.9386	4,721.6819	2.6057	9.5097	3,940.4448	3,064.7920	4,684.8300

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
120	08	1	HSGPA	0.0000	0.2838	15.7139	16.7715	16.8235	0.0540	0.1565	9.5357	9.9058	9.8603
120	08	2	SAT-CR	0.0000	15.7139	7,768.5502	4,572.4618	5,971.7674	2.1397	9.5357	4,503.3993	2,563.4305	3,457.3527
120	08	3	SAT-M	0.0000	16.7715	4,572.4618	7,675.1958	4,644.3395	-6.2408	9.9058	2,563.4305	4,291.9786	2,695.6169
120	08	4	SAT-W	0.0000	16.8235	5,971.7674	4,644.3395	7,786.4247	5.6555	9.8603	3,457.3527	2,695.6169	4,570.5109
120	08	5	Female	0.5773	0.0540	2.1397	-6.2408	5.6555	0.2442	0.0228	0.9045	-2.6381	2.3907
120	08	6	Female*HSGPA	0.0539	0.1565	9.5357	9.9058	9.8603	0.0228	0.1535	9.4203	10.2424	9.5553
120	08	7	Female*SAT-CR	2.1383	9.5357	4,503.3993	2,563.4305	3,457.3527	0.9045	9.4203	4,498.8240	2,576.7751	3,445.2597
120	08	8	Female*SAT-M	-6.2367	9.9058	2,563.4305	4,291.9786	2,695.6169	-2.6381	10.2424	2,576.7751	4,253.0563	2,730.8885
120	08	9	Female*SAT-W	5.6518	9.8603	3,457.3527	2,695.6169	4,570.5109	2.3907	9.5553	3,445.2597	2,730.8885	4,538.5475
121	06	1	HSGPA	0.0000	0.1875	12.7168	12.2578	13.8627	0.0213	0.1057	7.5983	7.5350	8.0964
121	06	2	SAT-CR	0.0000	12.7168	8,661.0505	4,009.3084	6,302.0338	-1.3791	7.5983	5,071.7839	2,468.5953	3,741.3263
121	06	3	SAT-M	0.0000	12.2578	4,009.3084	7,686.4952	4,277.4410	-9.1917	7.5350	2,468.5953	4,586.4732	2,610.9206
121	06	4	SAT-W	0.0000	13.8627	6,302.0338	4,277.4410	7,922.1880	0.7030	8.0964	3,741.3263	2,610.9206	4,646.1816
121	06	5	Female	0.5871	0.0213	-1.3791	-9.1917	0.7030	0.2425	0.0088	-0.5695	-3.7957	0.2903
121	06	6	Female*HSGPA	0.0213	0.1057	7.5983	7.5350	8.0964	0.0088	0.1052	7.6277	7.7310	8.0814
121	06	7	Female*SAT-CR	-1.3789	7.5983	5,071.7839	2,468.5953	3,741.3263	-0.5695	7.6277	5,069.8823	2,455.9209	3,742.2957
121	06	8	Female*SAT-M	-9.1903	7.5350	2,468.5953	4,586.4732	2,610.9206	-3.7957	7.7310	2,455.9209	4,501.9993	2,617.3816
121	06	9	Female*SAT-W	0.7029	8.0964	3,741.3263	2,610.9206	4,646.1816	0.2903	8.0814	3,742.2957	2,617.3816	4,645.6874
121	07	1	HSGPA	0.0000	0.1892	12.8905	13.3497	13.4916	0.0178	0.1043	7.7137	8.0415	7.8886
121	07	2	SAT-CR	0.0000	12.8905	8,777.2283	4,436.5055	6,343.9703	-1.7985	7.7137	5,231.4692	2,734.7704	3,789.7565
121	07	3	SAT-M	0.0000	13.3497	4,436.5055	8,353.9280	4,496.1478	-9.4487	8.0415	2,734.7704	5,069.3414	2,806.2847
121	07	4	SAT-W	0.0000	13.4916	6,343.9703	4,496.1478	7,861.0565	0.7348	7.8886	3,789.7565	2,806.2847	4,635.4112
121	07	5	Female	0.5893	0.0178	-1.7985	-9.4487	0.7348	0.2421	0.0073	-0.7387	-3.8808	0.3018
121	07	6	Female*HSGPA	0.0178	0.1043	7.7137	8.0415	7.8886	0.0073	0.1040	7.7457	8.2100	7.8755
121	07	7	Female*SAT-CR	-1.7982	7.7137	5,231.4692	2,734.7704	3,789.7565	-0.7387	7.7457	5,228.2352	2,717.7798	3,791.0779
121	07	8	Female*SAT-M	-9.4473	8.0415	2,734.7704	5,069.3414	2,806.2847	-3.8808	8.2100	2,717.7798	4,980.0770	2,813.2269
121	07	9	Female*SAT-W	0.7347	7.8886	3,789.7565	2,806.2847	4,635.4112	0.3018	7.8755	3,791.0779	2,813.2269	4,634.8713
121	08	1	HSGPA	0.0000	0.1963	12.2588	13.5894	14.0593	0.0227	0.1025	7.2441	7.5881	7.8963
121	08	2	SAT-CR	0.0000	12.2588	8,959.4399	3,977.3399	6,624.5867	-0.6245	7.2441	4,994.6689	2,253.8665	3,682.8074
121	08	3	SAT-M	0.0000	13.5894	3,977.3399	8,174.9623	4,414.0043	-8.5254	7.5881	2,253.8665	4,705.3890	2,496.3339
121	08	4	SAT-W	0.0000	14.0593	6,624.5867	4,414.0043	8,389.9557	2.3357	7.8963	3,682.8074	2,496.3339	4,592.5830
121	08	5	Female	0.5769	0.0227	-0.6245	-8.5254	2.3357	0.2441	0.0096	-0.2642	-3.6067	0.9881
121	08	6	Female*HSGPA	0.0227	0.1025	7.2441	7.5881	7.8963	0.0096	0.1019	7.2582	7.7815	7.8433
121	08	7	Female*SAT-CR	-0.6244	7.2441	4,994.6689	2,253.8665	3,682.8074	-0.2642	7.2582	4,994.2789	2,248.5430	3,684.2658
121	08	8	Female*SAT-M	-8.5238	7.5881	2,253.8665	4,705.3890	2,496.3339	-3.6067	7.7815	2,248.5430	4,632.7200	2,516.2427
121	08	9	Female*SAT-W	2.3352	7.8963	3,682.8074	2,496.3339	4,592.5830	0.9881	7.8433	3,684.2658	2,516.2427	4,587.1287
122	06	1	HSGPA	0.0000	0.2814	13.8315	16.4512	14.9998	0.0343	0.1531	8.7068	9.4718	8.6785
122	06	2	SAT-CR	0.0000	13.8315	9,314.0296	5,817.3284	7,117.1962	-3.0717	8.7068	5,409.4852	3,378.3118	4,145.1530
122	06	3	SAT-M	0.0000	16.4512	5,817.3284	10,006.5999	5,837.2444	-10.0266	9.4718	3,378.3118	5,609.5999	3,358.3656
122	06	4	SAT-W	0.0000	14.9998	7,117.1962	5,837.2444	8,687.7177	0.9036	8.6785	4,145.1530	3,358.3656	5,009.3380
122	06	5	Female	0.5776	0.0343	-3.0717	-10.0266	0.9036	0.2440	0.0145	-1.2976	-4.2355	0.3817
122	06	6	Female*HSGPA	0.0343	0.1531	8.7068	9.4718	8.6785	0.0145	0.1519	8.8122	9.8156	8.6475
122	06	7	Female*SAT-CR	-3.0712	8.7068	5,409.4852	3,378.3118	4,145.1530	-1.2976	8.8122	5,400.0514	3,347.5181	4,147.9283
122	06	8	Female*SAT-M	-10.0249	9.4718	3,378.3118	5,609.5999	3,358.3656	-4.2355	9.8156	3,347.5181	5,509.0840	3,367.4246
122	06	9	Female*SAT-W	0.9035	8.6785	4,145.1530	3,358.3656	5,009.3380	0.3817	8.6475	4,147.9283	3,367.4246	5,008.5216



## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
122	07	1	HSGPA	0.0000	0.2779	16.3233	18.5759	17.0955	0.0326	0.1490	9.9687	11.2012	9.9856
122	07	2	SAT-CR	0.0000	16.3233	9,645.6681	6,245.8992	7,538.0160	-1.3119	9.9687	5,674.8618	3,682.7875	4,494.6824
122	07	3	SAT-M	0.0000	18.5759	6,245.8992	10,279.6455	6,389.9307	-7.3463	11.2012	3,682.7875	5,957.8588	3,810.9980
122	07	4	SAT-W	0.0000	17.0955	7,538.0160	6,389.9307	9,054.7641	1.9245	9.9856	4,494.6824	3,810.9980	5,361.8499
122	07	5	Female	0.5747	0.0326	-1.3119	-7.3463	1.9245	0.2445	0.0138	-0.5580	-3.1245	0.8185
122	07	6	Female*HSGPA	0.0326	0.1490	9.9687	11.2012	9.9856	0.0138	0.1480	10.0115	11.4404	9.9229
122	07	7	Female*SAT-CR	-1.3117	9.9687	5,674.8618	3,682.7875	4,494.6824	-0.5580	10.0115	5,673.1409	3,673.1512	4,497.2068
122	07	8	Female*SAT-M	-7.3452	11.2012	3,682.7875	5,957.8588	3,810.9980	-3.1245	11.4404	3,673.1512	5,903.8992	3,825.1339
122	07	9	Female*SAT-W	1.9242	9.9856	4,494.6824	3,810.9980	5,361.8499	0.8185	9.9229	4,497.2068	3,825.1339	5,358.1467
122	08	1	HSGPA	0.0000	0.2729	14.1542	16.7469	15.0325	0.0330	0.1499	8.4755	10.0035	8.9718
122	08	2	SAT-CR	0.0000	14.1542	9,277.6578	6,116.1750	7,236.2502	-2.4055	8.4755	5,278.8942	3,435.1773	4,113.9613
122	08	3	SAT-M	0.0000	16.7469	6,116.1750	10,510.3177	6,308.9605	-9.1573	10.0035	3,435.1773	5,966.7928	3,630.8698
122	08	4	SAT-W	0.0000	15.0325	7,236.2502	6,308.9605	8,889.6296	0.4388	8.9718	4,113.9613	3,630.8698	5,097.1232
122	08	5	Female	0.5815	0.0330	-2.4055	-9.1573	0.4388	0.2434	0.0138	-1.0068	-3.8325	0.1836
122	08	6	Female*HSGPA	0.0330	0.1499	8.4755	10.0035	8.9718	0.0138	0.1488	8.5549	10.3056	8.9573
122	08	7	Female*SAT-CR	-2.4051	8.4755	5,278.8942	3,435.1773	4,113.9613	-1.0068	8.5549	5,273.1088	3,413.1533	4,115.0166
122	08	8	Female*SAT-M	-9.1556	10.0035	3,435.1773	5,966.7928	3,630.8698	-3.8325	10.3056	3,413.1533	5,882.9520	3,634.8871
122	08	9	Female*SAT-W	0.4387	8.9718	4,113.9613	3,630.8698	5,097.1232	0.1836	8.9573	4,115.0166	3,634.8871	5,096.9307
123	06	1	HSGPA	0.0000	0.3972	18.0761	20.8876	19.8809	0.0474	0.2619	12.1525	13.9149	12.6478
123	06	2	SAT-CR	0.0000	18.0761	8,221.7041	5,729.9211	6,176.9493	0.3794	12.1525	5,567.3114	3,776.2526	4,177.9102
123	06	3	SAT-M	0.0000	20.8876	5,729.9211	9,126.3701	5,510.1252	-4.2353	13.9149	3,776.2526	5,898.2301	3,646.0872
123	06	4	SAT-W	0.0000	19.8809	6,176.9493	5,510.1252	7,672.3531	2.7948	12.6478	4,177.9102	3,646.0872	5,168.4297
123	06	5	Female	0.6976	0.0474	0.3794	-4.2353	2.7948	0.2110	0.0143	0.1147	-1.2807	0.8451
123	06	6	Female*HSGPA	0.0474	0.2619	12.1525	13.9149	12.6478	0.0143	0.2596	12.1345	14.1157	12.5152
123	06	7	Female*SAT-CR	0.3794	12.1525	5,567.3114	3,776.2526	4,177.9102	0.1147	12.1345	5,567.1675	3,777.8592	4,176.8500
123	06	8	Female*SAT-M	-4.2348	13.9149	3,776.2526	5,898.2301	3,646.0872	-1.2807	14.1157	3,777.8592	5,880.2945	3,657.9228
123	06	9	Female*SAT-W	2.7946	12.6478	4,177.9102	3,646.0872	5,168.4297	0.8451	12.5152	4,176.8500	3,657.9228	5,160.6194
124	06	1	HSGPA	0.0000	0.3051	21.6994	20.8482	23.4197	0.0482	0.1594	11.8623	11.3226	12.6065
124	06	2	SAT-CR	0.0000	21.6994	8,894.1730	5,616.9026	7,159.6722	1.5720	11.8623	5,296.5052	3,288.3209	4,256.2693
124	06	3	SAT-M	0.0000	20.8482	5,616.9026	9,164.6844	5,671.2921	-5.8916	11.3226	3,288.3209	5,373.5780	3,424.0585
124	06	4	SAT-W	0.0000	23.4197	7,159.6722	5,671.2921	8,951.1164	4.2154	12.6065	4,256.2693	3,424.0585	5,304.7265
124	06	5	Female	0.6033	0.0482	1.5720	-5.8916	4.2154	0.2395	0.0191	0.6235	-2.3370	1.6721
124	06	6	Female*HSGPA	0.0482	0.1594	11.8623	11.3226	12.6065	0.0191	0.1571	11.7866	11.6063	12.4035
124	06	7	Female*SAT-CR	1.5706	11.8623	5,296.5052	3,288.3209	4,256.2693	0.6235	11.7866	5,294.0363	3,297.5742	4,249.6486
124	06	8	Female*SAT-M	-5.8865	11.3226	3,288.3209	5,373.5780	3,424.0585	-2.3370	11.6063	3,297.5742	5,338.8970	3,448.8723
124	06	9	Female*SAT-W	4.2117	12.6065	4,256.2693	3,424.0585	5,304.7265	1.6721	12.4035	4,249.6486	3,448.8723	5,286.9725
124	07	1	HSGPA	0.0000	0.3473	21.8985	23.6780	24.0531	0.0420	0.2018	13.1964	14.1788	14.3976
124	07	2	SAT-CR	0.0000	21.8985	9,283.9416	5,432.6961	7,145.2299	1.3056	13.1964	5,889.8444	3,369.5995	4,505.9907
124	07	3	SAT-M	0.0000	23.6780	5,432.6961	9,080.8623	5,553.8795	-6.5051	14.1788	3,369.5995	5,373.7584	3,459.2443
124	07	4	SAT-W	0.0000	24.0531	7,145.2299	5,553.8795	8,769.7893	4.1698	14.3976	4,505.9907	3,459.2443	5,271.3805
124	07	5	Female	0.5986	0.0420	1.3056	-6.5051	4.1698	0.2405	0.0169	0.5241	-2.6110	1.6737
124	07	6	Female*HSGPA	0.0420	0.2018	13.1964	14.1788	14.3976	0.0169	0.2000	13.1416	14.4519	14.2225
124	07	7	Female*SAT-CR	1.3046	13.1964	5,889.8444	3,369.5995	4,505.9907	0.5241	13.1416	5,888.1410	3,378.0863	4,500.5506
124	07	8	Female*SAT-M	-6.5001	14.1788	3,369.5995	5,373.7584	3,459.2443	-2.6110	14.4519	3,378.0863	5,331.4743	3,486.3488
124	07	9	Female*SAT-W	4.1666	14.3976	4,505.9907	3,459.2443	5,271.3805	1.6737	14.2225	4,500.5506	3,486.3488	5,254.0063

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
124	08	1	HSGPA	0.0000	0.3164	19.1217	22.0918	22.0613	0.0496	0.1732	11.8432	13.1026	12.3560
124	08	2	SAT-CR	0.0000	19.1217	8,980.1018	5,853.1314	7,279.4037	0.9263	11.8432	5,362.5164	3,506.9727	4,535.7458
124	08	3	SAT-M	0.0000	22.0918	5,853.1314	9,354.9681	5,903.1272	-6.7234	13.1026	3,506.9727	5,280.8337	3,695.7973
124	08	4	SAT-W	0.0000	22.0613	7,279.4037	5,903.1272	9,139.7176	4.4763	12.3560	4,535.7458	3,695.7973	5,766.6765
124	08	5	Female	0.6113	0.0496	0.9263	-6.7234	4.4763	0.2378	0.0193	0.3600	-2.6132	1.7398
124	08	6	Female*HSGPA	0.0495	0.1732	11.8432	13.1026	12.3560	0.0193	0.1708	11.7974	13.4356	12.1343
124	08	7	Female*SAT-CR	0.9256	11.8432	5,362.5164	3,506.9727	4,535.7458	0.3600	11.7974	5,361.6590	3,513.1960	4,531.6025
124	08	8	Female*SAT-M	-6.7183	13.1026	3,506.9727	5,280.8337	3,695.7973	-2.6132	13.4356	3,513.1960	5,235.6642	3,725.8701
124	08	9	Female*SAT-W	4.4729	12.3560	4,535.7458	3,695.7973	5,766.6765	1.7398	12.1343	4,531.6025	3,725.8701	5,746.6548
125	06	1	HSGPA	0.0000	0.3299	15.9042	17.7755	17.8589	0.0492	0.1726	10.0411	10.4364	10.4770
125	06	2	SAT-CR	0.0000	15.9042	8,147.6455	5,022.3910	6,092.8154	-0.4275	10.0411	4,440.9070	2,784.4233	3,335.5039
125	06	3	SAT-M	0.0000	17.7755	5,022.3910	8,766.3122	4,932.1833	-8.8467	10.4364	2,784.4233	4,558.5345	2,754.1945
125	06	4	SAT-W	0.0000	17.8589	6,092.8154	4,932.1833	7,802.2035	2.7714	10.4770	3,335.5039	2,754.1945	4,157.3473
125	06	5	Female	0.5376	0.0492	-0.4275	-8.8467	2.7714	0.2486	0.0228	-0.1977	-4.0908	1.2815
125	06	6	Female*HSGPA	0.0492	0.1726	10.0411	10.4364	10.4770	0.0228	0.1702	10.0621	10.8717	10.3407
125	06	7	Female*SAT-CR	-0.4275	10.0411	4,440.9070	2,784.4233	3,335.5039	-0.1977	10.0621	4,440.7242	2,780.6416	3,336.6886
125	06	8	Female*SAT-M	-8.8453	10.4364	2,784.4233	4,558.5345	2,754.1945	-4.0908	10.8717	2,780.6416	4,480.2829	2,778.7084
125	06	9	Female*SAT-W	2.7710	10.4770	3,335.5039	2,754.1945	4,157.3473	1.2815	10.3407	3,336.6886	2,778.7084	4,149.6678
126	07	1	HSGPA	0.0000	0.4001	23.2346	25.0880	24.7327	0.0362	0.2640	16.6612	17.8350	17.8125
126	07	2	SAT-CR	0.0000	23.2346	7,647.9132	4,680.0597	5,545.5726	-5.7332	16.6612	4,557.7527	2,897.4425	3,329.7369
126	07	3	SAT-M	0.0000	25.0880	4,680.0597	7,830.3358	4,274.0689	-9.9013	17.8350	2,897.4425	4,372.0872	2,632.2317
126	07	4	SAT-W	0.0000	24.7327	5,545.5726	4,274.0689	6,705.0919	-1.0697	17.8125	3,329.7369	2,632.2317	4,037.0301
126	07	5	Female	0.6413	0.0362	-5.7332	-9.9013	-1.0697	0.2305	0.0130	-2.0565	-3.5515	-0.3837
126	07	6	Female*HSGPA	0.0362	0.2640	16.6612	17.8350	17.8125	0.0130	0.2627	16.8686	18.1931	17.8511
126	07	7	Female*SAT-CR	-5.7207	16.6612	4,557.7527	2,897.4425	3,329.7369	-2.0565	16.8686	4,524.9550	2,840.8005	3,323.6176
126	07	8	Female*SAT-M	-9.8797	17.8350	2,897.4425	4,372.0872	2,632.2317	-3.5515	18.1931	2,840.8005	4,274.2655	2,621.6637
126	07	9	Female*SAT-W	-1.0673	17.8125	3,329.7369	2,632.2317	4,037.0301	-0.3837	17.8511	3,323.6176	2,621.6637	4,035.8884
126	08	1	HSGPA	0.0000	0.3808	18.5509	22.9820	23.4601	0.0223	0.2494	13.1672	16.8835	15.9829
126	08	2	SAT-CR	0.0000	18.5509	7,882.9002	4,331.9105	5,780.5020	-5.8170	13.1672	4,911.1435	2,606.2765	3,474.2193
126	08	3	SAT-M	0.0000	22.9820	4,331.9105	7,459.3313	4,308.7084	-13.7031	16.8835	2,606.2765	4,463.2401	2,662.7078
126	08	4	SAT-W	0.0000	23.4601	5,780.5020	4,308.7084	7,391.2517	-1.0202	15.9829	3,474.2193	2,662.7078	4,468.0880
126	08	5	Female	0.6320	0.0223	-5.8170	-13.7031	-1.0202	0.2331	0.0082	-2.1405	-5.0425	-0.3754
126	08	6	Female*HSGPA	0.0223	0.2494	13.1672	16.8835	15.9829	0.0082	0.2489	13.2968	17.1889	16.0056
126	08	7	Female*SAT-CR	-5.8049	13.1672	4,911.1435	2,606.2765	3,474.2193	-2.1405	13.2968	4,877.3768	2,526.7319	3,468.2973
126	08	8	Female*SAT-M	-13.6746	16.8835	2,606.2765	4,463.2401	2,662.7078	-5.0425	17.1889	2,526.7319	4,275.8558	2,648.7572
126	08	9	Female*SAT-W	-1.0181	15.9829	3,474.2193	2,662.7078	4,468.0880	-0.3754	16.0056	3,468.2973	2,648.7572	4,467.0493
127	06	1	HSGPA	0.0000	0.3190	14.3630	16.5300	16.2817	0.0546	0.1875	9.2967	10.4705	10.5639
127	06	2	SAT-CR	0.0000	14.3630	8,470.2337	5,549.6507	6,207.0789	-3.0290	9.2967	5,174.9045	3,422.9162	3,876.1156
127	06	3	SAT-M	0.0000	16.5300	5,549.6507	8,799.5457	5,086.2875	-7.8798	10.4705	3,422.9162	5,139.1972	3,232.3389
127	06	4	SAT-W	0.0000	16.2817	6,207.0789	5,086.2875	7,693.5636	1.2724	10.5639	3,876.1156	3,232.3389	4,824.0447
127	06	5	Female	0.6082	0.0546	-3.0290	-7.8798	1.2724	0.2384	0.0214	-1.1869	-3.0876	0.4986
127	06	6	Female*HSGPA	0.0546	0.1875	9.2967	10.4705	10.5639	0.0214	0.1846	9.4619	10.9004	10.4945
127	06	7	Female*SAT-CR	-3.0280	9.2967	5,174.9045	3,422.9162	3,876.1156	-1.1869	9.4619	5,165.7328	3,399.0562	3,879.9685
127	06	8	Female*SAT-M	-7.8772	10.4705	3,422.9162	5,139.1972	3,232.3389	-3.0876	10.9004	3,399.0562	5,077.1259	3,242.3620
127	06	9	Female*SAT-W	1.2720	10.5639	3,876.1156	3,232.3389	4,824.0447	0.4986	10.4945	3,879.9685	3,242.3620	4,822.4262

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
128	07	1	HSGPA	0.0000	0.2551	15.4632	17.1520	16.7558	0.0377	0.1183	7.5920	8.1139	8.0028
128	07	2	SAT-CR	0.0000	15.4632	8,266.7874	5,028.5692	6,285.9559	-0.2210	7.5920	4,036.3245	2,427.3224	3,048.2757
128	07	3	SAT-M	0.0000	17.1520	5,028.5692	8,306.4185	4,878.5401	-8.3326	8.1139	2,427.3224	4,033.9960	2,339.6075
128	07	4	SAT-W	0.0000	16.7558	6,285.9559	4,878.5401	7,865.7791	2.7709	8.0028	3,048.2757	2,339.6075	3,748.0432
128	07	5	Female	0.5108	0.0377	-0.2210	-8.3326	2.7709	0.2499	0.0184	-0.1081	-4.0762	1.3555
128	07	6	Female*HSGPA	0.0377	0.1183	7.5920	8.1139	8.0028	0.0184	0.1169	7.6003	8.4277	7.8984
128	07	7	Female*SAT-CR	-0.2209	7.5920	4,036.3245	2,427.3224	3,048.2757	-0.1081	7.6003	4,036.2757	2,425.4814	3,048.8879
128	07	8	Female*SAT-M	-8.3314	8.1139	2,427.3224	4,033.9960	2,339.6075	-4.0762	8.4277	2,425.4814	3,964.5733	2,362.6927
128	07	9	Female*SAT-W	2.7705	8.0028	3,048.2757	2,339.6075	3,748.0432	1.3555	7.8984	3,048.8879	2,362.6927	3,740.3666
128	08	1	HSGPA	0.0000	0.2502	14.9724	16.9759	15.7683	0.0336	0.1201	7.9000	8.3742	8.0227
128	08	2	SAT-CR	0.0000	14.9724	8,278.0816	4,825.4089	6,183.7858	-0.6489	7.9000	4,205.8172	2,410.7850	3,147.2940
128	08	3	SAT-M	0.0000	16.9759	4,825.4089	7,966.6073	4,647.3779	-9.4645	8.3742	2,410.7850	3,871.0287	2,332.4409
128	08	4	SAT-W	0.0000	15.7683	6,183.7858	4,647.3779	7,673.0528	3.0906	8.0227	3,147.2940	2,332.4409	3,927.8212
128	08	5	Female	0.5205	0.0336	-0.6489	-9.4645	3.0906	0.2496	0.0161	-0.3111	-4.5381	1.4819
128	08	6	Female*HSGPA	0.0336	0.1201	7.9000	8.3742	8.0227	0.0161	0.1190	7.9218	8.6923	7.9188
128	08	7	Female*SAT-CR	-0.6488	7.9000	4,205.8172	2,410.7850	3,147.2940	-0.3111	7.9218	4,205.3962	2,404.6445	3,149.2991
128	08	8	Female*SAT-M	-9.4630	8.3742	2,410.7850	3,871.0287	2,332.4409	-4.5381	8.6923	2,404.6445	3,781.4661	2,361.6871
128	08	9	Female*SAT-W	3.0901	8.0227	3,147.2940	2,332.4409	3,927.8212	1.4819	7.9188	3,149.2991	2,361.6871	3,918.2709
129	07	1	HSGPA	0.0000	0.2449	11.6814	12.6782	13.3355	0.0383	0.0938	4.5495	4.6967	5.1305
129	07	2	SAT-CR	0.0000	11.6814	7,048.9139	3,965.2473	5,235.9178	-1.2636	4.5495	2,762.2392	1,580.4755	2,057.3968
129	07	3	SAT-M	0.0000	12.6782	3,965.2473	7,542.3834	3,998.1341	-7.2430	4.6967	1,580.4755	3,123.0373	1,616.3306
129	07	4	SAT-W	0.0000	13.3355	5,235.9178	3,998.1341	6,964.3855	1.7470	5.1305	2,057.3968	1,616.3306	2,742.7297
129	07	5	Female	0.3945	0.0383	-1.2636	-7.2430	1.7470	0.2389	0.0232	-0.7652	-4.3859	1.0579
129	07	6	Female*HSGPA	0.0383	0.0938	4.5495	4.6967	5.1305	0.0232	0.0923	4.5979	4.9739	5.0636
129	07	7	Female*SAT-CR	-1.2634	4.5495	2,762.2392	1,580.4755	2,057.3968	-0.7652	4.5979	2,760.6427	1,571.3246	2,059.6039
129	07	8	Female*SAT-M	-7.2418	4.6967	1,580.4755	3,123.0373	1,616.3306	-4.3859	4.9739	1,571.3246	3,070.5856	1,628.9817
129	07	9	Female*SAT-W	1.7467	5.1305	2,057.3968	1,616.3306	2,742.7297	1.0579	5.0636	2,059.6039	1,628.9817	2,739.6783
130	08	1	HSGPA	0.0000	0.3252	23.1290	27.5162	24.8100	0.0513	0.1693	12.0147	12.8707	13.2181
130	08	2	SAT-CR	0.0000	23.1290	10,344.1377	6,476.7695	7,979.6956	2.5176	12.0147	5,300.0755	3,320.2024	4,232.8559
130	08	3	SAT-M	0.0000	27.5162	6,476.7695	10,312.6422	6,552.6258	-2.0442	12.8707	3,320.2024	5,375.8209	3,616.2765
130	08	4	SAT-W	0.0000	24.8100	7,979.6956	6,552.6258	9,879.2497	7.7604	13.2181	4,232.8559	3,616.2765	5,578.8038
130	08	5	Female	0.5578	0.0513	2.5176	-2.0442	7.7604	0.2471	0.0227	1.1134	-0.9040	3.4320
130	08	6	Female*HSGPA	0.0513	0.1693	12.0147	12.8707	13.2181	0.0227	0.1666	11.8857	12.9755	12.8203
130	08	7	Female*SAT-CR	2.5134	12.0147	5,300.0755	3,320.2024	4,232.8559	1.1134	11.8857	5,293.7478	3,325.3403	4,213.3507
130	08	8	Female*SAT-M	-2.0408	12.8707	3,320.2024	5,375.8209	3,616.2765	-0.9040	12.9755	3,325.3403	5,371.6491	3,632.1140
130	08	9	Female*SAT-W	7.7476	13.2181	4,232.8559	3,616.2765	5,578.8038	3.4320	12.8203	4,213.3507	3,632.1140	5,518.6792
131	08	1	HSGPA	0.0000	0.3056	14.0388	16.2341	15.7948	0.0430	0.1908	10.0505	10.8195	11.2026
131	08	2	SAT-CR	0.0000	14.0388	9,314.6972	5,864.9972	7,026.8125	-2.3758	10.0505	5,652.2126	3,518.2499	4,458.0811
131	08	3	SAT-M	0.0000	16.2341	5,864.9972	9,826.6442	5,940.0895	-8.6249	10.8195	3,518.2499	5,748.7299	3,717.0193
131	08	4	SAT-W	0.0000	15.7948	7,026.8125	5,940.0895	8,524.9310	1.2858	11.2026	4,458.0811	3,717.0193	5,412.8846
131	08	5	Female	0.6009	0.0430	-2.3758	-8.6249	1.2858	0.2400	0.0171	-0.9483	-3.4424	0.5132
131	08	6	Female*HSGPA	0.0429	0.1908	10.0505	10.8195	11.2026	0.0171	0.1890	10.1525	11.1899	11.1474
131	08	7	Female*SAT-CR	-2.3745	10.0505	5,652.2126	3,518.2499	4,458.0811	-0.9483	10.1525	5,646.5711	3,497.7699	4,461.1342
131	08	8	Female*SAT-M	-8.6202	10.8195	3,518.2499	5,748.7299	3,717.0193	-3.4424	11.1899	3,497.7699	5,674.3821	3,728.1027
131	08	9	Female*SAT-W	1.2851	11.2026	4,458.0811	3,717.0193	5,412.8846	0.5132	11.1474	4,461.1342	3,728.1027	5,411.2323

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
132	08	1	HSGPA	0.0000	0.3289	24.2871	26.3928	25.2549	0.0508	0.1341	9.3054	10.8214	10.4130
132	08	2	SAT-CR	0.0000	24.2871	10,882.3476	6,519.1060	8,468.8505	2.8562	9.3054	4,556.4059	2,584.9177	3,505.5301
132	08	3	SAT-M	0.0000	26.3928	6,519.1060	10,829.2435	6,481.7512	-6.7430	10.8214	2,584.9177	4,724.4667	2,641.9390
132	08	4	SAT-W	0.0000	25.2549	8,468.8505	6,481.7512	9,795.3676	4.9754	10.4130	3,505.5301	2,641.9390	4,126.5966
132	08	5	Female	0.4659	0.0508	2.8562	-6.7430	4.9754	0.2489	0.0271	1.5254	-3.6011	2.6571
132	08	6	Female*HSGPA	0.0508	0.1341	9.3054	10.8214	10.4130	0.0271	0.1315	9.1604	11.1637	10.1604
132	08	7	Female*SAT-CR	2.8551	9.3054	4,556.4059	2,584.9177	3,505.5301	1.5254	9.1604	4,548.2513	2,604.1693	3,491.3252
132	08	8	Female*SAT-M	-6.7403	10.8214	2,584.9177	4,724.4667	2,641.9390	-3.6011	11.1637	2,604.1693	4,679.0169	2,675.4744
132	08	9	Female*SAT-W	4.9734	10.4130	3,505.5301	2,641.9390	4,126.5966	2.6571	10.1604	3,491.3252	2,675.4744	4,101.8523
133	06	1	HSGPA	0.0000	0.3782	18.8192	24.7638	21.1212	0.0472	0.2031	10.2365	12.7991	11.0436
133	06	2	SAT-CR	0.0000	18.8192	7,209.6273	4,829.4063	5,347.4446	-0.1158	10.2365	3,857.5936	2,548.7673	2,829.3002
133	06	3	SAT-M	0.0000	24.7638	4,829.4063	8,417.6990	4,765.8049	-6.1223	12.7991	2,548.7673	4,290.3633	2,491.6651
133	06	4	SAT-W	0.0000	21.1212	5,347.4446	4,765.8049	7,027.5617	4.0058	11.0436	2,829.3002	2,491.6651	3,730.4269
133	06	5	Female	0.5600	0.0472	-0.1158	-6.1223	4.0058	0.2465	0.0208	-0.0510	-2.6938	1.7626
133	06	6	Female*HSGPA	0.0472	0.2031	10.2365	12.7991	11.0436	0.0208	0.2009	10.2420	13.0879	10.8546
133	06	7	Female*SAT-CR	-0.1158	10.2365	3,857.5936	2,548.7673	2,829.3002	-0.0510	10.2420	3,857.5802	2,548.0583	2,829.7641
133	06	8	Female*SAT-M	-6.1203	12.7991	2,548.7673	4,290.3633	2,491.6651	-2.6938	13.0879	2,548.0583	4,252.8929	2,516.1819
133	06	9	Female*SAT-W	4.0045	11.0436	2,829.3002	2,491.6651	3,730.4269	1.7626	10.8546	2,829.7641	2,516.1819	3,714.3857
134	06	1	HSGPA	0.0000	0.2169	18.0819	18.0537	19.2166	0.0309	0.1058	8.9387	8.8353	9.1176
134	06	2	SAT-CR	0.0000	18.0819	9,199.8690	5,467.3959	7,201.7774	1.5070	8.9387	4,904.8228	2,897.5205	3,805.2201
134	06	3	SAT-M	0.0000	18.0537	5,467.3959	8,889.5834	5,689.1999	-6.5589	8.8353	2,897.5205	4,715.9540	2,991.8254
134	06	4	SAT-W	0.0000	19.2166	7,201.7774	5,689.1999	8,991.3434	4.0485	9.1176	3,805.2201	2,991.8254	4,738.2498
134	06	5	Female	0.5597	0.0309	1.5070	-6.5589	4.0485	0.2464	0.0136	0.6635	-2.8879	1.7826
134	06	6	Female*HSGPA	0.0309	0.1058	8.9387	8.8353	9.1176	0.0136	0.1048	8.8921	9.0381	8.9923
134	06	7	Female*SAT-CR	1.5069	8.9387	4,904.8228	2,897.5205	3,805.2201	0.6635	8.8921	4,902.5519	2,907.4042	3,799.1195
134	06	8	Female*SAT-M	-6.5587	8.8353	2,897.5205	4,715.9540	2,991.8254	-2.8879	9.0381	2,907.4042	4,672.9364	3,018.3780
134	06	9	Female*SAT-W	4.0483	9.1176	3,805.2201	2,991.8254	4,738.2498	1.7826	8.9923	3,799.1195	3,018.3780	4,721.8603
134	07	1	HSGPA	0.0000	0.2099	17.8253	17.2207	18.8098	0.0296	0.0988	8.4750	8.1031	8.6666
134	07	2	SAT-CR	0.0000	17.8253	9,308.7433	5,403.6622	7,266.7932	1.0887	8.4750	4,935.7869	2,853.6884	3,805.3465
134	07	3	SAT-M	0.0000	17.2207	5,403.6622	8,782.4554	5,581.6931	-5.9937	8.1031	2,853.6884	4,649.0158	2,925.0057
134	07	4	SAT-W	0.0000	18.8098	7,266.7932	5,581.6931	9,043.1250	3.8480	8.6666	3,805.3465	2,925.0057	4,718.4015
134	07	5	Female	0.5497	0.0296	1.0887	-5.9937	3.8480	0.2475	0.0133	0.4903	-2.6992	1.7329
134	07	6	Female*HSGPA	0.0296	0.0988	8.4750	8.1031	8.6666	0.0133	0.0980	8.4427	8.2806	8.5526
134	07	7	Female*SAT-CR	1.0886	8.4750	4,935.7869	2,853.6884	3,805.3465	0.4903	8.4427	4,934.6017	2,860.2132	3,801.1575
134	07	8	Female*SAT-M	-5.9935	8.1031	2,853.6884	4,649.0158	2,925.0057	-2.6992	8.2806	2,860.2132	4,613.0929	2,948.0684
134	07	9	Female*SAT-W	3.8478	8.6666	3,805.3465	2,925.0057	4,718.4015	1.7329	8.5526	3,801.1575	2,948.0684	4,703.5951
134	08	1	HSGPA	0.0000	0.2111	17.0283	17.8614	18.8397	0.0279	0.0988	7.6683	8.0075	8.2677
134	08	2	SAT-CR	0.0000	17.0283	9,337.1860	5,418.4996	7,428.2900	0.7394	7.6683	4,674.9764	2,688.4087	3,699.2931
134	08	3	SAT-M	0.0000	17.8614	5,418.4996	9,013.9747	5,846.4965	-6.0468	8.0075	2,688.4087	4,629.2978	2,896.9492
134	08	4	SAT-W	0.0000	18.8397	7,428.2900	5,846.4965	9,394.6224	4.8239	8.2677	3,699.2931	2,896.9492	4,717.0803
134	08	5	Female	0.5400	0.0279	0.7394	-6.0468	4.8239	0.2484	0.0128	0.3401	-2.7815	2.2190
134	08	6	Female*HSGPA	0.0279	0.0988	7.6683	8.0075	8.2677	0.0128	0.0980	7.6477	8.1760	8.1332
134	08	7	Female*SAT-CR	0.7394	7.6683	4,674.9764	2,688.4087	3,699.2931	0.3401	7.6477	4,674.4298	2,692.8793	3,695.7266
134	08	8	Female*SAT-M	-6.0465	8.0075	2,688.4087	4,629.2978	2,896.9492	-2.7815	8.1760	2,692.8793	4,592.7359	2,926.1171
134	08	9	Female*SAT-W	4.8237	8.2677	3,699.2931	2,896.9492	4,717.0803	2.2190	8.1332	3,695.7266	2,926.1171	4,693.8110

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
135	06	1	HSGPA	0.0000	0.2182	17.0626	18.1652	18.6463	0.0347	0.0935	7.6118	7.5756	7.9743
135	06	2	SAT-CR	0.0000	17.0626	8,621.6623	5,803.3658	6,871.4200	1.8318	7.6118	4,130.4305	2,678.0868	3,256.4586
135	06	3	SAT-M	0.0000	18.1652	5,803.3658	9,243.5966	5,942.9248	-6.4592	7.5756	2,678.0868	4,238.9885	2,767.1809
135	06	4	SAT-W	0.0000	18.6463	6,871.4200	5,942.9248	8,813.6510	4.9846	7.9743	3,256.4586	2,767.1809	4,164.0257
135	06	5	Female	0.5045	0.0347	1.8318	-6.4592	4.9846	0.2500	0.0172	0.9077	-3.2006	2.4699
135	06	6	Female*HSGPA	0.0347	0.0935	7.6118	7.5756	7.9743	0.0172	0.0923	7.5483	7.7996	7.8014
135	06	7	Female*SAT-CR	1.8317	7.6118	4,130.4305	2,678.0868	3,256.4586	0.9077	7.5483	4,127.0751	2,689.9182	3,247.3283
135	06	8	Female*SAT-M	-6.4588	7.5756	2,678.0868	4,238.9885	2,767.1809	-3.2006	7.7996	2,689.9182	4,197.2703	2,799.3751
135	06	9	Female*SAT-W	4.9843	7.9743	3,256.4586	2,767.1809	4,164.0257	2.4699	7.8014	3,247.3283	2,799.3751	4,139.1813
136	07	1	HSGPA	0.0000	0.2926	21.5099	24.5441	23.3908	0.0276	0.1306	9.9198	11.0335	10.7210
136	07	2	SAT-CR	0.0000	21.5099	9,664.6843	6,800.7118	7,898.0113	-1.3701	9.9198	4,558.3610	3,215.0252	3,752.2150
136	07	3	SAT-M	0.0000	24.5441	6,800.7118	11,210.3469	7,045.2127	-10.3129	11.0335	3,215.0252	5,234.2470	3,346.0264
136	07	4	SAT-W	0.0000	23.3908	7,898.0113	7,045.2127	9,768.9233	2.2867	10.7210	3,752.2150	3,346.0264	4,585.5850
136	07	5	Female	0.4764	0.0276	-1.3701	-10.3129	2.2867	0.2494	0.0144	-0.7174	-5.4000	1.1973
136	07	6	Female*HSGPA	0.0276	0.1306	9.9198	11.0335	10.7210	0.0144	0.1298	9.9576	11.3181	10.6579
136	07	7	Female*SAT-CR	-1.3701	9.9198	4,558.3610	3,215.0252	3,752.2150	-0.7174	9.9576	4,556.4837	3,200.8952	3,755.3480
136	07	8	Female*SAT-M	-10.3128	11.0335	3,215.0252	5,234.2470	3,346.0264	-5.4000	11.3181	3,200.8952	5,127.8919	3,369.6083
136	07	9	Female*SAT-W	2.2866	10.7210	3,752.2150	3,346.0264	4,585.5850	1.1973	10.6579	3,755.3480	3,369.6083	4,580.3562
136	08	1	HSGPA	0.0000	0.2975	21.5376	25.6655	23.8125	0.0273	0.1335	10.1831	11.5974	11.1832
136	08	2	SAT-CR	0.0000	21.5376	9,555.5373	6,705.6929	7,823.0552	-1.8546	10.1831	4,461.8352	3,181.3113	3,730.7450
136	08	3	SAT-M	0.0000	25.6655	6,705.6929	11,282.8021	7,077.5964	-9.9354	11.5974	3,181.3113	5,283.8328	3,386.2944
136	08	4	SAT-W	0.0000	23.8125	7,823.0552	7,077.5964	9,902.0181	2.8530	11.1832	3,730.7450	3,386.2944	4,728.0181
136	08	5	Female	0.4755	0.0273	-1.8546	-9.9354	2.8530	0.2494	0.0143	-0.9727	-5.2109	1.4963
136	08	6	Female*HSGPA	0.0273	0.1335	10.1831	11.5974	11.1832	0.0143	0.1328	10.2337	11.8688	11.1053
136	08	7	Female*SAT-CR	-1.8546	10.1831	4,461.8352	3,181.3113	3,730.7450	-0.9727	10.2337	4,458.3956	3,162.8852	3,736.0361
136	08	8	Female*SAT-M	-9.9353	11.5974	3,181.3113	5,283.8328	3,386.2944	-5.2109	11.8688	3,162.8852	5,185.1216	3,414.6396
136	08	9	Female*SAT-W	2.8529	11.1832	3,730.7450	3,386.2944	4,728.0181	1.4963	11.1053	3,736.0361	3,414.6396	4,719.8787
137	06	1	HSGPA	0.0000	0.3274	21.3172	24.2013	22.5761	0.0444	0.1738	12.9883	14.3473	13.3961
137	06	2	SAT-CR	0.0000	21.3172	7,859.0859	5,205.6151	5,856.1510	0.4919	12.9883	4,418.7836	2,923.0532	3,358.3864
137	06	3	SAT-M	0.0000	24.2013	5,205.6151	8,996.2907	5,135.8265	-5.6340	14.3473	2,923.0532	4,897.8744	2,951.8160
137	06	4	SAT-W	0.0000	22.5761	5,856.1510	5,135.8265	7,696.6559	3.8885	13.3961	3,358.3864	2,951.8160	4,363.8532
137	06	5	Female	0.5553	0.0444	0.4919	-5.6340	3.8885	0.2470	0.0198	0.2187	-2.5054	1.7292
137	06	6	Female*HSGPA	0.0444	0.1738	12.9883	14.3473	13.3961	0.0198	0.1719	12.9665	14.5975	13.2235
137	06	7	Female*SAT-CR	0.4917	12.9883	4,418.7836	2,923.0532	3,358.3864	0.2187	12.9665	4,418.5418	2,925.8236	3,356.4743
137	06	8	Female*SAT-M	-5.6321	14.3473	2,923.0532	4,897.8744	2,951.8160	-2.5054	14.5975	2,925.8236	4,866.1430	2,973.7168
137	06	9	Female*SAT-W	3.8873	13.3961	3,358.3864	2,951.8160	4,363.8532	1.7292	13.2235	3,356.4743	2,973.7168	4,348.7375
137	07	1	HSGPA	0.0000	0.3394	22.3056	24.4153	24.5825	0.0465	0.1776	12.5941	14.2001	13.8811
137	07	2	SAT-CR	0.0000	22.3056	7,771.1369	5,084.3190	6,133.5175	1.1955	12.5941	4,243.4304	2,686.2053	3,358.8294
137	07	3	SAT-M	0.0000	24.4153	5,084.3190	8,559.7493	5,218.1859	-5.6472	14.2001	2,686.2053	4,406.4341	2,788.0512
137	07	4	SAT-W	0.0000	24.5825	6,133.5175	5,218.1859	7,890.7495	4.6884	13.8811	3,358.8294	2,788.0512	4,253.5324
137	07	5	Female	0.5547	0.0465	1.1955	-5.6472	4.6884	0.2471	0.0207	0.5324	-2.5148	2.0878
137	07	6	Female*HSGPA	0.0465	0.1776	12.5941	14.2001	13.8811	0.0207	0.1754	12.5385	14.4629	13.6630
137	07	7	Female*SAT-CR	1.1952	12.5941	4,243.4304	2,686.2053	3,358.8294	0.5324	12.5385	4,242.0016	2,692.9548	3,353.2260
137	07	8	Female*SAT-M	-5.6458	14.2001	2,686.2053	4,406.4341	2,788.0512	-2.5148	14.4629	2,692.9548	4,374.5509	2,814.5208
137	07	9	Female*SAT-W	4.6872	13.8811	3,358.8294	2,788.0512	4,253.5324	2.0878	13.6630	3,353.2260	2,814.5208	4,231.5572

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
137	08	1	HSGPA	0.0000	0.3152	19.4872	22.4969	22.4308	0.0467	0.1697	11.4672	12.9806	12.9600
137	08	2	SAT-CR	0.0000	19.4872	7,628.8710	5,005.6113	5,806.1304	-1.5640	11.4672	4,293.5344	2,779.0826	3,304.3874
137	08	3	SAT-M	0.0000	22.4969	5,005.6113	8,407.6681	4,934.2240	-7.0560	12.9806	2,779.0826	4,432.0684	2,773.7864
137	08	4	SAT-W	0.0000	22.4308	5,806.1304	4,934.2240	7,510.0532	2.6575	12.9600	3,304.3874	2,773.7864	4,222.6256
137	08	5	Female	0.5492	0.0467	-1.5640	-7.0560	2.6575	0.2476	0.0211	-0.7050	-3.1808	1.1980
137	08	6	Female*HSGPA	0.0467	0.1697	11.4672	12.9806	12.9600	0.0211	0.1675	11.5403	13.3102	12.8358
137	08	7	Female*SAT-CR	-1.5636	11.4672	4,293.5344	2,779.0826	3,304.3874	-0.7050	11.5403	4,291.0890	2,768.0500	3,308.5426
137	08	8	Female*SAT-M	-7.0541	12.9806	2,779.0826	4,432.0684	2,773.7864	-3.1808	13.3102	2,768.0500	4,382.2943	2,792.5326
137	08	9	Female*SAT-W	2.6568	12.9600	3,304.3874	2,773.7864	4,222.6256	1.1980	12.8358	3,308.5426	2,792.5326	4,215.5653
138	06	1	HSGPA	0.0000	0.2076	12.8713	13.6908	14.2862	0.0298	0.0811	5.5216	5.6928	5.7712
138	06	2	SAT-CR	0.0000	12.8713	7,720.7923	4,126.5354	5,838.7496	1.2489	5.5216	3,412.6950	1,832.5182	2,529.8945
138	06	3	SAT-M	0.0000	13.6908	4,126.5354	7,839.3718	4,324.0877	-8.4539	5.6928	1,832.5182	3,491.9950	1,829.9989
138	06	4	SAT-W	0.0000	14.2862	5,838.7496	4,324.0877	7,853.8390	4.8550	5.7712	2,529.8945	1,829.9989	3,300.5717
138	06	5	Female	0.4383	0.0298	1.2489	-8.4539	4.8550	0.2462	0.0168	0.7016	-4.7489	2.7273
138	06	6	Female*HSGPA	0.0298	0.0811	5.5216	5.6928	5.7712	0.0168	0.0802	5.4843	5.9450	5.6264
138	06	7	Female*SAT-CR	1.2487	5.5216	3,412.6950	1,832.5182	2,529.8945	0.7016	5.4843	3,411.1355	1,843.0745	2,523.8320
138	06	8	Female*SAT-M	-8.4524	5.6928	1,832.5182	3,491.9950	1,829.9989	-4.7489	5.9450	1,843.0745	3,420.5393	1,871.0355
138	06	9	Female*SAT-W	4.8542	5.7712	2,529.8945	1,829.9989	3,300.5717	2.7273	5.6264	2,523.8320	1,871.0355	3,277.0046
138	07	1	HSGPA	0.0000	0.2012	12.6520	14.2479	13.6482	0.0239	0.0840	6.3641	6.2819	6.3003
138	07	2	SAT-CR	0.0000	12.6520	8,106.9202	4,416.0140	6,033.7636	0.7052	6.3641	3,540.8869	1,957.3038	2,638.4046
138	07	3	SAT-M	0.0000	14.2479	4,416.0140	8,045.0437	4,590.0903	-6.4389	6.2819	1,957.3038	3,602.9667	2,035.0169
138	07	4	SAT-W	0.0000	13.6482	6,033.7636	4,590.0903	7,819.8066	4.4799	6.3003	2,638.4046	2,035.0169	3,391.2628
138	07	5	Female	0.4400	0.0239	0.7052	-6.4389	4.4799	0.2464	0.0134	0.3949	-3.6055	2.5085
138	07	6	Female*HSGPA	0.0238	0.0840	6.3641	6.2819	6.3003	0.0134	0.0834	6.3472	6.4354	6.1934
138	07	7	Female*SAT-CR	0.7051	6.3641	3,540.8869	1,957.3038	2,638.4046	0.3949	6.3472	3,540.3897	1,961.8441	2,635.2457
138	07	8	Female*SAT-M	-6.4379	6.2819	1,957.3038	3,602.9667	2,035.0169	-3.6055	6.4354	1,961.8441	3,561.5134	2,063.8580
138	07	9	Female*SAT-W	4.4792	6.3003	2,638.4046	2,035.0169	3,391.2628	2.5085	6.1934	2,635.2457	2,063.8580	3,371.1967
138	08	1	HSGPA	0.0000	0.1969	10.9422	13.5638	12.9442	0.0235	0.0798	4.8502	5.6999	5.5193
138	08	2	SAT-CR	0.0000	10.9422	7,669.7883	3,918.5578	5,863.2202	1.0843	4.8502	3,065.0994	1,608.6256	2,302.7409
138	08	3	SAT-M	0.0000	13.5638	3,918.5578	7,923.9401	4,383.0999	-6.8557	5.6999	1,608.6256	3,634.1643	1,824.3101
138	08	4	SAT-W	0.0000	12.9442	5,863.2202	4,383.0999	8,005.2138	5.9205	5.5193	2,302.7409	1,824.3101	3,165.0631
138	08	5	Female	0.4309	0.0235	1.0843	-6.8557	5.9205	0.2453	0.0134	0.6171	-3.9015	3.3692
138	08	6	Female*HSGPA	0.0235	0.0798	4.8502	5.6999	5.5193	0.0134	0.0792	4.8247	5.8608	5.3804
138	08	7	Female*SAT-CR	1.0841	4.8502	3,065.0994	1,608.6256	2,302.7409	0.6171	4.8247	3,063.9238	1,616.0581	2,296.3223
138	08	8	Female*SAT-M	-6.8545	5.6999	1,608.6256	3,634.1643	1,824.3101	-3.9015	5.8608	1,616.0581	3,587.1722	1,864.8916
138	08	9	Female*SAT-W	5.9194	5.5193	2,302.7409	1,824.3101	3,165.0631	3.3692	5.3804	2,296.3223	1,864.8916	3,130.0177
139	06	1	HSGPA	0.0000	0.3076	21.9367	27.4476	25.2433	0.0236	0.1669	11.8164	14.4335	14.2295
139	06	2	SAT-CR	0.0000	21.9367	8,959.2855	5,842.2644	6,832.7785	-2.6850	11.8164	4,961.5224	3,274.0851	3,914.4534
139	06	3	SAT-M	0.0000	27.4476	5,842.2644	10,379.8014	6,218.7007	-8.6741	14.4335	3,274.0851	5,743.1705	3,598.3382
139	06	4	SAT-W	0.0000	25.2433	6,832.7785	6,218.7007	8,700.7843	0.6431	14.2295	3,914.4534	3,598.3382	5,037.1327
139	06	5	Female	0.5659	0.0236	-2.6850	-8.6741	0.6431	0.2458	0.0102	-1.1656	-3.7656	0.2792
139	06	6	Female*HSGPA	0.0236	0.1669	11.8164	14.4335	14.2295	0.0102	0.1663	11.8797	14.6380	14.2144
139	06	7	Female*SAT-CR	-2.6830	11.8164	4,961.5224	3,274.0851	3,914.4534	-1.1656	11.8797	4,954.3185	3,250.8121	3,916.1790
139	06	8	Female*SAT-M	-8.6679	14.4335	3,274.0851	5,743.1705	3,598.3382	-3.7656	14.6380	3,250.8121	5,667.9847	3,603.9129
139	06	9	Female*SAT-W	0.6427	14.2295	3,914.4534	3,598.3382	5,037.1327	0.2792	14.2144	3,916.1790	3,603.9129	5,036.7194

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
139	07	1	HSGPA	0.0000	0.2907	19.4117	23.3551	22.5822	0.0450	0.1566	11.1808	13.6739	12.9411
139	07	2	SAT-CR	0.0000	19.4117	8,201.0826	5,287.0503	6,355.8928	0.5425	11.1808	4,874.2717	3,147.4191	3,799.2483
139	07	3	SAT-M	0.0000	23.3551	5,287.0503	9,015.2931	5,373.7863	-4.3894	13.6739	3,147.4191	5,438.2049	3,322.9204
139	07	4	SAT-W	0.0000	22.5822	6,355.8928	5,373.7863	8,149.4922	4.5927	12.9411	3,799.2483	3,322.9204	4,824.5055
139	07	5	Female	0.5953	0.0450	0.5425	-4.3894	4.5927	0.2411	0.0182	0.2196	-1.7765	1.8588
139	07	6	Female*HSGPA	0.0450	0.1566	11.1808	13.6739	12.9411	0.0182	0.1546	11.1564	13.8713	12.7345
139	07	7	Female*SAT-CR	0.5422	11.1808	4,874.2717	3,147.4191	3,799.2483	0.2196	11.1564	4,873.9775	3,149.7989	3,796.7581
139	07	8	Female*SAT-M	-4.3868	13.6739	3,147.4191	5,438.2049	3,322.9204	-1.7765	13.8713	3,149.7989	5,418.9497	3,343.0678
139	07	9	Female*SAT-W	4.5900	12.9411	3,799.2483	3,322.9204	4,824.5055	1.8588	12.7345	3,796.7581	3,343.0678	4,803.4247
139	08	1	HSGPA	0.0000	0.2999	22.7059	26.8289	24.1768	0.0487	0.1670	13.2313	16.3469	14.1200
139	08	2	SAT-CR	0.0000	22.7059	8,971.5270	5,717.8860	6,872.2632	-0.0767	13.2313	5,208.8777	3,527.1435	4,201.5294
139	08	3	SAT-M	0.0000	26.8289	5,717.8860	10,516.1649	5,983.4008	-5.5667	16.3469	3,527.1435	6,599.7544	3,879.9469
139	08	4	SAT-W	0.0000	24.1768	6,872.2632	5,983.4008	8,645.3989	4.0359	14.1200	4,201.5294	3,879.9469	5,289.7778
139	08	5	Female	0.5987	0.0487	-0.0767	-5.5667	4.0359	0.2404	0.0195	-0.0308	-2.2339	1.6196
139	08	6	Female*HSGPA	0.0486	0.1670	13.2313	16.3469	14.1200	0.0195	0.1646	13.2350	16.6177	13.9237
139	08	7	Female*SAT-CR	-0.0767	13.2313	5,208.8777	3,527.1435	4,201.5294	-0.0308	13.2350	5,208.8718	3,526.7167	4,201.8388
139	08	8	Female*SAT-M	-5.5631	16.3469	3,527.1435	6,599.7544	3,879.9469	-2.2339	16.6177	3,526.7167	6,568.7865	3,902.3989
139	08	9	Female*SAT-W	4.0333	14.1200	4,201.5294	3,879.9469	5,289.7778	1.6196	13.9237	4,201.8388	3,902.3989	5,273.5000
140	07	1	HSGPA	0.0000	0.3215	20.0274	22.9041	21.8796	0.0335	0.1539	9.4807	10.6218	10.6404
140	07	2	SAT-CR	0.0000	20.0274	8,954.9003	5,816.7025	7,101.5655	0.0963	9.4807	4,521.6990	2,839.0851	3,576.1623
140	07	3	SAT-M	0.0000	22.9041	5,816.7025	9,265.8765	5,748.8882	-7.4648	10.6218	2,839.0851	4,472.8291	2,827.4662
140	07	4	SAT-W	0.0000	21.8796	7,101.5655	5,748.8882	8,710.6213	3.8768	10.6404	3,576.1623	2,827.4662	4,409.4353
140	07	5	Female	0.5257	0.0335	0.0963	-7.4648	3.8768	0.2494	0.0159	0.0457	-3.5406	1.8388
140	07	6	Female*HSGPA	0.0335	0.1539	9.4807	10.6218	10.6404	0.0159	0.1528	9.4774	10.8722	10.5104
140	07	7	Female*SAT-CR	0.0963	9.4807	4,521.6990	2,839.0851	3,576.1623	0.0457	9.4774	4,521.6898	2,839.8041	3,575.7889
140	07	8	Female*SAT-M	-7.4638	10.6218	2,839.0851	4,472.8291	2,827.4662	-3.5406	10.8722	2,839.8041	4,417.1129	2,856.4020
140	07	9	Female*SAT-W	3.8763	10.6404	3,576.1623	2,827.4662	4,409.4353	1.8388	10.5104	3,575.7889	2,856.4020	4,394.4077
141	08	1	HSGPA	0.0000	0.3227	27.2665	30.0007	28.4127	0.0381	0.1689	15.5561	16.6067	15.7427
141	08	2	SAT-CR	0.0000	27.2665	9,847.8076	7,088.3623	7,929.3297	-5.4832	15.5561	5,329.4349	3,925.3643	4,384.1844
141	08	3	SAT-M	0.0000	30.0007	7,088.3623	10,348.8147	6,976.5979	-10.3069	16.6067	3,925.3643	5,510.6256	3,925.5072
141	08	4	SAT-W	0.0000	28.4127	7,929.3297	6,976.5979	9,751.0027	-0.0461	15.7427	4,384.1844	3,925.5072	5,497.6905
141	08	5	Female	0.5557	0.0381	-5.4832	-10.3069	-0.0461	0.2470	0.0169	-2.4360	-4.5790	-0.0205
141	08	6	Female*HSGPA	0.0380	0.1689	15.5561	16.6067	15.7427	0.0169	0.1675	15.7647	16.9988	15.7445
141	08	7	Female*SAT-CR	-5.4810	15.5561	5,329.4349	3,925.3643	4,384.1844	-2.4360	15.7647	5,299.3816	3,868.8722	4,383.9320
141	08	8	Female*SAT-M	-10.3028	16.6067	3,925.3643	5,510.6256	3,925.5072	-4.5790	16.9988	3,868.8722	5,404.4357	3,925.0326
141	08	9	Female*SAT-W	-0.0460	15.7427	4,384.1844	3,925.5072	5,497.6905	-0.0205	15.7445	4,383.9320	3,925.0326	5,497.6883
142	07	1	HSGPA	0.0000	0.2764	10.7407	13.3952	12.2176	0.0214	0.1322	6.2429	7.1644	6.7176
142	07	2	SAT-CR	0.0000	10.7407	10,595.8130	6,875.8264	8,205.0688	-6.7924	6.2429	5,156.9248	3,469.5558	4,044.2177
142	07	3	SAT-M	0.0000	13.3952	6,875.8264	11,686.1879	6,806.4551	-15.2770	7.1644	3,469.5558	5,803.4276	3,452.5857
142	07	4	SAT-W	0.0000	12.2176	8,205.0688	6,806.4551	9,533.2306	-3.4326	6.7176	4,044.2177	3,452.5857	4,724.7282
142	07	5	Female	0.4947	0.0214	-6.7924	-15.2770	-3.4326	0.2500	0.0108	-3.4320	-7.7190	-1.7344
142	07	6	Female*HSGPA	0.0214	0.1322	6.2429	7.1644	6.7176	0.0108	0.1318	6.3884	7.4918	6.7912
142	07	7	Female*SAT-CR	-6.7916	6.2429	5,156.9248	3,469.5558	4,044.2177	-3.4320	6.3884	5,110.7931	3,365.7995	4,020.9047
142	07	8	Female*SAT-M	-15.2753	7.1644	3,469.5558	5,803.4276	3,452.5857	-7.7190	7.4918	3,365.7995	5,570.0660	3,400.1515
142	07	9	Female*SAT-W	-3.4322	6.7176	4,044.2177	3,452.5857	4,724.7282	-1.7344	6.7912	4,020.9047	3,400.1515	4,712.9468

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
142	08	1	HSGPA	0.0000	0.2733	11.8034	14.9096	12.8726	0.0152	0.1387	7.0862	8.4659	7.2636
142	08	2	SAT-CR	0.0000	11.8034	10,413.6267	7,115.6303	8,027.8104	-7.2727	7.0862	5,262.0923	3,679.1532	4,110.5816
142	08	3	SAT-M	0.0000	14.9096	7,115.6303	12,260.0783	7,088.5760	-16.9261	8.4659	3,679.1532	6,227.9578	3,694.6789
142	08	4	SAT-W	0.0000	12.8726	8,027.8104	7,088.5760	9,392.8140	-3.8593	7.2636	4,110.5816	3,694.6789	4,808.1721
142	08	5	Female	0.5137	0.0152	-7.2727	-16.9261	-3.8593	0.2498	0.0074	-3.5370	-8.2317	-1.8769
142	08	6	Female*HSGPA	0.0152	0.1387	7.0862	8.4659	7.2636	0.0074	0.1384	7.1968	8.7234	7.3223
142	08	7	Female*SAT-CR	-7.2719	7.0862	5,262.0923	3,679.1532	4,110.5816	-3.5370	7.1968	5,209.2055	3,556.0678	4,082.5173
142	08	8	Female*SAT-M	-16.9242	8.4659	3,679.1532	6,227.9578	3,694.6789	-8.2317	8.7234	3,556.0678	5,941.4967	3,629.3638
142	08	9	Female*SAT-W	-3.8588	7.2636	4,110.5816	3,694.6789	4,808.1721	-1.8769	7.3223	4,082.5173	3,629.3638	4,793.2798
143	06	1	HSGPA	0.0000	0.3254	26.7936	26.2080	27.9708	0.0295	0.1975	17.7414	17.1126	17.7256
143	06	2	SAT-CR	0.0000	26.7936	9,754.3517	5,729.0302	7,501.3382	0.0681	17.7414	6,282.0310	3,652.5329	4,875.3289
143	06	3	SAT-M	0.0000	26.2080	5,729.0302	8,725.8654	5,463.9067	-9.2881	17.1126	3,652.5329	5,257.0542	3,525.4628
143	06	4	SAT-W	0.0000	27.9708	7,501.3382	5,463.9067	8,738.4553	2.8246	17.7256	4,875.3289	3,525.4628	5,602.4640
143	06	5	Female	0.6336	0.0295	0.0681	-9.2881	2.8246	0.2322	0.0108	0.0250	-3.4035	1.0350
143	06	6	Female*HSGPA	0.0295	0.1975	17.7414	17.1126	17.7256	0.0108	0.1966	17.7394	17.3863	17.6423
143	06	7	Female*SAT-CR	0.0681	17.7414	6,282.0310	3,652.5329	4,875.3289	0.0250	17.7394	6,282.0264	3,653.1652	4,875.1366
143	06	8	Female*SAT-M	-9.2847	17.1126	3,652.5329	5,257.0542	3,525.4628	-3.4035	17.3863	3,653.1652	5,170.8174	3,551.6878
143	06	9	Female*SAT-W	2.8235	17.7256	4,875.3289	3,525.4628	5,602.4640	1.0350	17.6423	4,875.1366	3,551.6878	5,594.4888
144	06	1	HSGPA	0.0000	0.3272	20.7442	24.9318	22.0226	0.0447	0.1599	10.4877	12.6833	11.5875
144	06	2	SAT-CR	0.0000	20.7442	7,462.6375	5,271.9833	5,658.1203	0.6638	10.4877	3,962.9717	2,704.3900	2,973.8325
144	06	3	SAT-M	0.0000	24.9318	5,271.9833	9,692.4178	5,269.0674	-6.7429	12.6833	2,704.3900	4,840.6723	2,692.3886
144	06	4	SAT-W	0.0000	22.0226	5,658.1203	5,269.0674	7,435.7092	4.6867	11.5875	2,973.8325	2,692.3886	3,938.2179
144	06	5	Female	0.5411	0.0447	0.6638	-6.7429	4.6867	0.2484	0.0205	0.3046	-3.0943	2.1507
144	06	6	Female*HSGPA	0.0446	0.1599	10.4877	12.6833	11.5875	0.0205	0.1579	10.4581	12.9842	11.3783
144	06	7	Female*SAT-CR	0.6635	10.4877	3,962.9717	2,704.3900	2,973.8325	0.3046	10.4581	3,962.5312	2,708.8640	2,970.7228
144	06	8	Female*SAT-M	-6.7395	12.6833	2,704.3900	4,840.6723	2,692.3886	-3.0943	12.9842	2,708.8640	4,795.2286	2,723.9746
144	06	9	Female*SAT-W	4.6843	11.5875	2,973.8325	2,692.3886	3,938.2179	2.1507	11.3783	2,970.7228	2,723.9746	3,916.2638
144	07	1	HSGPA	0.0000	0.3363	21.2118	25.1416	24.1945	0.0411	0.1681	12.1009	13.0881	13.3724
144	07	2	SAT-CR	0.0000	21.2118	7,691.8602	5,126.2107	6,010.7155	0.3947	12.1009	4,251.7734	2,790.0926	3,442.2120
144	07	3	SAT-M	0.0000	25.1416	5,126.2107	8,939.7480	5,047.9786	-7.2721	13.0881	2,790.0926	4,542.6561	2,775.8587
144	07	4	SAT-W	0.0000	24.1945	6,010.7155	5,047.9786	7,790.7044	5.1476	13.3724	3,442.2120	2,775.8587	4,392.9400
144	07	5	Female	0.5412	0.0411	0.3947	-7.2721	5.1476	0.2484	0.0189	0.1811	-3.3366	2.3618
144	07	6	Female*HSGPA	0.0411	0.1681	12.1009	13.0881	13.3724	0.0189	0.1664	12.0847	13.3868	13.1610
144	07	7	Female*SAT-CR	0.3946	12.1009	4,251.7734	2,790.0926	3,442.2120	0.1811	12.0847	4,251.6176	2,792.9618	3,440.1809
144	07	8	Female*SAT-M	-7.2687	13.0881	2,790.0926	4,542.6561	2,775.8587	-3.3366	13.3868	2,792.9618	4,489.7975	2,813.2751
144	07	9	Female*SAT-W	5.1452	13.3724	3,442.2120	2,775.8587	4,392.9400	2.3618	13.1610	3,440.1809	2,813.2751	4,366.4546
144	08	1	HSGPA	0.0000	0.3458	20.6226	24.9651	23.2569	0.0481	0.1596	9.4788	11.1307	10.3974
144	08	2	SAT-CR	0.0000	20.6226	7,858.6420	5,475.0229	5,944.7820	-0.8032	9.4788	3,741.1038	2,595.9451	2,915.5838
144	08	3	SAT-M	0.0000	24.9651	5,475.0229	9,142.5883	5,288.3670	-6.8635	11.1307	2,595.9451	4,283.2543	2,576.7880
144	08	4	SAT-W	0.0000	23.2569	5,944.7820	5,288.3670	7,750.4228	4.0651	10.3974	2,915.5838	2,576.7880	3,854.0870
144	08	5	Female	0.5073	0.0481	-0.8032	-6.8635	4.0651	0.2501	0.0237	-0.3957	-3.3819	2.0030
144	08	6	Female*HSGPA	0.0481	0.1596	9.4788	11.1307	10.3974	0.0237	0.1573	9.5174	11.4609	10.2019
144	08	7	Female*SAT-CR	-0.8028	9.4788	3,741.1038	2,595.9451	2,915.5838	-0.3957	9.5174	3,740.4591	2,590.4353	2,918.8471
144	08	8	Female*SAT-M	-6.8602	11.1307	2,595.9451	4,283.2543	2,576.7880	-3.3819	11.4609	2,590.4353	4,236.1693	2,604.6755
144	08	9	Female*SAT-W	4.0632	10.3974	2,915.5838	2,576.7880	3,854.0870	2.0030	10.2019	2,918.8471	2,604.6755	3,837.5697



## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
145	08	1	HSGPA	0.0000	0.3183	16.7733	19.7998	17.8199	0.0404	0.1507	8.5566	9.6728	8.9861
145	08	2	SAT-CR	0.0000	16.7733	8,901.4987	5,814.8103	6,904.3924	-0.4147	8.5566	4,244.2585	2,863.0703	3,420.8698
145	08	3	SAT-M	0.0000	19.7998	5,814.8103	9,711.9338	5,846.2857	-8.7970	9.6728	2,863.0703	4,756.5851	2,970.9950
145	08	4	SAT-W	0.0000	17.8199	6,904.3924	5,846.2857	8,675.5336	3.1732	8.9861	3,420.8698	2,970.9950	4,343.4701
145	08	5	Female	0.5030	0.0404	-0.4147	-8.7970	3.1732	0.2500	0.0201	-0.2061	-4.3718	1.5770
145	08	6	Female*HSGPA	0.0404	0.1507	8.5566	9.6728	8.9861	0.0201	0.1491	8.5734	10.0279	8.8580
145	08	7	Female*SAT-CR	-0.4147	8.5566	4,244.2585	2,863.0703	3,420.8698	-0.2061	8.5734	4,244.0865	2,859.4220	3,422.1858
145	08	8	Female*SAT-M	-8.7966	9.6728	2,863.0703	4,756.5851	2,970.9950	-4.3718	10.0279	2,859.4220	4,679.2015	2,998.9078
145	08	9	Female*SAT-W	3.1730	8.9861	3,420.8698	2,970.9950	4,343.4701	1.5770	8.8580	3,422.1858	2,998.9078	4,333.4017
146	06	1	HSGPA	0.0000	0.2758	16.0913	17.5641	17.5422	0.0419	0.1573	10.3232	10.8394	10.6868
146	06	2	SAT-CR	0.0000	16.0913	8,774.0819	5,279.2698	6,794.4022	-0.7905	10.3232	5,385.8823	3,194.6004	4,225.4782
146	06	3	SAT-M	0.0000	17.5641	5,279.2698	8,392.0542	5,165.8516	-8.0686	10.8394	3,194.6004	5,011.3718	3,192.5060
146	06	4	SAT-W	0.0000	17.5422	6,794.4022	5,165.8516	8,475.8594	2.7122	10.6868	4,225.4782	3,192.5060	5,250.3481
146	06	5	Female	0.6132	0.0419	-0.7905	-8.0686	2.7122	0.2372	0.0162	-0.3058	-3.1212	1.0492
146	06	6	Female*HSGPA	0.0419	0.1573	10.3232	10.8394	10.6868	0.0162	0.1555	10.3563	11.1776	10.5731
146	06	7	Female*SAT-CR	-0.7903	10.3232	5,385.8823	3,194.6004	4,225.4782	-0.3058	10.3563	5,385.2576	3,188.2238	4,227.6216
146	06	8	Female*SAT-M	-8.0670	10.8394	3,194.6004	5,011.3718	3,192.5060	-3.1212	11.1776	3,188.2238	4,946.2820	3,214.3855
146	06	9	Female*SAT-W	2.7117	10.6868	4,225.4782	3,192.5060	5,250.3481	1.0492	10.5731	4,227.6216	3,214.3855	5,242.9934
146	07	1	HSGPA	0.0000	0.2606	14.6996	16.5351	15.6980	0.0315	0.1474	8.8822	9.9156	9.3141
146	07	2	SAT-CR	0.0000	14.6996	8,780.2634	4,887.0072	6,541.7919	-0.4922	8.8822	5,265.6090	2,914.1888	3,922.6640
146	07	3	SAT-M	0.0000	16.5351	4,887.0072	8,106.4399	4,699.4641	-7.3930	9.9156	2,914.1888	4,745.8903	2,838.7549
146	07	4	SAT-W	0.0000	15.6980	6,541.7919	4,699.4641	7,934.5353	3.2529	9.3141	3,922.6640	2,838.7549	4,752.9472
146	07	5	Female	0.6070	0.0315	-0.4922	-7.3930	3.2529	0.2386	0.0124	-0.1934	-2.9052	1.2782
146	07	6	Female*HSGPA	0.0315	0.1474	8.8822	9.9156	9.3141	0.0124	0.1464	8.8977	10.1487	9.2116
146	07	7	Female*SAT-CR	-0.4921	8.8822	5,265.6090	2,914.1888	3,922.6640	-0.1934	8.8977	5,265.3668	2,910.5504	3,924.2648
146	07	8	Female*SAT-M	-7.3917	9.9156	2,914.1888	4,745.8903	2,838.7549	-2.9052	10.1487	2,910.5504	4,691.2430	2,862.7992
146	07	9	Female*SAT-W	3.2523	9.3141	3,922.6640	2,838.7549	4,752.9472	1.2782	9.2116	3,924.2648	2,862.7992	4,742.3679
146	08	1	HSGPA	0.0000	0.2535	13.0888	16.0571	14.7439	0.0296	0.1463	8.1176	9.9290	8.8766
146	08	2	SAT-CR	0.0000	13.0888	8,476.3242	4,900.6817	6,455.5139	-0.2458	8.1176	5,071.4470	2,890.4346	3,922.2928
146	08	3	SAT-M	0.0000	16.0571	4,900.6817	8,274.4813	4,829.5837	-8.6038	9.9290	2,890.4346	4,808.5672	2,920.7266
146	08	4	SAT-W	0.0000	14.7439	6,455.5139	4,829.5837	8,091.5523	2.8135	8.8766	3,922.2928	2,920.7266	4,880.0916
146	08	5	Female	0.6125	0.0296	-0.2458	-8.6038	2.8135	0.2374	0.0115	-0.0952	-3.3342	1.0903
146	08	6	Female*HSGPA	0.0296	0.1463	8.1176	9.9290	8.8766	0.0115	0.1455	8.1249	10.1838	8.7932
146	08	7	Female*SAT-CR	-0.2457	8.1176	5,071.4470	2,890.4346	3,922.2928	-0.0952	8.1249	5,071.3866	2,888.3204	3,922.9841
146	08	8	Female*SAT-M	-8.6024	9.9290	2,890.4346	4,808.5672	2,920.7266	-3.3342	10.1838	2,888.3204	4,734.5540	2,944.9291
146	08	9	Female*SAT-W	2.8130	8.8766	3,922.2928	2,920.7266	4,880.0916	1.0903	8.7932	3,922.9841	2,944.9291	4,872.1773
147	08	1	HSGPA	0.0000	0.3568	16.4111	18.1083	18.3911	0.0606	0.1752	9.5903	9.6918	10.0516
147	08	2	SAT-CR	0.0000	16.4111	8,511.4874	5,009.2402	6,180.5320	-0.1507	9.5903	4,689.1931	2,650.2014	3,417.7438
147	08	3	SAT-M	0.0000	18.1083	5,009.2402	7,965.9944	4,653.4052	-7.1290	9.6918	2,650.2014	4,114.3349	2,505.0443
147	08	4	SAT-W	0.0000	18.3911	6,180.5320	4,653.4052	7,518.8800	3.9862	10.0516	3,417.7438	2,505.0443	4,175.8143
147	08	5	Female	0.5557	0.0606	-0.1507	-7.1290	3.9862	0.2470	0.0269	-0.0670	-3.1676	1.7712
147	08	6	Female*HSGPA	0.0606	0.1752	9.5903	9.6918	10.0516	0.0269	0.1715	9.5994	10.1240	9.8100
147	08	7	Female*SAT-CR	-0.1506	9.5903	4,689.1931	2,650.2014	3,417.7438	-0.0670	9.5994	4,689.1704	2,649.1274	3,418.3443
147	08	8	Female*SAT-M	-7.1275	9.6918	2,650.2014	4,114.3349	2,505.0443	-3.1676	10.1240	2,649.1274	4,063.5229	2,533.4558
147	08	9	Female*SAT-W	3.9853	10.0516	3,417.7438	2,505.0443	4,175.8143	1.7712	9.8100	3,418.3443	2,533.4558	4,159.9280

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
148	06	1	HSGPA	0.0000	0.2498	14.4189	14.7497	15.6920	0.0450	0.1639	10.4592	11.0015	10.6538
148	06	2	SAT-CR	0.0000	14.4189	8,557.7958	4,475.5349	6,319.8968	0.3994	10.4592	5,927.0027	3,079.9534	4,359.7236
148	06	3	SAT-M	0.0000	14.7497	4,475.5349	7,184.4849	4,275.9811	-6.1286	11.0015	3,079.9534	4,785.9282	2,962.9853
148	06	4	SAT-W	0.0000	15.6920	6,319.8968	4,275.9811	7,779.3652	3.8069	10.6538	4,359.7236	2,962.9853	5,233.7357
148	06	5	Female	0.6902	0.0450	0.3994	-6.1286	3.8069	0.2139	0.0140	0.1237	-1.8986	1.1793
148	06	6	Female*HSGPA	0.0450	0.1639	10.4592	11.0015	10.6538	0.0140	0.1619	10.4412	11.2774	10.4824
148	06	7	Female*SAT-CR	0.3994	10.4592	5,927.0027	3,079.9534	4,359.7236	0.1237	10.4412	5,926.8432	3,082.4010	4,358.2033
148	06	8	Female*SAT-M	-6.1274	11.0015	3,079.9534	4,785.9282	2,962.9853	-1.8986	11.2774	3,082.4010	4,748.3755	2,986.3116
148	06	9	Female*SAT-W	3.8061	10.6538	4,359.7236	2,962.9853	5,233.7357	1.1793	10.4824	4,358.2033	2,986.3116	5,219.2463
148	08	1	HSGPA	0.0000	0.2515	14.4869	15.2449	16.2059	0.0379	0.1590	9.7145	10.5700	10.5605
148	08	2	SAT-CR	0.0000	14.4869	8,736.0593	4,739.8139	6,669.2166	-1.2332	9.7145	5,747.3757	3,171.6091	4,463.5847
148	08	3	SAT-M	0.0000	15.2449	4,739.8139	7,539.9726	4,901.7423	-6.7611	10.5700	3,171.6091	5,004.0459	3,384.7636
148	08	4	SAT-W	0.0000	16.2059	6,669.2166	4,901.7423	8,444.4610	3.0462	10.5605	4,463.5847	3,384.7636	5,662.7755
148	08	5	Female	0.6755	0.0379	-1.2332	-6.7611	3.0462	0.2192	0.0123	-0.4002	-2.1939	0.9884
148	08	6	Female*HSGPA	0.0379	0.1590	9.7145	10.5700	10.5605	0.0123	0.1576	9.7612	10.8261	10.4452
148	08	7	Female*SAT-CR	-1.2330	9.7145	5,747.3757	3,171.6091	4,463.5847	-0.4002	9.7612	5,745.8551	3,163.2728	4,467.3406
148	08	8	Female*SAT-M	-6.7598	10.5700	3,171.6091	5,004.0459	3,384.7636	-2.1939	10.8261	3,163.2728	4,958.3422	3,405.3551
148	08	9	Female*SAT-W	3.0456	10.5605	4,463.5847	3,384.7636	5,662.7755	0.9884	10.4452	4,467.3406	3,405.3551	5,653.4980
149	08	1	HSGPA	0.0000	0.2255	11.1356	13.3483	13.7827	0.0435	0.1370	8.0711	9.6629	9.1981
149	08	2	SAT-CR	0.0000	11.1356	6,111.9328	3,669.7592	4,624.8040	-0.6907	8.0711	3,865.8774	2,387.4669	3,002.0727
149	08	3	SAT-M	0.0000	13.3483	3,669.7592	6,887.4719	3,866.4872	-7.0872	9.6629	2,387.4669	4,352.3388	2,594.9586
149	08	4	SAT-W	0.0000	13.7827	4,624.8040	3,866.4872	6,586.8449	3.5600	9.1981	3,002.0727	2,594.9586	4,260.9773
149	08	5	Female	0.6405	0.0435	-0.6907	-7.0872	3.5600	0.2303	0.0156	-0.2483	-2.5481	1.2799
149	08	6	Female*HSGPA	0.0435	0.1370	8.0711	9.6629	9.1981	0.0156	0.1351	8.1012	9.9711	9.0433
149	08	7	Female*SAT-CR	-0.6907	8.0711	3,865.8774	2,387.4669	3,002.0727	-0.2483	8.1012	3,865.4004	2,382.5720	3,004.5315
149	08	8	Female*SAT-M	-7.0867	9.6629	2,387.4669	4,352.3388	2,594.9586	-2.5481	9.9711	2,382.5720	4,302.1141	2,620.1874
149	08	9	Female*SAT-W	3.5598	9.1981	3,002.0727	2,594.9586	4,260.9773	1.2799	9.0433	3,004.5315	2,620.1874	4,248.3043
150	06	1	HSGPA	0.0000	0.3553	31.3370	30.2147	31.2310	0.0256	0.2271	20.5063	19.5293	19.8458
150	06	2	SAT-CR	0.0000	31.3370	9,298.7992	5,816.3114	7,278.3189	-3.0423	20.5063	6,062.0573	3,576.3263	4,659.0758
150	06	3	SAT-M	0.0000	30.2147	5,816.3114	9,013.9478	5,686.4788	-10.3289	19.5293	3,576.3263	5,446.0740	3,547.4217
150	06	4	SAT-W	0.0000	31.2310	7,278.3189	5,686.4788	8,918.0685	0.0836	19.8458	4,659.0758	3,547.4217	5,635.0136
150	06	5	Female	0.6564	0.0256	-3.0423	-10.3289	0.0836	0.2257	0.0088	-1.0452	-3.5487	0.0287
150	06	6	Female*HSGPA	0.0256	0.2271	20.5063	19.5293	19.8458	0.0088	0.2264	20.5841	19.7932	19.8437
150	06	7	Female*SAT-CR	-3.0401	20.5063	6,062.0573	3,576.3263	4,659.0758	-1.0452	20.5841	6,052.8085	3,544.9258	4,659.3299
150	06	8	Female*SAT-M	-10.3213	19.5293	3,576.3263	5,446.0740	3,547.4217	-3.5487	19.7932	3,544.9258	5,339.4667	3,548.2843
150	06	9	Female*SAT-W	0.0835	19.8458	4,659.0758	3,547.4217	5,635.0136	0.0287	19.8437	4,659.3299	3,548.2843	5,635.0067
151	06	1	HSGPA	0.0000	0.4047	19.9530	23.1882	22.6187	0.0525	0.1713	8.4900	9.0489	9.3505
151	06	2	SAT-CR	0.0000	19.9530	7,587.3739	5,036.5411	5,609.3424	0.8290	8.4900	3,225.9822	2,097.2411	2,387.3938
151	06	3	SAT-M	0.0000	23.1882	5,036.5411	8,806.0242	4,845.5202	-7.1888	9.0489	2,097.2411	3,675.0269	1,991.3473
151	06	4	SAT-W	0.0000	22.6187	5,609.3424	4,845.5202	7,273.4763	4.9339	9.3505	2,387.3938	1,991.3473	3,079.4501
151	06	5	Female	0.4464	0.0525	0.8290	-7.1888	4.9339	0.2472	0.0291	0.4589	-3.9797	2.7314
151	06	6	Female*HSGPA	0.0525	0.1713	8.4900	9.0489	9.3505	0.0291	0.1685	8.4465	9.4264	9.0914
151	06	7	Female*SAT-CR	0.8289	8.4900	3,225.9822	2,097.2411	2,387.3938	0.4589	8.4465	3,225.2950	2,103.2002	2,383.3039
151	06	8	Female*SAT-M	-7.1880	9.0489	2,097.2411	3,675.0269	1,991.3473	-3.9797	9.4264	2,103.2002	3,623.3536	2,026.8123
151	06	9	Female*SAT-W	4.9334	9.3505	2,387.3938	1,991.3473	3,079.4501	2.7314	9.0914	2,383.3039	2,026.8123	3,055.1093

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
152	06	1	HSGPA	0.0000	0.2616	14.6749	12.5637	13.8292	0.0480	0.1257	8.1596	6.5310	7.3787
152	06	2	SAT-CR	0.0000	14.6749	7,942.9853	3,784.7403	5,563.8045	1.2056	8.1596	4,173.8038	1,863.3297	2,829.8468
152	06	3	SAT-M	0.0000	12.5637	3,784.7403	7,238.4511	3,854.1989	-7.0113	6.5310	1,863.3297	3,615.8574	1,859.5159
152	06	4	SAT-W	0.0000	13.8292	5,563.8045	3,854.1989	7,121.9464	4.2387	7.3787	2,829.8468	1,859.5159	3,485.5982
152	06	5	Female	0.5240	0.0480	1.2056	-7.0113	4.2387	0.2496	0.0228	0.5738	-3.3372	2.0175
152	06	6	Female*HSGPA	0.0480	0.1257	8.1596	6.5310	7.3787	0.0228	0.1234	8.1018	6.8673	7.1754
152	06	7	Female*SAT-CR	1.2049	8.1596	4,173.8038	1,863.3297	2,829.8468	0.5738	8.1018	4,172.3511	1,871.7778	2,824.7395
152	06	8	Female*SAT-M	-7.0072	6.5310	1,863.3297	3,615.8574	1,859.5159	-3.3372	6.8673	1,871.7778	3,566.7276	1,889.2174
152	06	9	Female*SAT-W	4.2362	7.3787	2,829.8468	1,859.5159	3,485.5982	2.0175	7.1754	2,824.7395	1,889.2174	3,467.6421
153	06	1	HSGPA	0.0000	0.1469	12.9532	12.7785	13.5901	0.0089	0.0733	6.9873	6.9248	7.0264
153	06	2	SAT-CR	0.0000	12.9532	10,411.7685	6,218.2301	8,343.4184	-0.1260	6.9873	5,773.5303	3,591.2079	4,602.4375
153	06	3	SAT-M	0.0000	12.7785	6,218.2301	9,305.8082	6,413.0606	-8.2739	6.9248	3,591.2079	5,322.8498	3,650.2011
153	06	4	SAT-W	0.0000	13.5901	8,343.4184	6,413.0606	9,941.9725	1.4069	7.0264	4,602.4375	3,650.2011	5,337.2828
153	06	5	Female	0.5377	0.0089	-0.1260	-8.2739	1.4069	0.2486	0.0041	-0.0583	-3.8251	0.6504
153	06	6	Female*HSGPA	0.0089	0.0733	6.9873	6.9248	7.0264	0.0041	0.0732	6.9884	6.9984	7.0139
153	06	7	Female*SAT-CR	-0.1260	6.9873	5,773.5303	3,591.2079	4,602.4375	-0.0583	6.9884	5,773.5144	3,590.1652	4,602.6148
153	06	8	Female*SAT-M	-8.2736	6.9248	3,591.2079	5,322.8498	3,650.2011	-3.8251	6.9984	3,590.1652	5,254.3955	3,661.8409
153	06	9	Female*SAT-W	1.4068	7.0264	4,602.4375	3,650.2011	5,337.2828	0.6504	7.0139	4,602.6148	3,661.8409	5,335.3036
154	08	1	HSGPA	0.0000	0.3728	19.0283	20.8479	24.6956	0.0601	0.2331	14.4734	14.4663	19.2578
154	08	2	SAT-CR	0.0000	19.0283	7,311.1886	3,427.3761	5,032.7827	0.7214	14.4734	4,336.3617	2,170.0981	3,095.8889
154	08	3	SAT-M	0.0000	20.8479	3,427.3761	6,241.3466	3,698.0441	-6.4108	14.4663	2,170.0981	3,855.5401	2,425.0555
154	08	4	SAT-W	0.0000	24.6956	5,032.7827	3,698.0441	6,527.8731	1.8292	19.2578	3,095.8889	2,425.0555	4,171.6229
154	08	5	Female	0.6371	0.0601	0.7214	-6.4108	1.8292	0.2322	0.0218	0.2618	-2.3263	0.6638
154	08	6	Female*HSGPA	0.0598	0.2331	14.4734	14.4663	19.2578	0.0218	0.2295	14.4302	14.8497	19.1484
154	08	7	Female*SAT-CR	0.7184	14.4734	4,336.3617	2,170.0981	3,095.8889	0.2618	14.4302	4,335.8435	2,174.7034	3,094.5749
154	08	8	Female*SAT-M	-6.3838	14.4663	2,170.0981	3,855.5401	2,425.0555	-2.3263	14.8497	2,174.7034	3,814.6149	2,436.7326
154	08	9	Female*SAT-W	1.8215	19.2578	3,095.8889	2,425.0555	4,171.6229	0.6638	19.1484	3,094.5749	2,436.7326	4,168.2911
155	06	1	HSGPA	0.0000	0.3137	17.0349	20.4896	18.1000	0.0409	0.1488	9.0262	10.0411	9.1308
155	06	2	SAT-CR	0.0000	17.0349	8,975.4470	5,560.7624	6,678.9236	-1.1384	9.0262	4,615.9855	2,816.9399	3,423.1298
155	06	3	SAT-M	0.0000	20.4896	5,560.7624	9,229.1755	5,149.3384	-9.3754	10.0411	2,816.9399	4,553.5246	2,615.7078
155	06	4	SAT-W	0.0000	18.1000	6,678.9236	5,149.3384	8,032.0931	2.8304	9.1308	3,423.1298	2,615.7078	4,042.0968
155	06	5	Female	0.5160	0.0409	-1.1384	-9.3754	2.8304	0.2498	0.0198	-0.5510	-4.5380	1.3700
155	06	6	Female*HSGPA	0.0409	0.1488	9.0262	10.0411	9.1308	0.0198	0.1471	9.0728	10.4248	9.0150
155	06	7	Female*SAT-CR	-1.1383	9.0262	4,615.9855	2,816.9399	3,423.1298	-0.5510	9.0728	4,614.6897	2,806.2678	3,426.3517
155	06	8	Female*SAT-M	-9.3747	10.0411	2,816.9399	4,553.5246	2,615.7078	-4.5380	10.4248	2,806.2678	4,465.6325	2,642.2418
155	06	9	Female*SAT-W	2.8302	9.1308	3,423.1298	2,615.7078	4,042.0968	1.3700	9.0150	3,426.3517	2,642.2418	4,034.0864
155	07	1	HSGPA	0.0000	0.3171	17.1730	20.0633	18.7164	0.0450	0.1498	9.0003	10.2534	9.6412
155	07	2	SAT-CR	0.0000	17.1730	9,101.1101	5,405.3381	6,780.7692	-0.4343	9.0003	4,632.8127	2,727.6868	3,498.4897
155	07	3	SAT-M	0.0000	20.0633	5,405.3381	9,196.6246	5,172.7404	-8.3871	10.2534	2,727.6868	4,624.5413	2,628.5317
155	07	4	SAT-W	0.0000	18.7164	6,780.7692	5,172.7404	8,064.7906	3.3812	9.6412	3,498.4897	2,628.5317	4,161.5740
155	07	5	Female	0.5180	0.0450	-0.4343	-8.3871	3.3812	0.2497	0.0217	-0.2093	-4.0427	1.6298
155	07	6	Female*HSGPA	0.0450	0.1498	9.0003	10.2534	9.6412	0.0217	0.1478	9.0198	10.6307	9.4891
155	07	7	Female*SAT-CR	-0.4343	9.0003	4,632.8127	2,727.6868	3,498.4897	-0.2093	9.0198	4,632.6241	2,724.0445	3,499.9581
155	07	8	Female*SAT-M	-8.3866	10.2534	2,727.6868	4,624.5413	2,628.5317	-4.0427	10.6307	2,724.0445	4,554.2019	2,656.8880
155	07	9	Female*SAT-W	3.3809	9.6412	3,498.4897	2,628.5317	4,161.5740	1.6298	9.4891	3,499.9581	2,656.8880	4,150.1425

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
155	08	1	HSGPA	0.0000	0.3043	15.9354	19.0052	17.2647	0.0374	0.1439	8.1040	9.3242	8.5466
155	08	2	SAT-CR	0.0000	15.9354	8,843.1609	5,243.4061	6,526.6015	-0.9554	8.1040	4,497.8234	2,564.0091	3,366.6200
155	08	3	SAT-M	0.0000	19.0052	5,243.4061	8,840.1181	4,983.5430	-9.1007	9.3242	2,564.0091	4,272.1670	2,497.6402
155	08	4	SAT-W	0.0000	17.2647	6,526.6015	4,983.5430	7,848.9174	2.8559	8.5466	3,366.6200	2,497.6402	4,022.0171
155	08	5	Female	0.5173	0.0374	-0.9554	-9.1007	2.8559	0.2497	0.0181	-0.4612	-4.3934	1.3787
155	08	6	Female*HSGPA	0.0374	0.1439	8.1040	9.3242	8.5466	0.0181	0.1425	8.1397	9.6646	8.4398
155	08	7	Female*SAT-CR	-0.9554	8.1040	4,497.8234	2,564.0091	3,366.6200	-0.4612	8.1397	4,496.9106	2,555.3147	3,369.3483
155	08	8	Female*SAT-M	-9.1001	9.3242	2,564.0091	4,272.1670	2,497.6402	-4.3934	9.6646	2,555.3147	4,189.3495	2,523.6288
155	08	9	Female*SAT-W	2.8557	8.5466	3,366.6200	2,497.6402	4,022.0171	1.3787	8.4398	3,369.3483	2,523.6288	4,013.8617
156	07	1	HSGPA	0.0000	0.3654	22.6075	25.7799	25.1302	0.0444	0.2243	14.8903	16.8961	16.7628
156	07	2	SAT-CR	0.0000	22.6075	7,614.7281	4,729.8450	5,949.2549	1.2306	14.8903	4,781.6130	2,981.6391	3,780.1514
156	07	3	SAT-M	0.0000	25.7799	4,729.8450	8,274.3566	5,013.8548	-4.6941	16.8961	2,981.6391	5,024.5206	3,245.9054
156	07	4	SAT-W	0.0000	25.1302	5,949.2549	5,013.8548	7,840.5268	4.5989	16.7628	3,780.1514	3,245.9054	5,016.7572
156	07	5	Female	0.6378	0.0444	1.2306	-4.6941	4.5989	0.2311	0.0161	0.4457	-1.7000	1.6655
156	07	6	Female*HSGPA	0.0444	0.2243	14.8903	16.8961	16.7628	0.0161	0.2223	14.8357	17.1043	16.5588
156	07	7	Female*SAT-CR	1.2303	14.8903	4,781.6130	2,981.6391	3,780.1514	0.4457	14.8357	4,780.0990	2,987.4144	3,774.4933
156	07	8	Female*SAT-M	-4.6930	16.8961	2,981.6391	5,024.5206	3,245.9054	-1.7000	17.1043	2,987.4144	5,002.4910	3,267.4879
156	07	9	Female*SAT-W	4.5978	16.7628	3,780.1514	3,245.9054	5,016.7572	1.6655	16.5588	3,774.4933	3,267.4879	4,995.6126
156	08	1	HSGPA	0.0000	0.3543	20.5500	25.2117	24.2578	0.0346	0.2213	14.2566	16.6942	16.0832
156	08	2	SAT-CR	0.0000	20.5500	7,218.1428	4,668.7069	5,576.5834	-0.7015	14.2566	4,607.8632	2,932.2217	3,618.5655
156	08	3	SAT-M	0.0000	25.2117	4,668.7069	8,536.7476	4,882.0538	-5.9970	16.6942	2,932.2217	5,189.1536	3,139.1272
156	08	4	SAT-W	0.0000	24.2578	5,576.5834	4,882.0538	7,582.1190	3.9489	16.0832	3,618.5655	3,139.1272	4,845.7719
156	08	5	Female	0.6403	0.0346	-0.7015	-5.9970	3.9489	0.2304	0.0124	-0.2523	-2.1573	1.4205
156	08	6	Female*HSGPA	0.0346	0.2213	14.2566	16.6942	16.0832	0.0124	0.2201	14.2809	16.9015	15.9467
156	08	7	Female*SAT-CR	-0.7013	14.2566	4,607.8632	2,932.2217	3,618.5655	-0.2523	14.2809	4,607.3712	2,928.0160	3,621.3348
156	08	8	Female*SAT-M	-5.9955	16.6942	2,932.2217	5,189.1536	3,139.1272	-2.1573	16.9015	2,928.0160	5,153.1981	3,162.8030
156	08	9	Female*SAT-W	3.9479	16.0832	3,618.5655	3,139.1272	4,845.7719	1.4205	15.9467	3,621.3348	3,162.8030	4,830.1819
157	06	1	HSGPA	0.0000	0.3332	22.1530	27.1755	24.7685	0.0312	0.1558	11.0241	13.7288	12.6081
157	06	2	SAT-CR	0.0000	22.1530	9,334.4663	6,038.1926	7,427.4960	-2.6450	11.0241	4,621.7581	3,032.7791	3,798.7711
157	06	3	SAT-M	0.0000	27.1755	6,038.1926	10,758.3528	6,312.3191	-10.5731	13.7288	3,032.7791	5,324.0727	3,253.2458
157	06	4	SAT-W	0.0000	24.7685	7,427.4960	6,312.3191	9,338.9161	1.4114	12.6081	3,798.7711	3,253.2458	4,771.4532
157	06	5	Female	0.4973	0.0312	-2.6450	-10.5731	1.4114	0.2500	0.0157	-1.3296	-5.3147	0.7094
157	06	6	Female*HSGPA	0.0312	0.1558	11.0241	13.7288	12.6081	0.0157	0.1548	11.1068	14.0591	12.5640
157	06	7	Female*SAT-CR	-2.6448	11.0241	4,621.7581	3,032.7791	3,798.7711	-1.3296	11.1068	4,614.7627	3,004.8158	3,802.5038
157	06	8	Female*SAT-M	-10.5722	13.7288	3,032.7791	5,324.0727	3,253.2458	-5.3147	14.0591	3,004.8158	5,212.2927	3,268.1669
157	06	9	Female*SAT-W	1.4112	12.6081	3,798.7711	3,253.2458	4,771.4532	0.7094	12.5640	3,802.5038	3,268.1669	4,769.4615
158	06	1	HSGPA	0.0000	0.3855	24.7645	26.3496	26.1672	0.0553	0.1832	13.2273	13.6261	13.3756
158	06	2	SAT-CR	0.0000	24.7645	12,001.7708	8,350.8732	9,594.2647	0.6598	13.2273	6,341.4424	4,278.6407	5,125.2821
158	06	3	SAT-M	0.0000	26.3496	8,350.8732	11,504.8192	7,744.1123	-7.9815	13.6261	4,278.6407	5,884.6499	4,073.6769
158	06	4	SAT-W	0.0000	26.1672	9,594.2647	7,744.1123	10,902.3389	4.4423	13.3756	5,125.2821	4,073.6769	5,661.1064
158	06	5	Female	0.5192	0.0553	0.6598	-7.9815	4.4423	0.2497	0.0266	0.3172	-3.8371	2.1356
158	06	6	Female*HSGPA	0.0553	0.1832	13.2273	13.6261	13.3756	0.0266	0.1802	13.1908	14.0674	13.1299
158	06	7	Female*SAT-CR	0.6595	13.2273	6,341.4424	4,278.6407	5,125.2821	0.3172	13.1908	6,341.0073	4,283.9044	5,122.3524
158	06	8	Female*SAT-M	-7.9781	13.6261	4,278.6407	5,884.6499	4,073.6769	-3.8371	14.0674	4,283.9044	5,820.9726	4,109.1179
158	06	9	Female*SAT-W	4.4404	13.3756	5,125.2821	4,073.6769	5,661.1064	2.1356	13.1299	5,122.3524	4,109.1179	5,641.3809

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
159	07	1	HSGPA	0.0000	0.3206	27.1825	30.0763	29.0966	0.0303	0.1520	13.4535	14.5103	14.0791
159	07	2	SAT-CR	0.0000	27.1825	11,575.9782	8,634.9756	9,593.1370	-2.2508	13.4535	5,799.6466	4,330.8717	4,834.2894
159	07	3	SAT-M	0.0000	30.0763	8,634.9756	12,857.9777	8,652.8595	-10.0329	14.5103	4,330.8717	6,354.2629	4,350.4389
159	07	4	SAT-W	0.0000	29.0966	9,593.1370	8,652.8595	11,155.2844	1.2819	14.0791	4,834.2894	4,350.4389	5,555.7097
159	07	5	Female	0.5005	0.0303	-2.2508	-10.0329	1.2819	0.2500	0.0152	-1.1243	-5.0118	0.6404
159	07	6	Female*HSGPA	0.0303	0.1520	13.4535	14.5103	14.0791	0.0152	0.1511	13.5217	14.8145	14.0402
159	07	7	Female*SAT-CR	-2.2507	13.4535	5,799.6466	4,330.8717	4,834.2894	-1.1243	13.5217	5,794.5808	4,308.2906	4,837.1746
159	07	8	Female*SAT-M	-10.0326	14.5103	4,330.8717	6,354.2629	4,350.4389	-5.0118	14.8145	4,308.2906	6,253.6067	4,363.3002
159	07	9	Female*SAT-W	1.2819	14.0791	4,834.2894	4,350.4389	5,555.7097	0.6404	14.0402	4,837.1746	4,363.3002	5,554.0663
159	08	1	HSGPA	0.0000	0.3126	25.1032	29.0392	27.7215	0.0347	0.1437	12.0134	13.5318	13.1378
159	08	2	SAT-CR	0.0000	25.1032	11,051.9663	8,118.5743	9,093.4560	-2.0437	12.0134	5,478.1998	3,999.7946	4,536.7602
159	08	3	SAT-M	0.0000	29.0392	8,118.5743	12,358.8537	8,287.2307	-9.3625	13.5318	3,999.7946	5,970.6227	4,114.7241
159	08	4	SAT-W	0.0000	27.7215	9,093.4560	8,287.2307	10,911.5407	2.4534	13.1378	4,536.7602	4,114.7241	5,389.2588
159	08	5	Female	0.4953	0.0347	-2.0437	-9.3625	2.4534	0.2500	0.0175	-1.0315	-4.7257	1.2383
159	08	6	Female*HSGPA	0.0347	0.1437	12.0134	13.5318	13.1378	0.0175	0.1425	12.0844	13.8569	13.0526
159	08	7	Female*SAT-CR	-2.0436	12.0134	5,478.1998	3,999.7946	4,536.7602	-1.0315	12.0844	5,474.0234	3,980.6613	4,541.7740
159	08	8	Female*SAT-M	-9.3622	13.5318	3,999.7946	5,970.6227	4,114.7241	-4.7257	13.8569	3,980.6613	5,882.9686	4,137.6933
159	08	9	Female*SAT-W	2.4533	13.1378	4,536.7602	4,114.7241	5,389.2588	1.2383	13.0526	4,541.7740	4,137.6933	5,383.2399
160	06	1	HSGPA	0.0000	0.2580	15.4279	18.4934	16.4293	0.0128	0.0483	3.1524	3.3173	3.3992
160	06	2	SAT-CR	0.0000	15.4279	7,898.5225	4,938.3639	5,906.6961	-0.7449	3.1524	1,872.3291	1,207.4600	1,396.9657
160	06	3	SAT-M	0.0000	18.4934	4,938.3639	8,096.0035	4,842.1958	-5.0612	3.3173	1,207.4600	2,011.7285	1,149.9830
160	06	4	SAT-W	0.0000	16.4293	5,906.6961	4,842.1958	7,626.8389	0.9950	3.3992	1,396.9657	1,149.9830	1,714.3607
160	06	5	Female	0.2096	0.0128	-0.7449	-5.0612	0.9950	0.1658	0.0101	-0.5887	-4.0003	0.7864
160	06	6	Female*HSGPA	0.0128	0.0483	3.1524	3.3173	3.3992	0.0101	0.0482	3.1620	3.3819	3.3864
160	06	7	Female*SAT-CR	-0.7444	3.1524	1,872.3291	1,207.4600	1,396.9657	-0.5887	3.1620	1,871.7746	1,203.6923	1,397.7064
160	06	8	Female*SAT-M	-5.0582	3.3173	1,207.4600	2,011.7285	1,149.9830	-4.0003	3.3819	1,203.6923	1,986.1278	1,155.0157
160	06	9	Female*SAT-W	0.9944	3.3992	1,396.9657	1,149.9830	1,714.3607	0.7864	3.3864	1,397.7064	1,155.0157	1,713.3713
161	06	1	HSGPA	0.0000	0.2931	23.1573	26.6056	24.0862	0.0304	0.1532	13.8410	15.6140	13.7415
161	06	2	SAT-CR	0.0000	23.1573	12,814.7010	8,838.5029	10,092.3559	0.8648	13.8410	7,288.9422	5,017.5826	5,707.6148
161	06	3	SAT-M	0.0000	26.6056	8,838.5029	12,168.6306	8,486.3758	-6.6809	15.6140	5,017.5826	6,591.3770	4,714.0772
161	06	4	SAT-W	0.0000	24.0862	10,092.3559	8,486.3758	11,407.4594	4.4444	13.7415	5,707.6148	4,714.0772	6,262.1864
161	06	5	Female	0.5498	0.0304	0.8648	-6.6809	4.4444	0.2476	0.0137	0.3893	-3.0074	2.0006
161	06	6	Female*HSGPA	0.0304	0.1532	13.8410	15.6140	13.7415	0.0137	0.1522	13.8147	15.8172	13.6063
161	06	7	Female*SAT-CR	0.8643	13.8410	7,288.9422	5,017.5826	5,707.6148	0.3893	13.8147	7,288.1947	5,023.3572	5,703.7733
161	06	8	Female*SAT-M	-6.6774	15.6140	5,017.5826	6,591.3770	4,714.0772	-3.0074	15.8172	5,023.3572	6,546.7658	4,743.7541
161	06	9	Female*SAT-W	4.4420	13.7415	5,707.6148	4,714.0772	6,262.1864	2.0006	13.6063	5,703.7733	4,743.7541	6,242.4444
161	07	1	HSGPA	0.0000	0.2996	26.1935	26.3947	26.5663	0.0382	0.1566	14.5335	14.0976	14.4957
161	07	2	SAT-CR	0.0000	26.1935	12,299.2276	8,304.9941	10,044.8234	-0.4142	14.5335	6,954.1699	4,765.2186	5,729.6205
161	07	3	SAT-M	0.0000	26.3947	8,304.9941	11,493.2986	8,254.9461	-6.4116	14.0976	4,765.2186	6,428.8091	4,760.6697
161	07	4	SAT-W	0.0000	26.5663	10,044.8234	8,254.9461	11,637.2181	3.6929	14.4957	5,729.6205	4,760.6697	6,503.9221
161	07	5	Female	0.5637	0.0382	-0.4142	-6.4116	3.6929	0.2461	0.0167	-0.1807	-2.7977	1.6114
161	07	6	Female*HSGPA	0.0381	0.1566	14.5335	14.0976	14.4957	0.0167	0.1552	14.5493	14.3422	14.3549
161	07	7	Female*SAT-CR	-0.4139	14.5335	6,954.1699	4,765.2186	5,729.6205	-0.1807	14.5493	6,953.9985	4,762.5645	5,731.1491
161	07	8	Female*SAT-M	-6.4083	14.0976	4,765.2186	6,428.8091	4,760.6697	-2.7977	14.3422	4,762.5645	6,387.7217	4,784.3351
161	07	9	Female*SAT-W	3.6910	14.4957	5,729.6205	4,760.6697	6,503.9221	1.6114	14.3549	5,731.1491	4,784.3351	6,490.2914

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
161	08	1	HSGPA	0.0000	0.2812	23.8565	24.8592	24.7821	0.0386	0.1414	12.2300	12.7821	12.5622
161	08	2	SAT-CR	0.0000	23.8565	12,565.1610	8,641.5935	10,140.8003	1.7740	12.2300	6,697.5782	4,513.4941	5,383.6988
161	08	3	SAT-M	0.0000	24.8592	8,641.5935	11,532.0043	8,492.8464	-2.9375	12.7821	4,513.4941	6,055.7074	4,391.5234
161	08	4	SAT-W	0.0000	24.7821	10,140.8003	8,492.8464	11,639.5715	5.1187	12.5622	5,383.6988	4,391.5234	6,104.9043
161	08	5	Female	0.5517	0.0386	1.7740	-2.9375	5.1187	0.2475	0.0173	0.7953	-1.3168	2.2946
161	08	6	Female*HSGPA	0.0386	0.1414	12.2300	12.7821	12.5622	0.0173	0.1399	12.1615	12.8956	12.3645
161	08	7	Female*SAT-CR	1.7730	12.2300	6,697.5782	4,513.4941	5,383.6988	0.7953	12.1615	6,694.4327	4,518.7024	5,374.6232
161	08	8	Female*SAT-M	-2.9358	12.7821	4,513.4941	6,055.7074	4,391.5234	-1.3168	12.8956	4,518.7024	6,047.0836	4,406.5510
161	08	9	Female*SAT-W	5.1158	12.5622	5,383.6988	4,391.5234	6,104.9043	2.2946	12.3645	5,374.6232	4,406.5510	6,078.7180
162	06	1	HSGPA	0.0000	0.3142	12.8700	14.6574	14.2172	0.0467	0.1982	9.3223	11.4740	10.1646
162	06	2	SAT-CR	0.0000	12.8700	7,001.0123	4,120.7430	4,938.3598	-1.6546	9.3223	4,547.0228	2,718.3354	3,326.5327
162	06	3	SAT-M	0.0000	14.6574	4,120.7430	7,268.0347	3,936.5631	-8.1093	11.4740	2,718.3354	4,753.7157	2,727.6431
162	06	4	SAT-W	0.0000	14.2172	4,938.3598	3,936.5631	6,587.3883	2.3375	10.1646	3,326.5327	2,727.6431	4,455.5715
162	06	5	Female	0.6691	0.0467	-1.6546	-8.1093	2.3375	0.2215	0.0154	-0.5475	-2.6831	0.7734
162	06	6	Female*HSGPA	0.0467	0.1982	9.3223	11.4740	10.1646	0.0154	0.1960	9.3995	11.8523	10.0555
162	06	7	Female*SAT-CR	-1.6541	9.3223	4,547.0228	2,718.3354	3,326.5327	-0.5475	9.3995	4,544.2859	2,704.9220	3,330.3990
162	06	8	Female*SAT-M	-8.1067	11.4740	2,718.3354	4,753.7157	2,727.6431	-2.6831	11.8523	2,704.9220	4,687.9762	2,746.5921
162	06	9	Female*SAT-W	2.3367	10.1646	3,326.5327	2,727.6431	4,455.5715	0.7734	10.0555	3,330.3990	2,746.5921	4,450.1095
162	08	1	HSGPA	0.0000	0.3151	11.5702	13.2882	13.7669	0.0548	0.2071	8.9284	10.8253	10.1614
162	08	2	SAT-CR	0.0000	11.5702	6,880.5868	4,003.6662	5,047.8522	-1.0308	8.9284	4,535.7177	2,671.9345	3,417.1939
162	08	3	SAT-M	0.0000	13.2882	4,003.6662	7,076.4245	4,026.2117	-5.9026	10.8253	2,671.9345	4,635.2587	2,796.9279
162	08	4	SAT-W	0.0000	13.7669	5,047.8522	4,026.2117	6,693.5752	3.0379	10.1614	3,417.1939	2,796.9279	4,549.4779
162	08	5	Female	0.6761	0.0548	-1.0308	-5.9026	3.0379	0.2190	0.0177	-0.3338	-1.9116	0.9838
162	08	6	Female*HSGPA	0.0548	0.2071	8.9284	10.8253	10.1614	0.0177	0.2041	8.9848	11.1486	9.9950
162	08	7	Female*SAT-CR	-1.0305	8.9284	4,535.7177	2,671.9345	3,417.1939	-0.3338	8.9848	4,534.6554	2,665.8519	3,420.3245
162	08	8	Female*SAT-M	-5.9010	10.8253	2,671.9345	4,635.2587	2,796.9279	-1.9116	11.1486	2,665.8519	4,600.4275	2,814.8546
162	08	9	Female*SAT-W	3.0371	10.1614	3,417.1939	2,796.9279	4,549.4779	0.9838	9.9950	3,420.3245	2,814.8546	4,540.2516
163	06	1	HSGPA	0.0000	0.3096	14.0045	18.6371	16.5176	0.0387	0.2450	13.0327	16.6491	14.2373
163	06	2	SAT-CR	0.0000	14.0045	9,766.5329	5,106.7173	7,399.3803	1.9429	13.0327	7,917.9000	4,589.2819	6,033.5848
163	06	3	SAT-M	0.0000	18.6371	5,106.7173	8,420.8039	5,246.0190	-1.4973	16.6491	4,589.2819	7,115.5347	4,734.9974
163	06	4	SAT-W	0.0000	16.5176	7,399.3803	5,246.0190	8,999.1364	4.1097	14.2373	6,033.5848	4,734.9974	7,441.2839
163	06	5	Female	0.8415	0.0387	1.9429	-1.4973	4.1097	0.1335	0.0061	0.3079	-0.2373	0.6513
163	06	6	Female*HSGPA	0.0386	0.2450	13.0327	16.6491	14.2373	0.0061	0.2435	12.9577	16.7069	14.0787
163	06	7	Female*SAT-CR	1.9403	13.0327	7,917.9000	4,589.2819	6,033.5848	0.3079	12.9577	7,914.1302	4,592.1870	6,025.6108
163	06	8	Female*SAT-M	-1.4953	16.6491	4,589.2819	7,115.5347	4,734.9974	-0.2373	16.7069	4,592.1870	7,113.2958	4,741.1425
163	06	9	Female*SAT-W	4.1041	14.2373	6,033.5848	4,734.9974	7,441.2839	0.6513	14.0787	6,025.6108	4,741.1425	7,424.4171
164	08	1	HSGPA	0.0000	0.2692	13.2960	15.3108	14.7583	0.0364	0.1650	9.0022	10.3374	9.7940
164	08	2	SAT-CR	0.0000	13.2960	9,522.2370	5,353.9256	7,439.6227	-0.0897	9.0022	6,057.9058	3,454.6101	4,828.8469
164	08	3	SAT-M	0.0000	15.3108	5,353.9256	9,322.4556	5,555.6932	-7.8715	10.3374	3,454.6101	5,846.5375	3,648.9672
164	08	4	SAT-W	0.0000	14.7583	7,439.6227	5,555.6932	9,111.9021	2.7323	9.7940	4,828.8469	3,648.9672	5,940.5049
164	08	5	Female	0.6533	0.0364	-0.0897	-7.8715	2.7323	0.2265	0.0126	-0.0311	-2.7287	0.9472
164	08	6	Female*HSGPA	0.0364	0.1650	9.0022	10.3374	9.7940	0.0126	0.1637	9.0055	10.6241	9.6945
164	08	7	Female*SAT-CR	-0.0897	9.0022	6,057.9058	3,454.6101	4,828.8469	-0.0311	9.0055	6,057.8977	3,453.9040	4,829.0920
164	08	8	Female*SAT-M	-7.8707	10.3374	3,454.6101	5,846.5375	3,648.9672	-2.7287	10.6241	3,453.9040	5,784.5834	3,670.4722
164	08	9	Female*SAT-W	2.7320	9.7940	4,828.8469	3,648.9672	5,940.5049	0.9472	9.6945	4,829.0920	3,670.4722	5,933.0402

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
165	06	1	HSGPA	0.0000	0.2569	16.2241	17.8722	17.2965	0.0255	0.1564	10.5775	11.8256	10.7518
165	06	2	SAT-CR	0.0000	16.2241	8,861.5142	6,110.0156	6,780.0216	-3.8016	10.5775	5,419.4526	3,738.4868	4,191.8544
165	06	3	SAT-M	0.0000	17.8722	6,110.0156	9,950.4152	5,953.3904	-10.8168	11.8256	3,738.4868	5,958.9365	3,718.6121
165	06	4	SAT-W	0.0000	17.2965	6,780.0216	5,953.3904	8,359.9891	-0.0239	10.7518	4,191.8544	3,718.6121	5,185.0760
165	06	5	Female	0.6226	0.0255	-3.8016	-10.8168	-0.0239	0.2350	0.0096	-1.4345	-4.0817	-0.0090
165	06	6	Female*HSGPA	0.0255	0.1564	10.5775	11.8256	10.7518	0.0096	0.1558	10.6745	12.1013	10.7524
165	06	7	Female*SAT-CR	-3.8012	10.5775	5,419.4526	3,738.4868	4,191.8544	-1.4345	10.6745	5,405.0019	3,697.3697	4,191.7636
165	06	8	Female*SAT-M	-10.8158	11.8256	3,738.4868	5,958.9365	3,718.6121	-4.0817	12.1013	3,697.3697	5,841.9446	3,718.3537
165	06	9	Female*SAT-W	-0.0239	10.7518	4,191.8544	3,718.6121	5,185.0760	-0.0090	10.7524	4,191.7636	3,718.3537	5,185.0754
165	07	1	HSGPA	0.0000	0.2612	15.6260	17.0481	17.3231	0.0243	0.1522	9.4497	10.6531	10.2836
165	07	2	SAT-CR	0.0000	15.6260	8,418.9812	5,713.6040	6,604.7248	-2.8088	9.4497	5,026.1828	3,431.1910	3,992.5143
165	07	3	SAT-M	0.0000	17.0481	5,713.6040	9,531.6712	5,830.1696	-9.7898	10.6531	3,431.1910	5,614.9519	3,552.6407
165	07	4	SAT-W	0.0000	17.3231	6,604.7248	5,830.1696	8,261.0732	-0.4009	10.2836	3,992.5143	3,552.6407	5,042.1030
165	07	5	Female	0.6112	0.0243	-2.8088	-9.7898	-0.4009	0.2377	0.0095	-1.0921	-3.8065	-0.1559
165	07	6	Female*HSGPA	0.0243	0.1522	9.4497	10.6531	10.2836	0.0095	0.1516	9.5180	10.8912	10.2933
165	07	7	Female*SAT-CR	-2.8085	9.4497	5,026.1828	3,431.1910	3,992.5143	-1.0921	9.5180	5,018.2944	3,403.6964	3,991.3883
165	07	8	Female*SAT-M	-9.7889	10.6531	3,431.1910	5,614.9519	3,552.6407	-3.8065	10.8912	3,403.6964	5,519.1214	3,548.7161
165	07	9	Female*SAT-W	-0.4009	10.2836	3,992.5143	3,552.6407	5,042.1030	-0.1559	10.2933	3,991.3883	3,548.7161	5,041.9423
166	06	1	HSGPA	0.0000	0.1995	12.2638	11.9147	13.8638	0.0184	0.0778	5.9532	6.1196	6.7051
166	06	2	SAT-CR	0.0000	12.2638	9,176.8482	5,134.3483	7,109.4120	-3.7324	5.9532	4,194.1370	2,808.5615	3,331.9952
166	06	3	SAT-M	0.0000	11.9147	5,134.3483	8,901.0750	5,596.2929	-12.5486	6.1196	2,808.5615	4,641.5255	2,995.3083
166	06	4	SAT-W	0.0000	13.8638	7,109.4120	5,596.2929	9,104.2135	-1.3990	6.7051	3,331.9952	2,995.3083	4,063.2362
166	06	5	Female	0.4060	0.0184	-3.7324	-12.5486	-1.3990	0.2412	0.0109	-2.2171	-7.4540	-0.8310
166	06	6	Female*HSGPA	0.0184	0.0778	5.9532	6.1196	6.7051	0.0109	0.0775	6.0217	6.3499	6.7307
166	06	7	Female*SAT-CR	-3.7318	5.9532	4,194.1370	2,808.5615	3,331.9952	-2.2171	6.0217	4,180.2088	2,761.7330	3,326.7745
166	06	8	Female*SAT-M	-12.5466	6.1196	2,808.5615	4,641.5255	2,995.3083	-7.4540	6.3499	2,761.7330	4,484.0828	2,977.7558
166	06	9	Female*SAT-W	-1.3988	6.7051	3,331.9952	2,995.3083	4,063.2362	-0.8310	6.7307	3,326.7745	2,977.7558	4,061.2794
166	07	1	HSGPA	0.0000	0.2054	14.8718	13.7754	15.5394	0.0194	0.0804	7.1734	6.4324	7.4052
166	07	2	SAT-CR	0.0000	14.8718	9,945.3560	5,725.7089	7,565.4000	-2.3130	7.1734	4,768.8793	3,076.4726	3,835.6894
166	07	3	SAT-M	0.0000	13.7754	5,725.7089	9,505.5985	5,917.9881	-10.9137	6.4324	3,076.4726	4,939.9435	3,208.9824
166	07	4	SAT-W	0.0000	15.5394	7,565.4000	5,917.9881	9,220.2426	-0.1435	7.4052	3,835.6894	3,208.9824	4,536.7512
166	07	5	Female	0.4246	0.0194	-2.3130	-10.9137	-0.1435	0.2444	0.0112	-1.3309	-6.2798	-0.0826
166	07	6	Female*HSGPA	0.0194	0.0804	7.1734	6.4324	7.4052	0.0112	0.0800	7.2182	6.6439	7.4080
166	07	7	Female*SAT-CR	-2.3127	7.1734	4,768.8793	3,076.4726	3,835.6894	-1.3309	7.2182	4,763.5300	3,051.2326	3,835.3575
166	07	8	Female*SAT-M	-10.9120	6.4324	3,076.4726	4,939.9435	3,208.9824	-6.2798	6.6439	3,051.2326	4,820.8527	3,207.4163
166	07	9	Female*SAT-W	-0.1435	7.4052	3,835.6894	3,208.9824	4,536.7512	-0.0826	7.4080	3,835.3575	3,207.4163	4,536.7306
166	08	1	HSGPA	0.0000	0.2000	13.0840	12.5265	13.9329	0.0224	0.0751	6.0797	5.7864	6.1549
166	08	2	SAT-CR	0.0000	13.0840	9,866.7500	5,398.5201	7,424.5786	-3.3547	6.0797	4,481.1622	2,854.0301	3,537.8155
166	08	3	SAT-M	0.0000	12.5265	5,398.5201	9,348.1436	5,796.6213	-11.8422	5.7864	2,854.0301	4,832.3839	3,057.0413
166	08	4	SAT-W	0.0000	13.9329	7,424.5786	5,796.6213	9,280.7724	0.5478	6.1549	3,537.8155	3,057.0413	4,298.3857
166	08	5	Female	0.4227	0.0224	-3.3547	-11.8422	0.5478	0.2441	0.0129	-1.9365	-6.8360	0.3162
166	08	6	Female*HSGPA	0.0224	0.0751	6.0797	5.7864	6.1549	0.0129	0.0746	6.1549	6.0519	6.1426
166	08	7	Female*SAT-CR	-3.3541	6.0797	4,481.1622	2,854.0301	3,537.8155	-1.9365	6.1549	4,469.9103	2,814.3104	3,539.6528
166	08	8	Female*SAT-M	-11.8400	5.7864	2,854.0301	4,832.3839	3,057.0413	-6.8360	6.0519	2,814.3104	4,692.1728	3,063.5270
166	08	9	Female*SAT-W	0.5477	6.1549	3,537.8155	3,057.0413	4,298.3857	0.3162	6.1426	3,539.6528	3,063.5270	4,298.0856

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
167	06	1	HSGPA	0.0000	0.3176	16.3861	18.8633	19.1277	0.0454	0.1794	9.2752	11.8015	8.0396
167	06	2	SAT-CR	0.0000	16.3861	9,220.9400	5,696.9385	6,725.9876	0.2322	9.2752	4,824.4047	2,982.4048	3,337.8875
167	06	3	SAT-M	0.0000	18.8633	5,696.9385	8,763.9661	5,017.6766	-7.3346	11.8015	2,982.4048	4,659.3572	2,494.4377
167	06	4	SAT-W	0.0000	19.1277	6,725.9876	5,017.6766	8,082.3818	5.0733	8.0396	3,337.8875	2,494.4377	3,909.9588
167	06	5	Female	0.5542	0.0454	0.2322	-7.3346	5.0733	0.2475	0.0202	0.1035	-3.2695	2.2615
167	06	6	Female*HSGPA	0.0453	0.1794	9.2752	11.8015	8.0396	0.0202	0.1773	9.2647	12.1338	7.8097
167	06	7	Female*SAT-CR	0.2317	9.2752	4,824.4047	2,982.4048	3,337.8875	0.1035	9.2647	4,824.3509	2,984.1043	3,336.7120
167	06	8	Female*SAT-M	-7.3201	11.8015	2,982.4048	4,659.3572	2,494.4377	-3.2695	12.1338	2,984.1043	4,605.6671	2,531.5750
167	06	9	Female*SAT-W	5.0633	8.0396	3,337.8875	2,494.4377	3,909.9588	2.2615	7.8097	3,336.7120	2,531.5750	3,884.2710
167	07	1	HSGPA	0.0000	0.3012	18.1829	20.0323	18.8795	0.0504	0.1649	10.1470	11.6256	10.5979
167	07	2	SAT-CR	0.0000	18.1829	8,705.9050	5,512.9760	6,650.6283	0.2959	10.1470	4,441.9741	2,636.4859	3,492.9874
167	07	3	SAT-M	0.0000	20.0323	5,512.9760	8,497.6866	5,151.6976	-3.0822	11.6256	2,636.4859	4,553.7122	2,636.9783
167	07	4	SAT-W	0.0000	18.8795	6,650.6283	5,151.6976	8,005.3475	0.0547	10.5979	3,492.9874	2,636.9783	4,421.6884
167	07	5	Female	0.5891	0.0504	0.2959	-3.0822	6.0547	0.2424	0.0207	0.1216	-1.2664	2.4877
167	07	6	Female*HSGPA	0.0504	0.1649	10.1470	11.6256	10.5979	0.0207	0.1624	10.1321	11.7809	10.2929
167	07	7	Female*SAT-CR	0.2956	10.1470	4,441.9741	2,636.4859	3,492.9874	0.1216	10.1321	4,441.8867	2,637.3969	3,491.1978
167	07	8	Female*SAT-M	-3.0783	11.6256	2,636.4859	4,553.7122	2,636.9783	-1.2664	11.7809	2,637.3969	4,544.2245	2,655.6165
167	07	9	Female*SAT-W	6.0471	10.5979	3,492.9874	2,636.9783	4,421.6884	2.4877	10.2929	3,491.1978	2,655.6165	4,385.0748
167	08	1	HSGPA	0.0000	0.2871	16.5703	17.8767	18.2301	0.0483	0.1554	9.4139	10.5560	10.9122
167	08	2	SAT-CR	0.0000	16.5703	8,688.2923	5,065.2308	6,313.5514	4.6583	9.4139	5,245.8949	3,095.3028	3,953.3746
167	08	3	SAT-M	0.0000	17.8767	5,065.2308	8,036.1753	4,728.4711	-3.7428	10.5560	3,095.3028	4,902.4929	3,039.9923
167	08	4	SAT-W	0.0000	18.2301	6,313.5514	4,728.4711	7,392.3862	7.0347	10.9122	3,953.3746	3,039.9923	4,622.5346
167	08	5	Female	0.6215	0.0483	4.6583	-3.7428	7.0347	0.2355	0.0183	1.7633	-1.4168	2.6629
167	08	6	Female*HSGPA	0.0482	0.1554	9.4139	10.5560	10.9122	0.0183	0.1530	9.1892	10.7365	10.5729
167	08	7	Female*SAT-CR	4.6530	9.4139	5,245.8949	3,095.3028	3,953.3746	1.7633	9.1892	5,224.2199	3,112.7181	3,920.6420
167	08	8	Female*SAT-M	-3.7386	10.5560	3,095.3028	4,902.4929	3,039.9923	-1.4168	10.7365	3,112.7181	4,888.5001	3,066.2922
167	08	9	Female*SAT-W	7.0268	10.9122	3,953.3746	3,039.9923	4,622.5346	2.6629	10.5729	3,920.6420	3,066.2922	4,573.1031
168	06	1	HSGPA	0.0000	0.3603	18.8735	20.1634	18.9537	0.0715	0.1802	10.0401	10.8742	9.8430
168	06	2	SAT-CR	0.0000	18.8735	7,804.4604	4,382.3934	5,567.4317	4.3950	10.0401	4,366.8397	2,507.4002	3,202.8116
168	06	3	SAT-M	0.0000	20.1634	4,382.3934	7,491.5756	4,306.4741	-2.6185	10.8742	2,507.4002	4,089.1878	2,512.0208
168	06	4	SAT-W	0.0000	18.9537	5,567.4317	4,306.4741	7,266.1950	7.8976	9.8430	3,202.8116	2,512.0208	4,064.6331
168	06	5	Female	0.5454	0.0715	4.3950	-2.6185	7.8976	0.2481	0.0325	1.9980	-1.1904	3.5904
168	06	6	Female*HSGPA	0.0714	0.1802	10.0401	10.8742	9.8430	0.0325	0.1751	9.7263	11.0612	9.2790
168	06	7	Female*SAT-CR	4.3917	10.0401	4,366.8397	2,507.4002	3,202.8116	1.9980	9.7263	4,347.5381	2,518.8997	3,168.1279
168	06	8	Female*SAT-M	-2.6165	10.8742	2,507.4002	4,089.1878	2,512.0208	-1.1904	11.0612	2,518.8997	4,082.3366	2,532.6847
168	06	9	Female*SAT-W	7.8915	9.8430	3,202.8116	2,512.0208	4,064.6331	3.5904	9.2790	3,168.1279	2,532.6847	4,002.3090
168	07	1	HSGPA	0.0000	0.3483	18.4538	22.0174	19.6844	0.0618	0.1584	7.8689	10.0617	8.7518
168	07	2	SAT-CR	0.0000	18.4538	8,467.6801	4,719.5315	6,777.9578	3.8835	7.8689	4,632.4311	2,410.4054	3,823.2365
168	07	3	SAT-M	0.0000	22.0174	4,719.5315	7,987.7071	4,818.4183	-5.1018	10.0617	2,410.4054	4,146.2436	2,541.7545
168	07	4	SAT-W	0.0000	19.6844	6,777.9578	4,818.4183	8,430.6600	7.2172	8.7518	3,823.2365	2,541.7545	4,865.3723
168	07	5	Female	0.5505	0.0618	3.8835	-5.1018	7.2172	0.2476	0.0278	1.7454	-2.2930	3.2438
168	07	6	Female*HSGPA	0.0617	0.1584	7.8689	10.0617	8.7518	0.0278	0.1545	7.6292	10.3766	8.3063
168	07	7	Female*SAT-CR	3.8807	7.8689	4,632.4311	2,410.4054	3,823.2365	1.7454	7.6292	4,617.3607	2,430.2039	3,795.2290
168	07	8	Female*SAT-M	-5.0981	10.0617	2,410.4054	4,146.2436	2,541.7545	-2.2930	10.3766	2,430.2039	4,120.2337	2,578.5488
168	07	9	Female*SAT-W	7.2120	8.7518	3,823.2365	2,541.7545	4,865.3723	3.2438	8.3063	3,795.2290	2,578.5488	4,813.3220



## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
168	08	1	HSGPA	0.0000	0.3482	20.8822	19.9497	23.3521	0.0738	0.1620	9.6384	9.4003	10.8685
168	08	2	SAT-CR	0.0000	20.8822	8,721.6868	4,962.1742	7,163.7463	2.6628	9.6384	4,608.0938	2,600.7524	3,865.3266
168	08	3	SAT-M	0.0000	19.9497	4,962.1742	8,043.6598	5,228.2002	-4.9117	9.4003	2,600.7524	4,011.8630	2,727.8170
168	08	4	SAT-W	0.0000	23.3521	7,163.7463	5,228.2002	9,121.2568	6.3593	10.8685	3,865.3266	2,727.8170	4,883.3429
168	08	5	Female	0.5412	0.0738	2.6628	-4.9117	6.3593	0.2485	0.0339	1.2218	-2.2537	2.9180
168	08	6	Female*HSGPA	0.0738	0.1620	9.6384	9.4003	10.8685	0.0339	0.1566	9.4420	9.7627	10.3992
168	08	7	Female*SAT-CR	2.6608	9.6384	4,608.0938	2,600.7524	3,865.3266	1.2218	9.4420	4,601.0086	2,613.8217	3,848.4055
168	08	8	Female*SAT-M	-4.9081	9.4003	2,600.7524	4,011.8630	2,727.8170	-2.2537	9.7627	2,613.8217	3,987.7557	2,759.0294
168	08	9	Female*SAT-W	6.3547	10.8685	3,865.3266	2,727.8170	4,883.3429	2.9180	10.3992	3,848.4055	2,759.0294	4,842.9315
169	06	1	HSGPA	0.0000	0.3101	15.9537	17.5634	17.7291	0.0499	0.1746	8.9977	10.0068	9.7291
169	06	2	SAT-CR	0.0000	15.9537	7,405.9450	4,770.2745	5,366.7218	0.0893	8.9977	4,196.2000	2,637.2299	3,032.5052
169	06	3	SAT-M	0.0000	17.5634	4,770.2745	7,742.7446	4,458.9691	-6.1038	10.0068	2,637.2299	4,288.0725	2,550.5710
169	06	4	SAT-W	0.0000	17.7291	5,366.7218	4,458.9691	6,833.2741	4.1566	9.7291	3,032.5052	2,550.5710	3,952.5909
169	06	5	Female	0.6036	0.0499	0.0893	-6.1038	4.1566	0.2393	0.0198	0.0354	-2.4196	1.6477
169	06	6	Female*HSGPA	0.0499	0.1746	8.9977	10.0068	9.7291	0.0198	0.1721	8.9933	10.3113	9.5218
169	06	7	Female*SAT-CR	0.0893	8.9977	4,196.2000	2,637.2299	3,032.5052	0.0354	8.9933	4,196.1920	2,637.7749	3,032.1341
169	06	8	Female*SAT-M	-6.1029	10.0068	2,637.2299	4,288.0725	2,550.5710	-2.4196	10.3113	2,637.7749	4,250.8218	2,575.9384
169	06	9	Female*SAT-W	4.1560	9.7291	3,032.5052	2,550.5710	3,952.5909	1.6477	9.5218	3,032.1341	2,575.9384	3,935.3160
169	07	1	HSGPA	0.0000	0.3182	15.6826	17.2583	16.8628	0.0472	0.1818	8.6396	9.7248	9.3200
169	07	2	SAT-CR	0.0000	15.6826	7,219.5743	4,558.5666	5,241.5232	-1.1501	8.6396	4,116.4883	2,526.6420	3,032.1891
169	07	3	SAT-M	0.0000	17.2583	4,558.5666	7,404.6895	4,318.8008	-6.9086	9.7248	2,526.6420	4,021.2705	2,440.7578
169	07	4	SAT-W	0.0000	16.8628	5,241.5232	4,318.8008	6,638.6935	2.2931	9.3200	3,032.1891	2,440.7578	3,847.7636
169	07	5	Female	0.5987	0.0472	-1.1501	-6.9086	2.2931	0.2403	0.0190	-0.4615	-2.7723	0.9202
169	07	6	Female*HSGPA	0.0472	0.1818	8.6396	9.7248	9.3200	0.0190	0.1796	8.6940	10.0511	9.2116
169	07	7	Female*SAT-CR	-1.1499	8.6396	4,116.4883	2,526.6420	3,032.1891	-0.4615	8.6940	4,115.1658	2,518.6977	3,034.8259
169	07	8	Female*SAT-M	-6.9077	9.7248	2,526.6420	4,021.2705	2,440.7578	-2.7723	10.0511	2,518.6977	3,973.5475	2,456.5979
169	07	9	Female*SAT-W	2.2928	9.3200	3,032.1891	2,440.7578	3,847.7636	0.9202	9.2116	3,034.8259	2,456.5979	3,842.5060
169	08	1	HSGPA	0.0000	0.3101	14.6099	15.8188	15.9471	0.0469	0.1756	8.3528	8.7891	8.8112
169	08	2	SAT-CR	0.0000	14.6099	7,545.2138	4,768.7727	5,287.8489	-1.1459	8.3528	4,194.5092	2,565.5733	2,946.4858
169	08	3	SAT-M	0.0000	15.8188	4,768.7727	7,386.0069	4,327.3956	-7.1366	8.7891	2,565.5733	3,914.2460	2,385.5659
169	08	4	SAT-W	0.0000	15.9471	5,287.8489	4,327.3956	6,658.2805	3.3676	8.8112	2,946.4858	2,385.5659	3,751.0148
169	08	5	Female	0.5949	0.0469	-1.1459	-7.1366	3.3676	0.2410	0.0190	-0.4642	-2.8908	1.3641
169	08	6	Female*HSGPA	0.0469	0.1756	8.3528	8.7891	8.8112	0.0190	0.1734	8.4066	9.1241	8.6531
169	08	7	Female*SAT-CR	-1.1458	8.3528	4,194.5092	2,565.5733	2,946.4858	-0.4642	8.4066	4,193.1962	2,557.3963	2,950.3443
169	08	8	Female*SAT-M	-7.1358	8.7891	2,565.5733	3,914.2460	2,385.5659	-2.8908	9.1241	2,557.3963	3,863.3207	2,409.5960
169	08	9	Female*SAT-W	3.3672	8.8112	2,946.4858	2,385.5659	3,751.0148	1.3641	8.6531	2,950.3443	2,409.5960	3,739.6757
170	06	1	HSGPA	0.0000	0.2781	22.6845	21.6719	21.4093	0.0206	0.1740	15.2047	14.2220	14.2651
170	06	2	SAT-CR	0.0000	22.6845	9,275.5271	5,713.8101	6,851.7604	-0.6071	15.2047	6,392.0281	3,849.4719	4,710.4344
170	06	3	SAT-M	0.0000	21.6719	5,713.8101	8,960.1125	5,411.2281	-8.1661	14.2220	3,849.4719	5,906.8145	3,755.4876
170	06	4	SAT-W	0.0000	21.4093	6,851.7604	5,411.2281	8,060.3309	2.0404	14.2651	4,710.4344	3,755.4876	5,523.3876
170	06	5	Female	0.6910	0.0206	-0.6071	-8.1661	2.0404	0.2136	0.0064	-0.1876	-2.5235	0.6305
170	06	6	Female*HSGPA	0.0206	0.1740	15.2047	14.2220	14.2651	0.0064	0.1736	15.2172	14.3900	14.2231
170	06	7	Female*SAT-CR	-0.6069	15.2047	6,392.0281	3,849.4719	4,710.4344	-0.1876	15.2172	6,391.6596	3,844.5159	4,711.6728
170	06	8	Female*SAT-M	-8.1629	14.2220	3,849.4719	5,906.8145	3,755.4876	-2.5235	14.3900	3,844.5159	5,840.1556	3,772.1431
170	06	9	Female*SAT-W	2.0396	14.2651	4,710.4344	3,755.4876	5,523.3876	0.6305	14.2231	4,711.6728	3,772.1431	5,519.2260

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
171	06	1	HSGPA	0.0000	0.3334	18.4994	22.4162	20.8964	0.0437	0.1920	11.8337	13.8248	12.8961
171	06	2	SAT-CR	0.0000	18.4994	7,884.8238	5,256.4880	5,960.3288	-0.9676	11.8337	4,613.1679	3,025.7727	3,538.4458
171	06	3	SAT-M	0.0000	22.4162	5,256.4880	8,758.0368	5,136.0959	-6.8919	13.8248	3,025.7727	4,953.5432	3,085.5305
171	06	4	SAT-W	0.0000	20.8964	5,960.3288	5,136.0959	7,703.1274	3.8036	12.8961	3,538.4458	3,085.5305	4,619.5786
171	06	5	Female	0.6036	0.0437	-0.9676	-6.8919	3.8036	0.2393	0.0173	-0.3836	-2.7319	1.5077
171	06	6	Female*HSGPA	0.0437	0.1920	11.8337	13.8248	12.8961	0.0173	0.1901	11.8760	14.1263	12.7297
171	06	7	Female*SAT-CR	-0.9675	11.8337	4,613.1679	3,025.7727	3,538.4458	-0.3836	11.8760	4,612.2317	3,019.1049	3,542.1256
171	06	8	Female*SAT-M	-6.8907	13.8248	3,025.7727	4,953.5432	3,085.5305	-2.7319	14.1263	3,019.1049	4,906.0535	3,111.7396
171	06	9	Female*SAT-W	3.8029	12.8961	3,538.4458	3,085.5305	4,619.5786	1.5077	12.7297	3,542.1256	3,111.7396	4,605.1141
171	07	1	HSGPA	0.0000	0.3364	19.3202	21.4920	21.9495	0.0502	0.1913	12.0492	12.9659	12.7148
171	07	2	SAT-CR	0.0000	19.3202	8,070.7233	5,134.9904	6,231.3309	-0.0052	12.0492	4,763.4460	3,034.9504	3,648.1467
171	07	3	SAT-M	0.0000	21.4920	5,134.9904	8,783.0924	5,109.8932	-8.2829	12.9659	3,034.9504	4,933.9362	3,050.1214
171	07	4	SAT-W	0.0000	21.9495	6,231.3309	5,109.8932	7,870.0770	4.0248	12.7148	3,648.1467	3,050.1214	4,518.4536
171	07	5	Female	0.5870	0.0502	-0.0052	-8.2829	4.0248	0.2425	0.0207	-0.0022	-3.4209	1.6623
171	07	6	Female*HSGPA	0.0502	0.1913	12.0492	12.9659	12.7148	0.0207	0.1887	12.0494	13.3814	12.5129
171	07	7	Female*SAT-CR	-0.0052	12.0492	4,763.4460	3,034.9504	3,648.1467	-0.0022	12.0494	4,763.4460	3,034.9072	3,648.1677
171	07	8	Female*SAT-M	-8.2815	12.9659	3,034.9504	4,933.9362	3,050.1214	-3.4209	13.3814	3,034.9072	4,865.3414	3,083.4526
171	07	9	Female*SAT-W	4.0241	12.7148	3,648.1467	3,050.1214	4,518.4536	1.6623	12.5129	3,648.1677	3,083.4526	4,502.2575
172	06	1	HSGPA	0.0000	0.1643	13.9370	11.6752	13.4327	0.0273	0.0836	7.2984	7.0263	6.4995
172	06	2	SAT-CR	0.0000	13.9370	8,010.7933	4,265.5994	5,642.1264	0.4463	7.2984	5,006.8854	2,759.3296	3,451.5336
172	06	3	SAT-M	0.0000	11.6752	4,265.5994	7,778.1219	4,129.8678	-8.4291	7.0263	2,759.3296	4,730.3097	2,617.1258
172	06	4	SAT-W	0.0000	13.4327	5,642.1264	4,129.8678	7,242.1555	3.7057	6.4995	3,451.5336	2,617.1258	4,295.9711
172	06	5	Female	0.6051	0.0273	0.4463	-8.4291	3.7057	0.2391	0.0108	0.1762	-3.3284	1.4633
172	06	6	Female*HSGPA	0.0273	0.0836	7.2984	7.0263	6.4995	0.0108	0.0828	7.2862	7.2566	6.3982
172	06	7	Female*SAT-CR	0.4461	7.2984	5,006.8854	2,759.3296	3,451.5336	0.1762	7.2862	5,006.6863	2,763.0900	3,449.8803
172	06	8	Female*SAT-M	-8.4254	7.0263	2,759.3296	4,730.3097	2,617.1258	-3.3284	7.2566	2,763.0900	4,659.2915	2,648.3480
172	06	9	Female*SAT-W	3.7041	6.4995	3,451.5336	2,617.1258	4,295.9711	1.4633	6.3982	3,449.8803	2,648.3480	4,282.2447
172	07	1	HSGPA	0.0000	0.1767	15.3861	13.3943	15.9824	0.0280	0.0905	8.5438	7.5180	8.6612
172	07	2	SAT-CR	0.0000	15.3861	8,459.9097	4,427.9931	6,172.2770	2.1318	8.5438	5,029.0085	2,615.5668	3,664.1158
172	07	3	SAT-M	0.0000	13.3943	4,427.9931	7,748.6515	4,498.5677	-5.4476	7.5180	2,615.5668	4,621.4686	2,705.7064
172	07	4	SAT-W	0.0000	15.9824	6,172.2770	4,498.5677	7,921.8837	5.4069	8.6612	3,664.1158	2,705.7064	4,648.4614
172	07	5	Female	0.5893	0.0280	2.1318	-5.4476	5.4069	0.2421	0.0115	0.8755	-2.2371	2.2204
172	07	6	Female*HSGPA	0.0280	0.0905	8.5438	7.5180	8.6612	0.0115	0.0897	8.4842	7.6704	8.5100
172	07	7	Female*SAT-CR	2.1310	8.5438	5,029.0085	2,615.5668	3,664.1158	0.8755	8.4842	5,024.4655	2,627.1756	3,652.5937
172	07	8	Female*SAT-M	-5.4455	7.5180	2,615.5668	4,621.4686	2,705.7064	-2.2371	7.6704	2,627.1756	4,591.8037	2,735.1497
172	07	9	Female*SAT-W	5.4048	8.6612	3,664.1158	2,705.7064	4,648.4614	2.2204	8.5100	3,652.5937	2,735.1497	4,619.2381
172	08	1	HSGPA	0.0000	0.1813	14.5482	13.4125	15.6212	0.0299	0.0953	7.7846	7.0354	8.4824
172	08	2	SAT-CR	0.0000	14.5482	8,118.5737	4,326.8668	6,329.0445	0.6524	7.7846	4,567.6002	2,480.6762	3,527.6539
172	08	3	SAT-M	0.0000	13.4125	4,326.8668	7,353.1029	4,676.8164	-6.1460	7.0354	2,480.6762	4,167.1397	2,701.1047
172	08	4	SAT-W	0.0000	15.6212	6,329.0445	4,676.8164	8,443.1375	5.3917	8.4824	3,527.6539	2,701.1047	4,762.0261
172	08	5	Female	0.5930	0.0299	0.6524	-6.1460	5.3917	0.2415	0.0122	0.2655	-2.5012	2.1942
172	08	6	Female*HSGPA	0.0299	0.0953	7.7846	7.0354	8.4824	0.0122	0.0944	7.7651	7.2190	8.3213
172	08	7	Female*SAT-CR	0.6521	7.7846	4,567.6002	2,480.6762	3,527.6539	0.2655	7.7651	4,567.1747	2,484.6843	3,524.1377
172	08	8	Female*SAT-M	-6.1431	7.0354	2,480.6762	4,167.1397	2,701.1047	-2.5012	7.2190	2,484.6843	4,129.3842	2,734.2265
172	08	9	Female*SAT-W	5.3892	8.4824	3,527.6539	2,701.1047	4,762.0261	2.1942	8.3213	3,524.1377	2,734.2265	4,732.9694

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
173	07	1	HSGPA	0.0000	0.2316	16.2049	17.2993	17.2397	0.0176	0.1254	9.6447	10.0235	9.9100
173	07	2	SAT-CR	0.0000	16.2049	9,905.6971	6,344.5506	7,866.7573	-2.7421	9.6447	5,701.7704	3,706.6288	4,609.4916
173	07	3	SAT-M	0.0000	17.2993	6,344.5506	10,355.6933	6,506.7731	-11.0885	10.0235	3,706.6288	5,914.7895	3,831.0632
173	07	4	SAT-W	0.0000	17.2397	7,866.7573	6,506.7731	9,439.6567	-0.3617	9.9100	4,609.4916	3,831.0632	5,473.6978
173	07	5	Female	0.5677	0.0176	-2.7421	-11.0885	-0.3617	0.2454	0.0076	-1.1855	-4.7939	-0.1564
173	07	6	Female*HSGPA	0.0176	0.1254	9.6447	10.0235	9.9100	0.0076	0.1251	9.6929	10.2187	9.9164
173	07	7	Female*SAT-CR	-2.7421	9.6447	5,701.7704	3,706.6288	4,609.4916	-1.1855	9.6929	5,694.2513	3,676.2234	4,608.4997
173	07	8	Female*SAT-M	-11.0883	10.0235	3,706.6288	5,914.7895	3,831.0632	-4.7939	10.2187	3,676.2234	5,791.8375	3,827.0523
173	07	9	Female*SAT-W	-0.3617	9.9100	4,609.4916	3,831.0632	5,473.6978	-0.1564	9.9164	4,608.4997	3,827.0523	5,473.5670
173	08	1	HSGPA	0.0000	0.2299	14.9450	17.1041	16.4971	0.0148	0.1259	8.8224	10.0545	9.5932
173	08	2	SAT-CR	0.0000	14.9450	9,911.1277	6,656.0177	7,981.5649	-2.7946	8.8224	5,570.2728	3,822.6792	4,588.5578
173	08	3	SAT-M	0.0000	17.1041	6,656.0177	10,883.9725	6,916.2301	-11.4739	10.0545	3,822.6792	6,146.4988	4,062.8023
173	08	4	SAT-W	0.0000	16.4971	7,981.5649	6,916.2301	9,769.9525	0.3273	9.5932	4,588.5578	4,062.8023	5,639.5397
173	08	5	Female	0.5731	0.0148	-2.7946	-11.4739	0.3273	0.2447	0.0063	-1.1930	-4.8982	0.1397
173	08	6	Female*HSGPA	0.0148	0.1259	8.8224	10.0545	9.5932	0.0063	0.1256	8.8637	10.2241	9.5884
173	08	7	Female*SAT-CR	-2.7946	8.8224	5,570.2728	3,822.6792	4,588.5578	-1.1930	8.8637	5,562.4630	3,790.6146	4,589.4725
173	08	8	Female*SAT-M	-11.4737	10.0545	3,822.6792	6,146.4988	4,062.8023	-4.8982	10.2241	3,790.6146	6,014.8504	4,066.5579
173	08	9	Female*SAT-W	0.3273	9.5932	4,588.5578	4,062.8023	5,639.5397	0.1397	9.5884	4,589.4725	4,066.5579	5,639.4326
174	06	1	HSGPA	0.0000	0.3112	18.3271	23.8911	19.1950	0.0464	0.1614	9.3719	11.8893	9.8755
174	06	2	SAT-CR	0.0000	18.3271	8,362.3536	5,807.0566	6,092.0910	2.1290	9.3719	4,608.4441	3,119.4954	3,385.9445
174	06	3	SAT-M	0.0000	23.8911	5,807.0566	8,921.8611	5,310.9500	-2.0945	11.8893	3,119.4954	4,679.6802	2,799.1384
174	06	4	SAT-W	0.0000	19.1950	6,092.0910	5,310.9500	7,228.1467	6.2895	9.8755	3,385.9445	2,799.1384	3,960.8596
174	06	5	Female	0.5646	0.0464	2.1290	-2.0945	6.2895	0.2460	0.0202	0.9269	-0.9119	2.7383
174	06	6	Female*HSGPA	0.0464	0.1614	9.3719	11.8893	9.8755	0.0202	0.1593	9.2731	11.9865	9.5837
174	06	7	Female*SAT-CR	2.1276	9.3719	4,608.4441	3,119.4954	3,385.9445	0.9269	9.2731	4,603.9144	3,123.9517	3,372.5629
174	06	8	Female*SAT-M	-2.0932	11.8893	3,119.4954	4,679.6802	2,799.1384	-0.9119	11.9865	3,123.9517	4,675.2961	2,812.3033
174	06	9	Female*SAT-W	6.2855	9.8755	3,385.9445	2,799.1384	3,960.8596	2.7383	9.5837	3,372.5629	2,812.3033	3,921.3271
175	06	1	HSGPA	0.0000	0.2826	13.4928	16.6304	14.3976	0.0459	0.1435	7.1068	8.5866	7.4458
175	06	2	SAT-CR	0.0000	13.4928	7,867.8655	5,104.6963	5,562.3337	0.6514	7.1068	4,101.7610	2,571.0119	2,894.8823
175	06	3	SAT-M	0.0000	16.6304	5,104.6963	8,055.4188	4,575.3104	-5.0288	8.5866	2,571.0119	4,042.4165	2,336.7772
175	06	4	SAT-W	0.0000	14.3976	5,562.3337	4,575.3104	6,762.2817	4.6703	7.4458	2,894.8823	2,336.7772	3,536.9463
175	06	5	Female	0.5473	0.0459	0.6514	-5.0288	4.6703	0.2478	0.0208	0.2949	-2.2767	2.1144
175	06	6	Female*HSGPA	0.0459	0.1435	7.1068	8.5866	7.4458	0.0208	0.1414	7.0769	8.8172	7.2317
175	06	7	Female*SAT-CR	0.6513	7.1068	4,101.7610	2,571.0119	2,894.8823	0.2949	7.0769	4,101.3367	2,574.2873	2,891.8404
175	06	8	Female*SAT-M	-5.0285	8.5866	2,571.0119	4,042.4165	2,336.7772	-2.2767	8.8172	2,574.2873	4,017.1288	2,360.2620
175	06	9	Female*SAT-W	4.6700	7.4458	2,894.8823	2,336.7772	3,536.9463	2.1144	7.2317	2,891.8404	2,360.2620	3,515.1358
175	07	1	HSGPA	0.0000	0.2808	13.4821	16.2453	15.0300	0.0481	0.1457	7.3652	8.6808	8.1215
175	07	2	SAT-CR	0.0000	13.4821	7,992.3165	4,922.2246	5,943.1811	1.0827	7.3652	4,181.6657	2,504.7099	3,137.6662
175	07	3	SAT-M	0.0000	16.2453	4,922.2246	7,756.5276	4,676.6854	-5.0785	8.6808	2,504.7099	3,943.5113	2,436.8737
175	07	4	SAT-W	0.0000	15.0300	5,943.1811	4,676.6854	7,202.7813	4.8065	8.1215	3,137.6662	2,436.8737	3,841.3327
175	07	5	Female	0.5585	0.0481	1.0827	-5.0785	4.8065	0.2466	0.0212	0.4780	-2.2420	2.1219
175	07	6	Female*HSGPA	0.0481	0.1457	7.3652	8.6808	8.1215	0.0212	0.1433	7.3132	8.9250	7.8904
175	07	7	Female*SAT-CR	1.0827	7.3652	4,181.6657	2,504.7099	3,137.6662	0.4780	7.3132	4,180.4935	2,510.2083	3,132.4624
175	07	8	Female*SAT-M	-5.0783	8.6808	2,504.7099	3,943.5113	2,436.8737	-2.2420	8.9250	2,510.2083	3,917.7212	2,461.2823
175	07	9	Female*SAT-W	4.8062	8.1215	3,137.6662	2,436.8737	3,841.3327	2.1219	7.8904	3,132.4624	2,461.2823	3,818.2316

## Appendix A

## Male-Female Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
175	08	1	HSGPA	0.0000	0.2735	13.8343	16.6956	14.9652	0.0408	0.1419	7.5420	9.0212	8.0750
175	08	2	SAT-CR	0.0000	13.8343	8,002.4290	5,069.2020	5,810.6179	0.6268	7.5420	4,260.7201	2,646.2900	3,146.5481
175	08	3	SAT-M	0.0000	16.6956	5,069.2020	7,991.2285	4,731.3401	-5.2940	9.0212	2,646.2900	4,148.6197	2,532.4307
175	08	4	SAT-W	0.0000	14.9652	5,810.6179	4,731.3401	7,165.9294	5.1026	8.0750	3,146.5481	2,532.4307	3,958.3838
175	08	5	Female	0.5603	0.0408	0.6268	-5.2940	5.1026	0.2464	0.0179	0.2756	-2.3277	2.2435
175	08	6	Female*HSGPA	0.0408	0.1419	7.5420	9.0212	8.0750	0.0179	0.1402	7.5165	9.2371	7.8669
175	08	7	Female*SAT-CR	0.6268	7.5420	4,260.7201	2,646.2900	3,146.5481	0.2756	7.5165	4,260.3272	2,649.6083	3,143.3499
175	08	8	Female*SAT-M	-5.2937	9.0212	2,646.2900	4,148.6197	2,532.4307	-2.3277	9.2371	2,649.6083	4,120.5949	2,559.4423
175	08	9	Female*SAT-W	5.1023	8.0750	3,146.5481	2,532.4307	3,958.3838	2.2435	7.8669	3,143.3499	2,559.4423	3,932.3488
176	06	1	HSGPA	0.0000	0.2768	13.8787	16.1490	15.6573	0.0477	0.1400	8.3503	9.1238	8.5566
176	06	2	SAT-CR	0.0000	13.8787	8,940.3869	5,124.9353	6,683.6313	-0.5829	8.3503	4,964.9875	2,817.3247	3,738.2509
176	06	3	SAT-M	0.0000	16.1490	5,124.9353	8,339.9918	4,745.4489	-8.8855	9.1238	2,817.3247	4,409.9707	2,637.1953
176	06	4	SAT-W	0.0000	15.6573	6,683.6313	4,745.4489	8,062.6867	3.3246	8.5566	3,738.2509	2,637.1953	4,429.0123
176	06	5	Female	0.5554	0.0477	-0.5829	-8.8855	3.3246	0.2470	0.0212	-0.2592	-3.9508	1.4782
176	06	6	Female*HSGPA	0.0477	0.1400	8.3503	9.1238	8.5566	0.0212	0.1377	8.3781	9.5476	8.3980
176	06	7	Female*SAT-CR	-0.5828	8.3503	4,964.9875	2,817.3247	3,738.2509	-0.2592	8.3781	4,964.6477	2,812.1458	3,740.1886
176	06	8	Female*SAT-M	-8.8847	9.1238	2,817.3247	4,409.9707	2,637.1953	-3.9508	9.5476	2,812.1458	4,331.0258	2,666.7335
176	06	9	Female*SAT-W	3.3243	8.5566	3,738.2509	2,637.1953	4,429.0123	1.4782	8.3980	3,740.1886	2,666.7335	4,417.9602
176	07	1	HSGPA	0.0000	0.2902	14.6904	16.8991	16.6926	0.0479	0.1499	8.5133	9.5076	9.1951
176	07	2	SAT-CR	0.0000	14.6904	9,123.0779	5,082.0361	6,704.1247	-1.0312	8.5133	5,014.1968	2,778.4713	3,711.7169
176	07	3	SAT-M	0.0000	16.8991	5,082.0361	8,283.8586	4,720.5542	-8.2842	9.5076	2,778.4713	4,480.8745	2,652.7041
176	07	4	SAT-W	0.0000	16.6926	6,704.1247	4,720.5542	7,929.6307	3.2711	9.1951	3,711.7169	2,652.7041	4,420.2029
176	07	5	Female	0.5666	0.0479	-1.0312	-8.2842	3.2711	0.2456	0.0208	-0.4469	-3.5904	1.4177
176	07	6	Female*HSGPA	0.0479	0.1499	8.5133	9.5076	9.1951	0.0208	0.1476	8.5626	9.9042	9.0385
176	07	7	Female*SAT-CR	-1.0312	8.5133	5,014.1968	2,778.4713	3,711.7169	-0.4469	8.5626	5,013.1334	2,769.9290	3,715.0899
176	07	8	Female*SAT-M	-8.2835	9.5076	2,778.4713	4,480.8745	2,652.7041	-3.5904	9.9042	2,769.9290	4,412.2522	2,679.8006
176	07	9	Female*SAT-W	3.2709	9.1951	3,711.7169	2,652.7041	4,420.2029	1.4177	9.0385	3,715.0899	2,679.8006	4,409.5034
176	08	1	HSGPA	0.0000	0.2856	13.9578	16.1059	15.6837	0.0472	0.1432	7.9824	8.7370	8.6471
176	08	2	SAT-CR	0.0000	13.9578	8,871.4377	4,851.1080	6,524.7184	-0.1516	7.9824	4,849.7146	2,610.9686	3,649.8599
176	08	3	SAT-M	0.0000	16.1059	4,851.1080	7,918.8142	4,609.1698	-7.9031	8.7370	2,610.9686	4,202.2529	2,557.6691
176	08	4	SAT-W	0.0000	15.6837	6,524.7184	4,609.1698	7,871.9800	4.1300	8.6471	3,649.8599	2,557.6691	4,407.7044
176	08	5	Female	0.5609	0.0472	-0.1516	-7.9031	4.1300	0.2463	0.0207	-0.0666	-3.4704	1.8136
176	08	6	Female*HSGPA	0.0471	0.1432	7.9824	8.7370	8.6471	0.0207	0.1410	7.9895	9.1096	8.4524
176	08	7	Female*SAT-CR	-0.1516	7.9824	4,849.7146	2,610.9686	3,649.8599	-0.0666	7.9895	4,849.6916	2,609.7705	3,650.4860
176	08	8	Female*SAT-M	-7.9024	8.7370	2,610.9686	4,202.2529	2,557.6691	-3.4704	9.1096	2,609.7705	4,139.7996	2,590.3061
176	08	9	Female*SAT-W	4.1297	8.6471	3,649.8599	2,557.6691	4,407.7044	1.8136	8.4524	3,650.4860	2,590.3061	4,390.6488

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
1	07	1	HSGPA	0.0000	0.1890	4.2211	4.6596	4.9243	0.0259	0.1212	2.5832	3.1764	2.7318	0.0898
1	07	2	SAT-CR	0.0000	4.2211	6,183.8697	2,750.5613	4,148.7825	-0.6849	2.5832	4,148.6037	1,952.7652	2,785.1718	15.5541
1	07	3	SAT-M	0.0000	4.6596	2,750.5613	5,385.0584	2,705.1668	-7.1059	3.1764	1,952.7652	3,521.4958	1,957.4134	13.2393
1	07	4	SAT-W	0.0000	4.9243	4,148.7825	2,705.1668	5,941.8055	2.9902	2.7318	2,785.1718	1,957.4134	3,876.1964	17.6857
1	07	5	Female	0.6641	0.0259	-0.6849	-7.1059	2.9902	0.2232	0.0087	-0.2301	-2.3871	1.0045	0.0501
1	07	6	Female*HSGPA	0.0258	0.1212	2.5832	3.1764	2.7318	0.0087	0.1206	2.6009	3.3600	2.6545	0.0517
1	07	7	Female*SAT-CR	-0.6845	2.5832	4,148.6037	1,952.7652	2,785.1718	-0.2301	2.6009	4,148.1349	1,947.9014	2,787.2185	10.4533
1	07	8	Female*SAT-M	-7.1019	3.1764	1,952.7652	3,521.4958	1,957.4134	-2.3871	3.3600	1,947.9014	3,471.0307	1,978.6494	9.5108
1	07	9	Female*SAT-W	2.9885	2.7318	2,785.1718	1,957.4134	3,876.1964	1.0045	2.6545	2,787.2185	1,978.6494	3,867.2603	11.4478
1	07	10	FYGPA	2.9397	0.0898	15.5541	13.2393	17.6857	0.0501	0.0517	10.4533	9.5108	11.4478	0.4539
1	08	1	HSGPA	0.0000	0.1725	4.5282	3.0996	4.8705	0.0379	0.1035	3.2228	2.5863	2.2975	0.0861
1	08	2	SAT-CR	0.0000	4.5282	6,199.0048	2,694.4373	4,024.3597	-1.1459	3.2228	3,958.5482	1,830.4961	2,731.9922	14.4582
1	08	3	SAT-M	0.0000	3.0996	2,694.4373	5,440.3717	2,648.6787	-7.6326	2.5863	1,830.4961	3,542.4625	1,937.2455	12.8167
1	08	4	SAT-W	0.0000	4.8705	4,024.3597	2,648.6787	5,630.3007	3.1369	2.2975	2,731.9922	1,937.2455	3,811.6674	17.2996
1	08	5	Female	0.6731	0.0379	-1.1459	-7.6326	3.1369	0.2202	0.0124	-0.3745	-2.4949	1.0254	0.0518
1	08	6	Female*HSGPA	0.0379	0.1035	3.2228	2.5863	2.2975	0.0124	0.1021	3.2662	2.8755	2.1786	0.0485
1	08	7	Female*SAT-CR	-1.1451	3.2228	3,958.5482	1,830.4961	2,731.9922	-0.3745	3.2662	3,957.2360	1,821.7560	2,735.5843	9.7035
1	08	8	Female*SAT-M	-7.6276	2.5863	1,830.4961	3,542.4625	1,937.2455	-2.4949	2.8755	1,821.7560	3,484.2440	1,961.1729	8.9276
1	08	9	Female*SAT-W	3.1349	2.2975	2,731.9922	1,937.2455	3,811.6674	1.0254	2.1786	2,735.5843	1,961.1729	3,801.8333	10.8398
1	08	10	FYGPA	2.9894	0.0861	14.4582	12.8167	17.2996	0.0518	0.0485	9.7035	8.9276	10.8398	0.3753
2	08	1	HSGPA	0.0000	0.1752	8.0505	6.8923	8.7775	0.0494	0.1050	5.2546	5.0400	5.3795	0.0831
2	08	2	SAT-CR	0.0000	8.0505	5,324.4456	2,219.9883	3,261.8777	2.2063	5.2546	3,284.9321	1,307.0620	1,904.2105	10.3861
2	08	3	SAT-M	0.0000	6.8923	2,219.9883	4,981.7536	2,212.2418	-4.0389	5.0400	1,307.0620	2,915.8541	1,247.3157	8.5194
2	08	4	SAT-W	0.0000	8.7775	3,261.8777	2,212.2418	5,203.6549	6.8314	5.3795	1,904.2105	1,247.3157	3,049.9906	12.9468
2	08	5	Female	0.6238	0.0494	2.2063	-4.0389	6.8314	0.2349	0.0186	0.8300	-1.5194	2.5700	0.0660
2	08	6	Female*HSGPA	0.0494	0.1050	5.2546	5.0400	5.3795	0.0186	0.1025	5.1457	5.2395	5.0420	0.0454
2	08	7	Female*SAT-CR	2.2042	5.2546	3,284.9321	1,307.0620	1,904.2105	0.8300	5.1457	3,280.0689	1,315.9646	1,889.1527	6.4186
2	08	8	Female*SAT-M	-4.0350	5.0400	1,307.0620	2,915.8541	1,247.3157	-1.5194	5.2395	1,315.9646	2,899.5570	1,274.8807	6.0543
2	08	9	Female*SAT-W	6.8249	5.3795	1,904.2105	1,247.3157	3,049.9906	2.5700	5.0420	1,889.1527	1,274.8807	3,003.3670	7.4368
2	08	10	FYGPA	3.2480	0.0831	10.3861	8.5194	12.9468	0.0660	0.0454	6.4186	6.0543	7.4368	0.2015
3	08	1	HSGPA	0.0000	0.1826	5.6630	6.4917	6.9327	0.0294	0.0940	3.1135	3.3778	3.8645	0.0977
3	08	2	SAT-CR	0.0000	5.6630	5,845.3725	2,330.4201	4,123.3090	-1.2775	3.1135	3,008.6369	1,170.2526	2,143.3729	11.4347
3	08	3	SAT-M	0.0000	6.4917	2,330.4201	5,298.2463	2,629.4495	-8.2679	3.3778	1,170.2526	2,676.8012	1,349.7998	10.8863
3	08	4	SAT-W	0.0000	6.9327	4,123.3090	2,629.4495	6,209.6344	4.8714	3.8645	2,143.3729	1,349.7998	3,288.3275	16.3804
3	08	5	Female	0.5631	0.0294	-1.2775	-8.2679	4.8714	0.2461	0.0128	-0.5581	-3.6122	2.1283	0.0717
3	08	6	Female*HSGPA	0.0294	0.0940	3.1135	3.3778	3.8645	0.0128	0.0932	3.1510	3.6205	3.7215	0.0439
3	08	7	Female*SAT-CR	-1.2771	3.1135	3,008.6369	1,170.2526	2,143.3729	-0.5581	3.1510	3,007.0054	1,159.6938	2,149.5941	5.7208
3	08	8	Female*SAT-M	-8.2652	3.3778	1,170.2526	2,676.8012	1,349.7998	-3.6122	3.6205	1,159.6938	2,608.4653	1,390.0630	5.4456
3	08	9	Female*SAT-W	4.8698	3.8645	2,143.3729	1,349.7998	3,288.3275	2.1283	3.7215	2,149.5941	1,390.0630	3,264.6046	8.0334
3	08	10	FYGPA	3.2793	0.0977	11.4347	10.8863	16.3804	0.0717	0.0439	5.7208	5.4456	8.0334	0.4188

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
4	06	1	HSGPA	0.0000	0.1740	7.6549	8.8667	9.2545	0.0401	0.1120	5.5733	6.0730	6.3075	0.1163
4	06	2	SAT-CR	0.0000	7.6549	5,850.5731	2,856.7260	3,851.9500	-0.9205	5.5733	3,234.6502	1,679.8017	2,154.6055	16.9255
4	06	3	SAT-M	0.0000	8.8667	2,856.7260	5,745.1142	2,588.1171	-3.6251	6.0730	1,679.8017	3,282.0323	1,605.0349	16.4460
4	06	4	SAT-W	0.0000	9.2545	3,851.9500	2,588.1171	5,552.7901	2.4608	6.3075	2,154.6055	1,605.0349	3,231.4565	16.9048
4	06	5	Female	0.6141	0.0401	-0.9205	-3.6251	2.4608	0.2375	0.0155	-0.3553	-1.3990	0.9497	0.0521
4	06	6	Female*HSGPA	0.0400	0.1120	5.5733	6.0730	6.3075	0.0155	0.1104	5.6101	6.2180	6.2091	0.0786
4	06	7	Female*SAT-CR	-0.9186	5.5733	3,234.6502	1,679.8017	2,154.6055	-0.3553	5.6101	3,233.8047	1,676.4718	2,156.8660	10.5702
4	06	8	Female*SAT-M	-3.6174	6.0730	1,679.8017	3,282.0323	1,605.0349	-1.3990	6.2180	1,676.4718	3,268.9186	1,613.9367	11.6138
4	06	9	Female*SAT-W	2.4556	6.3075	2,154.6055	1,605.0349	3,231.4565	0.9497	6.2091	2,156.8660	1,613.9367	3,225.4137	10.7436
4	06	10	FYGPA	2.5523	0.1163	16.9255	16.4460	16.9048	0.0521	0.0786	10.5702	11.6138	10.7436	0.3221
4	07	1	HSGPA	0.0000	0.2152	9.6355	6.3417	8.5793	0.0778	0.1114	6.4928	3.7048	5.6032	0.1519
4	07	2	SAT-CR	0.0000	9.6355	5,515.8677	2,312.4272	3,378.5860	2.9641	6.4928	2,888.4503	1,173.0155	1,836.1650	16.6694
4	07	3	SAT-M	0.0000	6.3417	2,312.4272	4,756.7377	2,050.0330	-2.3905	3.7048	1,173.0155	2,266.6218	1,014.2150	10.6756
4	07	4	SAT-W	0.0000	8.5793	3,378.5860	2,050.0330	5,020.6682	7.2962	5.6032	1,836.1650	1,014.2150	2,428.4449	20.0547
4	07	5	Female	0.5462	0.0778	2.9641	-2.3905	7.2962	0.2484	0.0353	1.3451	-1.0848	3.3110	0.1306
4	07	6	Female*HSGPA	0.0776	0.1114	6.4928	3.7048	5.6032	0.0353	0.1053	6.2628	3.8903	5.0369	0.0822
4	07	7	Female*SAT-CR	2.9580	6.4928	2,888.4503	1,173.0155	1,836.1650	1.3451	6.2628	2,879.6824	1,180.0868	1,814.5826	10.2652
4	07	8	Female*SAT-M	-2.3856	3.7048	1,173.0155	2,266.6218	1,014.2150	-1.0848	3.8903	1,180.0868	2,260.9188	1,031.6212	7.1780
4	07	9	Female*SAT-W	7.2813	5.6032	1,836.1650	1,014.2150	2,428.4449	3.3110	5.0369	1,814.5826	1,031.6212	2,375.3190	10.8220
4	07	10	FYGPA	2.6174	0.1519	16.6694	10.6756	20.0547	0.1306	0.0822	10.2652	7.1780	10.8220	0.3930
4	08	1	HSGPA	0.0000	0.1814	9.9698	9.5315	12.2996	0.0621	0.1086	6.5238	5.7424	6.9679	0.1428
4	08	2	SAT-CR	0.0000	9.9698	5,677.8166	2,598.1294	3,767.3700	0.3952	6.5238	3,207.9735	1,510.3515	2,227.6621	19.9207
4	08	3	SAT-M	0.0000	9.5315	2,598.1294	5,745.5532	2,628.1544	-4.8181	5.7424	1,510.3515	3,250.9841	1,563.4473	17.8417
4	08	4	SAT-W	0.0000	12.2996	3,767.3700	2,628.1544	5,280.8834	4.6868	6.9679	2,227.6621	1,563.4473	3,089.1023	23.4884
4	08	5	Female	0.5827	0.0621	0.3952	-4.8181	4.6868	0.2437	0.0259	0.1649	-2.0104	1.9556	0.0657
4	08	6	Female*HSGPA	0.0619	0.1086	6.5238	5.7424	6.9679	0.0259	0.1047	6.4993	6.0407	6.6776	0.0767
4	08	7	Female*SAT-CR	0.3942	6.5238	3,207.9735	1,510.3515	2,227.6621	0.1649	6.4993	3,207.8177	1,512.2509	2,225.8145	11.5537
4	08	8	Female*SAT-M	-4.8065	5.7424	1,510.3515	3,250.9841	1,563.4473	-2.0104	6.0407	1,512.2509	3,227.8260	1,585.9745	11.2091
4	08	9	Female*SAT-W	4.6756	6.9679	2,227.6621	1,563.4473	3,089.1023	1.9556	6.6776	2,225.8145	1,585.9745	3,067.1888	12.7864
4	08	10	FYGPA	2.5646	0.1428	19.9207	17.8417	23.4884	0.0657	0.0767	11.5537	11.2091	12.7864	0.4032
5	08	1	HSGPA	0.0000	0.3416	16.9988	22.2708	23.4258	0.0788	0.1595	8.6403	10.6330	11.2396	0.2631
5	08	2	SAT-CR	0.0000	16.9988	8,092.1847	5,640.7843	6,812.3754	4.2432	8.6403	3,658.3914	2,484.7304	3,040.7340	26.1760
5	08	3	SAT-M	0.0000	22.2708	5,640.7843	8,327.5217	5,718.8814	-2.1048	10.6330	2,484.7304	4,075.7746	2,528.3203	31.3066
5	08	4	SAT-W	0.0000	23.4258	6,812.3754	5,718.8814	8,629.0550	7.0534	11.2396	3,040.7340	2,528.3203	3,996.3951	34.8831
5	08	5	Female	0.5261	0.0788	4.2432	-2.1048	7.0534	0.2501	0.0374	2.0107	-0.9974	3.3423	0.1192
5	08	6	Female*HSGPA	0.0786	0.1595	8.6403	10.6330	11.2396	0.0374	0.1533	8.3068	10.7984	10.6852	0.1145
5	08	7	Female*SAT-CR	4.2294	8.6403	3,658.3914	2,484.7304	3,040.7340	2.0107	8.3068	3,640.4453	2,493.6323	3,010.9028	12.0676
5	08	8	Female*SAT-M	-2.0979	10.6330	2,484.7304	4,075.7746	2,528.3203	-0.9974	10.7984	2,493.6323	4,071.3590	2,543.1176	13.7437
5	08	9	Female*SAT-W	7.0303	11.2396	3,040.7340	2,528.3203	3,996.3951	3.3423	10.6852	3,010.9028	2,543.1176	3,946.8078	16.0127
5	08	10	FYGPA	2.9294	0.2631	26.1760	31.3066	34.8831	0.1192	0.1145	12.0676	13.7437	16.0127	0.6297

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
6	06	1	HSGPA	0.0000	0.1816	6.4936	1.8874	5.6165	0.0520	0.1020	3.6905	2.4700	2.7513	0.0997
6	06	2	SAT-CR	0.0000	6.4936	6,717.0917	2,651.0360	4,431.8408	3.7467	3.6905	3,986.9552	1,731.2390	2,570.2197	14.4073
6	06	3	SAT-M	0.0000	1.8874	2,651.0360	5,512.5847	2,394.7166	-5.5609	2.4700	1,731.2390	2,920.4231	1,520.5336	9.0724
6	06	4	SAT-W	0.0000	5.6165	4,431.8408	2,394.7166	6,099.6767	8.3782	2.7513	2,570.2197	1,520.5336	3,533.4501	15.6066
6	06	5	Female	0.6041	0.0520	3.7467	-5.5609	8.3782	0.2396	0.0206	1.4833	-2.2016	3.3170	0.0644
6	06	6	Female*HSGPA	0.0519	0.1020	3.6905	2.4700	2.7513	0.0206	0.0993	3.4962	2.7585	2.3167	0.0485
6	06	7	Female*SAT-CR	3.7397	3.6905	3,986.9552	1,731.2390	2,570.2197	1.4833	3.4962	3,972.9439	1,752.0351	2,538.8877	7.7986
6	06	8	Female*SAT-M	-5.5506	2.4700	1,731.2390	2,920.4231	1,520.5336	-2.2016	2.7585	1,752.0351	2,889.5569	1,567.0376	5.4475
6	06	9	Female*SAT-W	8.3627	2.7513	2,570.2197	1,520.5336	3,533.4501	3.3170	2.3167	2,538.8877	1,567.0376	3,463.3858	8.9799
6	06	10	FYGPA	3.1228	0.0997	14.4073	9.0724	15.6066	0.0644	0.0485	7.7986	5.4475	8.9799	0.2794
6	07	1	HSGPA	0.0000	0.2186	7.4083	6.0260	8.9070	0.0639	0.1089	4.6112	3.9115	5.0612	0.1191
6	07	2	SAT-CR	0.0000	7.4083	6,487.1886	2,787.5060	4,403.9076	-1.0578	4.6112	3,959.9097	1,792.4565	2,803.4930	15.9855
6	07	3	SAT-M	0.0000	6.0260	2,787.5060	6,146.0979	2,904.4895	-7.3133	3.9115	1,792.4565	3,786.4443	2,050.2192	13.4688
6	07	4	SAT-W	0.0000	8.9070	4,403.9076	2,904.4895	6,112.4287	5.2804	5.0612	2,803.4930	2,050.2192	3,853.9755	19.0213
6	07	5	Female	0.6265	0.0639	-1.0578	-7.3133	5.2804	0.2345	0.0239	-0.3951	-2.7316	1.9723	0.0562
6	07	6	Female*HSGPA	0.0638	0.1089	4.6112	3.9115	5.0612	0.0239	0.1048	4.6787	4.3778	4.7246	0.0606
6	07	7	Female*SAT-CR	-1.0557	4.6112	3,959.9097	1,792.4565	2,803.4930	-0.3951	4.6787	3,958.7930	1,784.7361	2,809.0674	9.9702
6	07	8	Female*SAT-M	-7.2988	3.9115	1,792.4565	3,786.4443	2,050.2192	-2.7316	4.3778	1,784.7361	3,733.0661	2,088.7601	10.2052
6	07	9	Female*SAT-W	5.2700	5.0612	2,803.4930	2,050.2192	3,853.9755	1.9723	4.7246	2,809.0674	2,088.7601	3,826.1476	12.8929
6	07	10	FYGPA	3.1011	0.1191	15.9855	13.4688	19.0213	0.0562	0.0606	9.9702	10.2052	12.8929	0.3175
6	08	1	HSGPA	0.0000	0.1945	3.7474	5.6143	5.6473	0.0411	0.0992	2.5670	3.5106	3.1036	0.1102
6	08	2	SAT-CR	0.0000	3.7474	6,306.6843	2,600.8286	4,266.9396	-1.6219	2.5670	3,501.1835	1,466.4505	2,418.4414	13.6199
6	08	3	SAT-M	0.0000	5.6143	2,600.8286	5,414.2908	2,861.6764	-8.2852	3.5106	1,466.4505	3,198.5131	1,563.7399	11.9476
6	08	4	SAT-W	0.0000	5.6473	4,266.9396	2,861.6764	6,648.8573	2.2328	3.1036	2,418.4414	1,563.7399	3,552.1533	16.5615
6	08	5	Female	0.5769	0.0411	-1.6219	-8.2852	2.2328	0.2446	0.0174	-0.6862	-3.5053	0.9446	0.0407
6	08	6	Female*HSGPA	0.0410	0.0992	2.5670	3.5106	3.1036	0.0174	0.0975	2.6335	3.8505	3.0120	0.0552
6	08	7	Female*SAT-CR	-1.6187	2.5670	3,501.1835	1,466.4505	2,418.4414	-0.6862	2.6335	3,498.5581	1,453.0395	2,422.0555	7.2390
6	08	8	Female*SAT-M	-8.2685	3.5106	1,466.4505	3,198.5131	1,563.7399	-3.5053	3.8505	1,453.0395	3,130.0071	1,582.2017	6.8582
6	08	9	Female*SAT-W	2.2283	3.1036	2,418.4414	1,563.7399	3,552.1533	0.9446	3.0120	2,422.0555	1,582.2017	3,547.1780	8.5056
6	08	10	FYGPA	3.0992	0.1102	13.6199	11.9476	16.5615	0.0407	0.0552	7.2390	6.8582	8.5056	0.3035
7	07	1	HSGPA	0.0000	0.2256	3.9078	5.0892	6.1510	0.0450	0.1378	3.1923	4.0821	4.1946	0.1065
7	07	2	SAT-CR	0.0000	3.9078	5,839.4478	2,918.2735	4,003.8713	-3.0870	3.1923	3,978.3274	1,833.9070	2,740.2427	13.0312
7	07	3	SAT-M	0.0000	5.0892	2,918.2735	6,161.8012	2,883.4029	-7.3193	4.0821	1,833.9070	3,830.4210	1,883.5032	13.7384
7	07	4	SAT-W	0.0000	6.1510	4,003.8713	2,883.4029	5,383.2815	0.0171	4.1946	2,740.2427	1,883.5032	3,659.0513	14.2460
7	07	5	Female	0.6753	0.0450	-3.0870	-7.3193	0.0171	0.2195	0.0146	-1.0025	-2.3768	0.0055	0.0346
7	07	6	Female*HSGPA	0.0450	0.1378	3.1923	4.0821	4.1946	0.0146	0.1357	3.3312	4.4113	4.1939	0.0676
7	07	7	Female*SAT-CR	-3.0843	3.1923	3,978.3274	1,833.9070	2,740.2427	-1.0025	3.3312	3,968.8060	1,811.3320	2,740.2953	9.4609
7	07	8	Female*SAT-M	-7.3128	4.0821	1,833.9070	3,830.4210	1,883.5032	-2.3768	4.4113	1,811.3320	3,776.8959	1,883.6280	11.2076
7	07	9	Female*SAT-W	0.0171	4.1946	2,740.2427	1,883.5032	3,659.0513	0.0055	4.1939	2,740.2953	1,883.6280	3,659.0510	10.6241
7	07	10	FYGPA	2.5309	0.1065	13.0312	13.7384	14.2460	0.0346	0.0676	9.4609	11.2076	10.6241	0.6234

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
8	06	1	HSGPA	0.0000	0.2170	7.8588	6.2004	9.8959	0.0176	0.0717	2.5869	2.5337	4.5155	0.0564
8	06	2	SAT-CR	0.0000	7.8588	7,238.2270	3,969.9354	5,218.4987	-6.2601	2.5869	3,205.5223	1,707.8760	2,544.3361	13.2495
8	06	3	SAT-M	0.0000	6.2004	3,969.9354	5,783.0604	3,603.1793	-9.8060	2.5337	1,707.8760	2,401.1858	1,433.5602	8.5262
8	06	4	SAT-W	0.0000	9.8959	5,218.4987	3,603.1793	6,733.9011	-1.4955	4.5155	2,544.3361	1,433.5602	3,090.1480	14.4946
8	06	5	Female	0.4427	0.0176	-6.2601	-9.8060	-1.4955	0.2477	0.0098	-3.4888	-5.4650	-0.8335	0.0306
8	06	6	Female*HSGPA	0.0175	0.0717	2.5869	2.5337	4.5155	0.0098	0.0714	2.6966	2.7056	4.5417	0.0179
8	06	7	Female*SAT-CR	-6.2354	2.5869	3,205.5223	1,707.8760	2,544.3361	-3.4888	2.6966	3,166.4882	1,646.7321	2,535.0108	4.2521
8	06	8	Female*SAT-M	-9.7672	2.5337	1,707.8760	2,401.1858	1,433.5602	-5.4650	2.7056	1,646.7321	2,305.4087	1,418.9529	2.7759
8	06	9	Female*SAT-W	-1.4896	4.5155	2,544.3361	1,433.5602	3,090.1480	-0.8335	4.5417	2,535.0108	1,418.9529	3,087.9202	5.3324
8	06	10	FYGPA	3.3048	0.0564	13.2495	8.5262	14.4946	0.0306	0.0179	4.2521	2.7759	5.3324	0.1971
8	07	1	HSGPA	0.0000	0.1312	7.8098	3.6053	6.7375	0.0286	0.0559	4.0256	1.3881	2.9960	0.0407
8	07	2	SAT-CR	0.0000	7.8098	5,199.5946	2,811.7256	3,646.9534	-1.2645	4.0256	2,335.5373	1,195.3588	1,397.0382	10.4524
8	07	3	SAT-M	0.0000	3.6053	2,811.7256	5,238.9614	2,750.3734	-2.2689	1.3881	1,195.3588	2,258.2991	1,185.6814	12.4344
8	07	4	SAT-W	0.0000	6.7375	3,646.9534	2,750.3734	5,441.9952	3.9412	2.9960	1,397.0382	1,185.6814	2,142.3512	12.8882
8	07	5	Female	0.4424	0.0286	-1.2645	-2.2689	3.9412	0.2478	0.0159	-0.7051	-1.2652	2.1976	0.0372
8	07	6	Female*HSGPA	0.0284	0.0559	4.0256	1.3881	2.9960	0.0159	0.0551	4.0616	1.4526	2.8840	0.0180
8	07	7	Female*SAT-CR	-1.2587	4.0256	2,335.5373	1,195.3588	1,397.0382	-0.7051	4.0616	2,333.9457	1,192.5030	1,401.9989	4.4399
8	07	8	Female*SAT-M	-2.2585	1.3881	1,195.3588	2,258.2991	1,185.6814	-1.2652	1.4526	1,192.5030	2,253.1747	1,194.5825	4.0257
8	07	9	Female*SAT-W	3.9230	2.9960	1,397.0382	1,185.6814	2,142.3512	2.1976	2.8840	1,401.9989	1,194.5825	2,126.8901	5.1603
8	07	10	FYGPA	3.3304	0.0407	10.4524	12.4344	12.8882	0.0372	0.0180	4.4399	4.0257	5.1603	0.1664
8	08	1	HSGPA	0.0000	0.1376	3.8104	1.8893	3.0100	0.0120	0.0704	2.8669	1.1522	1.1671	0.0373
8	08	2	SAT-CR	0.0000	3.8104	5,574.4076	2,695.2607	3,114.2180	-1.2322	2.8669	2,654.9763	1,488.5272	1,305.5307	5.9644
8	08	3	SAT-M	0.0000	1.8893	2,695.2607	4,847.1430	2,415.1122	-7.8637	1.1522	1,488.5272	2,396.3725	1,264.1497	5.9945
8	08	4	SAT-W	0.0000	3.0100	3,114.2180	2,415.1122	4,788.2925	3.4859	1.1671	1,305.5307	1,264.1497	2,093.6600	8.9200
8	08	5	Female	0.4764	0.0120	-1.2322	-7.8637	3.4859	0.2506	0.0063	-0.6452	-4.1173	1.8251	0.0447
8	08	6	Female*HSGPA	0.0120	0.0704	2.8669	1.1522	1.1671	0.0063	0.0703	2.8817	1.2464	1.1253	0.0148
8	08	7	Female*SAT-CR	-1.2264	2.8669	2,654.9763	1,488.5272	1,305.5307	-0.6452	2.8817	2,653.4651	1,478.8830	1,309.8058	3.7710
8	08	8	Female*SAT-M	-7.8266	1.1522	1,488.5272	2,396.3725	1,264.1497	-4.1173	1.2464	1,478.8830	2,334.8261	1,291.4323	4.3039
8	08	9	Female*SAT-W	3.4694	1.1671	1,305.5307	1,264.1497	2,093.6600	1.8251	1.1253	1,309.8058	1,291.4323	2,081.5660	3.8973
8	08	10	FYGPA	3.3379	0.0373	5.9644	5.9945	8.9200	0.0447	0.0148	3.7710	4.3039	3.8973	0.1463
9	07	1	HSGPA	0.0000	0.1841	8.2779	9.8557	9.4132	0.0266	0.1014	4.4441	5.4573	5.2234	0.1006
9	07	2	SAT-CR	0.0000	8.2779	6,140.1542	3,539.3378	4,600.2461	-0.4362	4.4441	3,600.3752	2,033.3815	2,701.8138	19.7424
9	07	3	SAT-M	0.0000	9.8557	3,539.3378	7,023.0911	3,779.4458	-7.7176	5.4573	2,033.3815	4,076.7010	2,249.8509	19.8120
9	07	4	SAT-W	0.0000	9.4132	4,600.2461	3,779.4458	6,420.9128	3.5817	5.2234	2,701.8138	2,249.8509	3,824.8213	22.7039
9	07	5	Female	0.6010	0.0266	-0.4362	-7.7176	3.5817	0.2399	0.0106	-0.1741	-3.0795	1.4292	0.0470
9	07	6	Female*HSGPA	0.0265	0.1014	4.4441	5.4573	5.2234	0.0106	0.1007	4.4557	5.6621	5.1283	0.0534
9	07	7	Female*SAT-CR	-0.4361	4.4441	3,600.3752	2,033.3815	2,701.8138	-0.1741	4.4557	3,600.1849	2,030.0159	2,703.3758	12.8878
9	07	8	Female*SAT-M	-7.7153	5.4573	2,033.3815	4,076.7010	2,249.8509	-3.0795	5.6621	2,030.0159	4,017.1574	2,277.4846	12.9808
9	07	9	Female*SAT-W	3.5806	5.2234	2,701.8138	2,249.8509	3,824.8213	1.4292	5.1283	2,703.3758	2,277.4846	3,811.9968	14.3096
9	07	10	FYGPA	2.9126	0.1006	19.7424	19.8120	22.7039	0.0470	0.0534	12.8878	12.9808	14.3096	0.3923



## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
9	08	1	HSGPA	0.0000	0.1711	7.1307	8.4714	8.5099	0.0226	0.0924	4.4399	4.8538	4.7263	0.1001
9	08	2	SAT-CR	0.0000	7.1307	5,896.6510	3,021.6938	4,321.4971	-0.7393	4.4399	3,296.2185	1,724.2894	2,494.5771	17.8016
9	08	3	SAT-M	0.0000	8.4714	3,021.6938	6,290.7273	3,247.4513	-9.2534	4.8538	1,724.2894	3,435.7825	1,909.0062	16.9067
9	08	4	SAT-W	0.0000	8.5099	4,321.4971	3,247.4513	6,383.2670	4.9691	4.7263	2,494.5771	1,909.0062	3,721.6459	20.8222
9	08	5	Female	0.5836	0.0226	-0.7393	-9.2534	4.9691	0.2431	0.0094	-0.3078	-3.8533	2.0692	0.0467
9	08	6	Female*HSGPA	0.0226	0.0924	4.4399	4.8538	4.7263	0.0094	0.0918	4.4566	5.0626	4.6142	0.0574
9	08	7	Female*SAT-CR	-0.7390	4.4399	3,296.2185	1,724.2894	2,494.5771	-0.3078	4.4566	3,295.6722	1,717.4510	2,498.2493	11.0227
9	08	8	Female*SAT-M	-9.2504	4.8538	1,724.2894	3,435.7825	1,909.0062	-3.8533	5.0626	1,717.4510	3,350.1841	1,954.9723	10.5503
9	08	9	Female*SAT-W	4.9675	4.7263	2,494.5771	1,909.0062	3,721.6459	2.0692	4.6142	2,498.2493	1,954.9723	3,696.9622	12.3663
9	08	10	FYGPA	2.9476	0.1001	17.8016	16.9067	20.8222	0.0467	0.0574	11.0227	10.5503	12.3663	0.3799
10	06	1	HSGPA	0.0000	0.1091	5.0089	3.8686	5.9327	0.0313	0.0466	2.3245	1.8203	2.4216	0.0400
10	06	2	SAT-CR	0.0000	5.0089	4,579.6572	1,257.8388	2,700.5100	3.0553	2.3245	2,135.7119	612.3768	1,163.5173	6.6884
10	06	3	SAT-M	0.0000	3.8686	1,257.8388	4,113.2777	1,300.2180	-6.6714	1.8203	612.3768	2,196.7781	616.9127	3.0764
10	06	4	SAT-W	0.0000	5.9327	2,700.5100	1,300.2180	4,327.7188	4.3767	2.4216	1,163.5173	616.9127	1,842.7016	6.9951
10	06	5	Female	0.5080	0.0313	3.0553	-6.6714	4.3767	0.2502	0.0154	1.5032	-3.2823	2.1534	0.0376
10	06	6	Female*HSGPA	0.0312	0.0466	2.3245	1.8203	2.4216	0.0154	0.0457	2.2291	2.0287	2.2849	0.0195
10	06	7	Female*SAT-CR	3.0522	2.3245	2,135.7119	612.3768	1,163.5173	1.5032	2.2291	2,126.3867	632.7392	1,150.1586	3.4281
10	06	8	Female*SAT-M	-6.6647	1.8203	612.3768	2,196.7781	616.9127	-3.2823	2.0287	632.7392	2,152.3151	646.0824	1.9094
10	06	9	Female*SAT-W	4.3724	2.4216	1,163.5173	616.9127	1,842.7016	2.1534	2.2849	1,150.1586	646.0824	1,823.5650	3.1844
10	06	10	FYGPA	3.3768	0.0400	6.6884	3.0764	6.9951	0.0376	0.0195	3.4281	1.9094	3.1844	0.1340
10	07	1	HSGPA	0.0000	0.1126	3.1707	3.6541	3.3285	0.0114	0.0541	2.1512	1.8304	1.8980	0.0411
10	07	2	SAT-CR	0.0000	3.1707	4,324.9906	1,221.9769	2,386.4529	1.2542	2.1512	2,159.2056	766.1818	1,187.9467	5.9912
10	07	3	SAT-M	0.0000	3.6541	1,221.9769	4,133.8350	1,308.3200	-6.3989	1.8304	766.1818	2,302.1199	776.9213	6.1210
10	07	4	SAT-W	0.0000	3.3285	2,386.4529	1,308.3200	4,305.3463	2.6821	1.8980	1,187.9467	776.9213	2,179.4835	7.1086
10	07	5	Female	0.5200	0.0114	1.2542	-6.3989	2.6821	0.2498	0.0055	0.6020	-3.0715	1.2874	0.0212
10	07	6	Female*HSGPA	0.0113	0.0541	2.1512	1.8304	1.8980	0.0055	0.0540	2.1369	1.9030	1.8676	0.0210
10	07	7	Female*SAT-CR	1.2531	2.1512	2,159.2056	766.1818	1,187.9467	0.6020	2.1369	2,157.6339	774.2002	1,184.5858	3.2420
10	07	8	Female*SAT-M	-6.3931	1.8304	766.1818	2,302.1199	776.9213	-3.0715	1.9030	774.2002	2,261.2111	794.0681	3.8299
10	07	9	Female*SAT-W	2.6796	1.8980	1,187.9467	776.9213	2,179.4835	1.2874	1.8676	1,184.5858	794.0681	2,172.2965	3.8716
10	07	10	FYGPA	3.3806	0.0411	5.9912	6.1210	7.1086	0.0212	0.0210	3.2420	3.8299	3.8716	0.1372
10	08	1	HSGPA	0.0000	0.1467	2.5406	4.4044	4.3144	0.0173	0.0760	2.3754	3.0197	3.3888	0.0509
10	08	2	SAT-CR	0.0000	2.5406	5,116.0139	1,737.0187	3,124.9615	0.3248	2.3754	3,116.4372	1,227.1928	2,023.8110	7.9721
10	08	3	SAT-M	0.0000	4.4044	1,737.0187	4,561.9831	1,928.0160	-7.5780	3.0197	1,227.1928	2,608.3068	1,294.7745	5.9567
10	08	4	SAT-W	0.0000	4.3144	3,124.9615	1,928.0160	4,946.2435	3.3577	3.3888	2,023.8110	1,294.7745	2,909.9159	9.1645
10	08	5	Female	0.5533	0.0173	0.3248	-7.5780	3.3577	0.2475	0.0077	0.1451	-3.3849	1.4998	0.0201
10	08	6	Female*HSGPA	0.0173	0.0760	2.3754	3.0197	3.3888	0.0077	0.0757	2.3698	3.1506	3.3308	0.0294
10	08	7	Female*SAT-CR	0.3244	2.3754	3,116.4372	1,227.1928	2,023.8110	0.1451	2.3698	3,116.3318	1,229.6510	2,022.7218	5.9786
10	08	8	Female*SAT-M	-7.5685	3.0197	1,227.1928	2,608.3068	1,294.7745	-3.3849	3.1506	1,229.6510	2,550.9526	1,320.1875	3.8372
10	08	9	Female*SAT-W	3.3535	3.3888	2,023.8110	1,294.7745	2,909.9159	1.4998	3.3308	2,022.7218	1,320.1875	2,898.6557	5.4704
10	08	10	FYGPA	3.3456	0.0509	7.9721	5.9567	9.1645	0.0201	0.0294	5.9786	3.8372	5.4704	0.1617

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
11	06	1	HSGPA	0.0000	0.2440	4.6080	7.1504	6.5428	0.0406	0.1193	2.7360	3.8296	3.3954	0.1295
11	06	2	SAT-CR	0.0000	4.6080	6,510.3666	3,026.0684	4,462.6828	-0.4674	2.7360	3,616.5220	1,741.8419	2,510.3999	14.5363
11	06	3	SAT-M	0.0000	7.1504	3,026.0684	6,794.4867	2,975.1760	-7.6561	3.8296	1,741.8419	3,601.0936	1,700.0817	15.1043
11	06	4	SAT-W	0.0000	6.5428	4,462.6828	2,975.1760	5,818.1598	2.1832	3.3954	2,510.3999	1,700.0817	3,252.1590	14.5923
11	06	5	Female	0.5406	0.0406	-0.4674	-7.6561	2.1832	0.2485	0.0186	-0.2147	-3.5172	1.0030	0.0480
11	06	6	Female*HSGPA	0.0405	0.1193	2.7360	3.8296	3.3954	0.0186	0.1176	2.7549	4.1399	3.3069	0.0678
11	06	7	Female*SAT-CR	-0.4671	2.7360	3,616.5220	1,741.8419	2,510.3999	-0.2147	2.7549	3,616.3036	1,738.2657	2,511.4197	8.7310
11	06	8	Female*SAT-M	-7.6508	3.8296	1,741.8419	3,601.0936	1,700.0817	-3.5172	4.1399	1,738.2657	3,542.5186	1,716.7850	9.2100
11	06	9	Female*SAT-W	2.1817	3.3954	2,510.3999	1,700.0817	3,252.1590	1.0030	3.3069	2,511.4197	1,716.7850	3,247.3959	8.6191
11	06	10	FYGPA	2.7746	0.1295	14.5363	15.1043	14.5923	0.0480	0.0678	8.7310	9.2100	8.6191	0.5705
11	07	1	HSGPA	0.0000	0.2394	4.7991	6.8594	5.6146	0.0188	0.1252	3.1934	3.3968	2.9733	0.1224
11	07	2	SAT-CR	0.0000	4.7991	6,224.9871	2,789.6341	4,282.5544	-0.1317	3.1934	3,529.6087	1,575.3021	2,392.7980	10.5751
11	07	3	SAT-M	0.0000	6.8594	2,789.6341	6,427.0204	2,786.1310	-9.0010	3.3968	1,575.3021	3,349.1408	1,562.4339	11.4490
11	07	4	SAT-W	0.0000	5.6146	4,282.5544	2,786.1310	5,636.7363	2.8127	2.9733	2,392.7980	1,562.4339	3,011.5799	13.1908
11	07	5	Female	0.5302	0.0188	-0.1317	-9.0010	2.8127	0.2493	0.0088	-0.0619	-4.2286	1.3214	0.0486
11	07	6	Female*HSGPA	0.0188	0.1252	3.1934	3.3968	2.9733	0.0088	0.1248	3.1958	3.5658	2.9205	0.0645
11	07	7	Female*SAT-CR	-0.1316	3.1934	3,529.6087	1,575.3021	2,392.7980	-0.0619	3.1958	3,529.5914	1,574.1177	2,393.1681	6.4552
11	07	8	Female*SAT-M	-8.9949	3.3968	1,575.3021	3,349.1408	1,562.4339	-4.2286	3.5658	1,574.1177	3,268.1769	1,587.7341	7.3531
11	07	9	Female*SAT-W	2.8108	2.9733	2,392.7980	1,562.4339	3,011.5799	1.3214	2.9205	2,393.1681	1,587.7341	3,003.6739	6.9949
11	07	10	FYGPA	2.7495	0.1224	10.5751	11.4490	13.1908	0.0486	0.0645	6.4552	7.3531	6.9949	0.6063
11	08	1	HSGPA	0.0000	0.2414	4.7471	7.4816	6.4517	0.0292	0.1345	2.9266	5.2608	3.9901	0.1309
11	08	2	SAT-CR	0.0000	4.7471	6,357.0216	2,927.4827	4,085.5462	-1.4454	2.9266	3,497.3437	1,665.4597	2,285.9175	11.6157
11	08	3	SAT-M	0.0000	7.4816	2,927.4827	6,763.4605	2,636.5721	-9.3546	5.2608	1,665.4597	3,684.6317	1,637.4350	13.1092
11	08	4	SAT-W	0.0000	6.4517	4,085.5462	2,636.5721	5,403.6355	2.9983	3.9901	2,285.9175	1,637.4350	3,041.0439	13.1170
11	08	5	Female	0.5583	0.0292	-1.4454	-9.3546	2.9983	0.2468	0.0129	-0.6384	-4.1318	1.3243	0.0535
11	08	6	Female*HSGPA	0.0291	0.1345	2.9266	5.2608	3.9901	0.0129	0.1337	2.9687	5.5334	3.9027	0.0704
11	08	7	Female*SAT-CR	-1.4444	2.9266	3,497.3437	1,665.4597	2,285.9175	-0.6384	2.9687	3,495.2561	1,651.9479	2,290.2483	6.8699
11	08	8	Female*SAT-M	-9.3484	5.2608	1,665.4597	3,684.6317	1,637.4350	-4.1318	5.5334	1,651.9479	3,597.1814	1,665.4643	9.0228
11	08	9	Female*SAT-W	2.9963	3.9901	2,285.9175	1,637.4350	3,041.0439	1.3243	3.9027	2,290.2483	1,665.4643	3,032.0600	7.5131
11	08	10	FYGPA	2.7788	0.1309	11.6157	13.1092	13.1170	0.0535	0.0704	6.8699	9.0228	7.5131	0.5915
12	07	1	HSGPA	0.0000	0.3543	11.1055	13.8112	15.5081	0.0548	0.2006	8.1578	9.3469	9.8317	0.2782
12	07	2	SAT-CR	0.0000	11.1055	7,084.0458	3,912.0384	4,564.4856	-4.9019	8.1578	4,324.0263	2,398.8688	2,817.1499	9.4832
12	07	3	SAT-M	0.0000	13.8112	3,912.0384	6,716.9632	3,359.1241	-7.9398	9.3469	2,398.8688	3,981.7195	2,229.8039	12.4422
12	07	4	SAT-W	0.0000	15.5081	4,564.4856	3,359.1241	5,952.1087	1.7860	9.8317	2,817.1499	2,229.8039	3,531.3481	15.6469
12	07	5	Female	0.6076	0.0548	-4.9019	-7.9398	1.7860	0.2388	0.0215	-1.9237	-3.1159	0.7009	0.0747
12	07	6	Female*HSGPA	0.0547	0.2006	8.1578	9.3469	9.8317	0.0215	0.1976	8.4261	9.7816	9.7339	0.1486
12	07	7	Female*SAT-CR	-4.8939	8.1578	4,324.0263	2,398.8688	2,817.1499	-1.9237	8.4261	4,300.0370	2,360.0127	2,825.8904	3.8438
12	07	8	Female*SAT-M	-7.9267	9.3469	2,398.8688	3,981.7195	2,229.8039	-3.1159	9.7816	2,360.0127	3,918.7833	2,243.9611	8.5825
12	07	9	Female*SAT-W	1.7831	9.8317	2,817.1499	2,229.8039	3,531.3481	0.7009	9.7339	2,825.8904	2,243.9611	3,528.1635	8.8900
12	07	10	FYGPA	2.2039	0.2782	9.4832	12.4422	15.6469	0.0747	0.1486	3.8438	8.5825	8.8900	1.1456

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
12	08	1	HSGPA	0.0000	0.3208	11.8261	15.4804	14.9498	0.0342	0.1961	9.4871	12.9292	10.9773	0.2504
12	08	2	SAT-CR	0.0000	11.8261	6,960.8069	3,767.6396	4,547.4173	-7.7756	9.4871	3,991.5382	2,300.7339	2,725.0332	13.8431
12	08	3	SAT-M	0.0000	15.4804	3,767.6396	6,672.1534	3,466.0590	-11.6138	12.9292	2,300.7339	4,329.9398	2,286.5964	14.6280
12	08	4	SAT-W	0.0000	14.9498	4,547.4173	3,466.0590	5,752.7831	-1.6029	10.9773	2,725.0332	2,286.5964	3,640.8625	18.3168
12	08	5	Female	0.6278	0.0342	-7.7756	-11.6138	-1.6029	0.2340	0.0127	-2.8941	-4.3227	-0.5966	0.0532
12	08	6	Female*HSGPA	0.0342	0.1961	9.4871	12.9292	10.9773	0.0127	0.1949	9.7528	13.3260	11.0321	0.1602
12	08	7	Female*SAT-CR	-7.7631	9.4871	3,991.5382	2,300.7339	2,725.0332	-2.8941	9.7528	3,931.1753	2,210.5742	2,712.5895	11.2450
12	08	8	Female*SAT-M	-11.5952	12.9292	2,300.7339	4,329.9398	2,286.5964	-4.3227	13.3260	2,210.5742	4,195.2748	2,268.0102	12.9403
12	08	9	Female*SAT-W	-1.6004	10.9773	2,725.0332	2,286.5964	3,640.8625	-0.5966	11.0321	2,712.5895	2,268.0102	3,638.2972	12.4486
12	08	10	FYGPA	2.2628	0.2504	13.8431	14.6280	18.3168	0.0532	0.1602	11.2450	12.9403	12.4486	1.1425
13	06	1	HSGPA	0.0000	0.2246	7.3049	7.7165	8.6318	0.0408	0.1439	5.0610	5.8769	5.7840	0.1222
13	06	2	SAT-CR	0.0000	7.3049	5,105.4189	2,469.1882	3,386.4726	-2.1502	5.0610	3,171.0853	1,515.1558	2,168.7374	10.6003
13	06	3	SAT-M	0.0000	7.7165	2,469.1882	5,239.6600	2,502.7348	-7.1362	5.8769	1,515.1558	3,176.7842	1,560.3121	8.8494
13	06	4	SAT-W	0.0000	8.6318	3,386.4726	2,502.7348	5,237.4499	1.8093	5.7840	2,168.7374	1,560.3121	3,329.5160	12.9830
13	06	5	Female	0.6567	0.0408	-2.1502	-7.1362	1.8093	0.2256	0.0140	-0.7382	-2.4499	0.6211	0.0601
13	06	6	Female*HSGPA	0.0407	0.1439	5.0610	5.8769	5.7840	0.0140	0.1423	5.1486	6.1677	5.7103	0.0737
13	06	7	Female*SAT-CR	-2.1489	5.0610	3,171.0853	1,515.1558	2,168.7374	-0.7382	5.1486	3,166.4649	1,499.8211	2,172.6253	7.3002
13	06	8	Female*SAT-M	-7.1318	5.8769	1,515.1558	3,176.7842	1,560.3121	-2.4499	6.1677	1,499.8211	3,125.8899	1,573.2156	7.3181
13	06	9	Female*SAT-W	1.8082	5.7840	2,168.7374	1,560.3121	3,329.5160	0.6211	5.7103	2,172.6253	1,573.2156	3,326.2446	8.3772
13	06	10	FYGPA	2.9396	0.1222	10.6003	8.8494	12.9830	0.0601	0.0737	7.3002	7.3181	8.3772	0.3725
14	06	1	HSGPA	0.0000	0.1886	8.7828	8.6699	11.3669	0.0252	0.0976	6.2271	5.8343	7.2140	0.1039
14	06	2	SAT-CR	0.0000	8.7828	6,602.4271	2,956.6233	4,735.4374	-1.0518	6.2271	3,752.1473	1,737.2880	2,762.9119	13.9058
14	06	3	SAT-M	0.0000	8.6699	2,956.6233	5,326.7593	2,979.5025	-6.0159	5.8343	1,737.2880	2,939.1096	1,803.5174	10.8898
14	06	4	SAT-W	0.0000	11.3669	4,735.4374	2,979.5025	6,507.0563	0.8052	7.2140	2,762.9119	1,803.5174	3,706.1986	16.7309
14	06	5	Female	0.5432	0.0252	-1.0518	-6.0159	0.8052	0.2483	0.0115	-0.4805	-2.7483	0.3679	0.0208
14	06	6	Female*HSGPA	0.0252	0.0976	6.2271	5.8343	7.2140	0.0115	0.0970	6.2536	5.9859	7.1937	0.0535
14	06	7	Female*SAT-CR	-1.0511	6.2271	3,752.1473	1,737.2880	2,762.9119	-0.4805	6.2536	3,751.0417	1,730.9648	2,763.7583	8.7961
14	06	8	Female*SAT-M	-6.0117	5.8343	1,737.2880	2,939.1096	1,803.5174	-2.7483	5.9859	1,730.9648	2,902.9440	1,808.3580	7.1585
14	06	9	Female*SAT-W	0.8046	7.2140	2,762.9119	1,803.5174	3,706.1986	0.3679	7.1937	2,763.7583	1,808.3580	3,705.5507	10.4157
14	06	10	FYGPA	3.0353	0.1039	13.9058	10.8898	16.7309	0.0208	0.0535	8.7961	7.1585	10.4157	0.3026
14	07	1	HSGPA	0.0000	0.1643	7.4844	6.0291	9.0846	0.0334	0.0768	2.9205	2.5279	3.7867	0.0920
14	07	2	SAT-CR	0.0000	7.4844	6,400.4811	2,578.7040	4,245.4954	0.3727	2.9205	3,370.6649	1,229.3433	2,259.2832	12.5892
14	07	3	SAT-M	0.0000	6.0291	2,578.7040	5,636.9972	2,549.5140	-7.8952	2.5279	1,229.3433	2,785.7108	1,236.4709	9.4970
14	07	4	SAT-W	0.0000	9.0846	4,245.4954	2,549.5140	6,033.3342	2.0926	3.7867	2,259.2832	1,236.4709	3,156.0190	14.3985
14	07	5	Female	0.5232	0.0334	0.3727	-7.8952	2.0926	0.2496	0.0159	0.1777	-3.7641	0.9977	0.0468
14	07	6	Female*HSGPA	0.0334	0.0768	2.9205	2.5279	3.7867	0.0159	0.0757	2.9080	2.7916	3.7168	0.0386
14	07	7	Female*SAT-CR	0.3725	2.9205	3,370.6649	1,229.3433	2,259.2832	0.1777	2.9080	3,370.5260	1,232.2843	2,258.5037	5.8217
14	07	8	Female*SAT-M	-7.8900	2.5279	1,229.3433	2,785.7108	1,236.4709	-3.7641	2.7916	1,232.2843	2,723.4179	1,252.9816	3.7630
14	07	9	Female*SAT-W	2.0912	3.7867	2,259.2832	1,236.4709	3,156.0190	0.9977	3.7168	2,258.5037	1,252.9816	3,151.6428	6.7612
14	07	10	FYGPA	3.0566	0.0920	12.5892	9.4970	14.3985	0.0468	0.0386	5.8217	3.7630	6.7612	0.2981

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
14	08	1	HSGPA	0.0000	0.1655	5.3124	6.7662	8.1926	0.0350	0.0841	3.1758	3.4597	4.3673	0.0814
14	08	2	SAT-CR	0.0000	5.3124	6,213.1849	2,104.3899	4,249.0131	-1.4284	3.1758	3,472.5420	1,164.5558	2,436.7549	10.8991
14	08	3	SAT-M	0.0000	6.7662	2,104.3899	5,033.3766	2,433.2719	-7.1775	3.4597	1,164.5558	2,579.6440	1,320.0412	8.4399
14	08	4	SAT-W	0.0000	8.1926	4,249.0131	2,433.2719	6,374.1753	3.2107	4.3673	2,436.7549	1,320.0412	3,466.8631	14.1439
14	08	5	Female	0.5448	0.0350	-1.4284	-7.1775	3.2107	0.2482	0.0159	-0.6503	-3.2675	1.4617	0.0384
14	08	6	Female*HSGPA	0.0349	0.0841	3.1758	3.4597	4.3673	0.0159	0.0828	3.2257	3.7105	4.2551	0.0418
14	08	7	Female*SAT-CR	-1.4274	3.1758	3,472.5420	1,164.5558	2,436.7549	-0.6503	3.2257	3,470.5030	1,154.3103	2,441.3381	5.8290
14	08	8	Female*SAT-M	-7.1725	3.4597	1,164.5558	2,579.6440	1,320.0412	-3.2675	3.7105	1,154.3103	2,528.1638	1,343.0700	3.5394
14	08	9	Female*SAT-W	3.2085	4.3673	2,436.7549	1,320.0412	3,466.8631	1.4617	4.2551	2,441.3381	1,343.0700	3,456.5615	7.7263
14	08	10	FYGPA	3.0871	0.0814	10.8991	8.4399	14.1439	0.0384	0.0418	5.8290	3.5394	7.7263	0.2317
15	06	1	HSGPA	0.0000	0.2286	7.7332	7.4905	7.7789	0.0494	0.1306	4.4199	3.8965	5.0402	0.1077
15	06	2	SAT-CR	0.0000	7.7332	8,607.1867	3,891.6922	6,215.5552	-0.3384	4.4199	5,596.5019	2,659.6545	3,994.6623	14.4597
15	06	3	SAT-M	0.0000	7.4905	3,891.6922	6,820.7547	3,753.6424	-7.0832	3.8965	2,659.6545	4,440.2849	2,725.4951	8.3816
15	06	4	SAT-W	0.0000	7.7789	6,215.5552	3,753.6424	8,191.3880	-0.4038	5.0402	3,994.6623	2,725.4951	5,303.8052	14.2624
15	06	5	Female	0.6726	0.0494	-0.3384	-7.0832	-0.4038	0.2208	0.0162	-0.1108	-2.3191	-0.1322	0.0496
15	06	6	Female*HSGPA	0.0493	0.1306	4.4199	3.8965	5.0402	0.0162	0.1282	4.4366	4.2454	5.0601	0.0523
15	06	7	Female*SAT-CR	-0.3376	4.4199	5,596.5019	2,659.6545	3,994.6623	-0.1108	4.4366	5,596.3876	2,657.2636	3,994.5260	12.3555
15	06	8	Female*SAT-M	-7.0652	3.8965	2,659.6545	4,440.2849	2,725.4951	-2.3191	4.2454	2,657.2636	4,390.2412	2,722.6419	8.5174
15	06	9	Female*SAT-W	-0.4028	5.0402	3,994.6623	2,725.4951	5,303.8052	-0.1322	5.0601	3,994.5260	2,722.6419	5,303.6425	12.7149
15	06	10	FYGPA	3.1103	0.1077	14.4597	8.3816	14.2624	0.0496	0.0523	12.3555	8.5174	12.7149	0.3206
15	07	1	HSGPA	0.0000	0.2045	10.2856	11.1336	10.0887	0.0393	0.1295	6.4098	8.1992	6.6600	0.1192
15	07	2	SAT-CR	0.0000	10.2856	10,157.7863	5,560.2783	7,175.4318	0.4494	6.4098	6,412.0357	3,638.6584	4,557.9963	19.9725
15	07	3	SAT-M	0.0000	11.1336	5,560.2783	8,425.3172	4,756.6721	-6.6639	8.1992	3,638.6584	5,306.6078	3,297.7341	15.4306
15	07	4	SAT-W	0.0000	10.0887	7,175.4318	4,756.6721	8,395.6815	3.4425	6.6600	4,557.9963	3,297.7341	5,011.5724	20.8399
15	07	5	Female	0.6286	0.0393	0.4494	-6.6639	3.4425	0.2341	0.0146	0.1669	-2.4752	1.2786	0.0316
15	07	6	Female*HSGPA	0.0392	0.1295	6.4098	8.1992	6.6600	0.0146	0.1280	6.3922	8.4605	6.5249	0.0667
15	07	7	Female*SAT-CR	0.4482	6.4098	6,412.0357	3,638.6584	4,557.9963	0.1669	6.3922	6,411.8343	3,641.6450	4,556.4535	16.8232
15	07	8	Female*SAT-M	-6.6449	8.1992	3,638.6584	5,306.6078	3,297.7341	-2.4752	8.4605	3,641.6450	5,262.3266	3,320.6090	11.6066
15	07	9	Female*SAT-W	3.4327	6.6600	4,557.9963	3,297.7341	5,011.5724	1.2786	6.5249	4,556.4535	3,320.6090	4,999.7556	15.3071
15	07	10	FYGPA	3.1076	0.1192	19.9725	15.4306	20.8399	0.0316	0.0667	16.8232	11.6066	15.3071	0.3616
15	08	1	HSGPA	0.0000	0.2391	2.4493	3.3200	4.3555	0.0251	0.1735	1.3624	2.8612	3.4883	0.1350
15	08	2	SAT-CR	0.0000	2.4493	8,873.4756	4,834.5456	6,369.0549	-2.7047	1.3624	5,613.7712	2,814.1709	3,984.2393	12.0269
15	08	3	SAT-M	0.0000	3.3200	4,834.5456	7,623.9535	4,407.2118	-8.3950	2.8612	2,814.1709	4,424.6857	2,792.8194	8.0776
15	08	4	SAT-W	0.0000	4.3555	6,369.0549	4,407.2118	7,940.4072	2.5065	3.4883	3,984.2393	2,792.8194	5,207.8327	12.8309
15	08	5	Female	0.6875	0.0251	-2.7047	-8.3950	2.5065	0.2156	0.0078	-0.8452	-2.6234	0.7833	0.0242
15	08	6	Female*HSGPA	0.0250	0.1735	1.3624	2.8612	3.4883	0.0078	0.1729	1.4301	3.0713	3.4255	0.0902
15	08	7	Female*SAT-CR	-2.6953	1.3624	5,613.7712	2,814.1709	3,984.2393	-0.8452	1.4301	5,606.4812	2,791.5437	3,990.9952	8.7433
15	08	8	Female*SAT-M	-8.3659	2.8612	2,814.1709	4,424.6857	2,792.8194	-2.6234	3.0713	2,791.5437	4,354.4538	2,813.7888	6.3727
15	08	9	Female*SAT-W	2.4978	3.4883	3,984.2393	2,792.8194	5,207.8327	0.7833	3.4255	3,990.9952	2,813.7888	5,201.5718	8.6734
15	08	10	FYGPA	2.9726	0.1350	12.0269	8.0776	12.8309	0.0242	0.0902	8.7433	6.3727	8.6734	0.4429

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
16	07	1	HSGPA	0.0000	0.4210	22.0056	30.9155	26.6996	0.0180	0.2935	16.0458	21.4492	19.4439	0.2544
16	07	2	SAT-CR	0.0000	22.0056	6,926.9426	5,076.8790	5,295.8667	-2.3434	16.0458	5,013.7202	3,581.1988	3,856.8698	23.6709
16	07	3	SAT-M	0.0000	30.9155	5,076.8790	10,776.2434	5,489.8779	-10.2971	21.4492	3,581.1988	7,024.0063	3,877.1314	41.6376
16	07	4	SAT-W	0.0000	26.6996	5,295.8667	5,489.8779	7,224.4822	0.0367	19.4439	3,856.8698	3,877.1314	5,207.3336	30.6426
16	07	5	Female	0.6961	0.0180	-2.3434	-10.2971	0.0367	0.2119	0.0055	-0.7121	-3.1290	0.0111	-0.0206
16	07	6	Female*HSGPA	0.0179	0.2935	16.0458	21.4492	19.4439	0.0055	0.2932	16.0878	21.6340	19.4432	0.1798
16	07	7	Female*SAT-CR	-2.3397	16.0458	5,013.7202	3,581.1988	3,856.8698	-0.7121	16.0878	5,008.2373	3,557.1064	3,856.9556	17.2969
16	07	8	Female*SAT-M	-10.2811	21.4492	3,581.1988	7,024.0063	3,877.1314	-3.1290	21.6340	3,557.1064	6,918.1409	3,877.5086	28.5350
16	07	9	Female*SAT-W	0.0366	19.4439	3,856.8698	3,877.1314	5,207.3336	0.0111	19.4432	3,856.9556	3,877.5086	5,207.3323	21.5699
16	07	10	FYGPA	2.7315	0.2544	23.6709	41.6376	30.6426	-0.0206	0.1798	17.2969	28.5350	21.5699	0.8463
16	08	1	HSGPA	0.0000	0.4163	19.0094	28.6362	24.1745	0.0297	0.2870	12.0598	19.7662	16.0338	0.2479
16	08	2	SAT-CR	0.0000	19.0094	7,311.2195	5,130.1562	5,728.3222	-2.0179	12.0598	4,673.5219	3,384.5144	3,810.5863	22.3778
16	08	3	SAT-M	0.0000	28.6362	5,130.1562	9,757.4296	5,498.3752	-9.4505	19.7662	3,384.5144	6,206.6892	3,762.7562	31.8244
16	08	4	SAT-W	0.0000	24.1745	5,728.3222	5,498.3752	7,710.0748	0.5240	16.0338	3,810.5863	3,762.7562	5,249.3414	26.9740
16	08	5	Female	0.6934	0.0297	-2.0179	-9.4505	0.5240	0.2129	0.0091	-0.6187	-2.8976	0.1607	0.0114
16	08	6	Female*HSGPA	0.0296	0.2870	12.0598	19.7662	16.0338	0.0091	0.2861	12.1196	20.0464	16.0182	0.1723
16	08	7	Female*SAT-CR	-2.0147	12.0598	4,673.5219	3,384.5144	3,810.5863	-0.6187	12.1196	4,669.4564	3,365.4742	3,811.6420	14.0480
16	08	8	Female*SAT-M	-9.4357	19.7662	3,384.5144	6,206.6892	3,762.7562	-2.8976	20.0464	3,365.4742	6,117.5172	3,767.7004	20.3340
16	08	9	Female*SAT-W	0.5232	16.0338	3,810.5863	3,762.7562	5,249.3414	0.1607	16.0182	3,811.6420	3,767.7004	5,249.0672	17.8896
16	08	10	FYGPA	2.8647	0.2479	22.3778	31.8244	26.9740	0.0114	0.1723	14.0480	20.3340	17.8896	0.5575
17	06	1	HSGPA	0.0000	0.2911	5.7250	11.8560	11.0359	0.0659	0.2034	5.7072	9.7382	7.9002	0.1375
17	06	2	SAT-CR	0.0000	5.7250	4,904.2309	2,278.7133	3,596.4291	1.2499	5.7072	3,747.4147	1,634.5038	2,711.7070	5.7897
17	06	3	SAT-M	0.0000	11.8560	2,278.7133	5,442.7757	2,348.2124	-1.6671	9.7382	1,634.5038	3,470.4997	1,692.6958	9.9655
17	06	4	SAT-W	0.0000	11.0359	3,596.4291	2,348.2124	5,354.4388	6.4023	7.9002	2,711.7070	1,692.6958	3,846.5280	12.7322
17	06	5	Female	0.7119	0.0659	1.2499	-1.6671	6.4023	0.2058	0.0190	0.3601	-0.4802	1.8444	0.0931
17	06	6	Female*HSGPA	0.0656	0.2034	5.7072	9.7382	7.9002	0.0190	0.1990	5.6251	9.8477	7.4799	0.0825
17	06	7	Female*SAT-CR	1.2458	5.7072	3,747.4147	1,634.5038	2,711.7070	0.3601	5.6251	3,745.8576	1,636.5806	2,703.7312	4.0118
17	06	8	Female*SAT-M	-1.6615	9.7382	1,634.5038	3,470.4997	1,692.6958	-0.4802	9.8477	1,636.5806	3,467.7298	1,703.3335	7.2441
17	06	9	Female*SAT-W	6.3811	7.9002	2,711.7070	1,692.6958	3,846.5280	1.8444	7.4799	2,703.7312	1,703.3335	3,805.6746	7.9210
17	06	10	FYGPA	2.9834	0.1375	5.7897	9.9655	12.7322	0.0931	0.0825	4.0118	7.2441	7.9210	0.4844
17	07	1	HSGPA	0.0000	0.2979	9.3014	10.4717	9.9045	0.0112	0.2138	6.6487	6.7038	7.4248	0.1652
17	07	2	SAT-CR	0.0000	9.3014	4,054.3559	1,587.0191	2,828.3693	1.5786	6.6487	3,040.2172	1,186.9791	2,142.6221	9.9998
17	07	3	SAT-M	0.0000	10.4717	1,587.0191	4,597.0446	1,731.7041	-9.3440	6.7038	1,186.9791	2,718.4851	1,196.4299	8.5095
17	07	4	SAT-W	0.0000	9.9045	2,828.3693	1,731.7041	4,364.7360	3.9230	7.4248	2,142.6221	1,196.4299	3,084.2861	10.6237
17	07	5	Female	0.6891	0.0112	1.5786	-9.3440	3.9230	0.2152	0.0035	0.4908	-2.9053	1.2198	0.0633
17	07	6	Female*HSGPA	0.0111	0.2138	6.6487	6.7038	7.4248	0.0035	0.2137	6.6311	6.8079	7.3810	0.1196
17	07	7	Female*SAT-CR	1.5719	6.6487	3,040.2172	1,186.9791	2,142.6221	0.4908	6.6311	3,037.7359	1,201.6672	2,136.4554	7.7622
17	07	8	Female*SAT-M	-9.3048	6.7038	1,186.9791	2,718.4851	1,196.4299	-2.9053	6.8079	1,201.6672	2,631.5408	1,232.9325	6.0591
17	07	9	Female*SAT-W	3.9065	7.4248	2,142.6221	1,196.4299	3,084.2861	1.2198	7.3810	2,136.4554	1,232.9325	3,068.9609	8.5527
17	07	10	FYGPA	3.0399	0.1652	9.9998	8.5095	10.6237	0.0633	0.1196	7.7622	6.0591	8.5527	0.3307

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
17	08	1	HSGPA	0.0000	0.2763	7.3840	8.6231	9.2520	0.0371	0.1952	6.4201	6.9171	6.7342	0.1144
17	08	2	SAT-CR	0.0000	7.3840	4,034.9089	1,683.4646	2,725.8415	2.5169	6.4201	2,872.9972	1,177.7996	1,866.2261	6.1713
17	08	3	SAT-M	0.0000	8.6231	1,683.4646	4,781.3527	1,854.9359	-3.4296	6.9171	1,177.7996	3,141.0622	1,311.0788	6.0898
17	08	4	SAT-W	0.0000	9.2520	2,725.8415	1,854.9359	4,619.8090	8.9592	6.7342	1,866.2261	1,311.0788	2,958.3314	10.4898
17	08	5	Female	0.7042	0.0371	2.5169	-3.4296	8.9592	0.2089	0.0110	0.7444	-1.0144	2.6499	0.0753
17	08	6	Female*HSGPA	0.0370	0.1952	6.4201	6.9171	6.7342	0.0110	0.1938	6.3271	7.0439	6.4031	0.0776
17	08	7	Female*SAT-CR	2.5098	6.4201	2,872.9972	1,177.7996	1,866.2261	0.7444	6.3271	2,866.6803	1,186.4074	1,843.7401	6.0473
17	08	8	Female*SAT-M	-3.4200	6.9171	1,177.7996	3,141.0622	1,311.0788	-1.0144	7.0439	1,186.4074	3,129.3330	1,341.7188	4.3396
17	08	9	Female*SAT-W	8.9339	6.7342	1,866.2261	1,311.0788	2,958.3314	2.6499	6.4031	1,843.7401	1,341.7188	2,878.2906	7.1501
17	08	10	FYGPA	3.1063	0.1144	6.1713	6.0898	10.4898	0.0753	0.0776	6.0473	4.3396	7.1501	0.3166
18	07	1	HSGPA	0.0000	0.3006	9.9338	7.9203	9.7623	0.0636	0.1912	6.5889	6.0114	6.6421	0.1579
18	07	2	SAT-CR	0.0000	9.9338	5,617.3537	3,081.4992	4,247.2065	0.3954	6.5889	3,688.2203	2,022.3261	2,841.1364	5.7126
18	07	3	SAT-M	0.0000	7.9203	3,081.4992	5,603.0622	3,147.0175	-1.4737	6.0114	2,022.3261	3,608.4848	2,115.3797	8.2824
18	07	4	SAT-W	0.0000	9.7623	4,247.2065	3,147.0175	5,856.4642	6.3320	6.6421	2,841.1364	2,115.3797	3,657.9799	10.5250
18	07	5	Female	0.6538	0.0636	0.3954	-1.4737	6.3320	0.2271	0.0220	0.1369	-0.5101	2.1918	0.0924
18	07	6	Female*HSGPA	0.0634	0.1912	6.5889	6.0114	6.6421	0.0220	0.1872	6.5638	6.1048	6.2407	0.1063
18	07	7	Female*SAT-CR	0.3940	6.5889	3,688.2203	2,022.3261	2,841.1364	0.1369	6.5638	3,688.0645	2,022.9068	2,838.6414	2.8978
18	07	8	Female*SAT-M	-1.4685	6.0114	2,022.3261	3,608.4848	2,115.3797	-0.5101	6.1048	2,022.9068	3,606.3207	2,124.6784	6.6615
18	07	9	Female*SAT-W	6.3098	6.6421	2,841.1364	2,115.3797	3,657.9799	2.1918	6.2407	2,838.6414	2,124.6784	3,618.0260	5.9232
18	07	10	FYGPA	2.5049	0.1579	5.7126	8.2824	10.5250	0.0924	0.1063	2.8978	6.6615	5.9232	0.7586
18	08	1	HSGPA	0.0000	0.2868	8.8829	4.5096	7.5603	0.0628	0.2030	7.8364	5.2338	7.5780	0.1724
18	08	2	SAT-CR	0.0000	8.8829	5,961.2016	2,941.5144	4,204.7103	1.4653	7.8364	3,710.9724	2,158.6767	2,766.1422	15.4012
18	08	3	SAT-M	0.0000	4.5096	2,941.5144	6,791.5203	2,856.5351	-2.8461	5.2338	2,158.6767	4,378.7686	2,016.7765	16.2570
18	08	4	SAT-W	0.0000	7.5603	4,204.7103	2,856.5351	5,432.8214	2.7202	7.5780	2,766.1422	2,016.7765	3,693.8670	14.2957
18	08	5	Female	0.6907	0.0628	1.4653	-2.8461	2.7202	0.2144	0.0194	0.4532	-0.8802	0.8413	0.0769
18	08	6	Female*HSGPA	0.0626	0.2030	7.8364	5.2338	7.5780	0.0194	0.1991	7.7447	5.4120	7.4077	0.1146
18	08	7	Female*SAT-CR	1.4603	7.8364	3,710.9724	2,158.6767	2,766.1422	0.4532	7.7447	3,708.8326	2,162.8328	2,762.1698	13.2780
18	08	8	Female*SAT-M	-2.8363	5.2338	2,158.6767	4,378.7686	2,016.7765	-0.8802	5.4120	2,162.8328	4,370.6963	2,024.4918	11.8626
18	08	9	Female*SAT-W	2.7109	7.5780	2,766.1422	2,016.7765	3,693.8670	0.8413	7.4077	2,762.1698	2,024.4918	3,686.4928	13.7754
18	08	10	FYGPA	2.6159	0.1724	15.4012	16.2570	14.2957	0.0769	0.1146	13.2780	11.8626	13.7754	0.7121
19	06	1	HSGPA	0.0000	0.2776	14.1558	16.8058	16.4647	0.0581	0.1388	7.8654	8.0883	9.0385	0.1474
19	06	2	SAT-CR	0.0000	14.1558	6,252.7505	4,018.4016	4,849.7713	0.8604	7.8654	3,174.0156	1,985.9498	2,453.1123	18.2003
19	06	3	SAT-M	0.0000	16.8058	4,018.4016	8,021.0835	4,322.5315	-6.0261	8.0883	1,985.9498	4,034.6544	2,227.4394	22.1756
19	06	4	SAT-W	0.0000	16.4647	4,849.7713	4,322.5315	6,917.8785	4.0174	9.0385	2,453.1123	2,227.4394	3,436.3708	21.4309
19	06	5	Female	0.4827	0.0581	0.8604	-6.0261	4.0174	0.2502	0.0300	0.4451	-3.1174	2.0783	0.0299
19	06	6	Female*HSGPA	0.0579	0.1388	7.8654	8.0883	9.0385	0.0300	0.1355	7.8155	8.4374	8.8058	0.0848
19	06	7	Female*SAT-CR	0.8585	7.8654	3,174.0156	1,985.9498	2,453.1123	0.4451	7.8155	3,173.2769	1,991.1235	2,449.6631	8.4576
19	06	8	Female*SAT-M	-6.0131	8.0883	1,985.9498	4,034.6544	2,227.4394	-3.1174	8.4374	1,991.1235	3,998.4186	2,251.5966	10.8844
19	06	9	Female*SAT-W	4.0087	9.0385	2,453.1123	2,227.4394	3,436.3708	2.0783	8.8058	2,449.6631	2,251.5966	3,420.2660	9.5731
19	06	10	FYGPA	2.9940	0.1474	18.2003	22.1756	21.4309	0.0299	0.0848	8.4576	10.8844	9.5731	0.2913

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
19	07	1	HSGPA	0.0000	0.2752	12.5240	15.0781	12.2167	0.0521	0.1140	3.8956	4.8419	4.9569	0.1379
19	07	2	SAT-CR	0.0000	12.5240	5,919.4816	3,394.2416	4,208.7729	-0.0003	3.8956	2,416.5261	1,274.3641	1,814.3307	16.9072
19	07	3	SAT-M	0.0000	15.0781	3,394.2416	6,791.8173	3,197.3027	-5.7994	4.8419	1,274.3641	2,807.3068	1,285.2916	17.3022
19	07	4	SAT-W	0.0000	12.2167	4,208.7729	3,197.3027	5,670.6783	2.0608	4.9569	1,814.3307	1,285.2916	2,582.1641	18.1161
19	07	5	Female	0.4814	0.0521	-0.0003	-5.7994	2.0608	0.2502	0.0270	-0.0002	-3.0075	1.0687	0.0365
19	07	6	Female*HSGPA	0.0520	0.1140	3.8956	4.8419	4.9569	0.0270	0.1113	3.8956	5.1434	4.8497	0.0404
19	07	7	Female*SAT-CR	-0.0003	3.8956	2,416.5261	1,274.3641	1,814.3307	-0.0002	3.8956	2,416.5261	1,274.3621	1,814.3314	7.1993
19	07	8	Female*SAT-M	-5.7867	4.8419	1,274.3641	2,807.3068	1,285.2916	-3.0075	5.1434	1,274.3621	2,773.7479	1,297.2170	6.4702
19	07	9	Female*SAT-W	2.0563	4.9569	1,814.3307	1,285.2916	2,582.1641	1.0687	4.8497	1,814.3314	1,297.2170	2,577.9264	8.3374
19	07	10	FYGPA	2.9473	0.1379	16.9072	17.3022	18.1161	0.0365	0.0404	7.1993	6.4702	8.3374	0.3321
19	08	1	HSGPA	0.0000	0.2984	12.7870	15.0526	14.8607	0.0756	0.1374	6.6172	6.9236	6.9775	0.1857
19	08	2	SAT-CR	0.0000	12.7870	6,355.3149	3,722.1199	4,373.9171	1.6558	6.6172	3,088.6102	1,679.3197	1,968.3338	16.9515
19	08	3	SAT-M	0.0000	15.0526	3,722.1199	6,797.1632	3,590.3172	-3.5271	6.9236	1,679.3197	3,320.0701	1,719.3736	19.8731
19	08	4	SAT-W	0.0000	14.8607	4,373.9171	3,590.3172	6,081.7334	4.6963	6.9775	1,968.3338	1,719.3736	2,765.8230	20.6317
19	08	5	Female	0.5016	0.0756	1.6558	-3.5271	4.6963	0.2503	0.0377	0.8252	-1.7578	2.3404	0.0768
19	08	6	Female*HSGPA	0.0755	0.1374	6.6172	6.9236	6.9775	0.0377	0.1317	6.4922	7.1899	6.6229	0.0905
19	08	7	Female*SAT-CR	1.6540	6.6172	3,088.6102	1,679.3197	1,968.3338	0.8252	6.4922	3,085.8716	1,685.1535	1,960.5662	7.7634
19	08	8	Female*SAT-M	-3.5233	6.9236	1,679.3197	3,320.0701	1,719.3736	-1.7578	7.1899	1,685.1535	3,307.6431	1,735.9198	8.7649
19	08	9	Female*SAT-W	4.6911	6.9775	1,968.3338	1,719.3736	2,765.8230	2.3404	6.6229	1,960.5662	1,735.9198	2,743.7922	9.5596
19	08	10	FYGPA	2.8657	0.1857	16.9515	19.8731	20.6317	0.0768	0.0905	7.7634	8.7649	9.5596	0.5484
20	08	1	HSGPA	0.0000	0.1414	4.3962	4.0319	3.6139	0.0267	0.0657	2.3505	2.6800	1.7110	0.0648
20	08	2	SAT-CR	0.0000	4.3962	6,603.7538	2,416.9954	4,291.0024	-1.5583	2.3505	3,050.0889	1,189.3773	2,160.9039	11.6134
20	08	3	SAT-M	0.0000	4.0319	2,416.9954	5,906.8143	2,783.6776	-8.8133	2.6800	1,189.3773	3,043.5816	1,433.8548	11.2390
20	08	4	SAT-W	0.0000	3.6139	4,291.0024	2,783.6776	6,158.0039	2.0422	1.7110	2,160.9039	1,433.8548	3,154.8586	15.5010
20	08	5	Female	0.5194	0.0267	-1.5583	-8.8133	2.0422	0.2499	0.0129	-0.7489	-4.2357	0.9815	0.0308
20	08	6	Female*HSGPA	0.0267	0.0657	2.3505	2.6800	1.7110	0.0129	0.0650	2.3921	2.9155	1.6565	0.0298
20	08	7	Female*SAT-CR	-1.5563	2.3505	3,050.0889	1,189.3773	2,160.9039	-0.7489	2.3921	3,047.6636	1,175.6608	2,164.0823	5.6580
20	08	8	Female*SAT-M	-8.8023	2.6800	1,189.3773	3,043.5816	1,433.8548	-4.2357	2.9155	1,175.6608	2,966.0045	1,451.8311	4.9583
20	08	9	Female*SAT-W	2.0397	1.7110	2,160.9039	1,433.8548	3,154.8586	0.9815	1.6565	2,164.0823	1,451.8311	3,150.6931	7.2450
20	08	10	FYGPA	3.2640	0.0648	11.6134	11.2390	15.5010	0.0308	0.0298	5.6580	4.9583	7.2450	0.2645
21	07	1	HSGPA	0.0000	0.3273	11.5719	13.6648	12.8124	0.0426	0.1893	5.6841	8.2402	8.1773	0.2169
21	07	2	SAT-CR	0.0000	11.5719	7,126.0388	4,149.1076	5,228.2590	0.8516	5.6841	3,808.4795	2,272.7957	2,816.1467	17.7976
21	07	3	SAT-M	0.0000	13.6648	4,149.1076	7,132.3597	3,849.0239	-8.3582	8.2402	2,272.7957	3,981.3077	2,233.0004	19.5135
21	07	4	SAT-W	0.0000	12.8124	5,228.2590	3,849.0239	6,544.0758	2.6023	8.1773	2,816.1467	2,233.0004	3,606.7823	22.6214
21	07	5	Female	0.5754	0.0426	0.8516	-8.3582	2.6023	0.2446	0.0181	0.3616	-3.5487	1.1049	0.0574
21	07	6	Female*HSGPA	0.0425	0.1893	5.6841	8.2402	8.1773	0.0181	0.1875	5.6478	8.5957	8.0666	0.1209
21	07	7	Female*SAT-CR	0.8507	5.6841	3,808.4795	2,272.7957	2,816.1467	0.3616	5.6478	3,807.7551	2,279.9057	2,813.9331	8.5974
21	07	8	Female*SAT-M	-8.3489	8.2402	2,272.7957	3,981.3077	2,233.0004	-3.5487	8.5957	2,279.9057	3,911.5262	2,254.7263	11.7946
21	07	9	Female*SAT-W	2.5994	8.1773	2,816.1467	2,233.0004	3,606.7823	1.1049	8.0666	2,813.9331	2,254.7263	3,600.0181	12.8275
21	07	10	FYGPA	2.7304	0.2169	17.7976	19.5135	22.6214	0.0574	0.1209	8.5974	11.7946	12.8275	0.7736

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
21	08	1	HSGPA	0.0000	0.2970	10.4229	11.9340	13.1680	0.0279	0.1695	6.7346	7.8520	7.8287	0.1673
21	08	2	SAT-CR	0.0000	10.4229	6,940.0667	3,920.7648	4,967.5451	-1.4178	6.7346	3,812.8593	2,106.2136	2,726.1043	19.7961
21	08	3	SAT-M	0.0000	11.9340	3,920.7648	6,847.3243	3,689.8381	-7.3855	7.8520	2,106.2136	3,731.0658	2,054.9864	24.1339
21	08	4	SAT-W	0.0000	13.1680	4,967.5451	3,689.8381	6,047.7888	3.6196	7.8287	2,726.1043	2,054.9864	3,405.1146	22.9162
21	08	5	Female	0.5960	0.0279	-1.4178	-7.3855	3.6196	0.2411	0.0113	-0.5728	-2.9839	1.4624	0.0185
21	08	6	Female*HSGPA	0.0279	0.1695	6.7346	7.8520	7.8287	0.0113	0.1688	6.7741	8.0579	7.7277	0.0936
21	08	7	Female*SAT-CR	-1.4162	6.7346	3,812.8593	2,106.2136	2,726.1043	-0.5728	6.7741	3,810.8513	2,095.7539	2,731.2305	12.0939
21	08	8	Female*SAT-M	-7.3773	7.8520	2,106.2136	3,731.0658	2,054.9864	-2.9839	8.0579	2,095.7539	3,676.5803	2,081.6890	15.0650
21	08	9	Female*SAT-W	3.6155	7.8287	2,726.1043	2,054.9864	3,405.1146	1.4624	7.7277	2,731.2305	2,081.6890	3,392.0280	12.6406
21	08	10	FYGPA	2.7534	0.1673	19.7961	24.1339	22.9162	0.0185	0.0936	12.0939	15.0650	12.6406	0.8327
22	06	1	HSGPA	0.0000	0.0889	5.6066	4.4585	5.1884	0.0080	0.0376	1.6472	1.3311	1.3971	0.0446
22	06	2	SAT-CR	0.0000	5.6066	5,751.8198	2,371.7530	3,693.0965	-0.6730	1.6472	2,525.0618	1,055.8715	1,504.3946	12.6005
22	06	3	SAT-M	0.0000	4.4585	2,371.7530	4,739.2450	2,166.9043	-9.9896	1.3311	1,055.8715	2,212.0370	947.6502	8.9988
22	06	4	SAT-W	0.0000	5.1884	3,693.0965	2,166.9043	5,229.1120	1.9246	1.3971	1,504.3946	947.6502	2,208.5168	12.6057
22	06	5	Female	0.4673	0.0080	-0.6730	-9.9896	1.9246	0.2491	0.0043	-0.3585	-5.3216	1.0253	0.0069
22	06	6	Female*HSGPA	0.0080	0.0376	1.6472	1.3311	1.3971	0.0043	0.0375	1.6526	1.4114	1.3816	0.0160
22	06	7	Female*SAT-CR	-0.6726	1.6472	2,525.0618	1,055.8715	1,504.3946	-0.3585	1.6526	2,524.6091	1,049.1526	1,505.6891	5.8355
22	06	8	Female*SAT-M	-9.9835	1.3311	1,055.8715	2,212.0370	947.6502	-5.3216	1.4114	1,049.1526	2,112.3058	966.8647	4.1700
22	06	9	Female*SAT-W	1.9234	1.3971	1,504.3946	947.6502	2,208.5168	1.0253	1.3816	1,505.6891	966.8647	2,204.8149	5.8510
22	06	10	FYGPA	3.3374	0.0446	12.6005	8.9988	12.6057	0.0069	0.0160	5.8355	4.1700	5.8510	0.1878
23	06	1	HSGPA	0.0000	0.1672	9.9750	8.8706	9.2462	0.0330	0.0917	5.5007	4.3684	5.9967	0.1116
23	06	2	SAT-CR	0.0000	9.9750	5,443.3883	2,841.9332	3,672.6885	1.4548	5.5007	3,196.4981	1,484.1705	2,122.6956	14.0012
23	06	3	SAT-M	0.0000	8.8706	2,841.9332	5,663.0270	2,711.5007	-5.9384	4.3684	1,484.1705	3,005.9553	1,601.6586	10.7809
23	06	4	SAT-W	0.0000	9.2462	3,672.6885	2,711.5007	5,403.9148	4.9448	5.9967	2,122.6956	1,601.6586	3,072.6806	14.3162
23	06	5	Female	0.5889	0.0330	1.4548	-5.9384	4.9448	0.2425	0.0136	0.5981	-2.4416	2.0330	0.0464
23	06	6	Female*HSGPA	0.0329	0.0917	5.5007	4.3684	5.9967	0.0136	0.0906	5.4528	4.5639	5.8339	0.0641
23	06	7	Female*SAT-CR	1.4522	5.5007	3,196.4981	1,484.1705	2,122.6956	0.5981	5.4528	3,194.3854	1,492.7945	2,115.5146	9.8746
23	06	8	Female*SAT-M	-5.9281	4.3684	1,484.1705	3,005.9553	1,601.6586	-2.4416	4.5639	1,492.7945	2,970.7518	1,630.9715	6.0766
23	06	9	Female*SAT-W	4.9361	5.9967	2,122.6956	1,601.6586	3,072.6806	2.0330	5.8339	2,115.5146	1,630.9715	3,048.2726	9.8460
23	06	10	FYGPA	2.9763	0.1116	14.0012	10.7809	14.3162	0.0464	0.0641	9.8746	6.0766	9.8460	0.3432
23	08	1	HSGPA	0.0000	0.1793	10.0826	11.1885	11.0417	0.0287	0.0898	4.7114	5.5590	5.5106	0.1006
23	08	2	SAT-CR	0.0000	10.0826	4,689.0913	2,024.5798	3,153.5453	-0.5352	4.7114	2,280.1170	1,087.6741	1,586.1276	14.0990
23	08	3	SAT-M	0.0000	11.1885	2,024.5798	5,024.9879	2,140.7795	-7.4262	5.5590	1,087.6741	2,600.3176	1,213.2442	13.8654
23	08	4	SAT-W	0.0000	11.0417	3,153.5453	2,140.7795	5,138.2786	5.3124	5.5106	1,586.1276	1,213.2442	2,550.2315	16.2817
23	08	5	Female	0.5267	0.0287	-0.5352	-7.4262	5.3124	0.2497	0.0136	-0.2533	-3.5146	2.5142	0.0393
23	08	6	Female*HSGPA	0.0287	0.0898	4.7114	5.5590	5.5106	0.0136	0.0889	4.7267	5.7721	5.3581	0.0414
23	08	7	Female*SAT-CR	-0.5343	4.7114	2,280.1170	1,087.6741	1,586.1276	-0.2533	4.7267	2,279.8310	1,083.7060	1,588.9662	6.3166
23	08	8	Female*SAT-M	-7.4145	5.5590	1,087.6741	2,600.3176	1,213.2442	-3.5146	5.7721	1,083.7060	2,545.2560	1,252.6329	6.6867
23	08	9	Female*SAT-W	5.3040	5.5106	1,586.1276	1,213.2442	2,550.2315	2.5142	5.3581	1,588.9662	1,252.6329	2,522.0544	8.4363
23	08	10	FYGPA	3.0259	0.1006	14.0990	13.8654	16.2817	0.0393	0.0414	6.3166	6.6867	8.4363	0.3201



## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
24	06	1	HSGPA	0.0000	0.2606	19.0398	17.8345	17.6245	0.0639	0.1471	11.7946	11.9383	10.2975	0.1921
24	06	2	SAT-CR	0.0000	19.0398	7,561.8025	4,515.9356	5,344.9532	5.6943	11.7946	4,931.2250	2,645.4550	3,328.2253	29.8507
24	06	3	SAT-M	0.0000	17.8345	4,515.9356	7,790.5899	3,913.4332	-6.1521	11.9383	2,645.4550	4,500.7012	2,192.4808	23.3599
24	06	4	SAT-W	0.0000	17.6245	5,344.9532	3,913.4332	6,530.0732	6.2019	10.2975	3,328.2253	2,192.4808	3,742.8655	26.5801
24	06	5	Female	0.6235	0.0639	5.6943	-6.1521	6.2019	0.2355	0.0241	2.1439	-2.3163	2.3351	0.0849
24	06	6	Female*HSGPA	0.0638	0.1471	11.7946	11.9383	10.2975	0.0241	0.1430	11.4315	12.3305	9.9021	0.1047
24	06	7	Female*SAT-CR	5.6772	11.7946	4,931.2250	2,645.4550	3,328.2253	2.1439	11.4315	4,898.8974	2,680.3816	3,293.0161	18.2294
24	06	8	Female*SAT-M	-6.1336	11.9383	2,645.4550	4,500.7012	2,192.4808	-2.3163	12.3305	2,680.3816	4,462.9665	2,230.5208	14.2704
24	06	9	Female*SAT-W	6.1832	10.2975	3,328.2253	2,192.4808	3,742.8655	2.3351	9.9021	3,293.0161	2,230.5208	3,704.5177	14.4328
24	06	10	FYGPA	3.0752	0.1921	29.8507	23.3599	26.5801	0.0849	0.1047	18.2294	14.2704	14.4328	0.5079
24	07	1	HSGPA	0.0000	0.2645	20.7713	19.1767	18.0370	0.0224	0.1652	14.7161	13.1422	11.9161	0.1855
24	07	2	SAT-CR	0.0000	20.7713	8,625.6152	5,028.1336	6,366.7067	-2.1686	14.7161	5,822.7934	3,401.8315	4,325.0371	27.3830
24	07	3	SAT-M	0.0000	19.1767	5,028.1336	8,251.6900	4,740.7846	-7.1862	13.1422	3,401.8315	5,212.5318	3,265.7125	25.5730
24	07	4	SAT-W	0.0000	18.0370	6,366.7067	4,740.7846	7,898.4384	3.6251	11.9161	4,325.0371	3,265.7125	5,411.5228	26.4418
24	07	5	Female	0.6737	0.0224	-2.1686	-7.1862	3.6251	0.2204	0.0073	-0.7076	-2.3450	1.1829	0.0446
24	07	6	Female*HSGPA	0.0224	0.1652	14.7161	13.1422	11.9161	0.0073	0.1647	14.7647	13.3030	11.8350	0.1145
24	07	7	Female*SAT-CR	-2.1629	14.7161	5,822.7934	3,401.8315	4,325.0371	-0.7076	14.7647	5,818.1030	3,386.2885	4,332.8777	18.5664
24	07	8	Female*SAT-M	-7.1673	13.1422	3,401.8315	5,212.5318	3,265.7125	-2.3450	13.3030	3,386.2885	5,161.0259	3,291.6944	17.8497
24	07	9	Female*SAT-W	3.6155	11.9161	4,325.0371	3,265.7125	5,411.5228	1.1829	11.8350	4,332.8777	3,291.6944	5,398.4164	17.4757
24	07	10	FYGPA	3.1448	0.1855	27.3830	25.5730	26.4418	0.0446	0.1145	18.5664	17.8497	17.4757	0.4062
25	06	1	HSGPA	0.0000	0.1481	5.3503	4.0922	7.2849	0.0321	0.0748	3.1890	1.0190	3.1308	0.0438
25	06	2	SAT-CR	0.0000	5.3503	5,788.4967	2,094.3000	3,997.7566	1.5779	3.1890	3,408.4026	1,131.3492	2,239.5443	13.8491
25	06	3	SAT-M	0.0000	4.0922	2,094.3000	4,670.8633	2,013.0807	-3.7655	1.0190	1,131.3492	2,870.5929	1,220.5433	6.7505
25	06	4	SAT-W	0.0000	7.2849	3,997.7566	2,013.0807	5,766.5529	6.9616	3.1308	2,239.5443	1,220.5433	3,222.9993	14.1166
25	06	5	Female	0.5968	0.0321	1.5779	-3.7655	6.9616	0.2414	0.0130	0.6363	-1.5184	2.8071	0.0500
25	06	6	Female*HSGPA	0.0320	0.0748	3.1890	1.0190	3.1308	0.0130	0.0738	3.1385	1.1396	2.9079	0.0231
25	06	7	Female*SAT-CR	1.5728	3.1890	3,408.4026	1,131.3492	2,239.5443	0.6363	3.1385	3,405.9208	1,137.2718	2,228.5948	9.5269
25	06	8	Female*SAT-M	-3.7534	1.0190	1,131.3492	2,870.5929	1,220.5433	-1.5184	1.1396	1,137.2718	2,856.4595	1,246.6728	4.0913
25	06	9	Female*SAT-W	6.9391	3.1308	2,239.5443	1,220.5433	3,222.9993	2.8071	2.9079	2,228.5948	1,246.6728	3,174.6920	8.8714
25	06	10	FYGPA	3.3695	0.0438	13.8491	6.7505	14.1166	0.0500	0.0231	9.5269	4.0913	8.8714	0.1396
26	06	1	HSGPA	0.0000	0.1176	3.4694	3.6577	4.5752	0.0095	0.0598	1.7812	1.7938	2.3904	0.0499
26	06	2	SAT-CR	0.0000	3.4694	8,448.9216	4,939.3031	6,276.8802	-3.3404	1.7812	4,705.9984	2,835.2216	3,523.1851	24.3794
26	06	3	SAT-M	0.0000	3.6577	4,939.3031	8,038.2242	4,783.4872	-11.3042	1.7938	2,835.2216	4,476.3172	2,762.2408	23.9674
26	06	4	SAT-W	0.0000	4.5752	6,276.8802	4,783.4872	7,709.3979	-0.0703	2.3904	3,523.1851	2,762.2408	4,227.2999	25.7647
26	06	5	Female	0.5456	0.0095	-3.3404	-11.3042	-0.0703	0.2480	0.0043	-1.5180	-5.1370	-0.0319	0.0193
26	06	6	Female*HSGPA	0.0095	0.0598	1.7812	1.7938	2.3904	0.0043	0.0597	1.8128	1.9009	2.3911	0.0218
26	06	7	Female*SAT-CR	-3.3398	1.7812	4,705.9984	2,835.2216	3,523.1851	-1.5180	1.8128	4,694.8421	2,797.4674	3,522.9504	14.2065
26	06	8	Female*SAT-M	-11.3024	1.7938	2,835.2216	4,476.3172	2,762.2408	-5.1370	1.9009	2,797.4674	4,348.5526	2,761.4466	13.9934
26	06	9	Female*SAT-W	-0.0703	2.3904	3,523.1851	2,762.2408	4,227.2999	-0.0319	2.3911	3,522.9504	2,761.4466	4,227.2950	14.5679
26	06	10	FYGPA	3.1546	0.0499	24.3794	23.9674	25.7647	0.0193	0.0218	14.2065	13.9934	14.5679	0.4510

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
26	07	1	HSGPA	0.0000	0.1145	4.0589	3.9709	4.2248	0.0055	0.0571	2.2958	1.9373	2.4242	0.0632
26	07	2	SAT-CR	0.0000	4.0589	8,535.5671	4,755.9619	6,402.8832	-2.8564	2.2958	4,425.0747	2,563.4761	3,359.5650	26.2996
26	07	3	SAT-M	0.0000	3.9709	4,755.9619	7,859.0879	4,712.4167	-11.7294	1.9373	2,563.4761	4,072.7739	2,532.4278	24.0158
26	07	4	SAT-W	0.0000	4.2248	6,402.8832	4,712.4167	7,983.6287	0.2151	2.4242	3,359.5650	2,532.4278	4,137.6745	27.6617
26	07	5	Female	0.5363	0.0055	-2.8564	-11.7294	0.2151	0.2487	0.0025	-1.3245	-5.4389	0.0997	0.0225
26	07	6	Female*HSGPA	0.0055	0.0571	2.2958	1.9373	2.4242	0.0025	0.0571	2.3114	2.0016	2.4230	0.0286
26	07	7	Female*SAT-CR	-2.8560	2.2958	4,425.0747	2,563.4761	3,359.5650	-1.3245	2.3114	4,416.9168	2,529.9774	3,360.1791	14.0952
26	07	8	Female*SAT-M	-11.7276	1.9373	2,563.4761	4,072.7739	2,532.4278	-5.4389	2.0016	2,529.9774	3,935.2169	2,534.9498	12.4720
26	07	9	Female*SAT-W	0.2150	2.4242	3,359.5650	2,532.4278	4,137.6745	0.0997	2.4230	3,360.1791	2,534.9498	4,137.6282	14.2439
26	07	10	FYGPA	3.0674	0.0632	26.2996	24.0158	27.6617	0.0225	0.0286	14.0952	12.4720	14.2439	0.5221
26	08	1	HSGPA	0.0000	0.1059	3.8767	4.3425	4.0769	0.0011	0.0558	2.2531	2.4784	2.4496	0.0518
26	08	2	SAT-CR	0.0000	3.8767	8,185.2646	4,772.5356	6,287.7105	-4.8095	2.2531	4,367.3079	2,607.4778	3,432.8703	22.1497
26	08	3	SAT-M	0.0000	4.3425	4,772.5356	7,673.7296	4,894.1344	-12.0173	2.4784	2,607.4778	4,275.1784	2,756.7568	22.0477
26	08	4	SAT-W	0.0000	4.0769	6,287.7105	4,894.1344	8,209.2378	-0.9335	2.4496	3,432.8703	2,756.7568	4,534.5858	24.8737
26	08	5	Female	0.5571	0.0011	-4.8095	-12.0173	-0.9335	0.2468	0.0005	-2.1300	-5.3220	-0.4134	0.0082
26	08	6	Female*HSGPA	0.0011	0.0558	2.2531	2.4784	2.4496	0.0005	0.0558	2.2586	2.4920	2.4506	0.0272
26	08	7	Female*SAT-CR	-4.8087	2.2531	4,367.3079	2,607.4778	3,432.8703	-2.1300	2.2586	4,344.1805	2,549.6906	3,428.3815	12.6055
26	08	8	Female*SAT-M	-12.0151	2.4784	2,607.4778	4,275.1784	2,756.7568	-5.3220	2.4920	2,549.6906	4,130.7890	2,745.5409	13.0306
26	08	9	Female*SAT-W	-0.9333	2.4496	3,432.8703	2,756.7568	4,534.5858	-0.4134	2.4506	3,428.3815	2,745.5409	4,533.7145	14.1655
26	08	10	FYGPA	3.1364	0.0518	22.1497	22.0477	24.8737	0.0082	0.0272	12.6055	13.0306	14.1655	0.4417
27	06	1	HSGPA	0.0000	0.2079	12.7094	14.8468	13.6562	0.0121	0.0842	5.8446	5.9885	5.9666	0.0755
27	06	2	SAT-CR	0.0000	12.7094	8,163.8732	4,517.4676	5,897.4362	-4.2976	5.8446	3,879.2428	2,160.1141	2,865.4206	11.3171
27	06	3	SAT-M	0.0000	14.8468	4,517.4676	8,564.3943	4,414.4808	-13.0767	5.9885	2,160.1141	4,138.6875	2,105.5947	8.8673
27	06	4	SAT-W	0.0000	13.6562	5,897.4362	4,414.4808	7,349.1426	0.7173	5.9666	2,865.4206	2,105.5947	3,508.4920	11.7966
27	06	5	Female	0.4671	0.0121	-4.2976	-13.0767	0.7173	0.2490	0.0064	-2.2900	-6.9679	0.3822	0.0335
27	06	6	Female*HSGPA	0.0121	0.0842	5.8446	5.9885	5.9666	0.0064	0.0840	5.8964	6.1461	5.9579	0.0387
27	06	7	Female*SAT-CR	-4.2955	5.8446	3,879.2428	2,160.1141	2,865.4206	-2.2900	5.8964	3,860.7824	2,103.9431	2,868.5020	5.8508
27	06	8	Female*SAT-M	-13.0703	5.9885	2,160.1141	4,138.6875	2,105.5947	-6.9679	6.1461	2,103.9431	3,967.7710	2,114.9707	5.3051
27	06	9	Female*SAT-W	0.7170	5.9666	2,865.4206	2,105.5947	3,508.4920	0.3822	5.9579	2,868.5020	2,114.9707	3,507.9777	6.6589
27	06	10	FYGPA	3.1999	0.0755	11.3171	8.8673	11.7966	0.0335	0.0387	5.8508	5.3051	6.6589	0.3700
27	07	1	HSGPA	0.0000	0.1661	4.9574	6.5585	6.4324	0.0088	0.0646	2.4350	2.8233	2.7037	0.0750
27	07	2	SAT-CR	0.0000	4.9574	6,999.5207	3,006.3877	4,598.3116	-2.3913	2.4350	2,962.5316	1,406.5038	1,862.1133	12.0625
27	07	3	SAT-M	0.0000	6.5585	3,006.3877	6,925.3603	2,793.4122	-13.2380	2.8233	1,406.5038	3,273.4322	1,191.5580	8.2027
27	07	4	SAT-W	0.0000	6.4324	4,598.3116	2,793.4122	5,792.4483	-0.1241	2.7037	1,862.1133	1,191.5580	2,360.2621	12.6121
27	07	5	Female	0.4297	0.0088	-2.3913	-13.2380	-0.1241	0.2452	0.0050	-1.3637	-7.5493	-0.0707	0.0342
27	07	6	Female*HSGPA	0.0088	0.0646	2.4350	2.8233	2.7037	0.0050	0.0646	2.4561	2.9404	2.7048	0.0236
27	07	7	Female*SAT-CR	-2.3899	2.4350	2,962.5316	1,406.5038	1,862.1133	-1.3637	2.4561	2,956.8167	1,374.8670	1,861.8168	4.3054
27	07	8	Female*SAT-M	-13.2298	2.8233	1,406.5038	3,273.4322	1,191.5580	-7.5493	2.9404	1,374.8670	3,098.2962	1,189.9168	3.2312
27	07	9	Female*SAT-W	-0.1240	2.7037	1,862.1133	1,191.5580	2,360.2621	-0.0707	2.7048	1,861.8168	1,189.9168	2,360.2468	5.0856
27	07	10	FYGPA	3.2202	0.0750	12.0625	8.2027	12.6121	0.0342	0.0236	4.3054	3.2312	5.0856	0.3637

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
27	08	1	HSGPA	0.0000	0.1561	8.0132	6.4834	7.0033	0.0043	0.0635	3.6580	3.2298	3.1273	0.0673
27	08	2	SAT-CR	0.0000	8.0132	8,289.1210	2,804.4144	5,426.0750	-1.2740	3.6580	3,659.1936	1,571.3823	2,549.2071	13.2757
27	08	3	SAT-M	0.0000	6.4834	2,804.4144	7,004.0024	2,917.9782	-12.2673	3.2298	1,571.3823	3,717.5154	1,601.0135	7.7060
27	08	4	SAT-W	0.0000	7.0033	5,426.0750	2,917.9782	6,668.7363	0.8442	3.1273	2,549.2071	1,601.0135	3,157.5927	13.2084
27	08	5	Female	0.4289	0.0043	-1.2740	-12.2673	0.8442	0.2451	0.0025	-0.7276	-7.0061	0.4822	0.0423
27	08	6	Female*HSGPA	0.0043	0.0635	3.6580	3.2298	3.1273	0.0025	0.0635	3.6635	3.2824	3.1236	0.0254
27	08	7	Female*SAT-CR	-1.2733	3.6580	3,659.1936	1,571.3823	2,549.2071	-0.7276	3.6635	3,657.5715	1,555.7625	2,550.2820	6.7381
27	08	8	Female*SAT-M	-12.2607	3.2298	1,571.3823	3,717.5154	1,601.0135	-7.0061	3.2824	1,555.7625	3,567.1103	1,611.3644	4.0624
27	08	9	Female*SAT-W	0.8438	3.1273	2,549.2071	1,601.0135	3,157.5927	0.4822	3.1236	2,550.2820	1,611.3644	3,156.8804	6.6755
27	08	10	FYGPA	3.2005	0.0673	13.2757	7.7060	13.2084	0.0423	0.0254	6.7381	4.0624	6.6755	0.3507
28	07	1	HSGPA	0.0000	0.4356	19.8007	26.0053	23.3682	0.0623	0.2608	10.7281	17.4942	13.7246	0.2554
28	07	2	SAT-CR	0.0000	19.8007	7,240.8449	4,064.6537	4,557.2984	-1.6657	10.7281	4,333.3231	2,368.1890	2,713.0604	16.9467
28	07	3	SAT-M	0.0000	26.0053	4,064.6537	7,714.8323	3,937.7147	-5.1689	17.4942	2,368.1890	4,838.1801	2,388.2018	23.9258
28	07	4	SAT-W	0.0000	23.3682	4,557.2984	3,937.7147	5,964.5583	2.4566	13.7246	2,713.0604	2,388.2018	3,585.9447	19.8388
28	07	5	Female	0.6233	0.0623	-1.6657	-5.1689	2.4566	0.2355	0.0235	-0.6275	-1.9473	0.9255	0.0494
28	07	6	Female*HSGPA	0.0621	0.2608	10.7281	17.4942	13.7246	0.0235	0.2569	10.8316	17.8153	13.5720	0.1626
28	07	7	Female*SAT-CR	-1.6611	10.7281	4,333.3231	2,368.1890	2,713.0604	-0.6275	10.8316	4,330.5563	2,359.6032	2,717.1409	12.1109
28	07	8	Female*SAT-M	-5.1546	17.4942	2,368.1890	4,838.1801	2,388.2018	-1.9473	17.8153	2,359.6032	4,811.5366	2,400.8646	20.7610
28	07	9	Female*SAT-W	2.4498	13.7246	2,713.0604	2,388.2018	3,585.9447	0.9255	13.5720	2,717.1409	2,400.8646	3,579.9265	13.4812
28	07	10	FYGPA	2.3680	0.2554	16.9467	23.9258	19.8388	0.0494	0.1626	12.1109	20.7610	13.4812	1.0561
28	08	1	HSGPA	0.0000	0.4469	23.6894	27.5367	25.2737	0.0427	0.3075	15.6289	20.0857	16.6090	0.2529
28	08	2	SAT-CR	0.0000	23.6894	6,070.0150	4,417.8621	4,406.5694	0.6946	15.6289	4,140.5015	3,020.6969	3,006.8354	18.3686
28	08	3	SAT-M	0.0000	27.5367	4,417.8621	8,032.1940	3,960.7456	-7.5652	20.0857	3,020.6969	5,386.3436	2,746.3002	21.7358
28	08	4	SAT-W	0.0000	25.2737	4,406.5694	3,960.7456	5,906.5229	4.8893	16.6090	3,006.8354	2,746.3002	4,128.0295	18.6274
28	08	5	Female	0.6803	0.0427	0.6946	-7.5652	4.8893	0.2181	0.0136	0.2220	-2.4184	1.5630	0.0428
28	08	6	Female*HSGPA	0.0426	0.3075	15.6289	20.0857	16.6090	0.0136	0.3056	15.5994	20.4077	16.4009	0.1899
28	08	7	Female*SAT-CR	0.6927	15.6289	4,140.5015	3,020.6969	3,006.8354	0.2220	15.5994	4,140.0203	3,025.9373	3,003.4487	13.1292
28	08	8	Female*SAT-M	-7.5446	20.0857	3,020.6969	5,386.3436	2,746.3002	-2.4184	20.4077	3,025.9373	5,329.2672	2,783.1877	17.8471
28	08	9	Female*SAT-W	4.8759	16.6090	3,006.8354	2,746.3002	4,128.0295	1.5630	16.4009	3,003.4487	2,783.1877	4,104.1897	11.5391
28	08	10	FYGPA	2.4151	0.2529	18.3686	21.7358	18.6274	0.0428	0.1899	13.1292	17.8471	11.5391	0.9938
29	06	1	HSGPA	0.0000	0.3175	12.9899	12.0108	14.4730	0.0708	0.1789	9.0144	8.5999	9.3665	0.2092
29	06	2	SAT-CR	0.0000	12.9899	7,279.7650	3,999.0980	5,235.1712	0.5981	9.0144	4,186.7265	2,446.8474	3,113.8540	20.9732
29	06	3	SAT-M	0.0000	12.0108	3,999.0980	7,089.6070	3,829.7808	-7.6318	8.5999	2,446.8474	3,970.7088	2,350.6993	18.5426
29	06	4	SAT-W	0.0000	14.4730	5,235.1712	3,829.7808	6,878.5927	4.7017	9.3665	3,113.8540	2,350.6993	4,047.4146	23.4899
29	06	5	Female	0.5955	0.0708	0.5981	-7.6318	4.7017	0.2410	0.0286	0.2419	-3.0870	1.9018	0.0804
29	06	6	Female*HSGPA	0.0707	0.1789	9.0144	8.5999	9.3665	0.0286	0.1739	8.9721	9.1396	9.0340	0.1245
29	06	7	Female*SAT-CR	0.5978	9.0144	4,186.7265	2,446.8474	3,113.8540	0.2419	8.9721	4,186.3690	2,451.4096	3,111.0434	13.1341
29	06	8	Female*SAT-M	-7.6274	8.5999	2,446.8474	3,970.7088	2,350.6993	-3.0870	9.1396	2,451.4096	3,912.4983	2,386.5607	13.1947
29	06	9	Female*SAT-W	4.6990	9.3665	3,113.8540	2,350.6993	4,047.4146	1.9018	9.0340	3,111.0434	2,386.5607	4,025.3217	14.3211
29	06	10	FYGPA	2.7745	0.2092	20.9732	18.5426	23.4899	0.0804	0.1245	13.1341	13.1947	14.3211	0.7352

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
29	07	1	HSGPA	0.0000	0.2923	12.3542	11.8783	11.8739	0.0467	0.1664	8.7105	7.8298	7.6152	0.2071
29	07	2	SAT-CR	0.0000	12.3542	7,507.2207	4,260.2764	5,285.2832	-1.7540	8.7105	4,292.0481	2,299.5597	3,137.0436	19.5448
29	07	3	SAT-M	0.0000	11.8783	4,260.2764	7,208.7787	3,731.0855	-9.6774	7.8298	2,299.5597	3,805.9936	2,096.8403	17.6975
29	07	4	SAT-W	0.0000	11.8739	5,285.2832	3,731.0855	6,487.9564	1.9787	7.6152	3,137.0436	2,096.8403	3,805.6201	20.9912
29	07	5	Female	0.5897	0.0467	-1.7540	-9.6774	1.9787	0.2421	0.0191	-0.7197	-3.9706	0.8119	0.0770
29	07	6	Female*HSGPA	0.0466	0.1664	8.7105	7.8298	7.6152	0.0191	0.1642	8.7923	8.2811	7.5230	0.1205
29	07	7	Female*SAT-CR	-1.7531	8.7105	4,292.0481	2,299.5597	3,137.0436	-0.7197	8.7923	4,288.9730	2,282.5939	3,140.5126	14.1041
29	07	8	Female*SAT-M	-9.6725	7.8298	2,299.5597	3,805.9936	2,096.8403	-3.9706	8.2811	2,282.5939	3,712.3895	2,115.9794	12.6187
29	07	9	Female*SAT-W	1.9777	7.6152	3,137.0436	2,096.8403	3,805.6201	0.8119	7.5230	3,140.5126	2,115.9794	3,801.7068	14.0623
29	07	10	FYGPA	2.8267	0.2071	19.5448	17.6975	20.9912	0.0770	0.1205	14.1041	12.6187	14.0623	0.7250
29	08	1	HSGPA	0.0000	0.2882	11.7420	11.6345	13.2352	0.0503	0.1669	7.6668	8.1238	8.8153	0.1860
29	08	2	SAT-CR	0.0000	11.7420	7,096.4148	3,872.1321	5,134.2133	1.5950	7.6668	4,186.5414	2,350.8076	3,097.8291	18.7932
29	08	3	SAT-M	0.0000	11.6345	3,872.1321	7,160.2902	3,681.4013	-8.3810	8.1238	2,350.8076	4,229.7537	2,316.4536	14.4290
29	08	4	SAT-W	0.0000	13.2352	5,134.2133	3,681.4013	6,550.9636	5.0083	8.8153	3,097.8291	2,316.4536	3,991.4015	21.8554
29	08	5	Female	0.6045	0.0503	1.5950	-8.3810	5.0083	0.2392	0.0199	0.6308	-3.3145	1.9807	0.0781
29	08	6	Female*HSGPA	0.0503	0.1669	7.6668	8.1238	8.8153	0.0199	0.1644	7.5865	8.5456	8.5633	0.1027
29	08	7	Female*SAT-CR	1.5942	7.6668	4,186.5414	2,350.8076	3,097.8291	0.6308	7.5865	4,183.9987	2,364.1686	3,089.8447	13.6875
29	08	8	Female*SAT-M	-8.3771	8.1238	2,350.8076	4,229.7537	2,316.4536	-3.3145	8.5456	2,364.1686	4,159.5458	2,358.4088	11.8125
29	08	9	Female*SAT-W	5.0060	8.8153	3,097.8291	2,316.4536	3,991.4015	1.9807	8.5633	3,089.8447	2,358.4088	3,966.3297	15.4683
29	08	10	FYGPA	2.8899	0.1860	18.7932	14.4290	21.8554	0.0781	0.1027	13.6875	11.8125	15.4683	0.5882
30	06	1	HSGPA	0.0000	0.3208	20.7889	21.9019	25.3842	0.0693	0.1203	9.1514	9.5707	10.6255	0.2304
30	06	2	SAT-CR	0.0000	20.7889	7,712.5373	4,259.5331	5,730.6949	2.5935	9.1514	3,628.0438	2,145.9773	2,684.0262	31.0853
30	06	3	SAT-M	0.0000	21.9019	4,259.5331	7,040.7356	4,319.5514	-4.5938	9.5707	2,145.9773	3,185.5542	2,160.8358	27.6901
30	06	4	SAT-W	0.0000	25.3842	5,730.6949	4,319.5514	7,423.7573	7.5373	10.6255	2,684.0262	2,160.8358	3,412.1252	33.7017
30	06	5	Female	0.4698	0.0693	2.5935	-4.5938	7.5373	0.2502	0.0367	1.3750	-2.4355	3.9961	0.0898
30	06	6	Female*HSGPA	0.0690	0.1203	9.1514	9.5707	10.6255	0.0367	0.1155	8.9724	9.8876	10.1055	0.1053
30	06	7	Female*SAT-CR	2.5823	9.1514	3,628.0438	2,145.9773	2,684.0262	1.3750	8.9724	3,621.3466	2,157.8398	2,664.5626	16.2263
30	06	8	Female*SAT-M	-4.5740	9.5707	2,145.9773	3,185.5542	2,160.8358	-2.4355	9.8876	2,157.8398	3,164.5423	2,195.3114	13.0932
30	06	9	Female*SAT-W	7.5048	10.6255	2,684.0262	2,160.8358	3,412.1252	3.9961	10.1055	2,664.5626	2,195.3114	3,355.5589	16.6991
30	06	10	FYGPA	2.7672	0.2304	31.0853	27.6901	33.7017	0.0898	0.1053	16.2263	13.0932	16.6991	0.5223
31	07	1	HSGPA	0.0000	0.2429	7.6725	10.1016	8.1919	0.0416	0.1420	5.1181	7.1691	5.0916	0.1692
31	07	2	SAT-CR	0.0000	7.6725	6,950.3474	3,712.6552	4,645.1911	-1.5093	5.1181	4,148.5219	2,286.8174	2,890.3476	23.3456
31	07	3	SAT-M	0.0000	10.1016	3,712.6552	6,446.0915	3,408.6859	-5.5966	7.1691	2,286.8174	3,911.6434	2,126.4542	23.9932
31	07	4	SAT-W	0.0000	8.1919	4,645.1911	3,408.6859	5,821.9542	2.7076	5.0916	2,890.3476	2,126.4542	3,552.5830	21.4586
31	07	5	Female	0.6208	0.0416	-1.5093	-5.5966	2.7076	0.2356	0.0158	-0.5723	-2.1223	1.0267	0.0755
31	07	6	Female*HSGPA	0.0416	0.1420	5.1181	7.1691	5.0916	0.0158	0.1402	5.1809	7.4020	4.9790	0.1012
31	07	7	Female*SAT-CR	-1.5083	5.1181	4,148.5219	2,286.8174	2,890.3476	-0.5723	5.1809	4,146.2455	2,278.3758	2,894.4315	17.4644
31	07	8	Female*SAT-M	-5.5932	7.1691	2,286.8174	3,911.6434	2,126.4542	-2.1223	7.4020	2,278.3758	3,880.3400	2,141.5984	17.5121
31	07	9	Female*SAT-W	2.7059	5.0916	2,890.3476	2,126.4542	3,552.5830	1.0267	4.9790	2,894.4315	2,141.5984	3,545.2565	15.6484
31	07	10	FYGPA	2.2921	0.1692	23.3456	23.9932	21.4586	0.0755	0.1012	17.4644	17.5121	15.6484	0.9025

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
31	08	1	HSGPA	0.0000	0.2503	10.3039	13.8676	11.9431	0.0317	0.1527	7.2281	9.6626	7.9980	0.1809
31	08	2	SAT-CR	0.0000	10.3039	7,041.0574	4,251.1076	5,118.2534	-1.1905	7.2281	4,533.1452	2,745.9309	3,350.4300	23.7638
31	08	3	SAT-M	0.0000	13.8676	4,251.1076	6,990.4879	4,016.5817	-4.8762	9.6626	2,745.9309	4,471.8780	2,637.0963	26.6488
31	08	4	SAT-W	0.0000	11.9431	5,118.2534	4,016.5817	6,443.1516	3.3790	7.9980	3,350.4300	2,637.0963	4,131.8654	25.5317
31	08	5	Female	0.6366	0.0317	-1.1905	-4.8762	3.3790	0.2315	0.0115	-0.4326	-1.7719	1.2278	0.0470
31	08	6	Female*HSGPA	0.0317	0.1527	7.2281	9.6626	7.9980	0.0115	0.1517	7.2658	9.8171	7.8909	0.1074
31	08	7	Female*SAT-CR	-1.1898	7.2281	4,533.1452	2,745.9309	3,350.4300	-0.4326	7.2658	4,531.7286	2,740.1290	3,354.4504	18.8792
31	08	8	Female*SAT-M	-4.8734	9.6626	2,745.9309	4,471.8780	2,637.0963	-1.7719	9.8171	2,740.1290	4,448.1146	2,653.5634	20.4554
31	08	9	Female*SAT-W	3.3770	7.9980	3,350.4300	2,637.0963	4,131.8654	1.2278	7.8909	3,354.4504	2,653.5634	4,120.4545	19.3140
31	08	10	FYGPA	2.3527	0.1809	23.7638	26.6488	25.5317	0.0470	0.1074	18.8792	20.4554	19.3140	0.8499
32	08	1	HSGPA	0.0000	0.2163	10.8089	10.6559	11.8555	0.0367	0.1088	6.0699	5.6532	6.4205	0.0992
32	08	2	SAT-CR	0.0000	10.8089	5,104.2745	2,265.9647	3,416.1497	-1.8715	6.0699	2,894.2964	1,407.3979	2,086.7560	9.8477
32	08	3	SAT-M	0.0000	10.6559	2,265.9647	5,214.5827	2,277.4472	-6.9349	5.6532	1,407.3979	2,832.4559	1,352.7134	8.5060
32	08	4	SAT-W	0.0000	11.8555	3,416.1497	2,277.4472	5,386.8780	3.8526	6.4205	2,086.7560	1,352.7134	3,279.5961	12.0211
32	08	5	Female	0.5783	0.0367	-1.8715	-6.9349	3.8526	0.2442	0.0155	-0.7892	-2.9245	1.6246	0.0509
32	08	6	Female*HSGPA	0.0367	0.1088	6.0699	5.6532	6.4205	0.0155	0.1075	6.1386	5.9077	6.2792	0.0454
32	08	7	Female*SAT-CR	-1.8689	6.0699	2,894.2964	1,407.3979	2,086.7560	-0.7892	6.1386	2,890.7986	1,394.4370	2,093.9562	5.6879
32	08	8	Female*SAT-M	-6.9254	5.6532	1,407.3979	2,832.4559	1,352.7134	-2.9245	5.9077	1,394.4370	2,784.4291	1,379.3938	4.7988
32	08	9	Female*SAT-W	3.8473	6.4205	2,086.7560	1,352.7134	3,279.5961	1.6246	6.2792	2,093.9562	1,379.3938	3,264.7743	6.8897
32	08	10	FYGPA	3.1595	0.0992	9.8477	8.5060	12.0211	0.0509	0.0454	5.6879	4.7988	6.8897	0.2221
33	06	1	HSGPA	0.0000	0.1762	10.1809	11.5737	11.4569	0.0107	0.0811	4.4360	5.1327	4.9723	0.1155
33	06	2	SAT-CR	0.0000	10.1809	7,899.0112	4,722.6045	5,770.5768	-4.3729	4.4360	3,972.2816	2,416.7137	2,949.9207	21.0631
33	06	3	SAT-M	0.0000	11.5737	4,722.6045	8,120.7584	4,651.4356	-13.3489	5.1327	2,416.7137	4,173.7826	2,445.7265	18.9374
33	06	4	SAT-W	0.0000	11.4569	5,770.5768	4,651.4356	7,427.8051	-0.9391	4.9723	2,949.9207	2,445.7265	3,735.8288	22.4752
33	06	5	Female	0.4846	0.0107	-4.3729	-13.3489	-0.9391	0.2498	0.0055	-2.2537	-6.8797	-0.4840	0.0278
33	06	6	Female*HSGPA	0.0107	0.0811	4.4360	5.1327	4.9723	0.0055	0.0809	4.4828	5.2755	4.9824	0.0536
33	06	7	Female*SAT-CR	-4.3716	4.4360	3,972.2816	2,416.7137	2,949.9207	-2.2537	4.4828	3,953.1653	2,358.3580	2,945.8152	10.1436
33	06	8	Female*SAT-M	-13.3450	5.1327	2,416.7137	4,173.7826	2,445.7265	-6.8797	5.2755	2,358.3580	3,995.6423	2,433.1940	9.5084
33	06	9	Female*SAT-W	-0.9388	4.9723	2,949.9207	2,445.7265	3,735.8288	-0.4840	4.9824	2,945.8152	2,433.1940	3,734.9471	10.7139
33	06	10	FYGPA	3.0912	0.1155	21.0631	18.9374	22.4752	0.0278	0.0536	10.1436	9.5084	10.7139	0.4004
34	06	1	HSGPA	0.0000	0.2310	8.8057	10.0717	11.1630	0.0204	0.0569	2.3074	2.2386	3.0667	0.1518
34	06	2	SAT-CR	0.0000	8.8057	6,540.2191	2,719.3300	4,564.0735	-2.2048	2.3074	1,687.8398	740.2906	1,171.3127	9.9028
34	06	3	SAT-M	0.0000	10.0717	2,719.3300	5,864.0006	2,640.1778	-9.8516	2.2386	740.2906	1,782.6322	638.6500	12.3724
34	06	4	SAT-W	0.0000	11.1630	4,564.0735	2,640.1778	6,447.8112	2.2948	3.0667	1,171.3127	638.6500	1,725.2688	14.5934
34	06	5	Female	0.2745	0.0204	-2.2048	-9.8516	2.2948	0.1992	0.0148	-1.5996	-7.1477	1.6650	0.0337
34	06	6	Female*HSGPA	0.0204	0.0569	2.3074	2.2386	3.0667	0.0148	0.0565	2.3522	2.4392	3.0200	0.0353
34	06	7	Female*SAT-CR	-2.2035	2.3074	1,687.8398	740.2906	1,171.3127	-1.5996	2.3522	1,682.9816	718.5824	1,176.3694	3.2033
34	06	8	Female*SAT-M	-9.8459	2.2386	740.2906	1,782.6322	638.6500	-7.1477	2.4392	718.5824	1,685.6336	661.2447	2.5101
34	06	9	Female*SAT-W	2.2935	3.0667	1,171.3127	638.6500	1,725.2688	1.6650	3.0200	1,176.3694	661.2447	1,720.0055	4.6996
34	06	10	FYGPA	2.9602	0.1518	9.9028	12.3724	14.5934	0.0337	0.0353	3.2033	2.5101	4.6996	0.4729

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
34	07	1	HSGPA	0.0000	0.2287	8.3509	7.2917	8.6788	0.0303	0.0646	2.6203	2.1430	2.5184	0.1495
34	07	2	SAT-CR	0.0000	8.3509	6,873.0952	3,159.4340	4,648.7395	-1.6929	2.6203	1,887.4137	973.2655	1,252.9804	12.6276
34	07	3	SAT-M	0.0000	7.2917	3,159.4340	6,112.3513	2,778.9176	-9.5683	2.1430	973.2655	2,118.8467	860.9006	12.5485
34	07	4	SAT-W	0.0000	8.6788	4,648.7395	2,778.9176	6,381.5846	2.4525	2.5184	1,252.9804	860.9006	1,802.6261	16.1914
34	07	5	Female	0.3037	0.0303	-1.6929	-9.5683	2.4525	0.2116	0.0211	-1.1788	-6.6623	1.7076	0.0420
34	07	6	Female*HSGPA	0.0302	0.0646	2.6203	2.1430	2.5184	0.0211	0.0637	2.6715	2.4324	2.4442	0.0461
34	07	7	Female*SAT-CR	-1.6920	2.6203	1,887.4137	973.2655	1,252.9804	-1.1788	2.6715	1,884.5493	957.0763	1,257.1299	3.3403
34	07	8	Female*SAT-M	-9.5630	2.1430	973.2655	2,118.8467	860.9006	-6.6623	2.4324	957.0763	2,027.3452	884.3536	3.3507
34	07	9	Female*SAT-W	2.4511	2.5184	1,252.9804	860.9006	1,802.6261	1.7076	2.4442	1,257.1299	884.3536	1,796.6147	4.2559
34	07	10	FYGPA	3.0010	0.1495	12.6276	12.5485	16.1914	0.0420	0.0461	3.3403	3.3507	4.2559	0.4373
34	08	1	HSGPA	0.0000	0.2304	7.8723	9.1160	9.8495	0.0237	0.0692	3.0356	2.6356	3.9743	0.1518
34	08	2	SAT-CR	0.0000	7.8723	7,467.0429	3,544.1147	5,348.1447	-2.9386	3.0356	2,189.1702	1,176.2804	1,582.5186	16.3677
34	08	3	SAT-M	0.0000	9.1160	3,544.1147	6,466.8361	3,474.5333	-10.7046	2.6356	1,176.2804	2,294.1455	1,131.6922	15.4681
34	08	4	SAT-W	0.0000	9.8495	5,348.1447	3,474.5333	7,200.9569	1.7445	3.9743	1,582.5186	1,131.6922	2,177.5516	20.1074
34	08	5	Female	0.3177	0.0237	-2.9386	-10.7046	1.7445	0.2169	0.0162	-2.0050	-7.3036	1.1903	0.0328
34	08	6	Female*HSGPA	0.0237	0.0692	3.0356	2.6356	3.9743	0.0162	0.0687	3.1052	2.8892	3.9329	0.0490
34	08	7	Female*SAT-CR	-2.9370	3.0356	2,189.1702	1,176.2804	1,582.5186	-2.0050	3.1052	2,180.5397	1,144.8411	1,587.6422	5.0244
34	08	8	Female*SAT-M	-10.6988	2.6356	1,176.2804	2,294.1455	1,131.6922	-7.3036	2.8892	1,144.8411	2,179.6193	1,150.3562	4.2389
34	08	9	Female*SAT-W	1.7435	3.9743	1,582.5186	1,131.6922	2,177.5516	1.1903	3.9329	1,587.6422	1,150.3562	2,174.5099	6.2949
34	08	10	FYGPA	2.9744	0.1518	16.3677	15.4681	20.1074	0.0328	0.0490	5.0244	4.2389	6.2949	0.4804
35	06	1	HSGPA	0.0000	0.1389	4.3041	5.6801	5.4103	0.0208	0.0493	1.7723	1.7834	2.0025	0.0697
35	06	2	SAT-CR	0.0000	4.3041	4,897.6076	1,778.9625	3,376.5000	2.4352	1.7723	1,984.6263	617.0404	1,408.3947	11.6147
35	06	3	SAT-M	0.0000	5.6801	1,778.9625	4,753.4917	2,056.1557	-6.6873	1.7834	617.0404	1,914.6787	729.8634	11.8889
35	06	4	SAT-W	0.0000	5.4103	3,376.5000	2,056.1557	5,508.6961	5.5850	2.0025	1,408.3947	729.8634	2,356.6963	14.3531
35	06	5	Female	0.4244	0.0208	2.4352	-6.6873	5.5850	0.2445	0.0120	1.4018	-3.8495	3.2149	0.0305
35	06	6	Female*HSGPA	0.0208	0.0493	1.7723	1.7834	2.0025	0.0120	0.0489	1.7217	1.9222	1.8866	0.0253
35	06	7	Female*SAT-CR	2.4328	1.7723	1,984.6263	617.0404	1,408.3947	1.4018	1.7217	1,978.7018	633.3094	1,394.8075	4.9219
35	06	8	Female*SAT-M	-6.6807	1.7834	617.0404	1,914.6787	729.8634	-3.8495	1.9222	633.3094	1,870.0029	767.1749	4.8750
35	06	9	Female*SAT-W	5.5795	2.0025	1,408.3947	729.8634	2,356.6963	3.2149	1.8866	1,394.8075	767.1749	2,325.5352	6.2818
35	06	10	FYGPA	3.1726	0.0697	11.6147	11.8889	14.3531	0.0305	0.0253	4.9219	4.8750	6.2818	0.2629
35	07	1	HSGPA	0.0000	0.1439	3.1666	3.5922	4.7284	0.0059	0.0517	1.6344	1.7830	2.3562	0.0687
35	07	2	SAT-CR	0.0000	3.1666	4,991.1203	1,848.5522	3,237.2746	-0.7734	1.6344	1,898.6279	806.6667	1,136.7119	9.0610
35	07	3	SAT-M	0.0000	3.5922	1,848.5522	4,689.1723	1,699.1725	-8.0493	1.7830	806.6667	1,983.1656	629.3605	11.1203
35	07	4	SAT-W	0.0000	4.7284	3,237.2746	1,699.1725	5,324.5537	4.9814	2.3562	1,136.7119	629.3605	2,001.0219	11.5207
35	07	5	Female	0.3823	0.0059	-0.7734	-8.0493	4.9814	0.2364	0.0036	-0.4777	-4.9719	3.0769	0.0065
35	07	6	Female*HSGPA	0.0059	0.0517	1.6344	1.7830	2.3562	0.0036	0.0517	1.6389	1.8305	2.3268	0.0281
35	07	7	Female*SAT-CR	-0.7726	1.6344	1,898.6279	806.6667	1,136.7119	-0.4777	1.6389	1,898.0304	800.4480	1,140.5604	4.5653
35	07	8	Female*SAT-M	-8.0411	1.7830	806.6667	1,983.1656	629.3605	-4.9719	1.8305	800.4480	1,918.4405	669.4164	4.2863
35	07	9	Female*SAT-W	4.9763	2.3562	1,136.7119	629.3605	2,001.0219	3.0769	2.3268	1,140.5604	669.4164	1,976.2328	5.1219
35	07	10	FYGPA	3.1019	0.0687	9.0610	11.1203	11.5207	0.0065	0.0281	4.5653	4.2863	5.1219	0.2450

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
35	08	1	HSGPA	0.0000	0.1443	4.2997	5.0702	4.4343	0.0085	0.0623	1.0719	2.3300	1.9747	0.0827
35	08	2	SAT-CR	0.0000	4.2997	5,144.0031	2,037.3530	3,004.2474	-3.4087	1.0719	1,993.9229	818.1659	1,177.5414	9.4312
35	08	3	SAT-M	0.0000	5.0702	2,037.3530	5,284.8272	1,914.4251	-10.4745	2.3300	818.1659	2,339.8619	785.6003	11.5378
35	08	4	SAT-W	0.0000	4.4343	3,004.2474	1,914.4251	5,047.0305	3.1642	1.9747	1,177.5414	785.6003	1,917.2073	10.6488
35	08	5	Female	0.4251	0.0085	-3.4087	-10.4745	3.1642	0.2447	0.0049	-1.9595	-6.0214	1.8190	0.0158
35	08	6	Female*HSGPA	0.0085	0.0623	1.0719	2.3300	1.9747	0.0049	0.0622	1.1009	2.4191	1.9478	0.0362
35	08	7	Female*SAT-CR	-3.4048	1.0719	1,993.9229	818.1659	1,177.5414	-1.9595	1.1009	1,982.3168	782.5019	1,188.3150	2.5861
35	08	8	Female*SAT-M	-10.4626	2.3300	818.1659	2,339.8619	785.6003	-6.0214	2.4191	782.5019	2,230.2712	818.7062	4.5412
35	08	9	Female*SAT-W	3.1606	1.9747	1,177.5414	785.6003	1,917.2073	1.8190	1.9478	1,188.3150	818.7062	1,907.2064	4.2558
35	08	10	FYGPA	3.1440	0.0827	9.4312	11.5378	10.6488	0.0158	0.0362	2.5861	4.5412	4.2558	0.2780
36	07	1	HSGPA	0.0000	0.2344	9.3423	10.8089	11.0030	0.0470	0.1266	6.6986	5.7962	6.4569	0.1313
36	07	2	SAT-CR	0.0000	9.3423	7,578.6509	3,846.4844	5,394.1490	3.2574	6.6986	4,491.6214	2,295.0619	3,167.7254	22.6823
36	07	3	SAT-M	0.0000	10.8089	3,846.4844	6,491.5998	3,382.1964	-2.9825	5.7962	2,295.0619	3,923.5833	2,006.8342	17.7548
36	07	4	SAT-W	0.0000	11.0030	5,394.1490	3,382.1964	6,528.9726	6.6165	6.4569	3,167.7254	2,006.8342	3,893.7395	22.2565
36	07	5	Female	0.5711	0.0470	3.2574	-2.9825	6.6165	0.2456	0.0201	1.3972	-1.2793	2.8380	0.0856
36	07	6	Female*HSGPA	0.0468	0.1266	6.6986	5.7962	6.4569	0.0201	0.1244	6.5460	5.9359	6.1469	0.0647
36	07	7	Female*SAT-CR	3.2493	6.6986	4,491.6214	2,295.0619	3,167.7254	1.3972	6.5460	4,481.0371	2,304.7529	3,146.2263	13.6189
36	07	8	Female*SAT-M	-2.9750	5.7962	2,295.0619	3,923.5833	2,006.8342	-1.2793	5.9359	2,304.7529	3,914.7103	2,026.5187	11.9627
36	07	9	Female*SAT-W	6.6000	6.4569	3,167.7254	2,006.8342	3,893.7395	2.8380	6.1469	3,146.2263	2,026.5187	3,850.0703	13.1461
36	07	10	FYGPA	3.0537	0.1313	22.6823	17.7548	22.2565	0.0856	0.0647	13.6189	11.9627	13.1461	0.3847
36	08	1	HSGPA	0.0000	0.2072	7.0988	8.1790	10.6888	0.0442	0.1196	3.4847	5.2312	4.1765	0.1249
36	08	2	SAT-CR	0.0000	7.0988	6,689.4938	3,253.2143	5,344.1293	4.8523	3.4847	4,161.0099	2,057.8571	3,357.0602	18.3395
36	08	3	SAT-M	0.0000	8.1790	3,253.2143	6,205.9774	3,633.3643	-3.4079	5.2312	2,057.8571	3,709.2863	2,282.6056	17.2270
36	08	4	SAT-W	0.0000	10.6888	5,344.1293	3,633.3643	7,532.7467	10.6961	4.1765	3,357.0602	2,282.6056	4,705.5149	23.7955
36	08	5	Female	0.5764	0.0442	4.8523	-3.4079	10.6961	0.2448	0.0187	2.0554	-1.4435	4.5308	0.0672
36	08	6	Female*HSGPA	0.0441	0.1196	3.4847	5.2312	4.1765	0.0187	0.1177	3.2707	5.3815	3.7048	0.0637
36	08	7	Female*SAT-CR	4.8392	3.4847	4,161.0099	2,057.8571	3,357.0602	2.0554	3.2707	4,137.5286	2,074.3486	3,305.2990	10.4687
36	08	8	Female*SAT-M	-3.3987	5.2312	2,057.8571	3,709.2863	2,282.6056	-1.4435	5.3815	2,074.3486	3,697.7040	2,318.9586	10.8832
36	08	9	Female*SAT-W	10.6674	4.1765	3,357.0602	2,282.6056	4,705.5149	4.5308	3.7048	3,305.2990	2,318.9586	4,591.4147	14.2986
36	08	10	FYGPA	3.0830	0.1249	18.3395	17.2270	23.7955	0.0672	0.0637	10.4687	10.8832	14.2986	0.3320
37	07	1	HSGPA	0.0000	0.2287	12.1601	12.9770	12.5364	0.0326	0.1248	7.5125	7.8627	6.8466	0.1927
37	07	2	SAT-CR	0.0000	12.1601	6,516.3537	3,246.7508	4,434.5144	-1.6358	7.5125	3,749.4956	1,860.0240	2,531.7844	24.2497
37	07	3	SAT-M	0.0000	12.9770	3,246.7508	5,934.9556	2,840.1661	-4.9956	7.8627	1,860.0240	3,320.3825	1,759.5402	19.3254
37	07	4	SAT-W	0.0000	12.5364	4,434.5144	2,840.1661	5,342.1940	1.3520	6.8466	2,531.7844	1,759.5402	3,011.9209	22.1867
37	07	5	Female	0.5704	0.0326	-1.6358	-4.9956	1.3520	0.2456	0.0140	-0.7028	-2.1462	0.5808	0.0293
37	07	6	Female*HSGPA	0.0325	0.1248	7.5125	7.8627	6.8466	0.0140	0.1238	7.5657	8.0252	6.8026	0.1017
37	07	7	Female*SAT-CR	-1.6319	7.5125	3,749.4956	1,860.0240	2,531.7844	-0.7028	7.5657	3,746.8261	1,851.8718	2,533.9908	12.5596
37	07	8	Female*SAT-M	-4.9834	7.8627	1,860.0240	3,320.3825	1,759.5402	-2.1462	8.0252	1,851.8718	3,295.4874	1,766.2779	10.7287
37	07	9	Female*SAT-W	1.3487	6.8466	2,531.7844	1,759.5402	3,011.9209	0.5808	6.8026	2,533.9908	1,766.2779	3,010.0974	11.9733
37	07	10	FYGPA	2.4884	0.1927	24.2497	19.3254	22.1867	0.0293	0.1017	12.5596	10.7287	11.9733	0.8256

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
37	08	1	HSGPA	0.0000	0.2584	10.5605	15.3739	9.5591	0.0475	0.1447	6.5587	8.8778	5.6182	0.2376
37	08	2	SAT-CR	0.0000	10.5605	5,171.3066	2,575.1720	3,420.9458	-0.4614	6.5587	2,242.6052	1,125.3776	1,575.5960	18.3259
37	08	3	SAT-M	0.0000	15.3739	2,575.1720	5,683.4689	2,694.3861	-4.5955	8.8778	1,125.3776	2,838.9159	1,369.4358	19.2397
37	08	4	SAT-W	0.0000	9.5591	3,420.9458	2,694.3861	4,915.5489	-0.4787	5.6182	1,575.5960	1,369.4358	2,650.7329	14.1930
37	08	5	Female	0.5659	0.0475	-0.4614	-4.5955	-0.4787	0.2463	0.0206	-0.2003	-1.9951	-0.2078	0.0463
37	08	6	Female*HSGPA	0.0474	0.1447	6.5587	8.8778	5.6182	0.0206	0.1425	6.5806	9.0955	5.6409	0.1430
37	08	7	Female*SAT-CR	-0.4603	6.5587	2,242.6052	1,125.3776	1,575.5960	-0.2003	6.5806	2,242.3928	1,123.2622	1,575.3756	9.3948
37	08	8	Female*SAT-M	-4.5843	8.8778	1,125.3776	2,838.9159	1,369.4358	-1.9951	9.0955	1,123.2622	2,817.8487	1,367.2411	10.4582
37	08	9	Female*SAT-W	-0.4776	5.6182	1,575.5960	1,369.4358	2,650.7329	-0.2078	5.6409	1,575.3756	1,367.2411	2,650.5042	7.6227
37	08	10	FYGPA	2.4938	0.2376	18.3259	19.2397	14.1930	0.0463	0.1430	9.3948	10.4582	7.6227	0.9453
38	07	1	HSGPA	0.0000	0.2237	11.2585	8.4700	10.5235	0.0255	0.1054	4.7571	4.9084	5.2405	0.1359
38	07	2	SAT-CR	0.0000	11.2585	6,884.8136	2,247.3196	4,805.4743	2.1008	4.7571	3,471.4030	1,215.0511	2,073.6175	19.8666
38	07	3	SAT-M	0.0000	8.4700	2,247.3196	5,315.6187	1,955.3463	-7.8934	4.9084	1,215.0511	3,082.1484	1,123.3402	13.0778
38	07	4	SAT-W	0.0000	10.5235	4,805.4743	1,955.3463	6,463.4285	6.9400	5.2405	2,073.6175	1,123.3402	3,048.0412	21.6381
38	07	5	Female	0.5882	0.0255	2.1008	-7.8934	6.9400	0.2434	0.0105	0.8651	-3.2502	2.8577	0.0681
38	07	6	Female*HSGPA	0.0253	0.1054	4.7571	4.9084	5.2405	0.0105	0.1048	4.7038	5.1083	5.0647	0.0722
38	07	7	Female*SAT-CR	2.0905	4.7571	3,471.4030	1,215.0511	2,073.6175	0.8651	4.7038	3,467.0111	1,231.5525	2,059.1091	10.2289
38	07	8	Female*SAT-M	-7.8547	4.9084	1,215.0511	3,082.1484	1,123.3402	-3.2502	5.1083	1,231.5525	3,020.1486	1,177.8518	7.9065
38	07	9	Female*SAT-W	6.9060	5.2405	2,073.6175	1,123.3402	3,048.0412	2.8577	5.0647	2,059.1091	1,177.8518	3,000.1135	11.3780
38	07	10	FYGPA	3.1272	0.1359	19.8666	13.0778	21.6381	0.0681	0.0722	10.2289	7.9065	11.3780	0.3500
38	08	1	HSGPA	0.0000	0.2120	5.9376	12.0182	7.9488	0.0346	0.0906	2.8980	6.0994	3.2370	0.1076
38	08	2	SAT-CR	0.0000	5.9376	6,918.6557	2,836.0295	4,544.3288	-2.3943	2.8980	3,179.5012	1,547.2836	2,252.8247	14.1536
38	08	3	SAT-M	0.0000	12.0182	2,836.0295	6,365.4937	2,959.1935	-6.6361	6.0994	1,547.2836	3,434.6067	1,538.0903	17.6258
38	08	4	SAT-W	0.0000	7.9488	4,544.3288	2,959.1935	6,747.1372	4.5097	3.2370	2,252.8247	1,538.0903	3,254.1125	17.6857
38	08	5	Female	0.5233	0.0346	-2.3943	-6.6361	4.5097	0.2509	0.0165	-1.1414	-3.1637	2.1500	0.0539
38	08	6	Female*HSGPA	0.0344	0.0906	2.8980	6.0994	3.2370	0.0165	0.0894	2.9803	6.3277	3.0819	0.0203
38	08	7	Female*SAT-CR	-2.3803	2.8980	3,179.5012	1,547.2836	2,252.8247	-1.1414	2.9803	3,173.8021	1,531.4875	2,263.5593	5.8469
38	08	8	Female*SAT-M	-6.5975	6.0994	1,547.2836	3,434.6067	1,538.0903	-3.1637	6.3277	1,531.4875	3,390.8253	1,567.8431	8.8526
38	08	9	Female*SAT-W	4.4835	3.2370	2,252.8247	1,538.0903	3,254.1125	2.1500	3.0819	2,263.5593	1,567.8431	3,233.8932	7.7456
38	08	10	FYGPA	3.1207	0.1076	14.1536	17.6258	17.6857	0.0539	0.0203	5.8469	8.8526	7.7456	0.2741
39	07	1	HSGPA	0.0000	0.1938	5.6697	1.5319	2.8680	0.0352	0.1116	4.6926	0.4007	1.9967	0.0498
39	07	2	SAT-CR	0.0000	5.6697	4,835.4419	2,136.9690	2,651.8605	-3.1302	4.6926	2,274.2441	1,051.1894	1,215.9054	11.7238
39	07	3	SAT-M	0.0000	1.5319	2,136.9690	4,796.1993	1,854.4208	-8.4295	0.4007	1,051.1894	2,455.7766	889.9660	13.3210
39	07	4	SAT-W	0.0000	2.8680	2,651.8605	1,854.4208	4,277.0365	-4.1326	1.9967	1,215.9054	889.9660	2,168.5267	9.8136
39	07	5	Female	0.4651	0.0352	-3.1302	-8.4295	-4.1326	0.2496	0.0188	-1.6743	-4.5088	-2.2104	-0.0013
39	07	6	Female*HSGPA	0.0350	0.1116	4.6926	0.4007	1.9967	0.0188	0.1103	4.8022	0.6960	2.1415	0.0219
39	07	7	Female*SAT-CR	-3.1198	4.6926	2,274.2441	1,051.1894	1,215.9054	-1.6743	4.8022	2,264.4783	1,024.8909	1,203.0125	7.4306
39	07	8	Female*SAT-M	-8.4015	0.4007	1,051.1894	2,455.7766	889.9660	-4.5088	0.6960	1,024.8909	2,384.9569	855.2465	9.0162
39	07	9	Female*SAT-W	-4.1188	1.9967	1,215.9054	889.9660	2,168.5267	-2.2104	2.1415	1,203.0125	855.2465	2,151.5054	6.3191
39	07	10	FYGPA	2.8972	0.0498	11.7238	13.3210	9.8136	-0.0013	0.0219	7.4306	9.0162	6.3191	0.2455



## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
40	06	1	HSGPA	0.0000	0.1930	9.1611	7.9873	9.1832	0.0288	0.1110	5.8807	5.3044	5.6105	0.0932
40	06	2	SAT-CR	0.0000	9.1611	6,569.5389	3,151.5492	4,834.3180	-0.6788	5.8807	3,643.8623	1,777.4338	2,663.5272	15.8788
40	06	3	SAT-M	0.0000	7.9873	3,151.5492	6,386.7098	3,256.8027	-8.4612	5.3044	1,777.4338	3,598.4388	1,875.7015	12.4219
40	06	4	SAT-W	0.0000	9.1832	4,834.3180	3,256.8027	6,881.8276	2.8023	5.6105	2,663.5272	1,875.7015	3,704.2252	17.6267
40	06	5	Female	0.5671	0.0288	-0.6788	-8.4612	2.8023	0.2456	0.0125	-0.2938	-3.6626	1.2130	0.0531
40	06	6	Female*HSGPA	0.0288	0.1110	5.8807	5.3044	5.6105	0.0125	0.1101	5.9002	5.5481	5.5298	0.0514
40	06	7	Female*SAT-CR	-0.6785	5.8807	3,643.8623	1,777.4338	2,663.5272	-0.2938	5.9002	3,643.4017	1,771.6926	2,665.4287	9.8386
40	06	8	Female*SAT-M	-8.4579	5.3044	1,777.4338	3,598.4388	1,875.7015	-3.6626	5.5481	1,771.6926	3,526.8750	1,899.4026	8.1421
40	06	9	Female*SAT-W	2.8012	5.6105	2,663.5272	1,875.7015	3,704.2252	1.2130	5.5298	2,665.4287	1,899.4026	3,696.3757	10.0845
40	06	10	FYGPA	3.1289	0.0932	15.8788	12.4219	17.6267	0.0531	0.0514	9.8386	8.1421	10.0845	0.3190
40	07	1	HSGPA	0.0000	0.1904	10.2384	10.7047	10.5928	0.0198	0.1061	5.4894	5.9698	5.4051	0.0988
40	07	2	SAT-CR	0.0000	10.2384	6,732.6483	3,532.4951	5,286.6494	-0.2304	5.4894	3,608.0950	1,945.0972	2,825.0678	16.6666
40	07	3	SAT-M	0.0000	10.7047	3,532.4951	7,073.5205	3,684.8270	-8.6724	5.9698	1,945.0972	3,912.6041	2,039.6379	14.3043
40	07	4	SAT-W	0.0000	10.5928	5,286.6494	3,684.8270	7,429.9235	1.7796	5.4051	2,825.0678	2,039.6379	4,001.6553	18.1268
40	07	5	Female	0.5809	0.0198	-0.2304	-8.6724	1.7796	0.2436	0.0083	-0.0966	-3.6347	0.7459	0.0334
40	07	6	Female*HSGPA	0.0198	0.1061	5.4894	5.9698	5.4051	0.0083	0.1057	5.4940	6.1411	5.3699	0.0470
40	07	7	Female*SAT-CR	-0.2303	5.4894	3,608.0950	1,945.0972	2,825.0678	-0.0966	5.4940	3,608.0419	1,943.1000	2,825.4777	7.6788
40	07	8	Female*SAT-M	-8.6690	5.9698	1,945.0972	3,912.6041	2,039.6379	-3.6347	6.1411	1,943.1000	3,837.4238	2,055.0653	7.4465
40	07	9	Female*SAT-W	1.7789	5.4051	2,825.0678	2,039.6379	4,001.6553	0.7459	5.3699	2,825.4777	2,055.0653	3,998.4895	8.5444
40	07	10	FYGPA	3.1646	0.0988	16.6666	14.3043	18.1268	0.0334	0.0470	7.6788	7.4465	8.5444	0.3080
40	08	1	HSGPA	0.0000	0.1743	6.3509	7.4799	6.3766	0.0187	0.0982	3.0341	3.8913	3.1189	0.0850
40	08	2	SAT-CR	0.0000	6.3509	6,681.2167	2,800.8763	4,943.2450	-1.5390	3.0341	3,822.3339	1,544.9775	2,862.8340	13.7080
40	08	3	SAT-M	0.0000	7.4799	2,800.8763	6,488.3805	2,996.4732	-9.5752	3.8913	1,544.9775	3,542.2622	1,750.5808	11.1012
40	08	4	SAT-W	0.0000	6.3766	4,943.2450	2,996.4732	6,907.6324	2.1136	3.1189	2,862.8340	1,750.5808	3,994.1437	14.6519
40	08	5	Female	0.5913	0.0187	-1.5390	-9.5752	2.1136	0.2418	0.0076	-0.6290	-3.9132	0.8638	0.0316
40	08	6	Female*HSGPA	0.0187	0.0982	3.0341	3.8913	3.1189	0.0076	0.0978	3.0629	4.0704	3.0794	0.0408
40	08	7	Female*SAT-CR	-1.5384	3.0341	3,822.3339	1,544.9775	2,862.8340	-0.6290	3.0629	3,819.9662	1,530.2469	2,866.0856	6.9846
40	08	8	Female*SAT-M	-9.5712	3.8913	1,544.9775	3,542.2622	1,750.5808	-3.9132	4.0704	1,530.2469	3,450.6158	1,770.8109	6.1003
40	08	9	Female*SAT-W	2.1128	3.1189	2,862.8340	1,750.5808	3,994.1437	0.8638	3.0794	2,866.0856	1,770.8109	3,989.6781	7.8350
40	08	10	FYGPA	3.1189	0.0850	13.7080	11.1012	14.6519	0.0316	0.0408	6.9846	6.1003	7.8350	0.3175
41	07	1	HSGPA	0.0000	0.1870	4.0544	5.2107	5.8245	0.0149	0.1033	2.8670	3.0697	3.7534	0.0750
41	07	2	SAT-CR	0.0000	4.0544	5,046.6599	2,121.3372	3,256.5824	-2.1255	2.8670	2,780.4620	1,201.6756	1,837.6703	9.7032
41	07	3	SAT-M	0.0000	5.2107	2,121.3372	4,871.0257	1,920.3095	-8.7472	3.0697	1,201.6756	2,543.3349	1,121.4213	8.1790
41	07	4	SAT-W	0.0000	5.8245	3,256.5824	1,920.3095	5,265.1686	2.9899	3.7534	1,837.6703	1,121.4213	2,847.7898	11.8294
41	07	5	Female	0.5694	0.0149	-2.1255	-8.7472	2.9899	0.2452	0.0064	-0.9153	-3.7668	1.2876	0.0332
41	07	6	Female*HSGPA	0.0149	0.1033	2.8670	3.0697	3.7534	0.0064	0.1031	2.8987	3.2000	3.7088	0.0428
41	07	7	Female*SAT-CR	-2.1251	2.8670	2,780.4620	1,201.6756	1,837.6703	-0.9153	2.8987	2,775.9452	1,183.0872	1,844.0241	6.0873
41	07	8	Female*SAT-M	-8.7456	3.0697	1,201.6756	2,543.3349	1,121.4213	-3.7668	3.2000	1,183.0872	2,466.8359	1,147.5701	5.3814
41	07	9	Female*SAT-W	2.9894	3.7534	1,837.6703	1,121.4213	2,847.7898	1.2876	3.7088	1,844.0241	1,147.5701	2,838.8516	7.0658
41	07	10	FYGPA	3.1207	0.0750	9.7032	8.1790	11.8294	0.0332	0.0428	6.0873	5.3814	7.0658	0.3410

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
41	08	1	HSGPA	0.0000	0.1663	3.9130	4.3274	4.4791	0.0221	0.0967	2.3845	2.4972	2.8282	0.0661
41	08	2	SAT-CR	0.0000	3.9130	5,095.0100	2,270.0815	3,376.5887	-1.4001	2.3845	2,898.6615	1,306.1150	1,940.3828	9.1200
41	08	3	SAT-M	0.0000	4.3274	2,270.0815	4,914.7881	2,201.4016	-8.1396	2.4972	1,306.1150	2,755.3748	1,321.0855	8.1136
41	08	4	SAT-W	0.0000	4.4791	3,376.5887	2,201.4016	5,257.9085	3.4451	2.8282	1,940.3828	1,321.0855	2,981.4423	10.7931
41	08	5	Female	0.5908	0.0221	-1.4001	-8.1396	3.4451	0.2418	0.0090	-0.5729	-3.3308	1.4098	0.0332
41	08	6	Female*HSGPA	0.0221	0.0967	2.3845	2.4972	2.8282	0.0090	0.0963	2.4154	2.6768	2.7522	0.0424
41	08	7	Female*SAT-CR	-1.3997	2.3845	2,898.6615	1,306.1150	1,940.3828	-0.5729	2.4154	2,896.7018	1,294.7216	1,945.2051	5.7731
41	08	8	Female*SAT-M	-8.1378	2.4972	1,306.1150	2,755.3748	1,321.0855	-3.3308	2.6768	1,294.7216	2,689.1364	1,349.1209	5.2377
41	08	9	Female*SAT-W	3.4443	2.8282	1,940.3828	1,321.0855	2,981.4423	1.4098	2.7522	1,945.2051	1,349.1209	2,969.5763	6.6207
41	08	10	FYGPA	3.1949	0.0661	9.1200	8.1136	10.7931	0.0332	0.0424	5.7731	5.2377	6.6207	0.2997
42	07	1	HSGPA	0.0000	0.1035	2.7682	0.7796	1.5148	0.0174	0.0518	1.7602	0.0913	1.1734	0.0245
42	07	2	SAT-CR	0.0000	2.7682	4,753.4685	1,249.2984	2,713.9625	0.0908	1.7602	2,350.2517	697.2241	1,275.5703	6.5584
42	07	3	SAT-M	0.0000	0.7796	1,249.2984	4,272.9844	1,432.7184	-5.7312	0.0913	697.2241	2,278.2275	795.9490	5.4406
42	07	4	SAT-W	0.0000	1.5148	2,713.9625	1,432.7184	4,621.2973	1.8527	1.1734	1,275.5703	795.9490	2,288.4078	6.4512
42	07	5	Female	0.5210	0.0174	0.0908	-5.7312	1.8527	0.2498	0.0083	0.0435	-2.7451	0.8874	0.0051
42	07	6	Female*HSGPA	0.0174	0.0518	1.7602	0.0913	1.1734	0.0083	0.0515	1.7586	0.1909	1.1412	0.0096
42	07	7	Female*SAT-CR	0.0907	1.7602	2,350.2517	697.2241	1,275.5703	0.0435	1.7586	2,350.2434	697.7440	1,275.4023	3.8112
42	07	8	Female*SAT-M	-5.7253	0.0913	697.2241	2,278.2275	795.9490	-2.7451	0.1909	697.7440	2,245.4142	806.5563	3.7451
42	07	9	Female*SAT-W	1.8508	1.1734	1,275.5703	795.9490	2,288.4078	0.8874	1.1412	1,275.4023	806.5563	2,284.9789	3.4946
42	07	10	FYGPA	3.4478	0.0245	6.5584	5.4406	6.4512	0.0051	0.0096	3.8112	3.7451	3.4946	0.1465
42	08	1	HSGPA	0.0000	0.1041	1.2096	1.9323	1.0933	0.0092	0.0554	0.8271	1.0923	0.4143	0.0124
42	08	2	SAT-CR	0.0000	1.2096	4,428.0583	849.4591	2,384.6614	0.3024	0.8271	2,433.5857	474.7661	1,377.9512	5.9372
42	08	3	SAT-M	0.0000	1.9323	849.4591	4,066.5842	1,611.5596	-6.6446	1.0923	474.7661	2,369.8745	974.9439	5.4192
42	08	4	SAT-W	0.0000	1.0933	2,384.6614	1,611.5596	4,382.1396	1.5145	0.4143	1,377.9512	974.9439	2,431.7822	8.5330
42	08	5	Female	0.5365	0.0092	0.3024	-6.6446	1.5145	0.2489	0.0043	0.1401	-3.0796	0.7019	-0.0090
42	08	6	Female*HSGPA	0.0092	0.0554	0.8271	1.0923	0.4143	0.0043	0.0554	0.8244	1.1532	0.4004	0.0032
42	08	7	Female*SAT-CR	0.3020	0.8271	2,433.5857	474.7661	1,377.9512	0.1401	0.8244	2,433.4943	476.7731	1,377.4937	3.6443
42	08	8	Female*SAT-M	-6.6370	1.0923	474.7661	2,369.8745	974.9439	-3.0796	1.1532	476.7731	2,325.7743	984.9955	3.1125
42	08	9	Female*SAT-W	1.5127	0.4143	1,377.9512	974.9439	2,431.7822	0.7019	0.4004	1,377.4937	984.9955	2,429.4912	4.9834
42	08	10	FYGPA	3.4919	0.0124	5.9372	5.4192	8.5330	-0.0090	0.0032	3.6443	3.1125	4.9834	0.1362
43	06	1	HSGPA	0.0000	0.1316	8.8161	7.3070	7.7544	0.0180	0.0620	4.1804	3.3594	3.4161	0.0519
43	06	2	SAT-CR	0.0000	8.8161	5,302.0019	2,482.0805	3,303.5753	4.6018	4.1804	2,853.7035	1,467.8968	1,772.7915	13.9354
43	06	3	SAT-M	0.0000	7.3070	2,482.0805	5,755.1384	2,776.3158	-6.5555	3.3594	1,467.8968	3,474.1559	1,832.5670	11.8374
43	06	4	SAT-W	0.0000	7.7544	3,303.5753	2,776.3158	5,318.2479	4.2618	3.4161	1,772.7915	1,832.5670	2,823.6555	12.9780
43	06	5	Female	0.5420	0.0180	4.6018	-6.5555	4.2618	0.2489	0.0082	2.1077	-3.0025	1.9520	0.0240
43	06	6	Female*HSGPA	0.0179	0.0620	4.1804	3.3594	3.4161	0.0082	0.0617	4.0978	3.4770	3.3396	0.0194
43	06	7	Female*SAT-CR	4.5901	4.1804	2,853.7035	1,467.8968	1,772.7915	2.1077	4.0978	2,832.5811	1,497.9871	1,753.2298	6.6794
43	06	8	Female*SAT-M	-6.5389	3.3594	1,467.8968	3,474.1559	1,832.5670	-3.0025	3.4770	1,497.9871	3,431.2902	1,860.4340	7.4308
43	06	9	Female*SAT-W	4.2509	3.4161	1,772.7915	1,832.5670	2,823.6555	1.9520	3.3396	1,753.2298	1,860.4340	2,805.5391	7.5191
43	06	10	FYGPA	3.3035	0.0519	13.9354	11.8374	12.9780	0.0240	0.0194	6.6794	7.4308	7.5191	0.1649

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
43	07	1	HSGPA	0.0000	0.1243	8.3787	6.3330	7.0324	0.0199	0.0554	4.0433	2.9975	3.5843	0.0639
43	07	2	SAT-CR	0.0000	8.3787	5,162.0808	2,396.4981	3,543.7270	2.4921	4.0433	2,390.4649	1,157.0354	1,710.9713	15.5077
43	07	3	SAT-M	0.0000	6.3330	2,396.4981	5,050.7063	2,445.0047	-5.3533	2.9975	1,157.0354	2,735.4813	1,199.9764	13.8864
43	07	4	SAT-W	0.0000	7.0324	3,543.7270	2,445.0047	5,392.2229	3.6180	3.5843	1,710.9713	1,199.9764	2,718.3985	14.4562
43	07	5	Female	0.5079	0.0199	2.4921	-5.3533	3.6180	0.2505	0.0098	1.2264	-2.6343	1.7804	0.0006
43	07	6	Female*HSGPA	0.0199	0.0554	4.0433	2.9975	3.5843	0.0098	0.0550	3.9937	3.1038	3.5124	0.0300
43	07	7	Female*SAT-CR	2.4865	4.0433	2,390.4649	1,157.0354	1,710.9713	1.2264	3.9937	2,384.2683	1,170.3462	1,701.9752	7.3940
43	07	8	Female*SAT-M	-5.3412	2.9975	1,157.0354	2,735.4813	1,199.9764	-2.6343	3.1038	1,170.3462	2,706.8887	1,219.3009	6.6123
43	07	9	Female*SAT-W	3.6099	3.5843	1,710.9713	1,199.9764	2,718.3985	1.7804	3.5124	1,701.9752	1,219.3009	2,705.3380	7.0915
43	07	10	FYGPA	3.2850	0.0639	15.5077	13.8864	14.4562	0.0006	0.0300	7.3940	6.6123	7.0915	0.1819
43	08	1	HSGPA	0.0000	0.1265	6.1431	5.8986	5.8375	0.0142	0.0647	2.5287	2.9234	2.1834	0.0494
43	08	2	SAT-CR	0.0000	6.1431	5,760.3331	2,695.8901	3,930.6873	1.6490	2.5287	2,893.6776	1,481.5123	2,067.8788	13.6006
43	08	3	SAT-M	0.0000	5.8986	2,695.8901	5,618.8660	3,088.0665	-7.8402	2.9234	1,481.5123	3,397.6367	1,793.2954	14.5327
43	08	4	SAT-W	0.0000	5.8375	3,930.6873	3,088.0665	5,827.3866	3.5750	2.1834	2,067.8788	1,793.2954	3,109.5653	15.0676
43	08	5	Female	0.5418	0.0142	1.6490	-7.8402	3.5750	0.2491	0.0065	0.7556	-3.5923	1.6380	0.0047
43	08	6	Female*HSGPA	0.0141	0.0647	2.5287	2.9234	2.1834	0.0065	0.0645	2.5054	3.0343	2.1328	0.0228
43	08	7	Female*SAT-CR	1.6435	2.5287	2,893.6776	1,481.5123	2,067.8788	0.7556	2.5054	2,890.9674	1,494.3977	2,062.0033	6.6799
43	08	8	Female*SAT-M	-7.8140	2.9234	1,481.5123	3,397.6367	1,793.2954	-3.5923	3.0343	1,494.3977	3,336.3731	1,821.2305	7.7987
43	08	9	Female*SAT-W	3.5630	2.1834	2,067.8788	1,793.2954	3,109.5653	1.6380	2.1328	2,062.0033	1,821.2305	3,096.8274	8.1195
43	08	10	FYGPA	3.3086	0.0494	13.6006	14.5327	15.0676	0.0047	0.0228	6.6799	7.7987	8.1195	0.1543
44	06	1	HSGPA	0.0000	0.3300	14.8489	14.3686	14.2352	0.0475	0.2074	10.6560	10.5058	9.7823	0.2054
44	06	2	SAT-CR	0.0000	14.8489	7,072.7777	3,719.4796	4,736.2982	4.2442	10.6560	4,820.4078	2,656.7784	3,468.8986	24.7407
44	06	3	SAT-M	0.0000	14.3686	3,719.4796	7,476.6922	3,493.1305	-5.8542	10.5058	2,656.7784	4,857.3922	2,644.1656	22.1521
44	06	4	SAT-W	0.0000	14.2352	4,736.2982	3,493.1305	6,090.7044	5.1589	9.7823	3,468.8986	2,644.1656	4,172.7332	23.4969
44	06	5	Female	0.6469	0.0475	4.2442	-5.8542	5.1589	0.2292	0.0168	1.4988	-2.0673	1.8218	0.0606
44	06	6	Female*HSGPA	0.0473	0.2074	10.6560	10.5058	9.7823	0.0168	0.2051	10.4553	10.7827	9.5382	0.1238
44	06	7	Female*SAT-CR	4.2302	10.6560	4,820.4078	2,656.7784	3,468.8986	1.4988	10.4553	4,802.4540	2,681.5426	3,447.0755	16.2839
44	06	8	Female*SAT-M	-5.8348	10.5058	2,656.7784	4,857.3922	2,644.1656	-2.0673	10.7827	2,681.5426	4,823.2342	2,674.2669	15.2307
44	06	9	Female*SAT-W	5.1419	9.7823	3,468.8986	2,644.1656	4,172.7332	1.8218	9.5382	3,447.0755	2,674.2669	4,146.2068	14.3159
44	06	10	FYGPA	2.8279	0.2054	24.7407	22.1521	23.4969	0.0606	0.1238	16.2839	15.2307	14.3159	0.5084
45	06	1	HSGPA	0.0000	0.2618	5.0433	7.2487	6.8859	0.0426	0.1376	3.6839	5.0269	4.6716	0.1119
45	06	2	SAT-CR	0.0000	5.0433	4,508.4614	1,796.3455	2,910.4089	0.3866	3.6839	2,418.2886	959.3541	1,585.3371	8.3086
45	06	3	SAT-M	0.0000	7.2487	1,796.3455	5,017.7686	1,784.0570	-8.3213	5.0269	959.3541	2,749.5912	1,009.4955	10.7319
45	06	4	SAT-W	0.0000	6.8859	2,910.4089	1,784.0570	4,631.9821	4.4679	4.6716	1,585.3371	1,009.4955	2,539.6977	12.4696
45	06	5	Female	0.5547	0.0426	0.3866	-8.3213	4.4679	0.2472	0.0190	0.1722	-3.7058	1.9897	0.0493
45	06	6	Female*HSGPA	0.0425	0.1376	3.6839	5.0269	4.6716	0.0190	0.1358	3.6675	5.3809	4.4815	0.0657
45	06	7	Female*SAT-CR	0.3863	3.6839	2,418.2886	959.3541	1,585.3371	0.1722	3.6675	2,418.1392	962.5686	1,583.6111	6.5129
45	06	8	Female*SAT-M	-8.3139	5.0269	959.3541	2,749.5912	1,009.4955	-3.7058	5.3809	962.5686	2,680.4086	1,046.6414	7.9254
45	06	9	Female*SAT-W	4.4640	4.6716	1,585.3371	1,009.4955	2,539.6977	1.9897	4.4815	1,583.6111	1,046.6414	2,519.7531	7.9300
45	06	10	FYGPA	2.9387	0.1119	8.3086	10.7319	12.4696	0.0493	0.0657	6.5129	7.9254	7.9300	0.5531

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
45	07	1	HSGPA	0.0000	0.2740	4.5705	8.8186	5.9819	0.0413	0.1477	2.8627	4.6090	3.2934	0.1462
45	07	2	SAT-CR	0.0000	4.5705	4,465.8783	1,694.9020	2,876.1457	0.1182	2.8627	2,330.0928	801.9380	1,570.7589	10.9359
45	07	3	SAT-M	0.0000	8.8186	1,694.9020	4,540.3332	1,744.0602	-5.8195	4.6090	801.9380	2,319.6063	886.4070	8.8105
45	07	4	SAT-W	0.0000	5.9819	2,876.1457	1,744.0602	4,587.6432	3.9982	3.2934	1,570.7589	886.4070	2,372.3381	12.6437
45	07	5	Female	0.5464	0.0413	0.1182	-5.8195	3.9982	0.2480	0.0187	0.0536	-2.6400	1.8138	0.0923
45	07	6	Female*HSGPA	0.0413	0.1477	2.8627	4.6090	3.2934	0.0187	0.1460	2.8578	4.8491	3.1285	0.0706
45	07	7	Female*SAT-CR	0.1181	2.8627	2,330.0928	801.9380	1,570.7589	0.0536	2.8578	2,330.0788	802.6252	1,570.2867	5.5421
45	07	8	Female*SAT-M	-5.8151	4.6090	801.9380	2,319.6063	886.4070	-2.6400	4.8491	802.6252	2,285.7650	909.6572	5.4434
45	07	9	Female*SAT-W	3.9952	3.2934	1,570.7589	886.4070	2,372.3381	1.8138	3.1285	1,570.2867	909.6572	2,356.3643	6.5700
45	07	10	FYGPA	2.9181	0.1462	10.9359	8.8105	12.6437	0.0923	0.0706	5.5421	5.4434	6.5700	0.5663
45	08	1	HSGPA	0.0000	0.2733	4.3410	6.1287	6.5594	0.0400	0.1414	2.5734	3.3177	3.7087	0.1474
45	08	2	SAT-CR	0.0000	4.3410	4,966.1476	2,099.5151	3,296.3075	1.1360	2.5734	2,469.7683	1,043.6168	1,679.2669	9.7247
45	08	3	SAT-M	0.0000	6.1287	2,099.5151	4,996.7187	2,086.7033	-6.9469	3.3177	1,043.6168	2,468.9187	1,033.1486	10.1308
45	08	4	SAT-W	0.0000	6.5594	3,296.3075	2,086.7033	4,851.8521	4.9216	3.7087	1,679.2669	1,033.1486	2,506.4580	12.1383
45	08	5	Female	0.5270	0.0400	1.1360	-6.9469	4.9216	0.2495	0.0189	0.5373	-3.2859	2.3279	0.0714
45	08	6	Female*HSGPA	0.0400	0.1414	2.5734	3.3177	3.7087	0.0189	0.1398	2.5280	3.5957	3.5118	0.0671
45	08	7	Female*SAT-CR	1.1351	2.5734	2,469.7683	1,043.6168	1,679.2669	0.5373	2.5280	2,468.4787	1,051.5023	1,673.6804	4.9558
45	08	8	Female*SAT-M	-6.9412	3.3177	1,043.6168	2,468.9187	1,033.1486	-3.2859	3.5957	1,051.5023	2,420.6986	1,067.3105	4.9817
45	08	9	Female*SAT-W	4.9176	3.7087	1,679.2669	1,033.1486	2,506.4580	2.3279	3.5118	1,673.6804	1,067.3105	2,482.2557	6.8118
45	08	10	FYGPA	2.8247	0.1474	9.7247	10.1308	12.1383	0.0714	0.0671	4.9558	4.9817	6.8118	0.6282
46	08	1	HSGPA	0.0000	0.2286	14.2023	14.9187	15.4086	0.0495	0.1209	7.8342	8.0504	8.4080	0.1404
46	08	2	SAT-CR	0.0000	14.2023	6,385.7628	3,645.3054	4,705.4006	0.4772	7.8342	3,922.3121	2,292.7040	3,010.5833	19.6555
46	08	3	SAT-M	0.0000	14.9187	3,645.3054	6,513.2096	3,639.7094	-4.0732	8.0504	2,292.7040	3,598.2662	2,374.3412	20.6704
46	08	4	SAT-W	0.0000	15.4086	4,705.4006	3,639.7094	6,406.2322	6.8249	8.4080	3,010.5833	2,374.3412	4,191.3918	21.8479
46	08	5	Female	0.6063	0.0495	0.4772	-4.0732	6.8249	0.2393	0.0195	0.1879	-1.6037	2.6871	0.0518
46	08	6	Female*HSGPA	0.0494	0.1209	7.8342	8.0504	8.4080	0.0195	0.1185	7.8106	8.2517	8.0706	0.0795
46	08	7	Female*SAT-CR	0.4760	7.8342	3,922.3121	2,292.7040	3,010.5833	0.1879	7.8106	3,922.0849	2,294.6429	3,007.3345	12.0748
46	08	8	Female*SAT-M	-4.0633	8.0504	2,292.7040	3,598.2662	2,374.3412	-1.6037	8.2517	2,294.6429	3,581.7155	2,402.0732	11.1232
46	08	9	Female*SAT-W	6.8084	8.4080	3,010.5833	2,374.3412	4,191.3918	2.6871	8.0706	3,007.3345	2,402.0732	4,144.9246	13.7103
46	08	10	FYGPA	3.1226	0.1404	19.6555	20.6704	21.8479	0.0518	0.0795	12.0748	11.1232	13.7103	0.3016
47	08	1	HSGPA	0.0000	0.2917	8.5014	10.8390	11.1757	0.0431	0.1590	4.9446	6.9219	6.8461	0.1958
47	08	2	SAT-CR	0.0000	8.5014	5,416.6009	2,777.3037	3,905.2962	0.3293	4.9446	3,015.4027	1,487.0464	2,182.6112	17.8959
47	08	3	SAT-M	0.0000	10.8390	2,777.3037	5,648.0918	2,664.0449	-4.7849	6.9219	1,487.0464	3,112.1114	1,477.8979	14.8197
47	08	4	SAT-W	0.0000	11.1757	3,905.2962	2,664.0449	5,616.4404	5.1864	6.8461	2,182.6112	1,477.8979	3,196.9611	21.2311
47	08	5	Female	0.5897	0.0431	0.3293	-4.7849	5.1864	0.2422	0.0177	0.1351	-1.9630	2.1277	0.0604
47	08	6	Female*HSGPA	0.0431	0.1590	4.9446	6.9219	6.8461	0.0177	0.1571	4.9304	7.1280	6.6226	0.0943
47	08	7	Female*SAT-CR	0.3290	4.9446	3,015.4027	1,487.0464	2,182.6112	0.1351	4.9304	3,015.2944	1,488.6206	2,180.9049	10.6462
47	08	8	Female*SAT-M	-4.7800	6.9219	1,487.0464	3,112.1114	1,477.8979	-1.9630	7.1280	1,488.6206	3,089.2394	1,502.6889	9.4321
47	08	9	Female*SAT-W	5.1811	6.8461	2,182.6112	1,477.8979	3,196.9611	2.1277	6.6226	2,180.9049	1,502.6889	3,170.0901	12.6060
47	08	10	FYGPA	2.3923	0.1958	17.8959	14.8197	21.2311	0.0604	0.0943	10.6462	9.4321	12.6060	0.7533

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
48	06	1	HSGPA	0.0000	0.2154	8.8143	8.0403	8.3056	0.0308	0.1243	4.9494	4.3491	3.9213	0.0908
48	06	2	SAT-CR	0.0000	8.8143	6,276.9309	2,957.5931	4,170.5547	-1.8779	4.9494	3,382.2775	1,527.0457	2,203.7239	10.7763
48	06	3	SAT-M	0.0000	8.0403	2,957.5931	6,247.2326	2,744.0108	-10.1684	4.3491	1,527.0457	3,553.1503	1,554.9872	8.6229
48	06	4	SAT-W	0.0000	8.3056	4,170.5547	2,744.0108	5,781.1732	0.8232	3.9213	2,203.7239	1,554.9872	3,280.2142	11.4423
48	06	5	Female	0.6020	0.0308	-1.8779	-10.1684	0.8232	0.2399	0.0123	-0.7474	-4.0468	0.3276	0.0302
48	06	6	Female*HSGPA	0.0308	0.1243	4.9494	4.3491	3.9213	0.0123	0.1233	5.0071	4.6619	3.8960	0.0453
48	06	7	Female*SAT-CR	-1.8756	4.9494	3,382.2775	1,527.0457	2,203.7239	-0.7474	5.0071	3,378.7553	1,507.9741	2,205.2679	5.8596
48	06	8	Female*SAT-M	-10.1555	4.3491	1,527.0457	3,553.1503	1,554.9872	-4.0468	4.6619	1,507.9741	3,449.8843	1,563.3472	4.3443
48	06	9	Female*SAT-W	0.8222	3.9213	2,203.7239	1,554.9872	3,280.2142	0.3276	3.8960	2,205.2679	1,563.3472	3,279.5374	5.7819
48	06	10	FYGPA	3.2839	0.0908	10.7763	8.6229	11.4423	0.0302	0.0453	5.8596	4.3443	5.7819	0.2511
48	07	1	HSGPA	0.0000	0.2100	3.6273	5.7562	6.8449	0.0190	0.1356	2.5272	3.9544	4.4289	0.0828
48	07	2	SAT-CR	0.0000	3.6273	5,495.9895	2,764.0382	3,799.8634	-3.9803	2.5272	3,193.0719	1,681.2669	2,221.1593	7.0123
48	07	3	SAT-M	0.0000	5.7562	2,764.0382	5,870.0163	2,800.0745	-8.1791	3.9544	1,681.2669	3,699.8907	1,725.9993	6.1657
48	07	4	SAT-W	0.0000	6.8449	3,799.8634	2,800.0745	5,506.0176	-1.7794	4.4289	2,221.1593	1,725.9993	3,311.3238	8.5541
48	07	5	Female	0.6468	0.0190	-3.9803	-8.1791	-1.7794	0.2288	0.0067	-1.4060	-2.8892	-0.6286	0.0492
48	07	6	Female*HSGPA	0.0190	0.1356	2.5272	3.9544	4.4289	0.0067	0.1352	2.6027	4.1095	4.4626	0.0448
48	07	7	Female*SAT-CR	-3.9753	2.5272	3,193.0719	1,681.2669	2,221.1593	-1.4060	2.6027	3,177.2488	1,648.7528	2,214.0856	5.2352
48	07	8	Female*SAT-M	-8.1687	3.9544	1,681.2669	3,699.8907	1,725.9993	-2.8892	4.1095	1,648.7528	3,633.0784	1,711.4637	5.2955
48	07	9	Female*SAT-W	-1.7772	4.4289	2,221.1593	1,725.9993	3,311.3238	-0.6286	4.4626	2,214.0856	1,711.4637	3,308.1615	5.8573
48	07	10	FYGPA	3.2971	0.0828	7.0123	6.1657	8.5541	0.0492	0.0448	5.2352	5.2955	5.8573	0.2523
48	08	1	HSGPA	0.0000	0.1752	6.5282	5.1195	5.9175	0.0243	0.0984	3.4453	2.1795	2.3319	0.0881
48	08	2	SAT-CR	0.0000	6.5282	6,217.3361	2,839.8975	4,320.2654	-3.1424	3.4453	3,563.1450	1,726.9904	2,601.5639	12.8821
48	08	3	SAT-M	0.0000	5.1195	2,839.8975	5,780.0794	3,077.0548	-9.5519	2.1795	1,726.9904	3,362.5487	1,837.7810	8.7535
48	08	4	SAT-W	0.0000	5.9175	4,320.2654	3,077.0548	6,106.5933	-0.0185	2.3319	2,601.5639	1,837.7810	3,605.6982	13.8461
48	08	5	Female	0.6066	0.0243	-3.1424	-9.5519	-0.0185	0.2390	0.0096	-1.2361	-3.7572	-0.0073	0.0419
48	08	6	Female*HSGPA	0.0243	0.0984	3.4453	2.1795	2.3319	0.0096	0.0978	3.5216	2.4113	2.3323	0.0391
48	08	7	Female*SAT-CR	-3.1380	3.4453	3,563.1450	1,726.9904	2,601.5639	-1.2361	3.5216	3,553.2842	1,697.0164	2,601.5059	6.8886
48	08	8	Female*SAT-M	-9.5386	2.1795	1,726.9904	3,362.5487	1,837.7810	-3.7572	2.4113	1,697.0164	3,271.4369	1,837.6047	5.1496
48	08	9	Female*SAT-W	-0.0185	2.3319	2,601.5639	1,837.7810	3,605.6982	-0.0073	2.3323	2,601.5059	1,837.6047	3,605.6979	6.7368
48	08	10	FYGPA	3.2655	0.0881	12.8821	8.7535	13.8461	0.0419	0.0391	6.8886	5.1496	6.7368	0.2447
49	06	1	HSGPA	0.0000	0.2157	11.1240	11.6512	12.3164	0.0362	0.1227	6.7454	7.2734	7.1131	0.1324
49	06	2	SAT-CR	0.0000	11.1240	6,465.6423	3,731.1205	4,615.2184	-1.6094	6.7454	3,717.3576	2,100.7331	2,616.7171	20.6469
49	06	3	SAT-M	0.0000	11.6512	3,731.1205	6,746.5930	3,589.8379	-8.5947	7.2734	2,100.7331	3,555.4163	2,044.3620	17.4557
49	06	4	SAT-W	0.0000	12.3164	4,615.2184	3,589.8379	6,308.7090	2.8415	7.1131	2,616.7171	2,044.3620	3,578.4066	21.9813
49	06	5	Female	0.5804	0.0362	-1.6094	-8.5947	2.8415	0.2436	0.0152	-0.6754	-3.6067	1.1924	0.0484
49	06	6	Female*HSGPA	0.0362	0.1227	6.7454	7.2734	7.1131	0.0152	0.1214	6.8037	7.5847	7.0102	0.0757
49	06	7	Female*SAT-CR	-1.6087	6.7454	3,717.3576	2,100.7331	2,616.7171	-0.6754	6.8037	3,714.7685	2,086.9065	2,621.2884	13.0663
49	06	8	Female*SAT-M	-8.5910	7.2734	2,100.7331	3,555.4163	2,044.3620	-3.6067	7.5847	2,086.9065	3,481.5793	2,068.7733	11.3499
49	06	9	Female*SAT-W	2.8403	7.1131	2,616.7171	2,044.3620	3,578.4066	1.1924	7.0102	2,621.2884	2,068.7733	3,570.3359	13.8367
49	06	10	FYGPA	2.7664	0.1324	20.6469	17.4557	21.9813	0.0484	0.0757	13.0663	11.3499	13.8367	0.4900

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
49	07	1	HSGPA	0.0000	0.2152	11.2421	12.4734	11.3164	0.0281	0.1191	6.9055	7.9300	6.6889	0.1317
49	07	2	SAT-CR	0.0000	11.2421	6,631.4816	3,949.4629	4,706.5335	-1.4093	6.9055	3,716.5638	2,195.8666	2,670.8407	21.3632
49	07	3	SAT-M	0.0000	12.4734	3,949.4629	7,081.6755	3,620.5153	-10.0768	7.9300	2,195.8666	3,786.7220	2,077.5414	20.2912
49	07	4	SAT-W	0.0000	11.3164	4,706.5335	3,620.5153	6,168.1253	1.5257	6.6889	2,670.8407	2,077.5414	3,549.4892	21.3866
49	07	5	Female	0.5857	0.0281	-1.4093	-10.0768	1.5257	0.2428	0.0117	-0.5839	-4.1752	0.6322	0.0421
49	07	6	Female*HSGPA	0.0281	0.1191	6.9055	7.9300	6.6889	0.0117	0.1183	6.9451	8.2135	6.6460	0.0728
49	07	7	Female*SAT-CR	-1.4088	6.9055	3,716.5638	2,195.8666	2,670.8407	-0.5839	6.9451	3,714.5784	2,181.6708	2,672.9901	13.1370
49	07	8	Female*SAT-M	-10.0729	7.9300	2,195.8666	3,786.7220	2,077.5414	-4.1752	8.2135	2,181.6708	3,685.2187	2,092.9101	13.0510
49	07	9	Female*SAT-W	1.5251	6.6889	2,670.8407	2,077.5414	3,549.4892	0.6322	6.6460	2,672.9901	2,092.9101	3,547.1622	13.1731
49	07	10	FYGPA	2.7845	0.1317	21.3632	20.2912	21.3866	0.0421	0.0728	13.1370	13.0510	13.1731	0.4723
49	08	1	HSGPA	0.0000	0.2159	9.2709	9.2522	10.0116	0.0258	0.1240	6.1202	6.1325	6.4058	0.1298
49	08	2	SAT-CR	0.0000	9.2709	6,715.4973	3,784.6230	4,844.8092	-4.1601	6.1202	3,833.7260	2,184.9574	2,849.4763	18.9923
49	08	3	SAT-M	0.0000	9.2522	3,784.6230	6,866.0085	3,530.9503	-11.6019	6.1325	2,184.9574	3,764.4006	2,099.0937	14.8396
49	08	4	SAT-W	0.0000	10.0116	4,844.8092	3,530.9503	6,299.2806	0.8269	6.4058	2,849.4763	2,099.0937	3,669.0726	20.7754
49	08	5	Female	0.5705	0.0258	-4.1601	-11.6019	0.8269	0.2451	0.0111	-1.7868	-4.9833	0.3552	0.0616
49	08	6	Female*HSGPA	0.0258	0.1240	6.1202	6.1325	6.4058	0.0111	0.1233	6.2275	6.4316	6.3845	0.0712
49	08	7	Female*SAT-CR	-4.1583	6.1202	3,833.7260	2,184.9574	2,849.4763	-1.7868	6.2275	3,816.4270	2,136.7126	2,852.9149	11.7971
49	08	8	Female*SAT-M	-11.5971	6.1325	2,184.9574	3,764.4006	2,099.0937	-4.9833	6.4316	2,136.7126	3,629.8514	2,108.6836	9.6719
49	08	9	Female*SAT-W	0.8266	6.4058	2,849.4763	2,099.0937	3,669.0726	0.3552	6.3845	2,852.9149	2,108.6836	3,668.3891	12.7399
49	08	10	FYGPA	2.7258	0.1298	18.9923	14.8396	20.7754	0.0616	0.0712	11.7971	9.6719	12.7399	0.4966
50	06	1	HSGPA	0.0000	0.2054	5.6132	8.6372	12.6750	0.0264	0.0420	1.8805	1.5393	1.7343	0.0985
50	06	2	SAT-CR	0.0000	5.6132	7,787.5132	2,750.2646	5,207.3016	-3.0159	1.8805	2,847.3016	988.6772	1,576.6138	4.3873
50	06	3	SAT-M	0.0000	8.6372	2,750.2646	5,792.7040	2,527.0677	-3.4614	1.5393	988.6772	1,250.6280	676.7917	14.4407
50	06	4	SAT-W	0.0000	12.6750	5,207.3016	2,527.0677	6,940.1949	1.3060	1.7343	1,576.6138	676.7917	1,419.1101	9.1866
50	06	5	Female	0.2368	0.0264	-3.0159	-3.4614	1.3060	0.1817	0.0201	-2.3016	-2.6416	0.9967	-0.0205
50	06	6	Female*HSGPA	0.0262	0.0420	1.8805	1.5393	1.7343	0.0201	0.0413	1.9596	1.6301	1.7000	0.0024
50	06	7	Female*SAT-CR	-3.0000	1.8805	2,847.3016	988.6772	1,576.6138	-2.3016	1.9596	2,838.2540	978.2930	1,580.5319	3.7938
50	06	8	Female*SAT-M	-3.4432	1.5393	988.6772	1,250.6280	676.7917	-2.6416	1.6301	978.2930	1,238.7096	681.2887	4.6843
50	06	9	Female*SAT-W	1.2992	1.7343	1,576.6138	676.7917	1,419.1101	0.9967	1.7000	1,580.5319	681.2887	1,417.4133	3.1930
50	06	10	FYGPA	3.0453	0.0985	4.3873	14.4407	9.1866	-0.0205	0.0024	3.7938	4.6843	3.1930	0.4457
53	06	1	HSGPA	0.0000	0.1597	5.7254	6.2311	6.3937	0.0230	0.0792	3.0277	3.5221	3.2383	0.0914
53	06	2	SAT-CR	0.0000	5.7254	6,092.2902	2,703.1510	4,360.6472	-0.0349	3.0277	3,398.6375	1,572.6811	2,477.9153	14.7091
53	06	3	SAT-M	0.0000	6.2311	2,703.1510	5,719.0126	2,784.7498	-8.0110	3.5221	1,572.6811	3,080.2927	1,642.9031	10.3820
53	06	4	SAT-W	0.0000	6.3937	4,360.6472	2,784.7498	6,233.5799	3.2205	3.2383	2,477.9153	1,642.9031	3,342.7088	16.6170
53	06	5	Female	0.5433	0.0230	-0.0349	-8.0110	3.2205	0.2482	0.0105	-0.0160	-3.6584	1.4707	0.0508
53	06	6	Female*HSGPA	0.0230	0.0792	3.0277	3.5221	3.2383	0.0105	0.0787	3.0285	3.7066	3.1641	0.0434
53	06	7	Female*SAT-CR	-0.0349	3.0277	3,398.6375	1,572.6811	2,477.9153	-0.0160	3.0285	3,398.6363	1,572.4013	2,478.0278	8.2061
53	06	8	Female*SAT-M	-8.0079	3.5221	1,572.6811	3,080.2927	1,642.9031	-3.6584	3.7066	1,572.4013	3,016.1407	1,668.6922	6.2799
53	06	9	Female*SAT-W	3.2192	3.2383	2,477.9153	1,642.9031	3,342.7088	1.4707	3.1641	2,478.0278	1,668.6922	3,332.3415	9.0668
53	06	10	FYGPA	3.1054	0.0914	14.7091	10.3820	16.6170	0.0508	0.0434	8.2061	6.2799	9.0668	0.3603

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
53	07	1	HSGPA	0.0000	0.1802	9.5875	10.6109	10.9788	0.0301	0.0844	4.9933	5.1628	5.2867	0.1028
53	07	2	SAT-CR	0.0000	9.5875	7,058.4840	3,618.7739	5,156.3263	0.0003	4.9933	3,725.0448	1,944.0868	2,714.2686	17.5612
53	07	3	SAT-M	0.0000	10.6109	3,618.7739	6,453.6277	3,561.8737	-7.5551	5.1628	1,944.0868	3,325.7197	1,903.1714	13.9072
53	07	4	SAT-W	0.0000	10.9788	5,156.3263	3,561.8737	7,082.4214	4.4654	5.2867	2,714.2686	1,903.1714	3,581.0555	18.5683
53	07	5	Female	0.5269	0.0301	0.0003	-7.5551	4.4654	0.2494	0.0142	0.0001	-3.5746	2.1128	0.0456
53	07	6	Female*HSGPA	0.0301	0.0844	4.9933	5.1628	5.2867	0.0142	0.0835	4.9933	5.3899	5.1525	0.0494
53	07	7	Female*SAT-CR	0.0003	4.9933	3,725.0448	1,944.0868	2,714.2686	0.0001	4.9933	3,725.0448	1,944.0889	2,714.2674	8.9803
53	07	8	Female*SAT-M	-7.5527	5.1628	1,944.0868	3,325.7197	1,903.1714	-3.5746	5.3899	1,944.0889	3,268.6579	1,936.8974	7.4836
53	07	9	Female*SAT-W	4.4640	5.2867	2,714.2686	1,903.1714	3,581.0555	2.1128	5.1525	2,714.2674	1,936.8974	3,561.1220	9.5457
53	07	10	FYGPA	3.1322	0.1028	17.5612	13.9072	18.5683	0.0456	0.0494	8.9803	7.4836	9.5457	0.3177
53	08	1	HSGPA	0.0000	0.1515	5.0116	5.7567	6.7166	0.0226	0.0705	1.6058	2.3035	2.5453	0.0806
53	08	2	SAT-CR	0.0000	5.0116	5,890.8758	2,253.3642	3,910.4618	-0.5265	1.6058	2,782.3568	1,079.0134	1,835.8963	13.0329
53	08	3	SAT-M	0.0000	5.7567	2,253.3642	5,377.7943	2,383.0512	-8.9080	2.3035	1,079.0134	2,761.1254	1,188.1739	11.5080
53	08	4	SAT-W	0.0000	6.7166	3,910.4618	2,383.0512	5,781.8012	4.0362	2.5453	1,835.8963	1,188.1739	2,839.9218	14.9097
53	08	5	Female	0.5201	0.0226	-0.5265	-8.9080	4.0362	0.2497	0.0109	-0.2527	-4.2750	1.9370	0.0318
53	08	6	Female*HSGPA	0.0226	0.0705	1.6058	2.3035	2.5453	0.0109	0.0700	1.6177	2.5049	2.4541	0.0363
53	08	7	Female*SAT-CR	-0.5263	1.6058	2,782.3568	1,079.0134	1,835.8963	-0.2527	1.6177	2,782.0797	1,074.3251	1,838.0206	6.3262
53	08	8	Female*SAT-M	-8.9049	2.3035	1,079.0134	2,761.1254	1,188.1739	-4.2750	2.5049	1,074.3251	2,681.8008	1,224.1158	5.8907
53	08	9	Female*SAT-W	4.0348	2.5453	1,835.8963	1,188.1739	2,839.9218	1.9370	2.4541	1,838.0206	1,224.1158	2,823.6365	7.4877
53	08	10	FYGPA	3.1233	0.0806	13.0329	11.5080	14.9097	0.0318	0.0363	6.3262	5.8907	7.4877	0.2988
54	06	1	HSGPA	0.0000	0.2904	19.0610	20.0592	20.0870	0.0711	0.1122	10.9344	8.7582	11.2604	0.2860
54	06	2	SAT-CR	0.0000	19.0610	8,387.0751	4,474.5184	6,338.6309	12.4284	10.9344	3,743.5904	2,013.4049	3,165.3691	32.9594
54	06	3	SAT-M	0.0000	20.0592	4,474.5184	8,087.1872	5,023.3868	4.4672	8.7582	2,013.4049	3,634.3231	2,606.1569	29.9390
54	06	4	SAT-W	0.0000	20.0870	6,338.6309	5,023.3868	7,578.7299	14.1328	11.2604	3,165.3691	2,606.1569	3,816.4567	39.4076
54	06	5	Female	0.3941	0.0711	12.4284	4.4672	14.1328	0.2400	0.0431	7.5305	2.7067	8.5632	0.1656
54	06	6	Female*HSGPA	0.0707	0.1122	10.9344	8.7582	11.2604	0.0431	0.1072	10.0556	8.4423	10.2611	0.1021
54	06	7	Female*SAT-CR	12.3672	10.9344	3,743.5904	2,013.4049	3,165.3691	7.5305	10.0556	3,589.8855	1,958.1588	2,990.5858	19.1172
54	06	8	Female*SAT-M	4.4451	8.7582	2,013.4049	3,634.3231	2,606.1569	2.7067	8.4423	1,958.1588	3,614.4660	2,543.3345	15.9782
54	06	9	Female*SAT-W	14.0632	11.2604	3,165.3691	2,606.1569	3,816.4567	8.5632	10.2611	2,990.5858	2,543.3345	3,617.7043	21.5052
54	06	10	FYGPA	2.6891	0.2860	32.9594	29.9390	39.4076	0.1656	0.1021	19.1172	15.9782	21.5052	0.9216
55	07	1	HSGPA	0.0000	0.3744	7.9330	10.4743	12.3363	0.0510	0.2241	4.7006	6.4401	7.1237	0.2119
55	07	2	SAT-CR	0.0000	7.9330	5,260.7197	2,593.0464	3,345.6757	4.8564	4.7006	3,254.5061	1,585.0323	2,075.8710	19.1928
55	07	3	SAT-M	0.0000	10.4743	2,593.0464	5,200.2550	2,717.2254	0.0071	6.4401	1,585.0323	3,184.9774	1,852.4071	14.7536
55	07	4	SAT-W	0.0000	12.3363	3,345.6757	2,717.2254	5,030.7672	7.3239	7.1237	2,075.8710	1,852.4071	3,068.5533	23.5823
55	07	5	Female	0.6244	0.0510	4.8564	0.0071	7.3239	0.2350	0.0192	1.8239	0.0027	2.7506	0.1046
55	07	6	Female*HSGPA	0.0509	0.2241	4.7006	6.4401	7.1237	0.0192	0.2215	4.4533	6.4398	6.7508	0.1238
55	07	7	Female*SAT-CR	4.8454	4.7006	3,254.5061	1,585.0323	2,075.8710	1.8239	4.4533	3,230.9748	1,584.9980	2,040.3839	11.2278
55	07	8	Female*SAT-M	0.0071	6.4401	1,585.0323	3,184.9774	1,852.4071	0.0027	6.4398	1,584.9980	3,184.9774	1,852.3554	9.9266
55	07	9	Female*SAT-W	7.3073	7.1237	2,075.8710	1,852.4071	3,068.5533	2.7506	6.7508	2,040.3839	1,852.3554	3,015.0358	13.3895
55	07	10	FYGPA	2.3666	0.2119	19.1928	14.7536	23.5823	0.1046	0.1238	11.2278	9.9266	13.3895	0.7196

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
55	08	1	HSGPA	0.0000	0.3751	9.1112	11.5635	9.5740	0.0382	0.2294	7.4688	7.4435	7.8816	0.1672
55	08	2	SAT-CR	0.0000	9.1112	4,539.8036	2,538.3047	2,666.3358	0.1948	7.4688	2,686.5534	1,395.4979	1,564.7909	8.1754
55	08	3	SAT-M	0.0000	11.5635	2,538.3047	5,258.3145	2,136.9132	-3.4107	7.4435	1,395.4979	2,892.7971	1,147.2507	11.3004
55	08	4	SAT-W	0.0000	9.5740	2,666.3358	2,136.9132	4,421.1647	4.2142	7.8816	1,564.7909	1,147.2507	2,480.9926	12.9660
55	08	5	Female	0.5974	0.0382	0.1948	-3.4107	4.2142	0.2411	0.0154	0.0784	-1.3730	1.6965	0.0651
55	08	6	Female*HSGPA	0.0381	0.2294	7.4688	7.4435	7.8816	0.0154	0.2280	7.4614	7.5734	7.7212	0.1153
55	08	7	Female*SAT-CR	0.1943	7.4688	2,686.5534	1,395.4979	1,564.7909	0.0784	7.4614	2,686.5156	1,396.1607	1,563.9719	7.3239
55	08	8	Female*SAT-M	-3.4019	7.4435	1,395.4979	2,892.7971	1,147.2507	-1.3730	7.5734	1,396.1607	2,881.1944	1,161.5868	9.3403
55	08	9	Female*SAT-W	4.2034	7.8816	1,564.7909	1,147.2507	2,480.9926	1.6965	7.7212	1,563.9719	1,161.5868	2,463.2790	11.0237
55	08	10	FYGPA	2.4556	0.1672	8.1754	11.3004	12.9660	0.0651	0.1153	7.3239	9.3403	11.0237	0.6427
56	06	1	HSGPA	0.0000	0.1937	6.6237	7.1562	8.3214	0.0652	0.0801	4.8254	3.4071	4.3100	0.0758
56	06	2	SAT-CR	0.0000	6.6237	6,942.6962	2,560.7177	4,849.8007	7.3080	4.8254	3,634.9672	1,465.5306	2,636.4037	14.4205
56	06	3	SAT-M	0.0000	7.1562	2,560.7177	5,188.9991	2,616.2890	-2.8517	3.4071	1,465.5306	2,491.0922	1,309.6277	11.2954
56	06	4	SAT-W	0.0000	8.3214	4,849.8007	2,616.2890	6,352.7800	9.2855	4.3100	2,636.4037	1,309.6277	3,254.9293	14.6749
56	06	5	Female	0.4972	0.0652	7.3080	-2.8517	9.2855	0.2507	0.0328	3.6746	-1.4339	4.6690	0.0552
56	06	6	Female*HSGPA	0.0650	0.0801	4.8254	3.4071	4.3100	0.0328	0.0758	4.3502	3.5925	3.7063	0.0384
56	06	7	Female*SAT-CR	7.2873	4.8254	3,634.9672	1,465.5306	2,636.4037	3.6746	4.3502	3,581.7115	1,486.3122	2,568.7368	7.9263
56	06	8	Female*SAT-M	-2.8437	3.4071	1,465.5306	2,491.0922	1,309.6277	-1.4339	3.5925	1,486.3122	2,482.9827	1,336.0329	5.2259
56	06	9	Female*SAT-W	9.2593	4.3100	2,636.4037	1,309.6277	3,254.9293	4.6690	3.7063	2,568.7368	1,336.0329	3,168.9516	7.2721
56	06	10	FYGPA	3.2793	0.0758	14.4205	11.2954	14.6749	0.0552	0.0384	7.9263	5.2259	7.2721	0.1949
56	07	1	HSGPA	0.0000	0.1463	5.0114	3.7480	3.3696	0.0274	0.0753	3.9779	3.8719	3.6386	0.0535
56	07	2	SAT-CR	0.0000	5.0114	6,136.6822	1,741.6334	3,815.2325	6.4768	3.9779	3,045.4180	1,185.6880	1,993.1540	11.3839
56	07	3	SAT-M	0.0000	3.7480	1,741.6334	4,365.2544	1,993.3149	-3.0156	3.8719	1,185.6880	2,423.6588	1,149.3727	3.8071
56	07	4	SAT-W	0.0000	3.3696	3,815.2325	1,993.3149	5,618.7033	8.2941	3.6386	1,993.1540	1,149.3727	2,930.2416	9.9795
56	07	5	Female	0.5559	0.0274	6.4768	-3.0156	8.2941	0.2476	0.0122	2.8766	-1.3393	3.6837	0.0492
56	07	6	Female*HSGPA	0.0273	0.0753	3.9779	3.8719	3.6386	0.0122	0.0746	3.8010	3.9543	3.4120	0.0387
56	07	7	Female*SAT-CR	6.4588	3.9779	3,045.4180	1,185.6880	1,993.1540	2.8766	3.8010	3,003.5856	1,205.1649	1,939.5842	5.7187
56	07	8	Female*SAT-M	-3.0072	3.8719	1,185.6880	2,423.6588	1,149.3727	-1.3393	3.9543	1,205.1649	2,414.5904	1,174.3145	3.2302
56	07	9	Female*SAT-W	8.2710	3.6386	1,993.1540	1,149.3727	2,930.2416	3.6837	3.4120	1,939.5842	1,174.3145	2,861.6411	5.4984
56	07	10	FYGPA	3.2865	0.0535	11.3839	3.8071	9.9795	0.0492	0.0387	5.7187	3.2302	5.4984	0.1657
56	08	1	HSGPA	0.0000	0.1466	6.4396	4.9252	4.8560	0.0041	0.0743	4.9055	3.6717	3.5931	0.0620
56	08	2	SAT-CR	0.0000	6.4396	5,561.6575	2,070.8170	3,328.5756	1.7643	4.9055	2,832.7124	922.5253	1,665.4551	13.9237
56	08	3	SAT-M	0.0000	4.9252	2,070.8170	4,551.7153	1,903.1808	-4.1353	3.6717	922.5253	2,286.4457	915.4312	10.0227
56	08	4	SAT-W	0.0000	4.8560	3,328.5756	1,903.1808	5,625.1166	4.8138	3.5931	1,665.4551	915.4312	2,685.2414	14.9155
56	08	5	Female	0.5281	0.0041	1.7643	-4.1353	4.8138	0.2500	0.0019	0.8325	-1.9513	2.2715	0.0245
56	08	6	Female*HSGPA	0.0041	0.0743	4.9055	3.6717	3.5931	0.0019	0.0743	4.8983	3.6886	3.5734	0.0324
56	08	7	Female*SAT-CR	1.7588	4.9055	2,832.7124	922.5253	1,665.4551	0.8325	4.8983	2,829.6094	929.7984	1,656.9887	6.5062
56	08	8	Female*SAT-M	-4.1224	3.6717	922.5253	2,286.4457	915.4312	-1.9513	3.6886	929.7984	2,269.3985	935.2753	5.1214
56	08	9	Female*SAT-W	4.7987	3.5931	1,665.4551	915.4312	2,685.2414	2.2715	3.5734	1,656.9887	935.2753	2,662.1414	7.3672
56	08	10	FYGPA	3.3066	0.0620	13.9237	10.0227	14.9155	0.0245	0.0324	6.5062	5.1214	7.3672	0.1688



## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
57	07	1	HSGPA	0.0000	0.2033	5.7197	6.0661	8.3782	0.0643	0.0994	2.8176	3.8553	3.8698	0.1268
57	07	2	SAT-CR	0.0000	5.7197	6,674.7320	3,003.0758	4,561.5223	-0.3423	2.8176	3,618.9089	1,505.9001	2,251.9461	16.4205
57	07	3	SAT-M	0.0000	6.0661	3,003.0758	6,280.8147	3,192.4041	-5.8348	3.8553	1,505.9001	2,976.6264	1,757.0885	12.6768
57	07	4	SAT-W	0.0000	8.3782	4,561.5223	3,192.4041	6,394.0743	3.5299	3.8698	2,251.9461	1,757.0885	2,931.2264	18.2435
57	07	5	Female	0.5050	0.0643	-0.3423	-5.8348	3.5299	0.2506	0.0318	-0.1694	-2.8881	1.7472	0.0739
57	07	6	Female*HSGPA	0.0641	0.0994	2.8176	3.8553	3.8698	0.0318	0.0953	2.8396	4.2295	3.6434	0.0600
57	07	7	Female*SAT-CR	-0.3415	2.8176	3,618.9089	1,505.9001	2,251.9461	-0.1694	2.8396	3,618.7920	1,503.9077	2,253.1515	10.3605
57	07	8	Female*SAT-M	-5.8202	3.8553	1,505.9001	2,976.6264	1,757.0885	-2.8881	4.2295	1,503.9077	2,942.6666	1,777.6334	8.7622
57	07	9	Female*SAT-W	3.5211	3.8698	2,251.9461	1,757.0885	2,931.2264	1.7472	3.6434	2,253.1515	1,777.6334	2,918.7973	10.7261
57	07	10	FYGPA	3.0223	0.1268	16.4205	12.6768	18.2435	0.0739	0.0600	10.3605	8.7622	10.7261	0.3759
58	06	1	HSGPA	0.0000	0.2110	4.7783	7.2200	6.5828	0.0352	0.1058	3.4684	4.5585	4.2101	0.1442
58	06	2	SAT-CR	0.0000	4.7783	7,178.9884	3,554.0569	4,952.9491	-2.7402	3.4684	3,887.6571	1,854.3785	2,559.2260	15.4249
58	06	3	SAT-M	0.0000	7.2200	3,554.0569	6,259.7687	3,234.0418	-7.6310	4.5585	1,854.3785	3,341.6654	1,690.9981	15.3082
58	06	4	SAT-W	0.0000	6.5828	4,952.9491	3,234.0418	6,265.2764	1.2792	4.2101	2,559.2260	1,690.9981	3,264.9309	17.3057
58	06	5	Female	0.5670	0.0352	-2.7402	-7.6310	1.2792	0.2456	0.0152	-1.1865	-3.3042	0.5539	0.0642
58	06	6	Female*HSGPA	0.0352	0.1058	3.4684	4.5585	4.2101	0.0152	0.1046	3.5647	4.8268	4.1651	0.0686
58	06	7	Female*SAT-CR	-2.7392	3.4684	3,887.6571	1,854.3785	2,559.2260	-1.1865	3.5647	3,880.1512	1,833.4756	2,562.7300	9.9415
58	06	8	Female*SAT-M	-7.6282	4.5585	1,854.3785	3,341.6654	1,690.9981	-3.3042	4.8268	1,833.4756	3,283.4541	1,700.7561	10.2522
58	06	9	Female*SAT-W	1.2787	4.2101	2,559.2260	1,690.9981	3,264.9309	0.5539	4.1651	2,562.7300	1,700.7561	3,263.2952	10.5823
58	06	10	FYGPA	2.5814	0.1442	15.4249	15.3082	17.3057	0.0642	0.0686	9.9415	10.2522	10.5823	0.9803
58	07	1	HSGPA	0.0000	0.2163	5.1711	7.8317	7.6183	0.0296	0.1191	3.4374	4.4062	4.4805	0.1612
58	07	2	SAT-CR	0.0000	5.1711	6,505.9961	3,073.1627	4,484.0446	-2.2359	3.4374	3,528.7218	1,598.3589	2,490.1171	17.9261
58	07	3	SAT-M	0.0000	7.8317	3,073.1627	5,947.1534	2,873.6069	-9.2271	4.4062	1,598.3589	3,163.6583	1,579.4017	17.6747
58	07	4	SAT-W	0.0000	7.6183	4,484.0446	2,873.6069	6,053.6260	2.3926	4.4805	2,490.1171	1,579.4017	3,379.8141	21.5559
58	07	5	Female	0.5775	0.0296	-2.2359	-9.2271	2.3926	0.2441	0.0125	-0.9447	-3.8986	1.0109	0.0579
58	07	6	Female*HSGPA	0.0296	0.1191	3.4374	4.4062	4.4805	0.0125	0.1182	3.5036	4.6795	4.4097	0.0905
58	07	7	Female*SAT-CR	-2.2350	3.4374	3,528.7218	1,598.3589	2,490.1171	-0.9447	3.5036	3,523.7246	1,577.7363	2,495.4645	11.0050
58	07	8	Female*SAT-M	-9.2235	4.4062	1,598.3589	3,163.6583	1,579.4017	-3.8986	4.6795	1,577.7363	3,078.5519	1,601.4697	10.4024
58	07	9	Female*SAT-W	2.3917	4.4805	2,490.1171	1,579.4017	3,379.8141	1.0109	4.4097	2,495.4645	1,601.4697	3,374.0918	12.4890
58	07	10	FYGPA	2.5494	0.1612	17.9261	17.6747	21.5559	0.0579	0.0905	11.0050	10.4024	12.4890	0.9249
58	08	1	HSGPA	0.0000	0.2068	5.5666	7.1299	6.6649	0.0267	0.1094	3.0677	3.8765	3.2615	0.1570
58	08	2	SAT-CR	0.0000	5.5666	6,662.4901	3,157.6156	4,586.6066	-1.8838	3.0677	3,601.9084	1,597.3544	2,516.8925	16.3174
58	08	3	SAT-M	0.0000	7.1299	3,157.6156	6,095.4472	3,033.6311	-9.5815	3.8765	1,597.3544	3,161.9924	1,651.0755	15.9441
58	08	4	SAT-W	0.0000	6.6649	4,586.6066	3,033.6311	6,133.9992	2.1463	3.2615	2,516.8925	1,651.0755	3,415.2646	18.0938
58	08	5	Female	0.5707	0.0267	-1.8838	-9.5815	2.1463	0.2451	0.0115	-0.8087	-4.1132	0.9214	0.0654
58	08	6	Female*HSGPA	0.0267	0.1094	3.0677	3.8765	3.2615	0.0115	0.1087	3.1180	4.1324	3.2042	0.0870
58	08	7	Female*SAT-CR	-1.8831	3.0677	3,601.9084	1,597.3544	2,516.8925	-0.8087	3.1180	3,598.3610	1,579.3116	2,520.9341	9.9658
58	08	8	Female*SAT-M	-9.5778	3.8765	1,597.3544	3,161.9924	1,651.0755	-4.1132	4.1324	1,579.3116	3,070.2226	1,671.6319	10.0210
58	08	9	Female*SAT-W	2.1454	3.2615	2,516.8925	1,651.0755	3,415.2646	0.9214	3.2042	2,520.9341	1,671.6319	3,410.6599	9.9831
58	08	10	FYGPA	2.6469	0.1570	16.3174	15.9441	18.0938	0.0654	0.0870	9.9658	10.0210	9.9831	0.9153

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
59	06	1	HSGPA	0.0000	0.1898	7.4774	8.3513	9.5505	0.0256	0.0818	4.0940	3.8278	4.5339	0.0938
59	06	2	SAT-CR	0.0000	7.4774	6,661.1505	3,327.5858	4,862.9154	-1.8816	4.0940	3,367.7476	1,815.6378	2,490.6028	9.4510
59	06	3	SAT-M	0.0000	8.3513	3,327.5858	6,647.0381	3,343.3788	-11.3534	3.8278	1,815.6378	3,404.4598	1,788.6733	9.3991
59	06	4	SAT-W	0.0000	9.5505	4,862.9154	3,343.3788	6,679.4967	1.5462	4.5339	2,490.6028	1,788.6733	3,222.9356	12.2441
59	06	5	Female	0.4832	0.0256	-1.8816	-11.3534	1.5462	0.2498	0.0132	-0.9725	-5.8677	0.7991	0.0325
59	06	6	Female*HSGPA	0.0256	0.0818	4.0940	3.8278	4.5339	0.0132	0.0811	4.1421	4.1179	4.4943	0.0383
59	06	7	Female*SAT-CR	-1.8811	4.0940	3,367.7476	1,815.6378	2,490.6028	-0.9725	4.1421	3,364.2081	1,794.2809	2,493.5113	5.3834
59	06	8	Female*SAT-M	-11.3503	3.8278	1,815.6378	3,404.4598	1,788.6733	-5.8677	4.1179	1,794.2809	3,275.5953	1,806.2229	5.2008
59	06	9	Female*SAT-W	1.5458	4.5339	2,490.6028	1,788.6733	3,222.9356	0.7991	4.4943	2,493.5113	1,806.2229	3,220.5456	6.5281
59	06	10	FYGPA	3.1694	0.0938	9.4510	9.3991	12.2441	0.0325	0.0383	5.3834	5.2008	6.5281	0.3065
59	07	1	HSGPA	0.0000	0.1342	4.3742	4.8556	5.1135	0.0183	0.0605	1.7063	2.0019	1.8837	0.0609
59	07	2	SAT-CR	0.0000	4.3742	6,185.3928	2,809.3659	4,254.4013	-2.4060	1.7063	3,131.6839	1,498.4119	2,190.4408	9.8935
59	07	3	SAT-M	0.0000	4.8556	2,809.3659	6,075.3678	2,802.6028	-11.9136	2.0019	1,498.4119	3,113.9741	1,451.5977	7.5187
59	07	4	SAT-W	0.0000	5.1135	4,254.4013	2,802.6028	5,999.9401	0.3983	1.8837	2,190.4408	1,451.5977	2,934.4467	10.6932
59	07	5	Female	0.4951	0.0183	-2.4060	-11.9136	0.3983	0.2500	0.0092	-1.2148	-6.0150	0.2011	0.0295
59	07	6	Female*HSGPA	0.0183	0.0605	1.7063	2.0019	1.8837	0.0092	0.0602	1.7503	2.2195	1.8764	0.0233
59	07	7	Female*SAT-CR	-2.4054	1.7063	3,131.6839	1,498.4119	2,190.4408	-1.2148	1.7503	3,125.8965	1,469.7554	2,191.3989	4.9909
59	07	8	Female*SAT-M	-11.9102	2.0019	1,498.4119	3,113.9741	1,451.5977	-6.0150	2.2195	1,469.7554	2,972.0807	1,456.3419	3.6878
59	07	9	Female*SAT-W	0.3982	1.8837	2,190.4408	1,451.5977	2,934.4467	0.2011	1.8764	2,191.3989	1,456.3419	2,934.2881	5.4388
59	07	10	FYGPA	3.2566	0.0609	9.8935	7.5187	10.6932	0.0295	0.0233	4.9909	3.6878	5.4388	0.2628
59	08	1	HSGPA	0.0000	0.1352	3.7113	5.0165	5.2125	0.0146	0.0626	2.0307	2.6737	2.4610	0.0567
59	08	2	SAT-CR	0.0000	3.7113	6,448.0363	2,572.3930	4,218.4023	-3.5317	2.0307	3,201.9121	1,440.4304	2,199.1227	8.4567
59	08	3	SAT-M	0.0000	5.0165	2,572.3930	5,959.7889	2,480.2580	-11.3522	2.6737	1,440.4304	3,026.5307	1,420.2780	8.1269
59	08	4	SAT-W	0.0000	5.2125	4,218.4023	2,480.2580	5,962.1646	1.4139	2.4610	2,199.1227	1,420.2780	3,082.8706	11.5716
59	08	5	Female	0.4962	0.0146	-3.5317	-11.3522	1.4139	0.2501	0.0074	-1.7794	-5.7195	0.7124	0.0294
59	08	6	Female*HSGPA	0.0146	0.0626	2.0307	2.6737	2.4610	0.0074	0.0624	2.0822	2.8396	2.4403	0.0254
59	08	7	Female*SAT-CR	-3.5307	2.0307	3,201.9121	1,440.4304	2,199.1227	-1.7794	2.0822	3,189.4427	1,400.3497	2,204.1148	4.1854
59	08	8	Female*SAT-M	-11.3487	2.6737	1,440.4304	3,026.5307	1,420.2780	-5.7195	2.8396	1,400.3497	2,897.6984	1,436.3241	4.4083
59	08	9	Female*SAT-W	1.4135	2.4610	2,199.1227	1,420.2780	3,082.8706	0.7124	2.4403	2,204.1148	1,436.3241	3,080.8720	5.4220
59	08	10	FYGPA	3.2751	0.0567	8.4567	8.1269	11.5716	0.0294	0.0254	4.1854	4.4083	5.4220	0.2401
60	06	1	HSGPA	0.0000	0.2586	4.4485	7.6078	6.7212	0.0328	0.1311	2.8441	3.8347	3.5952	0.0754
60	06	2	SAT-CR	0.0000	4.4485	5,825.2971	2,831.8993	3,913.8099	-2.7298	2.8441	2,773.1824	1,318.8755	1,899.6250	5.7553
60	06	3	SAT-M	0.0000	7.6078	2,831.8993	6,181.8028	2,698.5029	-11.6285	3.8347	1,318.8755	2,919.7374	1,297.0006	1.9839
60	06	4	SAT-W	0.0000	6.7212	3,913.8099	2,698.5029	5,513.8697	1.5017	3.5952	1,899.6250	1,297.0006	2,680.9080	8.4205
60	06	5	Female	0.4922	0.0328	-2.7298	-11.6285	1.5017	0.2501	0.0167	-1.3863	-5.9053	0.7626	0.0544
60	06	6	Female*HSGPA	0.0328	0.1311	2.8441	3.8347	3.5952	0.0167	0.1300	2.9336	4.2159	3.5460	0.0383
60	06	7	Female*SAT-CR	-2.7278	2.8441	2,773.1824	1,318.8755	1,899.6250	-1.3863	2.9336	2,765.7361	1,287.1558	1,903.7212	4.0129
60	06	8	Female*SAT-M	-11.6198	3.8347	1,318.8755	2,919.7374	1,297.0006	-5.9053	4.2159	1,287.1558	2,784.6173	1,314.4497	2.0144
60	06	9	Female*SAT-W	1.5005	3.5952	1,899.6250	1,297.0006	2,680.9080	0.7626	3.5460	1,903.7212	1,314.4497	2,678.6546	4.6037
60	06	10	FYGPA	2.7988	0.0754	5.7553	1.9839	8.4205	0.0544	0.0383	4.0129	2.0144	4.6037	0.4253

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
60	07	1	HSGPA	0.0000	0.2494	4.8163	3.9194	6.2969	0.0366	0.1187	3.1346	2.9153	4.0725	0.1286
60	07	2	SAT-CR	0.0000	4.8163	5,903.8587	2,676.9864	3,925.0601	-1.9408	3.1346	2,612.6152	1,230.6818	1,783.8265	6.1072
60	07	3	SAT-M	0.0000	3.9194	2,676.9864	6,230.0712	2,658.9430	-12.7396	2.9153	1,230.6818	2,891.5438	1,297.1488	5.0435
60	07	4	SAT-W	0.0000	6.2969	3,925.0601	2,658.9430	5,509.0960	1.0628	4.0725	1,783.8265	1,297.1488	2,519.4697	9.7901
60	07	5	Female	0.4585	0.0366	-1.9408	-12.7396	1.0628	0.2485	0.0198	-1.0509	-6.8984	0.5755	0.0761
60	07	6	Female*HSGPA	0.0365	0.1187	3.1346	2.9153	4.0725	0.0198	0.1173	3.2055	3.3807	4.0337	0.0681
60	07	7	Female*SAT-CR	-1.9394	3.1346	2,612.6152	1,230.6818	1,783.8265	-1.0509	3.2055	2,608.8512	1,205.9742	1,785.8877	4.3675
60	07	8	Female*SAT-M	-12.7308	2.9153	1,230.6818	2,891.5438	1,297.1488	-6.8984	3.3807	1,205.9742	2,729.3588	1,310.6791	4.7139
60	07	9	Female*SAT-W	1.0621	4.0725	1,783.8265	1,297.1488	2,519.4697	0.5755	4.0337	1,785.8877	1,310.6791	2,518.3409	6.4711
60	07	10	FYGPA	2.6425	0.1286	6.1072	5.0435	9.7901	0.0761	0.0681	4.3675	4.7139	6.4711	0.7312
60	08	1	HSGPA	0.0000	0.2537	4.8387	6.0546	7.9228	0.0422	0.1222	2.0616	3.7849	3.7439	0.1272
60	08	2	SAT-CR	0.0000	4.8387	5,946.3166	2,725.7942	4,129.6541	-2.0031	2.0616	2,733.2644	1,326.5676	1,985.1052	3.1819
60	08	3	SAT-M	0.0000	6.0546	2,725.7942	5,730.6998	2,460.3703	-9.4419	3.7849	1,326.5676	2,785.8230	1,274.3063	-0.3746
60	08	4	SAT-W	0.0000	7.9228	4,129.6541	2,460.3703	5,841.0399	3.0001	3.7439	1,985.1052	1,274.3063	2,851.1452	9.9318
60	08	5	Female	0.4807	0.0422	-2.0031	-9.4419	3.0001	0.2498	0.0219	-1.0402	-4.9029	1.5579	0.0982
60	08	6	Female*HSGPA	0.0422	0.1222	2.0616	3.7849	3.7439	0.0219	0.1204	2.1461	4.1833	3.6173	0.0575
60	08	7	Female*SAT-CR	-2.0017	2.0616	2,733.2644	1,326.5676	1,985.1052	-1.0402	2.1461	2,729.2549	1,307.6683	1,991.1104	2.6701
60	08	8	Female*SAT-M	-9.4350	3.7849	1,326.5676	2,785.8230	1,274.3063	-4.9029	4.1833	1,307.6683	2,696.7392	1,302.6124	1.9313
60	08	9	Female*SAT-W	2.9979	3.7439	1,985.1052	1,274.3063	2,851.1452	1.5579	3.6173	1,991.1104	1,302.6124	2,842.1511	5.9396
60	08	10	FYGPA	2.6826	0.1272	3.1819	-0.3746	9.9318	0.0982	0.0575	2.6701	1.9313	5.9396	0.6802
61	06	1	HSGPA	0.0000	0.2303	5.2004	5.2116	6.7289	0.0548	0.1308	3.5526	3.8639	3.7564	0.1397
61	06	2	SAT-CR	0.0000	5.2004	5,063.4395	2,260.5200	3,480.5652	-1.6756	3.5526	2,731.0711	1,325.4898	1,972.0481	9.5282
61	06	3	SAT-M	0.0000	5.2116	2,260.5200	5,868.3663	2,295.9230	-9.1798	3.8639	1,325.4898	3,105.9000	1,369.3657	9.0235
61	06	4	SAT-W	0.0000	6.7289	3,480.5652	2,295.9230	5,207.4723	1.5722	3.7564	1,972.0481	1,369.3657	3,012.4453	12.5785
61	06	5	Female	0.5851	0.0548	-1.6756	-9.1798	1.5722	0.2431	0.0228	-0.6953	-3.8091	0.6524	0.0706
61	06	6	Female*HSGPA	0.0548	0.1308	3.5526	3.8639	3.7564	0.0228	0.1278	3.6444	4.3666	3.6703	0.0703
61	06	7	Female*SAT-CR	-1.6732	3.5526	2,731.0711	1,325.4898	1,972.0481	-0.6953	3.6444	2,728.2675	1,310.1298	1,974.6787	6.3997
61	06	8	Female*SAT-M	-9.1671	3.8639	1,325.4898	3,105.9000	1,369.3657	-3.8091	4.3666	1,310.1298	3,021.7471	1,383.7780	7.7437
61	06	9	Female*SAT-W	1.5700	3.7564	1,972.0481	1,369.3657	3,012.4453	0.6524	3.6703	1,974.6787	1,383.7780	3,009.9770	8.4975
61	06	10	FYGPA	2.7298	0.1397	9.5282	9.0235	12.5785	0.0706	0.0703	6.3997	7.7437	8.4975	0.5791
61	07	1	HSGPA	0.0000	0.2332	3.4797	6.8942	6.7294	0.0565	0.1149	2.7597	4.7376	4.5628	0.1754
61	07	2	SAT-CR	0.0000	3.4797	5,675.1912	2,412.2097	4,000.4171	-0.7578	2.7597	2,991.4102	1,338.1479	2,095.7437	11.4634
61	07	3	SAT-M	0.0000	6.8942	2,412.2097	5,726.5241	2,617.8100	-8.9388	4.7376	1,338.1479	3,017.3901	1,485.6765	10.9183
61	07	4	SAT-W	0.0000	6.7294	4,000.4171	2,617.8100	5,515.6904	2.5141	4.5628	2,095.7437	1,485.6765	3,047.7541	12.8170
61	07	5	Female	0.5442	0.0565	-0.7578	-8.9388	2.5141	0.2484	0.0257	-0.3454	-4.0741	1.1458	0.0842
61	07	6	Female*HSGPA	0.0564	0.1149	2.7597	4.7376	4.5628	0.0257	0.1117	2.8024	5.2414	4.4210	0.0935
61	07	7	Female*SAT-CR	-0.7567	2.7597	2,991.4102	1,338.1479	2,095.7437	-0.3454	2.8024	2,990.8367	1,331.3838	2,097.6461	7.6340
61	07	8	Female*SAT-M	-8.9254	4.7376	1,338.1479	3,017.3901	1,485.6765	-4.0741	5.2414	1,331.3838	2,937.6070	1,508.1158	7.4890
61	07	9	Female*SAT-W	2.5103	4.5628	2,095.7437	1,485.6765	3,047.7541	1.1458	4.4210	2,097.6461	1,508.1158	3,041.4430	7.6266
61	07	10	FYGPA	2.6947	0.1754	11.4634	10.9183	12.8170	0.0842	0.0935	7.6340	7.4890	7.6266	0.7839

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
61	08	1	HSGPA	0.0000	0.2369	7.5738	7.0388	9.9668	0.0475	0.1181	4.4533	4.4170	5.1929	0.1658
61	08	2	SAT-CR	0.0000	7.5738	5,725.0075	2,609.4284	3,973.9388	-0.4290	4.4533	3,114.5317	1,496.3534	2,261.6305	14.1143
61	08	3	SAT-M	0.0000	7.0388	2,609.4284	5,825.8878	2,702.4331	-8.2865	4.4170	1,496.3534	2,879.8843	1,554.9537	12.6710
61	08	4	SAT-W	0.0000	9.9668	3,973.9388	2,702.4331	5,678.8269	3.4435	5.1929	2,261.6305	1,554.9537	3,132.4647	15.2725
61	08	5	Female	0.5342	0.0475	-0.4290	-8.2865	3.4435	0.2491	0.0221	-0.1998	-3.8600	1.6040	0.0907
61	08	6	Female*HSGPA	0.0475	0.1181	4.4533	4.4170	5.1929	0.0221	0.1159	4.4736	4.8104	5.0294	0.0885
61	08	7	Female*SAT-CR	-0.4284	4.4533	3,114.5317	1,496.3534	2,261.6305	-0.1998	4.4736	3,114.3479	1,492.8033	2,263.1057	8.2828
61	08	8	Female*SAT-M	-8.2760	4.4170	1,496.3534	2,879.8843	1,554.9537	-3.8600	4.8104	1,492.8033	2,811.3051	1,583.4517	8.2284
61	08	9	Female*SAT-W	3.4391	5.1929	2,261.6305	1,554.9537	3,132.4647	1.6040	5.0294	2,263.1057	1,583.4517	3,120.6223	8.0057
61	08	10	FYGPA	2.7995	0.1658	14.1143	12.6710	15.2725	0.0907	0.0885	8.2828	8.2284	8.0057	0.6350
62	06	1	HSGPA	0.0000	0.1755	5.8708	6.5404	6.9702	0.0266	0.0898	3.3702	3.5316	3.7564	0.0896
62	06	2	SAT-CR	0.0000	5.8708	7,470.6621	3,600.6969	5,276.5395	-2.5705	3.3702	4,023.6963	1,959.1344	2,864.1355	14.9974
62	06	3	SAT-M	0.0000	6.5404	3,600.6969	6,933.6939	3,297.8074	-11.4808	3.5316	1,959.1344	3,528.7096	1,778.1083	13.7639
62	06	4	SAT-W	0.0000	6.9702	5,276.5395	3,297.8074	6,659.8077	1.2520	3.7564	2,864.1355	1,778.1083	3,473.6373	16.0326
62	06	5	Female	0.5237	0.0266	-2.5705	-11.4808	1.2520	0.2495	0.0127	-1.2244	-5.4685	0.5963	0.0299
62	06	6	Female*HSGPA	0.0266	0.0898	3.3702	3.5316	3.7564	0.0127	0.0891	3.4387	3.8375	3.7230	0.0465
62	06	7	Female*SAT-CR	-2.5697	3.3702	4,023.6963	1,959.1344	2,864.1355	-1.2244	3.4387	4,017.0908	1,929.6317	2,867.3527	8.9176
62	06	8	Female*SAT-M	-11.4775	3.5316	1,959.1344	3,528.7096	1,778.1083	-5.4685	3.8375	1,929.6317	3,396.9381	1,792.4780	7.9646
62	06	9	Female*SAT-W	1.2516	3.7564	2,864.1355	1,778.1083	3,473.6373	0.5963	3.7230	2,867.3527	1,792.4780	3,472.0703	9.1260
62	06	10	FYGPA	3.0098	0.0896	14.9974	13.7639	16.0326	0.0299	0.0465	8.9176	7.9646	9.1260	0.4400
64	06	1	HSGPA	0.0000	0.2621	7.6569	10.9050	9.2129	0.0376	0.1280	3.5698	4.8768	4.2421	0.1575
64	06	2	SAT-CR	0.0000	7.6569	6,847.8792	3,906.2964	4,694.5231	-2.3841	3.5698	3,303.6679	1,836.2425	2,266.3379	20.3151
64	06	3	SAT-M	0.0000	10.9050	3,906.2964	7,462.3628	3,690.5975	-10.1644	4.8768	1,836.2425	3,592.6267	1,792.0714	25.4996
64	06	4	SAT-W	0.0000	9.2129	4,694.5231	3,690.5975	6,096.9510	1.6802	4.2421	2,266.3379	1,792.0714	3,025.4437	22.1886
64	06	5	Female	0.5123	0.0376	-2.3841	-10.1644	1.6802	0.2499	0.0183	-1.1628	-4.9575	0.8195	0.0355
64	06	6	Female*HSGPA	0.0376	0.1280	3.5698	4.8768	4.2421	0.0183	0.1266	3.6595	5.2591	4.1789	0.0753
64	06	7	Female*SAT-CR	-2.3834	3.5698	3,303.6679	1,836.2425	2,266.3379	-1.1628	3.6595	3,297.9857	1,812.0165	2,270.3426	10.8532
64	06	8	Female*SAT-M	-10.1617	4.8768	1,836.2425	3,592.6267	1,792.0714	-4.9575	5.2591	1,812.0165	3,489.3390	1,809.1454	13.2711
64	06	9	Female*SAT-W	1.6798	4.2421	2,266.3379	1,792.0714	3,025.4437	0.8195	4.1789	2,270.3426	1,809.1454	3,022.6213	11.4306
64	06	10	FYGPA	2.5083	0.1575	20.3151	25.4996	22.1886	0.0355	0.0753	10.8532	13.2711	11.4306	0.8980
65	08	1	HSGPA	0.0000	0.2139	11.0109	10.1595	10.3273	0.0409	0.1077	6.6456	4.4120	5.4518	0.1258
65	08	2	SAT-CR	0.0000	11.0109	5,424.3095	2,736.2170	3,624.0950	-3.6580	6.6456	3,061.7214	1,494.1350	2,072.6839	9.5990
65	08	3	SAT-M	0.0000	10.1595	2,736.2170	5,758.5876	2,815.9465	-9.2895	4.4120	1,494.1350	3,116.9167	1,554.2171	11.0632
65	08	4	SAT-W	0.0000	10.3273	3,624.0950	2,815.9465	5,720.1111	1.3170	5.4518	2,072.6839	1,554.2171	3,124.4160	11.0461
65	08	5	Female	0.5425	0.0409	-3.6580	-9.2895	1.3170	0.2487	0.0187	-1.6736	-4.2501	0.6026	0.0538
65	08	6	Female*HSGPA	0.0408	0.1077	6.6456	4.4120	5.4518	0.0187	0.1060	6.7948	4.7910	5.3981	0.0626
65	08	7	Female*SAT-CR	-3.6500	6.6456	3,061.7214	1,494.1350	2,072.6839	-1.6736	6.7948	3,048.3696	1,460.2283	2,077.4911	5.5112
65	08	8	Female*SAT-M	-9.2692	4.4120	1,494.1350	3,116.9167	1,554.2171	-4.2501	4.7910	1,460.2283	3,030.8105	1,566.4250	3.6703
65	08	9	Female*SAT-W	1.3142	5.4518	2,072.6839	1,554.2171	3,124.4160	0.6026	5.3981	2,077.4911	1,566.4250	3,122.6852	5.5467
65	08	10	FYGPA	3.2149	0.1258	9.5990	11.0632	11.0461	0.0538	0.0626	5.5112	3.6703	5.5467	0.3738

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
66	06	1	HSGPA	0.0000	0.1997	6.3947	6.8127	7.1118	0.0342	0.0887	3.4364	3.2811	3.8493	0.1428
66	06	2	SAT-CR	0.0000	6.3947	5,897.9976	3,004.9496	3,932.8198	-0.1608	3.4364	2,821.6656	1,405.6867	1,841.1517	12.4423
66	06	3	SAT-M	0.0000	6.8127	3,004.9496	6,049.5966	2,768.9118	-8.4742	3.2811	1,405.6867	2,774.0074	1,286.5994	11.6702
66	06	4	SAT-W	0.0000	7.1118	3,932.8198	2,768.9118	5,416.7770	3.5301	3.8493	1,841.1517	1,286.5994	2,589.4104	15.1398
66	06	5	Female	0.4783	0.0342	-0.1608	-8.4742	3.5301	0.2496	0.0178	-0.0839	-4.4211	1.8417	0.0885
66	06	6	Female*HSGPA	0.0341	0.0887	3.4364	3.2811	3.8493	0.0178	0.0875	3.4419	3.5705	3.7288	0.0546
66	06	7	Female*SAT-CR	-0.1607	3.4364	2,821.6656	1,405.6867	1,841.1517	-0.0839	3.4419	2,821.6397	1,404.3246	1,841.7191	6.3814
66	06	8	Female*SAT-M	-8.4713	3.2811	1,405.6867	2,774.0074	1,286.5994	-4.4211	3.5705	1,404.3246	2,702.2201	1,316.5039	6.2989
66	06	9	Female*SAT-W	3.5289	3.8493	1,841.1517	1,286.5994	2,589.4104	1.8417	3.7288	1,841.7191	1,316.5039	2,576.9531	7.5383
66	06	10	FYGPA	2.8920	0.1428	12.4423	11.6702	15.1398	0.0885	0.0546	6.3814	6.2989	7.5383	0.6847
66	07	1	HSGPA	0.0000	0.2258	5.6001	7.6675	7.1012	0.0408	0.0958	3.1692	3.9790	3.8746	0.1857
66	07	2	SAT-CR	0.0000	5.6001	5,654.4056	2,755.7921	3,827.6881	-1.6092	3.1692	2,568.0568	1,227.3435	1,758.5660	13.5426
66	07	3	SAT-M	0.0000	7.6675	2,755.7921	5,823.5812	2,731.1028	-7.9093	3.9790	1,227.3435	2,546.4123	1,262.8265	13.6832
66	07	4	SAT-W	0.0000	7.1012	3,827.6881	2,731.1028	5,276.8857	2.8932	3.8746	1,758.5660	1,262.8265	2,484.8778	17.2114
66	07	5	Female	0.4723	0.0408	-1.6092	-7.9093	2.8932	0.2493	0.0215	-0.8492	-4.1738	1.5267	0.0837
66	07	6	Female*HSGPA	0.0408	0.0958	3.1692	3.9790	3.8746	0.0215	0.0941	3.2348	4.3016	3.7566	0.0774
66	07	7	Female*SAT-CR	-1.6087	3.1692	2,568.0568	1,227.3435	1,758.5660	-0.8492	3.2348	2,565.4681	1,214.6195	1,763.2203	6.4649
66	07	8	Female*SAT-M	-7.9071	3.9790	1,227.3435	2,546.4123	1,262.8265	-4.1738	4.3016	1,214.6195	2,483.8729	1,285.7029	7.0582
66	07	9	Female*SAT-W	2.8923	3.8746	1,758.5660	1,262.8265	2,484.8778	1.5267	3.7566	1,763.2203	1,285.7029	2,476.5097	8.0892
66	07	10	FYGPA	2.7349	0.1857	13.5426	13.6832	17.2114	0.0837	0.0774	6.4649	7.0582	8.0892	0.8285
67	08	1	HSGPA	0.0000	0.3447	19.1983	21.9114	22.2291	0.0286	0.2008	9.8510	11.4666	11.9776	0.3019
67	08	2	SAT-CR	0.0000	19.1983	7,248.9448	5,121.2362	5,430.9272	-4.8901	9.8510	4,197.0833	2,725.6991	3,342.7147	24.0257
67	08	3	SAT-M	0.0000	21.9114	5,121.2362	8,381.6424	4,691.2318	-6.3558	11.4666	2,725.6991	4,352.8652	2,838.0506	30.3033
67	08	4	SAT-W	0.0000	22.2291	5,430.9272	4,691.2318	6,900.4238	1.4998	11.9776	3,342.7147	2,838.0506	4,477.8393	29.7918
67	08	5	Female	0.6291	0.0286	-4.8901	-6.3558	1.4998	0.2349	0.0106	-1.8135	-2.3571	0.5562	0.0705
67	08	6	Female*HSGPA	0.0284	0.2008	9.8510	11.4666	11.9776	0.0106	0.2000	9.9898	11.6471	11.9350	0.1866
67	08	7	Female*SAT-CR	-4.8577	9.8510	4,197.0833	2,725.6991	3,342.7147	-1.8135	9.9898	4,173.3289	2,694.8244	3,350.0002	15.1647
67	08	8	Female*SAT-M	-6.3138	11.4666	2,725.6991	4,352.8652	2,838.0506	-2.3571	11.6471	2,694.8244	4,312.7359	2,847.5199	16.8568
67	08	9	Female*SAT-W	1.4898	11.9776	3,342.7147	2,838.0506	4,477.8393	0.5562	11.9350	3,350.0002	2,847.5199	4,475.6049	18.0742
67	08	10	FYGPA	2.9666	0.3019	24.0257	30.3033	29.7918	0.0705	0.1866	15.1647	16.8568	18.0742	0.8851
68	06	1	HSGPA	0.0000	0.3111	9.6633	9.9907	15.7848	0.0738	0.1655	6.1423	5.8940	9.7519	0.1946
68	06	2	SAT-CR	0.0000	9.6633	5,236.5570	2,814.8002	3,499.7767	1.8290	6.1423	3,612.4681	2,175.0989	2,352.2643	11.8347
68	06	3	SAT-M	0.0000	9.9907	2,814.8002	7,647.7262	2,559.9971	-9.4442	5.8940	2,175.0989	4,860.0471	1,952.5822	13.5281
68	06	4	SAT-W	0.0000	15.7848	3,499.7767	2,559.9971	5,680.1821	7.1155	9.7519	2,352.2643	1,952.5822	3,450.6042	19.5917
68	06	5	Female	0.5892	0.0738	1.8290	-9.4442	7.1155	0.2434	0.0303	0.7514	-3.8798	2.9231	0.0773
68	06	6	Female*HSGPA	0.0734	0.1655	6.1423	5.8940	9.7519	0.0303	0.1601	6.0081	6.5868	9.2299	0.0859
68	06	7	Female*SAT-CR	1.8191	6.1423	3,612.4681	2,175.0989	2,352.2643	0.7514	6.0081	3,609.1408	2,192.2792	2,339.3203	12.4876
68	06	8	Female*SAT-M	-9.3931	5.8940	2,175.0989	4,860.0471	1,952.5822	-3.8798	6.5868	2,192.2792	4,771.3366	2,019.4186	8.0030
68	06	9	Female*SAT-W	7.0770	9.7519	2,352.2643	1,952.5822	3,450.6042	2.9231	9.2299	2,339.3203	2,019.4186	3,400.2482	13.9223
68	06	10	FYGPA	2.4756	0.1946	11.8347	13.5281	19.5917	0.0773	0.0859	12.4876	8.0030	13.9223	1.0458

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
68	07	1	HSGPA	0.0000	0.3218	11.9757	13.2819	13.4714	0.0524	0.1821	7.2184	8.2563	7.9372	0.2071
68	07	2	SAT-CR	0.0000	11.9757	6,488.1356	3,476.8160	4,452.8422	1.7103	7.2184	3,486.0966	1,906.5320	2,646.2024	15.9744
68	07	3	SAT-M	0.0000	13.2819	3,476.8160	6,495.5781	3,350.5563	-7.4365	8.2563	1,906.5320	3,738.5327	1,987.1896	18.7113
68	07	4	SAT-W	0.0000	13.4714	4,452.8422	3,350.5563	6,635.3598	4.1268	7.9372	2,646.2024	1,987.1896	4,047.4797	15.6034
68	07	5	Female	0.5913	0.0524	1.7103	-7.4365	4.1268	0.2427	0.0214	0.6990	-3.0393	1.6866	0.0513
68	07	6	Female*HSGPA	0.0522	0.1821	7.2184	8.2563	7.9372	0.0214	0.1793	7.1291	8.6443	7.7220	0.1430
68	07	7	Female*SAT-CR	1.7028	7.2184	3,486.0966	1,906.5320	2,646.2024	0.6990	7.1291	3,483.1843	1,919.1951	2,639.1751	11.9935
68	07	8	Female*SAT-M	-7.4042	8.2563	1,906.5320	3,738.5327	1,987.1896	-3.0393	8.6443	1,919.1951	3,683.4717	2,017.7453	15.5672
68	07	9	Female*SAT-W	4.1089	7.9372	2,646.2024	1,987.1896	4,047.4797	1.6866	7.7220	2,639.1751	2,017.7453	4,030.5230	8.3454
68	07	10	FYGPA	2.3716	0.2071	15.9744	18.7113	15.6034	0.0513	0.1430	11.9935	15.5672	8.3454	1.0213
69	07	1	HSGPA	0.0000	0.2928	17.6420	19.0738	18.4727	0.0240	0.1707	11.6888	12.8199	12.2751	0.2157
69	07	2	SAT-CR	0.0000	17.6420	7,287.8133	4,453.2000	5,159.0111	-2.4947	11.6888	4,728.1013	2,887.9426	3,350.4943	19.2309
69	07	3	SAT-M	0.0000	19.0738	4,453.2000	7,318.1307	4,038.5389	-10.7671	12.8199	2,887.9426	4,319.0588	2,546.2425	20.1516
69	07	4	SAT-W	0.0000	18.4727	5,159.0111	4,038.5389	6,270.9728	0.7029	12.2751	3,350.4943	2,546.2425	3,930.1682	22.9750
69	07	5	Female	0.6242	0.0240	-2.4947	-10.7671	0.7029	0.2347	0.0090	-0.9374	-4.0458	0.2641	0.0490
69	07	6	Female*HSGPA	0.0240	0.1707	11.6888	12.8199	12.2751	0.0090	0.1701	11.7486	13.0780	12.2582	0.1250
69	07	7	Female*SAT-CR	-2.4933	11.6888	4,728.1013	2,887.9426	3,350.4943	-0.9374	11.7486	4,721.8813	2,861.0970	3,352.2468	12.8296
69	07	8	Female*SAT-M	-10.7612	12.8199	2,887.9426	4,319.0588	2,546.2425	-4.0458	13.0780	2,861.0970	4,203.1916	2,553.8064	14.9451
69	07	9	Female*SAT-W	0.7025	12.2751	3,350.4943	2,546.2425	3,930.1682	0.2641	12.2582	3,352.2468	2,553.8064	3,929.6744	15.5200
69	07	10	FYGPA	2.5765	0.2157	19.2309	20.1516	22.9750	0.0490	0.1250	12.8296	14.9451	15.5200	1.0382
69	08	1	HSGPA	0.0000	0.2820	13.4995	16.9687	16.6023	0.0287	0.1699	8.4458	11.0550	10.1789	0.1965
69	08	2	SAT-CR	0.0000	13.4995	6,943.9306	3,950.3332	4,745.9190	-2.2270	8.4458	3,888.1881	2,114.1321	2,763.2558	16.2373
69	08	3	SAT-M	0.0000	16.9687	3,950.3332	7,105.2087	3,635.2094	-10.2954	11.0550	2,114.1321	3,969.0548	2,082.0780	17.2893
69	08	4	SAT-W	0.0000	16.6023	4,745.9190	3,635.2094	6,157.9490	1.6896	10.1789	2,763.2558	2,082.0780	3,654.6232	21.0480
69	08	5	Female	0.6063	0.0287	-2.2270	-10.2954	1.6896	0.2388	0.0113	-0.8768	-4.0536	0.6652	0.0620
69	08	6	Female*HSGPA	0.0287	0.1699	8.4458	11.0550	10.1789	0.0113	0.1690	8.5097	11.3508	10.1304	0.1096
69	08	7	Female*SAT-CR	-2.2258	8.4458	3,888.1881	2,114.1321	2,763.2558	-0.8768	8.5097	3,883.2311	2,091.2163	2,767.0166	10.7404
69	08	8	Female*SAT-M	-10.2899	11.0550	2,114.1321	3,969.0548	2,082.0780	-4.0536	11.3508	2,091.2163	3,863.1165	2,099.4638	12.1376
69	08	9	Female*SAT-W	1.6887	10.1789	2,763.2558	2,082.0780	3,654.6232	0.6652	10.1304	2,767.0166	2,099.4638	3,651.7699	13.3205
69	08	10	FYGPA	2.6324	0.1965	16.2373	17.2893	21.0480	0.0620	0.1096	10.7404	12.1376	13.3205	0.9604
70	08	1	HSGPA	0.0000	0.1638	7.6251	7.4478	8.6718	0.0312	0.0702	4.0741	3.6539	4.5474	0.0948
70	08	2	SAT-CR	0.0000	7.6251	7,570.6225	3,021.0306	5,337.9192	-4.4792	4.0741	3,664.6953	1,715.0980	2,676.3943	13.5620
70	08	3	SAT-M	0.0000	7.4478	3,021.0306	6,213.1902	2,883.3838	-11.2713	3.6539	1,715.0980	3,358.6335	1,619.6738	10.6054
70	08	4	SAT-W	0.0000	8.6718	5,337.9192	2,883.3838	7,206.4464	2.6188	4.5474	2,676.3943	1,619.6738	3,569.9122	16.7598
70	08	5	Female	0.4742	0.0312	-4.4792	-11.2713	2.6188	0.2495	0.0164	-2.3551	-5.9263	1.3770	0.0566
70	08	6	Female*HSGPA	0.0312	0.0702	4.0741	3.6539	4.5474	0.0164	0.0692	4.2140	4.0059	4.4656	0.0380
70	08	7	Female*SAT-CR	-4.4767	4.0741	3,664.6953	1,715.0980	2,676.3943	-2.3551	4.2140	3,644.6433	1,664.6398	2,688.1180	6.6137
70	08	8	Female*SAT-M	-11.2650	3.6539	1,715.0980	3,358.6335	1,619.6738	-5.9263	4.0059	1,664.6398	3,231.6624	1,649.1749	4.0928
70	08	9	Female*SAT-W	2.6174	4.5474	2,676.3943	1,619.6738	3,569.9122	1.3770	4.4656	2,688.1180	1,649.1749	3,563.0578	8.1009
70	08	10	FYGPA	3.0067	0.0948	13.5620	10.6054	16.7598	0.0566	0.0380	6.6137	4.0928	8.1009	0.4062

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
71	06	1	HSGPA	0.0000	0.1525	2.7845	1.6122	1.2665	0.0274	0.0921	2.8605	1.9839	1.9727	0.0498
71	06	2	SAT-CR	0.0000	2.7845	5,690.0989	2,021.3578	3,287.9322	0.6218	2.8605	3,656.0623	1,162.9912	2,104.4033	7.6073
71	06	3	SAT-M	0.0000	1.6122	2,021.3578	4,577.0914	2,017.0098	-7.5246	1.9839	1,162.9912	2,418.3070	950.6213	7.1911
71	06	4	SAT-W	0.0000	1.2665	3,287.9322	2,017.0098	5,032.4495	2.8720	1.9727	2,104.4033	950.6213	2,747.5530	8.3882
71	06	5	Female	0.5739	0.0274	0.6218	-7.5246	2.8720	0.2452	0.0117	0.2650	-3.2065	1.2239	0.0168
71	06	6	Female*HSGPA	0.0273	0.0921	2.8605	1.9839	1.9727	0.0117	0.0913	2.8435	2.1897	1.8942	0.0266
71	06	7	Female*SAT-CR	0.6200	2.8605	3,656.0623	1,162.9912	2,104.4033	0.2650	2.8435	3,655.6768	1,167.6564	2,102.6226	5.0402
71	06	8	Female*SAT-M	-7.5032	1.9839	1,162.9912	2,418.3070	950.6213	-3.2065	2.1897	1,167.6564	2,361.8481	972.1705	5.0694
71	06	9	Female*SAT-W	2.8638	1.9727	2,104.4033	950.6213	2,747.5530	1.2239	1.8942	2,102.6226	972.1705	2,739.3281	4.8833
71	06	10	FYGPA	3.2361	0.0498	7.6073	7.1911	8.3882	0.0168	0.0266	5.0402	5.0694	4.8833	0.1772
71	08	1	HSGPA	0.0000	0.1867	4.4903	4.2736	5.4386	0.0363	0.1013	1.5654	1.7930	2.7169	0.0552
71	08	2	SAT-CR	0.0000	4.4903	4,549.0752	1,126.4067	2,567.6254	4.2014	1.5654	2,294.3757	649.5725	1,279.0298	9.0600
71	08	3	SAT-M	0.0000	4.2736	1,126.4067	3,689.5288	1,575.8640	-2.1103	1.7930	649.5725	2,077.2913	856.0638	6.0491
71	08	4	SAT-W	0.0000	5.4386	2,567.6254	1,575.8640	5,040.8738	10.8225	2.7169	1,279.0298	856.0638	2,652.7740	10.4701
71	08	5	Female	0.5188	0.0363	4.2014	-2.1103	10.8225	0.2504	0.0175	2.0219	-1.0156	5.2083	0.0461
71	08	6	Female*HSGPA	0.0362	0.1013	1.5654	1.7930	2.7169	0.0175	0.1000	1.4134	1.8694	2.3253	0.0195
71	08	7	Female*SAT-CR	4.1883	1.5654	2,294.3757	649.5725	1,279.0298	2.0219	1.4134	2,276.7790	658.4110	1,233.7022	4.6705
71	08	8	Female*SAT-M	-2.1037	1.7930	649.5725	2,077.2913	856.0638	-1.0156	1.8694	658.4110	2,072.8518	878.8312	3.2816
71	08	9	Female*SAT-W	10.7887	2.7169	1,279.0298	856.0638	2,652.7740	5.2083	2.3253	1,233.7022	878.8312	2,536.0137	5.4803
71	08	10	FYGPA	3.2809	0.0552	9.0600	6.0491	10.4701	0.0461	0.0195	4.6705	3.2816	5.4803	0.1627
72	06	1	HSGPA	0.0000	0.1770	4.9597	5.6701	5.6974	0.0208	0.0875	3.8528	4.0534	3.5086	0.1019
72	06	2	SAT-CR	0.0000	4.9597	5,564.9486	1,993.0634	3,658.3532	-3.3418	3.8528	2,902.7065	1,093.5826	1,920.4816	9.5484
72	06	3	SAT-M	0.0000	5.6701	1,993.0634	5,574.7312	1,927.8513	-10.4003	4.0534	1,093.5826	2,784.3961	1,112.4415	7.8380
72	06	4	SAT-W	0.0000	5.6974	3,658.3532	1,927.8513	5,414.0565	0.9421	3.5086	1,920.4816	1,112.4415	2,788.5375	9.9207
72	06	5	Female	0.4967	0.0208	-3.3418	-10.4003	0.9421	0.2501	0.0105	-1.6819	-5.2343	0.4741	0.0377
72	06	6	Female*HSGPA	0.0208	0.0875	3.8528	4.0534	3.5086	0.0105	0.0871	3.9223	4.2700	3.4890	0.0517
72	06	7	Female*SAT-CR	-3.3401	3.8528	2,902.7065	1,093.5826	1,920.4816	-1.6819	3.9223	2,891.5443	1,058.8439	1,923.6284	4.4872
72	06	8	Female*SAT-M	-10.3951	4.0534	1,093.5826	2,784.3961	1,112.4415	-5.2343	4.2700	1,058.8439	2,676.2834	1,122.2349	3.9597
72	06	9	Female*SAT-W	0.9416	3.5086	1,920.4816	1,112.4415	2,788.5375	0.4741	3.4890	1,923.6284	1,122.2349	2,787.6504	4.5685
72	06	10	FYGPA	2.8617	0.1019	9.5484	7.8380	9.9207	0.0377	0.0517	4.4872	3.9597	4.5685	0.4525
73	06	1	HSGPA	0.0000	0.2583	8.3769	9.2576	10.6247	0.0447	0.1635	7.2837	7.8377	7.4601	0.1546
73	06	2	SAT-CR	0.0000	8.3769	5,803.6869	2,710.7600	3,805.5445	-1.3552	7.2837	3,689.3511	1,710.1221	2,444.7538	13.0259
73	06	3	SAT-M	0.0000	9.2576	2,710.7600	5,536.1618	2,579.5132	-7.3152	7.8377	1,710.1221	3,381.1210	1,727.3155	12.2437
73	06	4	SAT-W	0.0000	10.6247	3,805.5445	2,579.5132	5,402.7453	3.5468	7.4601	2,444.7538	1,727.3155	3,407.6158	13.7627
73	06	5	Female	0.6276	0.0447	-1.3552	-7.3152	3.5468	0.2339	0.0166	-0.5046	-2.7239	1.3207	0.0713
73	06	6	Female*HSGPA	0.0447	0.1635	7.2837	7.8377	7.4601	0.0166	0.1615	7.3442	8.1644	7.3017	0.1055
73	06	7	Female*SAT-CR	-1.3543	7.2837	3,689.3511	1,710.1221	2,444.7538	-0.5046	7.3442	3,687.5159	1,700.2154	2,449.5571	10.0560
73	06	8	Female*SAT-M	-7.3104	7.8377	1,710.1221	3,381.1210	1,727.3155	-2.7239	8.1644	1,700.2154	3,327.6440	1,753.2441	10.0675
73	06	9	Female*SAT-W	3.5445	7.4601	2,444.7538	1,727.3155	3,407.6158	1.3207	7.3017	2,449.5571	1,753.2441	3,395.0442	9.3797
73	06	10	FYGPA	2.7307	0.1546	13.0259	12.2437	13.7627	0.0713	0.1055	10.0560	10.0675	9.3797	0.4976

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
73	07	1	HSGPA	0.0000	0.2695	7.6587	7.8215	10.4861	0.0508	0.1602	5.2793	6.1430	6.7505	0.1865
73	07	2	SAT-CR	0.0000	7.6587	5,512.4495	2,467.2707	3,772.7042	0.0314	5.2793	3,227.7859	1,540.9528	2,288.5874	12.7782
73	07	3	SAT-M	0.0000	7.8215	2,467.2707	5,635.1369	2,357.8188	-6.8014	6.1430	1,540.9528	3,334.6343	1,578.6256	11.2158
73	07	4	SAT-W	0.0000	10.4861	3,772.7042	2,357.8188	5,220.8051	4.0728	6.7505	2,288.5874	1,578.6256	3,212.8523	18.7263
73	07	5	Female	0.6034	0.0508	0.0314	-6.8014	4.0728	0.2395	0.0201	0.0125	-2.6976	1.6153	0.0948
73	07	6	Female*HSGPA	0.0507	0.1602	5.2793	6.1430	6.7505	0.0201	0.1576	5.2777	6.4880	6.5439	0.1153
73	07	7	Female*SAT-CR	0.0314	5.2793	3,227.7859	1,540.9528	2,288.5874	0.0125	5.2777	3,227.7849	1,541.1662	2,288.4597	8.5028
73	07	8	Female*SAT-M	-6.7972	6.1430	1,540.9528	3,334.6343	1,578.6256	-2.6976	6.4880	1,541.1662	3,288.4036	1,606.3090	10.0164
73	07	9	Female*SAT-W	4.0702	6.7505	2,288.5874	1,578.6256	3,212.8523	1.6153	6.5439	2,288.4597	1,606.3090	3,196.2753	11.5577
73	07	10	FYGPA	2.6368	0.1865	12.7782	11.2158	18.7263	0.0948	0.1153	8.5028	10.0164	11.5577	0.7375
73	08	1	HSGPA	0.0000	0.2380	5.0929	6.0002	8.5215	0.0516	0.1335	3.2651	3.8164	5.1067	0.1717
73	08	2	SAT-CR	0.0000	5.0929	5,201.2436	2,213.8151	3,415.1055	-2.4923	3.2651	2,899.2061	1,080.2505	1,927.3855	10.7449
73	08	3	SAT-M	0.0000	6.0002	2,213.8151	4,974.2092	2,037.8620	-7.6477	3.8164	1,080.2505	2,551.4985	1,108.0267	8.9619
73	08	4	SAT-W	0.0000	8.5215	3,415.1055	2,037.8620	5,004.8659	2.7604	5.1067	1,927.3855	1,108.0267	2,758.5384	17.2615
73	08	5	Female	0.5798	0.0516	-2.4923	-7.6477	2.7604	0.2438	0.0217	-1.0472	-3.2133	1.1598	0.0945
73	08	6	Female*HSGPA	0.0516	0.1335	3.2651	3.8164	5.1067	0.0217	0.1308	3.3937	4.2108	4.9643	0.0921
73	08	7	Female*SAT-CR	-2.4904	3.2651	2,899.2061	1,080.2505	1,927.3855	-1.0472	3.3937	2,892.9993	1,061.2043	1,934.2601	6.6649
73	08	8	Female*SAT-M	-7.6421	3.8164	1,080.2505	2,551.4985	1,108.0267	-3.2133	4.2108	1,061.2043	2,493.0537	1,129.1220	5.2547
73	08	9	Female*SAT-W	2.7584	5.1067	1,927.3855	1,108.0267	2,758.5384	1.1598	4.9643	1,934.2601	1,129.1220	2,750.9241	11.0222
73	08	10	FYGPA	2.7062	0.1717	10.7449	8.9619	17.2615	0.0945	0.0921	6.6649	5.2547	11.0222	0.6266
74	07	1	HSGPA	0.0000	0.2155	2.8680	6.8150	5.8101	0.0354	0.1062	1.6902	3.6169	2.7985	0.1294
74	07	2	SAT-CR	0.0000	2.8680	7,109.2153	3,631.9959	5,221.3362	-2.9911	1.6902	3,694.4400	1,871.9022	2,817.6963	18.6953
74	07	3	SAT-M	0.0000	6.8150	3,631.9959	6,932.7282	3,742.7165	-8.2672	3.6169	1,871.9022	3,522.3566	1,977.6091	24.8474
74	07	4	SAT-W	0.0000	5.8101	5,221.3362	3,742.7165	6,807.7338	1.0104	2.7985	2,817.6963	1,977.6091	3,613.4634	24.0214
74	07	5	Female	0.5116	0.0354	-2.9911	-8.2672	1.0104	0.2500	0.0173	-1.4609	-4.0378	0.4935	0.0474
74	07	6	Female*HSGPA	0.0354	0.1062	1.6902	3.6169	2.7985	0.0173	0.1050	1.7959	3.9093	2.7628	0.0604
74	07	7	Female*SAT-CR	-2.9899	1.6902	3,694.4400	1,871.9022	2,817.6963	-1.4609	1.7959	3,685.4971	1,847.1844	2,820.7173	11.4468
74	07	8	Female*SAT-M	-8.2639	3.6169	1,871.9022	3,522.3566	1,977.6091	-4.0378	3.9093	1,847.1844	3,454.0371	1,985.9590	14.7566
74	07	9	Female*SAT-W	1.0100	2.7985	2,817.6963	1,977.6091	3,613.4634	0.4935	2.7628	2,820.7173	1,985.9590	3,612.4428	13.8586
74	07	10	FYGPA	2.4532	0.1294	18.6953	24.8474	24.0214	0.0474	0.0604	11.4468	14.7566	13.8586	0.8925
74	08	1	HSGPA	0.0000	0.2198	3.7561	6.7735	6.0299	0.0322	0.1124	1.8616	3.5406	2.8479	0.1501
74	08	2	SAT-CR	0.0000	3.7561	7,585.8574	3,862.8246	5,490.6203	-2.8769	1.8616	3,940.6886	1,981.6588	2,905.8592	17.9355
74	08	3	SAT-M	0.0000	6.7735	3,862.8246	7,406.8216	3,878.4121	-9.6829	3.5406	1,981.6588	3,769.3554	2,022.4074	25.6234
74	08	4	SAT-W	0.0000	6.0299	5,490.6203	3,878.4121	7,035.5228	1.6403	2.8479	2,905.8592	2,022.4074	3,692.4742	24.0134
74	08	5	Female	0.5139	0.0322	-2.8769	-9.6829	1.6403	0.2499	0.0157	-1.3986	-4.7071	0.7974	0.0462
74	08	6	Female*HSGPA	0.0322	0.1124	1.8616	3.5406	2.8479	0.0157	0.1114	1.9542	3.8524	2.7950	0.0693
74	08	7	Female*SAT-CR	-2.8759	1.8616	3,940.6886	1,981.6588	2,905.8592	-1.3986	1.9542	3,932.4148	1,953.8117	2,910.5767	9.9943
74	08	8	Female*SAT-M	-9.6794	3.5406	1,981.6588	3,769.3554	2,022.4074	-4.7071	3.8524	1,953.8117	3,675.6301	2,038.2850	13.5841
74	08	9	Female*SAT-W	1.6397	2.8479	2,905.8592	2,022.4074	3,692.4742	0.7974	2.7950	2,910.5767	2,038.2850	3,689.7845	12.3927
74	08	10	FYGPA	2.4851	0.1501	17.9355	25.6234	24.0134	0.0462	0.0693	9.9943	13.5841	12.3927	0.9600



## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
75	06	1	HSGPA	0.0000	0.2494	14.0752	15.6946	15.7077	0.0268	0.0958	6.0112	6.5252	6.8426	0.1813
75	06	2	SAT-CR	0.0000	14.0752	7,146.5782	4,069.1718	5,157.0799	-2.5790	6.0112	2,869.3201	1,749.0523	2,132.9827	16.3866
75	06	3	SAT-M	0.0000	15.6946	4,069.1718	7,846.4485	3,973.1759	-12.4946	6.5252	1,749.0523	3,361.0650	1,695.5220	18.5718
75	06	4	SAT-W	0.0000	15.7077	5,157.0799	3,973.1759	6,702.8045	1.2020	6.8426	2,132.9827	1,695.5220	2,752.7253	19.9360
75	06	5	Female	0.4199	0.0268	-2.5790	-12.4946	1.2020	0.2436	0.0155	-1.4961	-7.2485	0.6973	0.0594
75	06	6	Female*HSGPA	0.0268	0.0958	6.0112	6.5252	6.8426	0.0155	0.0951	6.0803	6.8599	6.8104	0.0751
75	06	7	Female*SAT-CR	-2.5785	6.0112	2,869.3201	1,749.0523	2,132.9827	-1.4961	6.0803	2,862.6701	1,716.8347	2,136.0819	8.4874
75	06	8	Female*SAT-M	-12.4924	6.5252	1,749.0523	3,361.0650	1,695.5220	-7.2485	6.8599	1,716.8347	3,204.9778	1,710.5372	8.8435
75	06	9	Female*SAT-W	1.2017	6.8426	2,132.9827	1,695.5220	2,752.7253	0.6973	6.8104	2,136.0819	1,710.5372	2,751.2808	9.4174
75	06	10	FYGPA	2.7725	0.1813	16.3866	18.5718	19.9360	0.0594	0.0751	8.4874	8.8435	9.4174	0.6878
75	08	1	HSGPA	0.0000	0.2235	13.6951	13.5587	15.0646	0.0223	0.0962	6.1524	6.2455	6.4775	0.1500
75	08	2	SAT-CR	0.0000	13.6951	6,700.6112	3,558.9046	4,645.0964	-3.2075	6.1524	2,853.1929	1,641.9480	1,990.4263	13.7723
75	08	3	SAT-M	0.0000	13.5587	3,558.9046	7,205.5352	3,497.5286	-13.2803	6.2455	1,641.9480	3,401.0327	1,563.0891	14.3140
75	08	4	SAT-W	0.0000	15.0646	4,645.0964	3,497.5286	6,332.4932	2.0104	6.4775	1,990.4263	1,563.0891	2,745.7913	17.9404
75	08	5	Female	0.4541	0.0223	-3.2075	-13.2803	2.0104	0.2479	0.0122	-1.7510	-7.2498	1.0975	0.0529
75	08	6	Female*HSGPA	0.0223	0.0962	6.1524	6.2455	6.4775	0.0122	0.0957	6.2238	6.5412	6.4328	0.0659
75	08	7	Female*SAT-CR	-3.2068	6.1524	2,853.1929	1,641.9480	1,990.4263	-1.7510	6.2238	2,842.9068	1,599.3600	1,996.8733	6.7097
75	08	8	Female*SAT-M	-13.2774	6.2455	1,641.9480	3,401.0327	1,563.0891	-7.2498	6.5412	1,599.3600	3,224.7040	1,589.7819	6.6945
75	08	9	Female*SAT-W	2.0100	6.4775	1,990.4263	1,563.0891	2,745.7913	1.0975	6.4328	1,996.8733	1,589.7819	2,741.7505	8.1311
75	08	10	FYGPA	2.8859	0.1500	13.7723	14.3140	17.9404	0.0529	0.0659	6.7097	6.6945	8.1311	0.5305
76	08	1	HSGPA	0.0000	0.2016	-0.1739	6.7750	0.3936	0.0027	0.0773	1.5282	4.6041	3.2597	0.0551
76	08	2	SAT-CR	0.0000	-0.1739	6,414.9802	1,892.6550	4,055.4946	-9.2720	1.5282	2,251.0934	395.4996	1,290.5165	6.2666
76	08	3	SAT-M	0.0000	6.7750	1,892.6550	8,474.4497	1,819.3985	-17.1370	4.6041	395.4996	3,561.0442	162.9907	6.6323
76	08	4	SAT-W	0.0000	0.3936	4,055.4946	1,819.3985	5,600.1129	-3.1081	3.2597	1,290.5165	162.9907	1,860.1311	6.2919
76	08	5	Female	0.4241	0.0027	-9.2720	-17.1370	-3.1081	0.2458	0.0016	-5.3402	-9.8700	-1.7901	0.0325
76	08	6	Female*HSGPA	0.0027	0.0773	1.5282	4.6041	3.2597	0.0016	0.0773	1.5533	4.6506	3.2681	0.0313
76	08	7	Female*SAT-CR	-9.2133	1.5282	2,251.0934	395.4996	1,290.5165	-5.3402	1.5533	2,165.6684	237.6120	1,261.8806	2.8594
76	08	8	Female*SAT-M	-17.0285	4.6041	395.4996	3,561.0442	162.9907	-9.8700	4.6506	237.6120	3,269.2268	110.0640	1.8693
76	08	9	Female*SAT-W	-3.0884	3.2597	1,290.5165	162.9907	1,860.1311	-1.7901	3.2681	1,261.8806	110.0640	1,850.5319	2.2669
76	08	10	FYGPA	3.1763	0.0551	6.2666	6.6323	6.2919	0.0325	0.0313	2.8594	1.8693	2.2669	0.1804
77	06	1	HSGPA	0.0000	0.2927	16.7837	19.4888	17.7849	0.0253	0.1244	7.1872	8.1836	7.5765	0.1797
77	06	2	SAT-CR	0.0000	16.7837	7,343.7598	4,629.6428	5,530.6525	-3.1445	7.1872	3,333.5598	2,112.4457	2,567.4951	18.8537
77	06	3	SAT-M	0.0000	19.4888	4,629.6428	8,195.4003	4,377.3950	-11.7759	8.1836	2,112.4457	3,764.9051	2,037.1232	18.8996
77	06	4	SAT-W	0.0000	17.7849	5,530.6525	4,377.3950	7,155.8133	1.5185	7.5765	2,567.4951	2,037.1232	3,364.8640	21.8643
77	06	5	Female	0.4765	0.0253	-3.1445	-11.7759	1.5185	0.2496	0.0132	-1.6461	-6.1646	0.7949	0.0453
77	06	6	Female*HSGPA	0.0252	0.1244	7.1872	8.1836	7.5765	0.0132	0.1238	7.2665	8.4808	7.5382	0.0774
77	06	7	Female*SAT-CR	-3.1428	7.1872	3,333.5598	2,112.4457	2,567.4951	-1.6461	7.2665	3,323.6772	2,075.4364	2,572.2675	9.1753
77	06	8	Female*SAT-M	-11.7694	8.1836	2,112.4457	3,764.9051	2,037.1232	-6.1646	8.4808	2,075.4364	3,626.3095	2,054.9955	9.3293
77	06	9	Female*SAT-W	1.5177	7.5765	2,567.4951	2,037.1232	3,364.8640	0.7949	7.5382	2,572.2675	2,054.9955	3,362.5593	10.3677
77	06	10	FYGPA	2.9950	0.1797	18.8537	18.8996	21.8643	0.0453	0.0774	9.1753	9.3293	10.3677	0.5220

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
77	07	1	HSGPA	0.0000	0.2080	14.5722	15.4393	16.3937	0.0170	0.1043	7.7971	7.2216	8.2577	0.0561
77	07	2	SAT-CR	0.0000	14.5722	7,018.0498	4,010.8336	5,263.8774	-3.6682	7.7971	3,770.3451	2,133.1804	2,766.0118	9.6961
77	07	3	SAT-M	0.0000	15.4393	4,010.8336	7,514.0928	4,193.5804	-11.5631	7.2216	2,133.1804	3,650.7115	2,115.1459	7.9744
77	07	4	SAT-W	0.0000	16.3937	5,263.8774	4,193.5804	6,993.1152	-0.5771	8.2577	2,766.0118	2,115.1459	3,397.3698	10.5449
77	07	5	Female	0.5143	0.0170	-3.6682	-11.5631	-0.5771	0.2500	0.0082	-1.7817	-5.6164	-0.2803	0.0155
77	07	6	Female*HSGPA	0.0170	0.1043	7.7971	7.2216	8.2577	0.0082	0.1040	7.8594	7.4178	8.2675	0.0284
77	07	7	Female*SAT-CR	-3.6653	7.7971	3,770.3451	2,133.1804	2,766.0118	-1.7817	7.8594	3,756.8999	2,090.7979	2,763.8965	4.9834
77	07	8	Female*SAT-M	-11.5540	7.2216	2,133.1804	3,650.7115	2,115.1459	-5.6164	7.4178	2,090.7979	3,517.1113	2,108.4781	4.0281
77	07	9	Female*SAT-W	-0.5766	8.2577	2,766.0118	2,115.1459	3,397.3698	-0.2803	8.2675	2,763.8965	2,108.4781	3,397.0370	5.1484
77	07	10	FYGPA	3.4633	0.0561	9.6961	7.9744	10.5449	0.0155	0.0284	4.9834	4.0281	5.1484	0.0876
77	08	1	HSGPA	0.0000	0.2399	12.1552	14.2651	14.9544	0.0375	0.0981	5.4938	5.3075	6.3315	0.1572
77	08	2	SAT-CR	0.0000	12.1552	6,933.8517	3,930.3945	5,285.6924	-1.7700	5.4938	3,279.5939	1,954.6981	2,475.2489	17.5098
77	08	3	SAT-M	0.0000	14.2651	3,930.3945	7,434.3722	3,826.6781	-11.3740	5.3075	1,954.6981	3,450.4108	1,787.0179	15.9347
77	08	4	SAT-W	0.0000	14.9544	5,285.6924	3,826.6781	7,195.1754	3.2405	6.3315	2,475.2489	1,787.0179	3,275.5497	22.3002
77	08	5	Female	0.4665	0.0375	-1.7700	-11.3740	3.2405	0.2490	0.0200	-0.9443	-6.0679	1.7288	0.0514
77	08	6	Female*HSGPA	0.0375	0.0981	5.4938	5.3075	6.3315	0.0200	0.0967	5.5602	5.7342	6.2100	0.0589
77	08	7	Female*SAT-CR	-1.7690	5.4938	3,279.5939	1,954.6981	2,475.2489	-0.9443	5.5602	3,276.4629	1,934.5781	2,480.9812	8.5455
77	08	8	Female*SAT-M	-11.3674	5.3075	1,954.6981	3,450.4108	1,787.0179	-6.0679	5.7342	1,934.5781	3,321.1186	1,823.8538	7.5765
77	08	9	Female*SAT-W	3.2386	6.3315	2,475.2489	1,787.0179	3,275.5497	1.7288	6.2100	2,480.9812	1,823.8538	3,265.0550	10.2440
77	08	10	FYGPA	3.0793	0.1572	17.5098	15.9347	22.3002	0.0514	0.0589	8.5455	7.5765	10.2440	0.4391
78	06	1	HSGPA	0.0000	0.1526	5.5933	5.7714	5.9214	0.0167	0.0913	3.3729	3.4429	3.4056	0.0619
78	06	2	SAT-CR	0.0000	5.5933	5,221.3516	1,728.6046	3,184.5317	0.4117	3.3729	3,280.8273	1,019.3058	1,963.9833	12.3178
78	06	3	SAT-M	0.0000	5.7714	1,728.6046	4,796.8313	1,848.9179	-8.7432	3.4429	1,019.3058	2,799.2773	1,079.2625	8.8585
78	06	4	SAT-W	0.0000	5.9214	3,184.5317	1,848.9179	4,908.9070	2.5908	3.4056	1,963.9833	1,079.2625	2,991.7326	12.0855
78	06	5	Female	0.6357	0.0167	0.4117	-8.7432	2.5908	0.2317	0.0061	0.1500	-3.1854	0.9439	0.0168
78	06	6	Female*HSGPA	0.0167	0.0913	3.3729	3.4429	3.4056	0.0061	0.0910	3.3661	3.5886	3.3624	0.0351
78	06	7	Female*SAT-CR	0.4116	3.3729	3,280.8273	1,019.3058	1,963.9833	0.1500	3.3661	3,280.6579	1,022.9041	1,962.9170	8.3345
78	06	8	Female*SAT-M	-8.7406	3.4429	1,019.3058	2,799.2773	1,079.2625	-3.1854	3.5886	1,022.9041	2,722.8563	1,101.9077	5.6094
78	06	9	Female*SAT-W	2.5900	3.4056	1,963.9833	1,079.2625	2,991.7326	0.9439	3.3624	1,962.9170	1,101.9077	2,985.0223	7.8192
78	06	10	FYGPA	2.9937	0.0619	12.3178	8.8585	12.0855	0.0168	0.0351	8.3345	5.6094	7.8192	0.2443
78	07	1	HSGPA	0.0000	0.1566	5.2609	5.2238	5.2173	0.0215	0.0856	3.2281	3.1747	2.9807	0.0618
78	07	2	SAT-CR	0.0000	5.2609	4,972.6771	1,681.1194	2,995.9747	0.0540	3.2281	2,893.4039	1,001.6383	1,703.5000	11.8165
78	07	3	SAT-M	0.0000	5.2238	1,681.1194	4,724.7123	1,672.0686	-7.5789	3.1747	1,001.6383	2,767.2686	985.9071	8.3371
78	07	4	SAT-W	0.0000	5.2173	2,995.9747	1,672.0686	4,647.7318	2.1187	2.9807	1,703.5000	985.9071	2,720.9209	12.0240
78	07	5	Female	0.6206	0.0215	0.0540	-7.5789	2.1187	0.2355	0.0082	0.0205	-2.8756	0.8039	0.0221
78	07	6	Female*HSGPA	0.0215	0.0856	3.2281	3.1747	2.9807	0.0082	0.0851	3.2270	3.3378	2.9351	0.0313
78	07	7	Female*SAT-CR	0.0540	3.2281	2,893.4039	1,001.6383	1,703.5000	0.0205	3.2270	2,893.4010	1,002.0474	1,703.3857	6.6268
78	07	8	Female*SAT-M	-7.5766	3.1747	1,001.6383	2,767.2686	985.9071	-2.8756	3.3378	1,002.0474	2,709.8467	1,001.9599	5.2006
78	07	9	Female*SAT-W	2.1181	2.9807	1,703.5000	985.9071	2,720.9209	0.8039	2.9351	1,703.3857	1,001.9599	2,716.4333	6.8697
78	07	10	FYGPA	2.9946	0.0618	11.8165	8.3371	12.0240	0.0221	0.0313	6.6268	5.2006	6.8697	0.2742

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
78	08	1	HSGPA	0.0000	0.1488	4.0951	3.7216	3.5692	0.0237	0.0839	2.3195	2.6986	2.1601	0.0549
78	08	2	SAT-CR	0.0000	4.0951	4,936.2954	1,205.2744	3,060.4366	0.1892	2.3195	2,846.8281	691.0799	1,725.7989	10.0757
78	08	3	SAT-M	0.0000	3.7216	1,205.2744	4,678.8167	1,384.8691	-7.5157	2.6986	691.0799	2,867.2797	866.9762	8.3467
78	08	4	SAT-W	0.0000	3.5692	3,060.4366	1,384.8691	4,753.4322	2.9843	2.1601	1,725.7989	866.9762	2,773.1570	10.5333
78	08	5	Female	0.6150	0.0237	0.1892	-7.5157	2.9843	0.2368	0.0091	0.0728	-2.8932	1.1488	0.0148
78	08	6	Female*HSGPA	0.0236	0.0839	2.3195	2.6986	2.1601	0.0091	0.0834	2.3150	2.8763	2.0895	0.0302
78	08	7	Female*SAT-CR	0.1892	2.3195	2,846.8281	691.0799	1,725.7989	0.0728	2.3150	2,846.7923	692.5017	1,725.2344	6.0145
78	08	8	Female*SAT-M	-7.5131	2.6986	691.0799	2,867.2797	866.9762	-2.8932	2.8763	692.5017	2,810.8135	889.3978	5.1607
78	08	9	Female*SAT-W	2.9833	2.1601	1,725.7989	866.9762	2,773.1570	1.1488	2.0895	1,725.2344	889.3978	2,764.2538	6.2572
78	08	10	FYGPA	3.0083	0.0549	10.0757	8.3467	10.5333	0.0148	0.0302	6.0145	5.1607	6.2572	0.2436
79	08	1	HSGPA	0.0000	0.2456	7.9358	10.6632	14.3847	0.0280	0.1516	6.6142	8.3154	10.1599	0.1443
79	08	2	SAT-CR	0.0000	7.9358	4,146.0858	1,757.4178	3,034.2031	1.3096	6.6142	2,973.9163	1,418.2416	2,337.3523	12.9802
79	08	3	SAT-M	0.0000	10.6632	1,757.4178	4,879.5051	2,182.5981	-4.3192	8.3154	1,418.2416	3,459.6378	1,760.6535	11.4895
79	08	4	SAT-W	0.0000	14.3847	3,034.2031	2,182.5981	5,550.2061	5.5179	10.1599	2,337.3523	1,760.6535	3,961.3245	17.6219
79	08	5	Female	0.6930	0.0280	1.3096	-4.3192	5.5179	0.2134	0.0086	0.4021	-1.3262	1.6942	0.0521
79	08	6	Female*HSGPA	0.0279	0.1516	6.6142	8.3154	10.1599	0.0086	0.1508	6.5776	8.4359	10.0059	0.0900
79	08	7	Female*SAT-CR	1.3059	6.6142	2,973.9163	1,418.2416	2,337.3523	0.4021	6.5776	2,972.2061	1,423.8822	2,330.1462	9.3252
79	08	8	Female*SAT-M	-4.3070	8.3154	1,418.2416	3,459.6378	1,760.6535	-1.3262	8.4359	1,423.8822	3,441.0351	1,784.4193	9.4370
79	08	9	Female*SAT-W	5.5024	10.1599	2,337.3523	1,760.6535	3,961.3245	1.6942	10.0059	2,330.1462	1,784.4193	3,930.9626	13.0559
79	08	10	FYGPA	3.1549	0.1443	12.9802	11.4895	17.6219	0.0521	0.0900	9.3252	9.4370	13.0559	0.3208
80	07	1	HSGPA	0.0000	0.1629	3.3461	4.2461	4.1589	0.0303	0.0862	2.3157	2.2960	2.4159	0.0820
80	07	2	SAT-CR	0.0000	3.3461	5,900.0712	2,434.2657	3,801.5124	-2.1116	2.3157	3,355.5733	1,461.2733	2,274.2618	9.5241
80	07	3	SAT-M	0.0000	4.2461	2,434.2657	5,765.2789	2,233.6320	-10.3566	2.2960	1,461.2733	3,026.5974	1,407.1105	6.0011
80	07	4	SAT-W	0.0000	4.1589	3,801.5124	2,233.6320	5,398.5733	1.2454	2.4159	2,274.2618	1,407.1105	3,066.3686	11.1305
80	07	5	Female	0.5624	0.0303	-2.1116	-10.3566	1.2454	0.2462	0.0133	-0.9241	-4.5323	0.5450	0.0564
80	07	6	Female*HSGPA	0.0303	0.0862	2.3157	2.2960	2.4159	0.0133	0.0853	2.3798	2.6101	2.3782	0.0390
80	07	7	Female*SAT-CR	-2.1106	2.3157	3,355.5733	1,461.2733	2,274.2618	-0.9241	2.3798	3,351.1165	1,439.4148	2,276.8903	6.1759
80	07	8	Female*SAT-M	-10.3514	2.2960	1,461.2733	3,026.5974	1,407.1105	-4.5323	2.6101	1,439.4148	2,919.3920	1,420.0022	4.2229
80	07	9	Female*SAT-W	1.2448	2.4159	2,274.2618	1,407.1105	3,066.3686	0.5450	2.3782	2,276.8903	1,420.0022	3,064.8183	7.1450
80	07	10	FYGPA	3.0320	0.0820	9.5241	6.0011	11.1305	0.0564	0.0390	6.1759	4.2229	7.1450	0.3038
81	07	1	HSGPA	0.0000	0.3064	13.6271	18.9215	12.9961	0.0182	0.1805	7.0473	8.3083	6.3533	0.2663
81	07	2	SAT-CR	0.0000	13.6271	6,739.3209	3,488.0089	4,732.9154	1.9409	7.0473	3,626.8264	1,658.2544	2,637.8882	26.8556
81	07	3	SAT-M	0.0000	18.9215	3,488.0089	5,950.2018	3,023.8614	-4.2695	8.3083	1,658.2544	2,681.8218	1,489.7347	26.3163
81	07	4	SAT-W	0.0000	12.9961	4,732.9154	3,023.8614	6,103.8371	4.8579	6.3533	2,637.8882	1,489.7347	3,441.1804	22.5627
81	07	5	Female	0.5793	0.0182	1.9409	-4.2695	4.8579	0.2443	0.0077	0.8165	-1.7961	2.0437	0.0373
81	07	6	Female*HSGPA	0.0182	0.1805	7.0473	8.3083	6.3533	0.0077	0.1801	7.0120	8.3861	6.2648	0.1516
81	07	7	Female*SAT-CR	1.9364	7.0473	3,626.8264	1,658.2544	2,637.8882	0.8165	7.0120	3,623.0680	1,666.5219	2,628.4811	13.4410
81	07	8	Female*SAT-M	-4.2597	8.3083	1,658.2544	2,681.8218	1,489.7347	-1.7961	8.3861	1,666.5219	2,663.6350	1,510.4281	10.3192
81	07	9	Female*SAT-W	4.8468	6.3533	2,637.8882	1,489.7347	3,441.1804	2.0437	6.2648	2,628.4811	1,510.4281	3,417.6351	9.9106
81	07	10	FYGPA	2.2035	0.2663	26.8556	26.3163	22.5627	0.0373	0.1516	13.4410	10.3192	9.9106	1.0176

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
82	06	1	HSGPA	0.0000	0.2250	6.3313	4.8810	8.2901	0.0403	0.1273	3.6807	3.2338	4.2450	0.1182
82	06	2	SAT-CR	0.0000	6.3313	6,540.9294	2,646.9053	4,353.8998	-2.0091	3.6807	3,927.7896	1,464.5709	2,541.9261	13.0086
82	06	3	SAT-M	0.0000	4.8810	2,646.9053	5,590.9578	2,766.5262	-7.8001	3.2338	1,464.5709	3,102.9290	1,534.4716	9.3858
82	06	4	SAT-W	0.0000	8.2901	4,353.8998	2,766.5262	6,002.8442	1.8829	4.2450	2,541.9261	1,534.4716	3,489.5834	15.6032
82	06	5	Female	0.6005	0.0403	-2.0091	-7.8001	1.8829	0.2400	0.0161	-0.8027	-3.1163	0.7523	0.0449
82	06	6	Female*HSGPA	0.0403	0.1273	3.6807	3.2338	4.2450	0.0161	0.1257	3.7617	3.5482	4.1691	0.0673
82	06	7	Female*SAT-CR	-2.0079	3.6807	3,927.7896	1,464.5709	2,541.9261	-0.8027	3.7617	3,923.7554	1,448.9087	2,545.7068	8.0267
82	06	8	Female*SAT-M	-7.7955	3.2338	1,464.5709	3,102.9290	1,534.4716	-3.1163	3.5482	1,448.9087	3,042.1235	1,549.1497	6.8330
82	06	9	Female*SAT-W	1.8818	4.2450	2,541.9261	1,534.4716	3,489.5834	0.7523	4.1691	2,545.7068	1,549.1497	3,486.0402	9.4682
82	06	10	FYGPA	2.8971	0.1182	13.0086	9.3858	15.6032	0.0449	0.0673	8.0267	6.8330	9.4682	0.4821
83	06	1	HSGPA	0.0000	0.1728	7.2538	5.6182	10.1546	0.0113	0.0766	1.0406	4.0570	2.2431	0.1661
83	06	2	SAT-CR	0.0000	7.2538	7,937.1716	3,554.4789	5,182.1019	-2.1381	1.0406	4,608.7612	2,140.1925	2,776.0393	16.8064
83	06	3	SAT-M	0.0000	5.6182	3,554.4789	5,297.2315	2,269.0707	-15.0397	4.0570	2,140.1925	3,269.1431	1,437.4408	9.0427
83	06	4	SAT-W	0.0000	10.1546	5,182.1019	2,269.0707	5,829.6420	-1.4107	2.2431	2,776.0393	1,437.4408	2,905.1984	16.0211
83	06	5	Female	0.5421	0.0113	-2.1381	-15.0397	-1.4107	0.2506	0.0052	-0.9791	-6.8873	-0.6460	0.0311
83	06	6	Female*HSGPA	0.0112	0.0766	1.0406	4.0570	2.2431	0.0052	0.0765	1.0644	4.2247	2.2589	0.0663
83	06	7	Female*SAT-CR	-2.1181	1.0406	4,608.7612	2,140.1925	2,776.0393	-0.9791	1.0644	4,604.2325	2,108.3371	2,773.0513	10.7551
83	06	8	Female*SAT-M	-14.8991	4.0570	2,140.1925	3,269.1431	1,437.4408	-6.8873	4.2247	2,108.3371	3,045.0652	1,416.4228	9.1906
83	06	9	Female*SAT-W	-1.3975	2.2431	2,776.0393	1,437.4408	2,905.1984	-0.6460	2.2589	2,773.0513	1,416.4228	2,903.2270	6.7008
83	06	10	FYGPA	3.0840	0.1661	16.8064	9.0427	16.0211	0.0311	0.0663	10.7551	9.1906	6.7008	0.5128
83	07	1	HSGPA	0.0000	0.1639	7.3187	1.9745	5.6063	0.0277	0.0776	2.9903	2.6749	1.3994	0.1175
83	07	2	SAT-CR	0.0000	7.3187	5,826.6427	2,403.4386	3,461.1022	1.2208	2.9903	2,338.4696	924.7761	1,322.5058	6.3462
83	07	3	SAT-M	0.0000	1.9745	2,403.4386	6,735.5458	1,728.8085	-19.5142	2.6749	924.7761	3,291.2723	780.2141	6.2533
83	07	4	SAT-W	0.0000	5.6063	3,461.1022	1,728.8085	5,138.5179	4.8227	1.3994	1,322.5058	780.2141	2,241.1269	15.7661
83	07	5	Female	0.5041	0.0277	1.2208	-19.5142	4.8227	0.2520	0.0138	0.6055	-9.6778	2.3918	0.0445
83	07	6	Female*HSGPA	0.0275	0.0776	2.9903	2.6749	1.3994	0.0138	0.0768	2.9567	3.2119	1.2667	0.0610
83	07	7	Female*SAT-CR	1.2109	2.9903	2,338.4696	924.7761	1,322.5058	0.6055	2.9567	2,336.9913	948.4062	1,316.6659	1.6425
83	07	8	Female*SAT-M	-19.3555	2.6749	924.7761	3,291.2723	780.2141	-9.6778	3.2119	948.4062	2,913.5645	873.5608	5.1007
83	07	9	Female*SAT-W	4.7835	1.3994	1,322.5058	780.2141	2,241.1269	2.3918	1.2667	1,316.6659	873.5608	2,218.0572	9.2967
83	07	10	FYGPA	2.8233	0.1175	6.3462	6.2533	15.7661	0.0445	0.0610	1.6425	5.1007	9.2967	0.4916
83	08	1	HSGPA	0.0000	0.2450	-1.2565	2.1494	3.8467	0.0541	0.0981	-0.5323	3.3404	1.6616	0.1547
83	08	2	SAT-CR	0.0000	-1.2565	7,757.9993	3,181.2987	5,066.7967	-1.4747	-0.5323	4,886.4571	1,800.6391	2,995.5280	18.2393
83	08	3	SAT-M	0.0000	2.1494	3,181.2987	6,041.4566	2,511.0013	-8.6047	3.3404	1,800.6391	3,313.1014	1,847.9654	20.4829
83	08	4	SAT-W	0.0000	3.8467	5,066.7967	2,511.0013	5,991.0484	5.7705	1.6616	2,995.5280	1,847.9654	3,265.1272	20.3187
83	08	5	Female	0.5638	0.0541	-1.4747	-8.6047	5.7705	0.2476	0.0236	-0.6433	-3.7537	2.5173	0.0320
83	08	6	Female*HSGPA	0.0537	0.0981	-0.5323	3.3404	1.6616	0.0236	0.0952	-0.4531	3.8026	1.3516	0.0764
83	08	7	Female*SAT-CR	-1.4648	-0.5323	4,886.4571	1,800.6391	2,995.5280	-0.6433	-0.4531	4,884.2970	1,788.0350	3,003.9806	13.9990
83	08	8	Female*SAT-M	-8.5469	3.3404	1,800.6391	3,313.1014	1,847.9654	-3.7537	3.8026	1,788.0350	3,239.5581	1,897.2849	15.4018
83	08	9	Female*SAT-W	5.7317	1.6616	2,995.5280	1,847.9654	3,265.1272	2.5173	1.3516	3,003.9806	1,897.2849	3,232.0526	14.2779
83	08	10	FYGPA	2.9366	0.1547	18.2393	20.4829	20.3187	0.0320	0.0764	13.9990	15.4018	14.2779	0.6004

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
84	06	1	HSGPA	0.0000	0.2688	13.0964	12.2473	14.4639	0.0470	0.1399	7.5776	7.9399	7.6157	0.1505
84	06	2	SAT-CR	0.0000	13.0964	6,495.1915	3,470.3739	4,680.4653	-1.5836	7.5776	3,565.4911	1,889.0692	2,508.5198	15.8736
84	06	3	SAT-M	0.0000	12.2473	3,470.3739	6,494.5526	3,318.0603	-8.8972	7.9399	1,889.0692	3,712.0320	1,914.6700	13.4054
84	06	4	SAT-W	0.0000	14.4639	4,680.4653	3,318.0603	6,537.9281	2.5697	7.6157	2,508.5198	1,914.6700	3,438.4808	16.5351
84	06	5	Female	0.5844	0.0470	-1.5836	-8.8972	2.5697	0.2432	0.0195	-0.6582	-3.6981	1.0681	0.0640
84	06	6	Female*HSGPA	0.0469	0.1399	7.5776	7.9399	7.6157	0.0195	0.1377	7.6519	8.3574	7.4951	0.0724
84	06	7	Female*SAT-CR	-1.5818	7.5776	3,565.4911	1,889.0692	2,508.5198	-0.6582	7.6519	3,562.9861	1,874.9953	2,512.5847	7.6402
84	06	8	Female*SAT-M	-8.8873	7.9399	1,889.0692	3,712.0320	1,914.6700	-3.6981	8.3574	1,874.9953	3,632.9602	1,937.5079	7.2458
84	06	9	Female*SAT-W	2.5669	7.6157	2,508.5198	1,914.6700	3,438.4808	1.0681	7.4951	2,512.5847	1,937.5079	3,431.8847	8.7851
84	06	10	FYGPA	3.1099	0.1505	15.8736	13.4054	16.5351	0.0640	0.0724	7.6402	7.2458	8.7851	0.4327
85	06	1	HSGPA	0.0000	0.1441	4.7085	4.7908	6.2645	0.0250	0.0652	2.3606	2.1110	2.8116	0.0769
85	06	2	SAT-CR	0.0000	4.7085	6,660.8572	3,431.4673	4,533.4740	-1.0460	2.3606	3,389.3656	1,787.8596	2,317.6417	17.4545
85	06	3	SAT-M	0.0000	4.7908	3,431.4673	6,236.7015	3,252.8124	-9.3242	2.1110	1,787.8596	3,116.5283	1,703.5583	16.1751
85	06	4	SAT-W	0.0000	6.2645	4,533.4740	3,252.8124	6,125.5573	3.2572	2.8116	2,317.6417	1,703.5583	3,090.3557	18.4790
85	06	5	Female	0.5084	0.0250	-1.0460	-9.3242	3.2572	0.2500	0.0123	-0.5142	-4.5838	1.6013	0.0336
85	06	6	Female*HSGPA	0.0250	0.0652	2.3606	2.1110	2.8116	0.0123	0.0645	2.3867	2.3439	2.7303	0.0357
85	06	7	Female*SAT-CR	-1.0459	2.3606	3,389.3656	1,787.8596	2,317.6417	-0.5142	2.3867	3,388.2716	1,778.1077	2,321.0483	9.8193
85	06	8	Female*SAT-M	-9.3228	2.1110	1,787.8596	3,116.5283	1,703.5583	-4.5838	2.3439	1,778.1077	3,029.6013	1,733.9247	9.0006
85	06	9	Female*SAT-W	3.2567	2.8116	2,317.6417	1,703.5583	3,090.3557	1.6013	2.7303	2,321.0483	1,733.9247	3,079.7478	10.1365
85	06	10	FYGPA	2.8581	0.0769	17.4545	16.1751	18.4790	0.0336	0.0357	9.8193	9.0006	10.1365	0.4451
85	07	1	HSGPA	0.0000	0.1485	4.9894	5.1115	5.8537	0.0237	0.0692	2.8466	2.6310	3.1404	0.0773
85	07	2	SAT-CR	0.0000	4.9894	7,106.8174	3,911.3628	5,024.8385	-2.5997	2.8466	3,607.9861	2,021.9709	2,596.2075	18.7372
85	07	3	SAT-M	0.0000	5.1115	3,911.3628	6,613.5128	3,615.1003	-10.1105	2.6310	2,021.9709	3,355.3119	1,898.5150	16.8152
85	07	4	SAT-W	0.0000	5.8537	5,024.8385	3,615.1003	6,474.5288	2.0641	3.1404	2,596.2075	1,898.5150	3,285.9038	19.4223
85	07	5	Female	0.5146	0.0237	-2.5997	-10.1105	2.0641	0.2498	0.0115	-1.2620	-4.9079	1.0020	0.0308
85	07	6	Female*HSGPA	0.0237	0.0692	2.8466	2.6310	3.1404	0.0115	0.0687	2.9083	2.8710	3.0914	0.0395
85	07	7	Female*SAT-CR	-2.5993	2.8466	3,607.9861	2,021.9709	2,596.2075	-1.2620	2.9083	3,601.2288	1,995.6907	2,601.5726	11.0684
85	07	8	Female*SAT-M	-10.1090	2.6310	2,021.9709	3,355.3119	1,898.5150	-4.9079	2.8710	1,995.6907	3,253.1045	1,919.3807	9.6512
85	07	9	Female*SAT-W	2.0638	3.1404	2,596.2075	1,898.5150	3,285.9038	1.0020	3.0914	2,601.5726	1,919.3807	3,281.6441	10.7094
85	07	10	FYGPA	2.8747	0.0773	18.7372	16.8152	19.4223	0.0308	0.0395	11.0684	9.6512	10.7094	0.4447
85	08	1	HSGPA	0.0000	0.1359	3.7431	4.4108	4.8693	0.0175	0.0629	2.2330	2.5270	2.6105	0.0667
85	08	2	SAT-CR	0.0000	3.7431	7,052.5802	3,811.1462	4,930.0091	-3.2023	2.2330	3,391.5555	1,926.1970	2,441.4867	15.6305
85	08	3	SAT-M	0.0000	4.4108	3,811.1462	6,543.2633	3,552.8203	-10.3516	2.5270	1,926.1970	3,292.2764	1,842.9242	15.3878
85	08	4	SAT-W	0.0000	4.8693	4,930.0091	3,552.8203	6,442.8355	2.4268	2.6105	2,441.4867	1,842.9242	3,241.6713	17.6720
85	08	5	Female	0.5085	0.0175	-3.2023	-10.3516	2.4268	0.2500	0.0086	-1.5740	-5.0881	1.1929	0.0291
85	08	6	Female*HSGPA	0.0175	0.0629	2.2330	2.5270	2.6105	0.0086	0.0626	2.2892	2.7086	2.5679	0.0301
85	08	7	Female*SAT-CR	-3.2018	2.2330	3,391.5555	1,926.1970	2,441.4867	-1.5740	2.2892	3,381.3025	1,893.0533	2,449.2569	8.5353
85	08	8	Female*SAT-M	-10.3501	2.5270	1,926.1970	3,292.2764	1,842.9242	-5.0881	2.7086	1,893.0533	3,185.1368	1,868.0420	8.4437
85	08	9	Female*SAT-W	2.4265	2.6105	2,441.4867	1,842.9242	3,241.6713	1.1929	2.5679	2,449.2569	1,868.0420	3,235.7827	9.5288
85	08	10	FYGPA	2.9174	0.0667	15.6305	15.3878	17.6720	0.0291	0.0301	8.5353	8.4437	9.5288	0.4138

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
86	08	1	HSGPA	0.0000	0.2961	9.3277	9.9777	12.6939	0.0565	0.1848	5.7070	7.4133	7.9454	0.2544
86	08	2	SAT-CR	0.0000	9.3277	6,596.7701	2,958.4516	4,364.0687	-3.7613	5.7070	4,248.6659	1,978.1525	2,733.3210	11.7440
86	08	3	SAT-M	0.0000	9.9777	2,958.4516	7,361.4708	2,538.4479	-9.6401	7.4133	1,978.1525	4,000.8129	1,745.7631	11.8625
86	08	4	SAT-W	0.0000	12.6939	4,364.0687	2,538.4479	5,633.0155	0.9734	7.9454	2,733.3210	1,745.7631	3,245.2598	20.0129
86	08	5	Female	0.6121	0.0565	-3.7613	-9.6401	0.9734	0.2389	0.0219	-1.4589	-3.7392	0.3776	0.0722
86	08	6	Female*HSGPA	0.0561	0.1848	5.7070	7.4133	7.9454	0.0219	0.1816	5.9181	7.9544	7.8908	0.1614
86	08	7	Female*SAT-CR	-3.7385	5.7070	4,248.6659	1,978.1525	2,733.3210	-1.4589	5.9181	4,234.6045	1,942.1134	2,736.9600	9.5417
86	08	8	Female*SAT-M	-9.5816	7.4133	1,978.1525	4,000.8129	1,745.7631	-3.7392	7.9544	1,942.1134	3,908.4454	1,755.0898	8.2601
86	08	9	Female*SAT-W	0.9675	7.9454	2,733.3210	1,745.7631	3,245.2598	0.3776	7.8908	2,736.9600	1,755.0898	3,244.3181	13.7781
86	08	10	FYGPA	2.8512	0.2544	11.7440	11.8625	20.0129	0.0722	0.1614	9.5417	8.2601	13.7781	0.8566
87	08	1	HSGPA	0.0000	0.3900	34.5602	34.8200	32.3037	0.0535	0.2095	25.6703	19.3429	17.9129	0.3373
87	08	2	SAT-CR	0.0000	34.5602	10,888.6445	5,784.7661	7,372.9908	1.9952	25.6703	7,739.6690	3,670.0725	5,194.9103	38.1465
87	08	3	SAT-M	0.0000	34.8200	5,784.7661	7,960.9356	5,276.0696	-1.5874	19.3429	3,670.0725	4,371.9293	2,944.1492	38.7466
87	08	4	SAT-W	0.0000	32.3037	7,372.9908	5,276.0696	8,456.2975	8.9164	17.9129	5,194.9103	2,944.1492	5,502.0353	45.3172
87	08	5	Female	0.6260	0.0535	1.9952	-1.5874	8.9164	0.2360	0.0200	0.7462	-0.5936	3.3346	0.0973
87	08	6	Female*HSGPA	0.0531	0.2095	25.6703	19.3429	17.9129	0.0200	0.2067	25.5644	19.4271	17.4399	0.1576
87	08	7	Female*SAT-CR	1.9790	25.6703	7,739.6690	3,670.0725	5,194.9103	0.7462	25.5644	7,735.7205	3,673.2138	5,177.2649	25.8672
87	08	8	Female*SAT-M	-1.5745	19.3429	3,670.0725	4,371.9293	2,944.1492	-0.5936	19.4271	3,673.2138	4,369.4300	2,958.1877	22.1519
87	08	9	Female*SAT-W	8.8439	17.9129	5,194.9103	2,944.1492	5,502.0353	3.3346	17.4399	5,177.2649	2,958.1877	5,423.1789	24.2605
87	08	10	FYGPA	2.9910	0.3373	38.1465	38.7466	45.3172	0.0973	0.1576	25.8672	22.1519	24.2605	0.8816
88	06	1	HSGPA	0.0000	0.2315	9.9496	11.4995	10.9378	0.0381	0.1191	6.1749	6.4522	6.6078	0.1244
88	06	2	SAT-CR	0.0000	9.9496	7,806.7481	4,154.3996	5,869.2402	-1.8461	6.1749	4,213.6044	2,276.0508	3,188.0260	18.3091
88	06	3	SAT-M	0.0000	11.4995	4,154.3996	6,866.6159	4,038.4252	-8.0549	6.4522	2,276.0508	3,637.1785	2,192.1141	16.5080
88	06	4	SAT-W	0.0000	10.9378	5,869.2402	4,038.4252	7,522.0112	2.5592	6.6078	3,188.0260	2,192.1141	4,062.8267	20.2813
88	06	5	Female	0.5504	0.0381	-1.8461	-8.0549	2.5592	0.2476	0.0171	-0.8299	-3.6212	1.1505	0.0482
88	06	6	Female*HSGPA	0.0381	0.1191	6.1749	6.4522	6.6078	0.0171	0.1177	6.2453	6.7592	6.5102	0.0625
88	06	7	Female*SAT-CR	-1.8454	6.1749	4,213.6044	2,276.0508	3,188.0260	-0.8299	6.2453	4,210.1977	2,261.1867	3,192.7485	10.4839
88	06	8	Female*SAT-M	-8.0517	6.4522	2,276.0508	3,637.1785	2,192.1141	-3.6212	6.7592	2,261.1867	3,572.3228	2,212.7197	8.9759
88	06	9	Female*SAT-W	2.5581	6.6078	3,188.0260	2,192.1141	4,062.8267	1.1505	6.5102	3,192.7485	2,212.7197	4,056.2800	11.6360
88	06	10	FYGPA	3.0111	0.1244	18.3091	16.5080	20.2813	0.0482	0.0625	10.4839	8.9759	11.6360	0.3807
88	07	1	HSGPA	0.0000	0.2262	8.8588	10.1421	9.5692	0.0390	0.1146	5.7606	6.4293	6.2144	0.1232
88	07	2	SAT-CR	0.0000	8.8588	7,642.5507	4,004.0375	5,684.2830	-0.5840	5.7606	4,040.4208	2,168.1087	3,110.0040	20.3524
88	07	3	SAT-M	0.0000	10.1421	4,004.0375	7,136.2327	3,788.5846	-9.1039	6.4293	2,168.1087	3,809.0952	2,130.7019	15.1974
88	07	4	SAT-W	0.0000	9.5692	5,684.2830	3,788.5846	7,148.8780	3.1562	6.2144	3,110.0040	2,130.7019	3,935.7949	21.0818
88	07	5	Female	0.5388	0.0390	-0.5840	-9.1039	3.1562	0.2486	0.0180	-0.2694	-4.1987	1.4556	0.0418
88	07	6	Female*HSGPA	0.0390	0.1146	5.7606	6.4293	6.2144	0.0180	0.1130	5.7834	6.7842	6.0914	0.0639
88	07	7	Female*SAT-CR	-0.5838	5.7606	4,040.4208	2,168.1087	3,110.0040	-0.2694	5.7834	4,040.0799	2,162.7940	3,111.8466	10.9161
88	07	8	Female*SAT-M	-9.1003	6.4293	2,168.1087	3,809.0952	2,130.7019	-4.1987	6.7842	2,162.7940	3,726.2471	2,159.4238	8.7631
88	07	9	Female*SAT-W	3.1549	6.2144	3,110.0040	2,130.7019	3,935.7949	1.4556	6.0914	3,111.8466	2,159.4238	3,925.8376	11.7425
88	07	10	FYGPA	2.9979	0.1232	20.3524	15.1974	21.0818	0.0418	0.0639	10.9161	8.7631	11.7425	0.3677

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
88	08	1	HSGPA	0.0000	0.2121	7.1652	8.8700	7.1412	0.0309	0.1039	4.6015	4.9734	4.4392	0.1152
88	08	2	SAT-CR	0.0000	7.1652	7,660.1582	3,840.8290	5,586.1182	-0.8942	4.6015	4,016.0936	2,109.4310	3,057.4644	19.1621
88	08	3	SAT-M	0.0000	8.8700	3,840.8290	6,892.8571	3,829.9089	-9.3899	4.9734	2,109.4310	3,543.0853	2,147.1966	14.8748
88	08	4	SAT-W	0.0000	7.1412	5,586.1182	3,829.9089	7,157.4444	2.4037	4.4392	3,057.4644	2,147.1966	3,840.1832	18.9810
88	08	5	Female	0.5125	0.0309	-0.8942	-9.3899	2.4037	0.2499	0.0150	-0.4359	-4.5776	1.1718	0.0392
88	08	6	Female*HSGPA	0.0309	0.1039	4.6015	4.9734	4.4392	0.0150	0.1030	4.6291	5.2631	4.3651	0.0545
88	08	7	Female*SAT-CR	-0.8940	4.6015	4,016.0936	2,109.4310	3,057.4644	-0.4359	4.6291	4,015.2942	2,101.0368	3,059.6132	10.3526
88	08	8	Female*SAT-M	-9.3869	4.9734	2,109.4310	3,543.0853	2,147.1966	-4.5776	5.2631	2,101.0368	3,454.9436	2,169.7595	8.2991
88	08	9	Female*SAT-W	2.4029	4.4392	3,057.4644	2,147.1966	3,840.1832	1.1718	4.3651	3,059.6132	2,169.7595	3,834.4075	10.5701
88	08	10	FYGPA	3.0380	0.1152	19.1621	14.8748	18.9810	0.0392	0.0545	10.3526	8.2991	10.5701	0.3491
89	06	1	HSGPA	0.0000	0.4099	23.1792	28.1906	25.0297	0.0587	0.2559	17.1678	19.4100	16.9480	0.2984
89	06	2	SAT-CR	0.0000	23.1792	7,455.8706	4,709.5623	5,226.6122	-0.5973	17.1678	4,874.0219	3,172.7938	3,466.6368	26.4976
89	06	3	SAT-M	0.0000	28.1906	4,709.5623	7,753.8555	4,425.9878	-5.1054	19.4100	3,172.7938	4,795.2911	2,936.3614	29.4888
89	06	4	SAT-W	0.0000	25.0297	5,226.6122	4,425.9878	6,711.9245	4.2859	16.9480	3,466.6368	2,936.3614	4,291.3530	28.2201
89	06	5	Female	0.6290	0.0587	-0.5973	-5.1054	4.2859	0.2335	0.0218	-0.2216	-1.8939	1.5899	0.0907
89	06	6	Female*HSGPA	0.0586	0.2559	17.1678	19.4100	16.9480	0.0218	0.2525	17.2028	19.7093	16.6966	0.1927
89	06	7	Female*SAT-CR	-0.5968	17.1678	4,874.0219	3,172.7938	3,466.6368	-0.2216	17.2028	4,873.6654	3,169.7468	3,469.1948	19.2907
89	06	8	Female*SAT-M	-5.1010	19.4100	3,172.7938	4,795.2911	2,936.3614	-1.8939	19.7093	3,169.7468	4,769.2483	2,958.2240	20.8346
89	06	9	Female*SAT-W	4.2823	16.9480	3,466.6368	2,936.3614	4,291.3530	1.5899	16.6966	3,469.1948	2,958.2240	4,272.9996	19.3887
89	06	10	FYGPA	2.7091	0.2984	26.4976	29.4888	28.2201	0.0907	0.1927	19.2907	20.8346	19.3887	0.7596
89	07	1	HSGPA	0.0000	0.4041	16.3318	22.6266	20.4468	0.0659	0.2348	11.3019	14.8395	13.0096	0.2967
89	07	2	SAT-CR	0.0000	16.3318	6,661.8042	4,059.3075	4,496.6711	-1.5416	11.3019	3,783.4223	2,249.0936	2,641.5314	18.0480
89	07	3	SAT-M	0.0000	22.6266	4,059.3075	7,153.0913	3,914.6068	-7.6047	14.8395	2,249.0936	3,982.2936	2,206.1698	20.8284
89	07	4	SAT-W	0.0000	20.4468	4,496.6711	3,914.6068	6,028.6562	2.5721	13.0096	2,641.5314	2,206.1698	3,472.7037	21.8276
89	07	5	Female	0.5981	0.0659	-1.5416	-7.6047	2.5721	0.2406	0.0265	-0.6196	-3.0565	1.0338	0.1011
89	07	6	Female*HSGPA	0.0658	0.2348	11.3019	14.8395	13.0096	0.0265	0.2305	11.4033	15.3399	12.8403	0.1786
89	07	7	Female*SAT-CR	-1.5405	11.3019	3,783.4223	2,249.0936	2,641.5314	-0.6196	11.4033	3,781.0474	2,237.3785	2,645.4938	13.4834
89	07	8	Female*SAT-M	-7.5991	14.8395	2,249.0936	3,982.2936	2,206.1698	-3.0565	15.3399	2,237.3785	3,924.5047	2,225.7156	15.1066
89	07	9	Female*SAT-W	2.5702	13.0096	2,641.5314	2,206.1698	3,472.7037	1.0338	12.8403	2,645.4938	2,225.7156	3,466.0928	15.3039
89	07	10	FYGPA	2.5984	0.2967	18.0480	20.8284	21.8276	0.1011	0.1786	13.4834	15.1066	15.3039	0.8799
89	08	1	HSGPA	0.0000	0.4267	19.6631	24.1473	24.1968	0.0607	0.2443	13.0881	16.4647	15.5534	0.3220
89	08	2	SAT-CR	0.0000	19.6631	6,778.8888	4,082.5554	4,694.6415	-3.2175	13.0881	3,974.6600	2,379.6460	2,853.7942	19.1228
89	08	3	SAT-M	0.0000	24.1473	4,082.5554	7,153.4638	3,770.2705	-8.5745	16.4647	2,379.6460	4,251.5675	2,410.9796	23.2604
89	08	4	SAT-W	0.0000	24.1968	4,694.6415	3,770.2705	6,289.1542	3.2295	15.5534	2,853.7942	2,410.9796	3,865.6039	26.2537
89	08	5	Female	0.6063	0.0607	-3.2175	-8.5745	3.2295	0.2389	0.0239	-1.2669	-3.3762	1.2716	0.0930
89	08	6	Female*HSGPA	0.0607	0.2443	13.0881	16.4647	15.5534	0.0239	0.2406	13.2833	16.9849	15.3575	0.1928
89	08	7	Female*SAT-CR	-3.2149	13.0881	3,974.6600	2,379.6460	2,853.7942	-1.2669	13.2833	3,964.3159	2,352.0796	2,864.1770	13.4987
89	08	8	Female*SAT-M	-8.5676	16.4647	2,379.6460	4,251.5675	2,410.9796	-3.3762	16.9849	2,352.0796	4,178.1051	2,438.6489	18.1945
89	08	9	Female*SAT-W	3.2269	15.5534	2,853.7942	2,410.9796	3,865.6039	1.2716	15.3575	2,864.1770	2,438.6489	3,855.1824	17.9618
89	08	10	FYGPA	2.6298	0.3220	19.1228	23.2604	26.2537	0.0930	0.1928	13.4987	18.1945	17.9618	0.9489

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
90	08	1	HSGPA	0.0000	0.1954	9.5639	11.1805	11.0494	0.0244	0.1036	5.1209	5.5843	5.7424	0.1342
90	08	2	SAT-CR	0.0000	9.5639	6,572.8588	3,286.1760	4,648.7540	-1.0034	5.1209	3,694.6757	1,805.7557	2,660.7079	19.7508
90	08	3	SAT-M	0.0000	11.1805	3,286.1760	6,584.1414	3,513.0216	-8.2461	5.5843	1,805.7557	3,755.5175	2,028.8694	19.0135
90	08	4	SAT-W	0.0000	11.0494	4,648.7540	3,513.0216	6,487.4579	3.8855	5.7424	2,660.7079	2,028.8694	3,735.7906	22.4955
90	08	5	Female	0.6015	0.0244	-1.0034	-8.2461	3.8855	0.2398	0.0097	-0.3998	-3.2859	1.5483	0.0472
90	08	6	Female*HSGPA	0.0244	0.1036	5.1209	5.5843	5.7424	0.0097	0.1030	5.1454	5.7854	5.6476	0.0681
90	08	7	Female*SAT-CR	-1.0030	5.1209	3,694.6757	1,805.7557	2,660.7079	-0.3998	5.1454	3,693.6693	1,797.4851	2,664.6049	11.3119
90	08	8	Female*SAT-M	-8.2426	5.5843	1,805.7557	3,755.5175	2,028.8694	-3.2859	5.7854	1,797.4851	3,687.5488	2,060.8957	11.4220
90	08	9	Female*SAT-W	3.8838	5.7424	2,660.7079	2,028.8694	3,735.7906	1.5483	5.6476	2,664.6049	2,060.8957	3,720.7000	12.7697
90	08	10	FYGPA	3.0362	0.1342	19.7508	19.0135	22.4955	0.0472	0.0681	11.3119	11.4220	12.7697	0.5114
91	06	1	HSGPA	0.0000	0.1207	4.2594	4.6538	4.6368	0.0177	0.0708	2.7690	3.0738	2.8534	0.0602
91	06	2	SAT-CR	0.0000	4.2594	6,064.5158	2,893.0391	4,170.5193	-1.8068	2.7690	3,700.6522	1,727.8568	2,514.0267	13.3764
91	06	3	SAT-M	0.0000	4.6538	2,893.0391	5,881.7588	3,023.0394	-8.8367	3.0738	1,727.8568	3,492.1403	1,814.8932	13.1203
91	06	4	SAT-W	0.0000	4.6368	4,170.5193	3,023.0394	5,915.7963	1.0752	2.8534	2,514.0267	1,814.8932	3,580.8493	14.0217
91	06	5	Female	0.6282	0.0177	-1.8068	-8.8367	1.0752	0.2336	0.0066	-0.6717	-3.2851	0.3997	0.0148
91	06	6	Female*HSGPA	0.0177	0.0708	2.7690	3.0738	2.8534	0.0066	0.0705	2.8009	3.2298	2.8344	0.0371
91	06	7	Female*SAT-CR	-1.8064	2.7690	3,700.6522	1,727.8568	2,514.0267	-0.6717	2.8009	3,697.3883	1,711.8940	2,515.9689	8.8552
91	06	8	Female*SAT-M	-8.8347	3.0738	1,727.8568	3,492.1403	1,814.8932	-3.2851	3.2298	1,711.8940	3,414.0706	1,824.3920	8.3398
91	06	9	Female*SAT-W	1.0749	2.8534	2,514.0267	1,814.8932	3,580.8493	0.3997	2.8344	2,515.9689	1,824.3920	3,579.6936	8.5231
91	06	10	FYGPA	3.1953	0.0602	13.3764	13.1203	14.0217	0.0148	0.0371	8.8552	8.3398	8.5231	0.2616
91	07	1	HSGPA	0.0000	0.1143	3.1975	2.5108	3.5584	0.0163	0.0663	2.0640	1.4602	1.8746	0.0561
91	07	2	SAT-CR	0.0000	3.1975	6,105.0978	2,668.7469	4,073.4021	-3.1945	2.0640	3,702.5469	1,653.8223	2,483.8080	11.3186
91	07	3	SAT-M	0.0000	2.5108	2,668.7469	5,633.8896	2,734.9318	-8.8066	1.4602	1,653.8223	3,473.9330	1,749.8820	11.8895
91	07	4	SAT-W	0.0000	3.5584	4,073.4021	2,734.9318	5,819.2445	0.8320	1.8746	2,483.8080	1,749.8820	3,516.8300	12.8738
91	07	5	Female	0.6363	0.0163	-3.1945	-8.8066	0.8320	0.2315	0.0059	-1.1618	-3.2028	0.3026	0.0148
91	07	6	Female*HSGPA	0.0163	0.0663	2.0640	1.4602	1.8746	0.0059	0.0660	2.1162	1.6039	1.8610	0.0345
91	07	7	Female*SAT-CR	-3.1937	2.0640	3,702.5469	1,653.8223	2,483.8080	-1.1618	2.1162	3,692.3444	1,625.6962	2,486.4652	8.1476
91	07	8	Female*SAT-M	-8.8044	1.4602	1,653.8223	3,473.9330	1,749.8820	-3.2028	1.6039	1,625.6962	3,396.3955	1,757.2074	8.2859
91	07	9	Female*SAT-W	0.8318	1.8746	2,483.8080	1,749.8820	3,516.8300	0.3026	1.8610	2,486.4652	1,757.2074	3,516.1379	8.5363
91	07	10	FYGPA	3.1869	0.0561	11.3186	11.8895	12.8738	0.0148	0.0345	8.1476	8.2859	8.5363	0.3216
92	06	1	HSGPA	0.0000	0.2385	8.5346	8.6701	8.6293	0.0484	0.1173	6.1208	5.7673	5.0142	0.0933
92	06	2	SAT-CR	0.0000	8.5346	6,338.1288	3,514.1555	4,315.1272	-2.4300	6.1208	3,735.9448	2,098.4045	2,604.7183	8.3122
92	06	3	SAT-M	0.0000	8.6701	3,514.1555	7,250.1059	3,454.3116	-10.8257	5.7673	2,098.4045	4,178.8555	2,069.1984	7.2625
92	06	4	SAT-W	0.0000	8.6293	4,315.1272	3,454.3116	5,839.7166	0.6430	5.0142	2,604.7183	2,069.1984	3,359.9502	10.3058
92	06	5	Female	0.5452	0.0484	-2.4300	-10.8257	0.6430	0.2483	0.0220	-1.1052	-4.9236	0.2924	0.0608
92	06	6	Female*HSGPA	0.0484	0.1173	6.1208	5.7673	5.0142	0.0220	0.1150	6.2383	6.2910	4.9831	0.0362
92	06	7	Female*SAT-CR	-2.4266	6.1208	3,735.9448	2,098.4045	2,604.7183	-1.1052	6.2383	3,730.0481	2,072.1349	2,606.2785	5.6006
92	06	8	Female*SAT-M	-10.8104	5.7673	2,098.4045	4,178.8555	2,069.1984	-4.9236	6.2910	2,072.1349	4,061.8248	2,076.1491	5.3467
92	06	9	Female*SAT-W	0.6421	5.0142	2,604.7183	2,069.1984	3,359.9502	0.2924	4.9831	2,606.2785	2,076.1491	3,359.5374	6.7098
92	06	10	FYGPA	3.3904	0.0933	8.3122	7.2625	10.3058	0.0608	0.0362	5.6006	5.3467	6.7098	0.2360



## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
92	07	1	HSGPA	0.0000	0.2107	11.1441	6.7816	9.6270	0.0543	0.1083	7.2981	5.7899	6.5278	0.0793
92	07	2	SAT-CR	0.0000	11.1441	6,904.9147	2,985.7028	4,448.7648	2.3326	7.2981	3,813.9960	1,996.0987	2,583.6839	12.1194
92	07	3	SAT-M	0.0000	6.7816	2,985.7028	6,382.4734	2,549.5738	-7.1814	5.7899	1,996.0987	3,692.5984	1,696.1272	7.2552
92	07	4	SAT-W	0.0000	9.6270	4,448.7648	2,549.5738	6,020.3626	5.8245	6.5278	2,583.6839	1,696.1272	3,415.5874	12.3595
92	07	5	Female	0.5717	0.0543	2.3326	-7.1814	5.8245	0.2453	0.0232	0.9992	-3.0761	2.4949	0.0738
92	07	6	Female*HSGPA	0.0542	0.1083	7.2981	5.7899	6.5278	0.0232	0.1053	7.1717	6.1789	6.2122	0.0416
92	07	7	Female*SAT-CR	2.3288	7.2981	3,813.9960	1,996.0987	2,583.6839	0.9992	7.1717	3,808.5637	2,012.8230	2,570.1195	6.9558
92	07	8	Female*SAT-M	-7.1697	5.7899	1,996.0987	3,692.5984	1,696.1272	-3.0761	6.1789	2,012.8230	3,641.1099	1,737.8874	4.9401
92	07	9	Female*SAT-W	5.8150	6.5278	2,583.6839	1,696.1272	3,415.5874	2.4949	6.2122	2,570.1195	1,737.8874	3,381.7175	6.1319
92	07	10	FYGPA	3.4268	0.0793	12.1194	7.2552	12.3595	0.0738	0.0416	6.9558	4.9401	6.1319	0.2021
92	08	1	HSGPA	0.0000	0.2196	3.3135	5.0716	4.6564	0.0410	0.1000	2.1781	4.1513	3.4928	0.0602
92	08	2	SAT-CR	0.0000	3.3135	5,788.5253	2,958.8654	3,879.9013	-0.9911	2.1781	3,292.8354	1,740.1622	2,329.7155	8.4251
92	08	3	SAT-M	0.0000	5.0716	2,958.8654	5,735.5578	2,846.9693	-6.8740	4.1513	1,740.1622	3,392.4959	1,773.1390	8.2272
92	08	4	SAT-W	0.0000	4.6564	3,879.9013	2,846.9693	5,497.9649	3.4081	3.4928	2,329.7155	1,773.1390	3,296.5549	10.1996
92	08	5	Female	0.5564	0.0410	-0.9911	-6.8740	3.4081	0.2472	0.0182	-0.4396	-3.0492	1.5118	0.0420
92	08	6	Female*HSGPA	0.0409	0.1000	2.1781	4.1513	3.4928	0.0182	0.0984	2.2187	4.4328	3.3533	0.0282
92	08	7	Female*SAT-CR	-0.9895	2.1781	3,292.8354	1,740.1622	2,329.7155	-0.4396	2.2187	3,291.8547	1,733.3601	2,333.0880	4.6599
92	08	8	Female*SAT-M	-6.8634	4.1513	1,740.1622	3,392.4959	1,773.1390	-3.0492	4.4328	1,733.3601	3,345.3171	1,796.5301	5.4387
92	08	9	Female*SAT-W	3.4028	3.4928	2,329.7155	1,773.1390	3,296.5549	1.5118	3.3533	2,333.0880	1,796.5301	3,284.9577	5.5446
92	08	10	FYGPA	3.4349	0.0602	8.4251	8.2272	10.1996	0.0420	0.0282	4.6599	5.4387	5.5446	0.1859
93	07	1	HSGPA	0.0000	0.3721	14.4269	16.9148	17.9159	0.0579	0.2044	10.3856	11.9399	10.3217	0.2989
93	07	2	SAT-CR	0.0000	14.4269	7,087.4488	3,596.7565	5,170.1236	-3.8385	10.3856	4,128.3079	2,227.2626	2,976.7786	24.9570
93	07	3	SAT-M	0.0000	16.9148	3,596.7565	6,106.1965	3,512.3334	-9.6120	11.9399	2,227.2626	3,775.9907	2,204.8540	22.6418
93	07	4	SAT-W	0.0000	17.9159	5,170.1236	3,512.3334	6,372.3468	-0.2085	10.3217	2,976.7786	2,204.8540	3,656.1152	27.0332
93	07	5	Female	0.5862	0.0579	-3.8385	-9.6120	-0.2085	0.2431	0.0240	-1.5884	-3.9774	-0.0863	0.1040
93	07	6	Female*HSGPA	0.0578	0.2044	10.3856	11.9399	10.3217	0.0240	0.2011	10.6074	12.4951	10.3337	0.1665
93	07	7	Female*SAT-CR	-3.8303	10.3856	4,128.3079	2,227.2626	2,976.7786	-1.5884	10.6074	4,113.6053	2,190.4462	2,975.9799	15.9917
93	07	8	Female*SAT-M	-9.5913	11.9399	2,227.2626	3,775.9907	2,204.8540	-3.9774	12.4951	2,190.4462	3,683.7998	2,202.8538	13.6217
93	07	9	Female*SAT-W	-0.2081	10.3217	2,976.7786	2,204.8540	3,656.1152	-0.0863	10.3337	2,975.9799	2,202.8538	3,656.0718	16.6954
93	07	10	FYGPA	2.3487	0.2989	24.9570	22.6418	27.0332	0.1040	0.1665	15.9917	13.6217	16.6954	1.1322
93	08	1	HSGPA	0.0000	0.3795	9.7940	13.5966	12.7298	0.0519	0.2305	9.6486	10.2555	8.8619	0.2878
93	08	2	SAT-CR	0.0000	9.7940	6,410.1134	2,670.4542	4,301.4028	-1.5970	9.6486	3,860.6678	1,825.4008	2,753.6469	15.0450
93	08	3	SAT-M	0.0000	13.5966	2,670.4542	5,872.7749	2,709.6669	-7.4280	10.2555	1,825.4008	3,285.7540	1,820.3088	17.8360
93	08	4	SAT-W	0.0000	12.7298	4,301.4028	2,709.6669	5,702.5588	1.9012	8.8619	2,753.6469	1,820.3088	3,667.7226	18.5433
93	08	5	Female	0.6207	0.0519	-1.5970	-7.4280	1.9012	0.2358	0.0197	-0.6057	-2.8171	0.7210	0.0712
93	08	6	Female*HSGPA	0.0518	0.2305	9.6486	10.2555	8.8619	0.0197	0.2278	9.7313	10.6401	8.7634	0.1748
93	08	7	Female*SAT-CR	-1.5943	9.6486	3,860.6678	1,825.4008	2,753.6469	-0.6057	9.7313	3,858.1218	1,813.5585	2,756.6779	11.6171
93	08	8	Female*SAT-M	-7.4154	10.2555	1,825.4008	3,285.7540	1,820.3088	-2.8171	10.6401	1,813.5585	3,230.6722	1,834.4072	16.1479
93	08	9	Female*SAT-W	1.8980	8.8619	2,753.6469	1,820.3088	3,667.7226	0.7210	8.7634	2,756.6779	1,834.4072	3,664.1141	11.9295
93	08	10	FYGPA	2.3284	0.2878	15.0450	17.8360	18.5433	0.0712	0.1748	11.6171	16.1479	11.9295	1.0381

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
94	07	1	HSGPA	0.0000	0.2577	5.9436	7.2548	7.2869	0.0529	0.1567	5.9969	6.2403	5.1741	0.1159
94	07	2	SAT-CR	0.0000	5.9436	6,473.4311	3,001.6284	4,918.4915	-0.9873	5.9969	3,889.3851	1,915.8123	2,927.3260	16.4666
94	07	3	SAT-M	0.0000	7.2548	3,001.6284	6,251.9723	3,188.7261	-6.1251	6.2403	1,915.8123	3,600.0253	2,027.3643	16.7375
94	07	4	SAT-W	0.0000	7.2869	4,918.4915	3,188.7261	6,446.1347	1.9982	5.1741	2,927.3260	2,027.3643	3,788.1382	17.5917
94	07	5	Female	0.6010	0.0529	-0.9873	-6.1251	1.9982	0.2400	0.0211	-0.3939	-2.4438	0.7973	0.0247
94	07	6	Female*HSGPA	0.0529	0.1567	5.9969	6.2403	5.1741	0.0211	0.1539	6.0491	6.5641	5.0685	0.0773
94	07	7	Female*SAT-CR	-0.9863	5.9969	3,889.3851	1,915.8123	2,927.3260	-0.3939	6.0491	3,888.4113	1,909.7712	2,929.2969	11.0060
94	07	8	Female*SAT-M	-6.1188	6.2403	1,915.8123	3,600.0253	2,027.3643	-2.4438	6.5641	1,909.7712	3,562.5469	2,039.5911	10.1338
94	07	9	Female*SAT-W	1.9962	5.1741	2,927.3260	2,027.3643	3,788.1382	0.7973	5.0685	2,929.2969	2,039.5911	3,784.1493	10.9148
94	07	10	FYGPA	2.9986	0.1159	16.4666	16.7375	17.5917	0.0247	0.0773	11.0060	10.1338	10.9148	0.4034
95	06	1	HSGPA	0.0000	0.1994	7.1715	9.0024	9.1461	0.0541	0.1116	4.7778	5.5365	5.6416	0.1076
95	06	2	SAT-CR	0.0000	7.1715	5,915.6170	2,329.1273	3,772.9248	0.2073	4.7778	3,541.9305	1,256.7655	2,163.0705	13.6441
95	06	3	SAT-M	0.0000	9.0024	2,329.1273	5,780.6061	2,376.7021	-3.6426	5.5365	1,256.7655	3,466.1698	1,252.1585	12.4294
95	06	4	SAT-W	0.0000	9.1461	3,772.9248	2,376.7021	5,290.9728	5.0065	5.6416	2,163.0705	1,252.1585	2,922.4148	14.6943
95	06	5	Female	0.6098	0.0541	0.2073	-3.6426	5.0065	0.2385	0.0211	0.0809	-1.4213	1.9535	0.0527
95	06	6	Female*HSGPA	0.0540	0.1116	4.7778	5.5365	5.6416	0.0211	0.1087	4.7666	5.7333	5.3711	0.0589
95	06	7	Female*SAT-CR	0.2068	4.7778	3,541.9305	1,256.7655	2,163.0705	0.0809	4.7666	3,541.8876	1,257.5188	2,162.0351	7.6417
95	06	8	Female*SAT-M	-3.6349	5.5365	1,256.7655	3,466.1698	1,252.1585	-1.4213	5.7333	1,257.5188	3,452.9292	1,270.3564	8.6831
95	06	9	Female*SAT-W	4.9958	5.6416	2,163.0705	1,252.1585	2,922.4148	1.9535	5.3711	2,162.0351	1,270.3564	2,897.4035	8.0811
95	06	10	FYGPA	3.0229	0.1076	13.6441	12.4294	14.6943	0.0527	0.0589	7.6417	8.6831	8.0811	0.3239
95	07	1	HSGPA	0.0000	0.2202	8.8287	7.7639	8.4847	0.0574	0.1079	5.9257	5.0759	6.2539	0.1382
95	07	2	SAT-CR	0.0000	8.8287	5,651.9109	2,666.0881	4,212.2178	-1.3976	5.9257	3,031.4828	1,349.4070	2,218.1275	13.0306
95	07	3	SAT-M	0.0000	7.7639	2,666.0881	5,168.7131	2,592.3782	-7.2828	5.0759	1,349.4070	2,717.2631	1,396.4164	7.6940
95	07	4	SAT-W	0.0000	8.4847	4,212.2178	2,592.3782	6,099.1821	1.1265	6.2539	2,218.1275	1,396.4164	3,065.9508	16.1906
95	07	5	Female	0.5622	0.0574	-1.3976	-7.2828	1.1265	0.2467	0.0251	-0.6119	-3.1883	0.4932	0.0739
95	07	6	Female*HSGPA	0.0573	0.1079	5.9257	5.0759	6.2539	0.0251	0.1046	6.0058	5.4932	6.1894	0.0761
95	07	7	Female*SAT-CR	-1.3944	5.9257	3,031.4828	1,349.4070	2,218.1275	-0.6119	6.0058	3,029.5340	1,339.2520	2,219.6983	8.5562
95	07	8	Female*SAT-M	-7.2660	5.0759	1,349.4070	2,717.2631	1,396.4164	-3.1883	5.4932	1,339.2520	2,664.3461	1,404.6018	4.7202
95	07	9	Female*SAT-W	1.1239	6.2539	2,218.1275	1,396.4164	3,065.9508	0.4932	6.1894	2,219.6983	1,404.6018	3,064.6847	10.2259
95	07	10	FYGPA	3.0165	0.1382	13.0306	7.6940	16.1906	0.0739	0.0761	8.5562	4.7202	10.2259	0.3241
95	08	1	HSGPA	0.0000	0.2277	10.5866	7.5703	11.8808	0.0763	0.1200	5.9759	5.3494	5.5957	0.1501
95	08	2	SAT-CR	0.0000	10.5866	6,076.8063	2,814.2545	3,891.8596	1.6377	5.9759	3,226.8461	1,360.6269	1,999.5466	15.1177
95	08	3	SAT-M	0.0000	7.5703	2,814.2545	5,790.9940	2,677.8091	-4.9573	5.3494	1,360.6269	2,839.0803	1,342.1774	10.3941
95	08	4	SAT-W	0.0000	11.8808	3,891.8596	2,677.8091	5,450.7269	3.1216	5.5957	1,999.5466	1,342.1774	2,780.2766	15.3044
95	08	5	Female	0.5318	0.0763	1.6377	-4.9573	3.1216	0.2496	0.0357	0.7667	-2.3209	1.4615	0.1023
95	08	6	Female*HSGPA	0.0761	0.1200	5.9759	5.3494	5.5957	0.0357	0.1142	5.8513	5.7267	5.3582	0.0841
95	08	7	Female*SAT-CR	1.6340	5.9759	3,226.8461	1,360.6269	1,999.5466	0.7667	5.8513	3,224.1701	1,368.7271	1,994.4461	8.7529
95	08	8	Female*SAT-M	-4.9461	5.3494	1,360.6269	2,839.0803	1,342.1774	-2.3209	5.7267	1,368.7271	2,814.5609	1,357.6168	6.8556
95	08	9	Female*SAT-W	3.1145	5.5957	1,999.5466	1,342.1774	2,780.2766	1.4615	5.3582	1,994.4461	1,357.6168	2,770.5547	7.4995
95	08	10	FYGPA	3.0123	0.1501	15.1177	10.3941	15.3044	0.1023	0.0841	8.7529	6.8556	7.4995	0.3577

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
96	07	1	HSGPA	0.0000	0.2608	10.4731	9.2840	13.2395	0.0585	0.1352	5.3325	4.6600	7.0546	0.2138
96	07	2	SAT-CR	0.0000	10.4731	8,381.9968	3,996.5292	6,567.1006	6.7422	5.3325	3,529.3036	1,347.8690	2,370.9144	25.7232
96	07	3	SAT-M	0.0000	9.2840	3,996.5292	7,180.8799	4,045.1656	-4.0084	4.6600	1,347.8690	2,936.5695	1,422.1605	8.5244
96	07	4	SAT-W	0.0000	13.2395	6,567.1006	4,045.1656	8,806.5942	7.7630	7.0546	2,370.9144	1,422.1605	3,593.7514	35.0550
96	07	5	Female	0.5114	0.0585	6.7422	-4.0084	7.7630	0.2513	0.0286	3.2945	-1.9587	3.7933	0.1309
96	07	6	Female*HSGPA	0.0582	0.1352	5.3325	4.6600	7.0546	0.0286	0.1318	4.9404	4.8932	6.6031	0.1138
96	07	7	Female*SAT-CR	6.7039	5.3325	3,529.3036	1,347.8690	2,370.9144	3.2945	4.9404	3,484.1045	1,374.7412	2,318.8722	7.9743
96	07	8	Female*SAT-M	-3.9857	4.6600	1,347.8690	2,936.5695	1,422.1605	-1.9587	4.8932	1,374.7412	2,920.5932	1,453.1011	2.4049
96	07	9	Female*SAT-W	7.7189	7.0546	2,370.9144	1,422.1605	3,593.7514	3.7933	6.6031	2,318.8722	1,453.1011	3,533.8298	13.4532
96	07	10	FYGPA	2.8962	0.2138	25.7232	8.5244	35.0550	0.1309	0.1138	7.9743	2.4049	13.4532	0.6441
96	08	1	HSGPA	0.0000	0.2981	13.4657	5.5624	11.1611	0.0471	0.2016	8.4095	5.0184	6.9247	0.1645
96	08	2	SAT-CR	0.0000	13.4657	10,161.9632	4,583.4531	7,415.5277	9.3938	8.4095	4,504.8648	1,932.7425	3,137.1098	26.3925
96	08	3	SAT-M	0.0000	5.5624	4,583.4531	7,801.0136	4,420.4066	-6.7881	5.0184	1,932.7425	4,132.9913	2,109.8748	19.7660
96	08	4	SAT-W	0.0000	11.1611	7,415.5277	4,420.4066	8,778.6578	13.6502	6.9247	3,137.1098	2,109.8748	4,049.9324	28.7617
96	08	5	Female	0.5737	0.0471	9.3938	-6.7881	13.6502	0.2459	0.0201	4.0047	-2.8939	5.8193	0.0310
96	08	6	Female*HSGPA	0.0468	0.2016	8.4095	5.0184	6.9247	0.0201	0.1994	7.9698	5.3361	6.2857	0.1132
96	08	7	Female*SAT-CR	9.3443	8.4095	4,504.8648	1,932.7425	3,137.1098	4.0047	7.9698	4,417.0865	1,996.1725	3,009.5576	9.7902
96	08	8	Female*SAT-M	-6.7524	5.0184	1,932.7425	4,132.9913	2,109.8748	-2.8939	5.3361	1,996.1725	4,087.1558	2,202.0460	7.9791
96	08	9	Female*SAT-W	13.5784	6.9247	3,137.1098	2,109.8748	4,049.9324	5.8193	6.2857	3,009.5576	2,202.0460	3,864.5841	13.5464
96	08	10	FYGPA	3.0632	0.1645	26.3925	19.7660	28.7617	0.0310	0.1132	9.7902	7.9791	13.5464	0.5628
97	06	1	HSGPA	0.0000	0.1140	6.3007	4.3947	4.9576	0.0203	0.0534	3.0151	2.2881	2.7364	0.0496
97	06	2	SAT-CR	0.0000	6.3007	6,865.6965	2,760.4563	4,432.0934	2.3905	3.0151	3,293.1988	1,348.5620	2,087.5057	14.9221
97	06	3	SAT-M	0.0000	4.3947	2,760.4563	4,681.9815	2,628.5091	-4.7238	2.2881	1,348.5620	2,348.3686	1,176.4548	10.1141
97	06	4	SAT-W	0.0000	4.9576	4,432.0934	2,628.5091	5,777.1718	3.4095	2.7364	2,087.5057	1,176.4548	2,719.3996	13.4952
97	06	5	Female	0.5000	0.0203	2.3905	-4.7238	3.4095	0.2505	0.0102	1.1952	-2.3619	1.7048	0.0189
97	06	6	Female*HSGPA	0.0203	0.0534	3.0151	2.2881	2.7364	0.0102	0.0530	2.9666	2.3839	2.6673	0.0220
97	06	7	Female*SAT-CR	2.3859	3.0151	3,293.1988	1,348.5620	2,087.5057	1.1952	2.9666	3,287.4953	1,359.8327	2,079.3708	6.9583
97	06	8	Female*SAT-M	-4.7148	2.2881	1,348.5620	2,348.3686	1,176.4548	-2.3619	2.3839	1,359.8327	2,326.0967	1,192.5301	4.4433
97	06	9	Female*SAT-W	3.4030	2.7364	2,087.5057	1,176.4548	2,719.3996	1.7048	2.6673	2,079.3708	1,192.5301	2,707.7968	5.5671
97	06	10	FYGPA	3.3830	0.0496	14.9221	10.1141	13.4952	0.0189	0.0220	6.9583	4.4433	5.5671	0.1605
98	06	1	HSGPA	0.0000	0.1931	8.5249	9.3598	8.2715	0.0252	0.0999	5.1534	5.0812	4.1238	0.1017
98	06	2	SAT-CR	0.0000	8.5249	6,133.0574	2,993.9892	4,145.9255	-1.6814	5.1534	3,339.8964	1,695.2457	2,257.4640	12.3744
98	06	3	SAT-M	0.0000	9.3598	2,993.9892	6,257.2174	2,943.7186	-9.7669	5.0812	1,695.2457	3,458.4555	1,686.3841	11.7436
98	06	4	SAT-W	0.0000	8.2715	4,145.9255	2,943.7186	5,949.5304	2.5947	4.1238	2,257.4640	1,686.3841	3,238.3294	12.4707
98	06	5	Female	0.5484	0.0252	-1.6814	-9.7669	2.5947	0.2478	0.0114	-0.7593	-4.4108	1.1718	0.0348
98	06	6	Female*HSGPA	0.0252	0.0999	5.1534	5.0812	4.1238	0.0114	0.0993	5.1957	5.3270	4.0585	0.0494
98	06	7	Female*SAT-CR	-1.6807	5.1534	3,339.8964	1,695.2457	2,257.4640	-0.7593	5.1957	3,337.0704	1,678.8302	2,261.8249	7.5769
98	06	8	Female*SAT-M	-9.7630	5.0812	1,695.2457	3,458.4555	1,686.3841	-4.4108	5.3270	1,678.8302	3,363.1018	1,711.7156	7.3893
98	06	9	Female*SAT-W	2.5936	4.1238	2,257.4640	1,686.3841	3,238.3294	1.1718	4.0585	2,261.8249	1,711.7156	3,231.5998	6.7510
98	06	10	FYGPA	3.1257	0.1017	12.3744	11.7436	12.4707	0.0348	0.0494	7.5769	7.3893	6.7510	0.2878

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
99	08	1	HSGPA	0.0000	0.1491	10.6738	11.0848	10.2743	0.0181	0.0969	7.1678	7.5372	6.6010	0.0931
99	08	2	SAT-CR	0.0000	10.6738	7,029.1249	3,359.5175	4,993.3780	0.5358	7.1678	4,565.2878	2,187.5044	3,269.1740	16.4925
99	08	3	SAT-M	0.0000	11.0848	3,359.5175	7,156.6118	3,257.3126	-10.9611	7.5372	2,187.5044	4,254.5299	2,138.8822	14.2320
99	08	4	SAT-W	0.0000	10.2743	4,993.3780	3,257.3126	6,666.7474	2.8291	6.6010	3,269.1740	2,138.8822	4,267.7573	16.8425
99	08	5	Female	0.6440	0.0181	0.5358	-10.9611	2.8291	0.2297	0.0065	0.1908	-3.9025	1.0073	0.0501
99	08	6	Female*HSGPA	0.0181	0.0969	7.1678	7.5372	6.6010	0.0065	0.0966	7.1582	7.7355	6.5498	0.0559
99	08	7	Female*SAT-CR	0.5348	7.1678	4,565.2878	2,187.5044	3,269.1740	0.1908	7.1582	4,565.0012	2,193.3664	3,267.6610	10.5367
99	08	8	Female*SAT-M	-10.9398	7.5372	2,187.5044	4,254.5299	2,138.8822	-3.9025	7.7355	2,193.3664	4,134.6175	2,169.8323	9.4947
99	08	9	Female*SAT-W	2.8236	6.6010	3,269.1740	2,138.8822	4,267.7573	1.0073	6.5498	3,267.6610	2,169.8323	4,259.7689	10.1871
99	08	10	FYGPA	3.2714	0.0931	16.4925	14.2320	16.8425	0.0501	0.0559	10.5367	9.4947	10.1871	0.2675
100	06	1	HSGPA	0.0000	0.1429	5.1965	3.2055	6.4134	0.0269	0.0407	1.5359	0.6207	1.8811	0.0974
100	06	2	SAT-CR	0.0000	5.1965	5,404.2008	1,520.4078	3,424.2237	1.8404	1.5359	1,849.8526	488.3765	1,145.7181	10.3511
100	06	3	SAT-M	0.0000	3.2055	1,520.4078	4,576.4516	1,800.5741	-6.3455	0.6207	488.3765	1,653.7096	511.0597	12.1098
100	06	4	SAT-W	0.0000	6.4134	3,424.2237	1,800.5741	5,614.9310	3.8282	1.8811	1,145.7181	511.0597	1,794.8134	13.7498
100	06	5	Female	0.3215	0.0269	1.8404	-6.3455	3.8282	0.2182	0.0182	1.2487	-4.3053	2.5973	0.0371
100	06	6	Female*HSGPA	0.0269	0.0407	1.5359	0.6207	1.8811	0.0182	0.0400	1.4864	0.7913	1.7782	0.0269
100	06	7	Female*SAT-CR	1.8397	1.5359	1,849.8526	488.3765	1,145.7181	1.2487	1.4864	1,846.4668	500.0502	1,138.6755	3.3149
100	06	8	Female*SAT-M	-6.3429	0.6207	488.3765	1,653.7096	511.0597	-4.3053	0.7913	500.0502	1,613.4610	535.3413	2.8145
100	06	9	Female*SAT-W	3.8266	1.8811	1,145.7181	511.0597	1,794.8134	2.5973	1.7782	1,138.6755	535.3413	1,780.1646	3.4685
100	06	10	FYGPA	2.9238	0.0974	10.3511	12.1098	13.7498	0.0371	0.0269	3.3149	2.8145	3.4685	0.5289
100	07	1	HSGPA	0.0000	0.1208	4.2200	3.1913	5.3298	0.0207	0.0360	1.2670	1.1683	1.5503	0.0827
100	07	2	SAT-CR	0.0000	4.2200	5,774.0929	1,649.5275	3,616.3313	-0.2340	1.2670	1,979.1345	545.8901	1,253.5526	9.5564
100	07	3	SAT-M	0.0000	3.1913	1,649.5275	4,512.8974	1,735.1639	-7.8193	1.1683	545.8901	1,624.7119	496.8810	12.2713
100	07	4	SAT-W	0.0000	5.3298	3,616.3313	1,735.1639	5,719.7459	3.0528	1.5503	1,253.5526	496.8810	1,849.0257	12.6719
100	07	5	Female	0.3346	0.0207	-0.2340	-7.8193	3.0528	0.2228	0.0138	-0.1557	-5.2027	2.0312	0.0254
100	07	6	Female*HSGPA	0.0207	0.0360	1.2670	1.1683	1.5503	0.0138	0.0356	1.2718	1.3303	1.4871	0.0258
100	07	7	Female*SAT-CR	-0.2339	1.2670	1,979.1345	545.8901	1,253.5526	-0.1557	1.2718	1,979.0797	544.0609	1,254.2667	2.9793
100	07	8	Female*SAT-M	-7.8159	1.1683	545.8901	1,624.7119	496.8810	-5.2027	1.3303	544.0609	1,563.5964	520.7415	3.3176
100	07	9	Female*SAT-W	3.0515	1.5503	1,253.5526	496.8810	1,849.0257	2.0312	1.4871	1,254.2667	520.7415	1,839.7102	3.7722
100	07	10	FYGPA	3.0171	0.0827	9.5564	12.2713	12.6719	0.0254	0.0258	2.9793	3.3176	3.7722	0.4604
100	08	1	HSGPA	0.0000	0.1106	3.6506	2.5310	4.6728	0.0174	0.0311	1.3336	0.5650	1.5774	0.0746
100	08	2	SAT-CR	0.0000	3.6506	5,547.4324	1,142.9294	3,209.7540	0.0761	1.3336	1,645.3345	225.5122	1,021.8734	9.3015
100	08	3	SAT-M	0.0000	2.5310	1,142.9294	4,223.9944	1,402.3300	-6.8638	0.5650	225.5122	1,340.9376	297.9620	10.7747
100	08	4	SAT-W	0.0000	4.6728	3,209.7540	1,402.3300	5,038.4456	3.8671	1.5774	1,021.8734	297.9620	1,626.9804	11.4104
100	08	5	Female	0.3175	0.0174	0.0761	-6.8638	3.8671	0.2168	0.0119	0.0519	-4.6844	2.6392	0.0196
100	08	6	Female*HSGPA	0.0174	0.0311	1.3336	0.5650	1.5774	0.0119	0.0308	1.3323	0.6844	1.5101	0.0212
100	08	7	Female*SAT-CR	0.0760	1.3336	1,645.3345	225.5122	1,021.8734	0.0519	1.3323	1,645.3287	226.0340	1,021.5795	2.8358
100	08	8	Female*SAT-M	-6.8604	0.5650	225.5122	1,340.9376	297.9620	-4.6844	0.6844	226.0340	1,293.8494	324.4917	2.6048
100	08	9	Female*SAT-W	3.8652	1.5774	1,021.8734	297.9620	1,626.9804	2.6392	1.5101	1,021.5795	324.4917	1,612.0334	3.2450
100	08	10	FYGPA	3.0241	0.0746	9.3015	10.7747	11.4104	0.0196	0.0212	2.8358	2.6048	3.2450	0.4374

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
101	07	1	HSGPA	0.0000	0.1006	5.0802	4.8067	5.0853	0.0056	0.0484	2.4139	2.6649	2.5305	0.0430
101	07	2	SAT-CR	0.0000	5.0802	6,168.2658	2,669.4637	4,199.3468	-1.0239	2.4139	3,087.1221	1,355.3845	2,125.0681	13.3510
101	07	3	SAT-M	0.0000	4.8067	2,669.4637	5,868.7113	2,913.9584	-10.4322	2.6649	1,355.3845	2,995.2494	1,524.8750	9.3483
101	07	4	SAT-W	0.0000	5.0853	4,199.3468	2,913.9584	6,167.7228	0.6218	2.5305	2,125.0681	1,524.8750	3,013.5141	14.0333
101	07	5	Female	0.4932	0.0056	-1.0239	-10.4322	0.6218	0.2500	0.0029	-0.5189	-5.2873	0.3152	0.0215
101	07	6	Female*HSGPA	0.0056	0.0484	2.4139	2.6649	2.5305	0.0029	0.0484	2.4196	2.7235	2.5270	0.0194
101	07	7	Female*SAT-CR	-1.0235	2.4139	3,087.1221	1,355.3845	2,125.0681	-0.5189	2.4196	3,086.0742	1,344.7067	2,125.7045	6.2788
101	07	8	Female*SAT-M	-10.4290	2.6649	1,355.3845	2,995.2494	1,524.8750	-5.2873	2.7235	1,344.7067	2,886.4515	1,531.3599	4.3451
101	07	9	Female*SAT-W	0.6216	2.5305	2,125.0681	1,524.8750	3,013.5141	0.3152	2.5270	2,125.7045	1,531.3599	3,013.1276	6.4622
101	07	10	FYGPA	3.3137	0.0430	13.3510	9.3483	14.0333	0.0215	0.0194	6.2788	4.3451	6.4622	0.2084
101	08	1	HSGPA	0.0000	0.1001	5.5342	5.3836	4.1913	0.0038	0.0456	2.5667	2.5329	1.9839	0.0425
101	08	2	SAT-CR	0.0000	5.5342	6,278.3479	2,754.1833	4,201.6382	-3.5518	2.5667	3,188.6415	1,349.6387	2,133.0720	13.5318
101	08	3	SAT-M	0.0000	5.3836	2,754.1833	6,255.4728	2,892.4835	-11.3341	2.5329	1,349.6387	3,109.4784	1,439.0561	11.8033
101	08	4	SAT-W	0.0000	4.1913	4,201.6382	2,892.4835	6,119.5360	0.5785	1.9839	2,133.0720	1,439.0561	2,972.6584	14.2625
101	08	5	Female	0.4925	0.0038	-3.5518	-11.3341	0.5785	0.2500	0.0020	-1.8024	-5.7515	0.2936	0.0082
101	08	6	Female*HSGPA	0.0038	0.0456	2.5667	2.5329	1.9839	0.0020	0.0455	2.5803	2.5765	1.9817	0.0184
101	08	7	Female*SAT-CR	-3.5504	2.5667	3,188.6415	1,349.6387	2,133.0720	-1.8024	2.5803	3,176.0311	1,309.3986	2,135.1259	6.6694
101	08	8	Female*SAT-M	-11.3294	2.5329	1,349.6387	3,109.4784	1,439.0561	-5.7515	2.5765	1,309.3986	2,981.0705	1,445.6101	5.1640
101	08	9	Female*SAT-W	0.5783	1.9839	2,133.0720	1,439.0561	2,972.6584	0.2936	1.9817	2,135.1259	1,445.6101	2,972.3239	6.5610
101	08	10	FYGPA	3.3237	0.0425	13.5318	11.8033	14.2625	0.0082	0.0184	6.6694	5.1640	6.5610	0.2193
102	06	1	HSGPA	0.0000	0.1432	6.1583	6.8219	6.6901	0.0149	0.0695	3.7435	3.8180	3.6053	0.0547
102	06	2	SAT-CR	0.0000	6.1583	8,455.1839	4,031.1517	6,204.0105	-2.6863	3.7435	4,542.0039	2,166.7634	3,353.3250	15.1852
102	06	3	SAT-M	0.0000	6.8219	4,031.1517	7,326.1985	3,943.8649	-11.2309	3.8180	2,166.7634	3,772.1578	2,121.6267	12.3049
102	06	4	SAT-W	0.0000	6.6901	6,204.0105	3,943.8649	7,677.7641	0.3054	3.6053	3,353.3250	2,121.6267	4,041.6460	15.4505
102	06	5	Female	0.5283	0.0149	-2.6863	-11.2309	0.3054	0.2493	0.0070	-1.2671	-5.2976	0.1441	0.0144
102	06	6	Female*HSGPA	0.0149	0.0695	3.7435	3.8180	3.6053	0.0070	0.0693	3.7835	3.9854	3.6008	0.0270
102	06	7	Female*SAT-CR	-2.6857	3.7435	4,542.0039	2,166.7634	3,353.3250	-1.2671	3.7835	4,534.7895	2,136.6009	3,354.1453	9.0868
102	06	8	Female*SAT-M	-11.2284	3.8180	2,166.7634	3,772.1578	2,121.6267	-5.2976	3.9854	2,136.6009	3,646.0524	2,125.0562	7.2871
102	06	9	Female*SAT-W	0.3054	3.6053	3,353.3250	2,121.6267	4,041.6460	0.1441	3.6008	3,354.1453	2,125.0562	4,041.5527	9.1613
102	06	10	FYGPA	3.1847	0.0547	15.1852	12.3049	15.4505	0.0144	0.0270	9.0868	7.2871	9.1613	0.2097
102	08	1	HSGPA	0.0000	0.1195	5.3331	5.9951	6.3506	0.0134	0.0600	2.7657	3.1070	3.0211	0.0442
102	08	2	SAT-CR	0.0000	5.3331	8,309.9472	3,681.1578	5,830.7903	-3.4771	2.7657	4,454.7496	2,018.5049	3,188.7800	14.6711
102	08	3	SAT-M	0.0000	5.9951	3,681.1578	7,034.8310	3,676.9298	-11.0618	3.1070	2,018.5049	3,825.4311	2,050.3856	11.6560
102	08	4	SAT-W	0.0000	6.3506	5,830.7903	3,676.9298	7,256.9893	0.1169	3.0211	3,188.7800	2,050.3856	3,957.2232	15.1189
102	08	5	Female	0.5455	0.0134	-3.4771	-11.0618	0.1169	0.2480	0.0061	-1.5804	-5.0276	0.0531	0.0134
102	08	6	Female*HSGPA	0.0134	0.0600	2.7657	3.1070	3.0211	0.0061	0.0598	2.8124	3.2556	3.0195	0.0208
102	08	7	Female*SAT-CR	-3.4763	2.7657	4,454.7496	2,018.5049	3,188.7800	-1.5804	2.8124	4,442.6619	1,980.0505	3,189.1865	8.4239
102	08	8	Female*SAT-M	-11.0593	3.1070	2,018.5049	3,825.4311	2,050.3856	-5.0276	3.2556	1,980.0505	3,703.0959	2,051.6787	6.0986
102	08	9	Female*SAT-W	0.1169	3.0211	3,188.7800	2,050.3856	3,957.2232	0.0531	3.0195	3,189.1865	2,051.6787	3,957.2095	8.1151
102	08	10	FYGPA	3.2342	0.0442	14.6711	11.6560	15.1189	0.0134	0.0208	8.4239	6.0986	8.1151	0.1839

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
103	06	1	HSGPA	0.0000	0.2586	11.5072	15.9551	11.1736	0.0422	0.1173	6.6454	7.6299	4.4248	0.2193
103	06	2	SAT-CR	0.0000	11.5072	7,729.9285	4,291.3137	5,014.5699	-3.6874	6.6454	4,262.8814	2,216.0891	2,699.0765	21.9039
103	06	3	SAT-M	0.0000	15.9551	4,291.3137	7,560.0304	3,891.0844	-5.9878	7.6299	2,216.0891	3,629.6856	1,763.9168	25.5699
103	06	4	SAT-W	0.0000	11.1736	5,014.5699	3,891.0844	6,280.6808	0.7893	4.4248	2,699.0765	1,763.9168	2,965.6403	20.4404
103	06	5	Female	0.5406	0.0422	-3.6874	-5.9878	0.7893	0.2491	0.0194	-1.6939	-2.7506	0.3626	0.0772
103	06	6	Female*HSGPA	0.0421	0.1173	6.6454	7.6299	4.4248	0.0194	0.1155	6.8005	7.8817	4.3916	0.0958
103	06	7	Female*SAT-CR	-3.6759	6.6454	4,262.8814	2,216.0891	2,699.0765	-1.6939	6.8005	4,249.3270	2,194.0788	2,701.9778	12.8932
103	06	8	Female*SAT-M	-5.9690	7.6299	2,216.0891	3,629.6856	1,763.9168	-2.7506	7.8817	2,194.0788	3,593.9444	1,768.6280	12.6126
103	06	9	Female*SAT-W	0.7868	4.4248	2,699.0765	1,763.9168	2,965.6403	0.3626	4.3916	2,701.9778	1,768.6280	2,965.0193	9.5286
103	06	10	FYGPA	2.4443	0.2193	21.9039	25.5699	20.4404	0.0772	0.0958	12.8932	12.6126	9.5286	0.9247
103	07	1	HSGPA	0.0000	0.2997	13.5687	13.4915	15.8962	0.0548	0.1713	8.8753	8.6154	10.4423	0.2830
103	07	2	SAT-CR	0.0000	13.5687	7,280.9694	3,804.6068	4,917.7894	0.8402	8.8753	4,285.3332	2,096.3627	2,809.1618	29.1523
103	07	3	SAT-M	0.0000	13.4915	3,804.6068	6,524.9791	3,830.8987	-3.6633	8.6154	2,096.3627	3,056.0236	2,044.5814	23.8460
103	07	4	SAT-W	0.0000	15.8962	4,917.7894	3,830.8987	6,069.8345	5.1164	10.4423	2,809.1618	2,044.5814	3,286.2432	30.1982
103	07	5	Female	0.5510	0.0548	0.8402	-3.6633	5.1164	0.2481	0.0246	0.3772	-1.6448	2.2971	0.1091
103	07	6	Female*HSGPA	0.0547	0.1713	8.8753	8.6154	10.4423	0.0246	0.1683	8.8294	8.8157	10.1625	0.1790
103	07	7	Female*SAT-CR	0.8377	8.8753	4,285.3332	2,096.3627	2,809.1618	0.3772	8.8294	4,284.6293	2,099.4317	2,804.8756	19.5378
103	07	8	Female*SAT-M	-3.6526	8.6154	2,096.3627	3,056.0236	2,044.5814	-1.6448	8.8157	2,099.4317	3,042.6427	2,063.2697	14.3283
103	07	9	Female*SAT-W	5.1014	10.4423	2,809.1618	2,044.5814	3,286.2432	2.2971	10.1625	2,804.8756	2,063.2697	3,260.1423	17.7809
103	07	10	FYGPA	2.1482	0.2830	29.1523	23.8460	30.1982	0.1091	0.1790	19.5378	14.3283	17.7809	1.0873
103	08	1	HSGPA	0.0000	0.3006	17.4262	20.2032	19.8898	0.0206	0.1652	10.7364	10.2328	12.1814	0.2581
103	08	2	SAT-CR	0.0000	17.4262	8,210.2109	4,566.0149	6,169.9749	-1.2779	10.7364	4,573.9664	2,438.9226	3,471.0472	24.0270
103	08	3	SAT-M	0.0000	20.2032	4,566.0149	7,089.7326	4,599.6812	-5.2072	10.2328	2,438.9226	3,535.6474	2,485.3711	21.8654
103	08	4	SAT-W	0.0000	19.8898	6,169.9749	4,599.6812	8,048.0412	3.9032	12.1814	3,471.0472	2,485.3711	4,513.6242	25.4446
103	08	5	Female	0.5608	0.0206	-1.2779	-5.2072	3.9032	0.2470	0.0090	-0.5612	-2.2868	1.7142	0.0654
103	08	6	Female*HSGPA	0.0205	0.1652	10.7364	10.2328	12.1814	0.0090	0.1647	10.7627	10.3397	12.1013	0.1553
103	08	7	Female*SAT-CR	-1.2741	10.7364	4,573.9664	2,438.9226	3,471.0472	-0.5612	10.7627	4,572.3382	2,432.2881	3,476.0203	12.1348
103	08	8	Female*SAT-M	-5.1917	10.2328	2,438.9226	3,535.6474	2,485.3711	-2.2868	10.3397	2,432.2881	3,508.6130	2,505.6357	12.5483
103	08	9	Female*SAT-W	3.8916	12.1814	3,471.0472	2,485.3711	4,513.6242	1.7142	12.1013	3,476.0203	2,505.6357	4,498.4342	14.4231
103	08	10	FYGPA	2.5807	0.2581	24.0270	21.8654	25.4446	0.0654	0.1553	12.1348	12.5483	14.4231	1.0666
104	07	1	HSGPA	0.0000	0.1591	3.5297	1.8362	5.1295	0.0255	0.0599	2.5966	0.3635	2.3712	0.0601
104	07	2	SAT-CR	0.0000	3.5297	4,353.4164	911.0379	2,457.4016	2.2730	2.5966	2,183.3965	601.7920	1,507.4819	6.8973
104	07	3	SAT-M	0.0000	1.8362	911.0379	3,809.5387	940.5538	-3.5688	0.3635	601.7920	2,061.0011	658.2555	7.6273
104	07	4	SAT-W	0.0000	5.1295	2,457.4016	940.5538	4,400.6793	7.1729	2.3712	1,507.4819	658.2555	2,364.4011	10.9406
104	07	5	Female	0.5077	0.0255	2.2730	-3.5688	7.1729	0.2506	0.0126	1.1189	-1.7568	3.5310	0.0558
104	07	6	Female*HSGPA	0.0255	0.0599	2.5966	0.3635	2.3712	0.0126	0.0593	2.5387	0.4544	2.1886	0.0294
104	07	7	Female*SAT-CR	2.2671	2.5966	2,183.3965	601.7920	1,507.4819	1.1189	2.5387	2,178.2434	609.8828	1,491.2201	4.6926
104	07	8	Female*SAT-M	-3.5596	0.3635	601.7920	2,061.0011	658.2555	-1.7568	0.4544	609.8828	2,048.2979	683.7880	4.6557
104	07	9	Female*SAT-W	7.1545	2.3712	1,507.4819	658.2555	2,364.4011	3.5310	2.1886	1,491.2201	683.7880	2,313.0826	6.2711
104	07	10	FYGPA	3.1744	0.0601	6.8973	7.6273	10.9406	0.0558	0.0294	4.6926	4.6557	6.2711	0.2353

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
105	08	1	HSGPA	0.0000	0.1754	9.0169	12.8637	11.5587	0.0293	0.0991	4.7845	8.0355	7.0125	0.0970
105	08	2	SAT-CR	0.0000	9.0169	4,830.6840	2,260.4764	3,158.2510	0.8447	4.7845	2,547.0919	1,259.3414	1,845.6674	9.8421
105	08	3	SAT-M	0.0000	12.8637	2,260.4764	5,383.2741	2,091.5325	-7.1100	8.0355	1,259.3414	3,179.1598	1,271.3405	9.7049
105	08	4	SAT-W	0.0000	11.5587	3,158.2510	2,091.5325	4,725.5224	4.5951	7.0125	1,845.6674	1,271.3405	2,797.4461	13.9329
105	08	5	Female	0.5711	0.0293	0.8447	-7.1100	4.5951	0.2454	0.0126	0.3623	-3.0492	1.9707	0.0575
105	08	6	Female*HSGPA	0.0292	0.0991	4.7845	8.0355	7.0125	0.0126	0.0982	4.7598	8.2432	6.8783	0.0563
105	08	7	Female*SAT-CR	0.8430	4.7845	2,547.0919	1,259.3414	1,845.6674	0.3623	4.7598	2,546.3798	1,265.3351	1,841.7937	5.5444
105	08	8	Female*SAT-M	-7.0955	8.0355	1,259.3414	3,179.1598	1,271.3405	-3.0492	8.2432	1,265.3351	3,128.7108	1,303.9452	6.3397
105	08	9	Female*SAT-W	4.5858	7.0125	1,845.6674	1,271.3405	2,797.4461	1.9707	6.8783	1,841.7937	1,303.9452	2,776.3740	7.6703
105	08	10	FYGPA	3.1216	0.0970	9.8421	9.7049	13.9329	0.0575	0.0563	5.5444	6.3397	7.6703	0.2674
106	06	1	HSGPA	0.0000	0.1563	5.8472	5.7060	7.0669	0.0266	0.0706	3.5454	2.6541	3.7525	0.0952
106	06	2	SAT-CR	0.0000	5.8472	5,833.1123	2,613.7913	3,853.1843	0.1763	3.5454	3,032.3684	1,447.4672	2,050.8396	15.3509
106	06	3	SAT-M	0.0000	5.7060	2,613.7913	5,765.5310	2,590.2349	-8.2440	2.6541	1,447.4672	2,803.7239	1,410.0983	14.6527
106	06	4	SAT-W	0.0000	7.0669	3,853.1843	2,590.2349	5,679.1177	5.2375	3.7525	2,050.8396	1,410.0983	2,916.2726	17.3123
106	06	5	Female	0.5032	0.0266	0.1763	-8.2440	5.2375	0.2501	0.0132	0.0876	-4.0957	2.6021	0.0561
106	06	6	Female*HSGPA	0.0266	0.0706	3.5454	2.6541	3.7525	0.0132	0.0699	3.5407	2.8736	3.6130	0.0429
106	06	7	Female*SAT-CR	0.1763	3.5454	3,032.3684	1,447.4672	2,050.8396	0.0876	3.5407	3,032.3373	1,448.9204	2,049.9163	9.1461
106	06	8	Female*SAT-M	-8.2407	2.6541	1,447.4672	2,803.7239	1,410.0983	-4.0957	2.8736	1,448.9204	2,735.7880	1,453.2589	7.4748
106	06	9	Female*SAT-W	5.2354	3.7525	2,050.8396	1,410.0983	2,916.2726	2.6021	3.6130	2,049.9163	1,453.2589	2,888.8522	9.9062
106	06	10	FYGPA	3.0844	0.0952	15.3509	14.6527	17.3123	0.0561	0.0429	9.1461	7.4748	9.9062	0.4386
106	07	1	HSGPA	0.0000	0.1463	5.3705	5.5975	5.6812	0.0252	0.0606	2.3901	1.9894	2.2315	0.0867
106	07	2	SAT-CR	0.0000	5.3705	6,768.8500	3,213.6959	4,610.7035	-0.5059	2.3901	3,251.4445	1,468.1202	2,206.9688	15.4708
106	07	3	SAT-M	0.0000	5.5975	3,213.6959	6,173.4573	2,969.9741	-9.4288	1.9894	1,468.1202	2,924.3615	1,421.2934	15.1876
106	07	4	SAT-W	0.0000	5.6812	4,610.7035	2,969.9741	6,114.9560	3.5143	2.2315	2,206.9688	1,421.2934	2,943.4860	18.1684
106	07	5	Female	0.4880	0.0252	-0.5059	-9.4288	3.5143	0.2500	0.0129	-0.2590	-4.8277	1.7994	0.0542
106	07	6	Female*HSGPA	0.0252	0.0606	2.3901	1.9894	2.2315	0.0129	0.0600	2.4028	2.2265	2.1431	0.0333
106	07	7	Female*SAT-CR	-0.5057	2.3901	3,251.4445	1,468.1202	2,206.9688	-0.2590	2.4028	3,251.1887	1,463.3522	2,208.7460	8.0671
106	07	8	Female*SAT-M	-9.4250	1.9894	1,468.1202	2,924.3615	1,421.2934	-4.8277	2.2265	1,463.3522	2,835.4950	1,454.4159	7.4440
106	07	9	Female*SAT-W	3.5129	2.2315	2,206.9688	1,421.2934	2,943.4860	1.7994	2.1431	2,208.7460	1,454.4159	2,931.1405	8.5779
106	07	10	FYGPA	3.1615	0.0867	15.4708	15.1876	18.1684	0.0542	0.0333	8.0671	7.4440	8.5779	0.4066
106	08	1	HSGPA	0.0000	0.1397	4.3337	3.8333	4.8719	0.0239	0.0595	1.7472	0.9198	1.8902	0.0869
106	08	2	SAT-CR	0.0000	4.3337	5,831.2545	2,699.3240	3,946.7090	-1.5909	1.7472	2,750.1375	1,288.0378	1,815.1813	13.9290
106	08	3	SAT-M	0.0000	3.8333	2,699.3240	5,640.8550	2,661.4603	-10.1965	0.9198	1,288.0378	2,712.4785	1,235.4591	12.8924
106	08	4	SAT-W	0.0000	4.8719	3,946.7090	2,661.4603	5,827.2521	4.3281	1.8902	1,815.1813	1,235.4591	2,619.0900	16.4014
106	08	5	Female	0.5004	0.0239	-1.5909	-10.1965	4.3281	0.2501	0.0120	-0.7948	-5.0938	2.1622	0.0525
106	08	6	Female*HSGPA	0.0239	0.0595	1.7472	0.9198	1.8902	0.0120	0.0589	1.7852	1.1637	1.7866	0.0380
106	08	7	Female*SAT-CR	-1.5903	1.7472	2,750.1375	1,288.0378	1,815.1813	-0.7948	1.7852	2,747.6075	1,271.8228	1,822.0641	7.4154
106	08	8	Female*SAT-M	-10.1921	0.9198	1,288.0378	2,712.4785	1,235.4591	-5.0938	1.1637	1,271.8228	2,608.5546	1,279.5714	6.5487
106	08	9	Female*SAT-W	4.3262	1.8902	1,815.1813	1,235.4591	2,619.0900	2.1622	1.7866	1,822.0641	1,279.5714	2,600.3658	8.6283
106	08	10	FYGPA	3.2021	0.0869	13.9290	12.8924	16.4014	0.0525	0.0380	7.4154	6.5487	8.6283	0.3918

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
107	08	1	HSGPA	0.0000	0.2963	13.3485	15.7644	14.9501	0.0727	0.1331	7.5427	8.3180	8.3697	0.1644
107	08	2	SAT-CR	0.0000	13.3485	7,075.0179	3,813.4006	4,529.0975	-3.7400	7.5427	2,973.6999	1,565.6239	1,873.6978	6.2158
107	08	3	SAT-M	0.0000	15.7644	3,813.4006	6,986.9268	3,597.0965	-5.5508	8.3180	1,565.6239	2,957.7847	1,457.7527	9.1867
107	08	4	SAT-W	0.0000	14.9501	4,529.0975	3,597.0965	5,712.6784	3.2756	8.3697	1,873.6978	1,457.7527	2,360.7462	15.4431
107	08	5	Female	0.4380	0.0727	-3.7400	-5.5508	3.2756	0.2469	0.0408	-2.1017	-3.1193	1.8407	0.0872
107	08	6	Female*HSGPA	0.0724	0.1331	7.5427	8.3180	8.3697	0.0408	0.1279	7.8137	8.7201	8.1324	0.0819
107	08	7	Female*SAT-CR	-3.7292	7.5427	2,973.6999	1,565.6239	1,873.6978	-2.1017	7.8137	2,959.7527	1,544.9238	1,885.9130	6.7590
107	08	8	Female*SAT-M	-5.5348	8.3180	1,565.6239	2,957.7847	1,457.7527	-3.1193	8.7201	1,544.9238	2,927.0621	1,475.8822	5.3635
107	08	9	Female*SAT-W	3.2661	8.3697	1,873.6978	1,457.7527	2,360.7462	1.8407	8.1324	1,885.9130	1,475.8822	2,350.0479	7.9637
107	08	10	FYGPA	2.7481	0.1644	6.2158	9.1867	15.4431	0.0872	0.0819	6.7590	5.3635	7.9637	0.5702
108	06	1	HSGPA	0.0000	0.2487	6.3967	8.1846	9.3119	0.0491	0.1300	3.4962	3.9878	5.4821	0.1280
108	06	2	SAT-CR	0.0000	6.3967	6,085.9083	2,775.6130	4,461.0270	2.7424	3.4962	2,914.2318	1,294.4389	2,094.2731	11.1024
108	06	3	SAT-M	0.0000	8.1846	2,775.6130	6,098.0713	3,214.1798	-5.2357	3.9878	1,294.4389	3,340.8301	1,820.6421	7.2622
108	06	4	SAT-W	0.0000	9.3119	4,461.0270	3,214.1798	6,187.0228	5.3592	5.4821	2,094.2731	1,820.6421	3,086.8566	14.2855
108	06	5	Female	0.5291	0.0491	2.7424	-5.2357	5.3592	0.2499	0.0231	1.2915	-2.4658	2.5239	0.0300
108	06	6	Female*HSGPA	0.0490	0.1300	3.4962	3.9878	5.4821	0.0231	0.1276	3.3619	4.2442	5.2195	0.0726
108	06	7	Female*SAT-CR	2.7340	3.4962	2,914.2318	1,294.4389	2,094.2731	1.2915	3.3619	2,906.7343	1,308.7532	2,079.6213	6.9052
108	06	8	Female*SAT-M	-5.2197	3.9878	1,294.4389	3,340.8301	1,820.6421	-2.4658	4.2442	1,308.7532	3,313.5010	1,848.6155	5.1089
108	06	9	Female*SAT-W	5.3428	5.4821	2,094.2731	1,820.6421	3,086.8566	2.5239	5.2195	2,079.6213	1,848.6155	3,058.2236	8.7156
108	06	10	FYGPA	2.9225	0.1280	11.1024	7.2622	14.2855	0.0300	0.0726	6.9052	5.1089	8.7156	0.3299
108	07	1	HSGPA	0.0000	0.2476	12.6220	6.0987	13.1075	0.0504	0.1329	7.5506	3.8398	7.6858	0.1452
108	07	2	SAT-CR	0.0000	12.6220	6,903.8492	3,722.8504	4,844.2766	0.7118	7.5506	4,193.1471	2,383.7462	3,106.9503	21.5328
108	07	3	SAT-M	0.0000	6.0987	3,722.8504	6,276.2692	3,201.6232	-6.4332	3.8398	2,383.7462	4,015.4472	2,146.9694	15.7497
108	07	4	SAT-W	0.0000	13.1075	4,844.2766	3,201.6232	6,342.4149	5.9757	7.6858	3,106.9503	2,146.9694	4,101.4750	18.1557
108	07	5	Female	0.5994	0.0504	0.7118	-6.4332	5.9757	0.2408	0.0202	0.2851	-2.5769	2.3936	0.0477
108	07	6	Female*HSGPA	0.0503	0.1329	7.5506	3.8398	7.6858	0.0202	0.1304	7.5148	4.1631	7.3855	0.0770
108	07	7	Female*SAT-CR	0.7099	7.5506	4,193.1471	2,383.7462	3,106.9503	0.2851	7.5148	4,192.6418	2,388.3128	3,102.7085	13.1950
108	07	8	Female*SAT-M	-6.4152	3.8398	2,383.7462	4,015.4472	2,146.9694	-2.5769	4.1631	2,388.3128	3,974.1768	2,185.3045	10.5314
108	07	9	Female*SAT-W	5.9589	7.6858	3,106.9503	2,146.9694	4,101.4750	2.3936	7.3855	3,102.7085	2,185.3045	4,065.8664	10.1952
108	07	10	FYGPA	3.0064	0.1452	21.5328	15.7497	18.1557	0.0477	0.0770	13.1950	10.5314	10.1952	0.4094
109	06	1	HSGPA	0.0000	0.1576	11.9575	11.6599	13.1596	0.0143	0.0727	5.2440	4.7607	5.8076	0.0607
109	06	2	SAT-CR	0.0000	11.9575	7,410.5912	4,012.0625	5,566.1254	0.5305	5.2440	3,654.3627	1,873.8006	2,657.5585	13.7379
109	06	3	SAT-M	0.0000	11.6599	4,012.0625	7,285.1707	4,172.9499	-6.6332	4.7607	1,873.8006	3,543.1498	1,939.1787	9.5700
109	06	4	SAT-W	0.0000	13.1596	5,566.1254	4,172.9499	7,367.6105	2.6776	5.8076	2,657.5585	1,939.1787	3,558.2992	15.1883
109	06	5	Female	0.5314	0.0143	0.5305	-6.6332	2.6776	0.2491	0.0067	0.2486	-3.1084	1.2548	0.0341
109	06	6	Female*HSGPA	0.0143	0.0727	5.2440	4.7607	5.8076	0.0067	0.0725	5.2365	4.8552	5.7694	0.0233
109	06	7	Female*SAT-CR	0.5302	5.2440	3,654.3627	1,873.8006	2,657.5585	0.2486	5.2365	3,654.0815	1,877.3177	2,656.1388	6.1200
109	06	8	Female*SAT-M	-6.6301	4.7607	1,873.8006	3,543.1498	1,939.1787	-3.1084	4.8552	1,877.3177	3,499.1711	1,956.9316	3.6964
109	06	9	Female*SAT-W	2.6764	5.8076	2,657.5585	1,939.1787	3,558.2992	1.2548	5.7694	2,656.1388	1,956.9316	3,551.1329	7.0048
109	06	10	FYGPA	3.2556	0.0607	13.7379	9.5700	15.1883	0.0341	0.0233	6.1200	3.6964	7.0048	0.2325



## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
109	07	1	HSGPA	0.0000	0.1178	5.1013	5.0589	4.5847	0.0118	0.0534	1.3124	1.7561	1.1065	0.0451
109	07	2	SAT-CR	0.0000	5.1013	5,851.9699	2,405.6718	3,704.1378	-0.6452	1.3124	2,893.1873	1,122.3250	1,782.0638	10.9836
109	07	3	SAT-M	0.0000	5.0589	2,405.6718	5,685.9675	2,498.8005	-7.6045	1.7561	1,122.3250	2,881.5107	1,187.9258	6.9278
109	07	4	SAT-W	0.0000	4.5847	3,704.1378	2,498.8005	5,250.7133	1.5933	1.1065	1,782.0638	1,187.9258	2,594.1324	10.8719
109	07	5	Female	0.5271	0.0118	-0.6452	-7.6045	1.5933	0.2494	0.0056	-0.3051	-3.5959	0.7534	0.0295
109	07	6	Female*HSGPA	0.0118	0.0534	1.3124	1.7561	1.1065	0.0056	0.0532	1.3200	1.8462	1.0876	0.0158
109	07	7	Female*SAT-CR	-0.6449	1.3124	2,893.1873	1,122.3250	1,782.0638	-0.3051	1.3200	2,892.7712	1,117.4208	1,783.0913	5.1605
109	07	8	Female*SAT-M	-7.6011	1.7561	1,122.3250	2,881.5107	1,187.9258	-3.5959	1.8462	1,117.4208	2,823.7084	1,200.0365	2.8993
109	07	9	Female*SAT-W	1.5926	1.1065	1,782.0638	1,187.9258	2,594.1324	0.7534	1.0876	1,783.0913	1,200.0365	2,591.5950	4.9249
109	07	10	FYGPA	3.2861	0.0451	10.9836	6.9278	10.8719	0.0295	0.0158	5.1605	2.8993	4.9249	0.2022
109	08	1	HSGPA	0.0000	0.1255	7.4454	7.3835	7.3224	0.0115	0.0609	3.0451	2.8583	2.9971	0.0556
109	08	2	SAT-CR	0.0000	7.4454	6,177.5594	3,115.1786	4,299.3426	0.2411	3.0451	3,101.7795	1,461.2651	2,099.8875	13.9246
109	08	3	SAT-M	0.0000	7.3835	3,115.1786	6,373.8453	3,218.7586	-6.5506	2.8583	1,461.2651	3,311.1612	1,516.5711	10.1552
109	08	4	SAT-W	0.0000	7.3224	4,299.3426	3,218.7586	6,049.2394	3.2560	2.9971	2,099.8875	1,516.5711	3,059.0954	15.6151
109	08	5	Female	0.5499	0.0115	0.2411	-6.5506	3.2560	0.2476	0.0052	0.1085	-2.9483	1.4654	0.0351
109	08	6	Female*HSGPA	0.0115	0.0609	3.0451	2.8583	2.9971	0.0052	0.0608	3.0423	2.9338	2.9596	0.0234
109	08	7	Female*SAT-CR	0.2410	3.0451	3,101.7795	1,461.2651	2,099.8875	0.1085	3.0423	3,101.7214	1,462.8435	2,099.1029	6.5255
109	08	8	Female*SAT-M	-6.5470	2.8583	1,461.2651	3,311.1612	1,516.5711	-2.9483	2.9338	1,462.8435	3,268.2746	1,537.8879	5.0458
109	08	9	Female*SAT-W	3.2542	2.9971	2,099.8875	1,516.5711	3,059.0954	1.4654	2.9596	2,099.1029	1,537.8879	3,048.5000	7.7033
109	08	10	FYGPA	3.2602	0.0556	13.9246	10.1552	15.6151	0.0351	0.0234	6.5255	5.0458	7.7033	0.2247
110	07	1	HSGPA	0.0000	0.1566	11.3031	7.3964	10.8194	0.0541	0.0692	4.8162	4.2414	4.3226	0.0906
110	07	2	SAT-CR	0.0000	11.3031	7,037.6997	3,378.3033	4,924.3949	3.1066	4.8162	3,903.4531	1,997.6491	2,675.5668	21.8816
110	07	3	SAT-M	0.0000	7.3964	3,378.3033	5,827.8684	3,052.8807	-3.3104	4.2414	1,997.6491	3,609.9610	1,806.9970	16.4543
110	07	4	SAT-W	0.0000	10.8194	4,924.3949	3,052.8807	6,357.2499	6.5601	4.3226	2,675.5668	1,806.9970	3,391.4653	21.5143
110	07	5	Female	0.5993	0.0541	3.1066	-3.3104	6.5601	0.2405	0.0217	1.2447	-1.3263	2.6284	0.0550
110	07	6	Female*HSGPA	0.0540	0.0692	4.8162	4.2414	4.3226	0.0217	0.0663	4.6483	4.4202	3.9682	0.0448
110	07	7	Female*SAT-CR	3.1015	4.8162	3,903.4531	1,997.6491	2,675.5668	1.2447	4.6483	3,893.8182	2,007.9161	2,655.2210	11.3793
110	07	8	Female*SAT-M	-3.3049	4.2414	1,997.6491	3,609.9610	1,806.9970	-1.3263	4.4202	2,007.9161	3,599.0205	1,828.6774	10.5354
110	07	9	Female*SAT-W	6.5492	4.3226	2,675.5668	1,806.9970	3,391.4653	2.6284	3.9682	2,655.2210	1,828.6774	3,348.5019	10.4776
110	07	10	FYGPA	3.1306	0.0906	21.8816	16.4543	21.5143	0.0550	0.0448	11.3793	10.5354	10.4776	0.2679
110	08	1	HSGPA	0.0000	0.1478	6.0047	6.3763	6.0360	0.0327	0.0696	3.7776	3.6176	4.3172	0.0933
110	08	2	SAT-CR	0.0000	6.0047	6,243.7422	2,741.5546	4,547.5399	2.7503	3.7776	3,725.9058	1,760.8426	2,674.6126	18.9341
110	08	3	SAT-M	0.0000	6.3763	2,741.5546	5,128.4013	2,666.2985	-2.5383	3.6176	1,760.8426	2,862.4936	1,663.5665	15.6356
110	08	4	SAT-W	0.0000	6.0360	4,547.5399	2,666.2985	6,409.3189	8.3981	4.3172	2,674.6126	1,663.5665	3,869.4357	20.5662
110	08	5	Female	0.5947	0.0327	2.7503	-2.5383	8.3981	0.2414	0.0133	1.1146	-1.0287	3.4034	0.0508
110	08	6	Female*HSGPA	0.0327	0.0696	3.7776	3.6176	4.3172	0.0133	0.0685	3.6877	3.7005	4.0428	0.0439
110	08	7	Female*SAT-CR	2.7454	3.7776	3,725.9058	1,760.8426	2,674.6126	1.1146	3.6877	3,718.3552	1,767.8115	2,651.5561	10.7602
110	08	8	Female*SAT-M	-2.5339	3.6176	1,760.8426	2,862.4936	1,663.5665	-1.0287	3.7005	1,767.8115	2,856.0617	1,684.8463	9.3105
110	08	9	Female*SAT-W	8.3834	4.3172	2,674.6126	1,663.5665	3,869.4357	3.4034	4.0428	2,651.5561	1,684.8463	3,799.0311	11.9498
110	08	10	FYGPA	3.0982	0.0933	18.9341	15.6356	20.5662	0.0508	0.0439	10.7602	9.3105	11.9498	0.2965

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
111	06	1	HSGPA	0.0000	0.1615	5.9190	4.6266	5.4363	0.0459	0.1101	3.8843	3.5054	3.2207	0.0770
111	06	2	SAT-CR	0.0000	5.9190	4,868.4467	1,544.8100	2,822.9119	2.1429	3.8843	3,601.4535	1,107.1764	2,048.5764	8.9847
111	06	3	SAT-M	0.0000	4.6266	1,544.8100	3,800.6772	1,435.3183	-2.6535	3.5054	1,107.1764	2,746.5996	988.3965	4.6545
111	06	4	SAT-W	0.0000	5.4363	2,822.9119	1,435.3183	4,446.6585	4.3435	3.2207	2,048.5764	988.3965	3,050.6676	9.5248
111	06	5	Female	0.7354	0.0459	2.1429	-2.6535	4.3435	0.1950	0.0122	0.5671	-0.7022	1.1495	0.0517
111	06	6	Female*HSGPA	0.0458	0.1101	3.8843	3.5054	3.2207	0.0122	0.1080	3.7861	3.6270	3.0217	0.0473
111	06	7	Female*SAT-CR	2.1382	3.8843	3,601.4535	1,107.1764	2,048.5764	0.5671	3.7861	3,596.8715	1,112.8503	2,039.2889	5.9722
111	06	8	Female*SAT-M	-2.6478	3.5054	1,107.1764	2,746.5996	988.3965	-0.7022	3.6270	1,112.8503	2,739.5736	999.8973	3.3318
111	06	9	Female*SAT-W	4.3341	3.2207	2,048.5764	988.3965	3,050.6676	1.1495	3.0217	2,039.2889	999.8973	3,031.8422	5.3740
111	06	10	FYGPA	3.0292	0.0770	8.9847	4.6545	9.5248	0.0517	0.0473	5.9722	3.3318	5.3740	0.3107
111	07	1	HSGPA	0.0000	0.1746	4.0534	3.2506	7.1141	0.0659	0.1070	2.8086	3.3072	3.6513	0.0772
111	07	2	SAT-CR	0.0000	4.0534	4,227.9685	1,169.5915	2,847.6654	2.7867	2.8086	2,614.2690	540.0893	1,858.4839	8.0911
111	07	3	SAT-M	0.0000	3.2506	1,169.5915	4,451.3861	1,377.0865	-4.6429	3.3072	540.0893	2,529.0978	840.1664	9.5095
111	07	4	SAT-W	0.0000	7.1141	2,847.6654	1,377.0865	4,963.7664	10.0958	3.6513	1,858.4839	840.1664	3,267.3747	14.4012
111	07	5	Female	0.6541	0.0659	2.7867	-4.6429	10.0958	0.2268	0.0228	0.9639	-1.6060	3.4921	0.0669
111	07	6	Female*HSGPA	0.0658	0.1070	2.8086	3.3072	3.6513	0.0228	0.1027	2.6253	3.6127	2.9870	0.0407
111	07	7	Female*SAT-CR	2.7806	2.8086	2,614.2690	540.0893	1,858.4839	0.9639	2.6253	2,606.5202	552.9991	1,830.4118	5.0070
111	07	8	Female*SAT-M	-4.6326	3.3072	540.0893	2,529.0978	840.1664	-1.6060	3.6127	552.9991	2,507.5894	886.9361	5.9314
111	07	9	Female*SAT-W	10.0735	3.6513	1,858.4839	840.1664	3,267.3747	3.4921	2.9870	1,830.4118	886.9361	3,165.6748	7.5386
111	07	10	FYGPA	3.0345	0.0772	8.0911	9.5095	14.4012	0.0669	0.0407	5.0070	5.9314	7.5386	0.2652
111	08	1	HSGPA	0.0000	0.1560	6.0865	3.4462	7.6059	0.0607	0.1060	4.1944	3.6491	4.4585	0.0891
111	08	2	SAT-CR	0.0000	6.0865	3,827.6149	1,371.9998	2,641.3831	4.0468	4.1944	2,702.8155	940.2560	1,899.1713	9.9592
111	08	3	SAT-M	0.0000	3.4462	1,371.9998	3,380.2677	1,326.6227	-1.3576	3.6491	940.2560	2,243.0840	1,069.1246	5.5092
111	08	4	SAT-W	0.0000	7.6059	2,641.3831	1,326.6227	4,649.7723	10.6234	4.4585	1,899.1713	1,069.1246	3,211.0773	12.0215
111	08	5	Female	0.6904	0.0607	4.0468	-1.3576	10.6234	0.2142	0.0188	1.2528	-0.4203	3.2888	0.0848
111	08	6	Female*HSGPA	0.0606	0.1060	4.1944	3.6491	4.4585	0.0188	0.1023	3.9492	3.7313	3.8148	0.0496
111	08	7	Female*SAT-CR	4.0378	4.1944	2,702.8155	940.2560	1,899.1713	1.2528	3.9492	2,686.4750	945.7377	1,856.2758	5.7213
111	08	8	Female*SAT-M	-1.3546	3.6491	940.2560	2,243.0840	1,069.1246	-0.4203	3.7313	945.7377	2,241.2451	1,083.5146	4.6985
111	08	9	Female*SAT-W	10.5997	4.4585	1,899.1713	1,069.1246	3,211.0773	3.2888	3.8148	1,856.2758	1,083.5146	3,098.4718	6.6537
111	08	10	FYGPA	3.0559	0.0891	9.9592	5.5092	12.0215	0.0848	0.0496	5.7213	4.6985	6.6537	0.2504
112	07	1	HSGPA	0.0000	0.1919	7.7776	9.0312	8.2744	0.0271	0.1088	5.6901	5.1764	5.9565	0.0925
112	07	2	SAT-CR	0.0000	7.7776	5,708.8638	2,765.0032	3,944.5649	-0.6576	5.6901	3,742.2346	1,846.5696	2,633.8197	14.5365
112	07	3	SAT-M	0.0000	9.0312	2,765.0032	5,712.1399	2,742.5640	-8.2022	5.1764	1,846.5696	3,391.4536	1,849.3160	14.2783
112	07	4	SAT-W	0.0000	8.2744	3,944.5649	2,742.5640	5,519.4927	2.5462	5.9565	2,633.8197	1,849.3160	3,498.7632	16.7348
112	07	5	Female	0.6127	0.0271	-0.6576	-8.2022	2.5462	0.2375	0.0105	-0.2547	-3.1766	0.9861	0.0421
112	07	6	Female*HSGPA	0.0271	0.1088	5.6901	5.1764	5.9565	0.0105	0.1081	5.7079	5.3986	5.8875	0.0483
112	07	7	Female*SAT-CR	-0.6571	5.6901	3,742.2346	1,846.5696	2,633.8197	-0.2547	5.7079	3,741.8024	1,841.1798	2,635.4928	9.9137
112	07	8	Female*SAT-M	-8.1956	5.1764	1,846.5696	3,391.4536	1,849.3160	-3.1766	5.3986	1,841.1798	3,324.2311	1,870.1841	8.2757
112	07	9	Female*SAT-W	2.5442	5.9565	2,633.8197	1,849.3160	3,498.7632	0.9861	5.8875	2,635.4928	1,870.1841	3,492.2851	10.6948
112	07	10	FYGPA	3.0535	0.0925	14.5365	14.2783	16.7348	0.0421	0.0483	9.9137	8.2757	10.6948	0.3775

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
112	08	1	HSGPA	0.0000	0.1993	8.8135	9.3229	9.3157	0.0226	0.1219	5.5774	5.7442	5.5913	0.1095
112	08	2	SAT-CR	0.0000	8.8135	6,293.0265	3,182.8979	4,458.4663	-1.0498	5.5774	3,713.2947	1,955.1176	2,729.3326	17.4893
112	08	3	SAT-M	0.0000	9.3229	3,182.8979	5,739.5578	3,020.8388	-7.2493	5.7442	1,955.1176	3,512.4250	1,996.5815	16.7190
112	08	4	SAT-W	0.0000	9.3157	4,458.4663	3,020.8388	6,073.2980	2.9206	5.5913	2,729.3326	1,996.5815	3,790.7836	18.8096
112	08	5	Female	0.6264	0.0226	-1.0498	-7.2493	2.9206	0.2342	0.0084	-0.3922	-2.7081	1.0910	0.0441
112	08	6	Female*HSGPA	0.0226	0.1219	5.5774	5.7442	5.5913	0.0084	0.1214	5.6011	5.9077	5.5254	0.0604
112	08	7	Female*SAT-CR	-1.0490	5.5774	3,713.2947	1,955.1176	2,729.3326	-0.3922	5.6011	3,712.1935	1,947.5134	2,732.3961	10.2099
112	08	8	Female*SAT-M	-7.2433	5.7442	1,955.1176	3,512.4250	1,996.5815	-2.7081	5.9077	1,947.5134	3,459.9163	2,017.7360	10.8891
112	08	9	Female*SAT-W	2.9182	5.5913	2,729.3326	1,996.5815	3,790.7836	1.0910	5.5254	2,732.3961	2,017.7360	3,782.2610	11.6557
112	08	10	FYGPA	3.0670	0.1095	17.4893	16.7190	18.8096	0.0441	0.0604	10.2099	10.8891	11.6557	0.3950
113	06	1	HSGPA	0.0000	0.1866	4.8348	4.2659	5.7855	0.0404	0.1086	3.3344	3.5825	4.6358	0.0632
113	06	2	SAT-CR	0.0000	4.8348	7,401.7152	2,948.4723	4,975.2715	-2.2732	3.3344	4,473.4368	1,690.8820	3,080.6984	15.3419
113	06	3	SAT-M	0.0000	4.2659	2,948.4723	5,714.8834	2,563.6634	-7.1451	3.5825	1,690.8820	3,306.7489	1,669.3856	8.6859
113	06	4	SAT-W	0.0000	5.7855	4,975.2715	2,563.6634	5,921.2873	1.0392	4.6358	3,080.6984	1,669.3856	3,836.5384	14.6270
113	06	5	Female	0.6420	0.0404	-2.2732	-7.1451	1.0392	0.2302	0.0145	-0.8138	-2.5580	0.3720	0.0334
113	06	6	Female*HSGPA	0.0403	0.1086	3.3344	3.5825	4.6358	0.0145	0.1070	3.4260	3.8707	4.5939	0.0374
113	06	7	Female*SAT-CR	-2.2693	3.3344	4,473.4368	1,690.8820	3,080.6984	-0.8138	3.4260	4,468.2783	1,674.6676	3,083.0567	9.1796
113	06	8	Female*SAT-M	-7.1328	3.5825	1,690.8820	3,306.7489	1,669.3856	-2.5580	3.8707	1,674.6676	3,255.7837	1,676.7983	5.8455
113	06	9	Female*SAT-W	1.0374	4.6358	3,080.6984	1,669.3856	3,836.5384	0.3720	4.5939	3,083.0567	1,676.7983	3,835.4602	8.8212
113	06	10	FYGPA	3.2589	0.0632	15.3419	8.6859	14.6270	0.0334	0.0374	9.1796	5.8455	8.8212	0.2325
113	07	1	HSGPA	0.0000	0.1894	6.3047	7.5145	7.5389	0.0318	0.1218	4.9275	7.3442	5.2317	0.0857
113	07	2	SAT-CR	0.0000	6.3047	6,700.8053	2,583.1679	4,523.2745	1.9127	4.9275	4,495.8648	1,743.4231	2,962.4727	12.4406
113	07	3	SAT-M	0.0000	7.5145	2,583.1679	5,604.9380	2,553.8151	-5.1835	7.3442	1,743.4231	3,761.1405	1,819.7786	8.6596
113	07	4	SAT-W	0.0000	7.5389	4,523.2745	2,553.8151	6,288.8884	4.0767	5.2317	2,962.4727	1,819.7786	4,205.4039	11.6954
113	07	5	Female	0.6595	0.0318	1.9127	-5.1835	4.0767	0.2249	0.0108	0.6512	-1.7648	1.3879	0.0564
113	07	6	Female*HSGPA	0.0318	0.1218	4.9275	7.3442	5.2317	0.0108	0.1208	4.8668	7.5088	5.1022	0.0495
113	07	7	Female*SAT-CR	1.9096	4.9275	4,495.8648	1,743.4231	2,962.4727	0.6512	4.8668	4,492.2123	1,753.3214	2,954.6880	9.7055
113	07	8	Female*SAT-M	-5.1750	7.3442	1,743.4231	3,761.1405	1,819.7786	-1.7648	7.5088	1,753.3214	3,734.3160	1,840.8753	7.8509
113	07	9	Female*SAT-W	4.0700	5.2317	2,962.4727	1,819.7786	4,205.4039	1.3879	5.1022	2,954.6880	1,840.8753	4,188.8120	7.5921
113	07	10	FYGPA	3.2364	0.0857	12.4406	8.6596	11.6954	0.0564	0.0495	9.7055	7.8509	7.5921	0.2307
113	08	1	HSGPA	0.0000	0.1693	8.4398	7.8441	8.7889	0.0170	0.1089	4.9122	5.5183	5.3814	0.0784
113	08	2	SAT-CR	0.0000	8.4398	6,333.5466	2,324.4651	4,608.7844	-1.1005	4.9122	4,216.1163	1,545.9369	3,175.1388	17.5568
113	08	3	SAT-M	0.0000	7.8441	2,324.4651	5,449.7939	2,387.7094	-7.0842	5.5183	1,545.9369	3,347.4244	1,696.6503	9.9518
113	08	4	SAT-W	0.0000	8.7889	4,608.7844	2,387.7094	6,392.8577	3.0335	5.3814	3,175.1388	1,696.6503	4,349.9910	17.8116
113	08	5	Female	0.6371	0.0170	-1.1005	-7.0842	3.0335	0.2315	0.0062	-0.3994	-2.5707	1.1008	0.0429
113	08	6	Female*HSGPA	0.0169	0.1089	4.9122	5.5183	5.3814	0.0062	0.1086	4.9309	5.6382	5.3300	0.0498
113	08	7	Female*SAT-CR	-1.0990	4.9122	4,216.1163	1,545.9369	3,175.1388	-0.3994	4.9309	4,214.9068	1,538.1512	3,178.4726	11.3199
113	08	8	Female*SAT-M	-7.0744	5.5183	1,545.9369	3,347.4244	1,696.6503	-2.5707	5.6382	1,538.1512	3,297.3077	1,718.1105	7.8295
113	08	9	Female*SAT-W	3.0293	5.3814	3,175.1388	1,696.6503	4,349.9910	1.1008	5.3300	3,178.4726	1,718.1105	4,340.8017	11.8836
113	08	10	FYGPA	3.2057	0.0784	17.5568	9.9518	17.8116	0.0429	0.0498	11.3199	7.8295	11.8836	0.2723

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
114	06	1	HSGPA	0.0000	0.2040	-0.3653	1.7282	2.1585	0.0407	0.1090	0.3102	1.2159	1.4721	0.0828
114	06	2	SAT-CR	0.0000	-0.3653	6,248.9969	2,381.2658	4,253.5943	-2.4083	0.3102	3,499.4402	1,314.4088	2,378.0282	10.2722
114	06	3	SAT-M	0.0000	1.7282	2,381.2658	5,667.5396	2,418.3754	-8.3169	1.2159	1,314.4088	3,165.6991	1,379.3321	8.5592
114	06	4	SAT-W	0.0000	2.1585	4,253.5943	2,418.3754	5,946.9497	1.1875	1.4721	2,378.0282	1,379.3321	3,252.1226	12.8970
114	06	5	Female	0.5596	0.0407	-2.4083	-8.3169	1.1875	0.2465	0.0179	-1.0607	-3.6631	0.5230	0.0340
114	06	6	Female*HSGPA	0.0407	0.1090	0.3102	1.2159	1.4721	0.0179	0.1074	0.4083	1.5546	1.4238	0.0465
114	06	7	Female*SAT-CR	-2.4076	0.3102	3,499.4402	1,314.4088	2,378.0282	-1.0607	0.4083	3,493.6420	1,294.3854	2,380.8871	6.6319
114	06	8	Female*SAT-M	-8.3143	1.2159	1,314.4088	3,165.6991	1,379.3321	-3.6631	1.5546	1,294.3854	3,096.5502	1,389.2049	5.4243
114	06	9	Female*SAT-W	1.1871	1.4721	2,378.0282	1,379.3321	3,252.1226	0.5230	1.4238	2,380.8871	1,389.2049	3,250.7130	7.4744
114	06	10	FYGPA	2.8724	0.0828	10.2722	8.5592	12.8970	0.0340	0.0465	6.6319	5.4243	7.4744	0.4288
114	07	1	HSGPA	0.0000	0.2058	2.7325	4.4733	4.8594	0.0299	0.1133	1.6622	2.6862	2.9143	0.0902
114	07	2	SAT-CR	0.0000	2.7325	6,384.8574	2,602.3315	4,552.1047	-1.7303	1.6622	3,498.2042	1,443.6615	2,480.0389	13.8212
114	07	3	SAT-M	0.0000	4.4733	2,602.3315	5,977.7310	2,786.6423	-9.1995	2.6862	1,443.6615	3,168.5163	1,595.5004	10.7982
114	07	4	SAT-W	0.0000	4.8594	4,552.1047	2,786.6423	6,143.5918	1.2361	2.9143	2,480.0389	1,595.5004	3,380.2810	15.2750
114	07	5	Female	0.5719	0.0299	-1.7303	-9.1995	1.2361	0.2449	0.0128	-0.7408	-3.9388	0.5292	0.0370
114	07	6	Female*HSGPA	0.0299	0.1133	1.6622	2.6862	2.9143	0.0128	0.1124	1.7139	2.9609	2.8774	0.0489
114	07	7	Female*SAT-CR	-1.7298	1.6622	3,498.2042	1,443.6615	2,480.0389	-0.7408	1.7139	3,495.2112	1,427.7482	2,482.1770	7.9452
114	07	8	Female*SAT-M	-9.1971	2.6862	1,443.6615	3,168.5163	1,595.5004	-3.9388	2.9609	1,427.7482	3,083.9076	1,606.8687	6.6712
114	07	9	Female*SAT-W	1.2357	2.9143	2,480.0389	1,595.5004	3,380.2810	0.5292	2.8774	2,482.1770	1,606.8687	3,378.7536	8.6398
114	07	10	FYGPA	2.9097	0.0902	13.8212	10.7982	15.2750	0.0370	0.0489	7.9452	6.6712	8.6398	0.3962
114	08	1	HSGPA	0.0000	0.2114	3.0885	4.2485	5.3047	0.0398	0.1072	2.3349	2.7306	2.7796	0.1002
114	08	2	SAT-CR	0.0000	3.0885	6,471.8633	2,556.8148	4,592.8713	-2.2086	2.3349	3,448.7076	1,400.1416	2,555.0008	13.4008
114	08	3	SAT-M	0.0000	4.2485	2,556.8148	5,963.8440	2,652.4496	-9.0970	2.7306	1,400.1416	3,206.7849	1,559.6195	12.3968
114	08	4	SAT-W	0.0000	5.3047	4,592.8713	2,652.4496	6,450.0495	2.5463	2.7796	2,555.0008	1,559.6195	3,616.1446	16.5711
114	08	5	Female	0.5527	0.0398	-2.2086	-9.0970	2.5463	0.2473	0.0178	-0.9880	-4.0694	1.1390	0.0451
114	08	6	Female*HSGPA	0.0398	0.1072	2.3349	2.7306	2.7796	0.0178	0.1056	2.4229	3.0928	2.6782	0.0487
114	08	7	Female*SAT-CR	-2.2080	2.3349	3,448.7076	1,400.1416	2,555.0008	-0.9880	2.4229	3,443.8309	1,380.0555	2,560.6231	9.1604
114	08	8	Female*SAT-M	-9.0944	2.7306	1,400.1416	3,206.7849	1,559.6195	-4.0694	3.0928	1,380.0555	3,124.0532	1,582.7766	7.9735
114	08	9	Female*SAT-W	2.5456	2.7796	2,555.0008	1,559.6195	3,616.1446	1.1390	2.6782	2,560.6231	1,582.7766	3,609.6627	10.5120
114	08	10	FYGPA	2.9720	0.1002	13.4008	12.3968	16.5711	0.0451	0.0487	9.1604	7.9735	10.5120	0.4081
115	06	1	HSGPA	0.0000	0.0966	4.4709	3.4010	4.2933	0.0018	0.0481	2.0683	1.7603	1.9146	0.0322
115	06	2	SAT-CR	0.0000	4.4709	5,471.8742	1,722.4997	3,392.1510	0.5244	2.0683	3,050.3203	981.9776	1,883.3704	8.4652
115	06	3	SAT-M	0.0000	3.4010	1,722.4997	5,006.8915	1,949.5610	-9.5360	1.7603	981.9776	2,872.2231	1,126.2962	4.9805
115	06	4	SAT-W	0.0000	4.2933	3,392.1510	1,949.5610	5,017.4577	1.2093	1.9146	1,883.3704	1,126.2962	2,740.6567	8.2940
115	06	5	Female	0.5284	0.0018	0.5244	-9.5360	1.2093	0.2494	0.0009	0.2473	-4.4974	0.5703	0.0119
115	06	6	Female*HSGPA	0.0018	0.0481	2.0683	1.7603	1.9146	0.0009	0.0481	2.0674	1.7777	1.9124	0.0160
115	06	7	Female*SAT-CR	0.5241	2.0683	3,050.3203	981.9776	1,883.3704	0.2473	2.0674	3,050.0455	986.9750	1,882.7366	4.8007
115	06	8	Female*SAT-M	-9.5298	1.7603	981.9776	2,872.2231	1,126.2962	-4.4974	1.7777	986.9750	2,781.3471	1,137.8203	2.6913
115	06	9	Female*SAT-W	1.2085	1.9146	1,883.3704	1,126.2962	2,740.6567	0.5703	1.9124	1,882.7366	1,137.8203	2,739.1953	4.4038
115	06	10	FYGPA	3.3914	0.0322	8.4652	4.9805	8.2940	0.0119	0.0160	4.8007	2.6913	4.4038	0.1514

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
115	07	1	HSGPA	0.0000	0.0867	2.9411	3.5205	3.1815	0.0049	0.0456	1.4176	2.0715	1.5858	0.0259
115	07	2	SAT-CR	0.0000	2.9411	4,894.7713	1,884.6097	2,898.8795	-1.6248	1.4176	2,804.8044	1,223.8626	1,670.6945	7.4750
115	07	3	SAT-M	0.0000	3.5205	1,884.6097	5,011.1869	1,935.7151	-7.7125	2.0715	1,223.8626	3,107.0415	1,205.6476	7.2282
115	07	4	SAT-W	0.0000	3.1815	2,898.8795	1,935.7151	4,605.4390	0.2999	1.5858	1,670.6945	1,205.6476	2,589.1870	9.0752
115	07	5	Female	0.5405	0.0049	-1.6248	-7.7125	0.2999	0.2485	0.0022	-0.7467	-3.5442	0.1378	0.0156
115	07	6	Female*HSGPA	0.0049	0.0456	1.4176	2.0715	1.5858	0.0022	0.0455	1.4255	2.1092	1.5843	0.0143
115	07	7	Female*SAT-CR	-1.6237	1.4176	2,804.8044	1,223.8626	1,670.6945	-0.7467	1.4255	2,802.1661	1,211.3398	1,671.1815	4.4992
115	07	8	Female*SAT-M	-7.7072	2.0715	1,223.8626	3,107.0415	1,205.6476	-3.5442	2.1092	1,211.3398	3,047.5996	1,207.9593	4.6760
115	07	9	Female*SAT-W	0.2997	1.5858	1,670.6945	1,205.6476	2,589.1870	0.1378	1.5843	1,671.1815	1,207.9593	2,589.0971	5.3508
115	07	10	FYGPA	3.4119	0.0259	7.4750	7.2282	9.0752	0.0156	0.0143	4.4992	4.6760	5.3508	0.1555
115	08	1	HSGPA	0.0000	0.0961	3.4684	3.2795	3.4148	0.0103	0.0492	1.4199	1.7274	1.3822	0.0277
115	08	2	SAT-CR	0.0000	3.4684	4,941.9860	1,723.7951	2,906.3552	-0.3581	1.4199	2,639.8307	861.4481	1,566.4920	7.2661
115	08	3	SAT-M	0.0000	3.2795	1,723.7951	4,691.3852	1,670.0664	-7.5256	1.7274	861.4481	2,508.6745	803.8190	6.2980
115	08	4	SAT-W	0.0000	3.4148	2,906.3552	1,670.0664	4,774.6972	3.7165	1.3822	1,566.4920	803.8190	2,469.2826	8.0585
115	08	5	Female	0.5391	0.0103	-0.3581	-7.5256	3.7165	0.2487	0.0048	-0.1650	-3.4687	1.7130	0.0106
115	08	6	Female*HSGPA	0.0103	0.0492	1.4199	1.7274	1.3822	0.0048	0.0491	1.4236	1.8050	1.3439	0.0120
115	08	7	Female*SAT-CR	-0.3578	1.4199	2,639.8307	861.4481	1,566.4920	-0.1650	1.4236	2,639.7026	858.7556	1,567.8217	3.5251
115	08	8	Female*SAT-M	-7.5196	1.7274	861.4481	2,508.6745	803.8190	-3.4687	1.8050	858.7556	2,452.0852	831.7655	2.9634
115	08	9	Female*SAT-W	3.7135	1.3822	1,566.4920	803.8190	2,469.2826	1.7130	1.3439	1,567.8217	831.7655	2,455.4812	3.6693
115	08	10	FYGPA	3.4176	0.0277	7.2661	6.2980	8.0585	0.0106	0.0120	3.5251	2.9634	3.6693	0.1511
116	07	1	HSGPA	0.0000	0.2313	8.8494	3.5509	6.8731	0.0259	0.1130	3.5090	-2.2718	2.7516	0.1436
116	07	2	SAT-CR	0.0000	8.8494	9,336.7836	3,880.6824	6,536.4398	4.1051	3.5090	3,899.2284	1,036.6583	2,688.0571	17.4680
116	07	3	SAT-M	0.0000	3.5509	3,880.6824	7,191.2185	4,015.0326	-8.3759	-2.2718	1,036.6583	3,685.6819	2,099.2188	11.3529
116	07	4	SAT-W	0.0000	6.8731	6,536.4398	4,015.0326	8,182.1196	2.1284	2.7516	2,688.0571	2,099.2188	4,371.5709	22.7503
116	07	5	Female	0.4860	0.0259	4.1051	-8.3759	2.1284	0.2522	0.0133	2.1101	-4.3054	1.0940	0.0519
116	07	6	Female*HSGPA	0.0256	0.1130	3.5090	-2.2718	2.7516	0.0133	0.1123	3.4037	-2.0570	2.6970	0.0667
116	07	7	Female*SAT-CR	4.0667	3.5090	3,899.2284	1,036.6583	2,688.0571	2.1101	3.4037	3,882.5341	1,070.7210	2,679.4016	6.7360
116	07	8	Female*SAT-M	-8.2977	-2.2718	1,036.6583	3,685.6819	2,099.2188	-4.3054	-2.0570	1,070.7210	3,616.1810	2,116.8794	4.6976
116	07	9	Female*SAT-W	2.1085	2.7516	2,688.0571	2,099.2188	4,371.5709	1.0940	2.6970	2,679.4016	2,116.8794	4,367.0833	11.7979
116	07	10	FYGPA	2.9702	0.1436	17.4680	11.3529	22.7503	0.0519	0.0667	6.7360	4.6976	11.7979	0.3545
116	08	1	HSGPA	0.0000	0.2754	2.2570	4.0021	7.5965	0.0771	0.1415	3.4509	4.1724	5.1717	0.1176
116	08	2	SAT-CR	0.0000	2.2570	6,499.7383	2,544.2837	4,786.1639	4.1494	3.4509	2,899.2449	934.9824	2,170.4754	10.0925
116	08	3	SAT-M	0.0000	4.0021	2,544.2837	5,670.4959	2,762.5275	-0.9112	4.1724	934.9824	2,840.0312	1,447.0437	14.4588
116	08	4	SAT-W	0.0000	7.5965	4,786.1639	2,762.5275	6,957.0386	10.8244	5.1717	2,170.4754	1,447.0437	3,250.5279	12.7303
116	08	5	Female	0.5620	0.0771	4.1494	-0.9112	10.8244	0.2482	0.0338	1.8175	-0.3991	4.7413	0.1013
116	08	6	Female*HSGPA	0.0765	0.1415	3.4509	4.1724	5.1717	0.0338	0.1356	3.1335	4.2421	4.3438	0.0758
116	08	7	Female*SAT-CR	4.1152	3.4509	2,899.2449	934.9824	2,170.4754	1.8175	3.1335	2,882.1692	938.7320	2,125.9314	5.0900
116	08	8	Female*SAT-M	-0.9036	4.1724	934.9824	2,840.0312	1,447.0437	-0.3991	4.2421	938.7320	2,839.2079	1,456.8249	9.8577
116	08	9	Female*SAT-W	10.7349	5.1717	2,170.4754	1,447.0437	3,250.5279	4.7413	4.3438	2,125.9314	1,456.8249	3,134.3290	8.0601
116	08	10	FYGPA	3.1141	0.1176	10.0925	14.4588	12.7303	0.1013	0.0758	5.0900	9.8577	8.0601	0.3490

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
117	06	1	HSGPA	0.0000	0.1324	4.4676	3.6588	4.7766	0.0198	0.0661	2.5428	1.8390	2.4757	0.0573
117	06	2	SAT-CR	0.0000	4.4676	5,067.7134	2,274.2072	3,205.6863	-0.3335	2.5428	2,691.7103	1,268.4106	1,600.0914	9.4227
117	06	3	SAT-M	0.0000	3.6588	2,274.2072	5,193.1591	2,320.9496	-9.3404	1.8390	1,268.4106	2,716.8091	1,249.4496	7.7393
117	06	4	SAT-W	0.0000	4.7766	3,205.6863	2,320.9496	4,973.4757	2.3291	2.4757	1,600.0914	1,249.4496	2,464.0810	10.9233
117	06	5	Female	0.5316	0.0198	-0.3335	-9.3404	2.3291	0.2492	0.0093	-0.1562	-4.3753	1.0910	0.0383
117	06	6	Female*HSGPA	0.0198	0.0661	2.5428	1.8390	2.4757	0.0093	0.0657	2.5494	2.0237	2.4297	0.0266
117	06	7	Female*SAT-CR	-0.3332	2.5428	2,691.7103	1,268.4106	1,600.0914	-0.1562	2.5494	2,691.5992	1,265.2982	1,600.8675	4.9290
117	06	8	Female*SAT-M	-9.3329	1.8390	1,268.4106	2,716.8091	1,249.4496	-4.3753	2.0237	1,265.2982	2,629.6366	1,271.1866	4.2727
117	06	9	Female*SAT-W	2.3272	2.4757	1,600.0914	1,249.4496	2,464.0810	1.0910	2.4297	1,600.8675	1,271.1866	2,458.6607	5.8348
117	06	10	FYGPA	3.2344	0.0573	9.4227	7.7393	10.9233	0.0383	0.0266	4.9290	4.2727	5.8348	0.2412
117	07	1	HSGPA	0.0000	0.1178	3.8012	3.9124	4.1141	0.0109	0.0634	1.5654	2.0615	2.1019	0.0526
117	07	2	SAT-CR	0.0000	3.8012	5,365.5718	2,392.5418	3,254.0599	-4.0342	1.5654	2,782.3265	1,332.6848	1,704.1438	9.9118
117	07	3	SAT-M	0.0000	3.9124	2,392.5418	5,042.1330	2,353.7273	-10.1238	2.0615	1,332.6848	2,858.9338	1,322.8150	9.7083
117	07	4	SAT-W	0.0000	4.1141	3,254.0599	2,353.7273	4,801.8108	-1.3818	2.1019	1,704.1438	1,322.8150	2,536.9353	10.3546
117	07	5	Female	0.5580	0.0109	-4.0342	-10.1238	-1.3818	0.2468	0.0048	-1.7831	-4.4747	-0.6108	0.0202
117	07	6	Female*HSGPA	0.0109	0.0634	1.5654	2.0615	2.1019	0.0048	0.0633	1.6094	2.1719	2.1170	0.0257
117	07	7	Female*SAT-CR	-4.0311	1.5654	2,782.3265	1,332.6848	1,704.1438	-1.7831	1.6094	2,766.0644	1,291.8749	1,698.5735	5.4556
117	07	8	Female*SAT-M	-10.1161	2.0615	1,332.6848	2,858.9338	1,322.8150	-4.4747	2.1719	1,291.8749	2,756.5208	1,308.8363	5.1941
117	07	9	Female*SAT-W	-1.3808	2.1019	1,704.1438	1,322.8150	2,536.9353	-0.6108	2.1170	1,698.5735	1,308.8363	2,535.0272	6.2371
117	07	10	FYGPA	3.2661	0.0526	9.9118	9.7083	10.3546	0.0202	0.0257	5.4556	5.1941	6.2371	0.2119
117	08	1	HSGPA	0.0000	0.1158	5.6654	5.1799	4.9350	0.0106	0.0570	2.5901	2.2090	2.3183	0.0453
117	08	2	SAT-CR	0.0000	5.6654	5,648.4156	2,767.8284	3,614.5469	-2.9770	2.5901	2,803.2748	1,286.2513	1,684.7688	10.3147
117	08	3	SAT-M	0.0000	5.1799	2,767.8284	5,160.7837	2,823.6280	-7.7517	2.2090	1,286.2513	2,522.6776	1,284.3550	8.7308
117	08	4	SAT-W	0.0000	4.9350	3,614.5469	2,823.6280	5,829.8527	3.1956	2.3183	1,684.7688	1,284.3550	2,827.4236	13.2469
117	08	5	Female	0.5325	0.0106	-2.9770	-7.7517	3.1956	0.2492	0.0050	-1.3917	-3.6239	1.4939	0.0346
117	08	6	Female*HSGPA	0.0106	0.0570	2.5901	2.2090	2.3183	0.0050	0.0569	2.6217	2.2914	2.2843	0.0161
117	08	7	Female*SAT-CR	-2.9739	2.5901	2,803.2748	1,286.2513	1,684.7688	-1.3917	2.6217	2,794.4216	1,263.1984	1,694.2723	5.0202
117	08	8	Female*SAT-M	-7.7437	2.2090	1,286.2513	2,522.6776	1,284.3550	-3.6239	2.2914	1,263.1984	2,462.6501	1,309.1011	4.3042
117	08	9	Female*SAT-W	3.1923	2.3183	1,684.7688	1,284.3550	2,827.4236	1.4939	2.2843	1,694.2723	1,309.1011	2,817.2221	6.6788
117	08	10	FYGPA	3.2864	0.0453	10.3147	8.7308	13.2469	0.0346	0.0161	5.0202	4.3042	6.6788	0.1931
118	06	1	HSGPA	0.0000	0.2742	10.9952	10.5598	10.1463	0.0529	0.1292	6.1918	4.2157	5.3843	0.1348
118	06	2	SAT-CR	0.0000	10.9952	7,209.5238	3,252.3139	4,361.5359	-3.1053	6.1918	3,721.7687	1,578.8543	2,177.4485	21.7960
118	06	3	SAT-M	0.0000	10.5598	3,252.3139	6,540.0117	2,715.3528	-9.3282	4.2157	1,578.8543	2,848.4076	1,233.8469	18.0928
118	06	4	SAT-W	0.0000	10.1463	4,361.5359	2,715.3528	5,905.8163	-0.7269	5.3843	2,177.4485	1,233.8469	2,943.9284	20.5114
118	06	5	Female	0.5340	0.0529	-3.1053	-9.3282	-0.7269	0.2494	0.0247	-1.4472	-4.3473	-0.3388	0.0103
118	06	6	Female*HSGPA	0.0528	0.1292	6.1918	4.2157	5.3843	0.0247	0.1264	6.3558	4.7084	5.4227	0.0521
118	06	7	Female*SAT-CR	-3.0980	6.1918	3,721.7687	1,578.8543	2,177.4485	-1.4472	6.3558	3,712.1484	1,549.9554	2,175.1967	10.1582
118	06	8	Female*SAT-M	-9.3063	4.2157	1,578.8543	2,848.4076	1,233.8469	-4.3473	4.7084	1,549.9554	2,761.5970	1,227.0824	7.0787
118	06	9	Female*SAT-W	-0.7252	5.3843	2,177.4485	1,233.8469	2,943.9284	-0.3388	5.4227	2,175.1967	1,227.0824	2,943.4013	9.9895
118	06	10	FYGPA	2.6522	0.1348	21.7960	18.0928	20.5114	0.0103	0.0521	10.1582	7.0787	9.9895	0.5668

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
119	07	1	HSGPA	0.0000	0.2069	11.6233	13.0223	13.4726	0.0253	0.1025	6.5045	7.1538	7.3567	0.1193
119	07	2	SAT-CR	0.0000	11.6233	6,900.5934	3,670.0284	5,095.5529	-1.4904	6.5045	3,633.3424	1,970.0945	2,703.2467	16.4744
119	07	3	SAT-M	0.0000	13.0223	3,670.0284	6,866.9358	3,750.1546	-9.9943	7.1538	1,970.0945	3,615.0244	2,045.9706	16.0403
119	07	4	SAT-W	0.0000	13.4726	5,095.5529	3,750.1546	6,850.4736	1.7348	7.3567	2,703.2467	2,045.9706	3,568.5389	18.6430
119	07	5	Female	0.5285	0.0253	-1.4904	-9.9943	1.7348	0.2492	0.0120	-0.7027	-4.7124	0.8180	0.0302
119	07	6	Female*HSGPA	0.0253	0.1025	6.5045	7.1538	7.3567	0.0120	0.1018	6.5423	7.4071	7.3128	0.0602
119	07	7	Female*SAT-CR	-1.4901	6.5045	3,633.3424	1,970.0945	2,703.2467	-0.7027	6.5423	3,631.1216	1,955.2022	2,705.8317	9.3820
119	07	8	Female*SAT-M	-9.9923	7.1538	1,970.0945	3,615.0244	2,045.9706	-4.7124	7.4071	1,955.2022	3,515.1591	2,063.3051	8.8696
119	07	9	Female*SAT-W	1.7344	7.3567	2,703.2467	2,045.9706	3,568.5389	0.8180	7.3128	2,705.8317	2,063.3051	3,565.5300	10.4198
119	07	10	FYGPA	3.1177	0.1193	16.4744	16.0403	18.6430	0.0302	0.0602	9.3820	8.8696	10.4198	0.3565
119	08	1	HSGPA	0.0000	0.1794	10.4823	11.0126	12.0657	0.0254	0.0967	6.7983	6.6243	7.3402	0.1162
119	08	2	SAT-CR	0.0000	10.4823	7,082.0280	3,489.5742	5,147.5435	-2.1940	6.7983	3,776.5165	1,944.8755	2,854.2447	16.5970
119	08	3	SAT-M	0.0000	11.0126	3,489.5742	6,638.4900	3,674.3845	-9.9267	6.6243	1,944.8755	3,515.3814	2,091.6996	15.6095
119	08	4	SAT-W	0.0000	12.0657	5,147.5435	3,674.3845	6,982.0350	2.3464	7.3402	2,854.2447	2,091.6996	3,821.2373	19.0363
119	08	5	Female	0.5455	0.0254	-2.1940	-9.9267	2.3464	0.2480	0.0116	-0.9971	-4.5116	1.0664	0.0349
119	08	6	Female*HSGPA	0.0254	0.0967	6.7983	6.6243	7.3402	0.0116	0.0960	6.8541	6.8767	7.2805	0.0593
119	08	7	Female*SAT-CR	-2.1935	6.7983	3,776.5165	1,944.8755	2,854.2447	-0.9971	6.8541	3,771.7039	1,923.1009	2,859.3918	9.9297
119	08	8	Female*SAT-M	-9.9248	6.6243	1,944.8755	3,515.3814	2,091.6996	-4.5116	6.8767	1,923.1009	3,416.8617	2,114.9874	8.9921
119	08	9	Female*SAT-W	2.3460	7.3402	2,854.2447	2,091.6996	3,821.2373	1.0664	7.2805	2,859.3918	2,114.9874	3,815.7326	11.0276
119	08	10	FYGPA	3.1387	0.1162	16.5970	15.6095	19.0363	0.0349	0.0593	9.9297	8.9921	11.0276	0.3368
120	07	1	HSGPA	0.0000	0.2551	13.4380	13.6811	14.9078	0.0647	0.1168	8.1750	7.9128	7.9043	0.1898
120	07	2	SAT-CR	0.0000	13.4380	6,093.3834	3,003.4665	4,511.3425	3.7185	8.1750	3,545.6385	1,880.7816	2,770.3305	20.6673
120	07	3	SAT-M	0.0000	13.6811	3,003.4665	6,611.8889	3,281.4288	-6.1563	7.9128	1,880.7816	3,427.9457	1,908.4273	19.9097
120	07	4	SAT-W	0.0000	14.9078	4,511.3425	3,281.4288	6,480.1736	7.5684	7.9043	2,770.3305	1,908.4273	3,573.8882	24.9255
120	07	5	Female	0.5274	0.0647	3.7185	-6.1563	7.5684	0.2500	0.0306	1.7574	-2.9096	3.5770	0.0844
120	07	6	Female*HSGPA	0.0646	0.1168	8.1750	7.9128	7.9043	0.0306	0.1127	7.9349	8.3103	7.4157	0.0916
120	07	7	Female*SAT-CR	3.7078	8.1750	3,545.6385	1,880.7816	2,770.3305	1.7574	7.9349	3,531.8511	1,903.6079	2,742.2684	11.9118
120	07	8	Female*SAT-M	-6.1386	7.9128	1,880.7816	3,427.9457	1,908.4273	-2.9096	8.3103	1,903.6079	3,390.1547	1,954.8866	10.2861
120	07	9	Female*SAT-W	7.5466	7.9043	2,770.3305	1,908.4273	3,573.8882	3.5770	7.4157	2,742.2684	1,954.8866	3,516.7723	11.8447
120	07	10	FYGPA	3.0008	0.1898	20.6673	19.9097	24.9255	0.0844	0.0916	11.9118	10.2861	11.8447	0.4412
120	08	1	HSGPA	0.0000	0.2727	16.1091	14.9209	14.2952	0.0321	0.1466	10.0007	8.9833	8.1245	0.1554
120	08	2	SAT-CR	0.0000	16.1091	7,334.4711	3,967.9047	5,221.0632	-0.3164	10.0007	4,272.4416	2,246.2139	2,855.8278	24.5088
120	08	3	SAT-M	0.0000	14.9209	3,967.9047	6,756.2621	3,750.6942	-10.0979	8.9833	2,246.2139	3,999.2694	2,102.7108	16.4502
120	08	4	SAT-W	0.0000	14.2952	5,221.0632	3,750.6942	6,448.7395	2.4918	8.1245	2,855.8278	2,102.7108	3,447.9121	25.1127
120	08	5	Female	0.6006	0.0321	-0.3164	-10.0979	2.4918	0.2406	0.0128	-0.1264	-4.0329	0.9952	0.0907
120	08	6	Female*HSGPA	0.0320	0.1466	10.0007	8.9833	8.1245	0.0128	0.1456	10.0108	9.3063	8.0448	0.0659
120	08	7	Female*SAT-CR	-0.3154	10.0007	4,272.4416	2,246.2139	2,855.8278	-0.1264	10.0108	4,272.3418	2,243.0286	2,856.6138	14.5782
120	08	8	Female*SAT-M	-10.0666	8.9833	2,246.2139	3,999.2694	2,102.7108	-4.0329	9.3063	2,243.0286	3,897.6180	2,127.7945	10.0676
120	08	9	Female*SAT-W	2.4841	8.1245	2,855.8278	2,102.7108	3,447.9121	0.9952	8.0448	2,856.6138	2,127.7945	3,441.7223	13.2299
120	08	10	FYGPA	3.0080	0.1554	24.5088	16.4502	25.1127	0.0907	0.0659	14.5782	10.0676	13.2299	0.4381

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
121	06	1	HSGPA	0.0000	0.1490	9.7300	9.0134	9.3107	0.0211	0.0883	6.1469	5.6598	6.1615	0.0708
121	06	2	SAT-CR	0.0000	9.7300	7,334.2966	2,777.8602	5,049.7796	0.0671	6.1469	4,386.6104	1,628.6100	3,102.6099	17.8007
121	06	3	SAT-M	0.0000	9.0134	2,777.8602	5,614.8949	2,908.9631	-8.6174	5.6598	1,628.6100	3,197.8194	1,825.1301	11.4671
121	06	4	SAT-W	0.0000	9.3107	5,049.7796	2,908.9631	6,472.9808	1.7879	6.1615	3,102.6099	1,825.1301	3,864.8036	17.6912
121	06	5	Female	0.5638	0.0211	0.0671	-8.6174	1.7879	0.2464	0.0092	0.0293	-3.7590	0.7799	0.0205
121	06	6	Female*HSGPA	0.0211	0.0883	6.1469	5.6598	6.1615	0.0092	0.0878	6.1454	5.8417	6.1238	0.0321
121	06	7	Female*SAT-CR	0.0670	6.1469	4,386.6104	1,628.6100	3,102.6099	0.0293	6.1454	4,386.6059	1,629.1876	3,102.4901	10.6281
121	06	8	Female*SAT-M	-8.6026	5.6598	1,628.6100	3,197.8194	1,825.1301	-3.7590	5.8417	1,629.1876	3,123.6876	1,840.5108	6.5610
121	06	9	Female*SAT-W	1.7848	6.1615	3,102.6099	1,825.1301	3,864.8036	0.7799	6.1238	3,102.4901	1,840.5108	3,861.6124	10.3644
121	06	10	FYGPA	3.3915	0.0708	17.8007	11.4671	17.6912	0.0205	0.0321	10.6281	6.5610	10.3644	0.2098
121	07	1	HSGPA	0.0000	0.1282	10.4587	8.8500	10.6786	0.0192	0.0625	4.4446	4.1549	4.3840	0.0674
121	07	2	SAT-CR	0.0000	10.4587	7,734.7965	3,875.1581	5,409.8759	1.8203	4.4446	3,913.0287	1,772.0837	2,547.6657	15.7344
121	07	3	SAT-M	0.0000	8.8500	3,875.1581	6,166.6599	3,679.6348	-5.9209	4.1549	1,772.0837	3,172.8311	1,635.4743	12.2682
121	07	4	SAT-W	0.0000	10.6786	5,409.8759	3,679.6348	6,869.3501	4.0348	4.3840	2,547.6657	1,635.4743	3,266.2360	17.6118
121	07	5	Female	0.5697	0.0192	1.8203	-5.9209	4.0348	0.2456	0.0083	0.7833	-2.5476	1.7361	0.0446
121	07	6	Female*HSGPA	0.0192	0.0625	4.4446	4.1549	4.3840	0.0083	0.0621	4.4097	4.2686	4.3065	0.0316
121	07	7	Female*SAT-CR	1.8167	4.4446	3,913.0287	1,772.0837	2,547.6657	0.7833	4.4097	3,909.7216	1,782.8403	2,540.3356	8.0519
121	07	8	Female*SAT-M	-5.9091	4.1549	1,772.0837	3,172.8311	1,635.4743	-2.5476	4.2686	1,782.8403	3,137.8438	1,659.3164	6.1930
121	07	9	Female*SAT-W	4.0268	4.3840	2,547.6657	1,635.4743	3,266.2360	1.7361	4.3065	2,540.3356	1,659.3164	3,249.9889	8.1255
121	07	10	FYGPA	3.3708	0.0674	15.7344	12.2682	17.6118	0.0446	0.0316	8.0519	6.1930	8.1255	0.1884
121	08	1	HSGPA	0.0000	0.1424	5.6431	3.5733	5.9789	0.0375	0.0695	4.2426	2.5695	3.5096	0.0522
121	08	2	SAT-CR	0.0000	5.6431	6,499.5894	2,684.5092	4,190.6025	-0.3946	4.2426	3,669.0369	1,395.1987	2,396.7844	13.8241
121	08	3	SAT-M	0.0000	3.5733	2,684.5092	5,450.6563	2,791.1763	-5.6929	2.5695	1,395.1987	3,009.2094	1,444.9243	10.0134
121	08	4	SAT-W	0.0000	5.9789	4,190.6025	2,791.1763	6,088.3268	4.7137	3.5096	2,396.7844	1,444.9243	3,402.6237	15.3532
121	08	5	Female	0.5656	0.0375	-0.3946	-5.6929	4.7137	0.2462	0.0163	-0.1714	-2.4730	2.0477	0.0298
121	08	6	Female*HSGPA	0.0374	0.0695	4.2426	2.5695	3.5096	0.0163	0.0681	4.2573	2.7826	3.3331	0.0257
121	08	7	Female*SAT-CR	-0.3937	4.2426	3,669.0369	1,395.1987	2,396.7844	-0.1714	4.2573	3,668.8816	1,392.9574	2,398.6402	7.3014
121	08	8	Female*SAT-M	-5.6806	2.5695	1,395.1987	3,009.2094	1,444.9243	-2.4730	2.7826	1,392.9574	2,976.8705	1,471.7008	4.8385
121	08	9	Female*SAT-W	4.7035	3.5096	2,396.7844	1,444.9243	3,402.6237	2.0477	3.3331	2,398.6402	1,471.7008	3,380.4529	7.5152
121	08	10	FYGPA	3.3434	0.0522	13.8241	10.0134	15.3532	0.0298	0.0257	7.3014	4.8385	7.5152	0.2054
122	06	1	HSGPA	0.0000	0.2331	9.7943	12.7721	11.4625	0.0385	0.1338	6.4977	8.1819	7.9727	0.1167
122	06	2	SAT-CR	0.0000	9.7943	7,325.6305	4,293.8837	5,408.6091	0.4044	6.4977	4,608.5758	2,590.6328	3,407.7918	20.5289
122	06	3	SAT-M	0.0000	12.7721	4,293.8837	8,760.6651	4,721.3964	-10.0193	8.1819	2,590.6328	5,037.7615	2,908.3734	16.4701
122	06	4	SAT-W	0.0000	11.4625	5,408.6091	4,721.3964	7,252.8616	1.7874	7.9727	3,407.7918	2,908.3734	4,459.0598	20.9047
122	06	5	Female	0.5956	0.0385	0.4044	-10.0193	1.7874	0.2412	0.0156	0.1636	-4.0523	0.7229	0.0527
122	06	6	Female*HSGPA	0.0384	0.1338	6.4977	8.1819	7.9727	0.0156	0.1323	6.4821	8.5668	7.9041	0.0606
122	06	7	Female*SAT-CR	0.4038	6.4977	4,608.5758	2,590.6328	3,407.7918	0.1636	6.4821	4,608.4125	2,594.6788	3,407.0700	13.6535
122	06	8	Female*SAT-M	-10.0045	8.1819	2,590.6328	5,037.7615	2,908.3734	-4.0523	8.5668	2,594.6788	4,937.5235	2,926.2555	10.8069
122	06	9	Female*SAT-W	1.7848	7.9727	3,407.7918	2,908.3734	4,459.0598	0.7229	7.9041	3,407.0700	2,926.2555	4,455.8697	13.8842
122	06	10	FYGPA	2.8538	0.1167	20.5289	16.4701	20.9047	0.0527	0.0606	13.6535	10.8069	13.8842	0.4820



## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
122	07	1	HSGPA	0.0000	0.2164	10.6494	11.8600	10.3400	0.0256	0.1163	6.0459	7.1464	5.5129	0.1347
122	07	2	SAT-CR	0.0000	10.6494	7,181.4647	3,763.4932	5,349.4758	1.2853	6.0459	3,698.4679	2,120.5715	2,750.8340	19.1093
122	07	3	SAT-M	0.0000	11.8600	3,763.4932	7,893.2953	4,159.5852	-8.2017	7.1464	2,120.5715	4,808.3986	2,325.4529	16.0102
122	07	4	SAT-W	0.0000	10.3400	5,349.4758	4,159.5852	6,960.9753	1.2997	5.5129	2,750.8340	2,325.4529	3,688.3569	18.8281
122	07	5	Female	0.5607	0.0256	1.2853	-8.2017	1.2997	0.2467	0.0113	0.5647	-3.6031	0.5710	0.0597
122	07	6	Female*HSGPA	0.0256	0.1163	6.0459	7.1464	5.5129	0.0113	0.1157	6.0130	7.3564	5.4796	0.0680
122	07	7	Female*SAT-CR	1.2831	6.0459	3,698.4679	2,120.5715	2,750.8340	0.5647	6.0130	3,696.8187	2,131.0951	2,749.1663	10.0421
122	07	8	Female*SAT-M	-8.1877	7.1464	2,120.5715	4,808.3986	2,325.4529	-3.6031	7.3564	2,131.0951	4,741.2461	2,336.0946	8.6325
122	07	9	Female*SAT-W	1.2975	5.5129	2,750.8340	2,325.4529	3,688.3569	0.5710	5.4796	2,749.1663	2,336.0946	3,686.6705	10.5573
122	07	10	FYGPA	2.9160	0.1347	19.1093	16.0102	18.8281	0.0597	0.0680	10.0421	8.6325	10.5573	0.4484
122	08	1	HSGPA	0.0000	0.2086	9.6815	12.3229	9.6204	0.0326	0.1170	5.4789	7.2160	5.5393	0.1022
122	08	2	SAT-CR	0.0000	9.6815	7,123.0021	4,744.1319	5,297.2308	-2.1381	5.4789	3,760.0171	2,636.3758	2,853.6464	12.7323
122	08	3	SAT-M	0.0000	12.3229	4,744.1319	9,357.4241	4,936.9307	-12.1255	7.2160	2,636.3758	5,344.3543	2,963.9541	13.1901
122	08	4	SAT-W	0.0000	9.6204	5,297.2308	4,936.9307	7,292.0253	0.3574	5.5393	2,853.6464	2,963.9541	4,159.3186	15.5236
122	08	5	Female	0.5924	0.0326	-2.1381	-12.1255	0.3574	0.2419	0.0133	-0.8716	-4.9429	0.1457	0.0324
122	08	6	Female*HSGPA	0.0325	0.1170	5.4789	7.2160	5.5393	0.0133	0.1160	5.5484	7.6102	5.5276	0.0528
122	08	7	Female*SAT-CR	-2.1347	5.4789	3,760.0171	2,636.3758	2,853.6464	-0.8716	5.5484	3,755.4530	2,610.4919	2,854.4093	8.6561
122	08	8	Female*SAT-M	-12.1062	7.2160	2,636.3758	5,344.3543	2,963.9541	-4.9429	7.6102	2,610.4919	5,197.5612	2,968.2806	8.0566
122	08	9	Female*SAT-W	0.3568	5.5393	2,853.6464	2,963.9541	4,159.3186	0.1457	5.5276	2,854.4093	2,968.2806	4,159.1911	10.2712
122	08	10	FYGPA	2.8626	0.1022	12.7323	13.1901	15.5236	0.0324	0.0528	8.6561	8.0566	10.2712	0.3764
123	06	1	HSGPA	0.0000	0.2880	6.0136	8.4031	9.3760	0.0530	0.1841	4.2852	5.9136	5.5726	0.1549
123	06	2	SAT-CR	0.0000	6.0136	5,281.5176	2,503.0019	3,746.1674	1.4890	4.2852	3,776.2315	1,775.7537	2,767.9722	15.5634
123	06	3	SAT-M	0.0000	8.4031	2,503.0019	5,783.0884	2,585.2212	-3.4669	5.9136	1,775.7537	3,898.3365	1,859.8808	15.4340
123	06	4	SAT-W	0.0000	9.3760	3,746.1674	2,585.2212	5,606.9244	4.3373	5.5726	2,767.9722	1,859.8808	3,972.6738	17.1835
123	06	5	Female	0.6900	0.0530	1.4890	-3.4669	4.3373	0.2141	0.0164	0.4615	-1.0746	1.3445	0.0526
123	06	6	Female*HSGPA	0.0529	0.1841	4.2852	5.9136	5.5726	0.0164	0.1813	4.2064	6.0970	5.3431	0.0973
123	06	7	Female*SAT-CR	1.4876	4.2852	3,776.2315	1,775.7537	2,767.9722	0.4615	4.2064	3,774.0165	1,780.9111	2,761.5200	12.7783
123	06	8	Female*SAT-M	-3.4638	5.9136	1,775.7537	3,898.3365	1,859.8808	-1.0746	6.0970	1,780.9111	3,886.3279	1,874.9044	11.2200
123	06	9	Female*SAT-W	4.3334	5.5726	2,767.9722	1,859.8808	3,972.6738	1.3445	5.3431	2,761.5200	1,874.9044	3,953.8784	13.5026
123	06	10	FYGPA	2.7832	0.1549	15.5634	15.4340	17.1835	0.0526	0.0973	12.7783	11.2200	13.5026	0.6656
124	06	1	HSGPA	0.0000	0.2923	14.8140	16.2068	18.5720	0.0682	0.1431	8.7410	8.3063	9.2017	0.1512
124	06	2	SAT-CR	0.0000	14.8140	7,926.8720	4,403.9992	6,125.4541	1.3203	8.7410	4,960.3834	2,743.9025	3,727.3918	21.1092
124	06	3	SAT-M	0.0000	16.2068	4,403.9992	7,792.3564	4,640.1736	-7.5997	8.3063	2,743.9025	4,542.3656	2,773.0318	18.3897
124	06	4	SAT-W	0.0000	18.5720	6,125.4541	4,640.1736	8,012.2529	3.7120	9.2017	3,727.3918	2,773.0318	4,621.2562	24.9098
124	06	5	Female	0.5749	0.0682	1.3203	-7.5997	3.7120	0.2451	0.0290	0.5613	-3.2309	1.5781	0.0557
124	06	6	Female*HSGPA	0.0680	0.1431	8.7410	8.3063	9.2017	0.0290	0.1384	8.6512	8.8233	8.9491	0.0748
124	06	7	Female*SAT-CR	1.3168	8.7410	4,960.3834	2,743.9025	3,727.3918	0.5613	8.6512	4,958.6447	2,753.9098	3,722.5038	13.7745
124	06	8	Female*SAT-M	-7.5794	8.3063	2,743.9025	4,542.3656	2,773.0318	-3.2309	8.8233	2,753.9098	4,484.7649	2,801.1663	13.1621
124	06	9	Female*SAT-W	3.7021	9.2017	3,727.3918	2,773.0318	4,621.2562	1.5781	8.9491	3,722.5038	2,801.1663	4,607.5142	15.2992
124	06	10	FYGPA	3.0521	0.1512	21.1092	18.3897	24.9098	0.0557	0.0748	13.7745	13.1621	15.2992	0.4460

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
124	07	1	HSGPA	0.0000	0.2700	13.0344	15.9536	14.6381	0.0520	0.1235	6.4640	8.8163	7.0210	0.1733
124	07	2	SAT-CR	0.0000	13.0344	7,846.5528	3,902.1677	5,715.9341	2.2189	6.4640	4,781.2468	2,280.9137	3,340.2582	22.7893
124	07	3	SAT-M	0.0000	15.9536	3,902.1677	6,651.8621	3,481.7033	-4.4189	8.8163	2,280.9137	3,873.0607	1,919.6450	21.7672
124	07	4	SAT-W	0.0000	14.6381	5,715.9341	3,481.7033	7,125.7143	6.5824	7.0210	3,340.2582	1,919.6450	3,779.7363	24.8341
124	07	5	Female	0.5726	0.0520	2.2189	-4.4189	6.5824	0.2454	0.0222	0.9483	-1.8886	2.8133	0.0806
124	07	6	Female*HSGPA	0.0519	0.1235	6.4640	8.8163	7.0210	0.0222	0.1208	6.3490	9.0454	6.6797	0.0736
124	07	7	Female*SAT-CR	2.2128	6.4640	4,781.2468	2,280.9137	3,340.2582	0.9483	6.3490	4,776.3369	2,290.6917	3,325.6926	12.1234
124	07	8	Female*SAT-M	-4.4068	8.8163	2,280.9137	3,873.0607	1,919.6450	-1.8886	9.0454	2,290.6917	3,853.5878	1,948.6521	12.1889
124	07	9	Female*SAT-W	6.5644	7.0210	3,340.2582	1,919.6450	3,779.7363	2.8133	6.6797	3,325.6926	1,948.6521	3,736.5267	11.6397
124	07	10	FYGPA	3.0696	0.1733	22.7893	21.7672	24.8341	0.0806	0.0736	12.1234	12.1889	11.6397	0.4520
124	08	1	HSGPA	0.0000	0.2875	13.8388	17.9304	16.5826	0.0489	0.1309	6.9454	8.9032	7.0805	0.1667
124	08	2	SAT-CR	0.0000	13.8388	7,707.6210	4,594.6799	6,209.2844	5.1090	6.9454	4,286.2421	2,596.2711	3,600.5870	23.5881
124	08	3	SAT-M	0.0000	17.9304	4,594.6799	8,337.6288	4,731.4108	-2.1335	8.9032	2,596.2711	4,572.1497	2,785.2749	24.9053
124	08	4	SAT-W	0.0000	16.5826	6,209.2844	4,731.4108	8,100.4633	9.8904	7.0805	3,600.5870	2,785.2749	4,849.2937	24.6071
124	08	5	Female	0.5745	0.0489	5.1090	-2.1335	9.8904	0.2452	0.0208	2.1740	-0.9079	4.2087	0.0459
124	08	6	Female*HSGPA	0.0487	0.1309	6.9454	8.9032	7.0805	0.0208	0.1285	6.6964	9.0071	6.5986	0.0782
124	08	7	Female*SAT-CR	5.0934	6.9454	4,286.2421	2,596.2711	3,600.5870	2.1740	6.6964	4,260.2198	2,607.1379	3,550.2109	13.5223
124	08	8	Female*SAT-M	-2.1270	8.9032	2,596.2711	4,572.1497	2,785.2749	-0.9079	9.0071	2,607.1379	4,567.6117	2,806.3118	15.1380
124	08	9	Female*SAT-W	9.8603	7.0805	3,600.5870	2,785.2749	4,849.2937	4.2087	6.5986	3,550.2109	2,806.3118	4,751.7715	14.2375
124	08	10	FYGPA	3.0769	0.1667	23.5881	24.9053	24.6071	0.0459	0.0782	13.5223	15.1380	14.2375	0.4683
125	06	1	HSGPA	0.0000	0.3246	11.2599	12.8219	11.8740	0.0422	0.1547	6.7617	7.8061	6.6050	0.1863
125	06	2	SAT-CR	0.0000	11.2599	6,417.3302	3,760.5566	4,555.5231	0.2563	6.7617	3,287.2190	1,909.4935	2,282.7193	14.6580
125	06	3	SAT-M	0.0000	12.8219	3,760.5566	6,973.6238	3,608.1469	-7.9418	7.8061	1,909.4935	3,531.1773	1,878.0855	12.6649
125	06	4	SAT-W	0.0000	11.8740	4,555.5231	3,608.1469	6,135.9057	2.9703	6.6050	2,282.7193	1,878.0855	2,921.9284	16.4008
125	06	5	Female	0.5118	0.0422	0.2563	-7.9418	2.9703	0.2501	0.0206	0.1251	-3.8775	1.4502	0.0483
125	06	6	Female*HSGPA	0.0422	0.1547	6.7617	7.8061	6.6050	0.0206	0.1529	6.7509	8.1411	6.4797	0.0940
125	06	7	Female*SAT-CR	0.2561	6.7617	3,287.2190	1,909.4935	2,282.7193	0.1251	6.7509	3,287.1534	1,911.5271	2,281.9587	7.7636
125	06	8	Female*SAT-M	-7.9346	7.8061	1,909.4935	3,531.1773	1,878.0855	-3.8775	8.1411	1,911.5271	3,468.1625	1,901.6537	7.6819
125	06	9	Female*SAT-W	2.9676	6.6050	2,282.7193	1,878.0855	2,921.9284	1.4502	6.4797	2,281.9587	1,901.6537	2,913.1136	7.8808
125	06	10	FYGPA	2.7410	0.1863	14.6580	12.6649	16.4008	0.0483	0.0940	7.7636	7.6819	7.8808	0.6907
126	07	1	HSGPA	0.0000	0.3010	11.2960	17.1074	14.7358	0.0444	0.1894	8.9653	13.9051	10.7305	0.2993
126	07	2	SAT-CR	0.0000	11.2960	5,441.7719	3,201.0455	3,969.9021	-4.5852	8.9653	3,098.7642	1,986.4027	2,329.0975	17.7295
126	07	3	SAT-M	0.0000	17.1074	3,201.0455	6,274.0602	3,071.5336	-10.5301	13.9051	1,986.4027	3,839.8605	2,032.0894	16.3192
126	07	4	SAT-W	0.0000	14.7358	3,969.9021	3,071.5336	5,497.2961	-1.5824	10.7305	2,329.0975	2,032.0894	3,042.2920	19.4120
126	07	5	Female	0.6278	0.0444	-4.5852	-10.5301	-1.5824	0.2345	0.0165	-1.7065	-3.9191	-0.5889	0.0274
126	07	6	Female*HSGPA	0.0443	0.1894	8.9653	13.9051	10.7305	0.0165	0.1874	9.1682	14.3712	10.8005	0.1961
126	07	7	Female*SAT-CR	-4.5680	8.9653	3,098.7642	1,986.4027	2,329.0975	-1.7065	9.1682	3,077.8192	1,938.3015	2,321.8694	12.3039
126	07	8	Female*SAT-M	-10.4906	13.9051	1,986.4027	3,839.8605	2,032.0894	-3.9191	14.3712	1,938.3015	3,729.3934	2,015.4897	14.7227
126	07	9	Female*SAT-W	-1.5764	10.7305	2,329.0975	2,032.0894	3,042.2920	-0.5889	10.8005	2,321.8694	2,015.4897	3,039.7976	12.2449
126	07	10	FYGPA	2.1781	0.2993	17.7295	16.3192	19.4120	0.0274	0.1961	12.3039	14.7227	12.2449	1.1942

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
126	08	1	HSGPA	0.0000	0.3580	15.6652	17.1594	17.1801	0.0603	0.2299	11.4281	12.2533	11.9794	0.2884
126	08	2	SAT-CR	0.0000	15.6652	7,176.7897	3,268.2329	4,900.7420	-0.7155	11.4281	4,179.0438	1,943.6414	2,943.6120	24.5828
126	08	3	SAT-M	0.0000	17.1594	3,268.2329	5,707.7487	3,039.5927	-5.3224	12.2533	1,943.6414	3,382.1017	1,985.0352	18.6190
126	08	4	SAT-W	0.0000	17.1801	4,900.7420	3,039.5927	6,314.2924	3.2134	11.9794	2,943.6120	1,985.0352	4,004.9602	22.9243
126	08	5	Female	0.6456	0.0603	-0.7155	-5.3224	3.2134	0.2298	0.0214	-0.2536	-1.8864	1.1389	0.0808
126	08	6	Female*HSGPA	0.0601	0.2299	11.4281	12.2533	11.9794	0.0214	0.2263	11.4711	12.5730	11.7864	0.1771
126	08	7	Female*SAT-CR	-0.7125	11.4281	4,179.0438	1,943.6414	2,943.6120	-0.2536	11.4711	4,178.5340	1,939.8492	2,945.9015	17.3612
126	08	8	Female*SAT-M	-5.2999	12.2533	1,943.6414	3,382.1017	1,985.0352	-1.8864	12.5730	1,939.8492	3,353.8937	2,002.0657	11.7156
126	08	9	Female*SAT-W	3.1998	11.9794	2,943.6120	1,985.0352	4,004.9602	1.1389	11.7864	2,945.9015	2,002.0657	3,994.6780	15.8419
126	08	10	FYGPA	2.1857	0.2884	24.5828	18.6190	22.9243	0.0808	0.1771	17.3612	11.7156	15.8419	1.0664
127	06	1	HSGPA	0.0000	0.2384	8.9173	7.2534	10.2945	0.0409	0.1580	6.7590	6.2068	7.4344	0.1211
127	06	2	SAT-CR	0.0000	8.9173	7,436.0294	4,132.6646	4,924.7464	-2.1468	6.7590	5,151.8307	2,974.2136	3,489.6697	20.5381
127	06	3	SAT-M	0.0000	7.2534	4,132.6646	6,877.2966	3,534.2397	-7.7300	6.2068	2,974.2136	4,645.9227	2,644.2851	17.8112
127	06	4	SAT-W	0.0000	10.2945	4,924.7464	3,534.2397	6,331.1983	0.0435	7.4344	3,489.6697	2,644.2851	4,433.0554	19.1253
127	06	5	Female	0.6717	0.0409	-2.1468	-7.7300	0.0435	0.2208	0.0134	-0.7047	-2.5375	0.0143	0.0222
127	06	6	Female*HSGPA	0.0408	0.1580	6.7590	6.2068	7.4344	0.0134	0.1563	6.8467	6.5224	7.4327	0.0917
127	06	7	Female*SAT-CR	-2.1440	6.7590	5,151.8307	2,974.2136	3,489.6697	-0.7047	6.8467	5,147.2280	2,957.6403	3,489.7631	15.3810
127	06	8	Female*SAT-M	-7.7202	6.2068	2,974.2136	4,645.9227	2,644.2851	-2.5375	6.5224	2,957.6403	4,586.2463	2,644.6212	13.5941
127	06	9	Female*SAT-W	0.0435	7.4344	3,489.6697	2,644.2851	4,433.0554	0.0143	7.4327	3,489.7631	2,644.6212	4,433.0536	14.1306
127	06	10	FYGPA	2.5547	0.1211	20.5381	17.8112	19.1253	0.0222	0.0917	15.3810	13.5941	14.1306	0.6997
128	07	1	HSGPA	0.0000	0.1499	8.5341	9.3036	7.4273	0.0186	0.0722	4.3071	4.2869	3.7676	0.0693
128	07	2	SAT-CR	0.0000	8.5341	5,944.0140	2,695.1922	3,756.0619	-1.4521	4.3071	3,023.5618	1,362.1711	1,944.5199	13.1341
128	07	3	SAT-M	0.0000	9.3036	2,695.1922	6,093.5561	2,321.2378	-10.9484	4.2869	1,362.1711	3,065.0488	1,442.0854	9.4528
128	07	4	SAT-W	0.0000	7.4273	3,756.0619	2,321.2378	5,233.5623	1.6689	3.7676	1,944.5199	1,442.0854	2,759.1727	12.8146
128	07	5	Female	0.5448	0.0186	-1.4521	-10.9484	1.6689	0.2483	0.0085	-0.6610	-4.9837	0.7597	0.0291
128	07	6	Female*HSGPA	0.0186	0.0722	4.3071	4.2869	3.7676	0.0085	0.0718	4.3341	4.4905	3.7366	0.0365
128	07	7	Female*SAT-CR	-1.4504	4.3071	3,023.5618	1,362.1711	1,944.5199	-0.6610	4.3341	3,021.4557	1,346.2916	1,946.9404	7.0022
128	07	8	Female*SAT-M	-10.9354	4.2869	1,362.1711	3,065.0488	1,442.0854	-4.9837	4.4905	1,346.2916	2,945.3235	1,460.3349	5.6147
128	07	9	Female*SAT-W	1.6669	3.7676	1,944.5199	1,442.0854	2,759.1727	0.7597	3.7366	1,946.9404	1,460.3349	2,756.3909	6.4100
128	07	10	FYGPA	3.2087	0.0693	13.1341	9.4528	12.8146	0.0291	0.0365	7.0022	5.6147	6.4100	0.2009
128	08	1	HSGPA	0.0000	0.1695	4.5750	8.3310	7.6339	0.0290	0.0927	3.6513	5.3948	4.9718	0.0818
128	08	2	SAT-CR	0.0000	4.5750	5,413.1502	2,487.7066	3,362.7271	-1.9234	3.6513	3,054.4195	1,427.8537	1,963.3043	9.3523
128	08	3	SAT-M	0.0000	8.3310	2,487.7066	5,549.5501	2,475.2265	-11.2300	5.3948	1,427.8537	2,971.0200	1,422.7794	8.4547
128	08	4	SAT-W	0.0000	7.6339	3,362.7271	2,475.2265	5,172.1705	2.1602	4.9718	1,963.3043	1,422.7794	3,030.0024	12.3959
128	08	5	Female	0.5602	0.0290	-1.9234	-11.2300	2.1602	0.2466	0.0128	-0.8460	-4.9392	0.9501	0.0339
128	08	6	Female*HSGPA	0.0290	0.0927	3.6513	5.3948	4.9718	0.0128	0.0918	3.7071	5.7204	4.9092	0.0443
128	08	7	Female*SAT-CR	-1.9213	3.6513	3,054.4195	1,427.8537	1,963.3043	-0.8460	3.7071	3,050.7239	1,406.2770	1,967.4547	5.4157
128	08	8	Female*SAT-M	-11.2177	5.3948	1,427.8537	2,971.0200	1,422.7794	-4.9392	5.7204	1,406.2770	2,845.0443	1,447.0116	5.1918
128	08	9	Female*SAT-W	2.1578	4.9718	1,963.3043	1,422.7794	3,030.0024	0.9501	4.9092	1,967.4547	1,447.0116	3,025.3412	6.6196
128	08	10	FYGPA	3.1690	0.0818	9.3523	8.4547	12.3959	0.0339	0.0443	5.4157	5.1918	6.6196	0.2429

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
129	07	1	HSGPA	0.0000	0.1897	5.0163	5.1485	6.9771	0.0318	0.0614	1.9732	1.3430	2.2639	0.0545
129	07	2	SAT-CR	0.0000	5.0163	5,274.3608	2,174.5958	3,677.7572	-1.1471	1.9732	2,156.9102	967.4907	1,639.8431	6.9830
129	07	3	SAT-M	0.0000	5.1485	2,174.5958	5,157.0532	2,466.6819	-7.6430	1.3430	967.4907	2,089.6792	957.8463	7.2027
129	07	4	SAT-W	0.0000	6.9771	3,677.7572	2,466.6819	5,606.5614	3.0180	2.2639	1,639.8431	957.8463	2,372.1652	8.8069
129	07	5	Female	0.3949	0.0318	-1.1471	-7.6430	3.0180	0.2393	0.0193	-0.6941	-4.6250	1.8263	0.0251
129	07	6	Female*HSGPA	0.0318	0.0614	1.9732	1.3430	2.2639	0.0193	0.0604	2.0096	1.5859	2.1680	0.0184
129	07	7	Female*SAT-CR	-1.1455	1.9732	2,156.9102	967.4907	1,639.8431	-0.6941	2.0096	2,155.5963	958.7355	1,643.3003	3.1322
129	07	8	Female*SAT-M	-7.6327	1.3430	967.4907	2,089.6792	957.8463	-4.6250	1.5859	958.7355	2,031.3419	980.8822	3.1889
129	07	9	Female*SAT-W	3.0140	2.2639	1,639.8431	957.8463	2,372.1652	1.8263	2.1680	1,643.3003	980.8822	2,363.0690	4.1770
129	07	10	FYGPA	3.3654	0.0545	6.9830	7.2027	8.8069	0.0251	0.0184	3.1322	3.1889	4.1770	0.1466
130	08	1	HSGPA	0.0000	0.2249	13.3639	16.1526	15.3818	0.0342	0.1253	8.8466	8.3019	10.5938	0.1618
130	08	2	SAT-CR	0.0000	13.3639	6,950.1564	3,520.5834	5,051.1084	-2.5915	8.8466	4,450.4468	2,242.3203	3,205.7034	17.8667
130	08	3	SAT-M	0.0000	16.1526	3,520.5834	8,176.7000	3,983.5169	-3.1759	8.3019	2,242.3203	4,674.5496	2,414.6387	18.3508
130	08	4	SAT-W	0.0000	15.3818	5,051.1084	3,983.5169	6,923.7590	1.6891	10.5938	3,205.7034	2,414.6387	3,989.7425	17.9724
130	08	5	Female	0.6105	0.0342	-2.5915	-3.1759	1.6891	0.2392	0.0133	-1.0095	-1.2371	0.6580	0.0180
130	08	6	Female*HSGPA	0.0340	0.1253	8.8466	8.3019	10.5938	0.0133	0.1241	8.9347	8.4099	10.5364	0.0857
130	08	7	Female*SAT-CR	-2.5764	8.8466	4,450.4468	2,242.3203	3,205.7034	-1.0095	8.9347	4,443.7702	2,234.1379	3,210.0552	12.8932
130	08	8	Female*SAT-M	-3.1574	8.3019	2,242.3203	4,674.5496	2,414.6387	-1.2371	8.4099	2,234.1379	4,664.5218	2,419.9720	8.7593
130	08	9	Female*SAT-W	1.6793	10.5938	3,205.7034	2,414.6387	3,989.7425	0.6580	10.5364	3,210.0552	2,419.9720	3,986.9060	12.6016
130	08	10	FYGPA	3.1523	0.1618	17.8667	18.3508	17.9724	0.0180	0.0857	12.8932	8.7593	12.6016	0.4098
131	08	1	HSGPA	0.0000	0.2701	6.7521	8.9145	9.9569	0.0549	0.1482	4.7959	6.9456	7.2355	0.1285
131	08	2	SAT-CR	0.0000	6.7521	7,987.7311	4,622.2647	6,019.1021	-1.4961	4.7959	3,807.9860	2,094.5436	3,016.2103	17.2267
131	08	3	SAT-M	0.0000	8.9145	4,622.2647	8,380.5934	4,522.4813	-8.8956	6.9456	2,094.5436	3,739.9569	2,262.0726	15.6077
131	08	4	SAT-W	0.0000	9.9569	6,019.1021	4,522.4813	7,756.7484	4.4148	7.2355	3,016.2103	2,262.0726	4,097.8091	22.5106
131	08	5	Female	0.5110	0.0549	-1.4961	-8.8956	4.4148	0.2507	0.0268	-0.7315	-4.3496	2.1587	0.0774
131	08	6	Female*HSGPA	0.0547	0.1482	4.7959	6.9456	7.2355	0.0268	0.1452	4.8777	7.4321	6.9940	0.0838
131	08	7	Female*SAT-CR	-1.4914	4.7959	3,807.9860	2,094.5436	3,016.2103	-0.7315	4.8777	3,805.7546	2,081.2767	3,022.7946	10.2626
131	08	8	Female*SAT-M	-8.8675	6.9456	2,094.5436	3,739.9569	2,262.0726	-4.3496	7.4321	2,081.2767	3,661.0748	2,301.2211	10.0171
131	08	9	Female*SAT-W	4.4009	7.2355	3,016.2103	2,262.0726	4,097.8091	2.1587	6.9940	3,022.7946	2,301.2211	4,078.3801	15.5287
131	08	10	FYGPA	2.7899	0.1285	17.2267	15.6077	22.5106	0.0774	0.0838	10.2626	10.0171	15.5287	0.5247
132	08	1	HSGPA	0.0000	0.2736	13.6813	15.7327	17.4957	0.0516	0.1085	6.3540	9.2150	8.0474	0.2007
132	08	2	SAT-CR	0.0000	13.6813	8,006.9590	4,233.6376	6,353.4056	-2.4173	6.3540	3,910.5988	2,200.7492	3,043.5830	18.6464
132	08	3	SAT-M	0.0000	15.7327	4,233.6376	8,559.4402	4,588.7309	-11.9472	9.2150	2,200.7492	4,430.8915	2,475.9102	24.9536
132	08	4	SAT-W	0.0000	17.4957	6,353.4056	4,588.7309	8,126.7444	0.0363	8.0474	3,043.5830	2,475.9102	3,982.3403	23.0554
132	08	5	Female	0.4837	0.0516	-2.4173	-11.9472	0.0363	0.2502	0.0266	-1.2479	-6.1678	0.0188	0.0643
132	08	6	Female*HSGPA	0.0515	0.1085	6.3540	9.2150	8.0474	0.0266	0.1059	6.4785	9.8302	8.0455	0.0785
132	08	7	Female*SAT-CR	-2.4123	6.3540	3,910.5988	2,200.7492	3,043.5830	-1.2479	6.4785	3,904.7676	2,171.9286	3,043.6707	7.1870
132	08	8	Female*SAT-M	-11.9229	9.2150	2,200.7492	4,430.8915	2,475.9102	-6.1678	9.8302	2,171.9286	4,288.4470	2,476.3436	11.7774
132	08	9	Female*SAT-W	0.0363	8.0474	3,043.5830	2,475.9102	3,982.3403	0.0188	8.0455	3,043.6707	2,476.3436	3,982.3389	10.7075
132	08	10	FYGPA	2.9573	0.2007	18.6464	24.9536	23.0554	0.0643	0.0785	7.1870	11.7774	10.7075	0.7826

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
133	06	1	HSGPA	0.0000	0.3163	9.9124	12.6364	13.3212	0.0495	0.1696	6.5431	7.2353	8.0499	0.2011
133	06	2	SAT-CR	0.0000	9.9124	5,186.7203	2,619.3001	3,315.0190	2.0443	6.5431	2,609.6825	1,438.8068	1,632.5014	15.5203
133	06	3	SAT-M	0.0000	12.6364	2,619.3001	5,203.4717	2,420.1337	-4.3676	7.2353	1,438.8068	2,665.6443	1,316.7657	16.5499
133	06	4	SAT-W	0.0000	13.3212	3,315.0190	2,420.1337	4,952.9738	5.3901	8.0499	1,632.5014	1,316.7657	2,499.6351	18.0940
133	06	5	Female	0.5626	0.0495	2.0443	-4.3676	5.3901	0.2463	0.0216	0.8941	-1.9103	2.3574	0.0590
133	06	6	Female*HSGPA	0.0494	0.1696	6.5431	7.2353	8.0499	0.0216	0.1671	6.4422	7.4510	7.7836	0.1245
133	06	7	Female*SAT-CR	2.0421	6.5431	2,609.6825	1,438.8068	1,632.5014	0.8941	6.4422	2,605.5078	1,447.7260	1,621.4943	9.8621
133	06	8	Female*SAT-M	-4.3629	7.2353	1,438.8068	2,665.6443	1,316.7657	-1.9103	7.4510	1,447.7260	2,646.5885	1,340.2824	10.6193
133	06	9	Female*SAT-W	5.3843	8.0499	1,632.5014	1,316.7657	2,499.6351	2.3574	7.7836	1,621.4943	1,340.2824	2,470.6133	10.8505
133	06	10	FYGPA	2.7568	0.2011	15.5203	16.5499	18.0940	0.0590	0.1245	9.8621	10.6193	10.8505	0.6693
134	06	1	HSGPA	0.0000	0.1480	9.2213	8.2988	9.3313	0.0103	0.0693	4.0462	3.7887	4.1047	0.0612
134	06	2	SAT-CR	0.0000	9.2213	6,222.8970	3,086.0216	4,332.4882	-0.9186	4.0462	3,243.6147	1,707.7980	2,342.5098	12.2430
134	06	3	SAT-M	0.0000	8.2988	3,086.0216	5,667.9040	3,144.2540	-7.0179	3.7887	1,707.7980	3,036.5112	1,689.4994	10.5231
134	06	4	SAT-W	0.0000	9.3313	4,332.4882	3,144.2540	5,992.7544	1.3248	4.1047	2,342.5098	1,689.4994	3,229.0295	13.7086
134	06	5	Female	0.5328	0.0103	-0.9186	-7.0179	1.3248	0.2491	0.0048	-0.4292	-3.2789	0.6190	0.0220
134	06	6	Female*HSGPA	0.0103	0.0693	4.0462	3.7887	4.1047	0.0048	0.0692	4.0556	3.8611	4.0910	0.0277
134	06	7	Female*SAT-CR	-0.9181	4.0462	3,243.6147	1,707.7980	2,342.5098	-0.4292	4.0556	3,242.7713	1,701.3548	2,343.7261	7.4119
134	06	8	Female*SAT-M	-7.0142	3.7887	1,707.7980	3,036.5112	1,689.4994	-3.2789	3.8611	1,701.3548	2,987.2861	1,698.7918	6.1273
134	06	9	Female*SAT-W	1.3241	4.1047	2,342.5098	1,689.4994	3,229.0295	0.6190	4.0910	2,343.7261	1,698.7918	3,227.2753	7.8401
134	06	10	FYGPA	3.3142	0.0612	12.2430	10.5231	13.7086	0.0220	0.0277	7.4119	6.1273	7.8401	0.1886
134	07	1	HSGPA	0.0000	0.1310	7.0838	7.0588	7.5246	0.0084	0.0595	3.2741	3.2655	3.1955	0.0542
134	07	2	SAT-CR	0.0000	7.0838	5,701.6074	2,502.1426	3,803.3263	-0.8881	3.2741	2,930.5335	1,350.9046	1,969.4686	12.4790
134	07	3	SAT-M	0.0000	7.0588	2,502.1426	5,015.8734	2,465.7163	-8.3074	3.2655	1,350.9046	2,531.8277	1,344.4203	10.4439
134	07	4	SAT-W	0.0000	7.5246	3,803.3263	2,465.7163	5,487.5143	0.5695	3.1955	1,969.4686	1,344.4203	2,701.8075	12.8775
134	07	5	Female	0.4943	0.0084	-0.8881	-8.3074	0.5695	0.2501	0.0043	-0.4491	-4.2012	0.2880	0.0141
134	07	6	Female*HSGPA	0.0084	0.0595	3.2741	3.2655	3.1955	0.0043	0.0594	3.2816	3.3356	3.1907	0.0228
134	07	7	Female*SAT-CR	-0.8876	3.2741	2,930.5335	1,350.9046	1,969.4686	-0.4491	3.2816	2,929.7452	1,343.5307	1,969.9740	6.4386
134	07	8	Female*SAT-M	-8.3031	3.2655	1,350.9046	2,531.8277	1,344.4203	-4.2012	3.3356	1,343.5307	2,462.8506	1,349.1486	5.6411
134	07	9	Female*SAT-W	0.5692	3.1955	1,969.4686	1,344.4203	2,701.8075	0.2880	3.1907	1,969.9740	1,349.1486	2,701.4834	6.6264
134	07	10	FYGPA	3.2768	0.0542	12.4790	10.4439	12.8775	0.0141	0.0228	6.4386	5.6411	6.6264	0.2192
134	08	1	HSGPA	0.0000	0.1354	6.9055	8.5604	7.9899	-0.0048	0.0742	3.6616	4.6758	4.1870	0.0608
134	08	2	SAT-CR	0.0000	6.9055	5,961.4915	2,823.5225	4,129.5495	-2.3774	3.6616	3,023.4885	1,561.8736	2,149.1426	12.4562
134	08	3	SAT-M	0.0000	8.5604	2,823.5225	5,700.6394	2,869.9561	-8.7997	4.6758	1,561.8736	3,151.3846	1,601.9160	12.1886
134	08	4	SAT-W	0.0000	7.9899	4,129.5495	2,869.9561	6,221.3102	1.5065	4.1870	2,149.1426	1,601.9160	3,321.5015	13.6514
134	08	5	Female	0.5346	-0.0048	-2.3774	-8.7997	1.5065	0.2490	-0.0022	-1.1064	-4.0952	0.7011	0.0031
134	08	6	Female*HSGPA	-0.0048	0.0742	3.6616	4.6758	4.1870	-0.0022	0.0742	3.6503	4.6336	4.1943	0.0309
134	08	7	Female*SAT-CR	-2.3758	3.6616	3,023.4885	1,561.8736	2,149.1426	-1.1064	3.6503	3,017.8402	1,540.9672	2,152.7217	7.0540
134	08	8	Female*SAT-M	-8.7938	4.6758	1,561.8736	3,151.3846	1,601.9160	-4.0952	4.6336	1,540.9672	3,074.0023	1,615.1636	7.0404
134	08	9	Female*SAT-W	1.5055	4.1870	2,149.1426	1,601.9160	3,321.5015	0.7011	4.1943	2,152.7217	1,615.1636	3,319.2335	7.4310
134	08	10	FYGPA	3.2862	0.0608	12.4562	12.1886	13.6514	0.0031	0.0309	7.0540	7.0404	7.4310	0.2019

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
135	06	1	HSGPA	0.0000	0.1668	7.8670	8.1270	9.3109	0.0300	0.0709	4.2344	3.5233	4.8768	0.0806
135	06	2	SAT-CR	0.0000	7.8670	5,414.6406	2,771.4218	3,613.9790	1.0773	4.2344	2,829.7731	1,407.1442	1,812.1346	14.1528
135	06	3	SAT-M	0.0000	8.1270	2,771.4218	5,748.2583	2,745.0382	-7.4058	3.5233	1,407.1442	2,644.0997	1,277.0705	12.1944
135	06	4	SAT-W	0.0000	9.3109	3,613.9790	2,745.0382	5,591.3671	4.3663	4.8768	1,812.1346	1,277.0705	2,686.3025	16.0359
135	06	5	Female	0.4934	0.0300	1.0773	-7.4058	4.3663	0.2501	0.0152	0.5458	-3.7520	2.2121	0.0451
135	06	6	Female*HSGPA	0.0300	0.0709	4.2344	3.5233	4.8768	0.0152	0.0700	4.2021	3.7452	4.7459	0.0328
135	06	7	Female*SAT-CR	1.0765	4.2344	2,829.7731	1,407.1442	1,812.1346	0.5458	4.2021	2,828.6134	1,415.1167	1,807.4342	6.6554
135	06	8	Female*SAT-M	-7.4006	3.5233	1,407.1442	2,644.0997	1,277.0705	-3.7520	3.7452	1,415.1167	2,589.2921	1,309.3840	5.3204
135	06	9	Female*SAT-W	4.3633	4.8768	1,812.1346	1,277.0705	2,686.3025	2.2121	4.7459	1,807.4342	1,309.3840	2,667.2511	7.5427
135	06	10	FYGPA	3.1982	0.0806	14.1528	12.1944	16.0359	0.0451	0.0328	6.6554	5.3204	7.5427	0.2482
136	07	1	HSGPA	0.0000	0.2516	19.9580	23.1251	21.2489	0.0216	0.1031	9.0006	10.1746	9.5918	0.1445
136	07	2	SAT-CR	0.0000	19.9580	8,826.8783	6,264.2011	7,125.1374	-1.4669	9.0006	3,985.7659	2,879.7185	3,253.7195	22.9117
136	07	3	SAT-M	0.0000	23.1251	6,264.2011	10,368.1560	6,288.5106	-10.8451	10.1746	2,879.7185	4,573.4811	2,890.9013	22.8568
136	07	4	SAT-W	0.0000	21.2489	7,125.1374	6,288.5106	8,866.9998	2.5009	9.5918	3,253.7195	2,890.9013	3,923.0419	24.1971
136	07	5	Female	0.4352	0.0216	-1.4669	-10.8451	2.5009	0.2458	0.0122	-0.8285	-6.1249	1.4124	0.0448
136	07	6	Female*HSGPA	0.0216	0.1031	9.0006	10.1746	9.5918	0.0122	0.1026	9.0323	10.4091	9.5377	0.0606
136	07	7	Female*SAT-CR	-1.4668	9.0006	3,985.7659	2,879.7185	3,253.7195	-0.8285	9.0323	3,983.6143	2,863.8115	3,257.3877	10.7305
136	07	8	Female*SAT-M	-10.8439	10.1746	2,879.7185	4,573.4811	2,890.9013	-6.1249	10.4091	2,863.8115	4,455.8788	2,918.0203	10.5616
136	07	9	Female*SAT-W	2.5006	9.5918	3,253.7195	2,890.9013	3,923.0419	1.4124	9.5377	3,257.3877	2,918.0203	3,916.7882	11.4785
136	07	10	FYGPA	3.0563	0.1445	22.9117	22.8568	24.1971	0.0448	0.0606	10.7305	10.5616	11.4785	0.3858
136	08	1	HSGPA	0.0000	0.2719	21.0157	25.2177	22.7124	0.0184	0.1167	9.8257	11.4421	10.6558	0.1792
136	08	2	SAT-CR	0.0000	21.0157	9,153.3725	6,607.3104	7,409.6332	-3.3638	9.8257	4,152.1549	3,073.6863	3,453.2778	25.7076
136	08	3	SAT-M	0.0000	25.2177	6,607.3104	10,642.9317	6,711.5638	-12.0367	11.4421	3,073.6863	4,828.6219	3,164.7228	28.7212
136	08	4	SAT-W	0.0000	22.7124	7,409.6332	6,711.5638	9,348.8476	1.5629	10.6558	3,453.2778	3,164.7228	4,364.5850	29.5811
136	08	5	Female	0.4427	0.0184	-3.3638	-12.0367	1.5629	0.2467	0.0102	-1.8745	-6.7074	0.8709	0.0392
136	08	6	Female*HSGPA	0.0184	0.1167	9.8257	11.4421	10.6558	0.0102	0.1163	9.8874	11.6630	10.6271	0.0804
136	08	7	Female*SAT-CR	-3.3635	9.8257	4,152.1549	3,073.6863	3,453.2778	-1.8745	9.8874	4,140.8407	3,033.2011	3,458.5344	12.6394
136	08	8	Female*SAT-M	-12.0354	11.4421	3,073.6863	4,828.6219	3,164.7228	-6.7074	11.6630	3,033.2011	4,683.7555	3,183.5326	13.7018
136	08	9	Female*SAT-W	1.5627	10.6558	3,453.2778	3,164.7228	4,364.5850	0.8709	10.6271	3,458.5344	3,183.5326	4,362.1428	14.4389
136	08	10	FYGPA	2.9421	0.1792	25.7076	28.7212	29.5811	0.0392	0.0804	12.6394	13.7018	14.4389	0.5375
137	06	1	HSGPA	0.0000	0.2260	8.5931	10.2654	9.2332	0.0323	0.1326	6.3023	7.4693	6.3472	0.1323
137	06	2	SAT-CR	0.0000	8.5931	5,053.9816	2,440.6409	3,309.5786	-0.2455	6.3023	2,816.4673	1,500.0725	1,800.4025	15.5298
137	06	3	SAT-M	0.0000	10.2654	2,440.6409	5,503.6435	2,462.2017	-5.9380	7.4693	1,500.0725	3,366.6743	1,559.9496	12.6768
137	06	4	SAT-W	0.0000	9.2332	3,309.5786	2,462.2017	5,031.1223	2.6221	6.3472	1,800.4025	1,559.9496	2,868.7976	14.7655
137	06	5	Female	0.5777	0.0323	-0.2455	-5.9380	2.6221	0.2443	0.0136	-0.1037	-2.5079	1.1074	0.0543
137	06	6	Female*HSGPA	0.0322	0.1326	6.3023	7.4693	6.3472	0.0136	0.1316	6.3102	7.6606	6.2628	0.0843
137	06	7	Female*SAT-CR	-0.2452	6.3023	2,816.4673	1,500.0725	1,800.4025	-0.1037	6.3102	2,816.4070	1,498.6166	1,801.0454	8.7012
137	06	8	Female*SAT-M	-5.9300	7.4693	1,500.0725	3,366.6743	1,559.9496	-2.5079	7.6606	1,498.6166	3,331.4619	1,575.4987	8.8778
137	06	9	Female*SAT-W	2.6186	6.3472	1,800.4025	1,559.9496	2,868.7976	1.1074	6.2628	1,801.0454	1,575.4987	2,861.9314	8.4732
137	06	10	FYGPA	3.0305	0.1323	15.5298	12.6768	14.7655	0.0543	0.0843	8.7012	8.8778	8.4732	0.3243

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
137	07	1	HSGPA	0.0000	0.2363	6.2125	10.5105	8.9037	0.0295	0.1140	4.3198	6.1861	5.2747	0.1335
137	07	2	SAT-CR	0.0000	6.2125	4,899.6388	2,593.8443	3,190.0366	-0.0062	4.3198	2,489.7319	1,312.1041	1,639.7166	9.8467
137	07	3	SAT-M	0.0000	10.5105	2,593.8443	5,967.0266	2,477.8311	-5.6819	6.1861	1,312.1041	2,948.1467	1,310.6889	13.4744
137	07	4	SAT-W	0.0000	8.9037	3,190.0366	2,477.8311	5,022.4261	4.0879	5.2747	1,639.7166	1,310.6889	2,570.7788	14.5233
137	07	5	Female	0.5424	0.0295	-0.0062	-5.6819	4.0879	0.2485	0.0135	-0.0028	-2.6002	1.8707	0.0549
137	07	6	Female*HSGPA	0.0295	0.1140	4.3198	6.1861	5.2747	0.0135	0.1132	4.3200	6.3537	5.1542	0.0585
137	07	7	Female*SAT-CR	-0.0062	4.3198	2,489.7319	1,312.1041	1,639.7166	-0.0028	4.3200	2,489.7319	1,312.0690	1,639.7419	5.6810
137	07	8	Female*SAT-M	-5.6745	6.1861	1,312.1041	2,948.1467	1,310.6889	-2.6002	6.3537	1,312.0690	2,915.9043	1,333.8860	6.8538
137	07	9	Female*SAT-W	4.0826	5.2747	1,639.7166	1,310.6889	2,570.7788	1.8707	5.1542	1,639.7419	1,333.8860	2,554.0894	7.6860
137	07	10	FYGPA	3.0688	0.1335	9.8467	13.4744	14.5233	0.0549	0.0585	5.6810	6.8538	7.6860	0.3284
137	08	1	HSGPA	0.0000	0.2287	5.5818	8.9983	8.9128	0.0303	0.1248	3.4677	4.5123	4.7115	0.1084
137	08	2	SAT-CR	0.0000	5.5818	5,264.0685	2,491.0766	3,694.2646	-0.1242	3.4677	2,682.1783	1,406.0106	1,790.4234	9.5837
137	08	3	SAT-M	0.0000	8.9983	2,491.0766	5,500.6954	2,470.3483	-6.0588	4.5123	1,406.0106	2,842.3800	1,398.6076	9.9186
137	08	4	SAT-W	0.0000	8.9128	3,694.2646	2,470.3483	5,338.5223	3.7049	4.7115	1,790.4234	1,398.6076	2,773.1391	12.5037
137	08	5	Female	0.5566	0.0303	-0.1242	-6.0588	3.7049	0.2471	0.0134	-0.0551	-2.6862	1.6426	0.0671
137	08	6	Female*HSGPA	0.0303	0.1248	3.4677	4.5123	4.7115	0.0134	0.1239	3.4715	4.6957	4.5994	0.0645
137	08	7	Female*SAT-CR	-0.1240	3.4677	2,682.1783	1,406.0106	1,790.4234	-0.0551	3.4715	2,682.1629	1,405.2591	1,790.8829	5.2703
137	08	8	Female*SAT-M	-6.0504	4.5123	1,406.0106	2,842.3800	1,398.6076	-2.6862	4.6957	1,405.2591	2,805.7217	1,421.0238	6.0758
137	08	9	Female*SAT-W	3.6997	4.7115	1,790.4234	1,398.6076	2,773.1391	1.6426	4.5994	1,790.8829	1,421.0238	2,759.4319	6.5668
137	08	10	FYGPA	3.0394	0.1084	9.5837	9.9186	12.5037	0.0671	0.0645	5.2703	6.0758	6.5668	0.3273
138	06	1	HSGPA	0.0000	0.1688	10.3065	8.8353	9.5634	0.0227	0.0724	4.6786	4.3544	3.8301	0.0851
138	06	2	SAT-CR	0.0000	10.3065	6,485.7890	2,824.2686	4,471.4355	1.5126	4.6786	3,208.2593	1,365.4017	2,254.9013	20.5780
138	06	3	SAT-M	0.0000	8.8353	2,824.2686	5,973.7263	2,621.0301	-6.7403	4.3544	1,365.4017	2,615.2003	1,134.6300	16.5652
138	06	4	SAT-W	0.0000	9.5634	4,471.4355	2,621.0301	6,149.3430	5.1999	3.8301	2,254.9013	1,134.6300	2,943.0905	20.8417
138	06	5	Female	0.4746	0.0227	1.5126	-6.7403	5.1999	0.2498	0.0119	0.7948	-3.5415	2.7321	0.0248
138	06	6	Female*HSGPA	0.0227	0.0724	4.6786	4.3544	3.8301	0.0119	0.0719	4.6443	4.5071	3.7123	0.0303
138	06	7	Female*SAT-CR	1.5098	4.6786	3,208.2593	1,365.4017	2,254.9013	0.7948	4.6443	3,205.9756	1,375.5781	2,247.0506	10.4013
138	06	8	Female*SAT-M	-6.7276	4.3544	1,365.4017	2,615.2003	1,134.6300	-3.5415	4.5071	1,375.5781	2,569.8538	1,169.6128	8.1343
138	06	9	Female*SAT-W	5.1901	3.8301	2,254.9013	1,134.6300	2,943.0905	2.7321	3.7123	2,247.0506	1,169.6128	2,916.1027	10.0101
138	06	10	FYGPA	3.1350	0.0851	20.5780	16.5652	20.8417	0.0248	0.0303	10.4013	8.1343	10.0101	0.3298
138	07	1	HSGPA	0.0000	0.1428	4.9460	4.0766	4.8864	0.0191	0.0655	2.8593	2.2067	2.7134	0.0673
138	07	2	SAT-CR	0.0000	4.9460	5,879.8697	2,511.6052	3,948.9459	0.1691	2.8593	2,705.8446	1,269.6601	1,735.9264	16.4324
138	07	3	SAT-M	0.0000	4.0766	2,511.6052	5,353.6557	2,480.3383	-8.0776	2.2067	1,269.6601	2,520.2949	1,233.6649	12.5855
138	07	4	SAT-W	0.0000	4.8864	3,948.9459	2,480.3383	5,843.3731	3.0660	2.7134	1,735.9264	1,233.6649	2,502.2861	17.9460
138	07	5	Female	0.4640	0.0191	0.1691	-8.0776	3.0660	0.2492	0.0102	0.0907	-4.3296	1.6434	0.0137
138	07	6	Female*HSGPA	0.0190	0.0655	2.8593	2.2067	2.7134	0.0102	0.0652	2.8561	2.3606	2.6550	0.0217
138	07	7	Female*SAT-CR	0.1688	2.8593	2,705.8446	1,269.6601	1,735.9264	0.0907	2.8561	2,705.8161	1,271.0236	1,735.4088	8.1616
138	07	8	Female*SAT-M	-8.0614	2.2067	1,269.6601	2,520.2949	1,233.6649	-4.3296	2.3606	1,271.0236	2,455.1779	1,258.3811	6.0609
138	07	9	Female*SAT-W	3.0598	2.7134	1,735.9264	1,233.6649	2,502.2861	1.6434	2.6550	1,735.4088	1,258.3811	2,492.9047	7.8983
138	07	10	FYGPA	3.1663	0.0673	16.4324	12.5855	17.9460	0.0137	0.0217	8.1616	6.0609	7.8983	0.3044

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
138	08	1	HSGPA	0.0000	0.1217	5.6874	4.2405	6.8377	0.0053	0.0540	2.0425	1.3793	2.0902	0.0576
138	08	2	SAT-CR	0.0000	5.6874	5,268.2353	1,935.4607	3,577.4668	-1.2671	2.0425	1,982.6081	792.5450	1,105.1453	12.7816
138	08	3	SAT-M	0.0000	4.2405	1,935.4607	5,203.1113	1,999.1623	-11.1398	1.3793	792.5450	2,445.1826	738.2925	10.4012
138	08	4	SAT-W	0.0000	6.8377	3,577.4668	1,999.1623	5,416.8990	3.9077	2.0902	1,105.1453	738.2925	1,809.9706	13.4888
138	08	5	Female	0.4439	0.0053	-1.2671	-11.1398	3.9077	0.2474	0.0030	-0.7046	-6.1944	2.1730	0.0230
138	08	6	Female*HSGPA	0.0053	0.0540	2.0425	1.3793	2.0902	0.0030	0.0540	2.0492	1.4383	2.0695	0.0190
138	08	7	Female*SAT-CR	-1.2642	2.0425	1,982.6081	792.5450	1,105.1453	-0.7046	2.0492	1,981.0062	778.4617	1,110.0856	5.1585
138	08	8	Female*SAT-M	-11.1143	1.3793	792.5450	2,445.1826	738.2925	-6.1944	1.4383	778.4617	2,321.3713	781.7244	4.1749
138	08	9	Female*SAT-W	3.8988	2.0902	1,105.1453	738.2925	1,809.9706	2.1730	2.0695	1,110.0856	781.7244	1,794.7351	4.8719
138	08	10	FYGPA	3.2332	0.0576	12.7816	10.4012	13.4888	0.0230	0.0190	5.1585	4.1749	4.8719	0.2307
139	06	1	HSGPA	0.0000	0.1295	5.7867	0.7240	6.8034	0.0349	0.0605	2.5117	0.5078	3.4984	0.0591
139	06	2	SAT-CR	0.0000	5.7867	5,312.1645	1,788.8950	3,438.0178	-4.3333	2.5117	2,674.2323	887.9356	1,909.5252	11.2748
139	06	3	SAT-M	0.0000	0.7240	1,788.8950	4,196.1358	1,828.3527	-9.3270	0.5078	887.9356	2,149.2300	841.1173	10.3833
139	06	4	SAT-W	0.0000	6.8034	3,438.0178	1,828.3527	5,235.0513	-0.5072	3.4984	1,909.5252	841.1173	2,633.4299	13.6312
139	06	5	Female	0.5667	0.0349	-4.3333	-9.3270	-0.5072	0.2467	0.0151	-1.8778	-4.0417	-0.2198	0.0128
139	06	6	Female*HSGPA	0.0347	0.0605	2.5117	0.5078	3.4984	0.0151	0.0592	2.6621	0.8315	3.5160	0.0410
139	06	7	Female*SAT-CR	-4.3127	2.5117	2,674.2323	887.9356	1,909.5252	-1.8778	2.6621	2,655.5440	847.7113	1,907.3379	6.4074
139	06	8	Female*SAT-M	-9.2825	0.5078	887.9356	2,149.2300	841.1173	-4.0417	0.8315	847.7113	2,062.6522	836.4094	6.0962
139	06	9	Female*SAT-W	-0.5048	3.4984	1,909.5252	841.1173	2,633.4299	-0.2198	3.5160	1,907.3379	836.4094	2,633.1739	8.8147
139	06	10	FYGPA	2.6690	0.0591	11.2748	10.3833	13.6312	0.0128	0.0410	6.4074	6.0962	8.8147	0.3713
139	07	1	HSGPA	0.0000	0.1234	7.0181	1.4910	8.4131	0.0394	0.0661	4.2707	2.9206	5.4623	0.0587
139	07	2	SAT-CR	0.0000	7.0181	5,470.4755	1,895.3874	3,966.1012	7.1791	4.2707	3,343.3652	1,321.9177	2,657.6841	10.2249
139	07	3	SAT-M	0.0000	1.4910	1,895.3874	3,832.0315	1,984.0568	-0.6980	2.9206	1,321.9177	2,251.1996	1,444.2501	11.3042
139	07	4	SAT-W	0.0000	8.4131	3,966.1012	1,984.0568	5,968.7092	7.7476	5.4623	2,657.6841	1,444.2501	3,673.4450	10.4444
139	07	5	Female	0.6091	0.0394	7.1791	-0.6980	7.7476	0.2393	0.0154	2.8061	-0.2728	3.0282	0.0202
139	07	6	Female*HSGPA	0.0392	0.0661	4.2707	2.9206	5.4623	0.0154	0.0646	3.9896	2.9480	5.1589	0.0420
139	07	7	Female*SAT-CR	7.1427	4.2707	3,343.3652	1,321.9177	2,657.6841	2.8061	3.9896	3,292.0871	1,326.9031	2,602.3456	8.5441
139	07	8	Female*SAT-M	-0.6944	2.9206	1,321.9177	2,251.1996	1,444.2501	-0.2728	2.9480	1,326.9031	2,250.7149	1,449.6302	9.1039
139	07	9	Female*SAT-W	7.7083	5.4623	2,657.6841	1,444.2501	3,673.4450	3.0282	5.1589	2,602.3456	1,449.6302	3,613.7246	7.3859
139	07	10	FYGPA	2.7913	0.0587	10.2249	11.3042	10.4444	0.0202	0.0420	8.5441	9.1039	7.3859	0.2726
139	08	1	HSGPA	0.0000	0.1141	4.8641	1.3657	4.3620	0.0365	0.0659	3.2668	1.5422	3.0038	0.0651
139	08	2	SAT-CR	0.0000	4.8641	4,060.6554	972.9194	2,086.5845	0.8454	3.2668	2,197.1570	588.7021	1,250.8451	3.8570
139	08	3	SAT-M	0.0000	1.3657	972.9194	3,557.9480	1,142.8782	-3.8817	1.5422	588.7021	2,206.8530	894.8485	8.2699
139	08	4	SAT-W	0.0000	4.3620	2,086.5845	1,142.8782	3,838.9789	6.2366	3.0038	1,250.8451	894.8485	2,448.7735	8.5640
139	08	5	Female	0.6067	0.0365	0.8454	-3.8817	6.2366	0.2396	0.0144	0.3325	-1.5267	2.4529	0.0029
139	08	6	Female*HSGPA	0.0364	0.0659	3.2668	1.5422	3.0038	0.0144	0.0645	3.2360	1.6835	2.7768	0.0421
139	08	7	Female*SAT-CR	0.8419	3.2668	2,197.1570	588.7021	1,250.8451	0.3325	3.2360	2,196.4452	591.9701	1,245.5945	3.8598
139	08	8	Female*SAT-M	-3.8655	1.5422	588.7021	2,206.8530	894.8485	-1.5267	1.6835	591.9701	2,191.8483	918.9559	6.6650
139	08	9	Female*SAT-W	6.2105	3.0038	1,250.8451	894.8485	2,448.7735	2.4529	2.7768	1,245.5945	918.9559	2,410.0412	7.4737
139	08	10	FYGPA	2.8227	0.0651	3.8570	8.2699	8.5640	0.0029	0.0421	3.8598	6.6650	7.4737	0.2801



## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
140	07	1	HSGPA	0.0000	0.2417	10.9840	10.8940	12.2895	0.0209	0.1158	5.0783	4.2006	6.3102	0.1591
140	07	2	SAT-CR	0.0000	10.9840	6,440.3431	3,232.7923	4,361.9803	-2.3045	5.0783	3,117.4276	1,513.7573	2,136.4081	13.4492
140	07	3	SAT-M	0.0000	10.8940	3,232.7923	6,267.0575	3,032.3339	-9.9480	4.2006	1,513.7573	3,030.9841	1,505.1938	13.7132
140	07	4	SAT-W	0.0000	12.2895	4,361.9803	3,032.3339	5,950.3677	2.1818	6.3102	2,136.4081	1,505.1938	2,941.4657	16.4582
140	07	5	Female	0.5087	0.0209	-2.3045	-9.9480	2.1818	0.2501	0.0103	-1.1321	-4.8873	1.0719	0.0418
140	07	6	Female*HSGPA	0.0209	0.1158	5.0783	4.2006	6.3102	0.0103	0.1154	5.1264	4.4084	6.2646	0.0726
140	07	7	Female*SAT-CR	-2.3028	5.0783	3,117.4276	1,513.7573	2,136.4081	-1.1321	5.1264	3,112.1208	1,490.8490	2,141.4323	6.9978
140	07	8	Female*SAT-M	-9.9408	4.2006	1,513.7573	3,030.9841	1,505.1938	-4.8873	4.4084	1,490.8490	2,932.0931	1,526.8824	6.4286
140	07	9	Female*SAT-W	2.1802	6.3102	2,136.4081	1,505.1938	2,941.4657	1.0719	6.2646	2,141.4323	1,526.8824	2,936.7090	9.0524
140	07	10	FYGPA	3.1228	0.1591	13.4492	13.7132	16.4582	0.0418	0.0726	6.9978	6.4286	9.0524	0.4470
141	08	1	HSGPA	0.0000	0.2201	15.7364	17.5020	17.6898	0.0390	0.1150	8.8089	9.6958	9.8838	0.1538
141	08	2	SAT-CR	0.0000	15.7364	7,366.8804	4,243.6514	5,586.4904	-0.5803	8.8089	3,904.6481	2,383.7148	3,160.8885	19.2449
141	08	3	SAT-M	0.0000	17.5020	4,243.6514	7,388.2889	4,419.3486	-7.2310	9.6958	2,383.7148	3,916.0992	2,589.2155	19.6721
141	08	4	SAT-W	0.0000	17.6898	5,586.4904	4,419.3486	7,761.6744	3.6139	9.8838	3,160.8885	2,589.2155	4,436.0911	22.3754
141	08	5	Female	0.5468	0.0390	-0.5803	-7.2310	3.6139	0.2482	0.0177	-0.2630	-3.2774	1.6380	0.0555
141	08	6	Female*HSGPA	0.0389	0.1150	8.8089	9.6958	9.8838	0.0177	0.1135	8.8315	9.9773	9.7431	0.0646
141	08	7	Female*SAT-CR	-0.5795	8.8089	3,904.6481	2,383.7148	3,160.8885	-0.2630	8.8315	3,904.3118	2,379.5246	3,162.9827	10.8653
141	08	8	Female*SAT-M	-7.2206	9.6958	2,383.7148	3,916.0992	2,589.2155	-3.2774	9.9773	2,379.5246	3,863.8865	2,615.3102	10.4402
141	08	9	Female*SAT-W	3.6087	9.8838	3,160.8885	2,589.2155	4,436.0911	1.6380	9.7431	3,162.9827	2,615.3102	4,423.0495	12.8925
141	08	10	FYGPA	2.9952	0.1538	19.2449	19.6721	22.3754	0.0555	0.0646	10.8653	10.4402	12.8925	0.4381
142	07	1	HSGPA	0.0000	0.2196	-0.4547	0.4337	-0.5426	0.0149	0.0837	1.3772	1.5936	1.3180	0.0803
142	07	2	SAT-CR	0.0000	-0.4547	8,615.0647	4,792.5936	6,347.4957	-7.2080	1.3772	3,878.4724	1,972.2377	2,720.5145	15.8049
142	07	3	SAT-M	0.0000	0.4337	4,792.5936	8,531.2377	4,558.8185	-14.5487	1.5936	1,972.2377	4,064.8456	2,022.2631	15.0154
142	07	4	SAT-W	0.0000	-0.5426	6,347.4957	4,558.8185	7,484.8297	-4.4936	1.3180	2,720.5145	2,022.2631	3,222.4932	13.1697
142	07	5	Female	0.4668	0.0149	-7.2080	-14.5487	-4.4936	0.2494	0.0079	-3.8433	-7.7572	-2.3960	0.0214
142	07	6	Female*HSGPA	0.0149	0.0837	1.3772	1.5936	1.3180	0.0079	0.0834	1.4843	1.8099	1.3848	0.0302
142	07	7	Female*SAT-CR	-7.1926	1.3772	3,878.4724	1,972.2377	2,720.5145	-3.8433	1.4843	3,826.6276	1,867.5944	2,688.1937	6.8521
142	07	8	Female*SAT-M	-14.5176	1.5936	1,972.2377	4,064.8456	2,022.2631	-7.7572	1.8099	1,867.5944	3,853.6338	1,957.0268	7.1823
142	07	9	Female*SAT-W	-4.4840	1.3180	2,720.5145	2,022.2631	3,222.4932	-2.3960	1.3848	2,688.1937	1,957.0268	3,202.3439	6.8556
142	07	10	FYGPA	2.7274	0.0803	15.8049	15.0154	13.1697	0.0214	0.0302	6.8521	7.1823	6.8556	0.4408
142	08	1	HSGPA	0.0000	0.1903	-1.6094	-0.7236	0.2831	0.0363	0.0855	-0.4121	0.7238	0.4037	0.0794
142	08	2	SAT-CR	0.0000	-1.6094	8,431.1117	5,226.6257	6,016.8862	-10.5314	-0.4121	3,566.3948	2,323.4917	2,518.2325	16.1736
142	08	3	SAT-M	0.0000	-0.7236	5,226.6257	9,407.8347	4,783.9805	-15.9724	0.7238	2,323.4917	4,408.2264	2,135.7268	20.3676
142	08	4	SAT-W	0.0000	0.2831	6,016.8862	4,783.9805	6,999.7247	-4.8645	0.4037	2,518.2325	2,135.7268	3,026.7510	18.3978
142	08	5	Female	0.4805	0.0363	-10.5314	-15.9724	-4.8645	0.2500	0.0189	-5.4707	-8.2971	-2.5269	0.0134
142	08	6	Female*HSGPA	0.0363	0.0855	-0.4121	0.7238	0.4037	0.0189	0.0842	-0.0301	1.3032	0.5802	0.0407
142	08	7	Female*SAT-CR	-10.5173	-0.4121	3,566.3948	2,323.4917	2,518.2325	-5.4707	-0.0301	3,455.6335	2,155.5057	2,467.0716	7.2071
142	08	8	Female*SAT-M	-15.9510	0.7238	2,323.4917	4,408.2264	2,135.7268	-8.2971	1.3032	2,155.5057	4,153.4508	2,058.1337	9.3042
142	08	9	Female*SAT-W	-4.8579	0.4037	2,518.2325	2,135.7268	3,026.7510	-2.5269	0.5802	2,467.0716	2,058.1337	3,003.1196	7.6083
142	08	10	FYGPA	2.6803	0.0794	16.1736	20.3676	18.3978	0.0134	0.0407	7.2071	9.3042	7.6083	0.6005

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
143	06	1	HSGPA	0.0000	0.2473	14.7543	17.7856	16.1076	0.0223	0.1280	7.1955	9.4024	7.5233	0.1487
143	06	2	SAT-CR	0.0000	14.7543	8,419.2184	3,961.8250	6,344.4650	3.9929	7.1955	4,777.2191	2,244.2773	3,701.1400	18.5469
143	06	3	SAT-M	0.0000	17.7856	3,961.8250	7,437.5546	4,096.3709	-10.3993	9.4024	2,244.2773	4,349.4027	2,541.2988	15.9657
143	06	4	SAT-W	0.0000	16.1076	6,344.4650	4,096.3709	7,749.5724	4.2517	7.5233	3,701.1400	2,541.2988	4,496.1990	21.1624
143	06	5	Female	0.6033	0.0223	3.9929	-10.3993	4.2517	0.2399	0.0089	1.5839	-4.1252	1.6866	0.0316
143	06	6	Female*HSGPA	0.0223	0.1280	7.1955	9.4024	7.5233	0.0089	0.1275	7.1066	9.6339	7.4286	0.0860
143	06	7	Female*SAT-CR	3.9834	7.1955	4,777.2191	2,244.2773	3,701.1400	1.5839	7.1066	4,761.3135	2,285.7025	3,684.2035	12.3584
143	06	8	Female*SAT-M	-10.3746	9.4024	2,244.2773	4,349.4027	2,541.2988	-4.1252	9.6339	2,285.7025	4,241.5134	2,585.4089	12.0979
143	06	9	Female*SAT-W	4.2416	7.5233	3,701.1400	2,541.2988	4,496.1990	1.6866	7.4286	3,684.2035	2,585.4089	4,478.1648	13.9145
143	06	10	FYGPA	3.1193	0.1487	18.5469	15.9657	21.1624	0.0316	0.0860	12.3584	12.0979	13.9145	0.3858
144	06	1	HSGPA	0.0000	0.2789	14.7242	22.2809	18.4334	0.0350	0.1282	6.5203	10.3886	8.1674	0.1617
144	06	2	SAT-CR	0.0000	14.7242	6,338.6055	4,183.8711	5,077.5259	2.1453	6.5203	3,223.7639	2,054.3322	2,624.2226	18.6018
144	06	3	SAT-M	0.0000	22.2809	4,183.8711	8,568.4939	4,482.3235	-8.1226	10.3886	2,054.3322	3,990.7629	2,212.2876	20.3292
144	06	4	SAT-W	0.0000	18.4334	5,077.5259	4,482.3235	7,124.6781	4.4149	8.1674	2,624.2226	2,212.2876	3,823.1930	22.0088
144	06	5	Female	0.5072	0.0350	2.1453	-8.1226	4.4149	0.2505	0.0173	1.0571	-4.0024	2.1754	0.0487
144	06	6	Female*HSGPA	0.0349	0.1282	6.5203	10.3886	8.1674	0.0173	0.1270	6.4454	10.6724	8.0132	0.0698
144	06	7	Female*SAT-CR	2.1409	6.5203	3,223.7639	2,054.3322	2,624.2226	1.0571	6.4454	3,219.1709	2,071.7218	2,614.7707	10.0631
144	06	8	Female*SAT-M	-8.1057	10.3886	2,054.3322	3,990.7629	2,212.2876	-4.0024	10.6724	2,071.7218	3,924.9236	2,248.0734	11.2418
144	06	9	Female*SAT-W	4.4057	8.1674	2,624.2226	2,212.2876	3,823.1930	2.1754	8.0132	2,614.7707	2,248.0734	3,803.7422	12.6681
144	06	10	FYGPA	2.8193	0.1617	18.6018	20.3292	22.0088	0.0487	0.0698	10.0631	11.2418	12.6681	0.5333
144	07	1	HSGPA	0.0000	0.2903	14.4821	20.4722	17.2289	0.0432	0.1217	8.5221	9.6961	9.5323	0.1811
144	07	2	SAT-CR	0.0000	14.4821	6,517.8290	4,382.8025	4,801.1794	0.6811	8.5221	3,066.5069	2,087.6574	2,437.5954	22.7464
144	07	3	SAT-M	0.0000	20.4722	4,382.8025	8,378.3439	4,438.3227	-7.4628	9.6961	2,087.6574	3,911.8365	2,313.4372	24.0130
144	07	4	SAT-W	0.0000	17.2289	4,801.1794	4,438.3227	6,347.9754	3.8887	9.5323	2,437.5954	2,313.4372	3,252.6045	26.3840
144	07	5	Female	0.4809	0.0432	0.6811	-7.4628	3.8887	0.2502	0.0224	0.3535	-3.8737	2.0185	0.0590
144	07	6	Female*HSGPA	0.0431	0.1217	8.5221	9.6961	9.5323	0.0224	0.1198	8.4927	10.0178	9.3647	0.0792
144	07	7	Female*SAT-CR	0.6797	8.5221	3,066.5069	2,087.6574	2,437.5954	0.3535	8.4927	3,066.0439	2,092.7297	2,434.9523	13.6153
144	07	8	Female*SAT-M	-7.4470	9.6961	2,087.6574	3,911.8365	2,313.4372	-3.8737	10.0178	2,092.7297	3,856.2605	2,342.3967	13.0726
144	07	9	Female*SAT-W	3.8805	9.5323	2,437.5954	2,313.4372	3,252.6045	2.0185	9.3647	2,434.9523	2,342.3967	3,237.5144	14.9115
144	07	10	FYGPA	2.9358	0.1811	22.7464	24.0130	26.3840	0.0590	0.0792	13.6153	13.0726	14.9115	0.4533
144	08	1	HSGPA	0.0000	0.2679	14.1087	17.0394	16.4729	0.0586	0.1256	6.6467	8.6007	7.5028	0.1850
144	08	2	SAT-CR	0.0000	14.1087	6,776.7145	4,552.9741	5,300.9350	-2.1292	6.6467	3,519.9773	2,456.2529	3,064.5975	21.4980
144	08	3	SAT-M	0.0000	17.0394	4,552.9741	8,204.8211	4,667.0017	-7.9655	8.6007	2,456.2529	4,304.8334	2,727.6181	21.4169
144	08	4	SAT-W	0.0000	16.4729	5,300.9350	4,667.0017	7,058.1706	1.6971	7.5028	3,064.5975	2,727.6181	3,986.3546	24.4611
144	08	5	Female	0.5414	0.0586	-2.1292	-7.9655	1.6971	0.2489	0.0269	-0.9765	-3.6532	0.7784	0.0733
144	08	6	Female*HSGPA	0.0584	0.1256	6.6467	8.6007	7.5028	0.0269	0.1221	6.7712	9.0662	7.4036	0.0829
144	08	7	Female*SAT-CR	-2.1242	6.6467	3,519.9773	2,456.2529	3,064.5975	-0.9765	6.7712	3,515.4544	2,439.3327	3,068.2026	11.1002
144	08	8	Female*SAT-M	-7.9467	8.6007	2,456.2529	4,304.8334	2,727.6181	-3.6532	9.0662	2,439.3327	4,241.5342	2,741.1047	12.6029
144	08	9	Female*SAT-W	1.6931	7.5028	3,064.5975	2,727.6181	3,986.3546	0.7784	7.4036	3,068.2026	2,741.1047	3,983.4811	13.1423
144	08	10	FYGPA	2.9036	0.1850	21.4980	21.4169	24.4611	0.0733	0.0829	11.1002	12.6029	13.1423	0.4769

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
145	08	1	HSGPA	0.0000	0.2687	13.2986	15.0867	13.0239	0.0286	0.1391	7.6553	8.2836	7.2222	0.1815
145	08	2	SAT-CR	0.0000	13.2986	7,728.7451	5,089.7461	5,728.7365	-1.3083	7.6553	4,092.2435	2,750.0563	3,148.1212	24.0047
145	08	3	SAT-M	0.0000	15.0867	5,089.7461	8,387.6987	4,754.7553	-9.7730	8.2836	2,750.0563	4,443.3604	2,672.8250	24.3964
145	08	4	SAT-W	0.0000	13.0239	5,728.7365	4,754.7553	7,359.4096	1.6102	7.2222	3,148.1212	2,672.8250	4,024.6808	26.4051
145	08	5	Female	0.5423	0.0286	-1.3083	-9.7730	1.6102	0.2483	0.0131	-0.5988	-4.4733	0.7370	0.0548
145	08	6	Female*HSGPA	0.0286	0.1391	7.6553	8.2836	7.2222	0.0131	0.1383	7.6927	8.5632	7.1761	0.0943
145	08	7	Female*SAT-CR	-1.3080	7.6553	4,092.2435	2,750.0563	3,148.1212	-0.5988	7.6927	4,090.5322	2,737.2731	3,150.2274	13.9408
145	08	8	Female*SAT-M	-9.7709	8.2836	2,750.0563	4,443.3604	2,672.8250	-4.4733	8.5632	2,737.2731	4,347.8694	2,688.5583	14.5641
145	08	9	Female*SAT-W	1.6099	7.2222	3,148.1212	2,672.8250	4,024.6808	0.7370	7.1761	3,150.2274	2,688.5583	4,022.0885	15.0252
145	08	10	FYGPA	2.8366	0.1815	24.0047	24.3964	26.4051	0.0548	0.0943	13.9408	14.5641	15.0252	0.6627
146	06	1	HSGPA	0.0000	0.1736	7.7382	10.1891	8.1897	0.0256	0.1129	6.2484	7.6028	5.7287	0.1027
146	06	2	SAT-CR	0.0000	7.7382	6,901.6216	3,287.7645	4,844.7834	-1.2147	6.2484	4,760.9154	2,188.7936	3,266.5287	14.2154
146	06	3	SAT-M	0.0000	10.1891	3,287.7645	6,318.0626	2,734.7960	-9.3775	7.6028	2,188.7936	4,007.2545	1,905.4518	11.0463
146	06	4	SAT-W	0.0000	8.1897	4,844.7834	2,734.7960	6,188.2872	3.0866	5.7287	3,266.5287	1,905.4518	4,036.4812	15.8135
146	06	5	Female	0.6814	0.0256	-1.2147	-9.3775	3.0866	0.2175	0.0082	-0.3870	-2.9874	0.9833	0.0569
146	06	6	Female*HSGPA	0.0256	0.1129	6.2484	7.6028	5.7287	0.0082	0.1122	6.2795	7.8427	5.6497	0.0631
146	06	7	Female*SAT-CR	-1.2126	6.2484	4,760.9154	2,188.7936	3,266.5287	-0.3870	6.2795	4,759.4424	2,177.4223	3,270.2715	10.9257
146	06	8	Female*SAT-M	-9.3615	7.6028	2,188.7936	4,007.2545	1,905.4518	-2.9874	7.8427	2,177.4223	3,919.4669	1,934.3472	9.0937
146	06	9	Female*SAT-W	3.0814	5.7287	3,266.5287	1,905.4518	4,036.4812	0.9833	5.6497	3,270.2715	1,934.3472	4,026.9703	10.6703
146	06	10	FYGPA	3.3080	0.1027	14.2154	11.0463	15.8135	0.0569	0.0631	10.9257	9.0937	10.6703	0.2496
146	07	1	HSGPA	0.0000	0.1691	5.3254	8.0292	5.8629	0.0194	0.1008	3.5698	6.0929	4.3547	0.0887
146	07	2	SAT-CR	0.0000	5.3254	6,200.4753	2,287.4175	3,951.9003	-0.1682	3.5698	4,101.0963	1,579.4960	2,483.8512	12.5469
146	07	3	SAT-M	0.0000	8.0292	2,287.4175	5,472.2994	2,341.4311	-7.7651	6.0929	1,579.4960	3,560.3343	1,622.6138	8.4111
146	07	4	SAT-W	0.0000	5.8629	3,951.9003	2,341.4311	5,530.9993	2.5065	4.3547	2,483.8512	1,622.6138	3,465.7288	13.0510
146	07	5	Female	0.6507	0.0194	-0.1682	-7.7651	2.5065	0.2277	0.0068	-0.0588	-2.7126	0.8756	0.0611
146	07	6	Female*HSGPA	0.0193	0.1008	3.5698	6.0929	4.3547	0.0068	0.1005	3.5730	6.2430	4.3062	0.0490
146	07	7	Female*SAT-CR	-0.1679	3.5698	4,101.0963	1,579.4960	2,483.8512	-0.0588	3.5730	4,101.0680	1,578.1919	2,484.2722	8.3469
146	07	8	Female*SAT-M	-7.7522	6.0929	1,579.4960	3,560.3343	1,622.6138	-2.7126	6.2430	1,578.1919	3,500.1379	1,642.0445	7.6537
146	07	9	Female*SAT-W	2.5023	4.3547	2,483.8512	1,622.6138	3,465.7288	0.8756	4.3062	2,484.2722	1,642.0445	3,459.4568	8.5091
146	07	10	FYGPA	3.2751	0.0887	12.5469	8.4111	13.0510	0.0611	0.0490	8.3469	7.6537	8.5091	0.2721
146	08	1	HSGPA	0.0000	0.1447	3.6514	5.3781	4.5297	0.0265	0.0899	1.8835	3.3807	2.2352	0.0773
146	08	2	SAT-CR	0.0000	3.6514	6,834.4280	3,628.0180	4,696.8282	-3.4747	1.8835	4,487.8051	2,353.0213	3,061.6540	13.0062
146	08	3	SAT-M	0.0000	5.3781	3,628.0180	6,459.1531	3,345.4147	-10.7212	3.3807	2,353.0213	3,979.7617	2,157.7669	10.2021
146	08	4	SAT-W	0.0000	4.5297	4,696.8282	3,345.4147	6,438.4544	1.2919	2.2352	3,061.6540	2,157.7669	4,151.0564	14.8963
146	08	5	Female	0.6437	0.0265	-3.4747	-10.7212	1.2919	0.2297	0.0095	-1.2380	-3.8198	0.4603	0.0528
146	08	6	Female*HSGPA	0.0265	0.0899	1.8835	3.3807	2.2352	0.0095	0.0892	1.9755	3.6648	2.2009	0.0456
146	08	7	Female*SAT-CR	-3.4695	1.8835	4,487.8051	2,353.0213	3,061.6540	-1.2380	1.9755	4,475.7499	2,315.8245	3,066.1361	9.4126
146	08	8	Female*SAT-M	-10.7051	3.3807	2,353.0213	3,979.7617	2,157.7669	-3.8198	3.6648	2,315.8245	3,864.9904	2,171.5965	7.6677
146	08	9	Female*SAT-W	1.2899	2.2352	3,061.6540	2,157.7669	4,151.0564	0.4603	2.2009	3,066.1361	2,171.5965	4,149.3900	10.1665
146	08	10	FYGPA	3.2877	0.0773	13.0062	10.2021	14.8963	0.0528	0.0456	9.4126	7.6677	10.1665	0.2205

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
147	08	1	HSGPA	0.0000	0.3089	14.6488	16.3346	16.4306	0.0392	0.1775	9.0952	9.3129	9.8246	0.1789
147	08	2	SAT-CR	0.0000	14.6488	7,614.0231	4,554.7448	5,531.2162	-1.8303	9.0952	4,361.2097	2,395.2907	3,157.6943	18.4185
147	08	3	SAT-M	0.0000	16.3346	4,554.7448	7,333.8116	4,361.3778	-7.7933	9.3129	2,395.2907	4,038.2093	2,324.9394	15.3450
147	08	4	SAT-W	0.0000	16.4306	5,531.2162	4,361.3778	6,908.0350	1.5325	9.8246	3,157.6943	2,324.9394	3,975.6418	18.7528
147	08	5	Female	0.6074	0.0392	-1.8303	-7.7933	1.5325	0.2387	0.0154	-0.7185	-3.0592	0.6016	0.0538
147	08	6	Female*HSGPA	0.0392	0.1775	9.0952	9.3129	9.8246	0.0154	0.1759	9.1669	9.6183	9.7646	0.1018
147	08	7	Female*SAT-CR	-1.8286	9.0952	4,361.2097	2,395.2907	3,157.6943	-0.7185	9.1669	4,357.8628	2,381.0401	3,160.4967	12.0214
147	08	8	Female*SAT-M	-7.7858	9.3129	2,395.2907	4,038.2093	2,324.9394	-3.0592	9.6183	2,381.0401	3,977.5325	2,336.8713	9.5052
147	08	9	Female*SAT-W	1.5310	9.8246	3,157.6943	2,324.9394	3,975.6418	0.6016	9.7646	3,160.4967	2,336.8713	3,973.2954	12.1945
147	08	10	FYGPA	2.9230	0.1789	18.4185	15.3450	18.7528	0.0538	0.1018	12.0214	9.5052	12.1945	0.5229
148	06	1	HSGPA	0.0000	0.2102	5.8567	2.6610	6.5190	0.0653	0.1321	4.2828	2.2186	4.8393	0.1205
148	06	2	SAT-CR	0.0000	5.8567	6,048.9830	1,801.8947	3,970.2111	2.2085	4.2828	3,922.8121	1,175.5129	2,473.9623	13.3605
148	06	3	SAT-M	0.0000	2.6610	1,801.8947	4,880.8721	1,624.6064	-7.6616	2.2186	1,175.5129	3,036.5100	1,150.7792	9.8058
148	06	4	SAT-W	0.0000	6.5190	3,970.2111	1,624.6064	5,720.5947	3.6193	4.8393	2,473.9623	1,150.7792	3,633.0153	13.6781
148	06	5	Female	0.6782	0.0653	2.2085	-7.6616	3.6193	0.2185	0.0210	0.7106	-2.4651	1.1645	0.0657
148	06	6	Female*HSGPA	0.0652	0.1321	4.2828	2.2186	4.8393	0.0210	0.1278	4.1388	2.7181	4.6034	0.0823
148	06	7	Female*SAT-CR	2.2056	4.2828	3,922.8121	1,175.5129	2,473.9623	0.7106	4.1388	3,917.9410	1,192.4117	2,465.9794	8.5073
148	06	8	Female*SAT-M	-7.6517	2.2186	1,175.5129	3,036.5100	1,150.7792	-2.4651	2.7181	1,192.4117	2,977.8854	1,178.4735	6.9230
148	06	9	Female*SAT-W	3.6147	4.8393	2,473.9623	1,150.7792	3,633.0153	1.1645	4.6034	2,465.9794	1,178.4735	3,619.9326	8.5924
148	06	10	FYGPA	2.8288	0.1205	13.3605	9.8058	13.6781	0.0657	0.0823	8.5073	6.9230	8.5924	0.3793
148	08	1	HSGPA	0.0000	0.1994	6.1522	4.3045	7.7642	0.0546	0.1287	4.0861	3.7437	4.4297	0.1469
148	08	2	SAT-CR	0.0000	6.1522	6,271.8729	2,003.7130	4,242.2262	0.5207	4.0861	4,118.3566	1,442.5758	2,911.4006	16.7822
148	08	3	SAT-M	0.0000	4.3045	2,003.7130	4,420.6185	2,020.4389	-7.3601	3.7437	1,442.5758	3,000.8330	1,605.5998	10.4028
148	08	4	SAT-W	0.0000	7.7642	4,242.2262	2,020.4389	6,076.0404	3.6934	4.4297	2,911.4006	1,605.5998	4,218.2879	18.8392
148	08	5	Female	0.6616	0.0546	0.5207	-7.3601	3.6934	0.2242	0.0185	0.1762	-2.4907	1.2498	0.0707
148	08	6	Female*HSGPA	0.0545	0.1287	4.0861	3.7437	4.4297	0.0185	0.1258	4.0577	4.1451	4.2283	0.0953
148	08	7	Female*SAT-CR	0.5199	4.0861	4,118.3566	1,442.5758	2,911.4006	0.1762	4.0577	4,118.0859	1,446.4027	2,909.4802	10.8178
148	08	8	Female*SAT-M	-7.3500	3.7437	1,442.5758	3,000.8330	1,605.5998	-2.4907	4.1451	1,446.4027	2,946.7362	1,632.7461	10.1399
148	08	9	Female*SAT-W	3.6883	4.4297	2,911.4006	1,605.5998	4,218.2879	1.2498	4.2283	2,909.4802	1,632.7461	4,204.6656	11.7169
148	08	10	FYGPA	2.8004	0.1469	16.7822	10.4028	18.8392	0.0707	0.0953	10.8178	10.1399	11.7169	0.4576
149	08	1	HSGPA	0.0000	0.1741	6.3424	6.4750	7.3826	0.0481	0.1004	4.8222	4.8059	5.6989	0.0944
149	08	2	SAT-CR	0.0000	6.3424	4,113.3945	1,704.9468	2,837.2853	1.0438	4.8222	2,435.3617	1,078.9585	1,774.3877	10.4099
149	08	3	SAT-M	0.0000	6.4750	1,704.9468	4,443.8813	1,903.2630	-5.5123	4.8059	1,078.9585	2,697.5101	1,244.9244	7.1965
149	08	4	SAT-W	0.0000	7.3826	2,837.2853	1,903.2630	4,679.4996	4.5291	5.6989	1,774.3877	1,244.9244	2,956.9321	12.1438
149	08	5	Female	0.6227	0.0481	1.0438	-5.5123	4.5291	0.2351	0.0181	0.3939	-2.0800	1.7090	0.0610
149	08	6	Female*HSGPA	0.0480	0.1004	4.8222	4.8059	5.6989	0.0181	0.0981	4.7721	5.0708	5.4813	0.0517
149	08	7	Female*SAT-CR	1.0429	4.8222	2,435.3617	1,078.9585	1,774.3877	0.3939	4.7721	2,434.2731	1,084.7075	1,769.6641	6.6995
149	08	8	Female*SAT-M	-5.5078	4.8059	1,078.9585	2,697.5101	1,244.9244	-2.0800	5.0708	1,084.7075	2,667.1495	1,269.8698	5.0970
149	08	9	Female*SAT-W	4.5254	5.6989	1,774.3877	1,244.9244	2,956.9321	1.7090	5.4813	1,769.6641	1,269.8698	2,936.4360	7.8624
149	08	10	FYGPA	3.1580	0.0944	10.4099	7.1965	12.1438	0.0610	0.0517	6.6995	5.0970	7.8624	0.2441

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
150	06	1	HSGPA	0.0000	0.2492	19.9625	17.8171	22.1735	0.0415	0.1390	12.4994	11.9944	13.1717	0.1750
150	06	2	SAT-CR	0.0000	19.9625	6,230.4142	3,775.4108	5,187.3577	1.3125	12.4994	3,993.1415	2,488.6845	3,197.5171	23.3249
150	06	3	SAT-M	0.0000	17.8171	3,775.4108	6,659.3770	4,034.1414	-8.3843	11.9944	2,488.6845	3,924.6420	2,630.8717	22.3736
150	06	4	SAT-W	0.0000	22.1735	5,187.3577	4,034.1414	7,410.8529	4.9134	13.1717	3,197.5171	2,630.8717	4,611.0340	25.5499
150	06	5	Female	0.6396	0.0415	1.3125	-8.3843	4.9134	0.2311	0.0149	0.4730	-3.0216	1.7707	0.0363
150	06	6	Female*HSGPA	0.0414	0.1390	12.4994	11.9944	13.1717	0.0149	0.1373	12.4451	12.3411	12.9685	0.1040
150	06	7	Female*SAT-CR	1.3093	12.4994	3,993.1415	2,488.6845	3,197.5171	0.4730	12.4451	3,991.4230	2,499.6625	3,191.0837	14.0001
150	06	8	Female*SAT-M	-8.3643	11.9944	2,488.6845	3,924.6420	2,630.8717	-3.0216	12.3411	2,499.6625	3,854.5127	2,671.9694	13.8582
150	06	9	Female*SAT-W	4.9017	13.1717	3,197.5171	2,630.8717	4,611.0340	1.7707	12.9685	3,191.0837	2,671.9694	4,586.9497	14.3837
150	06	10	FYGPA	3.1846	0.1750	23.3249	22.3736	25.5499	0.0363	0.1040	14.0001	13.8582	14.3837	0.3691
151	06	1	HSGPA	0.0000	0.3526	14.6350	15.4509	18.4110	0.0408	0.1560	7.3755	7.2419	8.7391	0.2328
151	06	2	SAT-CR	0.0000	14.6350	6,195.9217	3,456.1904	4,352.5135	-1.1902	7.3755	2,953.6691	1,678.2862	2,137.6379	16.9533
151	06	3	SAT-M	0.0000	15.4509	3,456.1904	6,805.9197	3,368.5173	-9.6841	7.2419	1,678.2862	3,157.7446	1,542.8715	14.6267
151	06	4	SAT-W	0.0000	18.4110	4,352.5135	3,368.5173	6,071.7133	3.2914	8.7391	2,137.6379	1,542.8715	2,830.7370	19.5018
151	06	5	Female	0.4620	0.0408	-1.1902	-9.6841	3.2914	0.2486	0.0220	-0.6404	-5.2101	1.7708	0.0497
151	06	6	Female*HSGPA	0.0408	0.1560	7.3755	7.2419	8.7391	0.0220	0.1544	7.4241	7.6374	8.6047	0.1027
151	06	7	Female*SAT-CR	-1.1898	7.3755	2,953.6691	1,678.2862	2,137.6379	-0.6404	7.4241	2,952.2529	1,666.7637	2,141.5541	8.9435
151	06	8	Female*SAT-M	-9.6807	7.2419	1,678.2862	3,157.7446	1,542.8715	-5.2101	7.6374	1,666.7637	3,063.9956	1,574.7349	7.8868
151	06	9	Female*SAT-W	3.2903	8.7391	2,137.6379	1,542.8715	2,830.7370	1.7708	8.6047	2,141.5541	1,574.7349	2,819.9073	9.7818
151	06	10	FYGPA	2.7675	0.2328	16.9533	14.6267	19.5018	0.0497	0.1027	8.9435	7.8868	9.7818	0.6849
152	06	1	HSGPA	0.0000	0.2334	8.8988	3.8661	7.1176	0.0617	0.1198	6.2335	3.7022	4.0497	0.1250
152	06	2	SAT-CR	0.0000	8.8988	6,434.8473	2,252.5653	3,922.8095	4.9351	6.2335	2,828.8692	981.6553	1,796.1379	19.6911
152	06	3	SAT-M	0.0000	3.8661	2,252.5653	5,342.7064	2,202.5248	-5.5365	3.7022	981.6553	2,154.0067	977.9202	10.8429
152	06	4	SAT-W	0.0000	7.1176	3,922.8095	2,202.5248	5,894.6043	6.2414	4.0497	1,796.1379	977.9202	2,589.3467	16.6343
152	06	5	Female	0.4860	0.0617	4.9351	-5.5365	6.2414	0.2507	0.0317	2.5366	-2.8457	3.2080	0.0624
152	06	6	Female*HSGPA	0.0615	0.1198	6.2335	3.7022	4.0497	0.0317	0.1160	5.9298	4.0428	3.6657	0.0680
152	06	7	Female*SAT-CR	4.9178	6.2335	2,828.8692	981.6553	1,796.1379	2.5366	5.9298	2,804.5991	1,008.8830	1,765.4435	10.0192
152	06	8	Female*SAT-M	-5.5171	3.7022	981.6553	2,154.0067	977.9202	-2.8457	4.0428	1,008.8830	2,123.4611	1,012.3551	5.7850
152	06	9	Female*SAT-W	6.2196	4.0497	1,796.1379	977.9202	2,589.3467	3.2080	3.6657	1,765.4435	1,012.3551	2,550.5273	8.8834
152	06	10	FYGPA	2.9181	0.1250	19.6911	10.8429	16.6343	0.0624	0.0680	10.0192	5.7850	8.8834	0.3291
153	06	1	HSGPA	0.0000	0.0976	8.6821	8.2718	8.1427	-0.0033	0.0484	4.0496	4.0700	3.6692	0.0210
153	06	2	SAT-CR	0.0000	8.6821	5,693.7823	3,062.5905	4,244.1960	3.4501	4.0496	2,620.4773	1,511.2850	1,838.5544	9.7786
153	06	3	SAT-M	0.0000	8.2718	3,062.5905	4,983.7578	2,940.1064	-4.9290	4.0700	1,511.2850	2,717.1156	1,378.7498	7.2125
153	06	4	SAT-W	0.0000	8.1427	4,244.1960	2,940.1064	5,548.2739	3.1860	3.6692	1,838.5544	1,378.7498	2,318.5383	10.3265
153	06	5	Female	0.5052	-0.0033	3.4501	-4.9290	3.1860	0.2502	-0.0016	1.7072	-2.4391	1.5765	0.0145
153	06	6	Female*HSGPA	-0.0033	0.0484	4.0496	4.0700	3.6692	-0.0016	0.0484	4.0610	4.0537	3.6797	0.0101
153	06	7	Female*SAT-CR	3.4465	4.0496	2,620.4773	1,511.2850	1,838.5544	1.7072	4.0610	2,608.5864	1,528.2731	1,827.5738	3.7451
153	06	8	Female*SAT-M	-4.9240	4.0700	1,511.2850	2,717.1156	1,378.7498	-2.4391	4.0537	1,528.2731	2,692.8452	1,394.4373	2.9521
153	06	9	Female*SAT-W	3.1827	3.6692	1,838.5544	1,378.7498	2,318.5383	1.5765	3.6797	1,827.5738	1,394.4373	2,308.3983	3.9539
153	06	10	FYGPA	3.4535	0.0210	9.7786	7.2125	10.3265	0.0145	0.0101	3.7451	2.9521	3.9539	0.1260

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
154	08	1	HSGPA	0.0000	0.3914	16.8573	12.0914	23.6189	0.0916	0.2772	11.1734	10.9095	18.0846	0.4189
154	08	2	SAT-CR	0.0000	16.8573	6,328.5864	2,161.7987	4,436.2205	5.0381	11.1734	3,982.6684	1,547.4496	3,051.7470	16.7141
154	08	3	SAT-M	0.0000	12.0914	2,161.7987	4,747.0226	2,655.9055	-2.4631	10.9095	1,547.4496	3,685.0351	2,195.2264	17.9793
154	08	4	SAT-W	0.0000	23.6189	4,436.2205	2,655.9055	5,979.5276	6.6142	18.0846	3,051.7470	2,195.2264	4,165.3543	29.9846
154	08	5	Female	0.7031	0.0916	5.0381	-2.4631	6.6142	0.2104	0.0272	1.4957	-0.7312	1.9636	0.0460
154	08	6	Female*HSGPA	0.0909	0.2772	11.1734	10.9095	18.0846	0.0272	0.2688	10.7154	11.1334	17.4833	0.3150
154	08	7	Female*SAT-CR	4.9988	11.1734	3,982.6684	1,547.4496	3,051.7470	1.4957	10.7154	3,957.4839	1,559.7620	3,018.6843	13.0505
154	08	8	Female*SAT-M	-2.4438	10.9095	1,547.4496	3,685.0351	2,195.2264	-0.7312	11.1334	1,559.7620	3,679.0157	2,211.3904	14.3363
154	08	9	Female*SAT-W	6.5625	18.0846	3,051.7470	2,195.2264	4,165.3543	1.9636	17.4833	3,018.6843	2,211.3904	4,121.9488	23.8881
154	08	10	FYGPA	2.3809	0.4189	16.7141	17.9793	29.9846	0.0460	0.3150	13.0505	14.3363	23.8881	1.4035
155	06	1	HSGPA	0.0000	0.2435	10.8761	10.6413	11.2667	0.0441	0.1153	7.1971	6.7123	6.5814	0.1367
155	06	2	SAT-CR	0.0000	10.8761	7,136.5037	3,651.3309	4,835.9067	0.4495	7.1971	3,899.3782	2,184.7683	2,676.4709	17.4048
155	06	3	SAT-M	0.0000	10.6413	3,651.3309	6,760.8840	3,099.7669	-9.9102	6.7123	2,184.7683	3,799.5062	1,922.2559	14.2025
155	06	4	SAT-W	0.0000	11.2667	4,835.9067	3,099.7669	6,221.6598	3.7703	6.5814	2,676.4709	1,922.2559	3,312.7150	17.7726
155	06	5	Female	0.5174	0.0441	0.4495	-9.9102	3.7703	0.2499	0.0213	0.2169	-4.7823	1.8194	0.0538
155	06	6	Female*HSGPA	0.0441	0.1153	7.1971	6.7123	6.5814	0.0213	0.1134	7.1772	7.1494	6.4151	0.0687
155	06	7	Female*SAT-CR	0.4492	7.1971	3,899.3782	2,184.7683	2,676.4709	0.2169	7.1772	3,899.1763	2,189.2203	2,674.7771	11.1355
155	06	8	Female*SAT-M	-9.9038	6.7123	2,184.7683	3,799.5062	1,922.2559	-4.7823	7.1494	2,189.2203	3,701.3573	1,959.5960	9.7244
155	06	9	Female*SAT-W	3.7678	6.5814	2,676.4709	1,922.2559	3,312.7150	1.8194	6.4151	2,674.7771	1,959.5960	3,298.5092	10.2979
155	06	10	FYGPA	2.9368	0.1367	17.4048	14.2025	17.7726	0.0538	0.0687	11.1355	9.7244	10.2979	0.4293
155	07	1	HSGPA	0.0000	0.2491	7.1496	9.5179	9.0592	0.0525	0.1140	3.7819	4.6935	4.2103	0.1560
155	07	2	SAT-CR	0.0000	7.1496	6,496.3397	2,907.5464	4,304.1059	-1.2512	3.7819	3,216.1851	1,581.3176	2,199.8944	13.7899
155	07	3	SAT-M	0.0000	9.5179	2,907.5464	6,001.2238	2,732.2610	-8.3505	4.6935	1,581.3176	3,074.7155	1,406.6265	10.1863
155	07	4	SAT-W	0.0000	9.0592	4,304.1059	2,732.2610	5,678.2441	3.5078	4.2103	2,199.8944	1,406.6265	2,852.7257	16.4078
155	07	5	Female	0.5058	0.0525	-1.2512	-8.3505	3.5078	0.2501	0.0260	-0.6184	-4.1272	1.7337	0.0689
155	07	6	Female*HSGPA	0.0525	0.1140	3.7819	4.6935	4.2103	0.0260	0.1113	3.8476	5.1319	4.0262	0.0709
155	07	7	Female*SAT-CR	-1.2507	3.7819	3,216.1851	1,581.3176	2,199.8944	-0.6184	3.8476	3,214.6204	1,570.8739	2,204.2814	6.6715
155	07	8	Female*SAT-M	-8.3473	4.6935	1,581.3176	3,074.7155	1,406.6265	-4.1272	5.1319	1,570.8739	3,005.0120	1,435.9067	5.3026
155	07	9	Female*SAT-W	3.5064	4.2103	2,199.8944	1,406.6265	2,852.7257	1.7337	4.0262	2,204.2814	1,435.9067	2,840.4260	7.5274
155	07	10	FYGPA	2.8909	0.1560	13.7899	10.1863	16.4078	0.0689	0.0709	6.6715	5.3026	7.5274	0.4554
155	08	1	HSGPA	0.0000	0.2032	3.5496	6.2979	5.1187	0.0289	0.0932	2.3225	3.6666	2.6152	0.1186
155	08	2	SAT-CR	0.0000	3.5496	6,375.3712	2,947.7450	4,336.8892	-1.4001	2.3225	3,282.5529	1,540.7822	2,298.2497	11.4330
155	08	3	SAT-M	0.0000	6.2979	2,947.7450	5,942.9212	2,713.8677	-10.3790	3.6666	1,540.7822	3,012.8818	1,460.4837	9.6016
155	08	4	SAT-W	0.0000	5.1187	4,336.8892	2,713.8677	5,768.0617	2.3480	2.6152	2,298.2497	1,460.4837	2,940.4187	12.4842
155	08	5	Female	0.5192	0.0289	-1.4001	-10.3790	2.3480	0.2497	0.0139	-0.6732	-4.9905	1.1290	0.0472
155	08	6	Female*HSGPA	0.0289	0.0932	2.3225	3.6666	2.6152	0.0139	0.0924	2.3629	3.9665	2.5473	0.0543
155	08	7	Female*SAT-CR	-1.3995	2.3225	3,282.5529	1,540.7822	2,298.2497	-0.6732	2.3629	3,280.5935	1,526.2563	2,301.5358	7.1047
155	08	8	Female*SAT-M	-10.3753	3.6666	1,540.7822	3,012.8818	1,460.4837	-4.9905	3.9665	1,526.2563	2,905.1966	1,484.8444	5.6538
155	08	9	Female*SAT-W	2.3471	2.6152	2,298.2497	1,460.4837	2,940.4187	1.1290	2.5473	2,301.5358	1,484.8444	2,934.9078	7.1250
155	08	10	FYGPA	2.9287	0.1186	11.4330	9.6016	12.4842	0.0472	0.0543	7.1047	5.6538	7.1250	0.3856

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
156	07	1	HSGPA	0.0000	0.3217	15.5660	16.1039	19.3085	0.0611	0.1799	9.8272	10.5375	11.6433	0.1881
156	07	2	SAT-CR	0.0000	15.5660	5,733.2120	3,272.4166	4,238.2850	2.3899	9.8272	3,234.9867	1,976.7375	2,414.9247	14.5731
156	07	3	SAT-M	0.0000	16.1039	3,272.4166	6,369.8456	3,308.4554	-2.0886	10.5375	1,976.7375	3,797.9873	2,031.2137	16.4851
156	07	4	SAT-W	0.0000	19.3085	4,238.2850	3,308.4554	6,214.8708	7.7642	11.6433	2,414.9247	2,031.2137	3,487.3818	18.8294
156	07	5	Female	0.5956	0.0611	2.3899	-2.0886	7.7642	0.2411	0.0247	0.9664	-0.8446	3.1395	0.0584
156	07	6	Female*HSGPA	0.0610	0.1799	9.8272	10.5375	11.6433	0.0247	0.1762	9.6814	10.6649	11.1698	0.1080
156	07	7	Female*SAT-CR	2.3870	9.8272	3,234.9867	1,976.7375	2,414.9247	0.9664	9.6814	3,229.2819	1,981.7231	2,396.3914	10.1556
156	07	8	Female*SAT-M	-2.0861	10.5375	1,976.7375	3,797.9873	2,031.2137	-0.8446	10.6649	1,981.7231	3,793.6302	2,047.4107	11.5676
156	07	9	Female*SAT-W	7.7548	11.6433	2,414.9247	2,031.2137	3,487.3818	3.1395	11.1698	2,396.3914	2,047.4107	3,427.1714	12.2056
156	07	10	FYGPA	2.8465	0.1881	14.5731	16.4851	18.8294	0.0584	0.1080	10.1556	11.5676	12.2056	0.4852
156	08	1	HSGPA	0.0000	0.3091	17.2893	20.1645	18.5570	0.0393	0.1875	11.2444	12.8148	10.6882	0.1687
156	08	2	SAT-CR	0.0000	17.2893	5,967.6393	3,533.0878	4,263.1310	0.3527	11.2444	3,359.1149	2,014.4956	2,311.5537	15.7996
156	08	3	SAT-M	0.0000	20.1645	3,533.0878	6,794.6415	3,696.0705	-4.9861	12.8148	2,014.4956	3,930.9917	2,143.6444	17.5852
156	08	4	SAT-W	0.0000	18.5570	4,263.1310	3,696.0705	6,161.7732	5.1299	10.6882	2,311.5537	2,143.6444	3,136.3925	17.7750
156	08	5	Female	0.5872	0.0393	0.3527	-4.9861	5.1299	0.2428	0.0162	0.1456	-2.0583	2.1177	0.0646
156	08	6	Female*HSGPA	0.0392	0.1875	11.2444	12.8148	10.6882	0.0162	0.1859	11.2306	13.0104	10.4870	0.1021
156	08	7	Female*SAT-CR	0.3522	11.2444	3,359.1149	2,014.4956	2,311.5537	0.1456	11.2306	3,358.9907	2,016.2516	2,309.7470	8.3896
156	08	8	Female*SAT-M	-4.9786	12.8148	2,014.4956	3,930.9917	2,143.6444	-2.0583	13.0104	2,016.2516	3,906.1680	2,169.1843	10.9170
156	08	9	Female*SAT-W	5.1223	10.6882	2,311.5537	2,143.6444	3,136.3925	2.1177	10.4870	2,309.7470	2,169.1843	3,110.1159	9.2665
156	08	10	FYGPA	2.8803	0.1687	15.7996	17.5852	17.7750	0.0646	0.1021	8.3896	10.9170	9.2665	0.4688
157	06	1	HSGPA	0.0000	0.2000	9.9898	11.2502	10.7945	0.0238	0.0885	5.6154	6.1015	5.8836	0.1309
157	06	2	SAT-CR	0.0000	9.9898	6,173.3941	2,948.1261	4,289.1777	-2.1902	5.6154	3,109.4193	1,540.9984	2,230.0211	16.1906
157	06	3	SAT-M	0.0000	11.2502	2,948.1261	6,594.7300	2,907.9182	-11.0604	6.1015	1,540.9984	3,145.8747	1,490.1501	15.6906
157	06	4	SAT-W	0.0000	10.7945	4,289.1777	2,907.9182	6,092.1477	2.2991	5.8836	2,230.0211	1,490.1501	3,106.9608	17.9143
157	06	5	Female	0.4728	0.0238	-2.1902	-11.0604	2.2991	0.2494	0.0126	-1.1547	-5.8313	1.2121	0.0368
157	06	6	Female*HSGPA	0.0238	0.0885	5.6154	6.1015	5.8836	0.0126	0.0880	5.6676	6.3650	5.8288	0.0598
157	06	7	Female*SAT-CR	-2.1894	5.6154	3,109.4193	1,540.9984	2,230.0211	-1.1547	5.6676	3,104.6241	1,516.7830	2,235.0546	8.9540
157	06	8	Female*SAT-M	-11.0563	6.1015	1,540.9984	3,145.8747	1,490.1501	-5.8313	6.3650	1,516.7830	3,023.5880	1,515.5692	7.9440
157	06	9	Female*SAT-W	2.2982	5.8836	2,230.0211	1,490.1501	3,106.9608	1.2121	5.8288	2,235.0546	1,515.5692	3,101.6771	9.7027
157	06	10	FYGPA	2.8739	0.1309	16.1906	15.6906	17.9143	0.0368	0.0598	8.9540	7.9440	9.7027	0.5192
158	06	1	HSGPA	0.0000	0.3424	13.3863	13.3023	14.4506	0.0649	0.1749	8.5832	7.7156	8.9192	0.1921
158	06	2	SAT-CR	0.0000	13.3863	9,401.9200	5,555.9052	6,946.3677	1.5832	8.5832	5,110.6875	2,957.0763	3,864.1163	28.1260
158	06	3	SAT-M	0.0000	13.3023	5,555.9052	7,967.6274	5,114.0423	-7.3401	7.7156	2,957.0763	4,191.9482	2,790.7861	20.9656
158	06	4	SAT-W	0.0000	14.4506	6,946.3677	5,114.0423	8,374.4889	4.5674	8.9192	3,864.1163	2,790.7861	4,515.9274	27.2854
158	06	5	Female	0.5493	0.0649	1.5832	-7.3401	4.5674	0.2480	0.0293	0.7135	-3.3080	2.0584	0.0921
158	06	6	Female*HSGPA	0.0648	0.1749	8.5832	7.7156	8.9192	0.0293	0.1707	8.4806	8.1914	8.6232	0.1067
158	06	7	Female*SAT-CR	1.5805	8.5832	5,110.6875	2,957.0763	3,864.1163	0.7135	8.4806	5,108.1853	2,968.6774	3,856.8975	18.9463
158	06	8	Female*SAT-M	-7.3276	7.7156	2,957.0763	4,191.9482	2,790.7861	-3.3080	8.1914	2,968.6774	4,138.1628	2,824.2543	14.5951
158	06	9	Female*SAT-W	4.5596	8.9192	3,864.1163	2,790.7861	4,515.9274	2.0584	8.6232	3,856.8975	2,824.2543	4,495.1016	16.1197
158	06	10	FYGPA	3.0644	0.1921	28.1260	20.9656	27.2854	0.0921	0.1067	18.9463	14.5951	16.1197	0.5732

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
159	07	1	HSGPA	0.0000	0.1714	8.0203	8.9305	10.3726	0.0215	0.0806	4.1076	4.2568	4.8411	0.0979
159	07	2	SAT-CR	0.0000	8.0203	7,547.5052	4,360.3789	5,725.3176	-1.9619	4.1076	3,896.0443	2,379.2679	3,010.3816	21.0024
159	07	3	SAT-M	0.0000	8.9305	4,360.3789	8,232.5186	4,543.8328	-11.2903	4.2568	2,379.2679	4,374.4340	2,507.6214	19.7071
159	07	4	SAT-W	0.0000	10.3726	5,725.3176	4,543.8328	7,502.0324	1.3672	4.8411	3,010.3816	2,507.6214	3,844.7233	23.3855
159	07	5	Female	0.5147	0.0215	-1.9619	-11.2903	1.3672	0.2498	0.0104	-0.9521	-5.4792	0.6635	0.0353
159	07	6	Female*HSGPA	0.0215	0.0806	4.1076	4.2568	4.8411	0.0104	0.0801	4.1499	4.4998	4.8117	0.0454
159	07	7	Female*SAT-CR	-1.9614	4.1076	3,896.0443	2,379.2679	3,010.3816	-0.9521	4.1499	3,892.1963	2,357.1230	3,013.0633	11.9214
159	07	8	Female*SAT-M	-11.2875	4.2568	2,379.2679	4,374.4340	2,507.6214	-5.4792	4.4998	2,357.1230	4,246.9947	2,523.0540	10.7294
159	07	9	Female*SAT-W	1.3669	4.8411	3,010.3816	2,507.6214	3,844.7233	0.6635	4.8117	3,013.0633	2,523.0540	3,842.8545	12.6175
159	07	10	FYGPA	2.9230	0.0979	21.0024	19.7071	23.3855	0.0353	0.0454	11.9214	10.7294	12.6175	0.4881
159	08	1	HSGPA	0.0000	0.1810	7.5551	9.3501	9.9191	0.0279	0.0839	3.5513	4.3430	4.4865	0.1152
159	08	2	SAT-CR	0.0000	7.5551	7,193.9442	3,970.6813	5,329.3200	-3.3305	3.5513	3,564.2456	2,088.3094	2,660.6295	18.5954
159	08	3	SAT-M	0.0000	9.3501	3,970.6813	7,692.6075	4,159.6840	-11.1048	4.3430	2,088.3094	3,866.0005	2,203.4904	18.6531
159	08	4	SAT-W	0.0000	9.9191	5,329.3200	4,159.6840	7,307.2481	1.5473	4.4865	2,660.6295	2,203.4904	3,549.4541	23.1467
159	08	5	Female	0.4964	0.0279	-3.3305	-11.1048	1.5473	0.2500	0.0141	-1.6774	-5.5929	0.7793	0.0397
159	08	6	Female*HSGPA	0.0279	0.0839	3.5513	4.3430	4.4865	0.0141	0.0832	3.6443	4.6531	4.4433	0.0500
159	08	7	Female*SAT-CR	-3.3299	3.5513	3,564.2456	2,088.3094	2,660.6295	-1.6774	3.6443	3,553.1554	2,051.3314	2,665.7820	9.2949
159	08	8	Female*SAT-M	-11.1029	4.3430	2,088.3094	3,866.0005	2,203.4904	-5.5929	4.6531	2,051.3314	3,742.7048	2,220.6702	10.1510
159	08	9	Female*SAT-W	1.5471	4.4865	2,660.6295	2,203.4904	3,549.4541	0.7793	4.4433	2,665.7820	2,220.6702	3,547.0603	11.4269
159	08	10	FYGPA	2.7405	0.1152	18.5954	18.6531	23.1467	0.0397	0.0500	9.2949	10.1510	11.4269	0.6526
160	06	1	HSGPA	0.0000	0.1366	4.1773	6.9359	4.6440	-0.0107	0.0426	3.9345	4.3396	3.3605	0.0509
160	06	2	SAT-CR	0.0000	4.1773	6,638.3772	2,465.2701	4,512.7675	-3.7176	3.9345	1,706.7677	1,139.4274	1,087.4586	7.9788
160	06	3	SAT-M	0.0000	6.9359	2,465.2701	4,586.0242	2,426.9190	-7.7794	4.3396	1,139.4274	2,155.4038	1,095.2459	7.6006
160	06	4	SAT-W	0.0000	4.6440	4,512.7675	2,426.9190	5,798.9339	-1.2098	3.3605	1,087.4586	1,095.2459	1,210.5532	10.3117
160	06	5	Female	0.2073	-0.0107	-3.7176	-7.7794	-1.2098	0.1653	-0.0085	-2.9469	-6.1666	-0.9590	-0.0115
160	06	6	Female*HSGPA	-0.0106	0.0426	3.9345	4.3396	3.3605	-0.0085	0.0425	3.8949	4.2568	3.3477	0.0020
160	06	7	Female*SAT-CR	-3.6950	3.9345	1,706.7677	1,139.4274	1,087.4586	-2.9469	3.8949	1,693.0311	1,110.6826	1,082.9885	-1.0477
160	06	8	Female*SAT-M	-7.7320	4.3396	1,139.4274	2,155.4038	1,095.2459	-6.1666	4.2568	1,110.6826	2,095.2531	1,085.8919	-1.0055
160	06	9	Female*SAT-W	-1.2024	3.3605	1,087.4586	1,095.2459	1,210.5532	-0.9590	3.3477	1,082.9885	1,085.8919	1,209.0986	-1.1910
160	06	10	FYGPA	2.9346	0.0509	7.9788	7.6006	10.3117	-0.0115	0.0020	-1.0477	-1.0055	-1.1910	0.2731
161	06	1	HSGPA	0.0000	0.2441	6.4192	10.3641	7.5386	0.0330	0.0944	4.1125	5.0662	4.5210	0.0928
161	06	2	SAT-CR	0.0000	6.4192	8,648.0642	3,582.2064	5,668.7107	3.0586	4.1125	4,129.7886	1,850.3048	2,700.0301	24.7019
161	06	3	SAT-M	0.0000	10.3641	3,582.2064	6,252.7045	3,278.9738	-5.8242	5.0662	1,850.3048	3,387.1260	1,702.3863	17.1446
161	06	4	SAT-W	0.0000	7.5386	5,668.7107	3,278.9738	6,642.3745	6.9414	4.5210	2,700.0301	1,702.3863	3,185.2096	25.1763
161	06	5	Female	0.5000	0.0330	3.0586	-5.8242	6.9414	0.2509	0.0165	1.5293	-2.9121	3.4707	0.0701
161	06	6	Female*HSGPA	0.0329	0.0944	4.1125	5.0662	4.5210	0.0165	0.0933	4.0118	5.2579	4.2927	0.0456
161	06	7	Female*SAT-CR	3.0474	4.1125	4,129.7886	1,850.3048	2,700.0301	1.5293	4.0118	4,120.4677	1,868.0537	2,678.8766	11.9181
161	06	8	Female*SAT-M	-5.8029	5.0662	1,850.3048	3,387.1260	1,702.3863	-2.9121	5.2579	1,868.0537	3,353.3288	1,742.6666	10.0294
161	06	9	Female*SAT-W	6.9161	4.5210	2,700.0301	1,702.3863	3,185.2096	3.4707	4.2927	2,678.8766	1,742.6666	3,137.2025	11.9661
161	06	10	FYGPA	2.9186	0.0928	24.7019	17.1446	25.1763	0.0701	0.0456	11.9181	10.0294	11.9661	0.5211



## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
161	07	1	HSGPA	0.0000	0.2154	9.4018	9.9756	9.0998	0.0443	0.1075	4.6071	4.0272	4.8394	0.1385
161	07	2	SAT-CR	0.0000	9.4018	7,721.8039	4,092.3685	6,058.5892	3.5091	4.6071	4,169.1476	1,999.0953	3,303.6445	27.2764
161	07	3	SAT-M	0.0000	9.9756	4,092.3685	6,450.8205	4,022.5357	-3.6628	4.0272	1,999.0953	3,279.2311	1,959.6696	17.2255
161	07	4	SAT-W	0.0000	9.0998	6,058.5892	4,022.5357	8,028.5792	9.8756	4.8394	3,303.6445	1,959.6696	4,267.3165	29.6740
161	07	5	Female	0.5660	0.0443	3.5091	-3.6628	9.8756	0.2466	0.0192	1.5228	-1.5895	4.2857	0.0987
161	07	6	Female*HSGPA	0.0441	0.1075	4.6071	4.0272	4.8394	0.0192	0.1056	4.4522	4.1889	4.4035	0.0580
161	07	7	Female*SAT-CR	3.4959	4.6071	4,169.1476	1,999.0953	3,303.6445	1.5228	4.4522	4,156.8799	2,011.9001	3,269.1202	14.9634
161	07	8	Female*SAT-M	-3.6490	4.0272	1,999.0953	3,279.2311	1,959.6696	-1.5895	4.1889	2,011.9001	3,265.8656	1,995.7057	7.6547
161	07	9	Female*SAT-W	9.8384	4.8394	3,303.6445	1,959.6696	4,267.3165	4.2857	4.4035	3,269.1202	1,995.7057	4,170.1562	16.6303
161	07	10	FYGPA	2.9264	0.1385	27.2764	17.2255	29.6740	0.0987	0.0580	14.9634	7.6547	16.6303	0.4581
161	08	1	HSGPA	0.0000	0.1648	7.2865	4.6023	7.0414	0.0180	0.1045	5.1052	2.1283	5.6479	0.0791
161	08	2	SAT-CR	0.0000	7.2865	7,076.4425	3,343.5667	4,860.1050	4.0088	5.1052	4,607.0416	1,898.5905	3,134.8845	19.5073
161	08	3	SAT-M	0.0000	4.6023	3,343.5667	5,994.3254	3,823.3370	0.6723	2.1283	1,898.5905	3,764.5286	2,319.2453	20.3105
161	08	4	SAT-W	0.0000	7.0414	4,860.1050	3,823.3370	6,900.7439	9.3308	5.6479	3,134.8845	2,319.2453	4,317.0301	24.6299
161	08	5	Female	0.6154	0.0180	4.0088	0.6723	9.3308	0.2376	0.0069	1.5418	0.2586	3.5888	0.0502
161	08	6	Female*HSGPA	0.0179	0.1045	5.1052	2.1283	5.6479	0.0069	0.1042	5.0333	2.1163	5.4805	0.0631
161	08	7	Female*SAT-CR	3.9925	5.1052	4,607.0416	1,898.5905	3,134.8845	1.5418	5.0333	4,591.0365	1,895.9063	3,097.6309	14.0805
161	08	8	Female*SAT-M	0.6696	2.1283	1,898.5905	3,764.5286	2,319.2453	0.2586	2.1163	1,895.9063	3,764.0784	2,312.9977	13.8075
161	08	9	Female*SAT-W	9.2931	5.6479	3,134.8845	2,319.2453	4,317.0301	3.5888	5.4805	3,097.6309	2,312.9977	4,230.3182	16.2657
161	08	10	FYGPA	2.9910	0.0791	19.5073	20.3105	24.6299	0.0502	0.0631	14.0805	13.8075	16.2657	0.3690
162	06	1	HSGPA	0.0000	0.2465	2.5929	6.6526	6.6236	0.0327	0.1673	3.5411	6.0378	5.9253	0.1506
162	06	2	SAT-CR	0.0000	2.5929	5,735.1099	2,420.2093	3,583.6763	-0.8008	3.5411	4,190.1856	1,664.9354	2,705.2370	7.5014
162	06	3	SAT-M	0.0000	6.6526	2,420.2093	5,148.3539	2,379.8548	-4.2850	6.0378	1,664.9354	3,421.0971	1,630.3272	6.5498
162	06	4	SAT-W	0.0000	6.6236	3,583.6763	2,379.8548	5,043.2261	3.3913	5.9253	2,705.2370	1,630.3272	3,653.0484	12.1757
162	06	5	Female	0.7234	0.0327	-0.8008	-4.2850	3.3913	0.2004	0.0090	-0.2215	-1.1852	0.9380	0.0673
162	06	6	Female*HSGPA	0.0326	0.1673	3.5411	6.0378	5.9253	0.0090	0.1663	3.5672	6.1775	5.8148	0.1124
162	06	7	Female*SAT-CR	-0.7995	3.5411	4,190.1856	1,664.9354	2,705.2370	-0.2215	3.5672	4,189.5453	1,661.5095	2,707.9485	8.9145
162	06	8	Female*SAT-M	-4.2780	6.0378	1,664.9354	3,421.0971	1,630.3272	-1.1852	6.1775	1,661.5095	3,402.7662	1,644.8352	7.7517
162	06	9	Female*SAT-W	3.3858	5.9253	2,705.2370	1,630.3272	3,653.0484	0.9380	5.8148	2,707.9485	1,644.8352	3,641.5660	10.5125
162	06	10	FYGPA	2.6128	0.1506	7.5014	6.5498	12.1757	0.0673	0.1124	8.9145	7.7517	10.5125	0.7396
162	08	1	HSGPA	0.0000	0.2504	2.7042	4.3675	6.3606	0.0458	0.1700	2.6705	4.5062	4.9333	0.1858
162	08	2	SAT-CR	0.0000	2.7042	5,382.4104	2,126.5501	3,728.3421	-2.1911	2.6705	3,939.6315	1,395.8956	2,788.8105	9.4946
162	08	3	SAT-M	0.0000	4.3675	2,126.5501	4,994.3553	2,455.9321	-7.2861	4.5062	1,395.8956	3,144.4016	1,744.4529	8.1178
162	08	4	SAT-W	0.0000	6.3606	3,728.3421	2,455.9321	5,677.3613	0.2994	4.9333	2,788.8105	1,744.4529	4,072.5657	14.9341
162	08	5	Female	0.7325	0.0458	-2.1911	-7.2861	0.2994	0.1963	0.0122	-0.5860	-1.9488	0.0801	0.0773
162	08	6	Female*HSGPA	0.0457	0.1700	2.6705	4.5062	4.9333	0.0122	0.1679	2.7706	4.8391	4.9196	0.1521
162	08	7	Female*SAT-CR	-2.1867	2.6705	3,939.6315	1,395.8956	2,788.8105	-0.5860	2.7706	3,934.8404	1,379.9633	2,789.4651	8.9712
162	08	8	Female*SAT-M	-7.2715	4.5062	1,395.8956	3,144.4016	1,744.4529	-1.9488	4.8391	1,379.9633	3,091.4208	1,746.6297	8.1307
162	08	9	Female*SAT-W	0.2988	4.9333	2,788.8105	1,744.4529	4,072.5657	0.0801	4.9196	2,789.4651	1,746.6297	4,072.4763	11.1990
162	08	10	FYGPA	2.5733	0.1858	9.4946	8.1178	14.9341	0.0773	0.1521	8.9712	8.1307	11.1990	0.7304

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
163	06	1	HSGPA	0.0000	0.2597	7.5648	11.5596	11.4293	0.0537	0.1919	5.1379	9.0432	7.2406	0.1482
163	06	2	SAT-CR	0.0000	7.5648	7,300.8774	3,322.0645	4,120.0774	0.2213	5.1379	5,795.2119	2,506.5649	3,305.5472	12.0478
163	06	3	SAT-M	0.0000	11.5596	3,322.0645	5,836.4516	3,369.4516	0.1355	9.0432	2,506.5649	4,654.0852	2,638.9130	16.4368
163	06	4	SAT-W	0.0000	11.4293	4,120.0774	3,369.4516	5,780.6710	2.8910	7.2406	3,305.5472	2,638.9130	4,719.2624	20.5579
163	06	5	Female	0.8320	0.0537	0.2213	0.1355	2.8910	0.1409	0.0090	0.0372	0.0228	0.4857	0.0844
163	06	6	Female*HSGPA	0.0533	0.1919	5.1379	9.0432	7.2406	0.0090	0.1890	5.1261	9.0360	7.0867	0.0835
163	06	7	Female*SAT-CR	0.2195	5.1379	5,795.2119	2,506.5649	3,305.5472	0.0372	5.1261	5,795.1633	2,506.5352	3,304.9126	11.8972
163	06	8	Female*SAT-M	0.1344	9.0432	2,506.5649	4,654.0852	2,638.9130	0.0228	9.0360	2,506.5352	4,654.0670	2,638.5245	11.9176
163	06	9	Female*SAT-W	2.8678	7.2406	3,305.5472	2,638.9130	4,719.2624	0.4857	7.0867	3,304.9126	2,638.5245	4,710.9716	15.2783
163	06	10	FYGPA	3.0984	0.1482	12.0478	16.4368	20.5579	0.0844	0.0835	11.8972	11.9176	15.2783	0.3479
164	08	1	HSGPA	0.0000	0.1641	4.4022	4.9631	4.1943	0.0382	0.1043	3.0207	3.7074	2.7607	0.0651
164	08	2	SAT-CR	0.0000	4.4022	6,503.6553	2,622.0629	4,517.0439	2.4132	3.0207	4,193.4175	1,708.4546	2,877.3613	12.7062
164	08	3	SAT-M	0.0000	4.9631	2,622.0629	5,519.0336	2,480.5713	-3.5383	3.7074	1,708.4546	3,579.6094	1,582.6677	9.9433
164	08	4	SAT-W	0.0000	4.1943	4,517.0439	2,480.5713	6,208.1297	4.8841	2.7607	2,877.3613	1,582.6677	4,011.7295	12.6570
164	08	5	Female	0.6701	0.0382	2.4132	-3.5383	4.8841	0.2214	0.0126	0.7961	-1.1673	1.6112	0.0474
164	08	6	Female*HSGPA	0.0382	0.1043	3.0207	3.7074	2.7607	0.0126	0.1028	2.9286	3.8424	2.5743	0.0327
164	08	7	Female*SAT-CR	2.4101	3.0207	4,193.4175	1,708.4546	2,877.3613	0.7961	2.9286	4,187.6017	1,716.9820	2,865.5904	7.9579
164	08	8	Female*SAT-M	-3.5337	3.7074	1,708.4546	3,579.6094	1,582.6677	-1.1673	3.8424	1,716.9820	3,567.1061	1,599.9266	6.5381
164	08	9	Female*SAT-W	4.8778	2.7607	2,877.3613	1,582.6677	4,011.7295	1.6112	2.5743	2,865.5904	1,599.9266	3,987.9061	8.1808
164	08	10	FYGPA	3.1975	0.0651	12.7062	9.9433	12.6570	0.0474	0.0327	7.9579	6.5381	8.1808	0.2575
165	06	1	HSGPA	0.0000	0.1740	4.1467	2.6592	4.8507	0.0386	0.0950	1.8439	1.1171	2.3048	0.0844
165	06	2	SAT-CR	0.0000	4.1467	5,392.0641	2,680.4221	3,531.7586	-2.9578	1.8439	3,334.7218	1,584.5599	2,152.6102	8.9037
165	06	3	SAT-M	0.0000	2.6592	2,680.4221	6,446.9047	2,656.1410	-11.0675	1.1171	1,584.5599	3,549.5047	1,579.9804	9.3363
165	06	4	SAT-W	0.0000	4.8507	3,531.7586	2,656.1410	5,216.8933	0.0184	2.3048	2,152.6102	1,579.9804	3,154.9345	11.6943
165	06	5	Female	0.6002	0.0386	-2.9578	-11.0675	0.0184	0.2402	0.0154	-1.1825	-4.4248	0.0074	0.0545
165	06	6	Female*HSGPA	0.0386	0.0950	1.8439	1.1171	2.3048	0.0154	0.0936	1.9580	1.5438	2.3041	0.0476
165	06	7	Female*SAT-CR	-2.9548	1.8439	3,334.7218	1,584.5599	2,152.6102	-1.1825	1.9580	3,325.9818	1,551.8572	2,152.6646	5.6100
165	06	8	Female*SAT-M	-11.0563	1.1171	1,584.5599	3,549.5047	1,579.9804	-4.4248	1.5438	1,551.8572	3,427.1389	1,580.1838	6.2663
165	06	9	Female*SAT-W	0.0184	2.3048	2,152.6102	1,579.9804	3,154.9345	0.0074	2.3041	2,152.6646	1,580.1838	3,154.9341	7.3689
165	06	10	FYGPA	3.1247	0.0844	8.9037	9.3363	11.6943	0.0545	0.0476	5.6100	6.2663	7.3689	0.2876
165	07	1	HSGPA	0.0000	0.1672	4.2045	4.1073	4.9533	0.0366	0.0961	2.7168	2.8532	2.5374	0.0844
165	07	2	SAT-CR	0.0000	4.2045	5,777.9656	2,754.8427	3,851.8117	-0.5351	2.7168	3,481.8089	1,685.3880	2,297.1737	9.9848
165	07	3	SAT-M	0.0000	4.1073	2,754.8427	6,210.6276	2,907.8501	-6.7794	2.8532	1,685.3880	3,706.5495	1,768.9112	9.3611
165	07	4	SAT-W	0.0000	4.9533	3,851.8117	2,907.8501	5,469.6941	0.4866	2.5374	2,297.1737	1,768.9112	3,265.8286	11.4830
165	07	5	Female	0.6051	0.0366	-0.5351	-6.7794	0.4866	0.2392	0.0145	-0.2113	-2.6771	0.1922	0.0501
165	07	6	Female*HSGPA	0.0366	0.0961	2.7168	2.8532	2.5374	0.0145	0.0948	2.7363	3.1012	2.5196	0.0364
165	07	7	Female*SAT-CR	-0.5346	2.7168	3,481.8089	1,685.3880	2,297.1737	-0.2113	2.7363	3,481.5229	1,681.7638	2,297.4339	6.1707
165	07	8	Female*SAT-M	-6.7730	2.8532	1,685.3880	3,706.5495	1,768.9112	-2.6771	3.1012	1,681.7638	3,660.6327	1,772.2073	6.1658
165	07	9	Female*SAT-W	0.4862	2.5374	2,297.1737	1,768.9112	3,265.8286	0.1922	2.5196	2,297.4339	1,772.2073	3,265.5920	6.3894
165	07	10	FYGPA	3.1602	0.0844	9.9848	9.3611	11.4830	0.0501	0.0364	6.1707	6.1658	6.3894	0.2793

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
166	06	1	HSGPA	0.0000	0.1760	4.5689	4.3898	3.4865	0.0221	0.0685	3.4955	3.2667	2.8512	0.0655
166	06	2	SAT-CR	0.0000	4.5689	7,217.3537	3,751.5087	4,774.6270	-4.5114	3.4955	3,693.8479	2,273.2760	2,424.3996	11.0171
166	06	3	SAT-M	0.0000	4.3898	3,751.5087	6,862.2188	3,490.8830	-14.1673	3.2667	2,273.2760	3,711.3606	2,038.9766	12.0199
166	06	4	SAT-W	0.0000	3.4865	4,774.6270	3,490.8830	6,195.9217	-2.5149	2.8512	2,424.3996	2,038.9766	3,030.1006	11.8012
166	06	5	Female	0.4491	0.0221	-4.5114	-14.1673	-2.5149	0.2477	0.0122	-2.4854	-7.8050	-1.3855	0.0114
166	06	6	Female*HSGPA	0.0221	0.0685	3.4955	3.2667	2.8512	0.0122	0.0681	3.5952	3.5796	2.9067	0.0207
166	06	7	Female*SAT-CR	-4.5059	3.4955	3,693.8479	2,273.2760	2,424.3996	-2.4854	3.5952	3,673.5198	2,209.4396	2,413.0675	7.2901
166	06	8	Female*SAT-M	-14.1499	3.2667	2,273.2760	3,711.3606	2,038.9766	-7.8050	3.5796	2,209.4396	3,510.8948	2,003.3904	7.3879
166	06	9	Female*SAT-W	-2.5119	2.8512	2,424.3996	2,038.9766	3,030.1006	-1.3855	2.9067	2,413.0675	2,003.3904	3,023.7834	6.9956
166	06	10	FYGPA	3.2648	0.0655	11.0171	12.0199	11.8012	0.0114	0.0207	7.2901	7.3879	6.9956	0.3320
166	07	1	HSGPA	0.0000	0.1344	4.6984	2.8033	4.0473	0.0125	0.0530	2.6001	1.0123	2.2492	0.0776
166	07	2	SAT-CR	0.0000	4.6984	7,380.5854	3,460.2842	5,082.1751	-2.2044	2.6001	3,529.2920	1,786.1988	2,536.3682	10.9792
166	07	3	SAT-M	0.0000	2.8033	3,460.2842	6,711.0741	3,417.5377	-10.9796	1.0123	1,786.1988	3,395.1189	1,737.9058	9.9255
166	07	4	SAT-W	0.0000	4.0473	5,082.1751	3,417.5377	6,824.5258	2.4769	2.2492	2,536.3682	1,737.9058	3,359.1013	13.7839
166	07	5	Female	0.4645	0.0125	-2.2044	-10.9796	2.4769	0.2490	0.0067	-1.1806	-5.8801	1.3265	0.0481
166	07	6	Female*HSGPA	0.0125	0.0530	2.6001	1.0123	2.2492	0.0067	0.0528	2.6277	1.1497	2.2182	0.0244
166	07	7	Female*SAT-CR	-2.2018	2.6001	3,529.2920	1,786.1988	2,536.3682	-1.1806	2.6277	3,524.4383	1,762.0237	2,541.8219	5.0258
166	07	8	Female*SAT-M	-10.9666	1.0123	1,786.1988	3,395.1189	1,737.9058	-5.8801	1.1497	1,762.0237	3,274.7106	1,765.0693	4.0811
166	07	9	Female*SAT-W	2.4740	2.2492	2,536.3682	1,737.9058	3,359.1013	1.3265	2.2182	2,541.8219	1,765.0693	3,352.9734	6.3499
166	07	10	FYGPA	3.2905	0.0776	10.9792	9.9255	13.7839	0.0481	0.0244	5.0258	4.0811	6.3499	0.3132
166	08	1	HSGPA	0.0000	0.1432	3.9339	4.0471	4.7770	0.0063	0.0530	1.9817	1.1723	2.1583	0.0784
166	08	2	SAT-CR	0.0000	3.9339	6,561.1283	3,153.3709	4,605.4161	-4.1946	1.9817	3,314.9845	1,834.3468	2,382.2254	12.6480
166	08	3	SAT-M	0.0000	4.0471	3,153.3709	6,466.2198	3,171.6252	-14.4418	1.1723	1,834.3468	3,471.8806	1,796.2129	13.9071
166	08	4	SAT-W	0.0000	4.7770	4,605.4161	3,171.6252	6,347.4809	-0.1419	2.1583	2,382.2254	1,796.2129	2,955.8751	16.8683
166	08	5	Female	0.4211	0.0063	-4.1946	-14.4418	-0.1419	0.2441	0.0037	-2.4282	-8.3600	-0.0822	0.0185
166	08	6	Female*HSGPA	0.0063	0.0530	1.9817	1.1723	2.1583	0.0037	0.0529	2.0083	1.2638	2.1592	0.0199
166	08	7	Female*SAT-CR	-4.1887	1.9817	3,314.9845	1,834.3468	2,382.2254	-2.4282	2.0083	3,297.4143	1,773.8541	2,381.6309	6.9464
166	08	8	Female*SAT-M	-14.4214	1.1723	1,834.3468	3,471.8806	1,796.2129	-8.3600	1.2638	1,773.8541	3,263.6098	1,794.1662	7.0772
166	08	9	Female*SAT-W	-0.1417	2.1583	2,382.2254	1,796.2129	2,955.8751	-0.0822	2.1592	2,381.6309	1,794.1662	2,955.8550	8.2824
166	08	10	FYGPA	3.2122	0.0784	12.6480	13.9071	16.8683	0.0185	0.0199	6.9464	7.0772	8.2824	0.3686
167	06	1	HSGPA	0.0000	0.3137	11.7241	17.0317	12.0830	0.0369	0.1651	6.1263	7.4746	2.0950	0.1871
167	06	2	SAT-CR	0.0000	11.7241	8,134.4114	4,699.2333	5,406.4600	1.7176	6.1263	4,470.5553	2,426.9181	2,432.8630	25.3949
167	06	3	SAT-M	0.0000	17.0317	4,699.2333	7,387.6246	4,033.4772	-5.3477	7.4746	2,426.9181	3,149.8573	1,631.7714	26.6959
167	06	4	SAT-W	0.0000	12.0830	5,406.4600	4,033.4772	6,789.3423	8.0268	2.0950	2,432.8630	1,631.7714	3,040.1387	24.1122
167	06	5	Female	0.5484	0.0369	1.7176	-5.3477	8.0268	0.2493	0.0167	0.7757	-2.4151	3.6250	0.0246
167	06	6	Female*HSGPA	0.0366	0.1651	6.1263	7.4746	2.0950	0.0167	0.1638	6.0634	7.6705	1.8010	0.0878
167	06	7	Female*SAT-CR	1.7066	6.1263	4,470.5553	2,426.9181	2,432.8630	0.7757	6.0634	4,467.6240	2,436.0443	2,419.1648	12.3436
167	06	8	Female*SAT-M	-5.3132	7.4746	2,426.9181	3,149.8573	1,631.7714	-2.4151	7.6705	2,436.0443	3,121.4437	1,674.4196	11.1573
167	06	9	Female*SAT-W	7.9750	2.0950	2,432.8630	1,631.7714	3,040.1387	3.6250	1.8010	2,419.1648	1,674.4196	2,976.1246	8.8097
167	06	10	FYGPA	2.5590	0.1871	25.3949	26.6959	24.1122	0.0246	0.0878	12.3436	11.1573	8.8097	0.6485

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
167	07	1	HSGPA	0.0000	0.2739	16.7923	16.9480	17.0022	0.0513	0.1828	12.2893	12.3279	12.3316	0.2481
167	07	2	SAT-CR	0.0000	16.7923	7,657.1990	3,983.1152	5,939.0707	2.8174	12.2893	4,513.2506	2,465.5861	3,766.6956	35.3285
167	07	3	SAT-M	0.0000	16.9480	3,983.1152	6,276.3962	4,065.9031	-4.2267	12.3279	2,465.5861	3,635.4455	2,579.8671	27.4458
167	07	4	SAT-W	0.0000	17.0022	5,939.0707	4,065.9031	7,351.9961	8.4899	12.3316	3,766.6956	2,579.8671	4,424.7377	35.2734
167	07	5	Female	0.5365	0.0513	2.8174	-4.2267	8.4899	0.2500	0.0238	1.3060	-1.9592	3.9354	0.0847
167	07	6	Female*HSGPA	0.0510	0.1828	12.2893	12.3279	12.3316	0.0238	0.1802	12.1455	12.5436	11.8984	0.1940
167	07	7	Female*SAT-CR	2.8027	12.2893	4,513.2506	2,465.5861	3,766.6956	1.3060	12.1455	4,505.3541	2,477.4323	3,742.9008	17.5386
167	07	8	Female*SAT-M	-4.2046	12.3279	2,465.5861	3,635.4455	2,579.8671	-1.9592	12.5436	2,477.4323	3,617.6739	2,615.5640	16.3645
167	07	9	Female*SAT-W	8.4456	12.3316	3,766.6956	2,579.8671	4,424.7377	3.9354	11.8984	3,742.9008	2,615.5640	4,353.0355	19.9688
167	07	10	FYGPA	2.5563	0.2481	35.3285	27.4458	35.2734	0.0847	0.1940	17.5386	16.3645	19.9688	0.8159
167	08	1	HSGPA	0.0000	0.2512	10.3569	11.2006	10.2604	0.0428	0.1333	3.6317	5.4989	4.2499	0.1755
167	08	2	SAT-CR	0.0000	10.3569	7,597.3457	3,129.4000	5,150.2990	2.8746	3.6317	4,038.4307	1,637.9622	2,862.3425	24.3760
167	08	3	SAT-M	0.0000	11.2006	3,129.4000	7,036.8746	3,035.9976	-3.6795	5.4989	1,637.9622	3,467.3379	1,481.2678	15.6821
167	08	4	SAT-W	0.0000	10.2604	5,150.2990	3,035.9976	6,738.9974	7.8443	4.2499	2,862.3425	1,481.2678	3,655.1121	23.4043
167	08	5	Female	0.5575	0.0428	2.8746	-3.6795	7.8443	0.2481	0.0189	1.2721	-1.6283	3.4713	0.0320
167	08	6	Female*HSGPA	0.0426	0.1333	3.6317	5.4989	4.2499	0.0189	0.1315	3.5093	5.6555	3.9161	0.1053
167	08	7	Female*SAT-CR	2.8580	3.6317	4,038.4307	1,637.9622	2,862.3425	1.2721	3.5093	4,030.2151	1,648.4783	2,839.9231	13.7879
167	08	8	Female*SAT-M	-3.6583	5.4989	1,637.9622	3,467.3379	1,481.2678	-1.6283	5.6555	1,648.4783	3,453.8771	1,509.9651	9.3697
167	08	9	Female*SAT-W	7.7992	4.2499	2,862.3425	1,481.2678	3,655.1121	3.4713	3.9161	2,839.9231	1,509.9651	3,593.9322	12.5965
167	08	10	FYGPA	2.6513	0.1755	24.3760	15.6821	23.4043	0.0320	0.1053	13.7879	9.3697	12.5965	0.7388
168	06	1	HSGPA	0.0000	0.3055	12.7554	12.2013	14.6836	0.0749	0.1334	4.6335	5.2383	6.0825	0.2324
168	06	2	SAT-CR	0.0000	12.7554	6,280.2371	3,458.3444	4,323.0762	3.7296	4.6335	3,438.4142	1,792.8002	2,394.0284	26.6138
168	06	3	SAT-M	0.0000	12.2013	3,458.3444	6,491.5451	3,439.4957	-2.1362	5.2383	1,792.8002	3,243.2909	1,965.4797	21.8342
168	06	4	SAT-W	0.0000	14.6836	4,323.0762	3,439.4957	6,017.0976	7.1790	6.0825	2,394.0284	1,965.4797	3,332.7661	26.3312
168	06	5	Female	0.5190	0.0749	3.7296	-2.1362	7.1790	0.2504	0.0360	1.7940	-1.0276	3.4532	0.1178
168	06	6	Female*HSGPA	0.0747	0.1334	4.6335	5.2383	6.0825	0.0360	0.1278	4.3550	5.3979	5.5464	0.0879
168	06	7	Female*SAT-CR	3.7178	4.6335	3,438.4142	1,792.8002	2,394.0284	1.7940	4.3550	3,424.5487	1,800.7421	2,367.3386	11.6866
168	06	8	Female*SAT-M	-2.1295	5.2383	1,792.8002	3,243.2909	1,965.4797	-1.0276	5.3979	1,800.7421	3,238.7419	1,980.7672	8.6643
168	06	9	Female*SAT-W	7.1563	6.0825	2,394.0284	1,965.4797	3,332.7661	3.4532	5.5464	2,367.3386	1,980.7672	3,281.3908	11.6660
168	06	10	FYGPA	2.8351	0.2324	26.6138	21.8342	26.3312	0.1178	0.0879	11.6866	8.6643	11.6660	0.5344
168	07	1	HSGPA	0.0000	0.2870	10.4700	12.8518	14.1354	0.0745	0.1436	6.0056	6.1150	7.4626	0.2125
168	07	2	SAT-CR	0.0000	10.4700	6,424.4961	2,964.3294	5,097.6049	3.2772	6.0056	3,576.8785	1,328.5817	2,962.6074	22.9941
168	07	3	SAT-M	0.0000	12.8518	2,964.3294	6,355.8985	3,191.3613	-7.7058	6.1150	1,328.5817	3,162.7815	1,489.9933	19.4595
168	07	4	SAT-W	0.0000	14.1354	5,097.6049	3,191.3613	7,008.9445	8.3711	7.4626	2,962.6074	1,489.9933	3,908.0025	23.7998
168	07	5	Female	0.5434	0.0745	3.2772	-7.7058	8.3711	0.2488	0.0340	1.4965	-3.5188	3.8226	0.0852
168	07	6	Female*HSGPA	0.0743	0.1436	6.0056	6.1150	7.4626	0.0340	0.1381	5.7622	6.6875	6.8407	0.0969
168	07	7	Female*SAT-CR	3.2677	6.0056	3,576.8785	1,328.5817	2,962.6074	1.4965	5.7622	3,566.1694	1,353.7621	2,935.2528	12.8263
168	07	8	Female*SAT-M	-7.6835	6.1150	1,328.5817	3,162.7815	1,489.9933	-3.5188	6.6875	1,353.7621	3,103.5739	1,554.3130	10.4608
168	07	9	Female*SAT-W	8.3469	7.4626	2,962.6074	1,489.9933	3,908.0025	3.8226	6.8407	2,935.2528	1,554.3130	3,838.1295	13.0788
168	07	10	FYGPA	2.8199	0.2125	22.9941	19.4595	23.7998	0.0852	0.0969	12.8263	10.4608	13.0788	0.5354

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
168	08	1	HSGPA	0.0000	0.2830	13.0615	11.0045	13.5502	0.0827	0.1185	5.8618	4.9784	6.7366	0.1824
168	08	2	SAT-CR	0.0000	13.0615	6,732.6474	3,497.1004	5,181.6315	4.3560	5.8618	3,208.4957	1,873.0786	2,273.1875	28.8557
168	08	3	SAT-M	0.0000	11.0045	3,497.1004	6,902.5554	3,189.0578	-1.9378	4.9784	1,873.0786	3,366.6189	1,547.0174	22.1469
168	08	4	SAT-W	0.0000	13.5502	5,181.6315	3,189.0578	7,074.4488	8.1492	6.7366	2,273.1875	1,547.0174	3,037.8102	32.0314
168	08	5	Female	0.4839	0.0827	4.3560	-1.9378	8.1492	0.2506	0.0427	2.2483	-1.0002	4.2061	0.1075
168	08	6	Female*HSGPA	0.0824	0.1185	5.8618	4.9784	6.7366	0.0427	0.1116	5.5030	5.1380	6.0655	0.0681
168	08	7	Female*SAT-CR	4.3404	5.8618	3,208.4957	1,873.0786	2,273.1875	2.2483	5.5030	3,189.5890	1,881.4894	2,237.8168	11.6862
168	08	8	Female*SAT-M	-1.9309	4.9784	1,873.0786	3,366.6189	1,547.0174	-1.0002	5.1380	1,881.4894	3,362.8773	1,562.7524	10.5351
168	08	9	Female*SAT-W	8.1200	6.7366	2,273.1875	1,547.0174	3,037.8102	4.2061	6.0655	2,237.8168	1,562.7524	2,971.6384	12.9024
168	08	10	FYGPA	2.7763	0.1824	28.8557	22.1469	32.0314	0.1075	0.0681	11.6862	10.5351	12.9024	0.5241
169	06	1	HSGPA	0.0000	0.2805	7.6150	9.3846	10.0708	0.0467	0.1611	4.3803	5.6053	6.1456	0.1878
169	06	2	SAT-CR	0.0000	7.6150	4,848.1530	2,483.7378	3,012.0905	-3.0004	4.3803	2,710.7024	1,224.1386	1,663.7224	10.3238
169	06	3	SAT-M	0.0000	9.3846	2,483.7378	5,348.8546	2,286.4539	-8.1587	5.6053	1,224.1386	2,753.6020	1,273.5871	12.5168
169	06	4	SAT-W	0.0000	10.0708	3,012.0905	2,286.4539	4,481.4995	2.0754	6.1456	1,663.7224	1,273.5871	2,605.6283	14.6888
169	06	5	Female	0.6024	0.0467	-3.0004	-8.1587	2.0754	0.2397	0.0186	-1.1930	-3.2441	0.8252	0.0699
169	06	6	Female*HSGPA	0.0467	0.1611	4.3803	5.6053	6.1456	0.0186	0.1589	4.5202	5.9859	6.0488	0.1023
169	06	7	Female*SAT-CR	-2.9985	4.3803	2,710.7024	1,224.1386	1,663.7224	-1.1930	4.5202	2,701.7058	1,199.6747	1,669.9454	6.1375
169	06	8	Female*SAT-M	-8.1536	5.6053	1,224.1386	2,753.6020	1,273.5871	-3.2441	5.9859	1,199.6747	2,687.0791	1,290.5089	7.9114
169	06	9	Female*SAT-W	2.0741	6.1456	1,663.7224	1,273.5871	2,605.6283	0.8252	6.0488	1,669.9454	1,290.5089	2,601.3238	9.1926
169	06	10	FYGPA	2.6635	0.1878	10.3238	12.5168	14.6888	0.0699	0.1023	6.1375	7.9114	9.1926	0.7957
169	07	1	HSGPA	0.0000	0.2617	7.8503	8.1421	8.8175	0.0427	0.1451	4.4409	5.1306	5.3194	0.1568
169	07	2	SAT-CR	0.0000	7.8503	4,412.9176	2,187.8965	2,945.3725	-2.0454	4.4409	2,496.4832	1,180.8110	1,762.3899	12.0138
169	07	3	SAT-M	0.0000	8.1421	2,187.8965	4,588.5146	2,123.5128	-7.7326	5.1306	1,180.8110	2,457.7748	1,278.2364	11.7845
169	07	4	SAT-W	0.0000	8.8175	2,945.3725	2,123.5128	4,622.0287	1.3634	5.3194	1,762.3899	1,278.2364	2,762.6655	13.8105
169	07	5	Female	0.6150	0.0427	-2.0454	-7.7326	1.3634	0.2369	0.0164	-0.7875	-2.9770	0.5249	0.0420
169	07	6	Female*HSGPA	0.0427	0.1451	4.4409	5.1306	5.3194	0.0164	0.1433	4.5282	5.4607	5.2612	0.0869
169	07	7	Female*SAT-CR	-2.0442	4.4409	2,496.4832	1,180.8110	1,762.3899	-0.7875	4.5282	2,492.3020	1,165.0043	1,765.1769	6.9786
169	07	8	Female*SAT-M	-7.7279	5.1306	1,180.8110	2,457.7748	1,278.2364	-2.9770	5.4607	1,165.0043	2,398.0178	1,288.7724	7.8877
169	07	9	Female*SAT-W	1.3625	5.3194	1,762.3899	1,278.2364	2,762.6655	0.5249	5.2612	1,765.1769	1,288.7724	2,760.8079	9.2533
169	07	10	FYGPA	2.7698	0.1568	12.0138	11.7845	13.8105	0.0420	0.0869	6.9786	7.8877	9.2533	0.4982
169	08	1	HSGPA	0.0000	0.2710	5.3261	6.7757	6.7144	0.0510	0.1491	3.4481	4.0371	3.8822	0.1769
169	08	2	SAT-CR	0.0000	5.3261	4,788.4815	2,340.6802	2,997.3075	-2.4100	3.4481	2,569.0782	1,230.6111	1,641.6244	10.8668
169	08	3	SAT-M	0.0000	6.7757	2,340.6802	4,704.8609	2,189.4234	-6.6318	4.0371	1,230.6111	2,408.7285	1,223.9350	11.2464
169	08	4	SAT-W	0.0000	6.7144	2,997.3075	2,189.4234	4,569.6431	2.2325	3.8822	1,641.6244	1,223.9350	2,517.9778	14.7876
169	08	5	Female	0.5888	0.0510	-2.4100	-6.6318	2.2325	0.2423	0.0210	-0.9911	-2.7272	0.9181	0.0810
169	08	6	Female*HSGPA	0.0509	0.1491	3.4481	4.0371	3.8822	0.0210	0.1465	3.5709	4.3749	3.7685	0.0958
169	08	7	Female*SAT-CR	-2.4086	3.4481	2,569.0782	1,230.6111	1,641.6244	-0.9911	3.5709	2,563.2735	1,214.6379	1,647.0015	7.6504
169	08	8	Female*SAT-M	-6.6278	4.0371	1,230.6111	2,408.7285	1,223.9350	-2.7272	4.3749	1,214.6379	2,364.7743	1,238.7315	7.9181
169	08	9	Female*SAT-W	2.2311	3.8822	1,641.6244	1,223.9350	2,517.9778	0.9181	3.7685	1,647.0015	1,238.7315	2,512.9968	8.6208
169	08	10	FYGPA	2.5985	0.1769	10.8668	11.2464	14.7876	0.0810	0.0958	7.6504	7.9181	8.6208	0.7857

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
170	06	1	HSGPA	0.0000	0.1653	8.1511	4.2825	5.9684	0.0367	0.0820	6.0574	2.3134	3.7012	0.0812
170	06	2	SAT-CR	0.0000	8.1511	6,636.7558	2,740.1889	4,217.7579	2.3273	6.0574	4,321.0204	1,668.0410	2,511.5188	20.5614
170	06	3	SAT-M	0.0000	4.2825	2,740.1889	5,426.9156	2,775.3246	-3.4047	2.3134	1,668.0410	3,483.8452	1,673.7539	15.1589
170	06	4	SAT-W	0.0000	5.9684	4,217.7579	2,775.3246	5,589.7964	5.0524	3.7012	2,511.5188	1,673.7539	3,332.1036	18.5489
170	06	5	Female	0.6468	0.0367	2.3273	-3.4047	5.0524	0.2293	0.0130	0.8219	-1.2024	1.7843	0.0253
170	06	6	Female*HSGPA	0.0366	0.0820	6.0574	2.3134	3.7012	0.0130	0.0807	5.9723	2.4379	3.5165	0.0515
170	06	7	Female*SAT-CR	2.3187	6.0574	4,321.0204	1,668.0410	2,511.5188	0.8219	5.9723	4,315.6242	1,675.9352	2,499.8040	12.3269
170	06	8	Female*SAT-M	-3.3920	2.3134	1,668.0410	3,483.8452	1,673.7539	-1.2024	2.4379	1,675.9352	3,472.2965	1,690.8918	9.0902
170	06	9	Female*SAT-W	5.0337	3.7012	2,511.5188	1,673.7539	3,332.1036	1.7843	3.5165	2,499.8040	1,690.8918	3,306.6715	10.1189
170	06	10	FYGPA	3.1378	0.0812	20.5614	15.1589	18.5489	0.0253	0.0515	12.3269	9.0902	10.1189	0.2684
171	06	1	HSGPA	0.0000	0.2417	7.9662	9.0304	10.8899	0.0393	0.1392	4.7339	5.1197	6.7635	0.1629
171	06	2	SAT-CR	0.0000	7.9662	5,781.0561	2,669.1227	3,796.1896	-0.9216	4.7339	3,336.5608	1,488.5290	2,238.3056	14.9461
171	06	3	SAT-M	0.0000	9.0304	2,669.1227	5,946.7658	2,479.6845	-7.4702	5.1197	1,488.5290	3,202.5354	1,517.8678	13.3889
171	06	4	SAT-W	0.0000	10.8899	3,796.1896	2,479.6845	5,615.1748	3.8366	6.7635	2,238.3056	1,517.8678	3,304.8784	19.7228
171	06	5	Female	0.6094	0.0393	-0.9216	-7.4702	3.8366	0.2382	0.0154	-0.3600	-2.9178	1.4986	0.0729
171	06	6	Female*HSGPA	0.0393	0.1392	4.7339	5.1197	6.7635	0.0154	0.1376	4.7701	5.4132	6.6127	0.0941
171	06	7	Female*SAT-CR	-0.9208	4.7339	3,336.5608	1,488.5290	2,238.3056	-0.3600	4.7701	3,335.7122	1,481.6507	2,241.8382	10.0166
171	06	8	Female*SAT-M	-7.4634	5.1197	1,488.5290	3,202.5354	1,517.8678	-2.9178	5.4132	1,481.6507	3,146.7827	1,546.5017	9.7677
171	06	9	Female*SAT-W	3.8331	6.7635	2,238.3056	1,517.8678	3,304.8784	1.4986	6.6127	2,241.8382	1,546.5017	3,290.1724	11.9663
171	06	10	FYGPA	2.8411	0.1629	14.9461	13.3889	19.7228	0.0729	0.0941	10.0166	9.7677	11.9663	0.5154
171	07	1	HSGPA	0.0000	0.2667	10.9964	12.0698	14.9456	0.0591	0.1395	6.5390	6.6197	7.7725	0.1926
171	07	2	SAT-CR	0.0000	10.9964	6,099.7560	3,143.3268	4,393.6216	0.4692	6.5390	3,523.1911	1,800.1662	2,678.0061	18.5526
171	07	3	SAT-M	0.0000	12.0698	3,143.3268	6,600.9637	3,300.1555	-6.8618	6.6197	1,800.1662	3,884.8951	2,040.8619	18.3783
171	07	4	SAT-W	0.0000	14.9456	4,393.6216	3,300.1555	6,261.2093	4.6139	7.7725	2,678.0061	2,040.8619	3,718.1804	23.7162
171	07	5	Female	0.5837	0.0591	0.4692	-6.8618	4.6139	0.2432	0.0246	0.1953	-2.8565	1.9207	0.1017
171	07	6	Female*HSGPA	0.0591	0.1395	6.5390	6.6197	7.7725	0.0246	0.1360	6.5112	7.0252	7.4998	0.1020
171	07	7	Female*SAT-CR	0.4688	6.5390	3,523.1911	1,800.1662	2,678.0061	0.1953	6.5112	3,522.9712	1,803.3829	2,675.8432	12.7319
171	07	8	Female*SAT-M	-6.8556	6.6197	1,800.1662	3,884.8951	2,040.8619	-2.8565	7.0252	1,803.3829	3,837.8534	2,072.4927	13.3381
171	07	9	Female*SAT-W	4.6097	7.7725	2,678.0061	2,040.8619	3,718.1804	1.9207	7.4998	2,675.8432	2,072.4927	3,696.9119	14.8039
171	07	10	FYGPA	2.7433	0.1926	18.5526	18.3783	23.7162	0.1017	0.1020	12.7319	13.3381	14.8039	0.6083
172	06	1	HSGPA	0.0000	0.1284	8.3273	6.3327	8.9959	0.0442	0.0494	3.8546	3.5216	3.9698	0.0601
172	06	2	SAT-CR	0.0000	8.3273	7,989.0965	3,542.7853	5,471.7366	6.3372	3.8546	4,235.3551	2,038.7904	3,032.4273	15.9630
172	06	3	SAT-M	0.0000	6.3327	3,542.7853	7,042.0509	3,166.2199	-5.8609	3.5216	2,038.7904	3,648.6609	2,044.9041	11.3158
172	06	4	SAT-W	0.0000	8.9959	5,471.7366	3,166.2199	7,051.4885	7.3828	3.9698	3,032.4273	2,044.9041	3,863.0754	13.3751
172	06	5	Female	0.5040	0.0442	6.3372	-5.8609	7.3828	0.2506	0.0219	3.1434	-2.9071	3.6620	0.0483
172	06	6	Female*HSGPA	0.0441	0.0494	3.8546	3.5216	3.9698	0.0219	0.0475	3.5755	3.7798	3.6445	0.0236
172	06	7	Female*SAT-CR	6.3204	3.8546	4,235.3551	2,038.7904	3,032.4273	3.1434	3.5755	4,195.3015	2,075.8334	2,985.7655	7.0074
172	06	8	Female*SAT-M	-5.8453	3.5216	2,038.7904	3,648.6609	2,044.9041	-2.9071	3.7798	2,075.8334	3,614.4022	2,088.0587	5.4597
172	06	9	Female*SAT-W	7.3632	3.9698	3,032.4273	2,044.9041	3,863.0754	3.6620	3.6445	2,985.7655	2,088.0587	3,808.7149	5.1446
172	06	10	FYGPA	3.3681	0.0601	15.9630	11.3158	13.3751	0.0483	0.0236	7.0074	5.4597	5.1446	0.1696

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
172	07	1	HSGPA	0.0000	0.1031	9.2213	8.6692	7.7563	0.0203	0.0423	4.6737	3.2991	3.1382	0.0608
172	07	2	SAT-CR	0.0000	9.2213	5,869.1000	2,721.4333	3,959.8000	7.2933	4.6737	2,838.5500	1,197.5606	1,691.3284	17.1568
172	07	3	SAT-M	0.0000	8.6692	2,721.4333	5,466.6660	2,916.9092	1.4261	3.2991	1,197.5606	2,308.0755	1,225.6910	12.5142
172	07	4	SAT-W	0.0000	7.7563	3,959.8000	2,916.9092	5,715.4468	10.5140	3.1382	1,691.3284	1,225.6910	2,454.6223	15.0651
172	07	5	Female	0.4787	0.0203	7.2933	1.4261	10.5140	0.2502	0.0106	3.8018	0.7434	5.4807	0.0467
172	07	6	Female*HSGPA	0.0203	0.0423	4.6737	3.2991	3.1382	0.0106	0.0418	4.5259	3.2702	2.9252	0.0284
172	07	7	Female*SAT-CR	7.2739	4.6737	2,838.5500	1,197.5606	1,691.3284	3.8018	4.5259	2,785.4988	1,187.1873	1,614.8499	7.3605
172	07	8	Female*SAT-M	1.4223	3.2991	1,197.5606	2,308.0755	1,225.6910	0.7434	3.2702	1,187.1873	2,306.0472	1,210.7368	5.1678
172	07	9	Female*SAT-W	10.4861	3.1382	1,691.3284	1,225.6910	2,454.6223	5.4807	2.9252	1,614.8499	1,210.7368	2,344.3712	5.7710
172	07	10	FYGPA	3.3472	0.0608	17.1568	12.5142	15.0651	0.0467	0.0284	7.3605	5.1678	5.7710	0.1804
172	08	1	HSGPA	0.0000	0.1175	8.9992	7.7571	8.0897	0.0154	0.0577	4.8376	4.2257	4.5821	0.0732
172	08	2	SAT-CR	0.0000	8.9992	5,784.7271	2,704.6866	4,287.0372	4.6971	4.8376	2,567.2534	1,299.0040	1,767.7075	15.7840
172	08	3	SAT-M	0.0000	7.7571	2,704.6866	5,257.6845	2,893.6482	-0.2527	4.2257	1,299.0040	2,661.2833	1,469.4617	13.6101
172	08	4	SAT-W	0.0000	8.0897	4,287.0372	2,893.6482	6,318.1599	9.9644	4.5821	1,767.7075	1,469.4617	2,814.1329	18.7895
172	08	5	Female	0.5133	0.0154	4.6971	-0.2527	9.9644	0.2506	0.0075	2.2862	-0.1230	4.8499	0.0561
172	08	6	Female*HSGPA	0.0153	0.0577	4.8376	4.2257	4.5821	0.0075	0.0575	4.7656	4.2295	4.4293	0.0372
172	08	7	Female*SAT-CR	4.6832	4.8376	2,567.2534	1,299.0040	1,767.7075	2.2862	4.7656	2,545.2560	1,300.1872	1,721.0421	7.4947
172	08	8	Female*SAT-M	-0.2519	4.2257	1,299.0040	2,661.2833	1,469.4617	-0.1230	4.2295	1,300.1872	2,661.2196	1,471.9719	7.1165
172	08	9	Female*SAT-W	9.9350	4.5821	1,767.7075	1,469.4617	2,814.1329	4.8499	4.4293	1,721.0421	1,471.9719	2,715.1367	8.4207
172	08	10	FYGPA	3.3098	0.0732	15.7840	13.6101	18.7895	0.0561	0.0372	7.4947	7.1165	8.4207	0.2038
173	07	1	HSGPA	0.0000	0.1445	3.6338	4.6853	4.6549	0.0130	0.0806	2.9527	3.4276	3.2636	0.0589
173	07	2	SAT-CR	0.0000	3.6338	7,317.6092	4,064.4606	5,246.5512	-3.5266	2.9527	4,183.6527	2,318.5808	3,092.8899	16.3755
173	07	3	SAT-M	0.0000	4.6853	4,064.4606	7,718.5787	4,177.3485	-11.9387	3.4276	2,318.5808	4,364.0771	2,447.6550	14.4487
173	07	4	SAT-W	0.0000	4.6549	5,246.5512	4,177.3485	6,841.7283	-0.8079	3.2636	3,092.8899	2,447.6550	4,061.9397	15.9443
173	07	5	Female	0.5814	0.0130	-3.5266	-11.9387	-0.8079	0.2435	0.0054	-1.4764	-4.9980	-0.3382	0.0138
173	07	6	Female*HSGPA	0.0130	0.0806	2.9527	3.4276	3.2636	0.0054	0.0804	2.9985	3.5825	3.2741	0.0326
173	07	7	Female*SAT-CR	-3.5255	2.9527	4,183.6527	2,318.5808	3,092.8899	-1.4764	2.9985	4,171.2195	2,276.4905	3,090.0417	10.3574
173	07	8	Female*SAT-M	-11.9351	3.4276	2,318.5808	4,364.0771	2,447.6550	-4.9980	3.5825	2,276.4905	4,221.5878	2,438.0130	8.9786
173	07	9	Female*SAT-W	-0.8076	3.2636	3,092.8899	2,447.6550	4,061.9397	-0.3382	3.2741	3,090.0417	2,438.0130	4,061.2872	9.7255
173	07	10	FYGPA	3.0741	0.0589	16.3755	14.4487	15.9443	0.0138	0.0326	10.3574	8.9786	9.7255	0.2413
173	08	1	HSGPA	0.0000	0.1360	3.3398	4.9938	4.6947	0.0062	0.0726	2.2706	3.3975	2.9682	0.0461
173	08	2	SAT-CR	0.0000	3.3398	7,526.9816	4,566.1568	5,760.6479	-4.6831	2.2706	4,111.5872	2,566.9821	3,228.8156	18.2573
173	08	3	SAT-M	0.0000	4.9938	4,566.1568	8,351.0370	4,723.7317	-13.9874	3.3975	2,566.9821	4,588.0383	2,735.4953	17.3039
173	08	4	SAT-W	0.0000	4.6947	5,760.6479	4,723.7317	7,689.7222	-1.0300	2.9682	3,228.8156	2,735.4953	4,351.1093	20.0700
173	08	5	Female	0.5562	0.0062	-4.6831	-13.9874	-1.0300	0.2469	0.0028	-2.0783	-6.2075	-0.4571	0.0099
173	08	6	Female*HSGPA	0.0062	0.0726	2.2706	3.3975	2.9682	0.0028	0.0726	2.2998	3.4846	2.9746	0.0256
173	08	7	Female*SAT-CR	-4.6817	2.2706	4,111.5872	2,566.9821	3,228.8156	-2.0783	2.2998	4,089.6625	2,501.4978	3,223.9936	10.8872
173	08	8	Female*SAT-M	-13.9831	3.3975	2,566.9821	4,588.0383	2,735.4953	-6.2075	3.4846	2,501.4978	4,392.4506	2,721.0929	10.4070
173	08	9	Female*SAT-W	-1.0297	2.9682	3,228.8156	2,735.4953	4,351.1093	-0.4571	2.9746	3,223.9936	2,721.0929	4,350.0487	11.9780
173	08	10	FYGPA	3.1064	0.0461	18.2573	17.3039	20.0700	0.0099	0.0256	10.8872	10.4070	11.9780	0.2438

## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
174	06	1	HSGPA	0.0000	0.2667	11.3352	17.6443	13.6481	0.0442	0.1342	5.8788	8.9278	7.3198	0.1586
174	06	2	SAT-CR	0.0000	11.3352	6,649.0915	3,771.0940	4,383.5660	-0.3892	5.8788	3,570.4005	1,958.4529	2,572.0398	17.4989
174	06	3	SAT-M	0.0000	17.6443	3,771.0940	6,799.1428	3,554.9892	-5.5743	8.9278	1,958.4529	3,243.5098	1,787.5457	18.5951
174	06	4	SAT-W	0.0000	13.6481	4,383.5660	3,554.9892	5,695.6676	4.6935	7.3198	2,572.0398	1,787.5457	3,351.4374	19.6714
174	06	5	Female	0.5616	0.0442	-0.3892	-5.5743	4.6935	0.2468	0.0194	-0.1706	-2.4437	2.0576	0.0811
174	06	6	Female*HSGPA	0.0441	0.1342	5.8788	8.9278	7.3198	0.0194	0.1322	5.8959	9.1736	7.1128	0.0954
174	06	7	Female*SAT-CR	-0.3883	5.8788	3,570.4005	1,958.4529	2,572.0398	-0.1706	5.8959	3,570.2494	1,956.2884	2,573.8623	12.5883
174	06	8	Female*SAT-M	-5.5611	8.9278	1,958.4529	3,243.5098	1,787.5457	-2.4437	9.1736	1,956.2884	3,212.5100	1,813.6467	11.1533
174	06	9	Female*SAT-W	4.6823	7.3198	2,572.0398	1,787.5457	3,351.4374	2.0576	7.1128	2,573.8623	1,813.6467	3,329.4610	12.9542
174	06	10	FYGPA	2.6805	0.1586	17.4989	18.5951	19.6714	0.0811	0.0954	12.5883	11.1533	12.9542	0.5210
175	06	1	HSGPA	0.0000	0.1855	2.1427	3.7054	4.2926	0.0351	0.1063	2.0573	3.2004	3.2152	0.1057
175	06	2	SAT-CR	0.0000	2.1427	5,534.8894	2,645.5305	3,491.6549	-1.3854	2.0573	3,210.2593	1,454.6210	2,023.9085	10.5613
175	06	3	SAT-M	0.0000	3.7054	2,645.5305	5,370.1030	2,367.2419	-7.9703	3.2004	1,454.6210	2,946.2936	1,328.9692	11.5234
175	06	4	SAT-W	0.0000	4.2926	3,491.6549	2,367.2419	4,785.5110	2.4146	3.2152	2,023.9085	1,328.9692	2,726.6234	13.1636
175	06	5	Female	0.5966	0.0351	-1.3854	-7.9703	2.4146	0.2408	0.0141	-0.5588	-3.2151	0.9740	0.0756
175	06	6	Female*HSGPA	0.0351	0.1063	2.0573	3.2004	3.2152	0.0141	0.1051	2.1059	3.4798	3.1306	0.0564
175	06	7	Female*SAT-CR	-1.3848	2.0573	3,210.2593	1,454.6210	2,023.9085	-0.5588	2.1059	3,208.3409	1,443.5838	2,027.2523	7.2897
175	06	8	Female*SAT-M	-7.9670	3.2004	1,454.6210	2,946.2936	1,328.9692	-3.2151	3.4798	1,443.5838	2,882.7937	1,348.2067	8.4770
175	06	9	Female*SAT-W	2.4136	3.2152	2,023.9085	1,328.9692	2,726.6234	0.9740	3.1306	2,027.2523	1,348.2067	2,720.7954	7.7773
175	06	10	FYGPA	2.5891	0.1057	10.5613	11.5234	13.1636	0.0756	0.0564	7.2897	8.4770	7.7773	0.7336
175	07	1	HSGPA	0.0000	0.1949	0.5905	2.7469	3.0902	0.0296	0.1050	1.6312	2.9778	2.5886	0.0996
175	07	2	SAT-CR	0.0000	0.5905	6,319.4286	2,852.2229	4,095.9531	-2.4572	1.6312	3,451.5666	1,539.2067	2,222.3261	12.1000
175	07	3	SAT-M	0.0000	2.7469	2,852.2229	5,612.8757	2,602.0072	-9.0343	2.9778	1,539.2067	3,158.1021	1,518.1158	10.9353
175	07	4	SAT-W	0.0000	3.0902	4,095.9531	2,602.0072	5,201.3914	1.9820	2.5886	2,222.3261	1,518.1158	2,896.9270	14.1285
175	07	5	Female	0.5932	0.0296	-2.4572	-9.0343	1.9820	0.2414	0.0120	-0.9995	-3.6749	0.8062	0.0668
175	07	6	Female*HSGPA	0.0296	0.1050	1.6312	2.9778	2.5886	0.0120	0.1042	1.7039	3.2451	2.5300	0.0569
175	07	7	Female*SAT-CR	-2.4562	1.6312	3,451.5666	1,539.2067	2,222.3261	-0.9995	1.7039	3,445.5313	1,517.0162	2,227.1944	7.3564
175	07	8	Female*SAT-M	-9.0309	2.9778	1,539.2067	3,158.1021	1,518.1158	-3.6749	3.2451	1,517.0162	3,076.5135	1,536.0154	7.8644
175	07	9	Female*SAT-W	1.9813	2.5886	2,222.3261	1,518.1158	2,896.9270	0.8062	2.5300	2,227.1944	1,536.0154	2,893.0001	8.0203
175	07	10	FYGPA	2.6820	0.0996	12.1000	10.9353	14.1285	0.0668	0.0569	7.3564	7.8644	8.0203	0.6263
175	08	1	HSGPA	0.0000	0.1861	1.5132	4.0213	3.4088	0.0263	0.1048	1.5285	3.0914	2.5688	0.1056
175	08	2	SAT-CR	0.0000	1.5132	6,071.4605	3,089.3347	3,885.8880	-3.3281	1.5285	3,578.6936	1,827.9109	2,329.6949	9.8433
175	08	3	SAT-M	0.0000	4.0213	3,089.3347	5,655.8577	2,604.2609	-8.2860	3.0914	1,827.9109	3,346.8262	1,642.5721	11.7429
175	08	4	SAT-W	0.0000	3.4088	3,885.8880	2,604.2609	5,202.9377	1.5339	2.5688	2,329.6949	1,642.5721	3,213.4972	13.1733
175	08	5	Female	0.6094	0.0263	-3.3281	-8.2860	1.5339	0.2381	0.0103	-1.3000	-3.2366	0.5991	0.0595
175	08	6	Female*HSGPA	0.0262	0.1048	1.5285	3.0914	2.5688	0.0103	0.1041	1.6158	3.3089	2.5286	0.0586
175	08	7	Female*SAT-CR	-3.3269	1.5285	3,578.6936	1,827.9109	2,329.6949	-1.3000	1.6158	3,567.6213	1,800.3442	2,334.7979	7.6967
175	08	8	Female*SAT-M	-8.2830	3.0914	1,827.9109	3,346.8262	1,642.5721	-3.2366	3.3089	1,800.3442	3,278.1930	1,655.2771	8.5412
175	08	9	Female*SAT-W	1.5333	2.5688	2,329.6949	1,642.5721	3,213.4972	0.5991	2.5286	2,334.7979	1,655.2771	3,211.1453	9.4116
175	08	10	FYGPA	2.7015	0.1056	9.8433	11.7429	13.1733	0.0595	0.0586	7.6967	8.5412	9.4116	0.5932



## Appendix B

## Male-Female Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
176	06	1	HSGPA	0.0000	0.1814	4.0256	4.9747	5.2180	0.0384	0.1005	2.9670	3.6336	3.5576	0.0882
176	06	2	SAT-CR	0.0000	4.0256	7,278.8284	3,371.5267	5,190.3735	-1.9947	2.9670	4,268.0081	2,022.7113	3,168.5655	19.6148
176	06	3	SAT-M	0.0000	4.9747	3,371.5267	6,115.6631	2,951.1665	-9.4274	3.6336	2,022.7113	3,516.6722	1,851.2899	14.8395
176	06	4	SAT-W	0.0000	5.2180	5,190.3735	2,951.1665	6,553.0040	0.9753	3.5576	3,168.5655	1,851.2899	3,999.2778	17.8835
176	06	5	Female	0.5913	0.0384	-1.9947	-9.4274	0.9753	0.2418	0.0157	-0.8152	-3.8529	0.3986	0.0369
176	06	6	Female*HSGPA	0.0384	0.1005	2.9670	3.6336	3.5576	0.0157	0.0990	3.0435	3.9952	3.5202	0.0506
176	06	7	Female*SAT-CR	-1.9937	2.9670	4,268.0081	2,022.7113	3,168.5655	-0.8152	3.0435	4,264.0314	2,003.9160	3,170.5099	12.5198
176	06	8	Female*SAT-M	-9.4228	3.6336	2,022.7113	3,516.6722	1,851.2899	-3.8529	3.9952	2,003.9160	3,427.8399	1,860.4795	10.0884
176	06	9	Female*SAT-W	0.9748	3.5576	3,168.5655	1,851.2899	3,999.2778	0.3986	3.5202	3,170.5099	1,860.4795	3,998.3271	11.7319
176	06	10	FYGPA	2.8524	0.0882	19.6148	14.8395	17.8835	0.0369	0.0506	12.5198	10.0884	11.7319	0.3860
176	07	1	HSGPA	0.0000	0.1766	6.5312	6.8616	8.2039	0.0420	0.0945	4.5535	4.8909	4.8184	0.1002
176	07	2	SAT-CR	0.0000	6.5312	7,765.6190	3,904.2865	5,363.1477	-3.2523	4.5535	4,413.7774	2,262.7677	3,090.6561	18.2051
176	07	3	SAT-M	0.0000	6.8616	3,904.2865	6,334.1354	3,443.3706	-9.7207	4.8909	2,262.7677	3,463.1699	2,024.0087	15.3212
176	07	4	SAT-W	0.0000	8.2039	5,363.1477	3,443.3706	6,554.5484	0.3648	4.8184	3,090.6561	2,024.0087	3,761.1902	18.9353
176	07	5	Female	0.5649	0.0420	-3.2523	-9.7207	0.3648	0.2459	0.0183	-1.4150	-4.2291	0.1587	0.0378
176	07	6	Female*HSGPA	0.0419	0.0945	4.5535	4.8909	4.8184	0.0183	0.0927	4.6899	5.2986	4.8031	0.0560
176	07	7	Female*SAT-CR	-3.2505	4.5535	4,413.7774	2,262.7677	3,090.6561	-1.4150	4.6899	4,403.2057	2,231.1704	3,091.8420	12.1690
176	07	8	Female*SAT-M	-9.7153	4.8909	2,262.7677	3,463.1699	2,024.0087	-4.2291	5.2986	2,231.1704	3,368.7307	2,027.5532	10.4216
176	07	9	Female*SAT-W	0.3646	4.8184	3,090.6561	2,024.0087	3,761.1902	0.1587	4.8031	3,091.8420	2,027.5532	3,761.0572	11.5518
176	07	10	FYGPA	2.8403	0.1002	18.2051	15.3212	18.9353	0.0378	0.0560	12.1690	10.4216	11.5518	0.3744
176	08	1	HSGPA	0.0000	0.1657	3.8020	4.5988	4.8416	0.0303	0.0926	3.0314	3.0925	3.1817	0.0872
176	08	2	SAT-CR	0.0000	3.8020	7,398.7934	3,204.8515	5,006.2916	-1.2023	3.0314	4,258.5125	1,791.2746	2,950.3646	16.6987
176	08	3	SAT-M	0.0000	4.5988	3,204.8515	5,764.5366	2,906.9792	-9.1597	3.0925	1,791.2746	3,138.9000	1,703.3577	11.7490
176	08	4	SAT-W	0.0000	4.8416	5,006.2916	2,906.9792	6,465.1605	3.7638	3.1817	2,950.3646	1,703.3577	3,786.6298	17.5540
176	08	5	Female	0.5964	0.0303	-1.2023	-9.1597	3.7638	0.2408	0.0122	-0.4852	-3.6964	1.5189	0.0450
176	08	6	Female*HSGPA	0.0303	0.0926	3.0314	3.0925	3.1817	0.0122	0.0916	3.0679	3.3703	3.0676	0.0495
176	08	7	Female*SAT-CR	-1.2017	3.0314	4,258.5125	1,791.2746	2,950.3646	-0.4852	3.0679	4,257.0677	1,780.2671	2,954.8877	9.9217
176	08	8	Female*SAT-M	-9.1555	3.0925	1,791.2746	3,138.9000	1,703.3577	-3.6964	3.3703	1,780.2671	3,055.0388	1,737.8174	7.8142
176	08	9	Female*SAT-W	3.7621	3.1817	2,950.3646	1,703.3577	3,786.6298	1.5189	3.0676	2,954.8877	1,737.8174	3,772.4698	10.5808
176	08	10	FYGPA	2.8564	0.0872	16.6987	11.7490	17.5540	0.0450	0.0495	9.9217	7.8142	10.5808	0.3545

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
1	07	1	HSGPA	0.0000	0.2601	13.5342	14.3435	14.8156	-0.0118	0.0300	2.4493	2.5236	2.6810
1	07	2	SAT-CR	0.0000	13.5342	7,907.9902	4,587.1148	6,134.5402	-6.6968	2.4493	1,229.4074	965.4163	1,080.4212
1	07	3	SAT-M	0.0000	14.3435	4,587.1148	7,329.1357	4,641.8253	-6.7581	2.5236	965.4163	1,153.3874	956.9341
1	07	4	SAT-W	0.0000	14.8156	6,134.5402	4,641.8253	7,914.0071	-6.8398	2.6810	1,080.4212	956.9341	1,196.8947
1	07	5	Black	0.0790	-0.0118	-6.6968	-6.7581	-6.8398	0.0728	-0.0109	-6.1678	-6.2243	-6.2996
1	07	6	Black*HSGPA	-0.0118	0.0300	2.4493	2.5236	2.6810	-0.0109	0.0299	2.3704	2.4439	2.6004
1	07	7	Black*SAT-CR	-6.6962	2.4493	1,229.4074	965.4163	1,080.4212	-6.1678	2.3704	1,184.5645	920.1625	1,034.6205
1	07	8	Black*SAT-M	-6.7575	2.5236	965.4163	1,153.3874	956.9341	-6.2243	2.4439	920.1625	1,107.7190	910.7138
1	07	9	Black*SAT-W	-6.8392	2.6810	1,080.4212	956.9341	1,196.8947	-6.2996	2.6004	1,034.6205	910.7138	1,150.1158
1	08	1	HSGPA	0.0000	0.2410	12.6039	13.6618	14.0133	-0.0157	0.0311	2.8407	3.0825	3.0506
1	08	2	SAT-CR	0.0000	12.6039	7,964.0207	4,723.4791	6,222.7588	-7.9741	2.8407	1,428.5525	1,149.9187	1,240.1560
1	08	3	SAT-M	0.0000	13.6618	4,723.4791	7,550.4032	4,867.9649	-8.1769	3.0825	1,149.9187	1,398.8398	1,156.2360
1	08	4	SAT-W	0.0000	14.0133	6,222.7588	4,867.9649	8,117.5567	-8.1524	3.0506	1,240.1560	1,156.2360	1,388.5085
1	08	5	Black	0.0876	-0.0157	-7.9741	-8.1769	-8.1524	0.0800	-0.0143	-7.2753	-7.4602	-7.4379
1	08	6	Black*HSGPA	-0.0156	0.0311	2.8407	3.0825	3.0506	-0.0143	0.0308	2.7160	2.9545	2.9230
1	08	7	Black*SAT-CR	-7.9734	2.8407	1,428.5525	1,149.9187	1,240.1560	-7.2753	2.7160	1,364.9716	1,084.7213	1,175.1540
1	08	8	Black*SAT-M	-8.1761	3.0825	1,149.9187	1,398.8398	1,156.2360	-7.4602	2.9545	1,084.7213	1,331.9847	1,089.5813
1	08	9	Black*SAT-W	-8.1516	3.0506	1,240.1560	1,156.2360	1,388.5085	-7.4379	2.9230	1,175.1540	1,089.5813	1,322.0535
2	08	1	HSGPA	0.0000	0.2238	13.4397	13.7045	14.2455	-0.0278	0.0403	4.4140	4.5620	4.8483
2	08	2	SAT-CR	0.0000	13.4397	7,846.9168	4,578.3795	6,279.1796	-8.9417	4.4140	1,709.8544	1,436.1626	1,633.3692
2	08	3	SAT-M	0.0000	13.7045	4,578.3795	7,354.1195	4,918.4344	-9.5456	4.5620	1,436.1626	1,755.7867	1,536.6542
2	08	4	SAT-W	0.0000	14.2455	6,279.1796	4,918.4344	8,356.9021	-9.6314	4.8483	1,633.3692	1,536.6542	1,897.2374
2	08	5	Black	0.0920	-0.0278	-8.9417	-9.5456	-9.6314	0.0836	-0.0253	-8.1189	-8.6672	-8.7451
2	08	6	Black*HSGPA	-0.0278	0.0403	4.4140	4.5620	4.8483	-0.0253	0.0396	4.1650	4.2962	4.5801
2	08	7	Black*SAT-CR	-8.9407	4.4140	1,709.8544	1,436.1626	1,633.3692	-8.1189	4.1650	1,629.9091	1,350.8176	1,547.2574
2	08	8	Black*SAT-M	-9.5446	4.5620	1,436.1626	1,755.7867	1,536.6542	-8.6672	4.2962	1,350.8176	1,664.6774	1,444.7263
2	08	9	Black*SAT-W	-9.6304	4.8483	1,633.3692	1,536.6542	1,897.2374	-8.7451	4.5801	1,547.2574	1,444.7263	1,804.4835
3	08	1	HSGPA	0.0000	0.2710	17.4401	18.8964	18.7566	-0.0355	0.0690	5.9285	6.4742	6.2956
3	08	2	SAT-CR	0.0000	17.4401	8,678.1839	5,700.2196	6,893.6215	-14.3082	5.9285	2,599.0956	2,103.5781	2,196.7916
3	08	3	SAT-M	0.0000	18.8964	5,700.2196	8,716.8923	5,780.0073	-15.1435	6.4742	2,103.5781	2,653.7288	2,088.2993
3	08	4	SAT-W	0.0000	18.7566	6,893.6215	5,780.0073	8,770.7979	-14.5620	6.2956	2,196.7916	2,088.2993	2,471.2267
3	08	5	Black	0.1819	-0.0355	-14.3082	-15.1435	-14.5620	0.1488	-0.0290	-11.7052	-12.3885	-11.9128
3	08	6	Black*HSGPA	-0.0355	0.0690	5.9285	6.4742	6.2956	-0.0290	0.0677	5.4208	5.9369	5.7790
3	08	7	Black*SAT-CR	-14.3074	5.9285	2,599.0956	2,103.5781	2,196.7916	-11.7052	5.4208	2,394.3827	1,886.9149	1,988.4473
3	08	8	Black*SAT-M	-15.1426	6.4742	2,103.5781	2,653.7288	2,088.2993	-12.3885	5.9369	1,886.9149	2,424.4178	1,867.7928
3	08	9	Black*SAT-W	-14.5612	6.2956	2,196.7916	2,088.2993	2,471.2267	-11.9128	5.7790	1,988.4473	1,867.7928	2,259.1867
5	08	1	HSGPA	0.0000	0.4051	24.6109	25.5781	27.6037	-0.0495	0.0803	6.6686	6.6704	6.8601
5	08	2	SAT-CR	0.0000	24.6109	9,271.5944	5,792.2666	7,456.2364	-9.4159	6.6686	1,873.6945	1,433.7428	1,546.7575
5	08	3	SAT-M	0.0000	25.5781	5,792.2666	8,373.2299	5,849.6469	-11.2836	6.6704	1,433.7428	1,856.7463	1,351.8411
5	08	4	SAT-W	0.0000	27.6037	7,456.2364	5,849.6469	8,950.0913	-9.1354	6.8601	1,546.7575	1,351.8411	1,734.7395
5	08	5	Black	0.1491	-0.0495	-9.4159	-11.2836	-9.1354	0.1270	-0.0421	-8.0116	-9.6008	-7.7729
5	08	6	Black*HSGPA	-0.0495	0.0803	6.6686	6.6704	6.8601	-0.0421	0.0778	6.2025	6.1118	6.4079
5	08	7	Black*SAT-CR	-9.4095	6.6686	1,873.6945	1,433.7428	1,546.7575	-8.0116	6.2025	1,785.0953	1,327.5698	1,460.7983
5	08	8	Black*SAT-M	-11.2759	6.6704	1,433.7428	1,856.7463	1,351.8411	-9.6008	6.1118	1,327.5698	1,729.5136	1,248.8316
5	08	9	Black*SAT-W	-9.1291	6.8601	1,546.7575	1,351.8411	1,734.7395	-7.7729	6.4079	1,460.7983	1,248.8316	1,651.3415

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
7	07	1	HSGPA	0.0000	0.2979	13.2861	14.7452	15.1032	-0.0316	0.0610	3.2824	3.4234	3.5409
7	07	2	SAT-CR	0.0000	13.2861	7,253.0526	4,501.4662	5,304.1267	-9.0019	3.2824	1,564.3507	1,203.0666	1,261.0814
7	07	3	SAT-M	0.0000	14.7452	4,501.4662	7,613.2132	4,320.4484	-9.9705	3.4234	1,203.0666	1,616.1905	1,211.4955
7	07	4	SAT-W	0.0000	15.1032	5,304.1267	4,320.4484	6,823.5393	-9.2938	3.5409	1,261.0814	1,211.4955	1,534.8871
7	07	5	Black	0.1545	-0.0316	-9.0019	-9.9705	-9.2938	0.1307	-0.0267	-7.6110	-8.4300	-7.8578
7	07	6	Black*HSGPA	-0.0315	0.0610	3.2824	3.4234	3.5409	-0.0267	0.0600	2.9984	3.1088	3.2477
7	07	7	Black*SAT-CR	-8.9996	3.2824	1,564.3507	1,203.0666	1,261.0814	-7.6110	2.9984	1,483.3372	1,113.3357	1,177.4412
7	07	8	Black*SAT-M	-9.9680	3.4234	1,203.0666	1,616.1905	1,211.4955	-8.4300	3.1088	1,113.3357	1,516.8041	1,118.8552
7	07	9	Black*SAT-W	-9.2914	3.5409	1,261.0814	1,211.4955	1,534.8871	-7.8578	3.2477	1,177.4412	1,118.8552	1,448.5351
9	07	1	HSGPA	0.0000	0.2381	15.6651	17.4860	17.2592	-0.0258	0.0365	3.7509	4.3669	4.1734
9	07	2	SAT-CR	0.0000	15.6651	7,577.0053	4,879.6490	5,854.1313	-6.0774	3.7509	1,206.5645	1,119.8394	1,102.4179
9	07	3	SAT-M	0.0000	17.4860	4,879.6490	8,183.6660	4,945.0957	-7.4670	4.3669	1,119.8394	1,497.8196	1,157.1919
9	07	4	SAT-W	0.0000	17.2592	5,854.1313	4,945.0957	7,613.2686	-6.5900	4.1734	1,102.4179	1,157.1919	1,266.2888
9	07	5	Black	0.0736	-0.0258	-6.0774	-7.4670	-6.5900	0.0682	-0.0239	-5.6300	-6.9173	-6.1048
9	07	6	Black*HSGPA	-0.0258	0.0365	3.7509	4.3669	4.1734	-0.0239	0.0359	3.5941	4.1743	4.0034
9	07	7	Black*SAT-CR	-6.0771	3.7509	1,206.5645	1,119.8394	1,102.4179	-5.6300	3.5941	1,169.6311	1,074.4611	1,062.3695
9	07	8	Black*SAT-M	-7.4667	4.3669	1,119.8394	1,497.8196	1,157.1919	-6.9173	4.1743	1,074.4611	1,442.0656	1,107.9865
9	07	9	Black*SAT-W	-6.5897	4.1734	1,102.4179	1,157.1919	1,266.2888	-6.1048	4.0034	1,062.3695	1,107.9865	1,222.8628
9	08	1	HSGPA	0.0000	0.2263	15.3396	17.3547	17.0926	-0.0296	0.0418	4.1227	4.9477	4.4669
9	08	2	SAT-CR	0.0000	15.3396	7,436.8950	4,865.7449	5,818.4118	-6.8260	4.1227	1,340.6184	1,253.9699	1,211.6596
9	08	3	SAT-M	0.0000	17.3547	4,865.7449	8,103.1719	4,965.6975	-8.5788	4.9477	1,253.9699	1,689.8869	1,298.2706
9	08	4	SAT-W	0.0000	17.0926	5,818.4118	4,965.6975	7,778.3882	-7.4109	4.4669	1,211.6596	1,298.2706	1,400.7907
9	08	5	Black	0.0812	-0.0296	-6.8260	-8.5788	-7.4109	0.0746	-0.0272	-6.2717	-7.8822	-6.8091
9	08	6	Black*HSGPA	-0.0296	0.0418	4.1227	4.9477	4.4669	-0.0272	0.0409	3.9209	4.6941	4.2478
9	08	7	Black*SAT-CR	-6.8256	4.1227	1,340.6184	1,253.9699	1,211.6596	-6.2717	3.9209	1,294.0268	1,195.4143	1,161.0756
9	08	8	Black*SAT-M	-8.5783	4.9477	1,253.9699	1,689.8869	1,298.2706	-7.8822	4.6941	1,195.4143	1,616.2953	1,234.6976
9	08	9	Black*SAT-W	-7.4105	4.4669	1,211.6596	1,298.2706	1,400.7907	-6.8091	4.2478	1,161.0756	1,234.6976	1,345.8725
10	06	1	HSGPA	0.0000	0.1410	9.5995	8.2613	10.0676	-0.0143	0.0152	1.7490	1.7990	1.8775
10	06	2	SAT-CR	0.0000	9.5995	7,013.1134	3,394.3602	5,009.0818	-3.9471	1.7490	822.2199	674.4383	727.8064
10	06	3	SAT-M	0.0000	8.2613	3,394.3602	6,094.6700	3,462.5835	-4.3980	1.7990	674.4383	832.3321	685.3067
10	06	4	SAT-W	0.0000	10.0676	5,009.0818	3,462.5835	6,649.1920	-4.1801	1.8775	727.8064	685.3067	805.0121
10	06	5	Black	0.0480	-0.0143	-3.9471	-4.3980	-4.1801	0.0457	-0.0137	-3.7576	-4.1869	-3.9794
10	06	6	Black*HSGPA	-0.0143	0.0152	1.7490	1.7990	1.8775	-0.0137	0.0150	1.6924	1.7359	1.8175
10	06	7	Black*SAT-CR	-3.9467	1.7490	822.2199	674.4383	727.8064	-3.7576	1.6924	806.6418	657.0805	711.3086
10	06	8	Black*SAT-M	-4.3976	1.7990	674.4383	832.3321	685.3067	-4.1869	1.7359	657.0805	812.9912	666.9240
10	06	9	Black*SAT-W	-4.1797	1.8775	727.8064	685.3067	805.0121	-3.9794	1.8175	711.3086	666.9240	787.5402
10	07	1	HSGPA	0.0000	0.1499	10.1888	9.4493	10.3284	-0.0186	0.0210	2.6092	2.7664	2.6806
10	07	2	SAT-CR	0.0000	10.1888	7,016.6614	3,607.1100	5,005.4215	-4.5586	2.6092	995.2602	853.2451	865.8681
10	07	3	SAT-M	0.0000	9.4493	3,607.1100	6,511.0309	3,675.1403	-5.3355	2.7664	853.2451	1,101.2379	854.0100
10	07	4	SAT-W	0.0000	10.3284	5,005.4215	3,675.1403	6,698.4724	-4.7597	2.6806	865.8681	854.0100	974.8650
10	07	5	Black	0.0577	-0.0186	-4.5586	-5.3355	-4.7597	0.0543	-0.0175	-4.2957	-5.0278	-4.4852
10	07	6	Black*HSGPA	-0.0186	0.0210	2.6092	2.7664	2.6806	-0.0175	0.0206	2.5244	2.6672	2.5921
10	07	7	Black*SAT-CR	-4.5582	2.6092	995.2602	853.2451	865.8681	-4.2957	2.5244	974.4814	828.9253	844.1728
10	07	8	Black*SAT-M	-5.3350	2.7664	853.2451	1,101.2379	854.0100	-5.0278	2.6672	828.9253	1,072.7735	828.6172
10	07	9	Black*SAT-W	-4.7592	2.6806	865.8681	854.0100	974.8650	-4.4852	2.5921	844.1728	828.6172	952.2125

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
10	08	1	HSGPA	0.0000	0.1549	10.7446	10.8448	11.4684	-0.0219	0.0270	3.0469	3.3594	3.2288
10	08	2	SAT-CR	0.0000	10.7446	7,719.0816	4,198.8069	5,701.7784	-6.3555	3.0469	1,377.3720	1,195.5203	1,225.6255
10	08	3	SAT-M	0.0000	10.8448	4,198.8069	7,071.3583	4,235.1262	-7.3279	3.3594	1,195.5203	1,480.5922	1,197.2010
10	08	4	SAT-W	0.0000	11.4684	5,701.7784	4,235.1262	7,488.3790	-6.5783	3.2288	1,225.6255	1,197.2010	1,364.5060
10	08	5	Black	0.0732	-0.0219	-6.3555	-7.3279	-6.5783	0.0679	-0.0203	-5.8901	-6.7913	-6.0966
10	08	6	Black*HSGPA	-0.0219	0.0270	3.0469	3.3594	3.2288	-0.0203	0.0266	2.9075	3.1987	3.0845
10	08	7	Black*SAT-CR	-6.3548	3.0469	1,377.3720	1,195.5203	1,225.6255	-5.8901	2.9075	1,336.9839	1,148.9531	1,183.8221
10	08	8	Black*SAT-M	-7.3270	3.3594	1,195.5203	1,480.5922	1,197.2010	-6.7913	3.1987	1,148.9531	1,426.9004	1,149.0019
10	08	9	Black*SAT-W	-6.5775	3.2288	1,225.6255	1,197.2010	1,364.5060	-6.0966	3.0845	1,183.8221	1,149.0019	1,321.2377
11	06	1	HSGPA	0.0000	0.3362	18.4688	20.2511	19.0392	-0.0322	0.0507	3.4225	4.0838	3.9318
11	06	2	SAT-CR	0.0000	18.4688	8,767.1058	5,479.5336	6,578.3071	-5.4927	3.4225	1,251.9723	1,098.4999	1,088.0122
11	06	3	SAT-M	0.0000	20.2511	5,479.5336	8,733.3090	5,259.4889	-7.5946	4.0838	1,098.4999	1,655.4421	1,106.7058
11	06	4	SAT-W	0.0000	19.0392	6,578.3071	5,259.4889	8,073.7357	-6.5152	3.9318	1,088.0122	1,106.7058	1,294.4946
11	06	5	Black	0.1029	-0.0322	-5.4927	-7.5946	-6.5152	0.0923	-0.0289	-4.9276	-6.8133	-5.8450
11	06	6	Black*HSGPA	-0.0322	0.0507	3.4225	4.0838	3.9318	-0.0289	0.0496	3.2456	3.8392	3.7219
11	06	7	Black*SAT-CR	-5.4907	3.4225	1,251.9723	1,098.4999	1,088.0122	-4.9276	3.2456	1,221.8139	1,056.8006	1,052.2391
11	06	8	Black*SAT-M	-7.5918	4.0838	1,098.4999	1,655.4421	1,106.7058	-6.8133	3.8392	1,056.8006	1,597.7854	1,057.2432
11	06	9	Black*SAT-W	-6.5129	3.9318	1,088.0122	1,106.7058	1,294.4946	-5.8450	3.7219	1,052.2391	1,057.2432	1,252.0616
11	07	1	HSGPA	0.0000	0.3223	19.5903	19.4003	20.0165	-0.0278	0.0501	4.0954	3.8045	3.8036
11	07	2	SAT-CR	0.0000	19.5903	8,475.3477	5,303.3871	6,312.4631	-6.2626	4.0954	1,294.3125	1,033.4290	1,040.6399
11	07	3	SAT-M	0.0000	19.4003	5,303.3871	8,635.0071	5,085.7633	-7.3983	3.8045	1,033.4290	1,487.3773	979.9182
11	07	4	SAT-W	0.0000	20.0165	6,312.4631	5,085.7633	7,814.7000	-6.4601	3.8036	1,040.6399	979.9182	1,182.8121
11	07	5	Black	0.1094	-0.0278	-6.2626	-7.3983	-6.4601	0.0975	-0.0248	-5.5775	-6.5889	-5.7534
11	07	6	Black*HSGPA	-0.0278	0.0501	4.0954	3.8045	3.8036	-0.0248	0.0493	3.9213	3.5988	3.6241
11	07	7	Black*SAT-CR	-6.2603	4.0954	1,294.3125	1,033.4290	1,040.6399	-5.5775	3.9213	1,255.1063	987.1132	1,000.1972
11	07	8	Black*SAT-M	-7.3956	3.8045	1,033.4290	1,487.3773	979.9182	-6.5889	3.5988	987.1132	1,432.6627	932.1417
11	07	9	Black*SAT-W	-6.4578	3.8036	1,040.6399	979.9182	1,182.8121	-5.7534	3.6241	1,000.1972	932.1417	1,141.0939
11	08	1	HSGPA	0.0000	0.3329	18.6090	20.8928	20.7424	-0.0415	0.0587	4.6980	5.0839	4.6783
11	08	2	SAT-CR	0.0000	18.6090	8,387.3590	5,504.3706	6,382.8853	-7.6185	4.6980	1,572.8621	1,306.6892	1,360.3437
11	08	3	SAT-M	0.0000	20.8928	5,504.3706	8,883.2421	5,517.6779	-9.3331	5.0839	1,306.6892	1,875.0578	1,286.3730
11	08	4	SAT-W	0.0000	20.7424	6,382.8853	5,517.6779	8,096.4182	-8.0301	4.6783	1,360.3437	1,286.3730	1,606.6807
11	08	5	Black	0.1295	-0.0415	-7.6185	-9.3331	-8.0301	0.1128	-0.0362	-6.6317	-8.1242	-6.9900
11	08	6	Black*HSGPA	-0.0415	0.0587	4.6980	5.0839	4.6783	-0.0362	0.0569	4.3816	4.6962	4.3447
11	08	7	Black*SAT-CR	-7.6158	4.6980	1,572.8621	1,306.6892	1,360.3437	-6.6317	4.3816	1,514.8411	1,235.6103	1,299.1883
11	08	8	Black*SAT-M	-9.3298	5.0839	1,306.6892	1,875.0578	1,286.3730	-8.1242	4.6962	1,235.6103	1,787.9821	1,211.4541
11	08	9	Black*SAT-W	-8.0273	4.6783	1,360.3437	1,286.3730	1,606.6807	-6.9900	4.3447	1,299.1883	1,211.4541	1,542.2214
12	07	1	HSGPA	0.0000	0.4290	24.1690	24.8496	24.6144	-0.0198	0.0347	2.9714	2.7959	2.7239
12	07	2	SAT-CR	0.0000	24.1690	8,682.8405	5,317.0664	6,138.2072	-5.1409	2.9714	1,053.3271	772.3731	679.8123
12	07	3	SAT-M	0.0000	24.8496	5,317.0664	8,319.3892	4,618.5007	-4.5412	2.7959	772.3731	838.8680	526.4638
12	07	4	SAT-W	0.0000	24.6144	6,138.2072	4,618.5007	7,152.2672	-3.9742	2.7239	679.8123	526.4638	585.5982
12	07	5	Black	0.0663	-0.0198	-5.1409	-4.5412	-3.9742	0.0620	-0.0185	-4.8001	-4.2402	-3.7108
12	07	6	Black*HSGPA	-0.0198	0.0347	2.9714	2.7959	2.7239	-0.0185	0.0343	2.8694	2.7058	2.6451
12	07	7	Black*SAT-CR	-5.1349	2.9714	1,053.3271	772.3731	679.8123	-4.8001	2.8694	1,026.9294	749.0546	659.4055
12	07	8	Black*SAT-M	-4.5359	2.7959	772.3731	838.8680	526.4638	-4.2402	2.7058	749.0546	818.2696	508.4373
12	07	9	Black*SAT-W	-3.9695	2.7239	679.8123	526.4638	585.5982	-3.7108	2.6451	659.4055	508.4373	569.8227

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
12	08	1	HSGPA	0.0000	0.3971	20.9374	22.7785	23.9877	-0.0240	0.0382	3.0177	2.7900	3.0481
12	08	2	SAT-CR	0.0000	20.9374	8,020.0569	4,880.3575	5,745.0833	-6.8318	3.0177	1,072.3414	866.3158	779.9031
12	08	3	SAT-M	0.0000	22.7785	4,880.3575	7,784.2346	4,589.4865	-6.5277	2.7900	866.3158	1,052.7923	717.4415
12	08	4	SAT-W	0.0000	23.9877	5,745.0833	4,589.4865	7,366.3474	-5.5776	3.0481	779.9031	717.4415	821.3273
12	08	5	Black	0.0889	-0.0240	-6.8318	-6.5277	-5.5776	0.0811	-0.0219	-6.2242	-5.9472	-5.0816
12	08	6	Black*HSGPA	-0.0240	0.0382	3.0177	2.7900	3.0481	-0.0219	0.0377	2.8540	2.6336	2.9145
12	08	7	Black*SAT-CR	-6.8248	3.0177	1,072.3414	866.3158	779.9031	-6.2242	2.8540	1,025.7156	821.7655	741.8370
12	08	8	Black*SAT-M	-6.5210	2.7900	866.3158	1,052.7923	717.4415	-5.9472	2.6336	821.7655	1,010.2252	681.0699
12	08	9	Black*SAT-W	-5.5719	3.0481	779.9031	717.4415	821.3273	-5.0816	2.9145	741.8370	681.0699	790.2494
13	06	1	HSGPA	0.0000	0.3058	16.5338	19.5050	18.6383	-0.0342	0.0521	4.0344	4.8031	4.3423
13	06	2	SAT-CR	0.0000	16.5338	7,328.9725	4,896.5290	5,490.3832	-8.4608	4.0344	1,405.4257	1,346.2418	1,239.5539
13	06	3	SAT-M	0.0000	19.5050	4,896.5290	8,526.9674	4,894.8835	-10.6380	4.8031	1,346.2418	1,964.3373	1,383.8731
13	06	4	SAT-W	0.0000	18.6383	5,490.3832	4,894.8835	7,289.4361	-9.1274	4.3423	1,239.5539	1,383.8731	1,456.0370
13	06	5	Black	0.1074	-0.0342	-8.4608	-10.6380	-9.1274	0.0959	-0.0306	-7.5520	-9.4953	-8.1469
13	06	6	Black*HSGPA	-0.0342	0.0521	4.0344	4.8031	4.3423	-0.0306	0.0509	3.7447	4.4388	4.0297
13	06	7	Black*SAT-CR	-8.4599	4.0344	1,405.4257	1,346.2418	1,239.5539	-7.5520	3.7447	1,333.8477	1,256.2453	1,162.3369
13	06	8	Black*SAT-M	-10.6368	4.8031	1,346.2418	1,964.3373	1,383.8731	-9.4953	4.4388	1,256.2453	1,851.1826	1,286.7864
13	06	9	Black*SAT-W	-9.1264	4.3423	1,239.5539	1,383.8731	1,456.0370	-8.1469	4.0297	1,162.3369	1,286.7864	1,372.7367
14	06	1	HSGPA	0.0000	0.2537	17.9417	19.4717	18.8622	-0.0418	0.0623	6.4465	7.0250	6.9227
14	06	2	SAT-CR	0.0000	17.9417	8,257.2493	5,128.5564	6,389.4901	-10.2593	6.4465	2,151.0178	1,828.2593	1,951.1005
14	06	3	SAT-M	0.0000	19.4717	5,128.5564	8,259.1325	5,229.8627	-12.1232	7.0250	1,828.2593	2,413.8008	1,908.6808
14	06	4	SAT-W	0.0000	18.8622	6,389.4901	5,229.8627	8,328.0549	-11.3435	6.9227	1,951.1005	1,908.6808	2,283.7085
14	06	5	Black	0.1402	-0.0418	-10.2593	-12.1232	-11.3435	0.1206	-0.0359	-8.8210	-10.4235	-9.7532
14	06	6	Black*HSGPA	-0.0418	0.0623	6.4465	7.0250	6.9227	-0.0359	0.0605	6.0182	6.5188	6.4490
14	06	7	Black*SAT-CR	-10.2583	6.4465	2,151.0178	1,828.2593	1,951.1005	-8.8210	6.0182	2,045.7743	1,703.8958	1,834.7348
14	06	8	Black*SAT-M	-12.1220	7.0250	1,828.2593	2,413.8008	1,908.6808	-10.4235	6.5188	1,703.8958	2,266.8436	1,771.1744
14	06	9	Black*SAT-W	-11.3424	6.9227	1,951.1005	1,908.6808	2,283.7085	-9.7532	6.4490	1,834.7348	1,771.1744	2,155.0451
14	07	1	HSGPA	0.0000	0.2421	16.4007	17.5522	17.7510	-0.0390	0.0588	5.7547	6.1554	6.0151
14	07	2	SAT-CR	0.0000	16.4007	8,034.2239	4,836.3440	6,164.7335	-9.3424	5.7547	1,975.8147	1,609.7062	1,770.6644
14	07	3	SAT-M	0.0000	17.5522	4,836.3440	7,867.9689	4,886.9590	-11.0623	6.1554	1,609.7062	2,097.7168	1,688.4068
14	07	4	SAT-W	0.0000	17.7510	6,164.7335	4,886.9590	7,944.8270	-10.1389	6.0151	1,770.6644	1,688.4068	2,086.2670
14	07	5	Black	0.1379	-0.0390	-9.3424	-11.0623	-10.1389	0.1189	-0.0336	-8.0541	-9.5367	-8.7407
14	07	6	Black*HSGPA	-0.0390	0.0588	5.7547	6.1554	6.0151	-0.0336	0.0573	5.3902	5.7238	5.6195
14	07	7	Black*SAT-CR	-9.3417	5.7547	1,975.8147	1,609.7062	1,770.6644	-8.0541	5.3902	1,888.5408	1,506.3659	1,675.9497
14	07	8	Black*SAT-M	-11.0614	6.1554	1,609.7062	2,097.7168	1,688.4068	-9.5367	5.7238	1,506.3659	1,975.3526	1,576.2562
14	07	9	Black*SAT-W	-10.1381	6.0151	1,770.6644	1,688.4068	2,086.2670	-8.7407	5.6195	1,675.9497	1,576.2562	1,983.4773
14	08	1	HSGPA	0.0000	0.2412	16.6883	17.5158	18.7801	-0.0452	0.0670	6.4839	7.0024	7.0905
14	08	2	SAT-CR	0.0000	16.6883	8,518.7848	5,238.6410	6,708.0257	-12.4218	6.4839	2,494.4311	2,084.9256	2,231.0822
14	08	3	SAT-M	0.0000	17.5158	5,238.6410	8,247.6881	5,397.6660	-13.8886	7.0024	2,084.9256	2,667.0786	2,145.3122
14	08	4	SAT-W	0.0000	18.7801	6,708.0257	5,397.6660	8,656.1163	-13.4191	7.0905	2,231.0822	2,145.3122	2,573.5543
14	08	5	Black	0.1669	-0.0452	-12.4218	-13.8886	-13.4191	0.1391	-0.0376	-10.3484	-11.5704	-11.1793
14	08	6	Black*HSGPA	-0.0452	0.0670	6.4839	7.0024	7.0905	-0.0376	0.0650	5.9229	6.3752	6.4845
14	08	7	Black*SAT-CR	-12.4207	6.4839	2,494.4311	2,084.9256	2,231.0822	-10.3484	5.9229	2,340.1444	1,912.4200	2,064.4083
14	08	8	Black*SAT-M	-13.8874	7.0024	2,084.9256	2,667.0786	2,145.3122	-11.5704	6.3752	1,912.4200	2,474.2028	1,958.9568
14	08	9	Black*SAT-W	-13.4179	7.0905	2,231.0822	2,145.3122	2,573.5543	-11.1793	6.4845	2,064.4083	1,958.9568	2,393.4988

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
15	06	1	HSGPA	0.0000	0.2946	22.3157	22.1683	23.1707	-0.0425	0.0727	7.5259	7.5182	7.4691
15	06	2	SAT-CR	0.0000	22.3157	10,793.1156	7,018.9988	8,460.9427	-13.4378	7.5259	2,948.9366	2,372.1881	2,481.0951
15	06	3	SAT-M	0.0000	22.1683	7,018.9988	9,620.2140	6,682.3310	-13.9229	7.5182	2,372.1881	2,762.2330	2,284.7960
15	06	4	SAT-W	0.0000	23.1707	8,460.9427	6,682.3310	10,067.4658	-13.4436	7.4691	2,481.0951	2,284.7960	2,582.9667
15	06	5	Black	0.1448	-0.0425	-13.4378	-13.9229	-13.4436	0.1239	-0.0364	-11.4919	-11.9068	-11.4969
15	06	6	Black*HSGPA	-0.0425	0.0727	7.5259	7.5182	7.4691	-0.0364	0.0709	6.9548	6.9265	6.8978
15	06	7	Black*SAT-CR	-13.4324	7.5259	2,948.9366	2,372.1881	2,481.0951	-11.4919	6.9548	2,768.4357	2,185.1701	2,300.5161
15	06	8	Black*SAT-M	-13.9173	7.5182	2,372.1881	2,762.2330	2,284.7960	-11.9068	6.9265	2,185.1701	2,568.4628	2,097.6972
15	06	9	Black*SAT-W	-13.4382	7.4691	2,481.0951	2,284.7960	2,582.9667	-11.4969	6.8978	2,300.5161	2,097.6972	2,402.3096
15	07	1	HSGPA	0.0000	0.2999	19.9580	21.0186	21.5523	-0.0417	0.0805	7.1963	7.3408	7.5356
15	07	2	SAT-CR	0.0000	19.9580	10,698.4776	6,997.2590	8,475.7639	-14.4371	7.1963	3,047.1282	2,444.3839	2,709.8212
15	07	3	SAT-M	0.0000	21.0186	6,997.2590	9,778.2613	6,815.9666	-13.8691	7.3408	2,444.3839	2,816.2883	2,426.6698
15	07	4	SAT-W	0.0000	21.5523	8,475.7639	6,815.9666	10,064.7819	-14.7336	7.5356	2,709.8212	2,426.6698	2,971.4748
15	07	5	Black	0.1678	-0.0417	-14.4371	-13.8691	-14.7336	0.1397	-0.0347	-12.0143	-11.5416	-12.2610
15	07	6	Black*HSGPA	-0.0417	0.0805	7.1963	7.3408	7.5356	-0.0347	0.0788	6.5945	6.7627	6.9214
15	07	7	Black*SAT-CR	-14.4313	7.1963	3,047.1282	2,444.3839	2,709.8212	-12.0143	6.5945	2,838.7820	2,244.2350	2,497.1966
15	07	8	Black*SAT-M	-13.8635	7.3408	2,444.3839	2,816.2883	2,426.6698	-11.5416	6.7627	2,244.2350	2,624.0141	2,222.4107
15	07	9	Black*SAT-W	-14.7276	7.5356	2,709.8212	2,426.6698	2,971.4748	-12.2610	6.9214	2,497.1966	2,222.4107	2,754.4838
15	08	1	HSGPA	0.0000	0.2977	20.8011	22.9006	23.4223	-0.0478	0.0902	8.0768	8.5471	8.9346
15	08	2	SAT-CR	0.0000	20.8011	10,915.0471	7,411.5323	9,077.0885	-17.2653	8.0768	3,493.9728	2,842.3803	3,216.2182
15	08	3	SAT-M	0.0000	22.9006	7,411.5323	10,326.2084	7,578.1462	-17.9934	8.5471	2,842.3803	3,550.8918	3,023.5095
15	08	4	SAT-W	0.0000	23.4223	9,077.0885	7,578.1462	11,078.9454	-17.9718	8.9346	3,216.2182	3,023.5095	3,709.6394
15	08	5	Black	0.2071	-0.0478	-17.2653	-17.9934	-17.9718	0.1643	-0.0379	-13.6900	-14.2672	-14.2502
15	08	6	Black*HSGPA	-0.0478	0.0902	8.0768	8.5471	8.9346	-0.0379	0.0879	7.2512	7.6867	8.0752
15	08	7	Black*SAT-CR	-17.2581	8.0768	3,493.9728	2,842.3803	3,216.2182	-13.6900	7.2512	3,196.0058	2,531.8484	2,906.0581
15	08	8	Black*SAT-M	-17.9859	8.5471	2,842.3803	3,550.8918	3,023.5095	-14.2672	7.6867	2,531.8484	3,227.2652	2,700.2703
15	08	9	Black*SAT-W	-17.9643	8.9346	3,216.2182	3,023.5095	3,709.6394	-14.2502	8.0752	2,906.0581	2,700.2703	3,386.7872
16	07	1	HSGPA	0.0000	0.4613	24.9381	33.2575	31.4254	-0.1161	0.2552	12.7211	16.5390	15.4607
16	07	2	SAT-CR	0.0000	24.9381	8,165.2743	5,960.8025	6,816.9781	-15.2771	12.7211	3,959.0060	2,892.0963	3,320.3485
16	07	3	SAT-M	0.0000	33.2575	5,960.8025	10,046.0047	6,698.0729	-22.9473	16.5390	2,892.0963	4,884.9059	3,237.4368
16	07	4	SAT-W	0.0000	31.4254	6,816.9781	6,698.0729	9,189.7104	-19.3105	15.4607	3,320.3485	3,237.4368	4,494.9290
16	07	5	Black	0.5199	-0.1161	-15.2771	-22.9473	-19.3105	0.2498	-0.0557	-7.3348	-11.0174	-9.2713
16	07	6	Black*HSGPA	-0.1160	0.2552	12.7211	16.5390	15.4607	-0.0557	0.2418	10.9491	13.8773	13.2209
16	07	7	Black*SAT-CR	-15.2660	12.7211	3,959.0060	2,892.0963	3,320.3485	-7.3348	10.9491	3,725.7855	2,541.7822	3,025.5531
16	07	8	Black*SAT-M	-22.9307	16.5390	2,892.0963	4,884.9059	3,237.4368	-11.0174	13.8773	2,541.7822	4,358.7086	2,794.6327
16	07	9	Black*SAT-W	-19.2966	15.4607	3,320.3485	3,237.4368	4,494.9290	-9.2713	13.2209	3,025.5531	2,794.6327	4,122.3017
16	08	1	HSGPA	0.0000	0.4539	24.1864	34.0685	30.2557	-0.1247	0.2728	10.9022	16.2773	13.4346
16	08	2	SAT-CR	0.0000	24.1864	8,079.3201	6,236.5458	6,699.0705	-15.8398	10.9022	4,312.9515	3,237.5361	3,306.2997
16	08	3	SAT-M	0.0000	34.0685	6,236.5458	10,479.5066	6,806.1484	-23.7052	16.2773	3,237.5361	5,579.3006	3,344.9257
16	08	4	SAT-W	0.0000	30.2557	6,699.0705	6,806.1484	8,871.5539	-19.4633	13.4346	3,306.2997	3,344.9257	4,388.0078
16	08	5	Black	0.5997	-0.1247	-15.8398	-23.7052	-19.4633	0.2402	-0.0499	-6.3402	-9.4885	-7.7906
16	08	6	Black*HSGPA	-0.1247	0.2728	10.9022	16.2773	13.4346	-0.0499	0.2573	8.9276	13.3222	11.0083
16	08	7	Black*SAT-CR	-15.8291	10.9022	4,312.9515	3,237.5361	3,306.2997	-6.3402	8.9276	4,062.2222	2,862.3052	2,998.2139
16	08	8	Black*SAT-M	-23.6891	16.2773	3,237.5361	5,579.3006	3,344.9257	-9.4885	13.3222	2,862.3052	5,017.7457	2,883.8574
16	08	9	Black*SAT-W	-19.4501	13.4346	3,306.2997	3,344.9257	4,388.0078	-7.7906	11.0083	2,998.2139	2,883.8574	4,009.4447

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
17	06	1	HSGPA	0.0000	0.2846	11.3542	14.3578	12.3937	-0.0155	0.0310	1.4153	1.7831	1.2291
17	06	2	SAT-CR	0.0000	11.3542	6,060.5468	3,339.2983	4,133.5076	-2.5423	1.4153	714.1184	484.9114	593.3197
17	06	3	SAT-M	0.0000	14.3578	3,339.2983	6,341.9241	2,964.4056	-2.8018	1.7831	484.9114	617.6073	481.5801
17	06	4	SAT-W	0.0000	12.3937	4,133.5076	2,964.4056	5,596.3666	-3.7587	1.2291	593.3197	481.5801	711.8272
17	06	5	Black	0.0721	-0.0155	-2.5423	-2.8018	-3.7587	0.0669	-0.0144	-2.3591	-2.6000	-3.4879
17	06	6	Black*HSGPA	-0.0155	0.0310	1.4153	1.7831	1.2291	-0.0144	0.0307	1.3760	1.7398	1.1710
17	06	7	Black*SAT-CR	-2.5395	1.4153	714.1184	484.9114	593.3197	-2.3591	1.3760	707.6623	477.7962	583.7745
17	06	8	Black*SAT-M	-2.7988	1.7831	484.9114	617.6073	481.5801	-2.6000	1.7398	477.7962	609.7655	471.0604
17	06	9	Black*SAT-W	-3.7546	1.2291	593.3197	481.5801	711.8272	-3.4879	1.1710	583.7745	471.0604	697.7149
17	08	1	HSGPA	0.0000	0.3087	16.1216	17.1792	17.2994	-0.0204	0.0415	2.1165	2.1453	2.5463
17	08	2	SAT-CR	0.0000	16.1216	6,179.6384	3,905.2189	4,592.7158	-3.6504	2.1165	718.3425	562.6841	559.0486
17	08	3	SAT-M	0.0000	17.1792	3,905.2189	7,337.5843	3,769.5740	-4.7300	2.1453	562.6841	839.5072	480.9405
17	08	4	SAT-W	0.0000	17.2994	4,592.7158	3,769.5740	6,205.8917	-3.5857	2.5463	559.0486	480.9405	628.7627
17	08	5	Black	0.0787	-0.0204	-3.6504	-4.7300	-3.5857	0.0726	-0.0188	-3.3631	-4.3577	-3.3035
17	08	6	Black*HSGPA	-0.0204	0.0415	2.1165	2.1453	2.5463	-0.0188	0.0411	2.0422	2.0491	2.4734
17	08	7	Black*SAT-CR	-3.6479	2.1165	718.3425	562.6841	559.0486	-3.3631	2.0422	705.0265	545.4297	545.9683
17	08	8	Black*SAT-M	-4.7268	2.1453	562.6841	839.5072	480.9405	-4.3577	2.0491	545.4297	817.1497	463.9917
17	08	9	Black*SAT-W	-3.5833	2.5463	559.0486	480.9405	628.7627	-3.3035	2.4734	545.9683	463.9917	615.9141
18	07	1	HSGPA	0.0000	0.3420	16.0725	17.0108	14.9141	-0.0158	0.0375	1.7192	1.4620	1.7579
18	07	2	SAT-CR	0.0000	16.0725	6,996.4449	4,493.9103	5,250.5903	-6.1486	1.7192	1,006.5297	817.9360	923.4974
18	07	3	SAT-M	0.0000	17.0108	4,493.9103	7,054.8812	4,278.1607	-6.8203	1.4620	817.9360	1,106.6216	793.7740
18	07	4	SAT-W	0.0000	14.9141	5,250.5903	4,278.1607	7,025.5705	-7.3525	1.7579	923.4974	793.7740	1,283.7370
18	07	5	Black	0.1133	-0.0158	-6.1486	-6.8203	-7.3525	0.1006	-0.0140	-5.4518	-6.0473	-6.5193
18	07	6	Black*HSGPA	-0.0158	0.0375	1.7192	1.4620	1.7579	-0.0140	0.0373	1.6221	1.3543	1.6418
18	07	7	Black*SAT-CR	-6.1418	1.7192	1,006.5297	817.9360	923.4974	-5.4518	1.6221	968.7663	776.0471	878.3398
18	07	8	Black*SAT-M	-6.8127	1.4620	817.9360	1,106.6216	793.7740	-6.0473	1.3543	776.0471	1,060.1565	743.6830
18	07	9	Black*SAT-W	-7.3444	1.7579	923.4974	793.7740	1,283.7370	-6.5193	1.6418	878.3398	743.6830	1,229.7373
18	08	1	HSGPA	0.0000	0.3294	13.6956	15.3336	16.8107	-0.0371	0.0578	3.3035	3.5075	4.2209
18	08	2	SAT-CR	0.0000	13.6956	6,490.1337	4,189.9142	4,768.0035	-6.3559	3.3035	1,102.8480	801.2138	877.8704
18	08	3	SAT-M	0.0000	15.3336	4,189.9142	7,864.9493	4,309.0849	-6.6219	3.5075	801.2138	1,202.7555	802.8449
18	08	4	SAT-W	0.0000	16.8107	4,768.0035	4,309.0849	6,487.8375	-7.0357	4.2209	877.8704	802.8449	1,061.0609
18	08	5	Black	0.1250	-0.0371	-6.3559	-6.6219	-7.0357	0.1095	-0.0324	-5.5614	-5.7942	-6.1563
18	08	6	Black*HSGPA	-0.0370	0.0578	3.3035	3.5075	4.2209	-0.0324	0.0565	3.0681	3.2622	3.9603
18	08	7	Black*SAT-CR	-6.3497	3.3035	1,102.8480	801.2138	877.8704	-5.5614	3.0681	1,062.4902	759.1669	833.1961
18	08	8	Black*SAT-M	-6.6154	3.5075	801.2138	1,202.7555	802.8449	-5.7942	3.2622	759.1669	1,158.9488	756.3008
18	08	9	Black*SAT-W	-7.0288	4.2209	877.8704	802.8449	1,061.0609	-6.1563	3.9603	833.1961	756.3008	1,011.6083
19	06	1	HSGPA	0.0000	0.3267	16.8429	21.6499	18.3583	-0.0281	0.0523	3.5271	4.4836	3.9066
19	06	2	SAT-CR	0.0000	16.8429	7,281.1456	5,034.3472	5,307.9751	-8.2051	3.5271	1,539.8869	1,359.1343	1,241.1249
19	06	3	SAT-M	0.0000	21.6499	5,034.3472	9,373.1508	4,837.7692	-10.7144	4.4836	1,359.1343	2,004.4643	1,281.4279
19	06	4	SAT-W	0.0000	18.3583	5,307.9751	4,837.7692	6,941.0874	-8.2736	3.9066	1,241.1249	1,281.4279	1,424.7650
19	06	5	Black	0.1389	-0.0281	-8.2051	-10.7144	-8.2736	0.1196	-0.0242	-7.0657	-9.2266	-7.1248
19	06	6	Black*HSGPA	-0.0281	0.0523	3.5271	4.4836	3.9066	-0.0242	0.0515	3.2967	4.1827	3.6742
19	06	7	Black*SAT-CR	-8.2009	3.5271	1,539.8869	1,359.1343	1,241.1249	-7.0657	3.2967	1,472.5973	1,271.2658	1,173.2733
19	06	8	Black*SAT-M	-10.7090	4.4836	1,359.1343	2,004.4643	1,281.4279	-9.2266	4.1827	1,271.2658	1,889.7236	1,192.8256
19	06	9	Black*SAT-W	-8.2694	3.9066	1,241.1249	1,281.4279	1,424.7650	-7.1248	3.6742	1,173.2733	1,192.8256	1,356.3467

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
19	07	1	HSGPA	0.0000	0.3428	19.2146	22.8726	19.6352	-0.0320	0.0649	3.7594	4.7432	4.5663
19	07	2	SAT-CR	0.0000	19.2146	7,587.2764	5,213.9315	5,692.9575	-8.5705	3.7594	1,596.9151	1,375.6007	1,374.7466
19	07	3	SAT-M	0.0000	22.8726	5,213.9315	9,036.1311	5,128.0010	-10.6345	4.7432	1,375.6007	1,969.1994	1,415.5907
19	07	4	SAT-W	0.0000	19.6352	5,692.9575	5,128.0010	7,273.4537	-9.0979	4.5663	1,374.7466	1,415.5907	1,671.8603
19	07	5	Black	0.1452	-0.0320	-8.5705	-10.6345	-9.0979	0.1242	-0.0273	-7.3258	-9.0900	-7.7766
19	07	6	Black*HSGPA	-0.0320	0.0649	3.7594	4.7432	4.5663	-0.0273	0.0639	3.4854	4.4032	4.2754
19	07	7	Black*SAT-CR	-8.5665	3.7594	1,596.9151	1,375.6007	1,374.7466	-7.3258	3.4854	1,523.4959	1,284.5007	1,296.8096
19	07	8	Black*SAT-M	-10.6294	4.7432	1,375.6007	1,969.1994	1,415.5907	-9.0900	4.4032	1,284.5007	1,856.1607	1,318.8850
19	07	9	Black*SAT-W	-9.0936	4.5663	1,374.7466	1,415.5907	1,671.8603	-7.7766	4.2754	1,296.8096	1,318.8850	1,589.1277
19	08	1	HSGPA	0.0000	0.3431	18.8043	22.9473	21.0739	-0.0450	0.0839	4.9413	5.9654	5.4134
19	08	2	SAT-CR	0.0000	18.8043	7,881.3792	5,613.7007	5,919.5152	-11.8827	4.9413	2,175.8229	1,832.1952	1,730.5679
19	08	3	SAT-M	0.0000	22.9473	5,613.7007	9,418.5121	5,353.4813	-14.4766	5.9654	1,832.1952	2,638.7077	1,717.6486
19	08	4	SAT-W	0.0000	21.0739	5,919.5152	5,353.4813	7,487.5664	-11.3687	5.4134	1,730.5679	1,717.6486	1,935.9516
19	08	5	Black	0.1796	-0.0450	-11.8827	-14.4766	-11.3687	0.1474	-0.0369	-9.7490	-11.8771	-9.3273
19	08	6	Black*HSGPA	-0.0450	0.0839	4.9413	5.9654	5.4134	-0.0369	0.0819	4.4066	5.3139	4.9018
19	08	7	Black*SAT-CR	-11.8791	4.9413	2,175.8229	1,832.1952	1,730.5679	-9.7490	4.4066	2,034.6672	1,660.2266	1,595.5182
19	08	8	Black*SAT-M	-14.4721	5.9654	1,832.1952	2,638.7077	1,717.6486	-11.8771	5.3139	1,660.2266	2,429.1999	1,553.1189
19	08	9	Black*SAT-W	-11.3652	5.4134	1,730.5679	1,717.6486	1,935.9516	-9.3273	4.9018	1,595.5182	1,553.1189	1,806.7439
20	08	1	HSGPA	0.0000	0.2126	18.1617	19.2891	18.8384	-0.0435	0.0552	7.6965	8.6552	7.7378
20	08	2	SAT-CR	0.0000	18.1617	9,797.4574	6,585.3315	7,969.2087	-11.0321	7.6965	2,445.1462	2,354.0128	2,229.2297
20	08	3	SAT-M	0.0000	19.2891	6,585.3315	9,569.5759	6,627.3560	-12.4771	8.6552	2,354.0128	2,852.0682	2,317.9845
20	08	4	SAT-W	0.0000	18.8384	7,969.2087	6,627.3560	10,099.6500	-10.8239	7.7378	2,229.2297	2,317.9845	2,369.7635
20	08	5	Black	0.0952	-0.0435	-11.0321	-12.4771	-10.8239	0.0862	-0.0394	-9.9814	-11.2888	-9.7930
20	08	6	Black*HSGPA	-0.0435	0.0552	7.6965	8.6552	7.7378	-0.0394	0.0533	7.2166	8.1124	7.2669
20	08	7	Black*SAT-CR	-11.0297	7.6965	2,445.1462	2,354.0128	2,229.2297	-9.9814	7.2166	2,323.4647	2,216.3935	2,109.8449
20	08	8	Black*SAT-M	-12.4744	8.6552	2,354.0128	2,852.0682	2,317.9845	-11.2888	8.1124	2,216.3935	2,696.4234	2,182.9627
20	08	9	Black*SAT-W	-10.8216	7.7378	2,229.2297	2,317.9845	2,369.7635	-9.7930	7.2669	2,109.8449	2,182.9627	2,252.6321
22	06	1	HSGPA	0.0000	0.1819	14.8587	15.2461	16.1770	-0.0148	0.0206	2.6988	2.9568	2.7537
22	06	2	SAT-CR	0.0000	14.8587	8,200.0541	4,931.6934	6,470.2792	-3.6551	2.6988	812.1746	757.0338	726.7356
22	06	3	SAT-M	0.0000	15.2461	4,931.6934	7,842.2704	4,945.7859	-4.5147	2.9568	757.0338	1,002.7232	745.9584
22	06	4	SAT-W	0.0000	16.1770	6,470.2792	4,945.7859	8,406.9804	-3.4856	2.7537	726.7356	745.9584	793.3146
22	06	5	Black	0.0442	-0.0148	-3.6551	-4.5147	-3.4856	0.0422	-0.0142	-3.4937	-4.3152	-3.3316
22	06	6	Black*HSGPA	-0.0148	0.0206	2.6988	2.9568	2.7537	-0.0142	0.0204	2.6447	2.8900	2.7021
22	06	7	Black*SAT-CR	-3.6548	2.6988	812.1746	757.0338	726.7356	-3.4937	2.6447	798.8157	740.5335	713.9965
22	06	8	Black*SAT-M	-4.5143	2.9568	757.0338	1,002.7232	745.9584	-4.3152	2.8900	740.5335	982.3427	730.2236
22	06	9	Black*SAT-W	-3.4852	2.7537	726.7356	745.9584	793.3146	-3.3316	2.7021	713.9965	730.2236	781.1666
26	06	1	HSGPA	0.0000	0.2469	18.1779	20.4660	19.1550	-0.0401	0.0553	6.2454	6.6668	6.0878
26	06	2	SAT-CR	0.0000	18.1779	9,939.8314	7,013.2966	7,692.5676	-12.2993	6.2454	2,467.8502	2,185.9071	2,048.8295
26	06	3	SAT-M	0.0000	20.4660	7,013.2966	10,259.3657	6,659.0330	-13.8609	6.6668	2,185.9071	2,753.9832	2,044.5060
26	06	4	SAT-W	0.0000	19.1550	7,692.5676	6,659.0330	9,134.5266	-11.6314	6.0878	2,048.8295	2,044.5060	2,159.0371
26	06	5	Black	0.1462	-0.0401	-12.2993	-13.8609	-11.6314	0.1249	-0.0343	-10.5007	-11.8339	-9.9305
26	06	6	Black*HSGPA	-0.0401	0.0553	6.2454	6.6668	6.0878	-0.0343	0.0537	5.7518	6.1105	5.6210
26	06	7	Black*SAT-CR	-12.2988	6.2454	2,467.8502	2,185.9071	2,048.8295	-10.5007	5.7518	2,316.5834	2,015.4341	1,905.7769
26	06	8	Black*SAT-M	-13.8604	6.6668	2,185.9071	2,753.9832	2,044.5060	-11.8339	6.1105	2,015.4341	2,561.8654	1,883.2901
26	06	9	Black*SAT-W	-11.6310	6.0878	2,048.8295	2,044.5060	2,159.0371	-9.9305	5.6210	1,905.7769	1,883.2901	2,023.7526



## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
26	07	1	HSGPA	0.0000	0.2492	19.2841	21.3366	20.1339	-0.0408	0.0563	6.5374	6.9971	6.4478
26	07	2	SAT-CR	0.0000	19.2841	10,099.7150	6,999.3860	8,058.8835	-13.0394	6.5374	2,508.3186	2,190.5510	2,157.6920
26	07	3	SAT-M	0.0000	21.3366	6,999.3860	10,041.6834	6,826.8895	-14.1940	6.9971	2,190.5510	2,743.5225	2,099.1076
26	07	4	SAT-W	0.0000	20.1339	8,058.8835	6,826.8895	9,610.1628	-12.5832	6.4478	2,157.6920	2,099.1076	2,301.0856
26	07	5	Black	0.1550	-0.0408	-13.0394	-14.1940	-12.5832	0.1310	-0.0345	-11.0182	-11.9938	-10.6327
26	07	6	Black*HSGPA	-0.0408	0.0563	6.5374	6.9971	6.4478	-0.0345	0.0546	6.0049	6.4175	5.9340
26	07	7	Black*SAT-CR	-13.0390	6.5374	2,508.3186	2,190.5510	2,157.6920	-11.0182	6.0049	2,338.2978	2,005.4754	1,993.6195
26	07	8	Black*SAT-M	-14.1935	6.9971	2,190.5510	2,743.5225	2,099.1076	-11.9938	6.4175	2,005.4754	2,542.0590	1,920.5069
26	07	9	Black*SAT-W	-12.5828	6.4478	2,157.6920	2,099.1076	2,301.0856	-10.6327	5.9340	1,993.6195	1,920.5069	2,142.7533
26	08	1	HSGPA	0.0000	0.2368	18.0172	20.4609	19.2326	-0.0432	0.0601	6.8115	7.4628	6.7167
26	08	2	SAT-CR	0.0000	18.0172	10,067.4519	6,954.4668	7,990.1512	-14.1151	6.8115	2,812.9677	2,405.6567	2,355.3750
26	08	3	SAT-M	0.0000	20.4609	6,954.4668	10,028.0667	6,782.8313	-15.4777	7.4628	2,405.6567	2,987.8162	2,278.3441
26	08	4	SAT-W	0.0000	19.2326	7,990.1512	6,782.8313	9,671.9638	-13.2295	6.7167	2,355.3750	2,278.3441	2,525.5597
26	08	5	Black	0.1698	-0.0432	-14.1151	-15.4777	-13.2295	0.1410	-0.0359	-11.7187	-12.8499	-10.9834
26	08	6	Black*HSGPA	-0.0432	0.0601	6.8115	7.4628	6.7167	-0.0359	0.0582	6.2016	6.7940	6.1451
26	08	7	Black*SAT-CR	-14.1146	6.8115	2,812.9677	2,405.6567	2,355.3750	-11.7187	6.2016	2,613.7388	2,187.1953	2,168.6465
26	08	8	Black*SAT-M	-15.4771	7.4628	2,405.6567	2,987.8162	2,278.3441	-12.8499	6.7940	2,187.1953	2,748.2656	2,073.5898
26	08	9	Black*SAT-W	-13.2290	6.7167	2,355.3750	2,278.3441	2,525.5597	-10.9834	6.1451	2,168.6465	2,073.5898	2,350.5472
27	06	1	HSGPA	0.0000	0.2319	16.1269	18.2654	17.6830	-0.0293	0.0377	4.0022	4.7783	4.0698
27	06	2	SAT-CR	0.0000	16.1269	8,369.2914	5,218.2905	6,255.7049	-6.6840	4.0022	1,317.4434	1,221.2700	1,138.7931
27	06	3	SAT-M	0.0000	18.2654	5,218.2905	8,708.6913	5,057.9435	-8.1866	4.7783	1,221.2700	1,682.1126	1,180.1283
27	06	4	SAT-W	0.0000	17.6830	6,255.7049	5,057.9435	7,982.8631	-6.4986	4.0698	1,138.7931	1,180.1283	1,257.8137
27	06	5	Black	0.0808	-0.0293	-6.6840	-8.1866	-6.4986	0.0743	-0.0269	-6.1439	-7.5251	-5.9735
27	06	6	Black*HSGPA	-0.0293	0.0377	4.0022	4.7783	4.0698	-0.0269	0.0369	3.8064	4.5385	3.8794
27	06	7	Black*SAT-CR	-6.6825	4.0022	1,317.4434	1,221.2700	1,138.7931	-6.1439	3.8064	1,272.7773	1,166.5629	1,095.3661
27	06	8	Black*SAT-M	-8.1848	4.7783	1,221.2700	1,682.1126	1,180.1283	-7.5251	4.5385	1,166.5629	1,615.1072	1,126.9388
27	06	9	Black*SAT-W	-6.4971	4.0698	1,138.7931	1,180.1283	1,257.8137	-5.9735	3.8794	1,095.3661	1,126.9388	1,215.5915
27	07	1	HSGPA	0.0000	0.2518	19.3692	21.5745	20.8129	-0.0313	0.0426	4.6234	5.6396	4.7296
27	07	2	SAT-CR	0.0000	19.3692	8,959.3232	5,850.5955	6,872.1538	-6.8993	4.6234	1,414.2377	1,362.1359	1,206.9519
27	07	3	SAT-M	0.0000	21.5745	5,850.5955	9,448.3104	5,615.9484	-9.3364	5.6396	1,362.1359	1,927.9650	1,339.2391
27	07	4	SAT-W	0.0000	20.8129	6,872.1538	5,615.9484	8,430.1157	-7.0043	4.7296	1,206.9519	1,339.2391	1,308.3147
27	07	5	Black	0.0825	-0.0313	-6.8993	-9.3364	-7.0043	0.0757	-0.0287	-6.3305	-8.5666	-6.4268
27	07	6	Black*HSGPA	-0.0313	0.0426	4.6234	5.6396	4.7296	-0.0287	0.0416	4.4077	5.3477	4.5106
27	07	7	Black*SAT-CR	-6.8977	4.6234	1,414.2377	1,362.1359	1,206.9519	-6.3305	4.4077	1,366.6483	1,297.7364	1,158.6384
27	07	8	Black*SAT-M	-9.3342	5.6396	1,362.1359	1,927.9650	1,339.2391	-8.5666	5.3477	1,297.7364	1,840.8176	1,273.8598
27	07	9	Black*SAT-W	-7.0026	4.7296	1,206.9519	1,339.2391	1,308.3147	-6.4268	4.5106	1,158.6384	1,273.8598	1,259.2662
27	08	1	HSGPA	0.0000	0.2403	19.0814	21.6680	20.9581	-0.0426	0.0587	6.2682	6.9110	6.6901
27	08	2	SAT-CR	0.0000	19.0814	9,218.4997	6,281.7644	7,179.2769	-9.3521	6.2682	1,900.4562	1,755.9488	1,710.8154
27	08	3	SAT-M	0.0000	21.6680	6,281.7644	9,849.8620	6,105.7995	-11.5499	6.9110	1,755.9488	2,383.5815	1,776.1822
27	08	4	SAT-W	0.0000	20.9581	7,179.2769	6,105.7995	9,114.6942	-9.1947	6.6901	1,710.8154	1,776.1822	1,943.1830
27	08	5	Black	0.1105	-0.0426	-9.3521	-11.5499	-9.1947	0.0983	-0.0379	-8.3187	-10.2737	-8.1787
27	08	6	Black*HSGPA	-0.0426	0.0587	6.2682	6.9110	6.6901	-0.0379	0.0569	5.8701	6.4194	6.2988
27	08	7	Black*SAT-CR	-9.3497	6.2682	1,900.4562	1,755.9488	1,710.8154	-8.3187	5.8701	1,813.0170	1,647.9610	1,624.8478
27	08	8	Black*SAT-M	-11.5469	6.9110	1,755.9488	2,383.5815	1,776.1822	-10.2737	6.4194	1,647.9610	2,250.2161	1,670.0117
27	08	9	Black*SAT-W	-9.1923	6.6901	1,710.8154	1,776.1822	1,943.1830	-8.1787	6.2988	1,624.8478	1,670.0117	1,858.6620

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
28	07	1	HSGPA	0.0000	0.4409	24.7981	26.2796	25.4097	-0.0450	0.0866	6.8781	7.0646	5.6178
28	07	2	SAT-CR	0.0000	24.7981	7,921.0670	5,771.9165	5,639.9586	-10.2545	6.8781	1,779.1679	1,576.4195	1,283.0812
28	07	3	SAT-M	0.0000	26.2796	5,771.9165	9,022.1986	5,200.3803	-13.1378	7.0646	1,576.4195	2,380.6392	1,354.2936
28	07	4	SAT-W	0.0000	25.4097	5,639.9586	5,200.3803	6,967.2783	-7.0580	5.6178	1,283.0812	1,354.2936	1,432.7916
28	07	5	Black	0.1824	-0.0450	-10.2545	-13.1378	-7.0580	0.1494	-0.0368	-8.3845	-10.7420	-5.7709
28	07	6	Black*HSGPA	-0.0449	0.0866	6.8781	7.0646	5.6178	-0.0368	0.0846	6.4174	6.4744	5.3007
28	07	7	Black*SAT-CR	-10.2340	6.8781	1,779.1679	1,576.4195	1,283.0812	-8.3845	6.4174	1,674.2234	1,441.9671	1,210.8497
28	07	8	Black*SAT-M	-13.1115	7.0646	1,576.4195	2,380.6392	1,354.2936	-10.7420	6.4744	1,441.9671	2,208.3822	1,261.7524
28	07	9	Black*SAT-W	-7.0439	5.6178	1,283.0812	1,354.2936	1,432.7916	-5.7709	5.3007	1,210.8497	1,261.7524	1,383.0759
28	08	1	HSGPA	0.0000	0.4240	20.9264	23.2364	21.5446	-0.0551	0.0827	6.0639	6.2031	5.0890
28	08	2	SAT-CR	0.0000	20.9264	6,366.9606	4,445.6258	4,943.1861	-10.2030	6.0639	1,625.0593	1,354.9098	1,264.4137
28	08	3	SAT-M	0.0000	23.2364	4,445.6258	8,196.6554	4,535.5208	-11.8194	6.2031	1,354.9098	2,133.0872	1,292.3464
28	08	4	SAT-W	0.0000	21.5446	4,943.1861	4,535.5208	6,795.7373	-9.9222	5.0890	1,264.4137	1,292.3464	1,461.4526
28	08	5	Black	0.1848	-0.0551	-10.2030	-11.8194	-9.9222	0.1510	-0.0449	-8.3172	-9.6349	-8.0883
28	08	6	Black*HSGPA	-0.0550	0.0827	6.0639	6.2031	5.0890	-0.0449	0.0796	5.5026	5.5529	4.5432
28	08	7	Black*SAT-CR	-10.1832	6.0639	1,625.0593	1,354.9098	1,264.4137	-8.3172	5.5026	1,521.1604	1,234.5507	1,163.3745
28	08	8	Black*SAT-M	-11.7964	6.2031	1,354.9098	2,133.0872	1,292.3464	-9.6349	5.5529	1,234.5507	1,993.6601	1,175.3001
28	08	9	Black*SAT-W	-9.9029	5.0890	1,264.4137	1,292.3464	1,461.4526	-8.0883	4.5432	1,163.3745	1,175.3001	1,363.1945
29	06	1	HSGPA	0.0000	0.3507	17.1757	18.4837	18.5678	-0.0111	0.0211	1.1664	1.2862	1.4900
29	06	2	SAT-CR	0.0000	17.1757	7,886.0931	4,765.2265	5,764.2761	-2.3772	1.1664	426.0426	355.2841	350.8737
29	06	3	SAT-M	0.0000	18.4837	4,765.2265	7,930.6020	4,465.9543	-2.8150	1.2862	355.2841	514.4452	352.3685
29	06	4	SAT-W	0.0000	18.5678	5,764.2761	4,465.9543	7,305.1786	-2.5495	1.4900	350.8737	352.3685	428.9050
29	06	5	Black	0.0425	-0.0111	-2.3772	-2.8150	-2.5495	0.0407	-0.0106	-2.2760	-2.6953	-2.4411
29	06	6	Black*HSGPA	-0.0111	0.0211	1.1664	1.2862	1.4900	-0.0106	0.0210	1.1401	1.2550	1.4618
29	06	7	Black*SAT-CR	-2.3767	1.1664	426.0426	355.2841	350.8737	-2.2760	1.1401	420.3928	348.5936	344.8142
29	06	8	Black*SAT-M	-2.8145	1.2862	355.2841	514.4452	352.3685	-2.6953	1.2550	348.5936	506.5223	345.1929
29	06	9	Black*SAT-W	-2.5491	1.4900	350.8737	352.3685	428.9050	-2.4411	1.4618	344.8142	345.1929	422.4062
29	07	1	HSGPA	0.0000	0.3552	17.7176	19.2065	19.3881	-0.0124	0.0226	1.5463	1.5781	1.6952
29	07	2	SAT-CR	0.0000	17.7176	7,995.0901	4,920.8790	5,858.1654	-2.4291	1.5463	539.4996	416.4863	410.9965
29	07	3	SAT-M	0.0000	19.2065	4,920.8790	8,063.4109	4,540.9633	-2.8902	1.5781	416.4863	572.3336	382.1744
29	07	4	SAT-W	0.0000	19.3881	5,858.1654	4,540.9633	7,280.5056	-2.4762	1.6952	410.9965	382.1744	462.0547
29	07	5	Black	0.0448	-0.0124	-2.4291	-2.8902	-2.4762	0.0428	-0.0118	-2.3202	-2.7607	-2.3652
29	07	6	Black*HSGPA	-0.0124	0.0226	1.5463	1.5781	1.6952	-0.0118	0.0224	1.5163	1.5423	1.6646
29	07	7	Black*SAT-CR	-2.4287	1.5463	539.4996	416.4863	410.9965	-2.3202	1.5163	533.6001	409.4667	404.9826
29	07	8	Black*SAT-M	-2.8898	1.5781	416.4863	572.3336	382.1744	-2.7607	1.5423	409.4667	563.9816	375.0188
29	07	9	Black*SAT-W	-2.4758	1.6952	410.9965	382.1744	462.0547	-2.3652	1.6646	404.9826	375.0188	455.9241
29	08	1	HSGPA	0.0000	0.3456	15.9330	18.6930	18.8217	-0.0198	0.0331	2.4463	2.8014	2.6173
29	08	2	SAT-CR	0.0000	15.9330	7,937.7609	4,982.6904	5,882.0303	-4.6734	2.4463	857.3941	729.7058	715.5434
29	08	3	SAT-M	0.0000	18.6930	4,982.6904	8,257.3227	4,746.4415	-5.5228	2.8014	729.7058	1,001.8880	703.5385
29	08	4	SAT-W	0.0000	18.8217	5,882.0303	4,746.4415	7,452.6867	-4.6688	2.6173	715.5434	703.5385	832.0270
29	08	5	Black	0.0731	-0.0198	-4.6734	-5.5228	-4.6688	0.0678	-0.0183	-4.3316	-5.1189	-4.3274
29	08	6	Black*HSGPA	-0.0198	0.0331	2.4463	2.8014	2.6173	-0.0183	0.0327	2.3538	2.6921	2.5249
29	08	7	Black*SAT-CR	-4.6727	2.4463	857.3941	729.7058	715.5434	-4.3316	2.3538	835.5567	703.8992	693.7272
29	08	8	Black*SAT-M	-5.5220	2.8014	729.7058	1,001.8880	703.5385	-5.1189	2.6921	703.8992	971.3906	677.7570
29	08	9	Black*SAT-W	-4.6682	2.6173	715.5434	703.5385	832.0270	-4.3274	2.5249	693.7272	677.7570	810.2320

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
31	07	1	HSGPA	0.0000	0.2867	16.7078	18.5356	17.7794	-0.0453	0.0676	5.2616	5.9561	5.1945
31	07	2	SAT-CR	0.0000	16.7078	7,969.8986	5,019.6838	5,830.6603	-13.2650	5.2616	2,153.2010	1,699.9374	1,623.9480
31	07	3	SAT-M	0.0000	18.5356	5,019.6838	7,770.8007	4,789.6767	-14.3869	5.9561	1,699.9374	2,297.7794	1,538.4784
31	07	4	SAT-W	0.0000	17.7794	5,830.6603	4,789.6767	7,242.3874	-11.6541	5.1945	1,623.9480	1,538.4784	1,866.1119
31	07	5	Black	0.2126	-0.0453	-13.2650	-14.3869	-11.6541	0.1674	-0.0357	-10.4454	-11.3289	-9.1770
31	07	6	Black*HSGPA	-0.0453	0.0676	5.2616	5.9561	5.1945	-0.0357	0.0655	4.6607	5.3044	4.6665
31	07	7	Black*SAT-CR	-13.2629	5.2616	2,153.2010	1,699.9374	1,623.9480	-10.4454	4.6607	1,977.2679	1,509.1247	1,469.3798
31	07	8	Black*SAT-M	-14.3847	5.9561	1,699.9374	2,297.7794	1,538.4784	-11.3289	5.3044	1,509.1247	2,090.8288	1,370.8376
31	07	9	Black*SAT-W	-11.6523	5.1945	1,623.9480	1,538.4784	1,866.1119	-9.1770	4.6665	1,469.3798	1,370.8376	1,730.3142
31	08	1	HSGPA	0.0000	0.2816	15.8657	18.5236	16.7730	-0.0485	0.0790	5.5486	6.4288	5.4842
31	08	2	SAT-CR	0.0000	15.8657	8,228.0655	5,391.3295	6,060.2620	-16.5037	5.5486	2,751.0492	2,005.9266	2,039.9828
31	08	3	SAT-M	0.0000	18.5236	5,391.3295	8,200.5808	5,039.0544	-17.4542	6.4288	2,005.9266	2,753.4813	1,805.9719
31	08	4	SAT-W	0.0000	16.7730	6,060.2620	5,039.0544	7,464.2456	-13.8855	5.4842	2,039.9828	1,805.9719	2,298.8232
31	08	5	Black	0.2739	-0.0485	-16.5037	-17.4542	-13.8855	0.1989	-0.0352	-11.9830	-12.6731	-10.0819
31	08	6	Black*HSGPA	-0.0485	0.0790	5.5486	6.4288	5.4842	-0.0352	0.0767	4.7475	5.5816	4.8102
31	08	7	Black*SAT-CR	-16.5012	5.5486	2,751.0492	2,005.9266	2,039.9828	-11.9830	4.7475	2,478.7170	1,717.9104	1,810.8551
31	08	8	Black*SAT-M	-17.4516	6.4288	2,005.9266	2,753.4813	1,805.9719	-12.6731	5.5816	1,717.9104	2,448.8777	1,563.6483
31	08	9	Black*SAT-W	-13.8834	5.4842	2,039.9828	1,805.9719	2,298.8232	-10.0819	4.8102	1,810.8551	1,563.6483	2,106.0457
33	06	1	HSGPA	0.0000	0.2910	23.3412	26.7767	25.3446	-0.0728	0.1121	10.6133	12.8695	11.3880
33	06	2	SAT-CR	0.0000	23.3412	10,206.1938	7,661.9727	8,339.1004	-18.0801	10.6133	3,820.4550	3,524.9809	3,323.2545
33	06	3	SAT-M	0.0000	26.7767	7,661.9727	11,460.4888	7,671.2189	-22.8178	12.8695	3,524.9809	4,751.5660	3,490.3695
33	06	4	SAT-W	0.0000	25.3446	8,339.1004	7,671.2189	10,197.0827	-18.6204	11.3880	3,323.2545	3,490.3695	3,713.1147
33	06	5	Black	0.2308	-0.0728	-18.0801	-22.8178	-18.6204	0.1776	-0.0560	-13.9067	-17.5508	-14.3223
33	06	6	Black*HSGPA	-0.0728	0.1121	10.6133	12.8695	11.3880	-0.0560	0.1068	9.2968	11.2081	10.0322
33	06	7	Black*SAT-CR	-18.0792	10.6133	3,820.4550	3,524.9809	3,323.2545	-13.9067	9.2968	3,493.5815	3,112.4536	2,986.6115
33	06	8	Black*SAT-M	-22.8167	12.8695	3,524.9809	4,751.5660	3,490.3695	-17.5508	11.2081	3,112.4536	4,230.9403	3,065.5128
33	06	9	Black*SAT-W	-18.6196	11.3880	3,323.2545	3,490.3695	3,713.1147	-14.3223	10.0322	2,986.6115	3,065.5128	3,366.4102
34	06	1	HSGPA	0.0000	0.2667	15.9501	19.5694	17.8562	-0.0291	0.0422	3.7344	4.6552	3.5215
34	06	2	SAT-CR	0.0000	15.9501	8,231.4991	5,186.7523	6,336.1654	-5.2540	3.7344	1,199.9521	1,125.8986	1,024.8247
34	06	3	SAT-M	0.0000	19.5694	5,186.7523	8,546.1076	5,161.9195	-7.2751	4.6552	1,125.8986	1,597.4705	1,105.1253
34	06	4	SAT-W	0.0000	17.8562	6,336.1654	5,161.9195	8,206.5154	-4.8607	3.5215	1,024.8247	1,105.1253	1,139.9347
34	06	5	Black	0.0799	-0.0291	-5.2540	-7.2751	-4.8607	0.0735	-0.0268	-4.8344	-6.6942	-4.4725
34	06	6	Black*HSGPA	-0.0291	0.0422	3.7344	4.6552	3.5215	-0.0268	0.0414	3.5816	4.4436	3.3801
34	06	7	Black*SAT-CR	-5.2530	3.7344	1,199.9521	1,125.8986	1,024.8247	-4.8344	3.5816	1,172.3526	1,087.6821	999.2914
34	06	8	Black*SAT-M	-7.2738	4.6552	1,125.8986	1,597.4705	1,105.1253	-6.6942	4.4436	1,087.6821	1,544.5528	1,069.7698
34	06	9	Black*SAT-W	-4.8598	3.5215	1,024.8247	1,105.1253	1,139.9347	-4.4725	3.3801	999.2914	1,069.7698	1,116.3128
34	07	1	HSGPA	0.0000	0.2704	15.5684	18.0770	17.4068	-0.0220	0.0349	2.9081	3.7058	2.8838
34	07	2	SAT-CR	0.0000	15.5684	8,033.0500	5,028.9508	6,056.2001	-4.5378	2.9081	1,043.5101	976.6342	849.9362
34	07	3	SAT-M	0.0000	18.0770	5,028.9508	8,445.6903	4,953.6028	-6.7476	3.7058	976.6342	1,464.7998	942.9042
34	07	4	SAT-W	0.0000	17.4068	6,056.2001	4,953.6028	8,012.9748	-4.0962	2.8838	849.9362	942.9042	969.3317
34	07	5	Black	0.0805	-0.0220	-4.5378	-6.7476	-4.0962	0.0740	-0.0202	-4.1726	-6.2045	-3.7665
34	07	6	Black*HSGPA	-0.0220	0.0349	2.9081	3.7058	2.8838	-0.0202	0.0344	2.8083	3.5574	2.7937
34	07	7	Black*SAT-CR	-4.5370	2.9081	1,043.5101	976.6342	849.9362	-4.1726	2.8083	1,022.9219	946.0203	831.3518
34	07	8	Black*SAT-M	-6.7464	3.7058	976.6342	1,464.7998	942.9042	-6.2045	3.5574	946.0203	1,419.2779	915.2698
34	07	9	Black*SAT-W	-4.0955	2.8838	849.9362	942.9042	969.3317	-3.7665	2.7937	831.3518	915.2698	952.5561

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
34	08	1	HSGPA	0.0000	0.2614	16.3850	18.7246	17.8191	-0.0254	0.0414	3.2407	4.0343	3.3944
34	08	2	SAT-CR	0.0000	16.3850	8,582.0513	5,417.7795	6,547.1290	-6.6757	3.2407	1,401.6476	1,202.3519	1,147.4452
34	08	3	SAT-M	0.0000	18.7246	5,417.7795	8,673.2498	5,260.0931	-8.2497	4.0343	1,202.3519	1,654.4494	1,152.6485
34	08	4	SAT-W	0.0000	17.8191	6,547.1290	5,260.0931	8,433.7194	-6.1849	3.3944	1,147.4452	1,152.6485	1,275.9846
34	08	5	Black	0.0948	-0.0254	-6.6757	-8.2497	-6.1849	0.0858	-0.0230	-6.0430	-7.4678	-5.5987
34	08	6	Black*HSGPA	-0.0254	0.0414	3.2407	4.0343	3.3944	-0.0230	0.0408	3.0714	3.8250	3.2375
34	08	7	Black*SAT-CR	-6.6746	3.2407	1,401.6476	1,202.3519	1,147.4452	-6.0430	3.0714	1,357.0899	1,147.2885	1,106.1636
34	08	8	Black*SAT-M	-8.2483	4.0343	1,202.3519	1,654.4494	1,152.6485	-7.4678	3.8250	1,147.2885	1,586.4032	1,101.6336
34	08	9	Black*SAT-W	-6.1839	3.3944	1,147.4452	1,152.6485	1,275.9846	-5.5987	3.2375	1,106.1636	1,101.6336	1,237.7382
35	06	1	HSGPA	0.0000	0.1864	11.8738	13.1070	12.9628	-0.0169	0.0212	2.2998	2.9348	2.5134
35	06	2	SAT-CR	0.0000	11.8738	7,126.8818	4,402.3359	5,505.4571	-3.5710	2.2998	750.6427	761.5431	685.4584
35	06	3	SAT-M	0.0000	13.1070	4,402.3359	7,748.3158	4,583.3005	-4.9251	2.9348	761.5431	1,088.7918	788.2697
35	06	4	SAT-W	0.0000	12.9628	5,505.4571	4,583.3005	7,675.3795	-3.8275	2.5134	685.4584	788.2697	795.4555
35	06	5	Black	0.0444	-0.0169	-3.5710	-4.9251	-3.8275	0.0425	-0.0161	-3.4123	-4.7063	-3.6574
35	06	6	Black*HSGPA	-0.0169	0.0212	2.2998	2.9348	2.5134	-0.0161	0.0210	2.2395	2.8516	2.4487
35	06	7	Black*SAT-CR	-3.5706	2.2998	750.6427	761.5431	685.4584	-3.4123	2.2395	737.8920	743.9574	671.7919
35	06	8	Black*SAT-M	-4.9246	2.9348	761.5431	1,088.7918	788.2697	-4.7063	2.8516	743.9574	1,064.5377	769.4210
35	06	9	Black*SAT-W	-3.8271	2.5134	685.4584	788.2697	795.4555	-3.6574	2.4487	671.7919	769.4210	780.8074
35	07	1	HSGPA	0.0000	0.1934	12.1105	13.6340	13.5139	-0.0176	0.0226	2.6211	3.1090	2.6915
35	07	2	SAT-CR	0.0000	12.1105	7,434.1983	4,474.5225	5,760.2892	-3.8546	2.6211	899.3213	771.7686	821.0079
35	07	3	SAT-M	0.0000	13.6340	4,474.5225	7,708.0670	4,649.7128	-4.6680	3.1090	771.7686	949.4550	795.5592
35	07	4	SAT-W	0.0000	13.5139	5,760.2892	4,649.7128	7,906.7903	-4.0631	2.6915	821.0079	795.5592	921.5408
35	07	5	Black	0.0451	-0.0176	-3.8546	-4.6680	-4.0631	0.0431	-0.0168	-3.6807	-4.4574	-3.8798
35	07	6	Black*HSGPA	-0.0176	0.0226	2.6211	3.1090	2.6915	-0.0168	0.0223	2.5532	3.0267	2.6198
35	07	7	Black*SAT-CR	-3.8542	2.6211	899.3213	771.7686	821.0079	-3.6807	2.5532	884.4651	753.7774	805.3481
35	07	8	Black*SAT-M	-4.6675	3.1090	771.7686	949.4550	795.5592	-4.4574	3.0267	753.7774	927.6674	776.5948
35	07	9	Black*SAT-W	-4.0627	2.6915	821.0079	795.5592	921.5408	-3.8798	2.6198	805.3481	776.5948	905.0339
35	08	1	HSGPA	0.0000	0.1901	12.0617	13.2972	13.5874	-0.0210	0.0269	3.2448	3.9637	3.4177
35	08	2	SAT-CR	0.0000	12.0617	7,363.8046	4,409.2580	5,741.3502	-4.8909	3.2448	1,045.3851	1,034.4749	981.4962
35	08	3	SAT-M	0.0000	13.2972	4,409.2580	7,565.6578	4,594.7909	-6.2709	3.9637	1,034.4749	1,430.2782	1,084.3338
35	08	4	SAT-W	0.0000	13.5874	5,741.3502	4,594.7909	8,050.8615	-5.1599	3.4177	981.4962	1,084.3338	1,130.0957
35	08	5	Black	0.0532	-0.0210	-4.8909	-6.2709	-5.1599	0.0504	-0.0199	-4.6308	-5.9375	-4.8855
35	08	6	Black*HSGPA	-0.0210	0.0269	3.2448	3.9637	3.4177	-0.0199	0.0264	3.1421	3.8320	3.3094
35	08	7	Black*SAT-CR	-4.8904	3.2448	1,045.3851	1,034.4749	981.4962	-4.6308	3.1421	1,021.4668	1,003.8077	956.2625
35	08	8	Black*SAT-M	-6.2702	3.9637	1,034.4749	1,430.2782	1,084.3338	-5.9375	3.8320	1,003.8077	1,390.9580	1,051.9801
35	08	9	Black*SAT-W	-5.1593	3.4177	981.4962	1,084.3338	1,130.0957	-4.8855	3.3094	956.2625	1,051.9801	1,103.4741
40	06	1	HSGPA	0.0000	0.2742	20.4805	22.2486	21.9837	-0.0596	0.0846	8.8466	9.9961	9.5168
40	06	2	SAT-CR	0.0000	20.4805	8,844.1952	6,147.4188	7,228.4234	-13.3264	8.8466	2,673.7518	2,455.0044	2,469.9683
40	06	3	SAT-M	0.0000	22.2486	6,147.4188	9,487.0140	6,321.6824	-15.7065	9.9961	2,455.0044	3,195.7120	2,539.9994
40	06	4	SAT-W	0.0000	21.9837	7,228.4234	6,321.6824	9,339.9973	-14.2059	9.5168	2,469.9683	2,539.9994	2,822.6053
40	06	5	Black	0.1529	-0.0596	-13.3264	-15.7065	-14.2059	0.1296	-0.0505	-11.2882	-13.3042	-12.0331
40	06	6	Black*HSGPA	-0.0596	0.0846	8.8466	9.9961	9.5168	-0.0505	0.0810	8.0522	9.0598	8.6700
40	06	7	Black*SAT-CR	-13.3256	8.8466	2,673.7518	2,455.0044	2,469.9683	-11.2882	8.0522	2,496.1700	2,245.7070	2,280.6672
40	06	8	Black*SAT-M	-15.7055	9.9961	2,455.0044	3,195.7120	2,539.9994	-13.3042	9.0598	2,245.7070	2,949.0346	2,316.8897
40	06	9	Black*SAT-W	-14.2050	9.5168	2,469.9683	2,539.9994	2,822.6053	-12.0331	8.6700	2,280.6672	2,316.8897	2,620.8115

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
40	07	1	HSGPA	0.0000	0.2660	19.6488	21.2159	21.2122	-0.0582	0.0824	8.9482	9.8425	9.8594
40	07	2	SAT-CR	0.0000	19.6488	8,681.3328	5,807.3988	7,139.2240	-12.9223	8.9482	2,630.3652	2,392.8560	2,468.8254
40	07	3	SAT-M	0.0000	21.2159	5,807.3988	9,230.8535	6,056.1785	-15.5785	9.8425	2,392.8560	3,109.7091	2,512.4983
40	07	4	SAT-W	0.0000	21.2122	7,139.2240	6,056.1785	9,165.6333	-14.0431	9.8594	2,468.8254	2,512.4983	2,832.6454
40	07	5	Black	0.1514	-0.0582	-12.9223	-15.5785	-14.0431	0.1285	-0.0494	-10.9665	-13.2206	-11.9176
40	07	6	Black*HSGPA	-0.0582	0.0824	8.9482	9.8425	9.8594	-0.0494	0.0790	8.1963	8.9360	9.0423
40	07	7	Black*SAT-CR	-12.9215	8.9482	2,630.3652	2,392.8560	2,468.8254	-10.9665	8.1963	2,463.3894	2,191.5582	2,287.3667
40	07	8	Black*SAT-M	-15.5776	9.8425	2,392.8560	3,109.7091	2,512.4983	-13.2206	8.9360	2,191.5582	2,867.0343	2,293.7406
40	07	9	Black*SAT-W	-14.0423	9.8594	2,468.8254	2,512.4983	2,832.6454	-11.9176	9.0423	2,287.3667	2,293.7406	2,635.4476
40	08	1	HSGPA	0.0000	0.2582	19.1529	20.6970	21.0590	-0.0615	0.0851	9.1600	10.0232	9.9291
40	08	2	SAT-CR	0.0000	19.1529	8,890.7212	5,950.1969	7,389.7239	-14.7991	9.1600	3,074.5874	2,713.5370	2,801.4748
40	08	3	SAT-M	0.0000	20.6970	5,950.1969	9,318.8478	6,259.6825	-17.3078	10.0232	2,713.5370	3,473.7242	2,787.5185
40	08	4	SAT-W	0.0000	21.0590	7,389.7239	6,259.6825	9,646.9996	-15.8468	9.9291	2,801.4748	2,787.5185	3,166.4591
40	08	5	Black	0.1722	-0.0615	-14.7991	-17.3078	-15.8468	0.1426	-0.0509	-12.2500	-14.3265	-13.1172
40	08	6	Black*HSGPA	-0.0615	0.0851	9.1600	10.0232	9.9291	-0.0509	0.0814	8.2504	8.9594	8.9552
40	08	7	Black*SAT-CR	-14.7982	9.1600	3,074.5874	2,713.5370	2,801.4748	-12.2500	8.2504	2,855.5867	2,457.4130	2,566.9712
40	08	8	Black*SAT-M	-17.3067	10.0232	2,713.5370	3,473.7242	2,787.5185	-14.3265	8.9594	2,457.4130	3,174.1842	2,513.2637
40	08	9	Black*SAT-W	-15.8458	9.9291	2,801.4748	2,787.5185	3,166.4591	-13.1172	8.9552	2,566.9712	2,513.2637	2,915.3552
41	07	1	HSGPA	0.0000	0.3275	20.8929	22.9087	21.9172	-0.0637	0.1127	8.5694	9.3058	8.6805
41	07	2	SAT-CR	0.0000	20.8929	9,109.7993	6,300.8274	7,109.3012	-16.9898	8.5694	3,135.7070	2,552.6352	2,542.7708
41	07	3	SAT-M	0.0000	22.9087	6,300.8274	9,604.5308	6,048.7446	-18.8334	9.3058	2,552.6352	3,433.8316	2,413.4941
41	07	4	SAT-W	0.0000	21.9172	7,109.3012	6,048.7446	8,705.9428	-16.5067	8.6805	2,542.7708	2,413.4941	2,846.4602
41	07	5	Black	0.2571	-0.0637	-16.9898	-18.8334	-16.5067	0.1910	-0.0473	-12.6218	-13.9915	-12.2630
41	07	6	Black*HSGPA	-0.0637	0.1127	8.5694	9.3058	8.6805	-0.0473	0.1087	7.4867	8.1056	7.6286
41	07	7	Black*SAT-CR	-16.9892	8.5694	3,135.7070	2,552.6352	2,542.7708	-12.6218	7.4867	2,847.0643	2,232.6713	2,262.3345
41	07	8	Black*SAT-M	-18.8327	9.3058	2,552.6352	3,433.8316	2,413.4941	-13.9915	8.1056	2,232.6713	3,079.1478	2,102.6270
41	07	9	Black*SAT-W	-16.5062	8.6805	2,542.7708	2,413.4941	2,846.4602	-12.2630	7.6286	2,262.3345	2,102.6270	2,573.9969
41	08	1	HSGPA	0.0000	0.3144	21.2387	22.9541	21.9915	-0.0663	0.1168	9.4587	9.9747	9.5978
41	08	2	SAT-CR	0.0000	21.2387	9,319.8577	6,608.7103	7,280.2536	-18.4358	9.4587	3,464.8498	2,884.0340	2,805.7961
41	08	3	SAT-M	0.0000	22.9541	6,608.7103	9,877.3452	6,333.1023	-20.9553	9.9747	2,884.0340	3,815.3642	2,710.2967
41	08	4	SAT-W	0.0000	21.9915	7,280.2536	6,333.1023	8,973.5410	-17.7111	9.5978	2,805.7961	2,710.2967	3,130.1536
41	08	5	Black	0.2682	-0.0663	-18.4358	-20.9553	-17.7111	0.1963	-0.0485	-13.4905	-15.3341	-12.9602
41	08	6	Black*HSGPA	-0.0663	0.1168	9.4587	9.9747	9.5978	-0.0485	0.1124	8.2361	8.5850	8.4233
41	08	7	Black*SAT-CR	-18.4351	9.4587	3,464.8498	2,884.0340	2,805.7961	-13.4905	8.2361	3,124.9836	2,497.7200	2,479.2892
41	08	8	Black*SAT-M	-20.9546	9.9747	2,884.0340	3,815.3642	2,710.2967	-15.3341	8.5850	2,497.7200	3,376.2548	2,339.1678
41	08	9	Black*SAT-W	-17.7105	9.5978	2,805.7961	2,710.2967	3,130.1536	-12.9602	8.4233	2,479.2892	2,339.1678	2,816.4808
42	07	1	HSGPA	0.0000	0.2105	18.9222	20.2161	19.4884	-0.0617	0.0917	10.2374	11.1619	10.5012
42	07	2	SAT-CR	0.0000	18.9222	10,911.7045	8,226.7317	8,978.5166	-23.7164	10.2374	4,811.8568	4,273.1800	4,306.5530
42	07	3	SAT-M	0.0000	20.2161	8,226.7317	11,587.6389	8,431.3822	-26.7794	11.1619	4,273.1800	5,338.2131	4,303.7802
42	07	4	SAT-W	0.0000	19.4884	8,978.5166	8,431.3822	10,910.7546	-24.1470	10.5012	4,306.5530	4,303.7802	4,730.7453
42	07	5	Black	0.2692	-0.0617	-23.7164	-26.7794	-24.1470	0.1967	-0.0451	-17.3330	-19.5716	-17.6477
42	07	6	Black*HSGPA	-0.0617	0.0917	10.2374	11.1619	10.5012	-0.0451	0.0879	8.7740	9.5096	9.0113
42	07	7	Black*SAT-CR	-23.7143	10.2374	4,811.8568	4,273.1800	4,306.5530	-17.3330	8.7740	4,249.4404	3,638.1271	3,733.9257
42	07	8	Black*SAT-M	-26.7770	11.1619	4,273.1800	5,338.2131	4,303.7802	-19.5716	9.5096	3,638.1271	4,621.1426	3,657.1976
42	07	9	Black*SAT-W	-24.1448	10.5012	4,306.5530	4,303.7802	4,730.7453	-17.6477	9.0113	3,733.9257	3,657.1976	4,147.7218

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
42	08	1	HSGPA	0.0000	0.1956	17.7525	19.2256	18.4878	-0.0594	0.0920	10.2570	11.5225	10.5865
42	08	2	SAT-CR	0.0000	17.7525	10,799.9015	8,201.1907	9,027.7359	-26.0418	10.2570	5,252.1233	4,590.7467	4,632.4286
42	08	3	SAT-M	0.0000	19.2256	8,201.1907	11,552.8872	8,514.7622	-29.1980	11.5225	4,590.7467	5,757.3995	4,609.6596
42	08	4	SAT-W	0.0000	18.4878	9,027.7359	8,514.7622	11,192.4238	-26.4975	10.5865	4,632.4286	4,609.6596	5,166.0671
42	08	5	Black	0.3106	-0.0594	-26.0418	-29.1980	-26.4975	0.2141	-0.0410	-17.9544	-20.1305	-18.2686
42	08	6	Black*HSGPA	-0.0594	0.0920	10.2570	11.5225	10.5865	-0.0410	0.0884	8.7090	9.7869	9.0115
42	08	7	Black*SAT-CR	-26.0391	10.2570	5,252.1233	4,590.7467	4,632.4286	-17.9544	8.7090	4,574.0168	3,830.4558	3,942.4561
42	08	8	Black*SAT-M	-29.1950	11.5225	4,590.7467	5,757.3995	4,609.6596	-20.1305	9.7869	3,830.4558	4,904.9635	3,836.0643
42	08	9	Black*SAT-W	-26.4948	10.5865	4,632.4286	4,609.6596	5,166.0671	-18.2686	9.0115	3,942.4561	3,836.0643	4,464.0208
43	06	1	HSGPA	0.0000	0.1323	8.7041	8.4800	8.8163	-0.0148	0.0194	2.1967	2.0344	1.9325
43	06	2	SAT-CR	0.0000	8.7041	6,583.9316	3,174.4066	4,432.4618	-4.2036	2.1967	912.0891	695.2154	726.1672
43	06	3	SAT-M	0.0000	8.4800	3,174.4066	6,027.0957	3,141.8499	-4.8806	2.0344	695.2154	957.6209	672.4343
43	06	4	SAT-W	0.0000	8.8163	4,432.4618	3,141.8499	5,936.8223	-4.2119	1.9325	726.1672	672.4343	800.6981
43	06	5	Black	0.0612	-0.0148	-4.2036	-4.8806	-4.2119	0.0575	-0.0139	-3.9462	-4.5818	-3.9540
43	06	6	Black*HSGPA	-0.0148	0.0194	2.1967	2.0344	1.9325	-0.0139	0.0191	2.1345	1.9622	1.8702
43	06	7	Black*SAT-CR	-4.2025	2.1967	912.0891	695.2154	726.1672	-3.9462	2.1345	894.4234	674.7046	708.4667
43	06	8	Black*SAT-M	-4.8794	2.0344	695.2154	957.6209	672.4343	-4.5818	1.9622	674.7046	933.8069	651.8831
43	06	9	Black*SAT-W	-4.2108	1.9325	726.1672	672.4343	800.6981	-3.9540	1.8702	708.4667	651.8831	782.9626
43	07	1	HSGPA	0.0000	0.1334	8.7058	9.1336	8.4313	-0.0229	0.0256	2.7386	3.1624	2.8217
43	07	2	SAT-CR	0.0000	8.7058	6,407.2108	3,329.8956	4,381.3725	-5.1959	2.7386	917.7072	733.0445	770.4644
43	07	3	SAT-M	0.0000	9.1336	3,329.8956	6,329.1150	3,445.1104	-6.2055	3.1624	733.0445	1,111.1970	761.5538
43	07	4	SAT-W	0.0000	8.4313	4,381.3725	3,445.1104	6,084.8557	-5.2012	2.8217	770.4644	761.5538	906.3800
43	07	5	Black	0.0661	-0.0229	-5.1959	-6.2055	-5.2012	0.0618	-0.0214	-4.8522	-5.7950	-4.8572
43	07	6	Black*HSGPA	-0.0229	0.0256	2.7386	3.1624	2.8217	-0.0214	0.0250	2.6198	3.0204	2.7027
43	07	7	Black*SAT-CR	-5.1947	2.7386	917.7072	733.0445	770.4644	-4.8522	2.6198	890.7160	700.8087	743.4456
43	07	8	Black*SAT-M	-6.2041	3.1624	733.0445	1,111.1970	761.5538	-5.7950	3.0204	700.8087	1,072.6976	729.2851
43	07	9	Black*SAT-W	-5.2000	2.8217	770.4644	761.5538	906.3800	-4.8572	2.7027	743.4456	729.2851	879.3335
43	08	1	HSGPA	0.0000	0.1388	9.3199	9.7882	10.0450	-0.0251	0.0317	2.6113	3.3473	2.8547
43	08	2	SAT-CR	0.0000	9.3199	6,702.8019	3,535.9767	4,727.5770	-6.3083	2.6113	1,148.2011	971.8845	978.4103
43	08	3	SAT-M	0.0000	9.7882	3,535.9767	6,433.8674	3,673.5583	-7.8831	3.3473	971.8845	1,419.4962	1,024.2698
43	08	4	SAT-W	0.0000	10.0450	4,727.5770	3,673.5583	6,592.7354	-6.4354	2.8547	978.4103	1,024.2698	1,168.7104
43	08	5	Black	0.0883	-0.0251	-6.3083	-7.8831	-6.4354	0.0805	-0.0229	-5.7512	-7.1869	-5.8670
43	08	6	Black*HSGPA	-0.0251	0.0317	2.6113	3.3473	2.8547	-0.0229	0.0311	2.4527	3.1491	2.6929
43	08	7	Black*SAT-CR	-6.3066	2.6113	1,148.2011	971.8845	978.4103	-5.7512	2.4527	1,108.4169	922.1688	937.8247
43	08	8	Black*SAT-M	-7.8810	3.3473	971.8845	1,419.4962	1,024.2698	-7.1869	3.1491	922.1688	1,357.3696	973.5526
43	08	9	Black*SAT-W	-6.4336	2.8547	978.4103	1,024.2698	1,168.7104	-5.8670	2.6929	937.8247	973.5526	1,127.3073
44	06	1	HSGPA	0.0000	0.3913	22.5719	22.3935	22.4836	-0.0504	0.0848	6.1759	6.6193	6.3397
44	06	2	SAT-CR	0.0000	22.5719	8,587.3857	5,699.8001	6,526.4053	-12.2521	6.1759	2,105.6110	1,814.8680	1,713.1618
44	06	3	SAT-M	0.0000	22.3935	5,699.8001	8,846.5863	5,406.4669	-13.5949	6.6193	1,814.8680	2,408.4169	1,710.8624
44	06	4	SAT-W	0.0000	22.4836	6,526.4053	5,406.4669	8,236.6695	-11.7394	6.3397	1,713.1618	1,710.8624	1,973.4613
44	06	5	Black	0.1634	-0.0504	-12.2521	-13.5949	-11.7394	0.1368	-0.0422	-10.2502	-11.3735	-9.8212
44	06	6	Black*HSGPA	-0.0504	0.0848	6.1759	6.6193	6.3397	-0.0422	0.0823	5.5585	5.9342	5.7482
44	06	7	Black*SAT-CR	-12.2450	6.1759	2,105.6110	1,814.8680	1,713.1618	-10.2502	5.5585	1,955.5833	1,648.3982	1,569.4128
44	06	8	Black*SAT-M	-13.5870	6.6193	1,814.8680	2,408.4169	1,710.8624	-11.3735	5.9342	1,648.3982	2,223.7032	1,551.3595
44	06	9	Black*SAT-W	-11.7326	6.3397	1,713.1618	1,710.8624	1,973.4613	-9.8212	5.7482	1,569.4128	1,551.3595	1,835.7283

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
45	06	1	HSGPA	0.0000	0.3388	14.9700	19.0916	16.5161	-0.0249	0.0614	3.4414	4.0964	3.8802
45	06	2	SAT-CR	0.0000	14.9700	6,722.6617	4,202.9030	4,850.4248	-9.4669	3.4414	1,498.9185	1,199.2265	1,184.2001
45	06	3	SAT-M	0.0000	19.0916	4,202.9030	7,509.0328	4,063.8949	-10.4312	4.0964	1,199.2265	1,716.4772	1,150.0328
45	06	4	SAT-W	0.0000	16.5161	4,850.4248	4,063.8949	6,532.7199	-9.2962	3.8802	1,184.2001	1,150.0328	1,436.2475
45	06	5	Black	0.1555	-0.0249	-9.4669	-10.4312	-9.2962	0.1313	-0.0210	-7.9953	-8.8096	-7.8511
45	06	6	Black*HSGPA	-0.0249	0.0614	3.4414	4.0964	3.8802	-0.0210	0.0607	3.2059	3.8370	3.6489
45	06	7	Black*SAT-CR	-9.4653	3.4414	1,498.9185	1,199.2265	1,184.2001	-7.9953	3.2059	1,409.3109	1,100.4919	1,096.2080
45	06	8	Black*SAT-M	-10.4294	4.0964	1,199.2265	1,716.4772	1,150.0328	-8.8096	3.8370	1,100.4919	1,607.6860	1,053.0783
45	06	9	Black*SAT-W	-9.2947	3.8802	1,184.2001	1,150.0328	1,436.2475	-7.8511	3.6489	1,096.2080	1,053.0783	1,349.8418
45	07	1	HSGPA	0.0000	0.3269	14.9232	17.1824	15.8885	-0.0247	0.0673	3.7154	3.7132	4.0076
45	07	2	SAT-CR	0.0000	14.9232	7,061.0128	4,184.0284	5,205.2340	-9.9661	3.7154	1,728.5251	1,255.3612	1,404.9577
45	07	3	SAT-M	0.0000	17.1824	4,184.0284	7,141.2669	4,079.7426	-10.1058	3.7132	1,255.3612	1,663.7525	1,214.6537
45	07	4	SAT-W	0.0000	15.8885	5,205.2340	4,079.7426	6,765.8910	-10.3369	4.0076	1,404.9577	1,214.6537	1,661.9605
45	07	5	Black	0.1683	-0.0247	-9.9661	-10.1058	-10.3369	0.1400	-0.0206	-8.2890	-8.4053	-8.5974
45	07	6	Black*HSGPA	-0.0247	0.0673	3.7154	3.7132	4.0076	-0.0206	0.0667	3.4691	3.4635	3.7522
45	07	7	Black*SAT-CR	-9.9647	3.7154	1,728.5251	1,255.3612	1,404.9577	-8.2890	3.4691	1,629.2165	1,154.6600	1,301.9543
45	07	8	Black*SAT-M	-10.1044	3.7132	1,255.3612	1,663.7525	1,214.6537	-8.4053	3.4635	1,154.6600	1,561.6391	1,110.2058
45	07	9	Black*SAT-W	-10.3354	4.0076	1,404.9577	1,214.6537	1,661.9605	-8.5974	3.7522	1,301.9543	1,110.2058	1,555.1249
45	08	1	HSGPA	0.0000	0.3181	14.7048	16.3716	15.7091	-0.0181	0.0680	4.2151	4.3984	4.3274
45	08	2	SAT-CR	0.0000	14.7048	7,100.5578	4,293.2526	5,226.6311	-11.1990	4.2151	1,951.6313	1,380.3942	1,481.5714
45	08	3	SAT-M	0.0000	16.3716	4,293.2526	7,180.0017	4,129.7934	-11.3030	4.3984	1,380.3942	1,885.6718	1,293.8412
45	08	4	SAT-W	0.0000	15.7091	5,226.6311	4,129.7934	6,868.1027	-11.0087	4.3274	1,481.5714	1,293.8412	1,726.8214
45	08	5	Black	0.1915	-0.0181	-11.1990	-11.3030	-11.0087	0.1549	-0.0146	-9.0539	-9.1380	-8.9001
45	08	6	Black*HSGPA	-0.0181	0.0680	4.2151	4.3984	4.3274	-0.0146	0.0676	4.0124	4.1938	4.1282
45	08	7	Black*SAT-CR	-11.1974	4.2151	1,951.6313	1,380.3942	1,481.5714	-9.0539	4.0124	1,826.2315	1,253.8301	1,358.3025
45	08	8	Black*SAT-M	-11.3014	4.3984	1,380.3942	1,885.6718	1,293.8412	-9.1380	4.1938	1,253.8301	1,757.9327	1,169.4278
45	08	9	Black*SAT-W	-11.0072	4.3274	1,481.5714	1,293.8412	1,726.8214	-8.9001	4.1282	1,358.3025	1,169.4278	1,605.6471
47	08	1	HSGPA	0.0000	0.3796	18.7022	21.3337	20.7355	-0.0533	0.0843	4.9380	5.8593	4.8704
47	08	2	SAT-CR	0.0000	18.7022	6,988.5848	4,450.1144	5,111.5603	-8.7896	4.9380	1,500.5759	1,214.4202	1,192.0374
47	08	3	SAT-M	0.0000	21.3337	4,450.1144	7,721.8408	4,405.1664	-10.7875	5.8593	1,214.4202	1,775.8066	1,249.0190
47	08	4	SAT-W	0.0000	20.7355	5,111.5603	4,405.1664	6,764.8068	-8.7929	4.8704	1,192.0374	1,249.0190	1,448.4707
47	08	5	Black	0.1350	-0.0533	-8.7896	-10.7875	-8.7929	0.1168	-0.0461	-7.6032	-9.3314	-7.6060
47	08	6	Black*HSGPA	-0.0533	0.0843	4.9380	5.8593	4.8704	-0.0461	0.0815	4.4696	5.2844	4.4019
47	08	7	Black*SAT-CR	-8.7872	4.9380	1,500.5759	1,214.4202	1,192.0374	-7.6032	4.4696	1,423.3394	1,119.6278	1,114.7722
47	08	8	Black*SAT-M	-10.7846	5.8593	1,214.4202	1,775.8066	1,249.0190	-9.3314	5.2844	1,119.6278	1,659.4677	1,154.1913
47	08	9	Black*SAT-W	-8.7905	4.8704	1,192.0374	1,249.0190	1,448.4707	-7.6060	4.4019	1,114.7722	1,154.1913	1,371.1767
48	06	1	HSGPA	0.0000	0.2765	14.9109	16.2179	16.1301	-0.0154	0.0236	1.4838	2.1575	1.7612
48	06	2	SAT-CR	0.0000	14.9109	7,752.1602	4,585.3712	5,619.9687	-2.9425	1.4838	608.6066	515.5066	498.3406
48	06	3	SAT-M	0.0000	16.2179	4,585.3712	7,962.3562	4,426.4245	-4.2576	2.1575	515.5066	814.0604	554.3945
48	06	4	SAT-W	0.0000	16.1301	5,619.9687	4,426.4245	7,145.4791	-3.3599	1.7612	498.3406	554.3945	606.9079
48	06	5	Black	0.0533	-0.0154	-2.9425	-4.2576	-3.3599	0.0505	-0.0146	-2.7857	-4.0307	-3.1808
48	06	6	Black*HSGPA	-0.0154	0.0236	1.4838	2.1575	1.7612	-0.0146	0.0233	1.4385	2.0919	1.7094
48	06	7	Black*SAT-CR	-2.9417	1.4838	608.6066	515.5066	498.3406	-2.7857	1.4385	599.9507	502.9821	488.4571
48	06	8	Black*SAT-M	-4.2564	2.1575	515.5066	814.0604	554.3945	-4.0307	2.0919	502.9821	795.9385	540.0938
48	06	9	Black*SAT-W	-3.3589	1.7612	498.3406	554.3945	606.9079	-3.1808	1.7094	488.4571	540.0938	595.6226

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
48	07	1	HSGPA	0.0000	0.2747	13.9548	16.3569	15.7392	-0.0168	0.0256	1.6039	2.0520	1.8311
48	07	2	SAT-CR	0.0000	13.9548	7,616.6894	4,614.4094	5,574.4313	-2.6465	1.6039	553.1104	468.9561	457.3787
48	07	3	SAT-M	0.0000	16.3569	4,614.4094	7,890.9360	4,550.3701	-3.5098	2.0520	468.9561	667.8143	488.6675
48	07	4	SAT-W	0.0000	15.7392	5,574.4313	4,550.3701	7,195.2751	-3.1279	1.8311	457.3787	488.6675	550.2858
48	07	5	Black	0.0481	-0.0168	-2.6465	-3.5098	-3.1279	0.0458	-0.0160	-2.5192	-3.3409	-2.9774
48	07	6	Black*HSGPA	-0.0168	0.0256	1.6039	2.0520	1.8311	-0.0160	0.0253	1.5594	1.9929	1.7784
48	07	7	Black*SAT-CR	-2.6458	1.6039	553.1104	468.9561	457.3787	-2.5192	1.5594	546.1081	459.6697	449.1028
48	07	8	Black*SAT-M	-3.5088	2.0520	468.9561	667.8143	488.6675	-3.3409	1.9929	459.6697	655.4990	477.6921
48	07	9	Black*SAT-W	-3.1271	1.8311	457.3787	488.6675	550.2858	-2.9774	1.7784	449.1028	477.6921	540.5045
48	08	1	HSGPA	0.0000	0.2523	13.3186	14.3703	14.8461	-0.0143	0.0205	1.7872	2.2999	2.0074
48	08	2	SAT-CR	0.0000	13.3186	7,193.7511	4,277.8282	5,355.9162	-2.9888	1.7872	697.6444	609.5489	627.2461
48	08	3	SAT-M	0.0000	14.3703	4,277.8282	7,674.0721	4,399.6234	-4.8486	2.2999	609.5489	929.3994	670.4221
48	08	4	SAT-W	0.0000	14.8461	5,355.9162	4,399.6234	7,164.9233	-3.8012	2.0074	627.2461	670.4221	749.7339
48	08	5	Black	0.0553	-0.0143	-2.9888	-4.8486	-3.8012	0.0522	-0.0135	-2.8236	-4.5806	-3.5911
48	08	6	Black*HSGPA	-0.0143	0.0205	1.7872	2.2999	2.0074	-0.0135	0.0203	1.7444	2.2304	1.9530
48	08	7	Black*SAT-CR	-2.9879	1.7872	697.6444	609.5489	627.2461	-2.8236	1.7444	688.7141	595.0619	615.8886
48	08	8	Black*SAT-M	-4.8471	2.2999	609.5489	929.3994	670.4221	-4.5806	2.2304	595.0619	905.8981	651.9975
48	08	9	Black*SAT-W	-3.8000	2.0074	627.2461	670.4221	749.7339	-3.5911	1.9530	615.8886	651.9975	735.2894
49	06	1	HSGPA	0.0000	0.2645	14.6717	16.3367	16.2639	-0.0130	0.0180	1.5994	1.7810	1.8345
49	06	2	SAT-CR	0.0000	14.6717	6,805.3980	4,254.6578	4,942.0399	-2.9032	1.5994	547.6074	510.8873	503.6768
49	06	3	SAT-M	0.0000	16.3367	4,254.6578	7,533.6838	4,140.9752	-3.3990	1.7810	510.8873	714.2524	537.4177
49	06	4	SAT-W	0.0000	16.2639	4,942.0399	4,140.9752	6,655.2977	-3.2457	1.8345	503.6768	537.4177	585.1611
49	06	5	Black	0.0356	-0.0130	-2.9032	-3.3990	-3.2457	0.0343	-0.0125	-2.7998	-3.2780	-3.1301
49	06	6	Black*HSGPA	-0.0130	0.0180	1.5994	1.7810	1.8345	-0.0125	0.0178	1.5617	1.7369	1.7924
49	06	7	Black*SAT-CR	-2.9029	1.5994	547.6074	510.8873	503.6768	-2.7998	1.5617	539.1797	501.0203	494.2549
49	06	8	Black*SAT-M	-3.3987	1.7810	510.8873	714.2524	537.4177	-3.2780	1.7369	501.0203	702.7004	526.3868
49	06	9	Black*SAT-W	-3.2454	1.8345	503.6768	537.4177	585.1611	-3.1301	1.7924	494.2549	526.3868	574.6278
49	07	1	HSGPA	0.0000	0.2562	14.6403	16.7138	16.1757	-0.0106	0.0175	1.3967	1.6856	1.6191
49	07	2	SAT-CR	0.0000	14.6403	6,591.4494	4,143.7469	4,985.9699	-2.4738	1.3967	474.3353	448.9882	438.6126
49	07	3	SAT-M	0.0000	16.7138	4,143.7469	7,556.2055	4,194.1093	-2.9939	1.6856	448.9882	642.9485	483.6834
49	07	4	SAT-W	0.0000	16.1757	4,985.9699	4,194.1093	6,692.2761	-2.7694	1.6191	438.6126	483.6834	543.7531
49	07	5	Black	0.0348	-0.0106	-2.4738	-2.9939	-2.7694	0.0336	-0.0103	-2.3877	-2.8897	-2.6730
49	07	6	Black*HSGPA	-0.0106	0.0175	1.3967	1.6856	1.6191	-0.0103	0.0174	1.3704	1.6538	1.5896
49	07	7	Black*SAT-CR	-2.4736	1.3967	474.3353	448.9882	438.6126	-2.3877	1.3704	468.2163	441.5825	431.7624
49	07	8	Black*SAT-M	-2.9937	1.6856	448.9882	642.9485	483.6834	-2.8897	1.6538	441.5825	633.9857	475.3928
49	07	9	Black*SAT-W	-2.7691	1.6191	438.6126	483.6834	543.7531	-2.6730	1.5896	431.7624	475.3928	536.0844
49	08	1	HSGPA	0.0000	0.2503	14.1452	15.7174	16.1174	-0.0138	0.0205	1.5487	1.8950	1.8273
49	08	2	SAT-CR	0.0000	14.1452	6,670.8494	4,162.5318	5,029.7249	-3.4071	1.5487	648.7738	569.3341	572.3046
49	08	3	SAT-M	0.0000	15.7174	4,162.5318	7,426.8913	4,188.9629	-4.2347	1.8950	569.3341	787.8592	598.7095
49	08	4	SAT-W	0.0000	16.1174	5,029.7249	4,188.9629	6,800.8671	-3.6420	1.8273	572.3046	598.7095	665.7550
49	08	5	Black	0.0430	-0.0138	-3.4071	-4.2347	-3.6420	0.0412	-0.0132	-3.2605	-4.0525	-3.4852
49	08	6	Black*HSGPA	-0.0138	0.0205	1.5487	1.8950	1.8273	-0.0132	0.0203	1.5017	1.8366	1.7771
49	08	7	Black*SAT-CR	-3.4069	1.5487	648.7738	569.3341	572.3046	-3.2605	1.5017	637.1662	554.9069	559.8969
49	08	8	Black*SAT-M	-4.2344	1.8950	569.3341	787.8592	598.7095	-4.0525	1.8366	554.9069	769.9274	583.2878
49	08	9	Black*SAT-W	-3.6417	1.8273	572.3046	598.7095	665.7550	-3.4852	1.7771	559.8969	583.2878	652.4921



## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
52	06	1	HSGPA	0.0000	0.2974	20.7650	22.7852	19.9666	-0.0347	0.0551	3.9709	4.6628	3.9542
52	06	2	SAT-CR	0.0000	20.7650	8,532.1565	5,264.7046	6,412.7050	-7.6702	3.9709	1,479.3849	1,096.0693	1,202.5031
52	06	3	SAT-M	0.0000	22.7852	5,264.7046	7,834.2694	5,159.5425	-8.4439	4.6628	1,096.0693	1,379.8817	1,099.5102
52	06	4	SAT-W	0.0000	19.9666	6,412.7050	5,159.5425	7,933.8363	-8.4436	3.9542	1,202.5031	1,099.5102	1,401.9441
52	06	5	Black	0.1168	-0.0347	-7.6702	-8.4439	-8.4436	0.1032	-0.0306	-6.7747	-7.4581	-7.4577
52	06	6	Black*HSGPA	-0.0347	0.0551	3.9709	4.6628	3.9542	-0.0306	0.0539	3.7051	4.3702	3.6616
52	06	7	Black*SAT-CR	-7.6652	3.9709	1,479.3849	1,096.0693	1,202.5031	-6.7747	3.7051	1,420.5911	1,031.3450	1,137.7817
52	06	8	Black*SAT-M	-8.4384	4.6628	1,096.0693	1,379.8817	1,099.5102	-7.4581	4.3702	1,031.3450	1,308.6287	1,028.2604
52	06	9	Black*SAT-W	-8.4380	3.9542	1,202.5031	1,099.5102	1,401.9441	-7.4577	3.6616	1,137.7817	1,028.2604	1,330.6976
52	07	1	HSGPA	0.0000	0.3157	22.6753	22.5053	22.6154	-0.0338	0.0624	5.1171	4.1357	4.9832
52	07	2	SAT-CR	0.0000	22.6753	8,515.2545	4,960.3248	6,544.0235	-7.6326	5.1171	1,434.4363	918.0485	1,191.3625
52	07	3	SAT-M	0.0000	22.5053	4,960.3248	7,497.6987	5,100.1960	-8.0661	4.1357	918.0485	1,220.9582	982.2022
52	07	4	SAT-W	0.0000	22.6154	6,544.0235	5,100.1960	7,976.3553	-8.1646	4.9832	1,191.3625	982.2022	1,364.2064
52	07	5	Black	0.1155	-0.0338	-7.6326	-8.0661	-8.1646	0.1023	-0.0299	-6.7507	-7.1342	-7.2213
52	07	6	Black*HSGPA	-0.0338	0.0624	5.1171	4.1357	4.9832	-0.0299	0.0613	4.8593	3.8632	4.7074
52	07	7	Black*SAT-CR	-7.6276	5.1171	1,434.4363	918.0485	1,191.3625	-6.7507	4.8593	1,376.2184	856.5236	1,129.0864
52	07	8	Black*SAT-M	-8.0608	4.1357	918.0485	1,220.9582	982.2022	-7.1342	3.8632	856.5236	1,155.9386	916.3887
52	07	9	Black*SAT-W	-8.1593	4.9832	1,191.3625	982.2022	1,364.2064	-7.2213	4.7074	1,129.0864	916.3887	1,297.5892
52	08	1	HSGPA	0.0000	0.3232	18.7763	21.6594	19.2056	-0.0519	0.0819	5.4849	6.1881	5.3060
52	08	2	SAT-CR	0.0000	18.7763	8,061.9256	5,067.5098	6,237.3735	-12.4611	5.4849	1,915.6635	1,546.4719	1,622.5458
52	08	3	SAT-M	0.0000	21.6594	5,067.5098	7,685.9276	4,986.8674	-13.0741	6.1881	1,546.4719	2,068.0172	1,509.9474
52	08	4	SAT-W	0.0000	19.2056	6,237.3735	4,986.8674	7,608.2633	-12.3129	5.3060	1,622.5458	1,509.9474	1,827.5809
52	08	5	Black	0.1579	-0.0519	-12.4611	-13.0741	-12.3129	0.1331	-0.0437	-10.4930	-11.0092	-10.3682
52	08	6	Black*HSGPA	-0.0518	0.0819	5.4849	6.1881	5.3060	-0.0437	0.0792	4.8388	5.5103	4.6677
52	08	7	Black*SAT-CR	-12.4515	5.4849	1,915.6635	1,546.4719	1,622.5458	-10.4930	4.8388	1,760.5048	1,383.6802	1,469.2323
52	08	8	Black*SAT-M	-13.0640	6.1881	1,546.4719	2,068.0172	1,509.9474	-11.0092	5.5103	1,383.6802	1,897.2169	1,349.0916
52	08	9	Black*SAT-W	-12.3034	5.3060	1,622.5458	1,509.9474	1,827.5809	-10.3682	4.6677	1,469.2323	1,349.0916	1,676.0907
53	06	1	HSGPA	0.0000	0.2591	17.2357	19.2716	18.7054	-0.0314	0.0458	4.2638	4.9703	4.5920
53	06	2	SAT-CR	0.0000	17.2357	8,694.1016	5,839.7851	6,920.1811	-5.7793	4.2638	1,299.1693	1,164.4464	1,148.2738
53	06	3	SAT-M	0.0000	19.2716	5,839.7851	9,213.4057	5,827.6151	-7.3112	4.9703	1,164.4464	1,596.9522	1,195.9396
53	06	4	SAT-W	0.0000	18.7054	6,920.1811	5,827.6151	8,754.6940	-5.9548	4.5920	1,148.2738	1,195.9396	1,327.7104
53	06	5	Black	0.0890	-0.0314	-5.7793	-7.3112	-5.9548	0.0811	-0.0286	-5.2648	-6.6604	-5.4247
53	06	6	Black*HSGPA	-0.0314	0.0458	4.2638	4.9703	4.5920	-0.0286	0.0448	4.0822	4.7405	4.4048
53	06	7	Black*SAT-CR	-5.7789	4.2638	1,299.1693	1,164.4464	1,148.2738	-5.2648	4.0822	1,265.7718	1,122.1961	1,113.8617
53	06	8	Black*SAT-M	-7.3107	4.9703	1,164.4464	1,596.9522	1,195.9396	-6.6604	4.7405	1,122.1961	1,543.5025	1,152.4058
53	06	9	Black*SAT-W	-5.9544	4.5920	1,148.2738	1,195.9396	1,327.7104	-5.4247	4.4048	1,113.8617	1,152.4058	1,292.2529
53	07	1	HSGPA	0.0000	0.2522	16.6774	18.7168	18.2857	-0.0277	0.0419	3.9403	4.6258	4.2026
53	07	2	SAT-CR	0.0000	16.6774	8,696.3313	5,646.0822	6,947.4446	-5.3837	3.9403	1,268.0640	1,085.8830	1,099.1124
53	07	3	SAT-M	0.0000	18.7168	5,646.0822	8,988.6935	5,682.4584	-6.9687	4.6258	1,085.8830	1,489.7233	1,106.2436
53	07	4	SAT-W	0.0000	18.2857	6,947.4446	5,682.4584	8,779.9636	-5.6016	4.2026	1,099.1124	1,106.2436	1,253.1296
53	07	5	Black	0.0873	-0.0277	-5.3837	-6.9687	-5.6016	0.0797	-0.0253	-4.9138	-6.3605	-5.1127
53	07	6	Black*HSGPA	-0.0277	0.0419	3.9403	4.6258	4.2026	-0.0253	0.0412	3.7910	4.4326	4.0473
53	07	7	Black*SAT-CR	-5.3834	3.9403	1,268.0640	1,085.8830	1,099.1124	-4.9138	3.7910	1,239.0818	1,048.3677	1,068.9570
53	07	8	Black*SAT-M	-6.9683	4.6258	1,085.8830	1,489.7233	1,106.2436	-6.3605	4.4326	1,048.3677	1,441.1627	1,067.2098
53	07	9	Black*SAT-W	-5.6013	4.2026	1,099.1124	1,106.2436	1,253.1296	-5.1127	4.0473	1,068.9570	1,067.2098	1,221.7536

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
53	08	1	HSGPA	0.0000	0.2426	15.5954	17.8454	17.3653	-0.0306	0.0465	4.1547	4.7932	4.4767
53	08	2	SAT-CR	0.0000	15.5954	8,548.2093	5,579.1493	6,820.0102	-6.1139	4.1547	1,396.7708	1,207.9924	1,204.1579
53	08	3	SAT-M	0.0000	17.8454	5,579.1493	8,774.9777	5,676.0418	-7.6229	4.7932	1,207.9924	1,611.2483	1,212.9132
53	08	4	SAT-W	0.0000	17.3653	6,820.0102	5,676.0418	8,781.0651	-6.1739	4.4767	1,204.1579	1,212.9132	1,381.8979
53	08	5	Black	0.0957	-0.0306	-6.1139	-7.6229	-6.1739	0.0865	-0.0277	-5.5288	-6.8934	-5.5831
53	08	6	Black*HSGPA	-0.0306	0.0465	4.1547	4.7932	4.4767	-0.0277	0.0455	3.9677	4.5600	4.2878
53	08	7	Black*SAT-CR	-6.1135	4.1547	1,396.7708	1,207.9924	1,204.1579	-5.5288	3.9677	1,359.3934	1,161.3898	1,166.4136
53	08	8	Black*SAT-M	-7.6224	4.7932	1,207.9924	1,611.2483	1,212.9132	-6.8934	4.5600	1,161.3898	1,553.1437	1,165.8533
53	08	9	Black*SAT-W	-6.1735	4.4767	1,204.1579	1,212.9132	1,381.8979	-5.5831	4.2878	1,166.4136	1,165.8533	1,343.7832
54	06	1	HSGPA	0.0000	0.3287	25.4196	27.5926	27.9414	-0.0668	0.0853	9.1242	8.5848	9.1126
54	06	2	SAT-CR	0.0000	25.4196	9,717.2605	6,027.7043	7,185.5509	-12.5725	9.1242	2,154.4219	1,562.2901	1,745.4770
54	06	3	SAT-M	0.0000	27.5926	6,027.7043	9,077.6378	5,765.7128	-11.9333	8.5848	1,562.2901	1,695.2884	1,434.7508
54	06	4	SAT-W	0.0000	27.9414	7,185.5509	5,765.7128	8,264.8399	-10.9528	9.1126	1,745.4770	1,434.7508	1,829.0819
54	06	5	Black	0.1563	-0.0668	-12.5725	-11.9333	-10.9528	0.1321	-0.0563	-10.6074	-10.0682	-9.2409
54	06	6	Black*HSGPA	-0.0666	0.0853	9.1242	8.5848	9.1126	-0.0563	0.0808	8.2863	7.7895	8.3827
54	06	7	Black*SAT-CR	-12.5524	9.1242	2,154.4219	1,562.2901	1,745.4770	-10.6074	8.2863	1,996.6070	1,412.4978	1,607.9931
54	06	8	Black*SAT-M	-11.9143	8.5848	1,562.2901	1,695.2884	1,434.7508	-10.0682	7.7895	1,412.4978	1,553.1109	1,304.2559
54	06	9	Black*SAT-W	-10.9353	9.1126	1,745.4770	1,434.7508	1,829.0819	-9.2409	8.3827	1,607.9931	1,304.2559	1,709.3097
57	07	1	HSGPA	0.0000	0.2566	15.5827	14.8638	16.5702	-0.0221	0.0354	3.3317	3.2635	3.3502
57	07	2	SAT-CR	0.0000	15.5827	9,261.9257	5,067.8770	7,022.8191	-6.0750	3.3317	1,387.8699	1,066.8797	1,187.3247
57	07	3	SAT-M	0.0000	14.8638	5,067.8770	7,786.6742	4,975.8327	-6.8016	3.2635	1,066.8797	1,287.4606	1,036.7754
57	07	4	SAT-W	0.0000	16.5702	7,022.8191	4,975.8327	8,571.1715	-5.9013	3.3502	1,187.3247	1,036.7754	1,270.5946
57	07	5	Black	0.0804	-0.0221	-6.0750	-6.8016	-5.9013	0.0740	-0.0203	-5.5866	-6.2548	-5.4269
57	07	6	Black*HSGPA	-0.0221	0.0354	3.3317	3.2635	3.3502	-0.0203	0.0349	3.1976	3.1134	3.2199
57	07	7	Black*SAT-CR	-6.0726	3.3317	1,387.8699	1,066.8797	1,187.3247	-5.5866	3.1976	1,350.9788	1,025.5762	1,151.4881
57	07	8	Black*SAT-M	-6.7989	3.2635	1,066.8797	1,287.4606	1,036.7754	-6.2548	3.1134	1,025.5762	1,241.2169	996.6526
57	07	9	Black*SAT-W	-5.8990	3.3502	1,187.3247	1,036.7754	1,270.5946	-5.4269	3.2199	1,151.4881	996.6526	1,235.7825
58	06	1	HSGPA	0.0000	0.2850	18.0443	20.9951	18.6215	-0.0524	0.0750	7.0046	7.6462	6.7180
58	06	2	SAT-CR	0.0000	18.0443	9,456.2028	6,517.5463	7,047.3486	-16.3019	7.0046	2,895.4143	2,387.9508	2,256.8158
58	06	3	SAT-M	0.0000	20.9951	6,517.5463	9,568.2127	5,950.8667	-17.1102	7.6462	2,387.9508	3,072.6886	2,150.5250
58	06	4	SAT-W	0.0000	18.6215	7,047.3486	5,950.8667	8,207.1089	-14.5930	6.7180	2,256.8158	2,150.5250	2,392.3935
58	06	5	Black	0.2116	-0.0524	-16.3019	-17.1102	-14.5930	0.1668	-0.0413	-12.8531	-13.4905	-11.5058
58	06	6	Black*HSGPA	-0.0524	0.0750	7.0046	7.6462	6.7180	-0.0413	0.0723	6.1509	6.7502	5.9538
58	06	7	Black*SAT-CR	-16.3003	7.0046	2,895.4143	2,387.9508	2,256.8158	-12.8531	6.1509	2,629.6884	2,109.0483	2,018.9454
58	06	8	Black*SAT-M	-17.1086	7.6462	2,387.9508	3,072.6886	2,150.5250	-13.4905	6.7502	2,109.0483	2,779.9561	1,900.8592
58	06	9	Black*SAT-W	-14.5916	6.7180	2,256.8158	2,150.5250	2,392.3935	-11.5058	5.9538	2,018.9454	1,900.8592	2,179.4586
58	07	1	HSGPA	0.0000	0.2874	18.8456	20.9541	19.6649	-0.0539	0.0750	6.9271	7.3510	6.8215
58	07	2	SAT-CR	0.0000	18.8456	9,419.5032	6,133.1828	7,121.5854	-16.6779	6.9271	2,841.6995	2,236.5943	2,236.9993
58	07	3	SAT-M	0.0000	20.9541	6,133.1828	8,825.7939	5,708.2733	-16.6193	7.3510	2,236.5943	2,821.9366	2,039.1859
58	07	4	SAT-W	0.0000	19.6649	7,121.5854	5,708.2733	8,358.9084	-15.3024	6.8215	2,236.9993	2,039.1859	2,413.1967
58	07	5	Black	0.2222	-0.0539	-16.6779	-16.6193	-15.3024	0.1728	-0.0419	-12.9727	-12.9271	-11.9028
58	07	6	Black*HSGPA	-0.0538	0.0750	6.9271	7.3510	6.8215	-0.0419	0.0721	6.0290	6.4561	5.9975
58	07	7	Black*SAT-CR	-16.6764	6.9271	2,841.6995	2,236.5943	2,236.9993	-12.9727	6.0290	2,563.5709	1,959.4434	1,981.8096
58	07	8	Black*SAT-M	-16.6178	7.3510	2,236.5943	2,821.9366	2,039.1859	-12.9271	6.4561	1,959.4434	2,545.7601	1,784.8933
58	07	9	Black*SAT-W	-15.3010	6.8215	2,236.9993	2,039.1859	2,413.1967	-11.9028	5.9975	1,981.8096	1,784.8933	2,179.0539

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
58	08	1	HSGPA	0.0000	0.2792	18.8067	20.8057	18.9538	-0.0536	0.0738	7.0162	7.4951	6.6979
58	08	2	SAT-CR	0.0000	18.8067	9,430.7157	6,182.4710	6,991.0220	-16.7258	7.0162	2,942.7747	2,289.2295	2,275.8924
58	08	3	SAT-M	0.0000	20.8057	6,182.4710	8,988.8112	5,660.4307	-17.2134	7.4951	2,289.2295	2,900.6056	2,039.9498
58	08	4	SAT-W	0.0000	18.9538	6,991.0220	5,660.4307	8,232.6035	-14.7899	6.6979	2,275.8924	2,039.9498	2,440.6650
58	08	5	Black	0.2320	-0.0536	-16.7258	-17.2134	-14.7899	0.1782	-0.0411	-12.8451	-13.2195	-11.3583
58	08	6	Black*HSGPA	-0.0536	0.0738	7.0162	7.4951	6.6979	-0.0411	0.0710	6.1202	6.5730	5.9056
58	08	7	Black*SAT-CR	-16.7244	7.0162	2,942.7747	2,289.2295	2,275.8924	-12.8451	6.1202	2,663.0462	2,001.3466	2,028.5414
58	08	8	Black*SAT-M	-17.2119	7.4951	2,289.2295	2,900.6056	2,039.9498	-13.2195	6.5730	2,001.3466	2,604.3306	1,785.3883
58	08	9	Black*SAT-W	-14.7886	6.6979	2,275.8924	2,039.9498	2,440.6650	-11.3583	5.9056	2,028.5414	1,785.3883	2,221.9440
59	06	1	HSGPA	0.0000	0.3340	22.5782	25.4029	24.5783	-0.0370	0.0652	5.3977	6.3652	5.6962
59	06	2	SAT-CR	0.0000	22.5782	8,956.8968	6,327.6976	7,069.7070	-8.8440	5.3977	1,826.0232	1,667.9466	1,569.2980
59	06	3	SAT-M	0.0000	25.4029	6,327.6976	9,883.4206	6,267.4128	-11.3391	6.3652	1,667.9466	2,320.5940	1,658.1359
59	06	4	SAT-W	0.0000	24.5783	7,069.7070	6,267.4128	8,824.1377	-8.8890	5.6962	1,569.2980	1,658.1359	1,777.7808
59	06	5	Black	0.1228	-0.0370	-8.8440	-11.3391	-8.8890	0.1078	-0.0325	-7.7576	-9.9463	-7.7971
59	06	6	Black*HSGPA	-0.0370	0.0652	5.3977	6.3652	5.6962	-0.0325	0.0638	5.0703	5.9455	5.3672
59	06	7	Black*SAT-CR	-8.8433	5.3977	1,826.0232	1,667.9466	1,569.2980	-7.7576	5.0703	1,747.8132	1,567.6715	1,490.6901
59	06	8	Black*SAT-M	-11.3383	6.3652	1,667.9466	2,320.5940	1,658.1359	-9.9463	5.9455	1,567.6715	2,192.0284	1,557.3506
59	06	9	Black*SAT-W	-8.8883	5.6962	1,569.2980	1,658.1359	1,777.7808	-7.7971	5.3672	1,490.6901	1,557.3506	1,698.7731
59	07	1	HSGPA	0.0000	0.3259	22.9409	25.5889	24.7931	-0.0409	0.0685	6.0766	7.0180	6.2024
59	07	2	SAT-CR	0.0000	22.9409	9,117.7172	6,332.0586	7,210.1728	-9.3698	6.0766	2,008.6447	1,831.1864	1,723.7408
59	07	3	SAT-M	0.0000	25.5889	6,332.0586	9,978.9850	6,265.2456	-11.8815	7.0180	1,831.1864	2,465.8771	1,804.5649
59	07	4	SAT-W	0.0000	24.7931	7,210.1728	6,265.2456	8,921.6285	-9.5005	6.2024	1,723.7408	1,804.5649	1,910.5944
59	07	5	Black	0.1281	-0.0409	-9.3698	-11.8815	-9.5005	0.1117	-0.0357	-8.1699	-10.3599	-8.2838
59	07	6	Black*HSGPA	-0.0409	0.0685	6.0766	7.0180	6.2024	-0.0357	0.0668	5.6933	6.5320	5.8138
59	07	7	Black*SAT-CR	-9.3692	6.0766	2,008.6447	1,831.1864	1,723.7408	-8.1699	5.6933	1,920.8569	1,719.8658	1,634.7285
59	07	8	Black*SAT-M	-11.8808	7.0180	1,831.1864	2,465.8771	1,804.5649	-10.3599	6.5320	1,719.8658	2,324.7154	1,691.6916
59	07	9	Black*SAT-W	-9.4999	6.2024	1,723.7408	1,804.5649	1,910.5944	-8.2838	5.8138	1,634.7285	1,691.6916	1,820.3405
59	08	1	HSGPA	0.0000	0.3039	21.8364	24.7379	23.8668	-0.0423	0.0712	6.3099	7.3140	6.7994
59	08	2	SAT-CR	0.0000	21.8364	9,230.9898	6,451.7346	7,278.3815	-10.4057	6.3099	2,183.9312	1,981.2833	1,903.8473
59	08	3	SAT-M	0.0000	24.7379	6,451.7346	10,014.2321	6,373.8288	-12.7188	7.3140	1,981.2833	2,614.6575	1,978.1335
59	08	4	SAT-W	0.0000	23.8668	7,278.3815	6,373.8288	9,040.8620	-10.4220	6.7994	1,903.8473	1,978.1335	2,127.4967
59	08	5	Black	0.1327	-0.0423	-10.4057	-12.7188	-10.4220	0.1151	-0.0367	-9.0248	-11.0309	-9.0389
59	08	6	Black*HSGPA	-0.0423	0.0712	6.3099	7.3140	6.7994	-0.0367	0.0694	5.8701	6.7765	6.3590
59	08	7	Black*SAT-CR	-10.4051	6.3099	2,183.9312	1,981.2833	1,903.8473	-9.0248	5.8701	2,075.6588	1,848.9433	1,795.4055
59	08	8	Black*SAT-M	-12.7180	7.3140	1,981.2833	2,614.6575	1,978.1335	-11.0309	6.7765	1,848.9433	2,452.8997	1,845.5862
59	08	9	Black*SAT-W	-10.4214	6.7994	1,903.8473	1,978.1335	2,127.4967	-9.0389	6.3590	1,795.4055	1,845.5862	2,018.8851
60	06	1	HSGPA	0.0000	0.3117	14.1937	16.2413	15.8402	-0.0162	0.0307	1.5810	1.8371	1.5866
60	06	2	SAT-CR	0.0000	14.1937	7,315.0406	4,592.2224	5,264.9265	-4.2189	1.5810	748.8332	649.5034	636.6860
60	06	3	SAT-M	0.0000	16.2413	4,592.2224	8,068.6219	4,334.3621	-4.8885	1.8371	649.5034	901.4103	645.5213
60	06	4	SAT-W	0.0000	15.8402	5,264.9265	4,334.3621	6,925.8158	-4.3499	1.5866	636.6860	645.5213	746.7552
60	06	5	Black	0.0656	-0.0162	-4.2189	-4.8885	-4.3499	0.0613	-0.0151	-3.9421	-4.5679	-4.0646
60	06	6	Black*HSGPA	-0.0162	0.0307	1.5810	1.8371	1.5866	-0.0151	0.0304	1.5127	1.7580	1.5162
60	06	7	Black*SAT-CR	-4.2180	1.5810	748.8332	649.5034	636.6860	-3.9421	1.5127	731.0378	628.8834	618.3379
60	06	8	Black*SAT-M	-4.8875	1.8371	649.5034	901.4103	645.5213	-4.5679	1.7580	628.8834	877.5174	624.2609
60	06	9	Black*SAT-W	-4.3490	1.5866	636.6860	645.5213	746.7552	-4.0646	1.5162	618.3379	624.2609	727.8372

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
60	07	1	HSGPA	0.0000	0.3021	14.8085	16.0570	16.2252	-0.0142	0.0270	1.7688	1.8944	1.8941
60	07	2	SAT-CR	0.0000	14.8085	7,453.9249	4,569.0065	5,509.8409	-4.9092	1.7688	962.0775	794.8778	803.2292
60	07	3	SAT-M	0.0000	16.0570	4,569.0065	7,883.2123	4,415.5256	-5.4065	1.8944	794.8778	993.5801	771.7941
60	07	4	SAT-W	0.0000	16.2252	5,509.8409	4,415.5256	7,070.4018	-4.7550	1.8941	803.2292	771.7941	902.2778
60	07	5	Black	0.0700	-0.0142	-4.9092	-5.4065	-4.7550	0.0651	-0.0132	-4.5657	-5.0283	-4.4223
60	07	6	Black*HSGPA	-0.0142	0.0270	1.7688	1.8944	1.8941	-0.0132	0.0268	1.6993	1.8179	1.8268
60	07	7	Black*SAT-CR	-4.9083	1.7688	962.0775	794.8778	803.2292	-4.5657	1.6993	937.9819	768.3410	779.8904
60	07	8	Black*SAT-M	-5.4056	1.8944	794.8778	993.5801	771.7941	-5.0283	1.8179	768.3410	964.3547	746.0907
60	07	9	Black*SAT-W	-4.7541	1.8941	803.2292	771.7941	902.2778	-4.4223	1.8268	779.8904	746.0907	879.6720
60	08	1	HSGPA	0.0000	0.2992	12.1661	14.2020	14.1903	-0.0108	0.0373	1.0271	1.4346	1.2499
60	08	2	SAT-CR	0.0000	12.1661	7,220.4289	4,456.0723	5,258.4002	-5.3183	1.0271	978.0662	740.3081	771.2157
60	08	3	SAT-M	0.0000	14.2020	4,456.0723	7,930.7272	4,313.4426	-5.8513	1.4346	740.3081	1,016.6676	681.6796
60	08	4	SAT-W	0.0000	14.1903	5,258.4002	4,313.4426	6,817.0093	-4.9020	1.2499	771.2157	681.6796	866.6019
60	08	5	Black	0.0830	-0.0108	-5.3183	-5.8513	-4.9020	0.0761	-0.0099	-4.8771	-5.3659	-4.4953
60	08	6	Black*HSGPA	-0.0108	0.0373	1.0271	1.4346	1.2499	-0.0099	0.0371	0.9695	1.3713	1.1969
60	08	7	Black*SAT-CR	-5.3174	1.0271	978.0662	740.3081	771.2157	-4.8771	0.9695	949.7866	709.1945	745.1499
60	08	8	Black*SAT-M	-5.8503	1.4346	740.3081	1,016.6676	681.6796	-5.3659	1.3713	709.1945	982.4359	653.0015
60	08	9	Black*SAT-W	-4.9012	1.2499	771.2157	681.6796	866.6019	-4.4953	1.1969	745.1499	653.0015	842.5765
61	06	1	HSGPA	0.0000	0.2752	10.9941	14.1324	12.1603	-0.0197	0.0316	1.9708	2.6978	2.1251
61	06	2	SAT-CR	0.0000	10.9941	6,841.0269	4,205.5814	4,648.8737	-5.8372	1.9708	1,029.5944	943.2608	832.3947
61	06	3	SAT-M	0.0000	14.1324	4,205.5814	7,884.0504	3,751.4260	-7.6703	2.6978	943.2608	1,358.7347	876.6880
61	06	4	SAT-W	0.0000	12.1603	4,648.8737	3,751.4260	6,110.7471	-5.5852	2.1251	832.3947	876.6880	935.6502
61	06	5	Black	0.0887	-0.0197	-5.8372	-7.6703	-5.5852	0.0808	-0.0179	-5.3196	-6.9901	-5.0899
61	06	6	Black*HSGPA	-0.0197	0.0316	1.9708	2.6978	2.1251	-0.0179	0.0312	1.8559	2.5469	2.0152
61	06	7	Black*SAT-CR	-5.8350	1.9708	1,029.5944	943.2608	832.3947	-5.3196	1.8559	995.5341	898.5046	799.8052
61	06	8	Black*SAT-M	-7.6674	2.6978	943.2608	1,358.7347	876.6880	-6.9901	2.5469	898.5046	1,299.9239	833.8645
61	06	9	Black*SAT-W	-5.5830	2.1251	832.3947	876.6880	935.6502	-5.0899	2.0152	799.8052	833.8645	904.4680
61	07	1	HSGPA	0.0000	0.2879	12.5885	14.8245	15.2911	-0.0208	0.0343	2.4070	2.4445	2.7436
61	07	2	SAT-CR	0.0000	12.5885	6,813.6504	4,088.6626	4,873.2215	-6.0690	2.4070	1,006.7592	816.8958	836.2052
61	07	3	SAT-M	0.0000	14.8245	4,088.6626	7,419.4073	3,832.8526	-7.1423	2.4445	816.8958	1,153.3883	828.2075
61	07	4	SAT-W	0.0000	15.2911	4,873.2215	3,832.8526	6,377.7994	-6.1598	2.7436	836.2052	828.2075	1,015.5364
61	07	5	Black	0.0906	-0.0208	-6.0690	-7.1423	-6.1598	0.0824	-0.0189	-5.5194	-6.4955	-5.6020
61	07	6	Black*HSGPA	-0.0208	0.0343	2.4070	2.4445	2.7436	-0.0189	0.0339	2.2807	2.2958	2.6153
61	07	7	Black*SAT-CR	-6.0669	2.4070	1,006.7592	816.8958	836.2052	-5.5194	2.2807	969.9388	773.5639	798.8343
61	07	8	Black*SAT-M	-7.1398	2.4445	816.8958	1,153.3883	828.2075	-6.4955	2.2958	773.5639	1,102.3933	784.2276
61	07	9	Black*SAT-W	-6.1576	2.7436	836.2052	828.2075	1,015.5364	-5.6020	2.6153	798.8343	784.2276	977.6067
61	08	1	HSGPA	0.0000	0.2825	14.2399	16.5899	16.2288	-0.0298	0.0504	3.0047	3.5076	3.3099
61	08	2	SAT-CR	0.0000	14.2399	6,908.2433	4,554.4088	5,194.8123	-8.2329	3.0047	1,412.0657	1,191.1113	1,147.4191
61	08	3	SAT-M	0.0000	16.5899	4,554.4088	7,967.5384	4,482.8543	-10.1739	3.5076	1,191.1113	1,696.3038	1,172.8135
61	08	4	SAT-W	0.0000	16.2288	5,194.8123	4,482.8543	6,859.5152	-8.5679	3.3099	1,147.4191	1,172.8135	1,322.8566
61	08	5	Black	0.1121	-0.0298	-8.2329	-10.1739	-8.5679	0.0996	-0.0265	-7.3098	-9.0332	-7.6072
61	08	6	Black*HSGPA	-0.0298	0.0504	3.0047	3.5076	3.3099	-0.0265	0.0496	2.7593	3.2043	3.0546
61	08	7	Black*SAT-CR	-8.2302	3.0047	1,412.0657	1,191.1113	1,147.4191	-7.3098	2.7593	1,344.3070	1,107.3779	1,076.9036
61	08	8	Black*SAT-M	-10.1706	3.5076	1,191.1113	1,696.3038	1,172.8135	-9.0332	3.2043	1,107.3779	1,592.8297	1,085.6734
61	08	9	Black*SAT-W	-8.5651	3.3099	1,147.4191	1,172.8135	1,322.8566	-7.6072	3.0546	1,076.9036	1,085.6734	1,249.4721

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
62	06	1	HSGPA	0.0000	0.2751	18.1259	19.3265	19.7708	-0.0169	0.0287	2.2406	2.6126	2.3534
62	06	2	SAT-CR	0.0000	18.1259	8,524.4280	5,277.3660	6,512.2177	-4.4719	2.2406	910.5086	787.1483	800.5526
62	06	3	SAT-M	0.0000	19.3265	5,277.3660	8,516.4137	5,200.3337	-5.0143	2.6126	787.1483	1,033.1623	800.5378
62	06	4	SAT-W	0.0000	19.7708	6,512.2177	5,200.3337	8,224.4056	-4.5062	2.3534	800.5526	800.5378	905.9715
62	06	5	Black	0.0551	-0.0169	-4.4719	-5.0143	-4.5062	0.0520	-0.0160	-4.2256	-4.7381	-4.2580
62	06	6	Black*HSGPA	-0.0169	0.0287	2.2406	2.6126	2.3534	-0.0160	0.0284	2.1650	2.5278	2.2772
62	06	7	Black*SAT-CR	-4.4717	2.2406	910.5086	787.1483	800.5526	-4.2256	2.1650	890.5117	764.7260	780.4023
62	06	8	Black*SAT-M	-5.0140	2.6126	787.1483	1,033.1623	800.5378	-4.7381	2.5278	764.7260	1,008.0204	777.9434
62	06	9	Black*SAT-W	-4.5060	2.3534	800.5526	800.5378	905.9715	-4.2580	2.2772	780.4023	777.9434	885.6665
63	06	1	HSGPA	0.0000	0.1949	13.8430	14.0805	14.4353	-0.0392	0.0514	5.2197	5.0038	5.0423
63	06	2	SAT-CR	0.0000	13.8430	9,208.2266	4,689.6749	6,525.8331	-11.3018	5.2197	2,227.2452	1,599.6027	1,860.4460
63	06	3	SAT-M	0.0000	14.0805	4,689.6749	7,557.7743	4,891.0319	-9.8462	5.0038	1,599.6027	1,979.7692	1,624.2053
63	06	4	SAT-W	0.0000	14.4353	6,525.8331	4,891.0319	8,170.7711	-11.7476	5.0423	1,860.4460	1,624.2053	2,066.4776
63	06	5	Black	0.1376	-0.0392	-11.3018	-9.8462	-11.7476	0.1187	-0.0338	-9.7469	-8.4916	-10.1314
63	06	6	Black*HSGPA	-0.0392	0.0514	5.2197	5.0038	5.0423	-0.0338	0.0499	4.7769	4.6180	4.5821
63	06	7	Black*SAT-CR	-11.2940	5.2197	2,227.2452	1,599.6027	1,860.4460	-9.7469	4.7769	2,099.6028	1,488.3989	1,727.7683
63	06	8	Black*SAT-M	-9.8395	5.0038	1,599.6027	1,979.7692	1,624.2053	-8.4916	4.6180	1,488.3989	1,882.8870	1,508.6146
63	06	9	Black*SAT-W	-11.7396	5.0423	1,860.4460	1,624.2053	2,066.4776	-10.1314	4.5821	1,727.7683	1,508.6146	1,928.5659
63	07	1	HSGPA	0.0000	0.1963	14.3187	14.3982	13.9139	-0.0409	0.0532	5.2688	4.7206	4.9666
63	07	2	SAT-CR	0.0000	14.3187	9,113.4395	4,817.7851	6,757.4061	-13.2998	5.2688	2,700.5183	1,767.1295	2,142.3540
63	07	3	SAT-M	0.0000	14.3982	4,817.7851	8,377.3139	4,785.7139	-10.7910	4.7206	1,767.1295	2,080.2512	1,612.9601
63	07	4	SAT-W	0.0000	13.9139	6,757.4061	4,785.7139	8,113.5400	-12.6060	4.9666	2,142.3540	1,612.9601	2,162.9516
63	07	5	Black	0.1562	-0.0409	-13.2998	-10.7910	-12.6060	0.1319	-0.0345	-11.2226	-9.1056	-10.6372
63	07	6	Black*HSGPA	-0.0409	0.0532	5.2688	4.7206	4.9666	-0.0345	0.0515	4.7253	4.2796	4.4515
63	07	7	Black*SAT-CR	-13.2907	5.2688	2,700.5183	1,767.1295	2,142.3540	-11.2226	4.7253	2,523.7545	1,623.7095	1,974.8116
63	07	8	Black*SAT-M	-10.7836	4.7206	1,767.1295	2,080.2512	1,612.9601	-9.1056	4.2796	1,623.7095	1,963.8853	1,477.0221
63	07	9	Black*SAT-W	-12.5973	4.9666	2,142.3540	1,612.9601	2,162.9516	-10.6372	4.4515	1,974.8116	1,477.0221	2,004.1495
63	08	1	HSGPA	0.0000	0.1938	13.4856	15.6773	14.3628	-0.0275	0.0554	4.1228	4.7842	4.4280
63	08	2	SAT-CR	0.0000	13.4856	9,655.0860	5,416.5661	7,245.6648	-14.9586	4.1228	2,789.8719	1,855.7334	2,325.1944
63	08	3	SAT-M	0.0000	15.6773	5,416.5661	8,479.8555	5,463.8682	-12.0753	4.7842	1,855.7334	2,233.5753	1,874.3775
63	08	4	SAT-W	0.0000	14.3628	7,245.6648	5,463.8682	8,649.6036	-13.6211	4.4280	2,325.1944	1,874.3775	2,523.3411
63	08	5	Black	0.1632	-0.0275	-14.9586	-12.0753	-13.6211	0.1366	-0.0230	-12.5181	-10.1052	-11.3988
63	08	6	Black*HSGPA	-0.0275	0.0554	4.1228	4.7842	4.4280	-0.0230	0.0546	3.7121	4.4526	4.0540
63	08	7	Black*SAT-CR	-14.9481	4.1228	2,789.8719	1,855.7334	2,325.1944	-12.5181	3.7121	2,566.2686	1,675.2305	2,121.5843
63	08	8	Black*SAT-M	-12.0668	4.7842	1,855.7334	2,233.5753	1,874.3775	-10.1052	4.4526	1,675.2305	2,087.8649	1,710.0140
63	08	9	Black*SAT-W	-13.6115	4.4280	2,325.1944	1,874.3775	2,523.3411	-11.3988	4.0540	2,121.5843	1,710.0140	2,337.9367
64	06	1	HSGPA	0.0000	0.3029	14.8808	17.9768	16.2322	-0.0320	0.0633	3.7500	4.4695	3.8032
64	06	2	SAT-CR	0.0000	14.8808	7,831.1409	5,116.6725	5,579.0400	-8.8225	3.7500	1,846.6815	1,418.5267	1,394.3419
64	06	3	SAT-M	0.0000	17.9768	5,116.6725	8,374.3371	4,700.7476	-10.2005	4.4695	1,418.5267	1,952.0864	1,295.3367
64	06	4	SAT-W	0.0000	16.2322	5,579.0400	4,700.7476	6,885.7436	-8.0279	3.8032	1,394.3419	1,295.3367	1,568.5964
64	06	5	Black	0.1756	-0.0320	-8.8225	-10.2005	-8.0279	0.1448	-0.0264	-7.2732	-8.4092	-6.6181
64	06	6	Black*HSGPA	-0.0320	0.0633	3.7500	4.4695	3.8032	-0.0264	0.0623	3.4680	4.1435	3.5466
64	06	7	Black*SAT-CR	-8.8209	3.7500	1,846.6815	1,418.5267	1,394.3419	-7.2732	3.4680	1,768.8587	1,328.5484	1,323.5283
64	06	8	Black*SAT-M	-10.1987	4.4695	1,418.5267	1,952.0864	1,295.3367	-8.4092	4.1435	1,328.5484	1,848.0539	1,213.4623
64	06	9	Black*SAT-W	-8.0265	3.8032	1,394.3419	1,295.3367	1,568.5964	-6.6181	3.5466	1,323.5283	1,213.4623	1,504.1606

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
66	06	1	HSGPA	0.0000	0.2802	17.8874	21.5186	18.1924	-0.0342	0.0483	4.9040	5.6935	4.9182
66	06	2	SAT-CR	0.0000	17.8874	8,380.2438	5,811.0947	6,117.3524	-8.8209	4.9040	1,709.1428	1,523.7144	1,378.7748
66	06	3	SAT-M	0.0000	21.5186	5,811.0947	9,239.6736	5,293.6480	-10.3657	5.6935	1,523.7144	2,025.3418	1,416.9188
66	06	4	SAT-W	0.0000	18.1924	6,117.3524	5,293.6480	7,464.0844	-8.3851	4.9182	1,378.7748	1,416.9188	1,486.6371
66	06	5	Black	0.1154	-0.0342	-8.8209	-10.3657	-8.3851	0.1021	-0.0303	-7.8029	-9.1694	-7.4174
66	06	6	Black*HSGPA	-0.0342	0.0483	4.9040	5.6935	4.9182	-0.0303	0.0472	4.6023	5.3389	4.6313
66	06	7	Black*SAT-CR	-8.8202	4.9040	1,709.1428	1,523.7144	1,378.7748	-7.8029	4.6023	1,631.3408	1,432.2869	1,304.8163
66	06	8	Black*SAT-M	-10.3649	5.6935	1,523.7144	2,025.3418	1,416.9188	-9.1694	5.3389	1,432.2869	1,917.9025	1,330.0079
66	06	9	Black*SAT-W	-8.3845	4.9182	1,378.7748	1,416.9188	1,486.6371	-7.4174	4.6313	1,304.8163	1,330.0079	1,416.3323
66	07	1	HSGPA	0.0000	0.2759	17.4109	20.3210	18.3396	-0.0303	0.0448	4.2784	4.8767	4.3824
66	07	2	SAT-CR	0.0000	17.4109	8,261.3685	5,476.8515	6,236.3177	-8.1527	4.2784	1,545.0611	1,317.1317	1,288.3085
66	07	3	SAT-M	0.0000	20.3210	5,476.8515	8,611.7225	5,238.1801	-9.3032	4.8767	1,317.1317	1,727.4687	1,263.5074
66	07	4	SAT-W	0.0000	18.3396	6,236.3177	5,238.1801	7,618.8741	-7.9656	4.3824	1,288.3085	1,263.5074	1,416.7120
66	07	5	Black	0.1172	-0.0303	-8.1527	-9.3032	-7.9656	0.1035	-0.0267	-7.1971	-8.2127	-7.0319
66	07	6	Black*HSGPA	-0.0303	0.0448	4.2784	4.8767	4.3824	-0.0267	0.0439	4.0315	4.5949	4.1412
66	07	7	Black*SAT-CR	-8.1522	4.2784	1,545.0611	1,317.1317	1,288.3085	-7.1971	4.0315	1,478.5986	1,241.2907	1,223.3716
66	07	8	Black*SAT-M	-9.3025	4.8767	1,317.1317	1,727.4687	1,263.5074	-8.2127	4.5949	1,241.2907	1,640.9258	1,189.4074
66	07	9	Black*SAT-W	-7.9650	4.3824	1,288.3085	1,263.5074	1,416.7120	-7.0319	4.1412	1,223.3716	1,189.4074	1,353.2659
67	08	1	HSGPA	0.0000	0.3471	28.0819	28.2198	28.2159	-0.1219	0.1494	12.4384	12.6130	10.7676
67	08	2	SAT-CR	0.0000	28.0819	9,687.1098	6,596.2954	7,324.2086	-18.7188	12.4384	3,284.6230	2,430.3364	2,245.5926
67	08	3	SAT-M	0.0000	28.2198	6,596.2954	9,760.5065	6,202.5968	-19.2770	12.6130	2,430.3364	3,245.7657	2,094.8659
67	08	4	SAT-W	0.0000	28.2159	7,324.2086	6,202.5968	8,785.5696	-16.1218	10.7676	2,245.5926	2,094.8659	2,281.3164
67	08	5	Black	0.2690	-0.1219	-18.7188	-19.2770	-16.1218	0.1970	-0.0891	-13.6829	-14.0910	-11.7846
67	08	6	Black*HSGPA	-0.1217	0.1494	12.4384	12.6130	10.7676	-0.0891	0.1346	10.1612	10.2679	8.8063
67	08	7	Black*SAT-CR	-18.6857	12.4384	3,284.6230	2,430.3364	2,245.5926	-13.6829	10.1612	2,934.8500	2,070.1334	1,944.3469
67	08	8	Black*SAT-M	-19.2429	12.6130	2,430.3364	3,245.7657	2,094.8659	-14.0910	10.2679	2,070.1334	2,874.8217	1,784.6373
67	08	9	Black*SAT-W	-16.0932	10.7676	2,245.5926	2,094.8659	2,281.3164	-11.7846	8.8063	1,944.3469	1,784.6373	2,021.8653
69	07	1	HSGPA	0.0000	0.4025	24.5775	29.2218	26.6805	-0.0425	0.0647	4.9409	5.9545	4.7393
69	07	2	SAT-CR	0.0000	24.5775	8,006.5768	5,196.1251	5,921.8548	-7.7341	4.9409	1,398.5820	1,142.1843	1,045.1455
69	07	3	SAT-M	0.0000	29.2218	5,196.1251	8,571.4413	4,947.1775	-9.5011	5.9545	1,142.1843	1,612.3780	1,052.9491
69	07	4	SAT-W	0.0000	26.6805	5,921.8548	4,947.1775	7,336.2152	-7.0867	4.7393	1,045.1455	1,052.9491	1,170.6344
69	07	5	Black	0.1276	-0.0425	-7.7341	-9.5011	-7.0867	0.1113	-0.0371	-6.7477	-8.2893	-6.1828
69	07	6	Black*HSGPA	-0.0425	0.0647	4.9409	5.9545	4.7393	-0.0371	0.0629	4.6124	5.5510	4.4383
69	07	7	Black*SAT-CR	-7.7328	4.9409	1,398.5820	1,142.1843	1,045.1455	-6.7477	4.6124	1,338.7756	1,068.7142	990.3453
69	07	8	Black*SAT-M	-9.4994	5.9545	1,142.1843	1,612.3780	1,052.9491	-8.2893	5.5510	1,068.7142	1,522.1225	985.6290
69	07	9	Black*SAT-W	-7.0855	4.7393	1,045.1455	1,052.9491	1,170.6344	-6.1828	4.4383	990.3453	985.6290	1,120.4214
69	08	1	HSGPA	0.0000	0.4088	23.0408	27.2217	25.9812	-0.0388	0.0632	4.5879	5.5413	4.4311
69	08	2	SAT-CR	0.0000	23.0408	7,854.5121	4,915.9348	5,743.4385	-7.4682	4.5879	1,350.6536	1,106.6666	1,002.7071
69	08	3	SAT-M	0.0000	27.2217	4,915.9348	8,126.1364	4,754.9297	-9.1276	5.5413	1,106.6666	1,581.5777	1,001.5890
69	08	4	SAT-W	0.0000	25.9812	5,743.4385	4,754.9297	7,230.4727	-6.7846	4.4311	1,002.7071	1,001.5890	1,126.2014
69	08	5	Black	0.1284	-0.0388	-7.4682	-9.1276	-6.7846	0.1119	-0.0338	-6.5094	-7.9558	-5.9135
69	08	6	Black*HSGPA	-0.0388	0.0632	4.5879	5.5413	4.4311	-0.0338	0.0617	4.2980	5.1869	4.1677
69	08	7	Black*SAT-CR	-7.4670	4.5879	1,350.6536	1,106.6666	1,002.7071	-6.5094	4.2980	1,294.8889	1,038.5107	952.0468
69	08	8	Black*SAT-M	-9.1262	5.5413	1,106.6666	1,581.5777	1,001.5890	-7.9558	5.1869	1,038.5107	1,498.2773	939.6718
69	08	9	Black*SAT-W	-6.7835	4.4311	1,002.7071	1,001.5890	1,126.2014	-5.9135	4.1677	952.0468	939.6718	1,080.1783

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
70	08	1	HSGPA	0.0000	0.2478	18.7842	21.5842	21.2029	-0.0628	0.0818	8.0070	9.9167	8.7301
70	08	2	SAT-CR	0.0000	18.7842	8,520.1207	5,611.8231	6,863.6356	-12.5204	8.0070	2,456.6110	2,291.9728	2,125.7189
70	08	3	SAT-M	0.0000	21.5842	5,611.8231	8,857.3749	5,764.2259	-15.8104	9.9167	2,291.9728	3,089.8703	2,271.1320
70	08	4	SAT-W	0.0000	21.2029	6,863.6356	5,764.2259	9,000.2460	-12.6994	8.7301	2,125.7189	2,271.1320	2,384.0285
70	08	5	Black	0.1567	-0.0628	-12.5204	-15.8104	-12.6994	0.1321	-0.0530	-10.5589	-13.3335	-10.7099
70	08	6	Black*HSGPA	-0.0628	0.0818	8.0070	9.9167	8.7301	-0.0530	0.0779	7.2209	8.9239	7.9327
70	08	7	Black*SAT-CR	-12.5193	8.0070	2,456.6110	2,291.9728	2,125.7189	-10.5589	7.2209	2,299.8648	2,094.0383	1,966.7323
70	08	8	Black*SAT-M	-15.8090	9.9167	2,291.9728	3,089.8703	2,271.1320	-13.3335	8.9239	2,094.0383	2,839.9242	2,070.3683
70	08	9	Black*SAT-W	-12.6982	8.7301	2,125.7189	2,271.1320	2,384.0285	-10.7099	7.9327	1,966.7323	2,070.3683	2,222.7694
72	06	1	HSGPA	0.0000	0.2867	18.1261	21.6506	19.6723	-0.0443	0.0669	5.1456	6.3492	5.5544
72	06	2	SAT-CR	0.0000	18.1261	7,604.3693	4,833.9432	5,723.3442	-7.4236	5.1456	1,561.9080	1,320.1914	1,278.8289
72	06	3	SAT-M	0.0000	21.6506	4,833.9432	8,332.9398	4,849.6203	-10.4046	6.3492	1,320.1914	1,972.2984	1,332.9271
72	06	4	SAT-W	0.0000	19.6723	5,723.3442	4,849.6203	7,543.2883	-7.6965	5.5544	1,278.8289	1,332.9271	1,507.6659
72	06	5	Black	0.1388	-0.0443	-7.4236	-10.4046	-7.6965	0.1196	-0.0382	-6.3932	-8.9605	-6.6282
72	06	6	Black*HSGPA	-0.0443	0.0669	5.1456	6.3492	5.5544	-0.0382	0.0650	4.8166	5.8881	5.2133
72	06	7	Black*SAT-CR	-7.4226	5.1456	1,561.9080	1,320.1914	1,278.8289	-6.3932	4.8166	1,506.8050	1,242.9616	1,221.7008
72	06	8	Black*SAT-M	-10.4032	6.3492	1,320.1914	1,972.2984	1,332.9271	-8.9605	5.8881	1,242.9616	1,864.0565	1,252.8590
72	06	9	Black*SAT-W	-7.6954	5.5544	1,278.8289	1,332.9271	1,507.6659	-6.6282	5.2133	1,221.7008	1,252.8590	1,448.4384
73	06	1	HSGPA	0.0000	0.3395	17.1412	19.3813	18.8183	-0.0345	0.0553	3.9931	4.4765	4.0682
73	06	2	SAT-CR	0.0000	17.1412	7,352.8431	4,695.0874	5,279.5275	-8.2211	3.9931	1,466.6265	1,275.2549	1,185.5256
73	06	3	SAT-M	0.0000	19.3813	4,695.0874	8,020.2038	4,417.9338	-9.9117	4.4765	1,275.2549	1,775.1425	1,203.8535
73	06	4	SAT-W	0.0000	18.8183	5,279.5275	4,417.9338	6,810.1279	-8.3968	4.0682	1,185.5256	1,203.8535	1,298.6429
73	06	5	Black	0.1062	-0.0345	-8.2211	-9.9117	-8.3968	0.0949	-0.0308	-7.3483	-8.8593	-7.5053
73	06	6	Black*HSGPA	-0.0345	0.0553	3.9931	4.4765	4.0682	-0.0308	0.0541	3.7097	4.1347	3.7787
73	06	7	Black*SAT-CR	-8.2196	3.9931	1,466.6265	1,275.2549	1,185.5256	-7.3483	3.7097	1,399.0521	1,193.7848	1,116.5072
73	06	8	Black*SAT-M	-9.9099	4.4765	1,275.2549	1,775.1425	1,203.8535	-8.8593	4.1347	1,193.7848	1,676.9193	1,120.6423
73	06	9	Black*SAT-W	-8.3953	4.0682	1,185.5256	1,203.8535	1,298.6429	-7.5053	3.7787	1,116.5072	1,120.6423	1,228.1495
73	07	1	HSGPA	0.0000	0.3270	15.9222	17.5808	18.0700	-0.0335	0.0502	3.1342	3.8049	3.7949
73	07	2	SAT-CR	0.0000	15.9222	7,047.2729	4,311.2739	5,227.0003	-7.0092	3.1342	1,114.6033	954.9470	975.7723
73	07	3	SAT-M	0.0000	17.5808	4,311.2739	7,782.0378	4,347.4490	-8.2435	3.8049	954.9470	1,394.2507	1,023.0332
73	07	4	SAT-W	0.0000	18.0700	5,227.0003	4,347.4490	6,821.7363	-7.7099	3.7949	975.7723	1,023.0332	1,201.6675
73	07	5	Black	0.1029	-0.0335	-7.0092	-8.2435	-7.7099	0.0924	-0.0301	-6.2876	-7.3949	-6.9162
73	07	6	Black*HSGPA	-0.0335	0.0502	3.1342	3.8049	3.7949	-0.0301	0.0491	2.8991	3.5284	3.5363
73	07	7	Black*SAT-CR	-7.0080	3.1342	1,114.6033	954.9470	975.7723	-6.2876	2.8991	1,065.4832	897.1764	921.7412
73	07	8	Black*SAT-M	-8.2422	3.8049	954.9470	1,394.2507	1,023.0332	-7.3949	3.5284	897.1764	1,326.3062	959.4868
73	07	9	Black*SAT-W	-7.7086	3.7949	975.7723	1,023.0332	1,201.6675	-6.9162	3.5363	921.7412	959.4868	1,142.2345
73	08	1	HSGPA	0.0000	0.3317	17.0148	19.3366	18.5352	-0.0386	0.0661	4.3147	4.9788	4.4143
73	08	2	SAT-CR	0.0000	17.0148	7,287.1126	4,577.9402	5,451.0448	-9.9163	4.3147	1,734.7256	1,383.2075	1,399.3851
73	08	3	SAT-M	0.0000	19.3366	4,577.9402	7,867.7643	4,491.7718	-11.1634	4.9788	1,383.2075	1,842.9911	1,365.6397
73	08	4	SAT-W	0.0000	18.5352	5,451.0448	4,491.7718	7,054.8156	-9.6727	4.4143	1,399.3851	1,365.6397	1,578.4872
73	08	5	Black	0.1341	-0.0386	-9.9163	-11.1634	-9.6727	0.1161	-0.0334	-8.5869	-9.6668	-8.3760
73	08	6	Black*HSGPA	-0.0386	0.0661	4.3147	4.9788	4.4143	-0.0334	0.0647	3.9324	4.5484	4.0414
73	08	7	Black*SAT-CR	-9.9148	4.3147	1,734.7256	1,383.2075	1,399.3851	-8.5869	3.9324	1,636.4079	1,272.5253	1,303.4819
73	08	8	Black*SAT-M	-11.1617	4.9788	1,383.2075	1,842.9911	1,365.6397	-9.6668	4.5484	1,272.5253	1,718.3893	1,257.6757
73	08	9	Black*SAT-W	-9.6713	4.4143	1,399.3851	1,365.6397	1,578.4872	-8.3760	4.0414	1,303.4819	1,257.6757	1,484.9393

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
74	07	1	HSGPA	0.0000	0.3101	18.7914	21.7655	19.8061	-0.0596	0.1475	8.8739	10.0978	9.1112
74	07	2	SAT-CR	0.0000	18.7914	9,690.3989	6,861.4258	7,408.6458	-21.6029	8.8739	4,284.7270	3,204.6228	3,262.3072
74	07	3	SAT-M	0.0000	21.7655	6,861.4258	10,018.7977	6,452.2757	-24.5080	10.0978	3,204.6228	4,562.8644	2,946.2929
74	07	4	SAT-W	0.0000	19.8061	7,408.6458	6,452.2757	8,637.8322	-19.6517	9.1112	3,262.3072	2,946.2929	3,748.5782
74	07	5	Black	0.4635	-0.0596	-21.6029	-24.5080	-19.6517	0.2487	-0.0320	-11.5910	-13.1497	-10.5441
74	07	6	Black*HSGPA	-0.0596	0.1475	8.8739	10.0978	9.1112	-0.0320	0.1440	7.5871	8.6379	7.9406
74	07	7	Black*SAT-CR	-21.6002	8.8739	4,284.7270	3,204.6228	3,262.3072	-11.5910	7.5871	3,818.1000	2,675.2451	2,837.8263
74	07	8	Black*SAT-M	-24.5049	10.0978	3,204.6228	4,562.8644	2,946.2929	-13.1497	8.6379	2,675.2451	3,962.2972	2,464.7288
74	07	9	Black*SAT-W	-19.6492	9.1112	3,262.3072	2,946.2929	3,748.5782	-10.5441	7.9406	2,837.8263	2,464.7288	3,362.4367
74	08	1	HSGPA	0.0000	0.3049	19.6126	22.8625	20.2286	-0.0636	0.1580	10.0159	11.5411	9.9915
74	08	2	SAT-CR	0.0000	19.6126	10,195.7624	7,396.1241	7,591.7566	-23.9383	10.0159	4,931.6884	3,669.0925	3,620.8730
74	08	3	SAT-M	0.0000	22.8625	7,396.1241	10,660.0306	6,724.7572	-26.7128	11.5411	3,669.0925	5,198.3303	3,309.1283
74	08	4	SAT-W	0.0000	20.2286	7,591.7566	6,724.7572	8,792.6065	-20.3818	9.9915	3,620.8730	3,309.1283	4,155.8533
74	08	5	Black	0.4995	-0.0636	-23.9383	-26.7128	-20.3818	0.2500	-0.0318	-11.9807	-13.3693	-10.2007
74	08	6	Black*HSGPA	-0.0636	0.1580	10.0159	11.5411	9.9915	-0.0318	0.1540	8.4933	9.8420	8.6952
74	08	7	Black*SAT-CR	-23.9355	10.0159	4,931.6884	3,669.0925	3,620.8730	-11.9807	8.4933	4,358.7132	3,029.7083	3,133.0241
74	08	8	Black*SAT-M	-26.7096	11.5411	3,669.0925	5,198.3303	3,309.1283	-13.3693	9.8420	3,029.7083	4,484.8400	2,764.7366
74	08	9	Black*SAT-W	-20.3794	9.9915	3,620.8730	3,309.1283	4,155.8533	-10.2007	8.6952	3,133.0241	2,764.7366	3,740.4836
75	06	1	HSGPA	0.0000	0.3447	26.3816	30.9756	28.4677	-0.0214	0.0330	2.7952	3.5677	2.8222
75	06	2	SAT-CR	0.0000	26.3816	8,900.4203	6,463.9305	6,965.5226	-3.4556	2.7952	782.3062	694.8810	624.7854
75	06	3	SAT-M	0.0000	30.9756	6,463.9305	10,140.7421	6,264.7387	-4.8213	3.5677	694.8810	1,014.0807	659.5979
75	06	4	SAT-W	0.0000	28.4677	6,965.5226	6,264.7387	8,579.5180	-3.1864	2.8222	624.7854	659.5979	709.5571
75	06	5	Black	0.0623	-0.0214	-3.4556	-4.8213	-3.1864	0.0585	-0.0201	-3.2402	-4.5207	-2.9878
75	06	6	Black*HSGPA	-0.0214	0.0330	2.7952	3.5677	2.8222	-0.0201	0.0325	2.7211	3.4643	2.7539
75	06	7	Black*SAT-CR	-3.4554	2.7952	782.3062	694.8810	624.7854	-3.2402	2.7211	770.3656	678.2216	613.7750
75	06	8	Black*SAT-M	-4.8210	3.5677	694.8810	1,014.0807	659.5979	-4.5207	3.4643	678.2216	990.8376	644.2362
75	06	9	Black*SAT-W	-3.1862	2.8222	624.7854	659.5979	709.5571	-2.9878	2.7539	613.7750	644.2362	699.4044
75	08	1	HSGPA	0.0000	0.3326	25.8283	29.2271	28.3050	-0.0228	0.0363	3.1734	3.8044	3.3050
75	08	2	SAT-CR	0.0000	25.8283	9,006.4310	6,373.2966	7,082.9526	-4.4282	3.1734	914.6056	787.2133	749.7884
75	08	3	SAT-M	0.0000	29.2271	6,373.2966	9,843.4013	6,282.5037	-5.5540	3.8044	787.2133	1,087.5456	745.4562
75	08	4	SAT-W	0.0000	28.3050	7,082.9526	6,282.5037	8,876.5009	-4.0779	3.3050	749.7884	745.4562	841.9666
75	08	5	Black	0.0717	-0.0228	-4.4282	-5.5540	-4.0779	0.0666	-0.0212	-4.1107	-5.1558	-3.7855
75	08	6	Black*HSGPA	-0.0228	0.0363	3.1734	3.8044	3.3050	-0.0212	0.0357	3.0722	3.6775	3.2119
75	08	7	Black*SAT-CR	-4.4279	3.1734	914.6056	787.2133	749.7884	-4.1107	3.0722	894.9982	762.6209	731.7319
75	08	8	Black*SAT-M	-5.5536	3.8044	787.2133	1,087.5456	745.4562	-5.1558	3.6775	762.6209	1,056.7009	722.8090
75	08	9	Black*SAT-W	-4.0777	3.3050	749.7884	745.4562	841.9666	-3.7855	3.2119	731.7319	722.8090	825.3383
77	06	1	HSGPA	0.0000	0.3875	26.8794	30.5525	28.4027	-0.0479	0.0726	6.2157	7.1057	6.6298
77	06	2	SAT-CR	0.0000	26.8794	9,301.3654	6,585.3109	7,392.8328	-9.3038	6.2157	1,761.8025	1,585.5635	1,538.5342
77	06	3	SAT-M	0.0000	30.5525	6,585.3109	10,248.3537	6,462.6897	-11.0669	7.1057	1,585.5635	2,101.9729	1,598.1455
77	06	4	SAT-W	0.0000	28.4027	7,392.8328	6,462.6897	9,019.5078	-9.4489	6.6298	1,538.5342	1,598.1455	1,737.6395
77	06	5	Black	0.1187	-0.0479	-9.3038	-11.0669	-9.4489	0.1046	-0.0422	-8.1995	-9.7533	-8.3273
77	06	6	Black*HSGPA	-0.0479	0.0726	6.2157	7.1057	6.6298	-0.0422	0.0703	5.7703	6.5759	6.1775
77	06	7	Black*SAT-CR	-9.3024	6.2157	1,761.8025	1,585.5635	1,538.5342	-8.1995	5.7703	1,675.2545	1,482.6147	1,450.6368
77	06	8	Black*SAT-M	-11.0652	7.1057	1,585.5635	2,101.9729	1,598.1455	-9.7533	6.5759	1,482.6147	1,979.5154	1,493.5916
77	06	9	Black*SAT-W	-9.4474	6.6298	1,538.5342	1,598.1455	1,737.6395	-8.3273	6.1775	1,450.6368	1,493.5916	1,648.3716



## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
77	07	1	HSGPA	0.0000	0.3685	26.0851	31.3268	28.2758	-0.0508	0.0743	6.6768	8.2130	6.6402
77	07	2	SAT-CR	0.0000	26.0851	9,556.1855	6,718.1962	7,522.1415	-11.3366	6.6768	2,169.6586	1,901.6513	1,785.1181
77	07	3	SAT-M	0.0000	31.3268	6,718.1962	10,755.5873	6,659.0658	-13.3631	8.2130	1,901.6513	2,498.5068	1,817.2668
77	07	4	SAT-W	0.0000	28.2758	7,522.1415	6,659.0658	9,040.1862	-10.9315	6.6402	1,785.1181	1,817.2668	1,880.1257
77	07	5	Black	0.1262	-0.0508	-11.3366	-13.3631	-10.9315	0.1103	-0.0444	-9.9054	-11.6761	-9.5515
77	07	6	Black*HSGPA	-0.0508	0.0743	6.6768	8.2130	6.6402	-0.0444	0.0717	6.1006	7.5338	6.0846
77	07	7	Black*SAT-CR	-11.3342	6.6768	2,169.6586	1,901.6513	1,785.1181	-9.9054	6.1006	2,041.1682	1,750.1918	1,661.2192
77	07	8	Black*SAT-M	-13.3603	8.2130	1,901.6513	2,498.5068	1,817.2668	-11.6761	7.5338	1,750.1918	2,319.9721	1,671.2195
77	07	9	Black*SAT-W	-10.9291	6.6402	1,785.1181	1,817.2668	1,880.1257	-9.5515	6.0846	1,661.2192	1,671.2195	1,760.6542
77	08	1	HSGPA	0.0000	0.3564	25.6208	29.3425	28.1611	-0.0438	0.0701	5.9079	6.6175	6.1181
77	08	2	SAT-CR	0.0000	25.6208	9,350.0656	6,456.0076	7,400.0301	-9.8732	5.9079	1,856.6583	1,618.3699	1,538.8495
77	08	3	SAT-M	0.0000	29.3425	6,456.0076	10,001.6328	6,252.7188	-11.6159	6.6175	1,618.3699	2,145.5477	1,557.5879
77	08	4	SAT-W	0.0000	28.1611	7,400.0301	6,252.7188	9,110.8836	-9.5805	6.1181	1,538.8495	1,557.5879	1,654.6064
77	08	5	Black	0.1177	-0.0438	-9.8732	-11.6159	-9.5805	0.1039	-0.0386	-8.7109	-10.2485	-8.4528
77	08	6	Black*HSGPA	-0.0438	0.0701	5.9079	6.6175	6.1181	-0.0386	0.0682	5.4759	6.1092	5.6989
77	08	7	Black*SAT-CR	-9.8717	5.9079	1,856.6583	1,618.3699	1,538.8495	-8.7109	5.4759	1,759.1933	1,503.7011	1,444.2731
77	08	8	Black*SAT-M	-11.6142	6.6175	1,618.3699	2,145.5477	1,557.5879	-10.2485	6.1092	1,503.7011	2,010.6384	1,446.3176
77	08	9	Black*SAT-W	-9.5791	6.1181	1,538.8495	1,557.5879	1,654.6064	-8.4528	5.6989	1,444.2731	1,446.3176	1,562.8330
78	06	1	HSGPA	0.0000	0.2254	16.1049	16.8755	17.0898	-0.0234	0.0374	3.8442	4.1285	4.0166
78	06	2	SAT-CR	0.0000	16.1049	8,671.4924	5,247.4681	6,712.9643	-6.8386	3.8442	1,525.8086	1,303.3720	1,367.6723
78	06	3	SAT-M	0.0000	16.8755	5,247.4681	8,462.1118	5,346.5113	-7.7429	4.1285	1,303.3720	1,692.8970	1,342.3766
78	06	4	SAT-W	0.0000	17.0898	6,712.9643	5,346.5113	8,534.4078	-7.0964	4.0166	1,367.6723	1,342.3766	1,552.5457
78	06	5	Black	0.0880	-0.0234	-6.8386	-7.7429	-7.0964	0.0803	-0.0214	-6.2365	-7.0612	-6.4716
78	06	6	Black*HSGPA	-0.0234	0.0374	3.8442	4.1285	4.0166	-0.0214	0.0368	3.6840	3.9472	3.8505
78	06	7	Black*SAT-CR	-6.8383	3.8442	1,525.8086	1,303.3720	1,367.6723	-6.2365	3.6840	1,479.0447	1,250.4242	1,319.1456
78	06	8	Black*SAT-M	-7.7425	4.1285	1,303.3720	1,692.8970	1,342.3766	-7.0612	3.9472	1,250.4242	1,632.9476	1,287.4328
78	06	9	Black*SAT-W	-7.0961	4.0166	1,367.6723	1,342.3766	1,552.5457	-6.4716	3.8505	1,319.1456	1,287.4328	1,502.1896
78	07	1	HSGPA	0.0000	0.2206	15.3577	16.2787	16.2769	-0.0226	0.0354	3.5164	3.9052	3.6820
78	07	2	SAT-CR	0.0000	15.3577	8,394.0067	5,064.6266	6,412.9247	-6.5915	3.5164	1,423.1504	1,219.7698	1,274.1802
78	07	3	SAT-M	0.0000	16.2787	5,064.6266	8,322.3850	5,114.6677	-7.5749	3.9052	1,219.7698	1,596.0287	1,246.4842
78	07	4	SAT-W	0.0000	16.2769	6,412.9247	5,114.6677	8,192.0239	-6.9281	3.6820	1,274.1802	1,246.4842	1,462.8376
78	07	5	Black	0.0893	-0.0226	-6.5915	-7.5749	-6.9281	0.0813	-0.0206	-6.0028	-6.8984	-6.3094
78	07	6	Black*HSGPA	-0.0226	0.0354	3.5164	3.9052	3.6820	-0.0206	0.0349	3.3674	3.7340	3.5254
78	07	7	Black*SAT-CR	-6.5912	3.5164	1,423.1504	1,219.7698	1,274.1802	-6.0028	3.3674	1,379.7047	1,169.8422	1,228.5158
78	07	8	Black*SAT-M	-7.5746	3.9052	1,219.7698	1,596.0287	1,246.4842	-6.8984	3.7340	1,169.8422	1,538.6523	1,194.0070
78	07	9	Black*SAT-W	-6.9278	3.6820	1,274.1802	1,246.4842	1,462.8376	-6.3094	3.5254	1,228.5158	1,194.0070	1,414.8412
78	08	1	HSGPA	0.0000	0.2168	14.6070	15.7638	15.5154	-0.0240	0.0382	3.6798	4.1925	3.9076
78	08	2	SAT-CR	0.0000	14.6070	8,197.1546	4,886.9026	6,284.9675	-7.1329	3.6798	1,588.0407	1,306.9886	1,394.0199
78	08	3	SAT-M	0.0000	15.7638	4,886.9026	8,072.5717	4,973.2172	-8.3994	4.1925	1,306.9886	1,678.0704	1,330.3720
78	08	4	SAT-W	0.0000	15.5154	6,284.9675	4,973.2172	8,195.0407	-7.5924	3.9076	1,394.0199	1,330.3720	1,573.9178
78	08	5	Black	0.0981	-0.0240	-7.1329	-8.3994	-7.5924	0.0885	-0.0216	-6.4329	-7.5750	-6.8473
78	08	6	Black*HSGPA	-0.0240	0.0382	3.6798	4.1925	3.9076	-0.0216	0.0376	3.5086	3.9909	3.7255
78	08	7	Black*SAT-CR	-7.1326	3.6798	1,588.0407	1,306.9886	1,394.0199	-6.4329	3.5086	1,537.1641	1,247.0790	1,339.8661
78	08	8	Black*SAT-M	-8.3990	4.1925	1,306.9886	1,678.0704	1,330.3720	-7.5750	3.9909	1,247.0790	1,607.5241	1,266.6033
78	08	9	Black*SAT-W	-7.5921	3.9076	1,394.0199	1,330.3720	1,573.9178	-6.8473	3.7255	1,339.8661	1,266.6033	1,516.2757

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
80	07	1	HSGPA	0.0000	0.2275	13.4550	13.7405	14.3690	-0.0046	0.0073	0.7625	0.8071	0.8175
80	07	2	SAT-CR	0.0000	13.4550	7,580.1366	4,132.5273	5,635.5626	-1.0408	0.7625	259.3095	206.3507	227.7598
80	07	3	SAT-M	0.0000	13.7405	4,132.5273	7,201.6689	4,170.5255	-1.2089	0.8071	206.3507	266.4338	215.8751
80	07	4	SAT-W	0.0000	14.3690	5,635.5626	4,170.5255	7,354.3298	-1.1395	0.8175	227.7598	215.8751	261.5834
80	07	5	Black	0.0152	-0.0046	-1.0408	-1.2089	-1.1395	0.0150	-0.0046	-1.0249	-1.1905	-1.1221
80	07	6	Black*HSGPA	-0.0046	0.0073	0.7625	0.8071	0.8175	-0.0046	0.0073	0.7576	0.8015	0.8122
80	07	7	Black*SAT-CR	-1.0407	0.7625	259.3095	206.3507	227.7598	-1.0249	0.7576	258.2264	205.0927	226.5740
80	07	8	Black*SAT-M	-1.2088	0.8071	206.3507	266.4338	215.8751	-1.1905	0.8015	205.0927	264.9726	214.4977
80	07	9	Black*SAT-W	-1.1394	0.8175	227.7598	215.8751	261.5834	-1.1221	0.8122	226.5740	214.4977	260.2851
82	06	1	HSGPA	0.0000	0.3310	19.7252	21.4342	21.4289	-0.0435	0.0935	5.9680	7.1723	6.5552
82	06	2	SAT-CR	0.0000	19.7252	8,700.0862	5,817.3075	6,616.9441	-12.5515	5.9680	2,472.1310	2,047.8621	2,056.9528
82	06	3	SAT-M	0.0000	21.4342	5,817.3075	9,233.3400	5,657.3251	-15.3993	7.1723	2,047.8621	2,964.8020	2,097.5483
82	06	4	SAT-W	0.0000	21.4289	6,616.9441	5,657.3251	8,266.2401	-13.7348	6.5552	2,056.9528	2,097.5483	2,463.9963
82	06	5	Black	0.2051	-0.0435	-12.5515	-15.3993	-13.7348	0.1631	-0.0346	-9.9770	-12.2406	-10.9176
82	06	6	Black*HSGPA	-0.0435	0.0935	5.9680	7.1723	6.5552	-0.0346	0.0916	5.4223	6.5028	5.9580
82	06	7	Black*SAT-CR	-12.5496	5.9680	2,472.1310	2,047.8621	2,056.9528	-9.9770	5.4223	2,314.6150	1,854.6075	1,884.5865
82	06	8	Black*SAT-M	-15.3970	7.1723	2,047.8621	2,964.8020	2,097.5483	-12.2406	6.5028	1,854.6075	2,727.7001	1,886.0740
82	06	9	Black*SAT-W	-13.7327	6.5552	2,056.9528	2,097.5483	2,463.9963	-10.9176	5.9580	1,884.5865	1,886.0740	2,275.3797
84	06	1	HSGPA	0.0000	0.3449	23.6022	25.9903	25.4033	-0.0592	0.1199	8.0180	9.2674	8.7220
84	06	2	SAT-CR	0.0000	23.6022	9,403.8366	6,598.4879	7,324.5081	-15.4259	8.0180	3,305.1343	2,617.9139	2,673.3806
84	06	3	SAT-M	0.0000	25.9903	6,598.4879	10,096.5207	6,407.4421	-18.4641	9.2674	2,617.9139	3,728.1239	2,616.0650
84	06	4	SAT-W	0.0000	25.4033	7,324.5081	6,407.4421	8,997.5184	-16.3729	8.7220	2,673.3806	2,616.0650	3,149.9363
84	06	5	Black	0.2755	-0.0592	-15.4259	-18.4641	-16.3729	0.1996	-0.0429	-11.1765	-13.3779	-11.8627
84	06	6	Black*HSGPA	-0.0592	0.1199	8.0180	9.2674	8.7220	-0.0429	0.1164	7.1045	8.1739	7.7524
84	06	7	Black*SAT-CR	-15.4223	8.0180	3,305.1343	2,617.9139	2,673.3806	-11.1765	7.1045	3,067.2329	2,333.1552	2,420.8739
84	06	8	Black*SAT-M	-18.4598	9.2674	2,617.9139	3,728.1239	2,616.0650	-13.3779	8.1739	2,333.1552	3,387.2790	2,313.8244
84	06	9	Black*SAT-W	-16.3691	8.7220	2,673.3806	2,616.0650	3,149.9363	-11.8627	7.7524	2,420.8739	2,313.8244	2,881.9277
85	06	1	HSGPA	0.0000	0.2468	17.5773	19.4157	18.5060	-0.0328	0.0437	4.8723	5.3295	4.7303
85	06	2	SAT-CR	0.0000	17.5773	8,998.4418	6,158.6487	6,715.4919	-8.1573	4.8723	1,679.3474	1,482.4613	1,355.4381
85	06	3	SAT-M	0.0000	19.4157	6,158.6487	9,315.6640	5,738.1014	-9.3695	5.3295	1,482.4613	1,893.4013	1,360.3890
85	06	4	SAT-W	0.0000	18.5060	6,715.4919	5,738.1014	8,136.7025	-7.5397	4.7303	1,355.4381	1,360.3890	1,425.7789
85	06	5	Black	0.1066	-0.0328	-8.1573	-9.3695	-7.5397	0.0953	-0.0293	-7.2876	-8.3705	-6.7359
85	06	6	Black*HSGPA	-0.0328	0.0437	4.8723	5.3295	4.7303	-0.0293	0.0427	4.6050	5.0225	4.4833
85	06	7	Black*SAT-CR	-8.1569	4.8723	1,679.3474	1,482.4613	1,355.4381	-7.2876	4.6050	1,612.8096	1,406.0358	1,293.9373
85	06	8	Black*SAT-M	-9.3690	5.3295	1,482.4613	1,893.4013	1,360.3890	-8.3705	5.0225	1,406.0358	1,805.6187	1,289.7490
85	06	9	Black*SAT-W	-7.5394	4.7303	1,355.4381	1,360.3890	1,425.7789	-6.7359	4.4833	1,293.9373	1,289.7490	1,368.9338
85	07	1	HSGPA	0.0000	0.2478	17.8521	19.8691	19.1938	-0.0351	0.0480	5.2464	5.7857	5.1884
85	07	2	SAT-CR	0.0000	17.8521	9,103.2208	6,148.1552	7,052.1581	-8.8475	5.2464	1,793.0530	1,561.7168	1,521.3593
85	07	3	SAT-M	0.0000	19.8691	6,148.1552	9,200.9560	5,941.9065	-9.9944	5.7857	1,561.7168	1,993.0479	1,484.4121
85	07	4	SAT-W	0.0000	19.1938	7,052.1581	5,941.9065	8,597.0400	-8.5744	5.1884	1,521.3593	1,484.4121	1,629.4252
85	07	5	Black	0.1166	-0.0351	-8.8475	-9.9944	-8.5744	0.1030	-0.0310	-7.8155	-8.8286	-7.5742
85	07	6	Black*HSGPA	-0.0351	0.0480	5.2464	5.7857	5.1884	-0.0310	0.0468	4.9362	5.4353	4.8878
85	07	7	Black*SAT-CR	-8.8471	5.2464	1,793.0530	1,561.7168	1,521.3593	-7.8155	4.9362	1,714.7787	1,473.2956	1,445.5009
85	07	8	Black*SAT-M	-9.9939	5.7857	1,561.7168	1,993.0479	1,484.4121	-8.8286	5.4353	1,473.2956	1,893.1646	1,398.7199
85	07	9	Black*SAT-W	-8.5740	5.1884	1,521.3593	1,484.4121	1,629.4252	-7.5742	4.8878	1,445.5009	1,398.7199	1,555.9080

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
85	08	1	HSGPA	0.0000	0.2323	16.3465	18.7270	17.7674	-0.0354	0.0460	4.9965	5.7265	4.9843
85	08	2	SAT-CR	0.0000	16.3465	9,106.9161	6,195.2366	7,034.4044	-9.7422	4.9965	1,992.0885	1,725.3723	1,629.5810
85	08	3	SAT-M	0.0000	18.7270	6,195.2366	9,220.7009	5,916.9477	-11.2128	5.7265	1,725.3723	2,188.4880	1,591.5003
85	08	4	SAT-W	0.0000	17.7674	7,034.4044	5,916.9477	8,671.5010	-9.0574	4.9843	1,629.5810	1,591.5003	1,749.1313
85	08	5	Black	0.1270	-0.0354	-9.7422	-11.2128	-9.0574	0.1109	-0.0309	-8.5052	-9.7890	-7.9074
85	08	6	Black*HSGPA	-0.0354	0.0460	4.9965	5.7265	4.9843	-0.0309	0.0447	4.6511	5.3291	4.6632
85	08	7	Black*SAT-CR	-9.7418	4.9965	1,992.0885	1,725.3723	1,629.5810	-8.5052	4.6511	1,897.1812	1,616.1395	1,541.3451
85	08	8	Black*SAT-M	-11.2123	5.7265	1,725.3723	2,188.4880	1,591.5003	-9.7890	5.3291	1,616.1395	2,062.7673	1,489.9458
85	08	9	Black*SAT-W	-9.0570	4.9843	1,629.5810	1,591.5003	1,749.1313	-7.9074	4.6632	1,541.3451	1,489.9458	1,667.0977
86	08	1	HSGPA	0.0000	0.3553	23.8620	19.0932	22.4058	-0.0364	0.0668	5.1337	3.8372	5.6262
86	08	2	SAT-CR	0.0000	23.8620	8,695.5849	4,935.0796	6,370.8367	-7.2807	5.1337	1,530.2026	995.1929	1,172.6798
86	08	3	SAT-M	0.0000	19.0932	4,935.0796	7,779.7110	4,632.1532	-8.4420	3.8372	995.1929	1,426.7214	1,057.7616
86	08	4	SAT-W	0.0000	22.4058	6,370.8367	4,632.1532	7,389.7814	-7.8783	5.6262	1,172.6798	1,057.7616	1,424.0656
86	08	5	Black	0.1580	-0.0364	-7.2807	-8.4420	-7.8783	0.1332	-0.0306	-6.1306	-7.1083	-6.6337
86	08	6	Black*HSGPA	-0.0363	0.0668	5.1337	3.8372	5.6262	-0.0306	0.0655	4.8691	3.5304	5.3399
86	08	7	Black*SAT-CR	-7.2696	5.1337	1,530.2026	995.1929	1,172.6798	-6.1306	4.8691	1,477.2749	933.8235	1,115.4078
86	08	8	Black*SAT-M	-8.4290	3.8372	995.1929	1,426.7214	1,057.7616	-7.1083	3.5304	933.8235	1,355.5639	991.3551
86	08	9	Black*SAT-W	-7.8662	5.6262	1,172.6798	1,057.7616	1,424.0656	-6.6337	5.3399	1,115.4078	991.3551	1,362.0928
88	06	1	HSGPA	0.0000	0.2841	16.1467	17.1632	17.3550	-0.0219	0.0291	3.4971	3.5035	3.4604
88	06	2	SAT-CR	0.0000	16.1467	8,796.0965	5,396.0657	6,881.2448	-4.5931	3.4971	940.6032	809.8712	834.4397
88	06	3	SAT-M	0.0000	17.1632	5,396.0657	8,310.2908	5,294.1997	-4.5424	3.5035	809.8712	933.7398	771.8885
88	06	4	SAT-W	0.0000	17.3550	6,881.2448	5,294.1997	8,656.0859	-4.4497	3.4604	834.4397	771.8885	874.6460
88	06	5	Black	0.0429	-0.0219	-4.5931	-4.5424	-4.4497	0.0410	-0.0209	-4.3963	-4.3477	-4.2590
88	06	6	Black*HSGPA	-0.0219	0.0291	3.4971	3.5035	3.4604	-0.0209	0.0287	3.3966	3.4042	3.3631
88	06	7	Black*SAT-CR	-4.5926	3.4971	940.6032	809.8712	834.4397	-4.3963	3.3966	919.5088	789.0100	814.0038
88	06	8	Black*SAT-M	-4.5418	3.5035	809.8712	933.7398	771.8885	-4.3477	3.4042	789.0100	913.1092	751.6785
88	06	9	Black*SAT-W	-4.4492	3.4604	834.4397	771.8885	874.6460	-4.2590	3.3631	814.0038	751.6785	854.8481
88	07	1	HSGPA	0.0000	0.2794	15.7376	16.5324	17.0471	-0.0195	0.0257	2.9259	2.8688	3.0226
88	07	2	SAT-CR	0.0000	15.7376	8,718.4103	5,182.7163	6,760.2806	-4.2713	2.9259	846.2978	715.8906	779.3072
88	07	3	SAT-M	0.0000	16.5324	5,182.7163	8,113.7699	5,163.2137	-4.0729	2.8688	715.8906	853.3474	718.1692
88	07	4	SAT-W	0.0000	17.0471	6,760.2806	5,163.2137	8,525.2789	-4.1155	3.0226	779.3072	718.1692	860.9548
88	07	5	Black	0.0444	-0.0195	-4.2713	-4.0729	-4.1155	0.0424	-0.0187	-4.0817	-3.8921	-3.9329
88	07	6	Black*HSGPA	-0.0195	0.0257	2.9259	2.8688	3.0226	-0.0187	0.0253	2.8425	2.7893	2.9422
88	07	7	Black*SAT-CR	-4.2709	2.9259	846.2978	715.8906	779.3072	-4.0817	2.8425	828.0557	698.4960	761.7303
88	07	8	Black*SAT-M	-4.0724	2.8688	715.8906	853.3474	718.1692	-3.8921	2.7893	698.4960	836.7610	701.4089
88	07	9	Black*SAT-W	-4.1151	3.0226	779.3072	718.1692	860.9548	-3.9329	2.9422	761.7303	701.4089	844.0188
88	08	1	HSGPA	0.0000	0.2743	15.6859	17.6281	17.1050	-0.0222	0.0287	3.1400	3.2903	3.3898
88	08	2	SAT-CR	0.0000	15.6859	8,418.4514	5,147.9788	6,617.5983	-5.3184	3.1400	1,008.0856	874.9666	942.9897
88	08	3	SAT-M	0.0000	17.6281	5,147.9788	8,247.0962	5,231.7330	-5.3247	3.2903	874.9666	1,047.3731	894.9082
88	08	4	SAT-W	0.0000	17.1050	6,617.5983	5,231.7330	8,554.6035	-5.4536	3.3898	942.9897	894.9082	1,059.0102
88	08	5	Black	0.0527	-0.0222	-5.3184	-5.3247	-5.4536	0.0499	-0.0211	-5.0383	-5.0443	-5.1664
88	08	6	Black*HSGPA	-0.0222	0.0287	3.1400	3.2903	3.3898	-0.0211	0.0282	3.0217	3.1719	3.2685
88	08	7	Black*SAT-CR	-5.3179	3.1400	1,008.0856	874.9666	942.9897	-5.0383	3.0217	979.8028	846.6503	913.9881
88	08	8	Black*SAT-M	-5.3242	3.2903	874.9666	1,047.3731	894.9082	-5.0443	3.1719	846.6503	1,019.0232	865.8722
88	08	9	Black*SAT-W	-5.4531	3.3898	942.9897	894.9082	1,059.0102	-5.1664	3.2685	913.9881	865.8722	1,029.2715

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
89	06	1	HSGPA	0.0000	0.4303	25.9220	29.1262	28.2475	-0.0343	0.0462	2.9197	4.1019	3.4184
89	06	2	SAT-CR	0.0000	25.9220	7,833.7174	4,915.1266	5,585.6105	-4.2478	2.9197	709.7381	615.4013	521.3689
89	06	3	SAT-M	0.0000	29.1262	4,915.1266	7,884.3985	4,578.7450	-5.5260	4.1019	615.4013	877.6318	593.2914
89	06	4	SAT-W	0.0000	28.2475	5,585.6105	4,578.7450	6,946.0918	-4.2186	3.4184	521.3689	593.2914	585.1840
89	06	5	Black	0.0660	-0.0343	-4.2478	-5.5260	-4.2186	0.0616	-0.0320	-3.9677	-5.1616	-3.9404
89	06	6	Black*HSGPA	-0.0343	0.0462	2.9197	4.1019	3.4184	-0.0320	0.0450	2.7742	3.9125	3.2738
89	06	7	Black*SAT-CR	-4.2462	2.9197	709.7381	615.4013	521.3689	-3.9677	2.7742	691.7012	591.9368	503.4558
89	06	8	Black*SAT-M	-5.5239	4.1019	615.4013	877.6318	593.2914	-5.1616	3.9125	591.9368	847.1066	569.9880
89	06	9	Black*SAT-W	-4.2170	3.4184	521.3689	593.2914	585.1840	-3.9404	3.2738	503.4558	569.9880	567.3938
89	07	1	HSGPA	0.0000	0.4148	22.1342	27.3909	24.2920	-0.0293	0.0355	2.5220	3.2759	2.4624
89	07	2	SAT-CR	0.0000	22.1342	7,558.3921	4,777.4200	5,385.7068	-3.8746	2.5220	718.5375	575.1568	532.7434
89	07	3	SAT-M	0.0000	27.3909	4,777.4200	7,902.7977	4,433.1011	-4.6918	3.2759	575.1568	777.4863	513.7023
89	07	4	SAT-W	0.0000	24.2920	5,385.7068	4,433.1011	6,615.4334	-3.2784	2.4624	532.7434	513.7023	606.3410
89	07	5	Black	0.0607	-0.0293	-3.8746	-4.6918	-3.2784	0.0571	-0.0276	-3.6392	-4.4068	-3.0793
89	07	6	Black*HSGPA	-0.0293	0.0355	2.5220	3.2759	2.4624	-0.0276	0.0346	2.4083	3.1382	2.3662
89	07	7	Black*SAT-CR	-3.8732	2.5220	718.5375	575.1568	532.7434	-3.6392	2.4083	703.5306	556.9847	520.0456
89	07	8	Black*SAT-M	-4.6901	3.2759	575.1568	777.4863	513.7023	-4.4068	3.1382	556.9847	755.4812	498.3263
89	07	9	Black*SAT-W	-3.2772	2.4624	532.7434	513.7023	606.3410	-3.0793	2.3662	520.0456	498.3263	595.5969
89	08	1	HSGPA	0.0000	0.4199	21.9560	28.1638	25.1230	-0.0303	0.0421	2.5393	3.4818	2.6817
89	08	2	SAT-CR	0.0000	21.9560	7,275.4920	4,380.3992	5,244.5926	-3.3977	2.5393	537.3724	484.0787	473.4254
89	08	3	SAT-M	0.0000	28.1638	4,380.3992	7,567.1316	4,343.0325	-4.3195	3.4818	484.0787	723.3157	527.0573
89	08	4	SAT-W	0.0000	25.1230	5,244.5926	4,343.0325	6,910.6237	-3.4424	2.6817	473.4254	527.0573	638.6055
89	08	5	Black	0.0618	-0.0303	-3.3977	-4.3195	-3.4424	0.0580	-0.0284	-3.1878	-4.0527	-3.2298
89	08	6	Black*HSGPA	-0.0303	0.0421	2.5393	3.4818	2.6817	-0.0284	0.0412	2.4365	3.3510	2.5775
89	08	7	Black*SAT-CR	-3.3965	2.5393	537.3724	484.0787	473.4254	-3.1878	2.4365	525.8321	469.4074	461.7331
89	08	8	Black*SAT-M	-4.3180	3.4818	484.0787	723.3157	527.0573	-4.0527	3.3510	469.4074	704.6640	512.1927
89	08	9	Black*SAT-W	-3.4413	2.6817	473.4254	527.0573	638.6055	-3.2298	2.5775	461.7331	512.1927	626.7591
90	08	1	HSGPA	0.0000	0.2484	20.9462	22.6618	21.3674	-0.0625	0.0852	8.9810	9.7838	8.9614
90	08	2	SAT-CR	0.0000	20.9462	9,858.9276	6,965.8638	7,810.5506	-18.6024	8.9810	3,461.4529	2,923.2634	2,878.1906
90	08	3	SAT-M	0.0000	22.6618	6,965.8638	9,934.7693	6,799.8728	-19.7833	9.7838	2,923.2634	3,674.3436	2,777.7330
90	08	4	SAT-W	0.0000	21.3674	7,810.5506	6,799.8728	9,410.0942	-17.2344	8.9614	2,878.1906	2,777.7330	3,117.3059
90	08	5	Black	0.2355	-0.0625	-18.6024	-19.7833	-17.2344	0.1800	-0.0478	-14.2217	-15.1245	-13.1759
90	08	6	Black*HSGPA	-0.0625	0.0852	8.9810	9.7838	8.9614	-0.0478	0.0813	7.8181	8.5470	7.8839
90	08	7	Black*SAT-CR	-18.6010	8.9810	3,461.4529	2,923.2634	2,878.1906	-14.2217	7.8181	3,115.4288	2,555.2738	2,557.6120
90	08	8	Black*SAT-M	-19.7818	9.7838	2,923.2634	3,674.3436	2,777.7330	-15.1245	8.5470	2,555.2738	3,282.9941	2,436.8042
90	08	9	Black*SAT-W	-17.2332	8.9614	2,878.1906	2,777.7330	3,117.3059	-13.1759	7.8839	2,557.6120	2,436.8042	2,820.3016
91	06	1	HSGPA	0.0000	0.2608	20.0726	20.7024	21.1218	-0.0489	0.0785	7.5483	7.8125	7.6878
91	06	2	SAT-CR	0.0000	20.0726	9,587.6772	6,696.1755	7,579.9851	-15.2258	7.5483	2,956.4500	2,452.5295	2,462.2815
91	06	3	SAT-M	0.0000	20.7024	6,696.1755	9,824.9894	6,604.8566	-17.1216	7.8125	2,452.5295	3,151.8430	2,361.9157
91	06	4	SAT-W	0.0000	21.1218	7,579.9851	6,604.8566	9,153.9162	-15.2659	7.6878	2,462.2815	2,361.9157	2,704.5170
91	06	5	Black	0.2035	-0.0489	-15.2258	-17.1216	-15.2659	0.1621	-0.0389	-12.1280	-13.6381	-12.1599
91	06	6	Black*HSGPA	-0.0489	0.0785	7.5483	7.8125	7.6878	-0.0389	0.0761	6.8039	6.9755	6.9415
91	06	7	Black*SAT-CR	-15.2251	7.5483	2,956.4500	2,452.5295	2,462.2815	-12.1280	6.8039	2,724.6351	2,191.8501	2,229.8565
91	06	8	Black*SAT-M	-17.1209	7.8125	2,452.5295	3,151.8430	2,361.9157	-13.6381	6.9755	2,191.8501	2,858.7052	2,100.5504
91	06	9	Black*SAT-W	-15.2652	7.6878	2,462.2815	2,361.9157	2,704.5170	-12.1599	6.9415	2,229.8565	2,100.5504	2,471.4805

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
91	07	1	HSGPA	0.0000	0.2619	19.5645	20.5287	20.7157	-0.0506	0.0820	7.7282	8.1780	8.0220
91	07	2	SAT-CR	0.0000	19.5645	9,339.7363	6,433.6161	7,505.2863	-15.3619	7.7282	2,806.7834	2,318.6944	2,414.3353
91	07	3	SAT-M	0.0000	20.5287	6,433.6161	9,525.1712	6,454.7414	-17.0024	8.1780	2,318.6944	3,007.2981	2,296.3033
91	07	4	SAT-W	0.0000	20.7157	7,505.2863	6,454.7414	9,216.7501	-15.5939	8.0220	2,414.3353	2,296.3033	2,722.4753
91	07	5	Black	0.2034	-0.0506	-15.3619	-17.0024	-15.5939	0.1620	-0.0403	-12.2377	-13.5446	-12.4226
91	07	6	Black*HSGPA	-0.0506	0.0820	7.7282	8.1780	8.0220	-0.0403	0.0795	6.9513	7.3182	7.2334
91	07	7	Black*SAT-CR	-15.3613	7.7282	2,806.7834	2,318.6944	2,414.3353	-12.2377	6.9513	2,570.8054	2,057.5156	2,174.7926
91	07	8	Black*SAT-M	-17.0017	8.1780	2,318.6944	3,007.2981	2,296.3033	-13.5446	7.3182	2,057.5156	2,718.2273	2,031.1792
91	07	9	Black*SAT-W	-15.5933	8.0220	2,414.3353	2,296.3033	2,722.4753	-12.4226	7.2334	2,174.7926	2,031.1792	2,479.3142
92	06	1	HSGPA	0.0000	0.3114	15.3377	14.9078	15.4824	-0.0061	0.0162	0.9572	1.5082	1.1990
92	06	2	SAT-CR	0.0000	15.3377	7,157.5512	4,280.7835	5,209.3916	-1.7422	0.9572	439.8970	396.7978	347.1960
92	06	3	SAT-M	0.0000	14.9078	4,280.7835	7,663.5168	4,246.7054	-2.6297	1.5082	396.7978	588.8073	377.4398
92	06	4	SAT-W	0.0000	15.4824	5,209.3916	4,246.7054	6,904.7691	-1.9882	1.1990	347.1960	377.4398	381.4477
92	06	5	Black	0.0285	-0.0061	-1.7422	-2.6297	-1.9882	0.0277	-0.0059	-1.6925	-2.5546	-1.9315
92	06	6	Black*HSGPA	-0.0061	0.0162	0.9572	1.5082	1.1990	-0.0059	0.0161	0.9465	1.4921	1.1868
92	06	7	Black*SAT-CR	-1.7417	0.9572	439.8970	396.7978	347.1960	-1.6925	0.9465	436.8627	392.2178	343.7332
92	06	8	Black*SAT-M	-2.6288	1.5082	396.7978	588.8073	377.4398	-2.5546	1.4921	392.2178	581.8943	372.2131
92	06	9	Black*SAT-W	-1.9876	1.1990	347.1960	377.4398	381.4477	-1.9315	1.1868	343.7332	372.2131	377.4959
94	07	1	HSGPA	0.0000	0.3005	13.7412	14.1092	15.7050	-0.0115	0.0269	1.2300	1.2848	1.2154
94	07	2	SAT-CR	0.0000	13.7412	7,305.8203	4,130.3954	5,453.2319	-3.7842	1.2300	726.4770	537.2896	629.1420
94	07	3	SAT-M	0.0000	14.1092	4,130.3954	7,058.2032	4,083.7036	-3.8411	1.2848	537.2896	731.3973	547.1034
94	07	4	SAT-W	0.0000	15.7050	5,453.2319	4,083.7036	7,043.5910	-3.8985	1.2154	629.1420	547.1034	789.1238
94	07	5	Black	0.0662	-0.0115	-3.7842	-3.8411	-3.8985	0.0619	-0.0108	-3.5335	-3.5867	-3.6403
94	07	6	Black*HSGPA	-0.0115	0.0269	1.2300	1.2848	1.2154	-0.0108	0.0268	1.1864	1.2406	1.1705
94	07	7	Black*SAT-CR	-3.7833	1.2300	726.4770	537.2896	629.1420	-3.5335	1.1864	712.1602	522.7575	614.3927
94	07	8	Black*SAT-M	-3.8402	1.2848	537.2896	731.3973	547.1034	-3.5867	1.2406	522.7575	716.6466	532.1322
94	07	9	Black*SAT-W	-3.8976	1.2154	629.1420	547.1034	789.1238	-3.6403	1.1705	614.3927	532.1322	773.9289
96	08	1	HSGPA	0.0000	0.3140	22.0494	21.1702	24.0625	-0.0172	0.0279	3.9670	3.3795	4.1689
96	08	2	SAT-CR	0.0000	22.0494	11,630.8172	6,460.7023	9,332.1727	-5.4434	3.9670	1,528.2166	1,036.9392	1,280.0204
96	08	3	SAT-M	0.0000	21.1702	6,460.7023	9,090.8318	6,632.6794	-4.4814	3.3795	1,036.9392	1,102.1394	959.4800
96	08	4	SAT-W	0.0000	24.0625	9,332.1727	6,632.6794	11,183.2060	-4.6215	4.1689	1,280.0204	959.4800	1,316.6409
96	08	5	Black	0.0622	-0.0172	-5.4434	-4.4814	-4.6215	0.0584	-0.0162	-5.1049	-4.2027	-4.3342
96	08	6	Black*HSGPA	-0.0172	0.0279	3.9670	3.3795	4.1689	-0.0162	0.0276	3.8733	3.3023	4.0894
96	08	7	Black*SAT-CR	-5.4365	3.9670	1,528.2166	1,036.9392	1,280.0204	-5.1049	3.8733	1,498.6234	1,012.5761	1,254.8954
96	08	8	Black*SAT-M	-4.4757	3.3795	1,036.9392	1,102.1394	959.4800	-4.2027	3.3023	1,012.5761	1,082.0822	938.7955
96	08	9	Black*SAT-W	-4.6157	4.1689	1,280.0204	959.4800	1,316.6409	-4.3342	4.0894	1,254.8954	938.7955	1,295.3094
97	06	1	HSGPA	0.0000	0.1719	13.6878	11.9478	13.7330	-0.0259	0.0316	3.6586	3.6665	3.6371
97	06	2	SAT-CR	0.0000	13.6878	7,838.5111	4,084.9241	5,667.1359	-7.4478	3.6586	1,592.5473	1,224.7928	1,295.0873
97	06	3	SAT-M	0.0000	11.9478	4,084.9241	6,935.9638	4,110.1177	-7.3850	3.6665	1,224.7928	1,445.3833	1,181.2954
97	06	4	SAT-W	0.0000	13.7330	5,667.1359	4,110.1177	7,243.2461	-7.1353	3.6371	1,295.0873	1,181.2954	1,382.3479
97	06	5	Black	0.0859	-0.0259	-7.4478	-7.3850	-7.1353	0.0785	-0.0237	-6.8080	-6.7506	-6.5224
97	06	6	Black*HSGPA	-0.0259	0.0316	3.6586	3.6665	3.6371	-0.0237	0.0309	3.4655	3.4749	3.4520
97	06	7	Black*SAT-CR	-7.4460	3.6586	1,592.5473	1,224.7928	1,295.0873	-6.8080	3.4655	1,537.0911	1,169.8042	1,241.9578
97	06	8	Black*SAT-M	-7.3832	3.6665	1,224.7928	1,445.3833	1,181.2954	-6.7506	3.4749	1,169.8042	1,390.8585	1,128.6139
97	06	9	Black*SAT-W	-7.1336	3.6371	1,295.0873	1,181.2954	1,382.3479	-6.5224	3.4520	1,241.9578	1,128.6139	1,331.4474

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
98	06	1	HSGPA	0.0000	0.2516	14.9347	16.4729	16.1927	-0.0183	0.0265	2.4795	3.0231	2.7277
98	06	2	SAT-CR	0.0000	14.9347	7,344.7574	4,478.6940	5,587.9258	-3.6182	2.4795	690.0507	655.1458	637.2579
98	06	3	SAT-M	0.0000	16.4729	4,478.6940	7,772.9494	4,540.2335	-4.6345	3.0231	655.1458	924.7881	696.7978
98	06	4	SAT-W	0.0000	16.1927	5,587.9258	4,540.2335	7,544.5721	-3.8686	2.7277	637.2579	696.7978	759.3700
98	06	5	Black	0.0435	-0.0183	-3.6182	-4.6345	-3.8686	0.0416	-0.0175	-3.4608	-4.4329	-3.7004
98	06	6	Black*HSGPA	-0.0183	0.0265	2.4795	3.0231	2.7277	-0.0175	0.0262	2.4134	2.9384	2.6570
98	06	7	Black*SAT-CR	-3.6178	2.4795	690.0507	655.1458	637.2579	-3.4608	2.4134	676.9606	638.3791	623.2618
98	06	8	Black*SAT-M	-4.6340	3.0231	655.1458	924.7881	696.7978	-4.4329	2.9384	638.3791	903.3120	678.8706
98	06	9	Black*SAT-W	-3.8682	2.7277	637.2579	696.7978	759.3700	-3.7004	2.6570	623.2618	678.8706	744.4053
100	06	1	HSGPA	0.0000	0.2810	25.7541	27.9066	26.9448	-0.0803	0.1228	12.9718	14.9962	13.3246
100	06	2	SAT-CR	0.0000	25.7541	10,716.2175	8,237.0877	8,612.4953	-21.5200	12.9718	4,364.7372	4,072.7679	3,695.6917
100	06	3	SAT-M	0.0000	27.9066	8,237.0877	11,935.2811	8,020.3301	-25.7203	14.9962	4,072.7679	5,479.4031	3,904.7970
100	06	4	SAT-W	0.0000	26.9448	8,612.4953	8,020.3301	10,287.4196	-20.7050	13.3246	3,695.6917	3,904.7970	4,035.6556
100	06	5	Black	0.2653	-0.0803	-21.5200	-25.7203	-20.7050	0.1949	-0.0590	-15.8115	-18.8976	-15.2127
100	06	6	Black*HSGPA	-0.0803	0.1228	12.9718	14.9962	13.3246	-0.0590	0.1164	11.2428	12.9298	11.6611
100	06	7	Black*SAT-CR	-21.5182	12.9718	4,364.7372	4,072.7679	3,695.6917	-15.8115	11.2428	3,901.6661	3,519.3141	3,250.1591
100	06	8	Black*SAT-M	-25.7181	14.9962	4,072.7679	5,479.4031	3,904.7970	-18.8976	12.9298	3,519.3141	4,817.9256	3,372.3050
100	06	9	Black*SAT-W	-20.7032	13.3246	3,695.6917	3,904.7970	4,035.6556	-15.2127	11.6611	3,250.1591	3,372.3050	3,606.9973
100	07	1	HSGPA	0.0000	0.2861	26.4308	28.8103	27.7148	-0.0827	0.1239	13.6672	15.6613	13.7754
100	07	2	SAT-CR	0.0000	26.4308	10,810.8525	8,064.4604	8,753.9215	-21.8321	13.6672	4,376.4848	4,028.6875	3,774.6329
100	07	3	SAT-M	0.0000	28.8103	8,064.4604	11,582.7019	7,897.9856	-25.5761	15.6613	4,028.6875	5,310.2608	3,879.3193
100	07	4	SAT-W	0.0000	27.7148	8,753.9215	7,897.9856	10,500.5369	-21.2268	13.7754	3,774.6329	3,879.3193	4,098.7949
100	07	5	Black	0.2638	-0.0827	-21.8321	-25.5761	-21.2268	0.1942	-0.0609	-16.0736	-18.8301	-15.6279
100	07	6	Black*HSGPA	-0.0827	0.1239	13.6672	15.6613	13.7754	-0.0609	0.1171	11.8621	13.5467	12.0204
100	07	7	Black*SAT-CR	-21.8304	13.6672	4,376.4848	4,028.6875	3,774.6329	-16.0736	11.8621	3,899.8816	3,470.3512	3,311.2436
100	07	8	Black*SAT-M	-25.5741	15.6613	4,028.6875	5,310.2608	3,879.3193	-18.8301	13.5467	3,470.3512	4,656.1750	3,336.4630
100	07	9	Black*SAT-W	-21.2251	13.7754	3,774.6329	3,879.3193	4,098.7949	-15.6279	12.0204	3,311.2436	3,336.4630	3,648.2531
100	08	1	HSGPA	0.0000	0.2784	25.0418	28.5157	26.7221	-0.0839	0.1267	13.8859	15.9658	14.0075
100	08	2	SAT-CR	0.0000	25.0418	10,993.4076	8,512.1088	8,864.4281	-23.5689	13.8859	4,789.6807	4,429.5404	4,021.2606
100	08	3	SAT-M	0.0000	28.5157	8,512.1088	12,127.1947	8,310.3135	-27.7139	15.9658	4,429.5404	5,795.6847	4,189.6881
100	08	4	SAT-W	0.0000	26.7221	8,864.4281	8,310.3135	10,695.6233	-21.9810	14.0075	4,021.2606	4,189.6881	4,347.6884
100	08	5	Black	0.2848	-0.0839	-23.5689	-27.7139	-21.9810	0.2037	-0.0600	-16.8563	-19.8208	-15.7207
100	08	6	Black*HSGPA	-0.0839	0.1267	13.8859	15.9658	14.0075	-0.0600	0.1197	11.9085	13.6406	12.1633
100	08	7	Black*SAT-CR	-23.5669	13.8859	4,789.6807	4,429.5404	4,021.2606	-16.8563	11.9085	4,234.2357	3,776.4105	3,503.2366
100	08	8	Black*SAT-M	-27.7115	15.9658	4,429.5404	5,795.6847	4,189.6881	-19.8208	13.6406	3,776.4105	5,027.6904	3,580.5603
100	08	9	Black*SAT-W	-21.9792	14.0075	4,021.2606	4,189.6881	4,347.6884	-15.7207	12.1633	3,503.2366	3,580.5603	3,864.5643
101	07	1	HSGPA	0.0000	0.1983	15.1055	16.8586	16.3897	-0.0304	0.0410	4.8989	5.6512	5.1289
101	07	2	SAT-CR	0.0000	15.1055	8,746.5436	5,529.0658	6,968.3885	-7.6943	4.8989	1,629.3984	1,490.2864	1,492.8393
101	07	3	SAT-M	0.0000	16.8586	5,529.0658	8,742.2871	5,755.6616	-9.2631	5.6512	1,490.2864	1,988.2469	1,540.4273
101	07	4	SAT-W	0.0000	16.3897	6,968.3885	5,755.6616	9,046.4420	-8.0032	5.1289	1,492.8393	1,540.4273	1,679.2116
101	07	5	Black	0.0865	-0.0304	-7.6943	-9.2631	-8.0032	0.0790	-0.0278	-7.0290	-8.4621	-7.3112
101	07	6	Black*HSGPA	-0.0304	0.0410	4.8989	5.6512	5.1289	-0.0278	0.0401	4.6651	5.3696	4.8857
101	07	7	Black*SAT-CR	-7.6938	4.8989	1,629.3984	1,490.2864	1,492.8393	-7.0290	4.6651	1,570.2005	1,419.0181	1,431.2645
101	07	8	Black*SAT-M	-9.2625	5.6512	1,490.2864	1,988.2469	1,540.4273	-8.4621	5.3696	1,419.0181	1,902.4472	1,466.2975
101	07	9	Black*SAT-W	-8.0027	5.1289	1,492.8393	1,540.4273	1,679.2116	-7.3112	4.8857	1,431.2645	1,466.2975	1,615.1645

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
101	08	1	HSGPA	0.0000	0.1907	15.0180	16.4401	16.1661	-0.0304	0.0419	4.8339	5.3882	5.1777
101	08	2	SAT-CR	0.0000	15.0180	8,695.9004	5,471.3702	6,982.9074	-7.7330	4.8339	1,690.5236	1,523.4253	1,557.0038
101	08	3	SAT-M	0.0000	16.4401	5,471.3702	8,638.4731	5,769.1078	-9.1590	5.3882	1,523.4253	1,954.8375	1,584.5546
101	08	4	SAT-W	0.0000	16.1661	6,982.9074	5,769.1078	9,261.0076	-8.2825	5.1777	1,557.0038	1,584.5546	1,758.2324
101	08	5	Black	0.0916	-0.0304	-7.7330	-9.1590	-8.2825	0.0832	-0.0276	-7.0245	-8.3199	-7.5237
101	08	6	Black*HSGPA	-0.0304	0.0419	4.8339	5.3882	5.1777	-0.0276	0.0410	4.5988	5.1098	4.9259
101	08	7	Black*SAT-CR	-7.7323	4.8339	1,690.5236	1,523.4253	1,557.0038	-7.0245	4.5988	1,630.7297	1,452.6047	1,492.9608
101	08	8	Black*SAT-M	-9.1583	5.3882	1,523.4253	1,954.8375	1,584.5546	-8.3199	5.1098	1,452.6047	1,870.9568	1,508.7013
101	08	9	Black*SAT-W	-8.2818	5.1777	1,557.0038	1,584.5546	1,758.2324	-7.5237	4.9259	1,492.9608	1,508.7013	1,689.6382
102	06	1	HSGPA	0.0000	0.2482	15.4197	17.9562	17.0461	-0.0224	0.0302	3.4147	3.7824	3.3674
102	06	2	SAT-CR	0.0000	15.4197	9,315.5505	5,903.0398	7,291.3946	-5.6311	3.4147	1,209.8513	1,067.7473	1,023.6311
102	06	3	SAT-M	0.0000	17.9562	5,903.0398	9,056.6793	5,749.1255	-6.1434	3.7824	1,067.7473	1,338.2681	1,004.1775
102	06	4	SAT-W	0.0000	17.0461	7,291.3946	5,749.1255	8,994.8899	-5.3916	3.3674	1,023.6311	1,004.1775	1,070.1663
102	06	5	Black	0.0577	-0.0224	-5.6311	-6.1434	-5.3916	0.0544	-0.0211	-5.3061	-5.7888	-5.0804
102	06	6	Black*HSGPA	-0.0224	0.0302	3.4147	3.7824	3.3674	-0.0211	0.0297	3.2884	3.6447	3.2465
102	06	7	Black*SAT-CR	-5.6307	3.4147	1,209.8513	1,067.7473	1,023.6311	-5.3061	3.2884	1,178.1443	1,033.1557	993.2728
102	06	8	Black*SAT-M	-6.1430	3.7824	1,067.7473	1,338.2681	1,004.1775	-5.7888	3.6447	1,033.1557	1,300.5296	971.0573
102	06	9	Black*SAT-W	-5.3912	3.3674	1,023.6311	1,004.1775	1,070.1663	-5.0804	3.2465	993.2728	971.0573	1,041.0992
102	08	1	HSGPA	0.0000	0.2386	14.6224	17.2229	16.1768	-0.0216	0.0299	3.4217	3.7615	3.5181
102	08	2	SAT-CR	0.0000	14.6224	8,890.2322	5,570.7791	6,770.9017	-5.9183	3.4217	1,208.0220	1,065.4109	1,054.8877
102	08	3	SAT-M	0.0000	17.2229	5,570.7791	8,656.9599	5,420.1022	-6.2919	3.7615	1,065.4109	1,311.9586	1,033.2284
102	08	4	SAT-W	0.0000	16.1768	6,770.9017	5,420.1022	8,497.5292	-5.7961	3.5181	1,054.8877	1,033.2284	1,125.4996
102	08	5	Black	0.0588	-0.0216	-5.9183	-6.2919	-5.7961	0.0554	-0.0203	-5.5702	-5.9218	-5.4551
102	08	6	Black*HSGPA	-0.0215	0.0299	3.4217	3.7615	3.5181	-0.0203	0.0294	3.2941	3.6259	3.3932
102	08	7	Black*SAT-CR	-5.9180	3.4217	1,208.0220	1,065.4109	1,054.8877	-5.5702	3.2941	1,172.9975	1,028.1758	1,020.5867
102	08	8	Black*SAT-M	-6.2915	3.7615	1,065.4109	1,311.9586	1,033.2284	-5.9218	3.6259	1,028.1758	1,272.3735	996.7627
102	08	9	Black*SAT-W	-5.7957	3.5181	1,054.8877	1,033.2284	1,125.4996	-5.4551	3.3932	1,020.5867	996.7627	1,091.9073
103	06	1	HSGPA	0.0000	0.2893	20.0551	23.1564	17.4446	-0.0665	0.0876	7.2676	8.1506	6.2739
103	06	2	SAT-CR	0.0000	20.0551	9,379.7283	6,647.6922	6,488.7018	-18.7052	7.2676	3,152.6815	2,749.8787	2,318.7000
103	06	3	SAT-M	0.0000	23.1564	6,647.6922	9,744.4166	5,613.1791	-23.1572	8.1506	2,749.8787	3,908.4725	2,374.2365
103	06	4	SAT-W	0.0000	17.4446	6,488.7018	5,613.1791	7,419.2814	-16.3096	6.2739	2,318.7000	2,374.2365	2,576.1679
103	06	5	Black	0.2999	-0.0665	-18.7052	-23.1572	-16.3096	0.2102	-0.0466	-13.0954	-16.2121	-11.4183
103	06	6	Black*HSGPA	-0.0665	0.0876	7.2676	8.1506	6.2739	-0.0466	0.0832	6.0244	6.6114	5.1899
103	06	7	Black*SAT-CR	-18.6880	7.2676	3,152.6815	2,749.8787	2,318.7000	-13.0954	6.0244	2,803.1183	2,317.1176	2,013.9053
103	06	8	Black*SAT-M	-23.1359	8.1506	2,749.8787	3,908.4725	2,374.2365	-16.2121	6.6114	2,317.1176	3,372.7118	1,996.8989
103	06	9	Black*SAT-W	-16.2946	6.2739	2,318.7000	2,374.2365	2,576.1679	-11.4183	5.1899	2,013.9053	1,996.8989	2,310.4082
103	07	1	HSGPA	0.0000	0.3066	19.4279	22.2044	20.1314	-0.0830	0.1213	9.1811	10.4549	8.0238
103	07	2	SAT-CR	0.0000	19.4279	9,280.4161	5,960.6935	6,404.9067	-20.2159	9.1811	3,660.0747	2,620.7330	2,552.5056
103	07	3	SAT-M	0.0000	22.2044	5,960.6935	8,633.5731	5,174.9300	-20.6986	10.4549	2,620.7330	3,528.4886	2,215.3042
103	07	4	SAT-W	0.0000	20.1314	6,404.9067	5,174.9300	7,374.4308	-16.6414	8.0238	2,552.5056	2,215.3042	2,716.3501
103	07	5	Black	0.3378	-0.0830	-20.2159	-20.6986	-16.6414	0.2239	-0.0550	-13.3864	-13.7061	-11.0195
103	07	6	Black*HSGPA	-0.0829	0.1213	9.1811	10.4549	8.0238	-0.0550	0.1145	7.5046	8.7384	6.6437
103	07	7	Black*SAT-CR	-20.1988	9.1811	3,660.0747	2,620.7330	2,552.5056	-13.3864	7.5046	3,251.7384	2,202.6454	2,216.3692
103	07	8	Black*SAT-M	-20.6812	10.4549	2,620.7330	3,528.4886	2,215.3042	-13.7061	8.7384	2,202.6454	3,100.4168	1,871.1407
103	07	9	Black*SAT-W	-16.6274	8.0238	2,552.5056	2,215.3042	2,716.3501	-11.0195	6.6437	2,216.3692	1,871.1407	2,439.6476

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
103	08	1	HSGPA	0.0000	0.3045	22.1629	25.6402	21.0950	-0.1012	0.1153	9.4452	10.8181	8.7205
103	08	2	SAT-CR	0.0000	22.1629	9,747.9706	6,749.2836	7,208.4093	-22.8154	9.4452	3,720.0928	2,817.1774	2,813.4542
103	08	3	SAT-M	0.0000	25.6402	6,749.2836	9,889.4258	6,237.3033	-23.9021	10.8181	2,817.1774	4,083.2232	2,523.9884
103	08	4	SAT-W	0.0000	21.0950	7,208.4093	6,237.3033	8,396.6001	-19.1996	8.7205	2,813.4542	2,523.9884	3,217.6505
103	08	5	Black	0.3747	-0.1012	-22.8154	-23.9021	-19.1996	0.2345	-0.0633	-14.2662	-14.9457	-12.0053
103	08	6	Black*HSGPA	-0.1011	0.1153	9.4452	10.8181	8.7205	-0.0633	0.1051	7.1381	8.4010	6.7790
103	08	7	Black*SAT-CR	-22.7979	9.4452	3,720.0928	2,817.1774	2,813.4542	-14.2662	7.1381	3,199.9490	2,272.2587	2,375.7437
103	08	8	Black*SAT-M	-23.8838	10.8181	2,817.1774	4,083.2232	2,523.9884	-14.9457	8.4010	2,272.2587	3,512.3495	2,065.4293
103	08	9	Black*SAT-W	-19.1849	8.7205	2,813.4542	2,523.9884	3,217.6505	-12.0053	6.7790	2,375.7437	2,065.4293	2,849.3091
106	06	1	HSGPA	0.0000	0.2612	17.0176	18.2606	17.6704	-0.0270	0.0495	4.4734	4.9817	4.8285
106	06	2	SAT-CR	0.0000	17.0176	8,264.7026	5,423.2629	6,303.9926	-9.6618	4.4734	1,854.2227	1,587.4542	1,575.6118
106	06	3	SAT-M	0.0000	18.2606	5,423.2629	8,683.0818	5,299.0321	-10.9072	4.9817	1,587.4542	2,024.1819	1,555.6630
106	06	4	SAT-W	0.0000	17.6704	6,303.9926	5,299.0321	8,049.2236	-9.7194	4.8285	1,575.6118	1,555.6630	1,753.4330
106	06	5	Black	0.1213	-0.0270	-9.6618	-10.9072	-9.7194	0.1066	-0.0237	-8.4901	-9.5844	-8.5407
106	06	6	Black*HSGPA	-0.0270	0.0495	4.4734	4.9817	4.8285	-0.0237	0.0488	4.2129	4.6876	4.5664
106	06	7	Black*SAT-CR	-9.6612	4.4734	1,854.2227	1,587.4542	1,575.6118	-8.4901	4.2129	1,760.8782	1,482.0780	1,481.7110
106	06	8	Black*SAT-M	-10.9065	4.9817	1,587.4542	2,024.1819	1,555.6630	-9.5844	4.6876	1,482.0780	1,905.2230	1,449.6586
106	06	9	Black*SAT-W	-9.7188	4.8285	1,575.6118	1,555.6630	1,753.4330	-8.5407	4.5664	1,481.7110	1,449.6586	1,658.9725
106	07	1	HSGPA	0.0000	0.2660	18.5006	19.9573	19.6348	-0.0361	0.0594	6.0520	6.5006	6.4495
106	07	2	SAT-CR	0.0000	18.5006	8,698.9242	5,753.6218	6,901.4026	-11.3709	6.0520	2,129.0792	1,848.2944	1,900.0300
106	07	3	SAT-M	0.0000	19.9573	5,753.6218	8,861.8829	5,716.5911	-12.3893	6.5006	1,848.2944	2,325.4430	1,846.6967
106	07	4	SAT-W	0.0000	19.6348	6,901.4026	5,716.5911	8,661.7010	-11.7509	6.4495	1,900.0300	1,846.6967	2,114.9543
106	07	5	Black	0.1287	-0.0361	-11.3709	-12.3893	-11.7509	0.1122	-0.0314	-9.9070	-10.7943	-10.2381
106	07	6	Black*HSGPA	-0.0361	0.0594	6.0520	6.5006	6.4495	-0.0314	0.0581	5.6419	6.0538	6.0257
106	07	7	Black*SAT-CR	-11.3703	6.0520	2,129.0792	1,848.2944	1,900.0300	-9.9070	5.6419	1,999.7895	1,707.4249	1,766.4191
106	07	8	Black*SAT-M	-12.3886	6.5006	1,848.2944	2,325.4430	1,846.6967	-10.7943	6.0538	1,707.4249	2,171.9565	1,701.1189
106	07	9	Black*SAT-W	-11.7503	6.4495	1,900.0300	1,846.6967	2,114.9543	-10.2381	6.0257	1,766.4191	1,701.1189	1,976.8778
106	08	1	HSGPA	0.0000	0.2569	17.9160	19.4032	19.1865	-0.0428	0.0661	6.7991	7.3522	7.0576
106	08	2	SAT-CR	0.0000	17.9160	8,652.7455	5,835.7676	6,909.1011	-12.4708	6.7991	2,308.5797	2,017.3104	2,028.0315
106	08	3	SAT-M	0.0000	19.4032	5,835.7676	9,015.4072	5,877.5826	-13.6333	7.3522	2,017.3104	2,520.6509	2,003.8887
106	08	4	SAT-W	0.0000	19.1865	6,909.1011	5,877.5826	8,868.2213	-12.6660	7.0576	2,028.0315	2,003.8887	2,269.0464
106	08	5	Black	0.1407	-0.0428	-12.4708	-13.6333	-12.6660	0.1209	-0.0368	-10.7160	-11.7149	-10.8837
106	08	6	Black*HSGPA	-0.0428	0.0661	6.7991	7.3522	7.0576	-0.0368	0.0642	6.2648	6.7682	6.5150
106	08	7	Black*SAT-CR	-12.4701	6.7991	2,308.5797	2,017.3104	2,028.0315	-10.7160	6.2648	2,153.0667	1,847.3019	1,870.0855
106	08	8	Black*SAT-M	-13.6325	7.3522	2,017.3104	2,520.6509	2,003.8887	-11.7149	6.7682	1,847.3019	2,334.7956	1,831.2203
106	08	9	Black*SAT-W	-12.6652	7.0576	2,028.0315	2,003.8887	2,269.0464	-10.8837	6.5150	1,870.0855	1,831.2203	2,108.6292
109	06	1	HSGPA	0.0000	0.2706	22.8554	25.6265	24.0484	-0.0601	0.0932	10.0172	11.5730	10.6449
109	06	2	SAT-CR	0.0000	22.8554	10,677.1787	7,946.7922	8,749.7726	-16.4171	10.0172	3,498.4532	3,272.2969	3,178.0908
109	06	3	SAT-M	0.0000	25.6265	7,946.7922	11,654.4672	7,977.5914	-19.6707	11.5730	3,272.2969	4,299.0499	3,344.4098
109	06	4	SAT-W	0.0000	24.0484	8,749.7726	7,977.5914	10,526.7477	-17.2629	10.6449	3,178.0908	3,344.4098	3,539.9172
109	06	5	Black	0.1883	-0.0601	-16.4171	-19.6707	-17.2629	0.1529	-0.0488	-13.3256	-15.9666	-14.0122
109	06	6	Black*HSGPA	-0.0601	0.0932	10.0172	11.5730	10.6449	-0.0488	0.0896	9.0309	10.3913	9.6079
109	06	7	Black*SAT-CR	-16.4162	10.0172	3,498.4532	3,272.2969	3,178.0908	-13.3256	9.0309	3,228.9469	2,949.3777	2,894.6998
109	06	8	Black*SAT-M	-19.6697	11.5730	3,272.2969	4,299.0499	3,344.4098	-15.9666	10.3913	2,949.3777	3,912.1320	3,004.8542
109	06	9	Black*SAT-W	-17.2620	10.6449	3,178.0908	3,344.4098	3,539.9172	-14.0122	9.6079	2,894.6998	3,004.8542	3,241.9262



## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
109	07	1	HSGPA	0.0000	0.2657	22.1979	24.5909	23.4536	-0.0577	0.0873	9.6412	10.6762	10.1131
109	07	2	SAT-CR	0.0000	22.1979	10,546.9279	7,681.6259	8,680.5669	-16.3131	9.6412	3,425.4061	3,089.5093	3,122.3091
109	07	3	SAT-M	0.0000	24.5909	7,681.6259	11,225.6823	7,752.9847	-18.5782	10.6762	3,089.5093	3,955.1591	3,135.4428
109	07	4	SAT-W	0.0000	23.4536	8,680.5669	7,752.9847	10,531.6234	-16.7975	10.1131	3,122.3091	3,135.4428	3,463.4688
109	07	5	Black	0.1845	-0.0577	-16.3131	-18.5782	-16.7975	0.1505	-0.0470	-13.3030	-15.1502	-13.6981
109	07	6	Black*HSGPA	-0.0577	0.0873	9.6412	10.6762	10.1131	-0.0470	0.0840	8.7006	9.6050	9.1446
109	07	7	Black*SAT-CR	-16.3123	9.6412	3,425.4061	3,089.5093	3,122.3091	-13.3030	8.7006	3,159.3018	2,786.4564	2,848.3027
109	07	8	Black*SAT-M	-18.5773	10.6762	3,089.5093	3,955.1591	3,135.4428	-15.1502	9.6050	2,786.4564	3,610.0274	2,823.3906
109	07	9	Black*SAT-W	-16.7967	10.1131	3,122.3091	3,135.4428	3,463.4688	-13.6981	9.1446	2,848.3027	2,823.3906	3,181.3256
109	08	1	HSGPA	0.0000	0.2554	21.5468	24.2767	22.8645	-0.0597	0.0936	9.9799	11.3405	10.5093
109	08	2	SAT-CR	0.0000	21.5468	10,520.0808	7,819.7766	8,710.1613	-17.5404	9.9799	3,712.3178	3,415.2977	3,305.6319
109	08	3	SAT-M	0.0000	24.2767	7,819.7766	11,462.8405	7,986.1998	-20.7831	11.3405	3,415.2977	4,471.9229	3,439.5934
109	08	4	SAT-W	0.0000	22.8645	8,710.1613	7,986.1998	10,741.0784	-18.0433	10.5093	3,305.6319	3,439.5934	3,661.6959
109	08	5	Black	0.2056	-0.0597	-17.5404	-20.7831	-18.0433	0.1633	-0.0474	-13.9345	-16.5106	-14.3340
109	08	6	Black*HSGPA	-0.0597	0.0936	9.9799	11.3405	10.5093	-0.0474	0.0900	8.9329	10.1000	9.4323
109	08	7	Black*SAT-CR	-17.5394	9.9799	3,712.3178	3,415.2977	3,305.6319	-13.9345	8.9329	3,404.6687	3,050.7743	2,989.1636
109	08	8	Black*SAT-M	-20.7819	11.3405	3,415.2977	4,471.9229	3,439.5934	-16.5106	10.1000	3,050.7743	4,040.0110	3,064.6203
109	08	9	Black*SAT-W	-18.0422	10.5093	3,305.6319	3,439.5934	3,661.6959	-14.3340	9.4323	2,989.1636	3,064.6203	3,336.1555
110	07	1	HSGPA	0.0000	0.2143	17.6622	17.0964	18.4889	-0.0288	0.0422	5.3332	5.0739	5.6704
110	07	2	SAT-CR	0.0000	17.6622	9,659.0666	5,857.4141	7,683.3090	-11.5785	5.3332	2,212.0003	1,763.9200	2,048.6458
110	07	3	SAT-M	0.0000	17.0964	5,857.4141	8,471.3694	5,874.3658	-11.2033	5.0739	1,763.9200	1,993.3866	1,815.2670
110	07	4	SAT-W	0.0000	18.4889	7,683.3090	5,874.3658	9,546.8578	-12.0130	5.6704	2,048.6458	1,815.2670	2,296.1321
110	07	5	Black	0.1094	-0.0288	-11.5785	-11.2033	-12.0130	0.0975	-0.0256	-10.3114	-9.9773	-10.6984
110	07	6	Black*HSGPA	-0.0288	0.0422	5.3332	5.0739	5.6704	-0.0256	0.0414	4.9999	4.7515	5.3246
110	07	7	Black*SAT-CR	-11.5763	5.3332	2,212.0003	1,763.9200	2,048.6458	-10.3114	4.9999	2,077.9645	1,634.2282	1,909.5801
110	07	8	Black*SAT-M	-11.2011	5.0739	1,763.9200	1,993.3866	1,815.2670	-9.9773	4.7515	1,634.2282	1,867.8981	1,680.7085
110	07	9	Black*SAT-W	-12.0107	5.6704	2,048.6458	1,815.2670	2,296.1321	-10.6984	5.3246	1,909.5801	1,680.7085	2,151.8479
110	08	1	HSGPA	0.0000	0.2136	16.3882	16.0231	17.4997	-0.0301	0.0423	5.3935	5.1728	5.5727
110	08	2	SAT-CR	0.0000	16.3882	8,939.4995	5,539.8236	7,237.4399	-10.3456	5.3935	1,996.4439	1,605.1318	1,829.6268
110	08	3	SAT-M	0.0000	16.0231	5,539.8236	8,246.2136	5,642.6489	-10.2934	5.1728	1,605.1318	1,813.8029	1,673.4797
110	08	4	SAT-W	0.0000	17.4997	7,237.4399	5,642.6489	9,343.4660	-10.7869	5.5727	1,829.6268	1,673.4797	2,053.8288
110	08	5	Black	0.1023	-0.0301	-10.3456	-10.2934	-10.7869	0.0919	-0.0270	-9.2872	-9.2404	-9.6833
110	08	6	Black*HSGPA	-0.0301	0.0423	5.3935	5.1728	5.5727	-0.0270	0.0414	5.0825	4.8633	5.2484
110	08	7	Black*SAT-CR	-10.3433	5.3935	1,996.4439	1,605.1318	1,829.6268	-9.2872	5.0825	1,889.4368	1,498.6641	1,718.0552
110	08	8	Black*SAT-M	-10.2911	5.1728	1,605.1318	1,813.8029	1,673.4797	-9.2404	4.8633	1,498.6641	1,707.8718	1,562.4706
110	08	9	Black*SAT-W	-10.7845	5.5727	1,829.6268	1,673.4797	2,053.8288	-9.6833	5.2484	1,718.0552	1,562.4706	1,937.4982
112	07	1	HSGPA	0.0000	0.2770	19.3892	21.1966	19.9116	-0.0515	0.0665	7.2363	7.6341	7.3632
112	07	2	SAT-CR	0.0000	19.3892	9,033.9174	6,023.9014	7,110.9811	-13.9872	7.2363	2,568.4118	2,131.0674	2,223.5937
112	07	3	SAT-M	0.0000	21.1966	6,023.9014	8,949.2334	5,966.9701	-15.0222	7.6341	2,131.0674	2,624.5239	2,076.9591
112	07	4	SAT-W	0.0000	19.9116	7,110.9811	5,966.9701	8,686.4990	-13.9893	7.3632	2,223.5937	2,076.9591	2,412.3603
112	07	5	Black	0.1636	-0.0515	-13.9872	-15.0222	-13.9893	0.1369	-0.0430	-11.6987	-12.5644	-11.7005
112	07	6	Black*HSGPA	-0.0515	0.0665	7.2363	7.6341	7.3632	-0.0430	0.0639	6.5165	6.8611	6.6433
112	07	7	Black*SAT-CR	-13.9856	7.2363	2,568.4118	2,131.0674	2,223.5937	-11.6987	6.5165	2,372.7925	1,920.9725	2,027.9440
112	07	8	Black*SAT-M	-15.0206	7.6341	2,131.0674	2,624.5239	2,076.9591	-12.5644	6.8611	1,920.9725	2,398.8823	1,866.8316
112	07	9	Black*SAT-W	-13.9878	7.3632	2,223.5937	2,076.9591	2,412.3603	-11.7005	6.6433	2,027.9440	1,866.8316	2,216.6802

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
112	08	1	HSGPA	0.0000	0.2574	18.2602	20.3495	19.1326	-0.0520	0.0686	7.6866	8.3104	7.9066
112	08	2	SAT-CR	0.0000	18.2602	8,938.2177	5,953.1405	7,139.1421	-14.9053	7.6866	2,835.3109	2,366.0499	2,443.9013
112	08	3	SAT-M	0.0000	20.3495	5,953.1405	8,960.6552	6,015.6116	-16.2548	8.3104	2,366.0499	2,898.8263	2,316.3334
112	08	4	SAT-W	0.0000	19.1326	7,139.1421	6,015.6116	8,942.9931	-14.8388	7.9066	2,443.9013	2,316.3334	2,681.7448
112	08	5	Black	0.1760	-0.0520	-14.9053	-16.2548	-14.8388	0.1450	-0.0428	-12.2826	-13.3946	-12.2278
112	08	6	Black*HSGPA	-0.0519	0.0686	7.6866	8.3104	7.9066	-0.0428	0.0659	6.9123	7.4660	7.1357
112	08	7	Black*SAT-CR	-14.9037	7.6866	2,835.3109	2,366.0499	2,443.9013	-12.2826	6.9123	2,613.1664	2,123.7941	2,222.7485
112	08	8	Black*SAT-M	-16.2530	8.3104	2,366.0499	2,898.8263	2,316.3334	-13.3946	7.4660	2,123.7941	2,634.6384	2,075.1591
112	08	9	Black*SAT-W	-14.8371	7.9066	2,443.9013	2,316.3334	2,681.7448	-12.2278	7.1357	2,222.7485	2,075.1591	2,461.5793
113	06	1	HSGPA	0.0000	0.2639	14.5352	17.6726	15.9262	-0.0234	0.0351	3.3895	3.7689	3.4266
113	06	2	SAT-CR	0.0000	14.5352	9,138.1648	5,456.0186	6,861.1813	-7.9157	3.3895	1,623.9444	1,328.1489	1,407.9062
113	06	3	SAT-M	0.0000	17.6726	5,456.0186	8,477.6163	5,200.3141	-8.0159	3.7689	1,328.1489	1,599.7662	1,302.4895
113	06	4	SAT-W	0.0000	15.9262	6,861.1813	5,200.3141	8,213.5232	-7.7228	3.4266	1,407.9062	1,302.4895	1,476.4671
113	06	5	Black	0.0819	-0.0234	-7.9157	-8.0159	-7.7228	0.0752	-0.0215	-7.2678	-7.3598	-7.0907
113	06	6	Black*HSGPA	-0.0234	0.0351	3.3895	3.7689	3.4266	-0.0215	0.0346	3.2044	3.5815	3.2460
113	06	7	Black*SAT-CR	-7.9130	3.3895	1,623.9444	1,328.1489	1,407.9062	-7.2678	3.2044	1,561.3071	1,264.7183	1,346.7949
113	06	8	Black*SAT-M	-8.0133	3.7689	1,328.1489	1,599.7662	1,302.4895	-7.3598	3.5815	1,264.7183	1,535.5323	1,240.6043
113	06	9	Black*SAT-W	-7.7203	3.4266	1,407.9062	1,302.4895	1,476.4671	-7.0907	3.2460	1,346.7949	1,240.6043	1,416.8447
113	07	1	HSGPA	0.0000	0.2670	14.9538	17.2297	15.7639	-0.0258	0.0392	3.4679	4.0999	3.5102
113	07	2	SAT-CR	0.0000	14.9538	8,835.7584	5,159.1905	6,558.8088	-7.7337	3.4679	1,527.7032	1,279.6704	1,338.7289
113	07	3	SAT-M	0.0000	17.2297	5,159.1905	8,540.6755	4,993.9247	-8.3250	4.0999	1,279.6704	1,642.6644	1,256.2495
113	07	4	SAT-W	0.0000	15.7639	6,558.8088	4,993.9247	7,905.9661	-7.4185	3.5102	1,338.7289	1,256.2495	1,428.1009
113	07	5	Black	0.0870	-0.0258	-7.7337	-8.3250	-7.4185	0.0794	-0.0236	-7.0611	-7.6010	-6.7733
113	07	6	Black*HSGPA	-0.0258	0.0392	3.4679	4.0999	3.5102	-0.0236	0.0385	3.2683	3.8850	3.3188
113	07	7	Black*SAT-CR	-7.7314	3.4679	1,527.7032	1,279.6704	1,338.7289	-7.0611	3.2683	1,467.9106	1,215.3062	1,281.3733
113	07	8	Black*SAT-M	-8.3225	4.0999	1,279.6704	1,642.6644	1,256.2495	-7.6010	3.8850	1,215.3062	1,573.3793	1,194.5088
113	07	9	Black*SAT-W	-7.4163	3.5102	1,338.7289	1,256.2495	1,428.1009	-6.7733	3.3188	1,281.3733	1,194.5088	1,373.0830
113	08	1	HSGPA	0.0000	0.2779	14.6135	18.5944	17.0067	-0.0301	0.0452	4.1721	4.3852	4.5142
113	08	2	SAT-CR	0.0000	14.6135	8,801.0392	5,305.4824	6,638.1004	-10.1286	4.1721	1,949.7976	1,665.6939	1,702.0609
113	08	3	SAT-M	0.0000	18.5944	5,305.4824	8,503.4136	5,212.2220	-10.2163	4.3852	1,665.6939	1,990.5672	1,604.3038
113	08	4	SAT-W	0.0000	17.0067	6,638.1004	5,212.2220	8,246.3496	-10.1367	4.5142	1,702.0609	1,604.3038	1,847.8502
113	08	5	Black	0.1060	-0.0301	-10.1286	-10.2163	-10.1367	0.0948	-0.0269	-9.0546	-9.1330	-9.0618
113	08	6	Black*HSGPA	-0.0300	0.0452	4.1721	4.3852	4.5142	-0.0269	0.0443	3.8678	4.0782	4.2096
113	08	7	Black*SAT-CR	-10.1254	4.1721	1,949.7976	1,665.6939	1,702.0609	-9.0546	3.8678	1,847.2410	1,562.2495	1,599.4232
113	08	8	Black*SAT-M	-10.2131	4.3852	1,665.6939	1,990.5672	1,604.3038	-9.1330	4.0782	1,562.2495	1,886.2272	1,500.7776
113	08	9	Black*SAT-W	-10.1334	4.5142	1,702.0609	1,604.3038	1,847.8502	-9.0618	4.2096	1,599.4232	1,500.7776	1,745.1313
114	06	1	HSGPA	0.0000	0.3410	21.4725	24.9266	23.0062	-0.0724	0.1523	9.9741	11.4139	10.4527
114	06	2	SAT-CR	0.0000	21.4725	9,761.4463	7,103.3142	7,684.5911	-17.6900	9.9741	4,109.8074	3,292.5587	3,342.3954
114	06	3	SAT-M	0.0000	24.9266	7,103.3142	10,857.2832	6,940.7862	-21.0279	11.4139	3,292.5587	4,716.6268	3,252.6261
114	06	4	SAT-W	0.0000	23.0062	7,684.5911	6,940.7862	9,254.3633	-17.2479	10.4527	3,342.3954	3,252.6261	3,886.3782
114	06	5	Black	0.3645	-0.0724	-17.6900	-21.0279	-17.2479	0.2316	-0.0460	-11.2428	-13.3642	-10.9618
114	06	6	Black*HSGPA	-0.0724	0.1523	9.9741	11.4139	10.4527	-0.0460	0.1471	8.6926	9.8906	9.2033
114	06	7	Black*SAT-CR	-17.6889	9.9741	4,109.8074	3,292.5587	3,342.3954	-11.2428	8.6926	3,796.8909	2,920.5987	3,037.2997
114	06	8	Black*SAT-M	-21.0266	11.4139	3,292.5587	4,716.6268	3,252.6261	-13.3642	9.8906	2,920.5987	4,274.4825	2,889.9627
114	06	9	Black*SAT-W	-17.2468	10.4527	3,342.3954	3,252.6261	3,886.3782	-10.9618	9.2033	3,037.2997	2,889.9627	3,588.9079

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
114	07	1	HSGPA	0.0000	0.3331	20.7532	23.6993	22.9813	-0.0730	0.1358	9.0020	10.0112	9.9871
114	07	2	SAT-CR	0.0000	20.7532	9,383.7932	6,692.7118	7,568.1890	-17.4006	9.0020	3,693.9555	2,967.7114	3,104.9670
114	07	3	SAT-M	0.0000	23.6993	6,692.7118	10,327.9271	6,744.9673	-20.0410	10.0112	2,967.7114	4,124.1859	2,993.2120
114	07	4	SAT-W	0.0000	22.9813	7,568.1890	6,744.9673	9,225.8607	-17.3325	9.9871	3,104.9670	2,993.2120	3,640.3301
114	07	5	Black	0.3293	-0.0730	-17.4006	-20.0410	-17.3325	0.2209	-0.0490	-11.6712	-13.4422	-11.6256
114	07	6	Black*HSGPA	-0.0730	0.1358	9.0020	10.0112	9.9871	-0.0490	0.1305	7.7314	8.5477	8.7214
114	07	7	Black*SAT-CR	-17.3996	9.0020	3,693.9555	2,967.7114	3,104.9670	-11.6712	7.7314	3,391.1918	2,619.0068	2,803.3885
114	07	8	Black*SAT-M	-20.0398	10.0112	2,967.7114	4,124.1859	2,993.2120	-13.4422	8.5477	2,619.0068	3,722.5695	2,645.8724
114	07	9	Black*SAT-W	-17.3315	9.9871	3,104.9670	2,993.2120	3,640.3301	-11.6256	8.7214	2,803.3885	2,645.8724	3,339.9320
114	08	1	HSGPA	0.0000	0.3425	21.2946	24.1911	23.3655	-0.0785	0.1530	10.2570	11.2486	10.8139
114	08	2	SAT-CR	0.0000	21.2946	9,511.8942	6,809.7795	7,680.8582	-18.8106	10.2570	3,991.5519	3,167.7740	3,295.0889
114	08	3	SAT-M	0.0000	24.1911	6,809.7795	10,352.8494	6,751.2205	-21.9311	11.2486	3,167.7740	4,403.0113	3,152.0495
114	08	4	SAT-W	0.0000	23.3655	7,680.8582	6,751.2205	9,438.4198	-18.6188	10.8139	3,295.0889	3,152.0495	3,876.3772
114	08	5	Black	0.3476	-0.0785	-18.8106	-21.9311	-18.6188	0.2268	-0.0512	-12.2715	-14.3072	-12.1463
114	08	6	Black*HSGPA	-0.0785	0.1530	10.2570	11.2486	10.8139	-0.0512	0.1468	8.7804	9.5271	9.3524
114	08	7	Black*SAT-CR	-18.8095	10.2570	3,991.5519	3,167.7740	3,295.0889	-12.2715	8.7804	3,637.7344	2,755.2611	2,944.8792
114	08	8	Black*SAT-M	-21.9298	11.2486	3,167.7740	4,403.0113	3,152.0495	-14.3072	9.5271	2,755.2611	3,922.0659	2,743.7428
114	08	9	Black*SAT-W	-18.6177	10.8139	3,295.0889	3,152.0495	3,876.3772	-12.1463	9.3524	2,944.8792	2,743.7428	3,529.7383
115	06	1	HSGPA	0.0000	0.1518	9.7800	10.9865	10.7338	-0.0229	0.0285	3.2588	3.7467	3.4725
115	06	2	SAT-CR	0.0000	9.7800	6,970.5284	3,831.3624	5,117.1254	-6.2819	3.2588	1,188.4509	1,053.8550	1,067.5421
115	06	3	SAT-M	0.0000	10.9865	3,831.3624	7,107.2700	3,978.7939	-7.6691	3.7467	1,053.8550	1,463.1279	1,109.0544
115	06	4	SAT-W	0.0000	10.7338	5,117.1254	3,978.7939	6,997.2241	-6.5174	3.4725	1,067.5421	1,109.0544	1,240.4523
115	06	5	Black	0.0784	-0.0229	-6.2819	-7.6691	-6.5174	0.0722	-0.0211	-5.7895	-7.0680	-6.0065
115	06	6	Black*HSGPA	-0.0229	0.0285	3.2588	3.7467	3.4725	-0.0211	0.0280	3.1153	3.5714	3.3236
115	06	7	Black*SAT-CR	-6.2813	3.2588	1,188.4509	1,053.8550	1,067.5421	-5.7895	3.1153	1,148.9922	1,005.6825	1,026.6041
115	06	8	Black*SAT-M	-7.6685	3.7467	1,053.8550	1,463.1279	1,109.0544	-7.0680	3.5714	1,005.6825	1,404.3174	1,059.0760
115	06	9	Black*SAT-W	-6.5168	3.4725	1,067.5421	1,109.0544	1,240.4523	-6.0065	3.3236	1,026.6041	1,059.0760	1,197.9796
115	07	1	HSGPA	0.0000	0.1499	9.6812	11.2134	10.3818	-0.0224	0.0261	3.2178	3.7222	3.3367
115	07	2	SAT-CR	0.0000	9.6812	6,945.9264	3,891.2353	5,023.2045	-6.0935	3.2178	1,202.3521	1,108.5688	1,105.6061
115	07	3	SAT-M	0.0000	11.2134	3,891.2353	7,320.3224	4,031.6389	-7.1666	3.7222	1,108.5688	1,484.0315	1,152.9407
115	07	4	SAT-W	0.0000	10.3818	5,023.2045	4,031.6389	6,907.5407	-6.2597	3.3367	1,105.6061	1,152.9407	1,261.0926
115	07	5	Black	0.0701	-0.0224	-6.0935	-7.1666	-6.2597	0.0652	-0.0208	-5.6663	-6.6641	-5.8208
115	07	6	Black*HSGPA	-0.0224	0.0261	3.2178	3.7222	3.3367	-0.0208	0.0256	3.0812	3.5615	3.1963
115	07	7	Black*SAT-CR	-6.0931	3.2178	1,202.3521	1,108.5688	1,105.6061	-5.6663	3.0812	1,165.2236	1,064.9019	1,067.4651
115	07	8	Black*SAT-M	-7.1661	3.7222	1,108.5688	1,484.0315	1,152.9407	-6.6641	3.5615	1,064.9019	1,432.6750	1,108.0832
115	07	9	Black*SAT-W	-6.2592	3.3367	1,105.6061	1,152.9407	1,261.0926	-5.8208	3.1963	1,067.4651	1,108.0832	1,221.9115
115	08	1	HSGPA	0.0000	0.1523	9.2870	9.8962	9.6052	-0.0210	0.0261	3.0725	3.2977	3.2554
115	08	2	SAT-CR	0.0000	9.2870	6,917.8098	3,816.2520	5,088.0544	-6.4791	3.0725	1,317.1685	1,119.5418	1,182.0288
115	08	3	SAT-M	0.0000	9.8962	3,816.2520	7,081.9053	4,003.5245	-7.1790	3.2977	1,119.5418	1,407.8361	1,140.3676
115	08	4	SAT-W	0.0000	9.6052	5,088.0544	4,003.5245	7,173.3468	-6.5494	3.2554	1,182.0288	1,140.3676	1,342.0627
115	08	5	Black	0.0768	-0.0210	-6.4791	-7.1790	-6.5494	0.0709	-0.0193	-5.9818	-6.6279	-6.0466
115	08	6	Black*HSGPA	-0.0209	0.0261	3.0725	3.2977	3.2554	-0.0193	0.0256	2.9367	3.1473	3.1182
115	08	7	Black*SAT-CR	-6.4786	3.0725	1,317.1685	1,119.5418	1,182.0288	-5.9818	2.9367	1,275.1930	1,073.0323	1,139.5980
115	08	8	Black*SAT-M	-7.1783	3.2977	1,119.5418	1,407.8361	1,140.3676	-6.6279	3.1473	1,073.0323	1,356.3030	1,093.3537
115	08	9	Black*SAT-W	-6.5488	3.2554	1,182.0288	1,140.3676	1,342.0627	-6.0466	3.1182	1,139.5980	1,093.3537	1,299.1717

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
117	06	1	HSGPA	0.0000	0.1711	10.0440	9.3392	10.1810	-0.0178	0.0239	2.8572	2.9625	3.0788
117	06	2	SAT-CR	0.0000	10.0440	7,103.5978	4,071.5415	5,130.6895	-5.9862	2.8572	1,224.4199	1,121.0915	1,139.3050
117	06	3	SAT-M	0.0000	9.3392	4,071.5415	7,101.4000	4,109.4698	-6.9613	2.9625	1,121.0915	1,409.9338	1,148.5579
117	06	4	SAT-W	0.0000	10.1810	5,130.6895	4,109.4698	6,994.5336	-6.2064	3.0788	1,139.3050	1,148.5579	1,286.4176
117	06	5	Black	0.0678	-0.0178	-5.9862	-6.9613	-6.2064	0.0632	-0.0166	-5.5802	-6.4891	-5.7854
117	06	6	Black*HSGPA	-0.0178	0.0239	2.8572	2.9625	3.0788	-0.0166	0.0236	2.7506	2.8385	2.9683
117	06	7	Black*SAT-CR	-5.9856	2.8572	1,224.4199	1,121.0915	1,139.3050	-5.5802	2.7506	1,188.5887	1,079.4237	1,102.1562
117	06	8	Black*SAT-M	-6.9606	2.9625	1,121.0915	1,409.9338	1,148.5579	-6.4891	2.8385	1,079.4237	1,361.4787	1,105.3579
117	06	9	Black*SAT-W	-6.2057	3.0788	1,139.3050	1,148.5579	1,286.4176	-5.7854	2.9683	1,102.1562	1,105.3579	1,247.9028
117	07	1	HSGPA	0.0000	0.1667	10.4531	10.6479	10.7204	-0.0213	0.0288	3.2610	3.3875	3.5201
117	07	2	SAT-CR	0.0000	10.4531	7,200.0598	4,278.8701	5,412.7154	-6.9262	3.2610	1,400.8849	1,221.2849	1,308.0790
117	07	3	SAT-M	0.0000	10.6479	4,278.8701	7,329.2403	4,416.3594	-8.1970	3.3875	1,221.2849	1,551.3076	1,277.8276
117	07	4	SAT-W	0.0000	10.7204	5,412.7154	4,416.3594	7,367.3119	-7.2441	3.5201	1,308.0790	1,277.8276	1,497.7992
117	07	5	Black	0.0788	-0.0213	-6.9262	-8.1970	-7.2441	0.0726	-0.0196	-6.3805	-7.5511	-6.6733
117	07	6	Black*HSGPA	-0.0213	0.0288	3.2610	3.3875	3.5201	-0.0196	0.0283	3.1134	3.2128	3.3657
117	07	7	Black*SAT-CR	-6.9255	3.2610	1,400.8849	1,221.2849	1,308.0790	-6.3805	3.1134	1,352.9172	1,164.5164	1,257.9098
117	07	8	Black*SAT-M	-8.1962	3.3875	1,221.2849	1,551.3076	1,277.8276	-7.5511	3.2128	1,164.5164	1,484.1235	1,218.4536
117	07	9	Black*SAT-W	-7.2434	3.5201	1,308.0790	1,277.8276	1,497.7992	-6.6733	3.3657	1,257.9098	1,218.4536	1,445.3274
117	08	1	HSGPA	0.0000	0.1686	11.4938	11.7411	11.8047	-0.0279	0.0382	4.7325	4.9736	5.1779
117	08	2	SAT-CR	0.0000	11.4938	7,807.0511	4,912.9847	6,042.4110	-9.9894	4.7325	2,103.7373	1,888.9947	1,955.3297
117	08	3	SAT-M	0.0000	11.7411	4,912.9847	7,951.5351	5,121.8020	-11.0872	4.9736	1,888.9947	2,283.3172	1,927.4915
117	08	4	SAT-W	0.0000	11.8047	6,042.4110	5,121.8020	8,265.9500	-10.4011	5.1779	1,955.3297	1,927.4915	2,182.3554
117	08	5	Black	0.0996	-0.0279	-9.9894	-11.0872	-10.4011	0.0897	-0.0252	-8.9944	-9.9829	-9.3652
117	08	6	Black*HSGPA	-0.0279	0.0382	4.7325	4.9736	5.1779	-0.0252	0.0374	4.4534	4.6638	4.8873
117	08	7	Black*SAT-CR	-9.9884	4.7325	2,103.7373	1,888.9947	1,955.3297	-8.9944	4.4534	2,003.9596	1,778.2518	1,851.4393
117	08	8	Black*SAT-M	-11.0861	4.9736	1,888.9947	2,283.3172	1,927.4915	-9.9829	4.6638	1,778.2518	2,160.4040	1,812.1839
117	08	9	Black*SAT-W	-10.4001	5.1779	1,955.3297	1,927.4915	2,182.3554	-9.3652	4.8873	1,851.4393	1,812.1839	2,074.1826
118	06	1	HSGPA	0.0000	0.3884	25.2421	30.6685	28.3522	-0.0867	0.1569	8.1888	10.4266	10.1060
118	06	2	SAT-CR	0.0000	25.2421	10,356.1838	7,526.4669	7,876.2252	-19.5461	8.1888	3,936.2953	2,887.5117	3,092.5146
118	06	3	SAT-M	0.0000	30.6685	7,526.4669	11,101.8295	7,508.0048	-21.3416	10.4266	2,887.5117	4,396.5668	3,040.2687
118	06	4	SAT-W	0.0000	28.3522	7,876.2252	7,508.0048	9,650.1890	-20.4087	10.1060	3,092.5146	3,040.2687	3,769.7879
118	06	5	Black	0.3803	-0.0867	-19.5461	-21.3416	-20.4087	0.2359	-0.0537	-12.1125	-13.2251	-12.6470
118	06	6	Black*HSGPA	-0.0866	0.1569	8.1888	10.4266	10.1060	-0.0537	0.1494	6.4970	8.5793	8.3394
118	06	7	Black*SAT-CR	-19.5243	8.1888	3,936.2953	2,887.5117	3,092.5146	-12.1125	6.4970	3,554.6713	2,470.8334	2,694.0497
118	06	8	Black*SAT-M	-21.3177	10.4266	2,887.5117	4,396.5668	3,040.2687	-13.2251	8.5793	2,470.8334	3,941.6143	2,605.2025
118	06	9	Black*SAT-W	-20.3859	10.1060	3,092.5146	3,040.2687	3,769.7879	-12.6470	8.3394	2,694.0497	2,605.2025	3,353.7389
119	07	1	HSGPA	0.0000	0.3374	24.7447	26.9473	27.0121	-0.0281	0.0396	4.0685	4.5381	4.2562
119	07	2	SAT-CR	0.0000	24.7447	8,972.0143	5,975.0921	7,249.6968	-5.3257	4.0685	1,029.3005	902.1709	893.7354
119	07	3	SAT-M	0.0000	26.9473	5,975.0921	9,142.3663	6,107.4191	-6.1887	4.5381	902.1709	1,155.9544	903.3987
119	07	4	SAT-W	0.0000	27.0121	7,249.6968	6,107.4191	9,057.9970	-5.4271	4.2562	893.7354	903.3987	988.9109
119	07	5	Black	0.0636	-0.0281	-5.3257	-6.1887	-5.4271	0.0595	-0.0263	-4.9871	-5.7952	-5.0820
119	07	6	Black*HSGPA	-0.0281	0.0396	4.0685	4.5381	4.2562	-0.0263	0.0388	3.9190	4.3643	4.1038
119	07	7	Black*SAT-CR	-5.3254	4.0685	1,029.3005	902.1709	893.7354	-4.9871	3.9190	1,000.9389	869.2134	864.8338
119	07	8	Black*SAT-M	-6.1884	4.5381	902.1709	1,155.9544	903.3987	-5.7952	4.3643	869.2134	1,117.6563	869.8138
119	07	9	Black*SAT-W	-5.4268	4.2562	893.7354	903.3987	988.9109	-5.0820	4.1038	864.8338	869.8138	959.4591

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
119	08	1	HSGPA	0.0000	0.3264	23.4025	26.1035	26.1644	-0.0303	0.0419	4.3022	4.9410	4.3911
119	08	2	SAT-CR	0.0000	23.4025	8,763.9167	5,867.7689	7,106.7632	-5.8169	4.3022	1,149.7734	1,033.6356	1,004.7274
119	08	3	SAT-M	0.0000	26.1035	5,867.7689	8,932.1445	6,056.8953	-6.9451	4.9410	1,033.6356	1,315.3139	1,034.3213
119	08	4	SAT-W	0.0000	26.1644	7,106.7632	6,056.8953	9,166.6258	-6.0959	4.3911	1,004.7274	1,034.3213	1,127.8965
119	08	5	Black	0.0710	-0.0303	-5.8169	-6.9451	-6.0959	0.0660	-0.0281	-5.4040	-6.4521	-5.6632
119	08	6	Black*HSGPA	-0.0303	0.0419	4.3022	4.9410	4.3911	-0.0281	0.0410	4.1261	4.7308	4.2066
119	08	7	Black*SAT-CR	-5.8166	4.3022	1,149.7734	1,033.6356	1,004.7274	-5.4040	4.1261	1,115.9389	993.2386	969.2699
119	08	8	Black*SAT-M	-6.9448	4.9410	1,033.6356	1,315.3139	1,034.3213	-6.4521	4.7308	993.2386	1,267.0816	991.9866
119	08	9	Black*SAT-W	-6.0956	4.3911	1,004.7274	1,034.3213	1,127.8965	-5.6632	4.2066	969.2699	991.9866	1,090.7382
121	06	1	HSGPA	0.0000	0.1771	12.4550	12.1777	13.7441	-0.0181	0.0257	2.8890	2.9905	3.1331
121	06	2	SAT-CR	0.0000	12.4550	7,626.9726	4,118.1330	5,449.5934	-5.3308	2.8890	1,084.2174	937.0318	981.6763
121	06	3	SAT-M	0.0000	12.1777	4,118.1330	7,247.4367	4,230.0959	-5.9934	2.9905	937.0318	1,173.3746	967.6621
121	06	4	SAT-W	0.0000	13.7441	5,449.5934	4,230.0959	7,218.9798	-5.5254	3.1331	981.6763	967.6621	1,097.6968
121	06	5	Black	0.0567	-0.0181	-5.3308	-5.9934	-5.5254	0.0535	-0.0170	-5.0287	-5.6538	-5.2123
121	06	6	Black*HSGPA	-0.0181	0.0257	2.8890	2.9905	3.1331	-0.0170	0.0254	2.7927	2.8822	3.0333
121	06	7	Black*SAT-CR	-5.3295	2.8890	1,084.2174	937.0318	981.6763	-5.0287	2.7927	1,055.8065	905.0898	952.2286
121	06	8	Black*SAT-M	-5.9920	2.9905	937.0318	1,173.3746	967.6621	-5.6538	2.8822	905.0898	1,137.4626	934.5545
121	06	9	Black*SAT-W	-5.5240	3.1331	981.6763	967.6621	1,097.6968	-5.2123	3.0333	952.2286	934.5545	1,067.1745
121	07	1	HSGPA	0.0000	0.1776	12.1786	12.9027	12.7501	-0.0191	0.0259	2.8228	3.1297	3.0420
121	07	2	SAT-CR	0.0000	12.1786	7,894.5004	4,453.4746	5,648.3696	-5.8565	2.8228	1,226.4906	1,056.3309	1,109.7233
121	07	3	SAT-M	0.0000	12.9027	4,453.4746	7,836.6217	4,421.4359	-6.9460	3.1297	1,056.3309	1,396.5568	1,091.0032
121	07	4	SAT-W	0.0000	12.7501	5,648.3696	4,421.4359	7,357.6633	-6.3484	3.0420	1,109.7233	1,091.0032	1,277.3099
121	07	5	Black	0.0673	-0.0191	-5.8565	-6.9460	-6.3484	0.0628	-0.0178	-5.4621	-6.4783	-5.9210
121	07	6	Black*HSGPA	-0.0191	0.0259	2.8228	3.1297	3.0420	-0.0178	0.0255	2.7110	2.9971	2.9209
121	07	7	Black*SAT-CR	-5.8551	2.8228	1,226.4906	1,056.3309	1,109.7233	-5.4621	2.7110	1,192.2005	1,015.6615	1,072.5527
121	07	8	Black*SAT-M	-6.9444	3.1297	1,056.3309	1,396.5568	1,091.0032	-6.4783	2.9971	1,015.6615	1,348.3212	1,046.9173
121	07	9	Black*SAT-W	-6.3469	3.0420	1,109.7233	1,091.0032	1,277.3099	-5.9210	2.9209	1,072.5527	1,046.9173	1,237.0168
121	08	1	HSGPA	0.0000	0.1859	12.1365	12.9167	13.4631	-0.0230	0.0336	3.7119	4.0826	3.8761
121	08	2	SAT-CR	0.0000	12.1365	7,726.2167	4,200.9921	5,668.7672	-7.2860	3.7119	1,493.1456	1,262.8046	1,321.4074
121	08	3	SAT-M	0.0000	12.9167	4,200.9921	7,380.3009	4,275.8008	-8.3687	4.0826	1,262.8046	1,571.5817	1,285.6451
121	08	4	SAT-W	0.0000	13.4631	5,668.7672	4,275.8008	7,556.5031	-7.6717	3.8761	1,321.4074	1,285.6451	1,476.8425
121	08	5	Black	0.0763	-0.0230	-7.2860	-8.3687	-7.6717	0.0705	-0.0213	-6.7303	-7.7304	-7.0866
121	08	6	Black*HSGPA	-0.0230	0.0336	3.7119	4.0826	3.8761	-0.0213	0.0330	3.5440	3.8898	3.6993
121	08	7	Black*SAT-CR	-7.2839	3.7119	1,493.1456	1,262.8046	1,321.4074	-6.7303	3.5440	1,440.0753	1,201.8481	1,265.5273
121	08	8	Black*SAT-M	-8.3663	4.0826	1,262.8046	1,571.5817	1,285.6451	-7.7304	3.8898	1,201.8481	1,501.5671	1,221.4613
121	08	9	Black*SAT-W	-7.6695	3.8761	1,321.4074	1,285.6451	1,476.8425	-7.0866	3.6993	1,265.5273	1,221.4613	1,418.0039
122	06	1	HSGPA	0.0000	0.3007	14.6068	15.6471	15.0448	-0.0200	0.0322	2.5645	2.6617	2.6128
122	06	2	SAT-CR	0.0000	14.6068	8,445.5962	5,379.3742	6,245.6239	-4.8911	2.5645	1,073.9067	849.6888	931.8366
122	06	3	SAT-M	0.0000	15.6471	5,379.3742	8,816.1873	5,155.8794	-6.1334	2.6617	849.6888	1,170.9181	869.4335
122	06	4	SAT-W	0.0000	15.0448	6,245.6239	5,155.8794	7,836.8375	-4.9027	2.6128	931.8366	869.4335	1,059.0521
122	06	5	Black	0.0822	-0.0200	-4.8911	-6.1334	-4.9027	0.0755	-0.0184	-4.4892	-5.6294	-4.4998
122	06	6	Black*HSGPA	-0.0200	0.0322	2.5645	2.6617	2.6128	-0.0184	0.0318	2.4666	2.5389	2.5147
122	06	7	Black*SAT-CR	-4.8890	2.5645	1,073.9067	849.6888	931.8366	-4.4892	2.4666	1,049.9941	819.7026	907.8671
122	06	8	Black*SAT-M	-6.1308	2.6617	849.6888	1,170.9181	869.4335	-5.6294	2.5389	819.7026	1,133.3156	839.3760
122	06	9	Black*SAT-W	-4.9007	2.6128	931.8366	869.4335	1,059.0521	-4.4998	2.5147	907.8671	839.3760	1,035.0255

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
122	07	1	HSGPA	0.0000	0.2918	15.0578	17.0397	16.5308	-0.0246	0.0461	2.6050	3.7540	3.2204
122	07	2	SAT-CR	0.0000	15.0578	8,277.2225	5,210.3697	6,290.1126	-5.4237	2.6050	1,203.5040	1,073.8532	1,081.5714
122	07	3	SAT-M	0.0000	17.0397	5,210.3697	8,748.6212	5,224.4881	-7.8055	3.7540	1,073.8532	1,690.1122	1,165.1855
122	07	4	SAT-W	0.0000	16.5308	6,290.1126	5,224.4881	7,815.8770	-6.1149	3.2204	1,081.5714	1,165.1855	1,288.0930
122	07	5	Black	0.1041	-0.0246	-5.4237	-7.8055	-6.1149	0.0933	-0.0220	-4.8592	-6.9931	-5.4785
122	07	6	Black*HSGPA	-0.0246	0.0461	2.6050	3.7540	3.2204	-0.0220	0.0455	2.4718	3.5624	3.0702
122	07	7	Black*SAT-CR	-5.4216	2.6050	1,203.5040	1,073.8532	1,081.5714	-4.8592	2.4718	1,174.0992	1,031.5354	1,048.4189
122	07	8	Black*SAT-M	-7.8024	3.7540	1,073.8532	1,690.1122	1,165.1855	-6.9931	3.5624	1,031.5354	1,629.2107	1,117.4743
122	07	9	Black*SAT-W	-6.1126	3.2204	1,081.5714	1,165.1855	1,288.0930	-5.4785	3.0702	1,048.4189	1,117.4743	1,250.7152
122	08	1	HSGPA	0.0000	0.2883	16.8057	17.7358	16.6380	-0.0291	0.0426	4.1135	4.1602	4.3111
122	08	2	SAT-CR	0.0000	16.8057	8,321.3210	5,313.9406	6,348.7322	-8.5262	4.1135	1,705.0939	1,483.7457	1,404.9769
122	08	3	SAT-M	0.0000	17.7358	5,313.9406	8,867.4177	5,208.5038	-10.6183	4.1602	1,483.7457	1,993.8500	1,433.2099
122	08	4	SAT-W	0.0000	16.6380	6,348.7322	5,208.5038	8,034.3094	-8.4549	4.3111	1,404.9769	1,433.2099	1,500.8151
122	08	5	Black	0.1062	-0.0291	-8.5262	-10.6183	-8.4549	0.0949	-0.0261	-7.6210	-9.4910	-7.5573
122	08	6	Black*HSGPA	-0.0291	0.0426	4.1135	4.1602	4.3111	-0.0261	0.0417	3.8651	3.8508	4.0648
122	08	7	Black*SAT-CR	-8.5220	4.1135	1,705.0939	1,483.7457	1,404.9769	-7.6210	3.8651	1,632.4333	1,393.2565	1,332.9241
122	08	8	Black*SAT-M	-10.6131	4.1602	1,483.7457	1,993.8500	1,433.2099	-9.4910	3.8508	1,393.2565	1,881.1576	1,343.4777
122	08	9	Black*SAT-W	-8.4507	4.3111	1,404.9769	1,433.2099	1,500.8151	-7.5573	4.0648	1,332.9241	1,343.4777	1,429.3650
123	06	1	HSGPA	0.0000	0.3975	17.8074	20.6486	19.5927	-0.0024	0.3946	17.4754	20.2739	19.2399
123	06	2	SAT-CR	0.0000	17.8074	8,051.2748	5,555.1324	6,009.0866	-0.5653	17.4754	7,929.4481	5,444.1761	5,898.3614
123	06	3	SAT-M	0.0000	20.6486	5,555.1324	8,816.3816	5,303.3767	-0.7161	20.2739	5,444.1761	8,672.0925	5,184.0507
123	06	4	SAT-W	0.0000	19.5927	6,009.0866	5,303.3767	7,462.0114	-0.5873	19.2399	5,898.3614	5,184.0507	7,336.2854
123	06	5	Black	0.9922	-0.0024	-0.5653	-0.7161	-0.5873	0.0078	0.0000	-0.0044	-0.0056	-0.0046
123	06	6	Black*HSGPA	-0.0024	0.3946	17.4754	20.2739	19.2399	0.0000	0.3946	17.4741	20.2722	19.2385
123	06	7	Black*SAT-CR	-0.5652	17.4754	7,929.4481	5,444.1761	5,898.3614	-0.0044	17.4741	7,929.1286	5,443.7713	5,898.0294
123	06	8	Black*SAT-M	-0.7160	20.2739	5,444.1761	8,672.0925	5,184.0507	-0.0056	20.2722	5,443.7713	8,671.5797	5,183.6301
123	06	9	Black*SAT-W	-0.5873	19.2399	5,898.3614	5,184.0507	7,336.2854	-0.0046	19.2385	5,898.0294	5,183.6301	7,335.9405
124	06	1	HSGPA	0.0000	0.3067	22.4330	22.0740	23.9740	-0.0264	0.0344	1.9743	2.7074	2.7614
124	06	2	SAT-CR	0.0000	22.4330	8,758.3426	5,637.1681	7,089.4578	-6.0001	1.9743	951.4733	907.3714	862.0060
124	06	3	SAT-M	0.0000	22.0740	5,637.1681	9,270.7890	5,767.1101	-8.2946	2.7074	907.3714	1,352.2142	979.3003
124	06	4	SAT-W	0.0000	23.9740	7,089.4578	5,767.1101	8,870.1399	-7.0022	2.7614	862.0060	979.3003	1,063.9107
124	06	5	Black	0.0786	-0.0264	-6.0001	-8.2946	-7.0022	0.0725	-0.0243	-5.5286	-7.6429	-6.4520
124	06	6	Black*HSGPA	-0.0264	0.0344	1.9743	2.7074	2.7614	-0.0243	0.0337	1.8161	2.4886	2.5767
124	06	7	Black*SAT-CR	-5.9940	1.9743	951.4733	907.3714	862.0060	-5.5286	1.8161	915.5092	857.6539	820.0352
124	06	8	Black*SAT-M	-8.2862	2.7074	907.3714	1,352.2142	979.3003	-7.6429	2.4886	857.6539	1,283.4837	921.2791
124	06	9	Black*SAT-W	-6.9950	2.7614	862.0060	979.3003	1,063.9107	-6.4520	2.5767	820.0352	921.2791	1,014.9301
124	07	1	HSGPA	0.0000	0.3270	21.3737	22.7211	24.0328	-0.0267	0.0476	3.4609	3.5211	3.6395
124	07	2	SAT-CR	0.0000	21.3737	9,158.2346	5,305.3807	7,024.8539	-5.6290	3.4609	1,111.6612	963.3596	990.8879
124	07	3	SAT-M	0.0000	22.7211	5,305.3807	8,850.0233	5,335.6342	-6.9849	3.5211	963.3596	1,299.0655	1,007.9068
124	07	4	SAT-W	0.0000	24.0328	7,024.8539	5,335.6342	8,627.8847	-6.2355	3.6395	990.8879	1,007.9068	1,125.9217
124	07	5	Black	0.0633	-0.0267	-5.6290	-6.9849	-6.2355	0.0594	-0.0250	-5.2726	-6.5427	-5.8407
124	07	6	Black*HSGPA	-0.0267	0.0476	3.4609	3.5211	3.6395	-0.0250	0.0469	3.3108	3.3349	3.4732
124	07	7	Black*SAT-CR	-5.6241	3.4609	1,111.6612	963.3596	990.8879	-5.2726	3.3108	1,080.0034	924.0756	955.8191
124	07	8	Black*SAT-M	-6.9789	3.5211	963.3596	1,299.0655	1,007.9068	-6.5427	3.3349	924.0756	1,250.3184	964.3903
124	07	9	Black*SAT-W	-6.2301	3.6395	990.8879	1,007.9068	1,125.9217	-5.8407	3.4732	955.8191	964.3903	1,087.0745

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
124	08	1	HSGPA	0.0000	0.3091	19.7437	22.2765	22.9135	-0.0268	0.0446	3.5495	4.1026	3.2772
124	08	2	SAT-CR	0.0000	19.7437	8,828.5878	5,573.1662	7,029.3365	-8.7487	3.5495	1,803.4700	1,516.4694	1,608.1566
124	08	3	SAT-M	0.0000	22.2765	5,573.1662	8,733.1039	5,544.1720	-10.3404	4.1026	1,516.4694	1,823.2497	1,483.8493
124	08	4	SAT-W	0.0000	22.9135	7,029.3365	5,544.1720	8,847.0549	-8.9428	3.2772	1,608.1566	1,483.8493	1,722.1052
124	08	5	Black	0.0969	-0.0268	-8.7487	-10.3404	-8.9428	0.0876	-0.0242	-7.9011	-9.3385	-8.0763
124	08	6	Black*HSGPA	-0.0268	0.0446	3.5495	4.1026	3.2772	-0.0242	0.0439	3.3152	3.8258	3.0378
124	08	7	Black*SAT-CR	-8.7412	3.5495	1,803.4700	1,516.4694	1,608.1566	-7.9011	3.3152	1,726.9961	1,426.0827	1,529.9865
124	08	8	Black*SAT-M	-10.3314	4.1026	1,516.4694	1,823.2497	1,483.8493	-9.3385	3.8258	1,426.0827	1,716.4191	1,391.4579
124	08	9	Black*SAT-W	-8.9350	3.2772	1,608.1566	1,483.8493	1,722.1052	-8.0763	3.0378	1,529.9865	1,391.4579	1,642.2013
125	06	1	HSGPA	0.0000	0.3232	15.8095	17.7301	18.0373	-0.0282	0.0542	3.2779	3.9604	4.1061
125	06	2	SAT-CR	0.0000	15.8095	7,859.7225	4,828.3447	5,811.0296	-6.9723	3.2779	1,446.2216	1,195.4635	1,208.0065
125	06	3	SAT-M	0.0000	17.7301	4,828.3447	8,323.3884	4,662.7299	-9.0952	3.9604	1,195.4635	1,768.4793	1,223.3610
125	06	4	SAT-W	0.0000	18.0373	5,811.0296	4,662.7299	7,499.7716	-7.8330	4.1061	1,208.0065	1,223.3610	1,453.2245
125	06	5	Black	0.1255	-0.0282	-6.9723	-9.0952	-7.8330	0.1098	-0.0247	-6.0970	-7.9535	-6.8497
125	06	6	Black*HSGPA	-0.0282	0.0542	3.2779	3.9604	4.1061	-0.0247	0.0534	3.0811	3.7037	3.8850
125	06	7	Black*SAT-CR	-6.9709	3.2779	1,446.2216	1,195.4635	1,208.0065	-6.0970	3.0811	1,397.6188	1,132.0618	1,153.4033
125	06	8	Black*SAT-M	-9.0934	3.9604	1,195.4635	1,768.4793	1,223.3610	-7.9535	3.7037	1,132.0618	1,685.7726	1,152.1319
125	06	9	Black*SAT-W	-7.8315	4.1061	1,208.0065	1,223.3610	1,453.2245	-6.8497	3.8850	1,153.4033	1,152.1319	1,391.8801
127	06	1	HSGPA	0.0000	0.3084	14.3854	16.0943	16.1775	-0.0174	0.0321	1.7865	2.1300	2.1646
127	06	2	SAT-CR	0.0000	14.3854	7,616.2568	4,807.4794	5,461.6657	-4.6935	1.7865	914.6928	771.3018	778.4675
127	06	3	SAT-M	0.0000	16.0943	4,807.4794	7,982.2092	4,355.4768	-5.4349	2.1300	771.3018	1,028.2294	750.2357
127	06	4	SAT-W	0.0000	16.1775	5,461.6657	4,355.4768	7,004.5298	-5.1020	2.1646	778.4675	750.2357	886.6081
127	06	5	Black	0.0710	-0.0174	-4.6935	-5.4349	-5.1020	0.0660	-0.0162	-4.3603	-5.0491	-4.7398
127	06	6	Black*HSGPA	-0.0174	0.0321	1.7865	2.1300	2.1646	-0.0162	0.0318	1.7047	2.0353	2.0757
127	06	7	Black*SAT-CR	-4.6916	1.7865	914.6928	771.3018	778.4675	-4.3603	1.7047	892.6732	745.8036	754.5314
127	06	8	Black*SAT-M	-5.4327	2.1300	771.3018	1,028.2294	750.2357	-5.0491	2.0353	745.8036	998.7030	722.5182
127	06	9	Black*SAT-W	-5.0999	2.1646	778.4675	750.2357	886.6081	-4.7398	2.0757	754.5314	722.5182	860.5886
129	07	1	HSGPA	0.0000	0.2188	11.4439	11.4182	12.9959	-0.0121	0.0237	1.7064	1.9044	1.8719
129	07	2	SAT-CR	0.0000	11.4439	6,166.7651	3,455.0300	4,462.2955	-2.9017	1.7064	617.6326	543.5138	538.1396
129	07	3	SAT-M	0.0000	11.4182	3,455.0300	6,747.9690	3,541.6565	-4.5992	1.9044	543.5138	868.5230	582.5557
129	07	4	SAT-W	0.0000	12.9959	4,462.2955	3,541.6565	6,315.8667	-3.2685	1.8719	538.1396	582.5557	636.3543
129	07	5	Black	0.0507	-0.0121	-2.9017	-4.5992	-3.2685	0.0482	-0.0115	-2.7545	-4.3659	-3.1027
129	07	6	Black*HSGPA	-0.0121	0.0237	1.7064	1.9044	1.8719	-0.0115	0.0235	1.6713	1.8487	1.8323
129	07	7	Black*SAT-CR	-2.9010	1.7064	617.6326	543.5138	538.1396	-2.7545	1.6713	609.2147	530.1716	528.6578
129	07	8	Black*SAT-M	-4.5981	1.9044	543.5138	868.5230	582.5557	-4.3659	1.8487	530.1716	847.3756	567.5271
129	07	9	Black*SAT-W	-3.2677	1.8719	538.1396	582.5557	636.3543	-3.1027	1.8323	528.6578	567.5271	625.6740
131	08	1	HSGPA	0.0000	0.2970	12.0825	14.2701	14.1405	-0.0220	0.0353	1.9701	3.2724	2.7073
131	08	2	SAT-CR	0.0000	12.0825	7,829.1191	4,477.0060	5,697.7012	-5.6385	1.9701	1,200.8250	998.6069	990.9066
131	08	3	SAT-M	0.0000	14.2701	4,477.0060	7,977.9656	4,475.3166	-7.2790	3.2724	998.6069	1,397.1647	986.9810
131	08	4	SAT-W	0.0000	14.1405	5,697.7012	4,475.3166	7,259.8966	-6.0301	2.7073	990.9066	986.9810	1,118.4655
131	08	5	Black	0.0934	-0.0220	-5.6385	-7.2790	-6.0301	0.0848	-0.0200	-5.1120	-6.5994	-5.4670
131	08	6	Black*HSGPA	-0.0220	0.0353	1.9701	3.2724	2.7073	-0.0200	0.0348	1.8461	3.1123	2.5747
131	08	7	Black*SAT-CR	-5.6315	1.9701	1,200.8250	998.6069	990.9066	-5.1120	1.8461	1,169.0717	957.6149	956.9481
131	08	8	Black*SAT-M	-7.2700	3.2724	998.6069	1,397.1647	986.9810	-6.5994	3.1123	957.6149	1,344.2462	943.1422
131	08	9	Black*SAT-W	-6.0226	2.7073	990.9066	986.9810	1,118.4655	-5.4670	2.5747	956.9481	943.1422	1,082.1486

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
133	06	1	HSGPA	0.0000	0.3826	19.6175	25.9471	21.8638	-0.0346	0.0550	3.2533	3.8710	3.3164
133	06	2	SAT-CR	0.0000	19.6175	7,114.8958	4,798.4467	5,268.8586	-7.0135	3.2533	1,123.0062	952.4475	926.9020
133	06	3	SAT-M	0.0000	25.9471	4,798.4467	8,340.8910	4,776.3680	-8.5054	3.8710	952.4475	1,400.6676	989.1719
133	06	4	SAT-W	0.0000	21.8638	5,268.8586	4,776.3680	6,977.7866	-6.9180	3.3164	926.9020	989.1719	1,094.8366
133	06	5	Black	0.1090	-0.0346	-7.0135	-8.5054	-6.9180	0.0972	-0.0309	-6.2490	-7.5783	-6.1640
133	06	6	Black*HSGPA	-0.0346	0.0550	3.2533	3.8710	3.3164	-0.0309	0.0538	3.0105	3.5766	3.0769
133	06	7	Black*SAT-CR	-7.0108	3.2533	1,123.0062	952.4475	926.9020	-6.2490	3.0105	1,073.8359	892.8172	878.4006
133	06	8	Black*SAT-M	-8.5023	3.8710	952.4475	1,400.6676	989.1719	-7.5783	3.5766	892.8172	1,328.3523	930.3528
133	06	9	Black*SAT-W	-6.9155	3.3164	926.9020	989.1719	1,094.8366	-6.1640	3.0769	878.4006	930.3528	1,046.9950
134	06	1	HSGPA	0.0000	0.2164	18.1958	18.2738	19.2062	-0.0315	0.0428	5.4824	5.7108	5.7374
134	06	2	SAT-CR	0.0000	18.1958	8,367.0621	5,253.4922	6,495.2552	-7.0183	5.4824	1,605.2225	1,438.7777	1,491.3664
134	06	3	SAT-M	0.0000	18.2738	5,253.4922	8,246.2882	5,329.4545	-7.8833	5.7108	1,438.7777	1,764.2041	1,491.7179
134	06	4	SAT-W	0.0000	19.2062	6,495.2552	5,329.4545	8,356.5595	-7.3173	5.7374	1,491.3664	1,491.7179	1,647.2102
134	06	5	Black	0.0691	-0.0315	-7.0183	-7.8833	-7.3173	0.0643	-0.0293	-6.5333	-7.3385	-6.8117
134	06	6	Black*HSGPA	-0.0315	0.0428	5.4824	5.7108	5.7374	-0.0293	0.0418	5.2612	5.4623	5.5067
134	06	7	Black*SAT-CR	-7.0180	5.4824	1,605.2225	1,438.7777	1,491.3664	-6.5333	5.2612	1,555.9681	1,383.4528	1,440.0136
134	06	8	Black*SAT-M	-7.8829	5.7108	1,438.7777	1,764.2041	1,491.7179	-7.3385	5.4623	1,383.4528	1,702.0606	1,434.0359
134	06	9	Black*SAT-W	-7.3170	5.7374	1,491.3664	1,491.7179	1,647.2102	-6.8117	5.5067	1,440.0136	1,434.0359	1,593.6694
134	07	1	HSGPA	0.0000	0.2049	17.7927	17.2140	18.6451	-0.0310	0.0404	5.2194	5.3140	5.5005
134	07	2	SAT-CR	0.0000	17.7927	8,569.8965	5,229.5204	6,653.2704	-7.3870	5.2194	1,654.5734	1,427.0623	1,543.0039
134	07	3	SAT-M	0.0000	17.2140	5,229.5204	7,979.0035	5,308.9776	-7.8336	5.3140	1,427.0623	1,674.4092	1,462.8973
134	07	4	SAT-W	0.0000	18.6451	6,653.2704	5,308.9776	8,482.8267	-7.5534	5.5005	1,543.0039	1,462.8973	1,713.0123
134	07	5	Black	0.0729	-0.0310	-7.3870	-7.8336	-7.5534	0.0676	-0.0287	-6.8487	-7.2627	-7.0030
134	07	6	Black*HSGPA	-0.0310	0.0404	5.2194	5.3140	5.5005	-0.0287	0.0394	4.9904	5.0712	5.2664
134	07	7	Black*SAT-CR	-7.3866	5.2194	1,654.5734	1,427.0623	1,543.0039	-6.8487	4.9904	1,600.0089	1,369.1988	1,487.2101
134	07	8	Black*SAT-M	-7.8332	5.3140	1,427.0623	1,674.4092	1,462.8973	-7.2627	5.0712	1,369.1988	1,613.0472	1,403.7301
134	07	9	Black*SAT-W	-7.5530	5.5005	1,543.0039	1,462.8973	1,713.0123	-7.0030	5.2664	1,487.2101	1,403.7301	1,655.9614
134	08	1	HSGPA	0.0000	0.2081	18.3281	18.8118	19.9664	-0.0364	0.0472	6.1460	6.4807	6.6390
134	08	2	SAT-CR	0.0000	18.3281	8,696.0368	5,549.8907	6,936.3041	-8.4908	6.1460	1,908.0084	1,681.1917	1,801.1779
134	08	3	SAT-M	0.0000	18.8118	5,549.8907	8,323.7695	5,745.6348	-9.2085	6.4807	1,681.1917	1,951.8069	1,741.6178
134	08	4	SAT-W	0.0000	19.9664	6,936.3041	5,745.6348	8,995.4686	-9.0373	6.6390	1,801.1779	1,741.6178	1,987.9301
134	08	5	Black	0.0790	-0.0364	-8.4908	-9.2085	-9.0373	0.0728	-0.0336	-7.8199	-8.4809	-8.3232
134	08	6	Black*HSGPA	-0.0364	0.0472	6.1460	6.4807	6.6390	-0.0336	0.0459	5.8367	6.1452	6.3098
134	08	7	Black*SAT-CR	-8.4903	6.1460	1,908.0084	1,681.1917	1,801.1779	-7.8199	5.8367	1,835.9191	1,603.0089	1,724.4486
134	08	8	Black*SAT-M	-9.2080	6.4807	1,681.1917	1,951.8069	1,741.6178	-8.4809	6.1452	1,603.0089	1,867.0156	1,658.4029
134	08	9	Black*SAT-W	-9.0368	6.6390	1,801.1779	1,741.6178	1,987.9301	-8.3232	6.3098	1,724.4486	1,658.4029	1,906.2622
135	06	1	HSGPA	0.0000	0.2119	16.2885	17.4725	17.6512	-0.0327	0.0439	5.8058	6.6249	6.1052
135	06	2	SAT-CR	0.0000	16.2885	8,213.5586	5,472.9833	6,455.4915	-7.9816	5.8058	1,787.2462	1,790.6843	1,689.8541
135	06	3	SAT-M	0.0000	17.4725	5,472.9833	8,833.5606	5,563.5506	-9.5221	6.6249	1,790.6843	2,268.6765	1,849.0318
135	06	4	SAT-W	0.0000	17.6512	6,455.4915	5,563.5506	8,416.1629	-8.4141	6.1052	1,689.8541	1,849.0318	1,844.0056
135	06	5	Black	0.0685	-0.0327	-7.9816	-9.5221	-8.4141	0.0638	-0.0305	-7.4350	-8.8700	-7.8379
135	06	6	Black*HSGPA	-0.0327	0.0439	5.8058	6.6249	6.1052	-0.0305	0.0428	5.5445	6.3132	5.8297
135	06	7	Black*SAT-CR	-7.9810	5.8058	1,787.2462	1,790.6843	1,689.8541	-7.4350	5.5445	1,723.5455	1,714.6887	1,622.7013
135	06	8	Black*SAT-M	-9.5214	6.6249	1,790.6843	2,268.6765	1,849.0318	-8.8700	6.3132	1,714.6887	2,178.0131	1,768.9179
135	06	9	Black*SAT-W	-8.4135	6.1052	1,689.8541	1,849.0318	1,844.0056	-7.8379	5.8297	1,622.7013	1,768.9179	1,773.2138



## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
136	07	1	HSGPA	0.0000	0.2887	21.5440	24.4010	23.4271	-0.0363	0.0527	4.7677	5.6096	5.0417
136	07	2	SAT-CR	0.0000	21.5440	9,038.3819	6,579.2178	7,374.1375	-7.4906	4.7677	1,499.3079	1,361.8099	1,306.0539
136	07	3	SAT-M	0.0000	24.4010	6,579.2178	10,436.9100	6,701.2506	-9.6365	5.6096	1,361.8099	1,927.2643	1,371.8412
136	07	4	SAT-W	0.0000	23.4271	7,374.1375	6,701.2506	9,277.9317	-7.5190	5.0417	1,306.0539	1,371.8412	1,501.1417
136	07	5	Black	0.1095	-0.0363	-7.4906	-9.6365	-7.5190	0.0975	-0.0323	-6.6705	-8.5815	-6.6959
136	07	6	Black*HSGPA	-0.0363	0.0527	4.7677	5.6096	5.0417	-0.0323	0.0514	4.4961	5.2601	4.7690
136	07	7	Black*SAT-CR	-7.4904	4.7677	1,499.3079	1,361.8099	1,306.0539	-6.6705	4.4961	1,443.2005	1,289.6288	1,249.7333
136	07	8	Black*SAT-M	-9.6363	5.6096	1,361.8099	1,927.2643	1,371.8412	-8.5815	5.2601	1,289.6288	1,834.4049	1,299.3859
136	07	9	Black*SAT-W	-7.5189	5.0417	1,306.0539	1,371.8412	1,501.1417	-6.6959	4.7690	1,249.7333	1,299.3859	1,444.6072
136	08	1	HSGPA	0.0000	0.2937	21.9696	25.5310	24.0566	-0.0446	0.0678	5.9492	7.0971	6.2506
136	08	2	SAT-CR	0.0000	21.9696	9,075.9972	6,694.6281	7,419.7906	-9.1682	5.9492	1,846.5262	1,681.9547	1,581.7074
136	08	3	SAT-M	0.0000	25.5310	6,694.6281	10,444.2645	6,799.1838	-11.7399	7.0971	1,681.9547	2,333.9318	1,666.7682
136	08	4	SAT-W	0.0000	24.0566	7,419.7906	6,799.1838	9,469.3670	-9.1251	6.2506	1,581.7074	1,666.7682	1,817.2072
136	08	5	Black	0.1306	-0.0446	-9.1682	-11.7399	-9.1251	0.1135	-0.0388	-7.9711	-10.2070	-7.9336
136	08	6	Black*HSGPA	-0.0446	0.0678	5.9492	7.0971	6.2506	-0.0388	0.0658	5.5401	6.5733	5.8435
136	08	7	Black*SAT-CR	-9.1680	5.9492	1,846.5262	1,681.9547	1,581.7074	-7.9711	5.5401	1,762.4721	1,574.3228	1,498.0483
136	08	8	Black*SAT-M	-11.7397	7.0971	1,681.9547	2,333.9318	1,666.7682	-10.2070	6.5733	1,574.3228	2,196.1084	1,559.6421
136	08	9	Black*SAT-W	-9.1249	6.2506	1,581.7074	1,666.7682	1,817.2072	-7.9336	5.8435	1,498.0483	1,559.6421	1,733.9412
137	06	1	HSGPA	0.0000	0.3266	21.0246	24.7342	22.8277	-0.0287	0.0538	3.4034	4.4029	4.1734
137	06	2	SAT-CR	0.0000	21.0246	7,437.2643	4,929.5661	5,535.0347	-5.9751	3.4034	1,221.4762	976.5659	1,049.9825
137	06	3	SAT-M	0.0000	24.7342	4,929.5661	8,575.3025	4,901.1027	-8.3923	4.4029	976.5659	1,497.0097	1,042.2169
137	06	4	SAT-W	0.0000	22.8277	5,535.0347	4,901.1027	7,534.0580	-6.8442	4.1734	1,049.9825	1,042.2169	1,374.3115
137	06	5	Black	0.1208	-0.0287	-5.9751	-8.3923	-6.8442	0.1063	-0.0252	-5.2530	-7.3782	-6.0171
137	06	6	Black*HSGPA	-0.0287	0.0538	3.4034	4.4029	4.1734	-0.0252	0.0530	3.2321	4.1623	3.9772
137	06	7	Black*SAT-CR	-5.9725	3.4034	1,221.4762	976.5659	1,049.9825	-5.2530	3.2321	1,185.7904	926.4434	1,009.1060
137	06	8	Black*SAT-M	-8.3886	4.4029	976.5659	1,497.0097	1,042.2169	-7.3782	4.1623	926.4434	1,426.6101	984.8040
137	06	9	Black*SAT-W	-6.8412	4.1734	1,049.9825	1,042.2169	1,374.3115	-6.0171	3.9772	1,009.1060	984.8040	1,327.4895
137	07	1	HSGPA	0.0000	0.3258	20.6055	23.2777	23.3395	-0.0354	0.0541	4.1065	4.6149	4.6633
137	07	2	SAT-CR	0.0000	20.6055	7,363.0426	4,762.1046	5,761.5152	-6.3189	4.1065	1,196.9280	942.6105	1,022.5107
137	07	3	SAT-M	0.0000	23.2777	4,762.1046	8,335.2989	4,986.6686	-8.1452	4.6149	942.6105	1,523.9408	1,076.5129
137	07	4	SAT-W	0.0000	23.3395	5,761.5152	4,986.6686	7,535.7072	-6.9225	4.6633	1,022.5107	1,076.5129	1,289.7378
137	07	5	Black	0.1138	-0.0354	-6.3189	-8.1452	-6.9225	0.1009	-0.0314	-5.5996	-7.2179	-6.1344
137	07	6	Black*HSGPA	-0.0354	0.0541	4.1065	4.6149	4.6633	-0.0314	0.0529	3.8826	4.3263	4.4180
137	07	7	Black*SAT-CR	-6.3168	4.1065	1,196.9280	942.6105	1,022.5107	-5.5996	3.8826	1,157.0128	891.1593	978.7830
137	07	8	Black*SAT-M	-8.1424	4.6149	942.6105	1,523.9408	1,076.5129	-7.2179	4.3263	891.1593	1,457.6197	1,020.1474
137	07	9	Black*SAT-W	-6.9201	4.6633	1,022.5107	1,076.5129	1,289.7378	-6.1344	4.4180	978.7830	1,020.1474	1,241.8334
137	08	1	HSGPA	0.0000	0.3088	18.5404	21.2404	21.7616	-0.0353	0.0566	3.8228	4.4513	4.3500
137	08	2	SAT-CR	0.0000	18.5404	7,257.0807	4,636.6999	5,496.3748	-5.9881	3.8228	1,125.5524	927.6182	917.4820
137	08	3	SAT-M	0.0000	21.2404	4,636.6999	7,851.2423	4,468.7791	-8.4590	4.4513	927.6182	1,373.0277	924.3950
137	08	4	SAT-W	0.0000	21.7616	5,496.3748	4,468.7791	7,209.8741	-6.6241	4.3500	917.4820	924.3950	1,168.3937
137	08	5	Black	0.1164	-0.0353	-5.9881	-8.4590	-6.6241	0.1029	-0.0312	-5.2913	-7.4747	-5.8533
137	08	6	Black*HSGPA	-0.0353	0.0566	3.8228	4.4513	4.3500	-0.0312	0.0554	3.6114	4.1526	4.1162
137	08	7	Black*SAT-CR	-5.9859	3.8228	1,125.5524	927.6182	917.4820	-5.2913	3.6114	1,089.7083	876.9832	877.8307
137	08	8	Black*SAT-M	-8.4560	4.4513	927.6182	1,373.0277	924.3950	-7.4747	4.1526	876.9832	1,301.4982	868.3817
137	08	9	Black*SAT-W	-6.6217	4.3500	917.4820	924.3950	1,168.3937	-5.8533	4.1162	877.8307	868.3817	1,124.5309

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
138	06	1	HSGPA	0.0000	0.2008	12.2981	12.5039	13.2838	-0.0211	0.0262	2.7287	2.9982	3.1264
138	06	2	SAT-CR	0.0000	12.2981	7,348.8364	4,010.7450	5,486.0990	-4.3993	2.7287	879.1862	747.3853	813.6683
138	06	3	SAT-M	0.0000	12.5039	4,010.7450	7,286.1550	4,076.2506	-5.0073	2.9982	747.3853	1,002.8896	788.1971
138	06	4	SAT-W	0.0000	13.2838	5,486.0990	4,076.2506	7,484.3594	-4.5243	3.1264	813.6683	788.1971	987.6639
138	06	5	Black	0.0594	-0.0211	-4.3993	-5.0073	-4.5243	0.0559	-0.0198	-4.1381	-4.7100	-4.2557
138	06	6	Black*HSGPA	-0.0211	0.0262	2.7287	2.9982	3.1264	-0.0198	0.0258	2.6359	2.8926	3.0310
138	06	7	Black*SAT-CR	-4.3983	2.7287	879.1862	747.3853	813.6683	-4.1381	2.6359	859.8367	725.3617	793.7690
138	06	8	Black*SAT-M	-5.0062	2.9982	747.3853	1,002.8896	788.1971	-4.7100	2.8926	725.3617	977.8224	765.5477
138	06	9	Black*SAT-W	-4.5233	3.1264	813.6683	788.1971	987.6639	-4.2557	3.0310	793.7690	765.5477	967.1992
138	07	1	HSGPA	0.0000	0.2017	13.1280	13.6153	13.8988	-0.0231	0.0292	3.6243	4.0986	3.8610
138	07	2	SAT-CR	0.0000	13.1280	7,778.5099	4,380.6106	5,824.5751	-5.6971	3.6243	1,225.7144	1,129.0852	1,118.3754
138	07	3	SAT-M	0.0000	13.6153	4,380.6106	7,423.9090	4,417.4281	-6.4492	4.0986	1,129.0852	1,419.8108	1,144.8743
138	07	4	SAT-W	0.0000	13.8988	5,824.5751	4,417.4281	7,632.2872	-5.8872	3.8610	1,118.3754	1,144.8743	1,226.9181
138	07	5	Black	0.0623	-0.0231	-5.6971	-6.4492	-5.8872	0.0584	-0.0217	-5.3422	-6.0475	-5.5205
138	07	6	Black*HSGPA	-0.0231	0.0292	3.6243	4.0986	3.8610	-0.0217	0.0287	3.4925	3.9494	3.7248
138	07	7	Black*SAT-CR	-5.6960	3.6243	1,225.7144	1,129.0852	1,118.3754	-5.3422	3.4925	1,193.2640	1,092.3506	1,084.8421
138	07	8	Black*SAT-M	-6.4479	4.0986	1,129.0852	1,419.8108	1,144.8743	-6.0475	3.9494	1,092.3506	1,378.2265	1,106.9139
138	07	9	Black*SAT-W	-5.8860	3.8610	1,118.3754	1,144.8743	1,226.9181	-5.5205	3.7248	1,084.8421	1,106.9139	1,192.2658
138	08	1	HSGPA	0.0000	0.1937	11.6939	12.9094	13.4644	-0.0275	0.0345	3.8006	4.4927	4.0725
138	08	2	SAT-CR	0.0000	11.6939	7,501.7254	4,262.1735	5,848.4201	-6.5527	3.8006	1,319.7944	1,200.4684	1,238.3971
138	08	3	SAT-M	0.0000	12.9094	4,262.1735	7,256.9622	4,393.5682	-7.8537	4.4927	1,200.4684	1,609.1416	1,275.9982
138	08	4	SAT-W	0.0000	13.4644	5,848.4201	4,393.5682	8,117.3650	-6.8370	4.0725	1,238.3971	1,275.9982	1,430.7039
138	08	5	Black	0.0705	-0.0275	-6.5527	-7.8537	-6.8370	0.0656	-0.0255	-6.0905	-7.2998	-6.3548
138	08	6	Black*HSGPA	-0.0275	0.0345	3.8006	4.4927	4.0725	-0.0255	0.0338	3.6206	4.2769	3.8847
138	08	7	Black*SAT-CR	-6.5511	3.8006	1,319.7944	1,200.4684	1,238.3971	-6.0905	3.6206	1,276.8669	1,149.0175	1,193.6066
138	08	8	Black*SAT-M	-7.8519	4.4927	1,200.4684	1,609.1416	1,275.9982	-7.2998	4.2769	1,149.0175	1,547.4750	1,222.3145
138	08	9	Black*SAT-W	-6.8354	4.0725	1,238.3971	1,275.9982	1,430.7039	-6.3548	3.8847	1,193.6066	1,222.3145	1,383.9697
140	07	1	HSGPA	0.0000	0.3213	19.9522	22.1109	21.7319	-0.0338	0.0580	5.4356	5.6029	5.5745
140	07	2	SAT-CR	0.0000	19.9522	8,721.0460	5,831.3803	6,909.8827	-10.4872	5.4356	1,980.9326	1,655.4462	1,729.3849
140	07	3	SAT-M	0.0000	22.1109	5,831.3803	8,988.0304	5,712.2019	-10.7918	5.6029	1,655.4462	2,064.3827	1,631.9416
140	07	4	SAT-W	0.0000	21.7319	6,909.8827	5,712.2019	8,523.2510	-10.1030	5.5745	1,729.3849	1,631.9416	1,920.1439
140	07	5	Black	0.1247	-0.0338	-10.4872	-10.7918	-10.1030	0.1091	-0.0296	-9.1799	-9.4466	-8.8436
140	07	6	Black*HSGPA	-0.0338	0.0580	5.4356	5.6029	5.5745	-0.0296	0.0569	5.0813	5.2384	5.2332
140	07	7	Black*SAT-CR	-10.4856	5.4356	1,980.9326	1,655.4462	1,729.3849	-9.1799	5.0813	1,870.9685	1,542.2883	1,623.4498
140	07	8	Black*SAT-M	-10.7901	5.6029	1,655.4462	2,064.3827	1,631.9416	-9.4466	5.2384	1,542.2883	1,947.9382	1,522.9297
140	07	9	Black*SAT-W	-10.1014	5.5745	1,729.3849	1,631.9416	1,920.1439	-8.8436	5.2332	1,623.4498	1,522.9297	1,818.0901
141	08	1	HSGPA	0.0000	0.3091	26.9203	28.5129	27.7587	-0.0550	0.0645	7.3241	7.9207	7.0860
141	08	2	SAT-CR	0.0000	26.9203	9,628.3355	6,822.3767	7,713.8275	-11.1726	7.3241	2,188.5353	1,970.1161	1,809.4281
141	08	3	SAT-M	0.0000	28.5129	6,822.3767	9,796.6724	6,641.1876	-12.9513	7.9207	1,970.1161	2,399.2244	1,858.2400
141	08	4	SAT-W	0.0000	27.7587	7,713.8275	6,641.1876	9,555.2996	-11.0704	7.0860	1,809.4281	1,858.2400	1,907.0169
141	08	5	Black	0.1084	-0.0550	-11.1726	-12.9513	-11.0704	0.0967	-0.0490	-9.9619	-11.5478	-9.8708
141	08	6	Black*HSGPA	-0.0550	0.0645	7.3241	7.9207	7.0860	-0.0490	0.0615	6.7102	7.2091	6.4777
141	08	7	Black*SAT-CR	-11.1675	7.3241	2,188.5353	1,970.1161	1,809.4281	-9.9619	6.7102	2,063.7655	1,825.4826	1,685.7988
141	08	8	Black*SAT-M	-12.9454	7.9207	1,970.1161	2,399.2244	1,858.2400	-11.5478	7.2091	1,825.4826	2,231.5648	1,714.9286
141	08	9	Black*SAT-W	-11.0654	7.0860	1,809.4281	1,858.2400	1,907.0169	-9.8708	6.4777	1,685.7988	1,714.9286	1,784.5178

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
142	07	1	HSGPA	0.0000	0.2722	11.3757	12.7170	12.5761	-0.0338	0.0587	3.4101	4.1323	3.6566
142	07	2	SAT-CR	0.0000	11.3757	8,859.6627	5,660.2731	6,571.4521	-11.8459	3.4101	2,167.4120	1,822.8644	1,780.2733
142	07	3	SAT-M	0.0000	12.7170	5,660.2731	9,528.4287	5,285.2116	-14.6383	4.1323	1,822.8644	2,634.2179	1,727.0996
142	07	4	SAT-W	0.0000	12.5761	6,571.4521	5,285.2116	7,920.2870	-11.3710	3.6566	1,780.2733	1,727.0996	1,909.5959
142	07	5	Black	0.1696	-0.0338	-11.8459	-14.6383	-11.3710	0.1409	-0.0281	-9.8371	-12.1560	-9.4428
142	07	6	Black*HSGPA	-0.0338	0.0587	3.4101	4.1323	3.6566	-0.0281	0.0576	3.0099	3.6378	3.2724
142	07	7	Black*SAT-CR	-11.8408	3.4101	2,167.4120	1,822.8644	1,780.2733	-9.8371	3.0099	2,027.1473	1,649.5354	1,645.6310
142	07	8	Black*SAT-M	-14.6320	4.1323	1,822.8644	2,634.2179	1,727.0996	-12.1560	3.6378	1,649.5354	2,420.0305	1,560.7184
142	07	9	Black*SAT-W	-11.3662	3.6566	1,780.2733	1,727.0996	1,909.5959	-9.4428	3.2724	1,645.6310	1,560.7184	1,780.3507
142	08	1	HSGPA	0.0000	0.2594	12.8731	15.8637	13.7183	-0.0429	0.0741	5.6326	7.1174	5.5608
142	08	2	SAT-CR	0.0000	12.8731	9,733.6348	6,808.5018	7,351.6055	-16.6711	5.6326	3,285.7271	2,949.7243	2,633.6436
142	08	3	SAT-M	0.0000	15.8637	6,808.5018	10,933.4906	6,399.1489	-20.1924	7.1174	2,949.7243	4,209.7024	2,712.9089
142	08	4	SAT-W	0.0000	13.7183	7,351.6055	6,399.1489	8,661.6066	-15.0169	5.5608	2,633.6436	2,712.9089	2,697.3522
142	08	5	Black	0.2063	-0.0429	-16.6711	-20.1924	-15.0169	0.1638	-0.0341	-13.2316	-16.0264	-11.9187
142	08	6	Black*HSGPA	-0.0429	0.0741	5.6326	7.1174	5.5608	-0.0341	0.0722	4.9170	6.2506	4.9162
142	08	7	Black*SAT-CR	-16.6639	5.6326	3,285.7271	2,949.7243	2,633.6436	-13.2316	4.9170	3,007.9203	2,613.2402	2,383.4028
142	08	8	Black*SAT-M	-20.1836	7.1174	2,949.7243	4,209.7024	2,712.9089	-16.0264	6.2506	2,613.2402	3,802.1473	2,409.8132
142	08	9	Black*SAT-W	-15.0104	5.5608	2,633.6436	2,712.9089	2,697.3522	-11.9187	4.9162	2,383.4028	2,409.8132	2,471.9421
144	06	1	HSGPA	0.0000	0.3251	20.8407	24.8828	22.0065	-0.0187	0.0238	1.4584	1.7716	1.7702
144	06	2	SAT-CR	0.0000	20.8407	7,072.2770	5,005.5864	5,262.2564	-1.8751	1.4584	357.4449	339.2817	309.9539
144	06	3	SAT-M	0.0000	24.8828	5,005.5864	9,278.3635	4,912.2031	-2.9346	1.7716	339.2817	526.4959	357.8052
144	06	4	SAT-W	0.0000	22.0065	5,262.2564	4,912.2031	7,046.1636	-2.2873	1.7702	309.9539	357.8052	405.2746
144	06	5	Black	0.0366	-0.0187	-1.8751	-2.9346	-2.2873	0.0353	-0.0180	-1.8065	-2.8271	-2.2035
144	06	6	Black*HSGPA	-0.0187	0.0238	1.4584	1.7716	1.7702	-0.0180	0.0235	1.4233	1.7167	1.7274
144	06	7	Black*SAT-CR	-1.8740	1.4584	357.4449	339.2817	309.9539	-1.8065	1.4233	353.9309	333.7823	305.6675
144	06	8	Black*SAT-M	-2.9328	1.7716	339.2817	526.4959	357.8052	-2.8271	1.7167	333.7823	517.8893	351.0970
144	06	9	Black*SAT-W	-2.2859	1.7702	309.9539	357.8052	405.2746	-2.2035	1.7274	305.6675	351.0970	400.0461
144	07	1	HSGPA	0.0000	0.3370	21.7191	25.5846	24.4355	-0.0294	0.0331	2.4718	2.8301	2.9148
144	07	2	SAT-CR	0.0000	21.7191	7,351.1690	4,995.6701	5,711.2418	-2.4336	2.4718	465.4889	400.0600	424.5319
144	07	3	SAT-M	0.0000	25.5846	4,995.6701	8,810.7834	4,929.8482	-3.4426	2.8301	400.0600	641.2464	445.1227
144	07	4	SAT-W	0.0000	24.4355	5,711.2418	4,929.8482	7,545.4167	-3.1630	2.9148	424.5319	445.1227	526.0233
144	07	5	Black	0.0517	-0.0294	-2.4336	-3.4426	-3.1630	0.0491	-0.0279	-2.3077	-3.2646	-2.9995
144	07	6	Black*HSGPA	-0.0294	0.0331	2.4718	2.8301	2.9148	-0.0279	0.0322	2.4002	2.7288	2.8217
144	07	7	Black*SAT-CR	-2.4323	2.4718	465.4889	400.0600	424.5319	-2.3077	2.4002	459.5698	391.6867	416.8386
144	07	8	Black*SAT-M	-3.4407	2.8301	400.0600	641.2464	445.1227	-3.2646	2.7288	391.6867	629.4014	434.2396
144	07	9	Black*SAT-W	-3.1613	2.9148	424.5319	445.1227	526.0233	-2.9995	2.8217	416.8386	434.2396	516.0240
144	08	1	HSGPA	0.0000	0.3384	20.9535	24.8855	23.3545	-0.0278	0.0358	3.3069	3.9352	3.2284
144	08	2	SAT-CR	0.0000	20.9535	7,615.8100	5,291.6092	5,707.3676	-3.9352	3.3069	708.9472	659.0684	549.8304
144	08	3	SAT-M	0.0000	24.8855	5,291.6092	8,824.7830	5,060.6936	-5.1721	3.9352	659.0684	898.4321	598.3982
144	08	4	SAT-W	0.0000	23.3545	5,707.3676	5,060.6936	7,483.1036	-3.7376	3.2284	549.8304	598.3982	637.8321
144	08	5	Black	0.0499	-0.0278	-3.9352	-5.1721	-3.7376	0.0475	-0.0264	-3.7388	-4.9139	-3.5510
144	08	6	Black*HSGPA	-0.0277	0.0358	3.3069	3.9352	3.2284	-0.0264	0.0350	3.1978	3.7918	3.1247
144	08	7	Black*SAT-CR	-3.9331	3.3069	708.9472	659.0684	549.8304	-3.7388	3.1978	693.4696	638.7260	535.1301
144	08	8	Black*SAT-M	-5.1693	3.9352	659.0684	898.4321	598.3982	-4.9139	3.7918	638.7260	871.6960	579.0775
144	08	9	Black*SAT-W	-3.7356	3.2284	549.8304	598.3982	637.8321	-3.5510	3.1247	535.1301	579.0775	623.8701

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
145	08	1	HSGPA	0.0000	0.3079	16.4734	19.1245	17.6679	-0.0172	0.0317	2.3801	2.9279	2.4428
145	08	2	SAT-CR	0.0000	16.4734	8,024.8099	5,393.7868	6,136.6716	-4.8174	2.3801	1,007.7233	864.1046	863.6985
145	08	3	SAT-M	0.0000	19.1245	5,393.7868	8,869.4330	5,304.2328	-5.9592	2.9279	864.1046	1,206.2269	862.5255
145	08	4	SAT-W	0.0000	17.6679	6,136.6716	5,304.2328	7,986.7486	-5.1046	2.4428	863.6985	862.5255	1,004.5655
145	08	5	Black	0.0753	-0.0172	-4.8174	-5.9592	-5.1046	0.0696	-0.0159	-4.4549	-5.5108	-4.7205
145	08	6	Black*HSGPA	-0.0172	0.0317	2.3801	2.9279	2.4428	-0.0159	0.0314	2.2972	2.8254	2.3550
145	08	7	Black*SAT-CR	-4.8171	2.3801	1,007.7233	864.1046	863.6985	-4.4549	2.2972	984.5175	835.3986	839.1093
145	08	8	Black*SAT-M	-5.9588	2.9279	864.1046	1,206.2269	862.5255	-5.5108	2.8254	835.3986	1,170.7172	832.1082
145	08	9	Black*SAT-W	-5.1042	2.4428	863.6985	862.5255	1,004.5655	-4.7205	2.3550	839.1093	832.1082	978.5104
147	08	1	HSGPA	0.0000	0.3485	15.7829	17.1015	17.9742	-0.0318	0.0426	2.7867	3.0202	2.8626
147	08	2	SAT-CR	0.0000	15.7829	8,020.7970	4,640.1115	5,856.9559	-5.9096	2.7867	972.9538	819.9566	803.3177
147	08	3	SAT-M	0.0000	17.1015	4,640.1115	7,426.3609	4,345.0920	-6.7152	3.0202	819.9566	1,098.9273	782.5236
147	08	4	SAT-W	0.0000	17.9742	5,856.9559	4,345.0920	7,256.7939	-5.9195	2.8626	803.3177	782.5236	884.0501
147	08	5	Black	0.0781	-0.0318	-5.9096	-6.7152	-5.9195	0.0720	-0.0293	-5.4479	-6.1906	-5.4570
147	08	6	Black*HSGPA	-0.0318	0.0426	2.7867	3.0202	2.8626	-0.0293	0.0415	2.5989	2.8068	2.6745
147	08	7	Black*SAT-CR	-5.9080	2.7867	972.9538	819.9566	803.3177	-5.4479	2.5989	938.0401	780.2836	768.3456
147	08	8	Black*SAT-M	-6.7133	3.0202	819.9566	1,098.9273	782.5236	-6.1906	2.8068	780.2836	1,053.8460	742.7842
147	08	9	Black*SAT-W	-5.9179	2.8626	803.3177	782.5236	884.0501	-5.4570	2.6745	768.3456	742.7842	849.0196
148	06	1	HSGPA	0.0000	0.2437	14.4446	14.6129	15.5519	-0.0100	0.0166	1.7017	2.0892	1.7542
148	06	2	SAT-CR	0.0000	14.4446	7,946.4019	4,378.9454	5,864.5195	-2.6970	1.7017	605.2969	502.2750	491.8251
148	06	3	SAT-M	0.0000	14.6129	4,378.9454	7,047.4551	4,149.0412	-3.3815	2.0892	502.2750	672.5378	501.3698
148	06	4	SAT-W	0.0000	15.5519	5,864.5195	4,149.0412	7,463.5382	-2.7048	1.7542	491.8251	501.3698	538.4518
148	06	5	Black	0.0360	-0.0100	-2.6970	-3.3815	-2.7048	0.0347	-0.0097	-2.5999	-3.2599	-2.6074
148	06	6	Black*HSGPA	-0.0100	0.0166	1.7017	2.0892	1.7542	-0.0097	0.0165	1.6747	2.0554	1.7271
148	06	7	Black*SAT-CR	-2.6963	1.7017	605.2969	502.2750	491.8251	-2.5999	1.6747	598.0250	493.1573	484.5322
148	06	8	Black*SAT-M	-3.3807	2.0892	502.2750	672.5378	501.3698	-3.2599	2.0554	493.1573	661.1058	492.2257
148	06	9	Black*SAT-W	-2.7041	1.7542	491.8251	501.3698	538.4518	-2.6074	1.7271	484.5322	492.2257	531.1378
149	08	1	HSGPA	0.0000	0.2193	10.8359	13.1288	13.4793	-0.0153	0.0204	1.7848	2.2814	2.1334
149	08	2	SAT-CR	0.0000	10.8359	5,931.9130	3,509.5095	4,449.4850	-3.6147	1.7848	662.5849	622.3863	610.9768
149	08	3	SAT-M	0.0000	13.1288	3,509.5095	6,628.0113	3,663.7683	-4.8134	2.2814	622.3863	897.7851	668.4184
149	08	4	SAT-W	0.0000	13.4793	4,449.4850	3,663.7683	6,391.0393	-4.1226	2.1334	610.9768	668.4184	739.6540
149	08	5	Black	0.0499	-0.0153	-3.6147	-4.8134	-4.1226	0.0474	-0.0145	-3.4345	-4.5733	-3.9170
149	08	6	Black*HSGPA	-0.0153	0.0204	1.7848	2.2814	2.1334	-0.0145	0.0202	1.7294	2.2077	2.0703
149	08	7	Black*SAT-CR	-3.6144	1.7848	662.5849	622.3863	610.9768	-3.4345	1.7294	649.5196	604.9887	596.0759
149	08	8	Black*SAT-M	-4.8129	2.2814	622.3863	897.7851	668.4184	-4.5733	2.2077	604.9887	874.6187	648.5764
149	08	9	Black*SAT-W	-4.1223	2.1334	610.9768	668.4184	739.6540	-3.9170	2.0703	596.0759	648.5764	722.6594
151	06	1	HSGPA	0.0000	0.4013	19.7454	22.8472	22.4707	-0.0316	0.0452	3.5172	4.1804	3.8459
151	06	2	SAT-CR	0.0000	19.7454	7,451.3738	5,020.5749	5,493.4633	-5.7419	3.5172	1,032.2870	924.6964	879.0880
151	06	3	SAT-M	0.0000	22.8472	5,020.5749	8,752.1298	4,801.6395	-6.7219	4.1804	924.6964	1,259.2007	933.9465
151	06	4	SAT-W	0.0000	22.4707	5,493.4633	4,801.6395	7,187.4701	-6.0592	3.8459	879.0880	933.9465	1,027.5520
151	06	5	Black	0.0749	-0.0316	-5.7419	-6.7219	-6.0592	0.0693	-0.0293	-5.3116	-6.2181	-5.6051
151	06	6	Black*HSGPA	-0.0316	0.0452	3.5172	4.1804	3.8459	-0.0293	0.0442	3.3355	3.9677	3.6542
151	06	7	Black*SAT-CR	-5.7412	3.5172	1,032.2870	924.6964	879.0880	-5.3116	3.3355	999.3217	886.1048	844.3013
151	06	8	Black*SAT-M	-6.7210	4.1804	924.6964	1,259.2007	933.9465	-6.2181	3.9677	886.1048	1,214.0226	893.2227
151	06	9	Black*SAT-W	-6.0584	3.8459	879.0880	933.9465	1,027.5520	-5.6051	3.6542	844.3013	893.2227	990.8432

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
153	06	1	HSGPA	0.0000	0.1461	13.0192	13.3838	13.7418	-0.0331	0.0444	5.6501	5.8914	5.8269
153	06	2	SAT-CR	0.0000	13.0192	9,503.1380	5,898.7817	7,621.2123	-12.4089	5.6501	2,704.4187	2,283.4569	2,384.1368
153	06	3	SAT-M	0.0000	13.3838	5,898.7817	8,659.5628	6,033.3575	-13.6749	5.8914	2,283.4569	2,837.0587	2,312.5849
153	06	4	SAT-W	0.0000	13.7418	7,621.2123	6,033.3575	9,280.3328	-12.3199	5.8269	2,384.1368	2,312.5849	2,634.7487
153	06	5	Black	0.1463	-0.0331	-12.4089	-13.6749	-12.3199	0.1249	-0.0282	-10.5937	-11.6745	-10.5177
153	06	6	Black*HSGPA	-0.0331	0.0444	5.6501	5.8914	5.8269	-0.0282	0.0433	5.2399	5.4393	5.4197
153	06	7	Black*SAT-CR	-12.4080	5.6501	2,704.4187	2,283.4569	2,384.1368	-10.5937	5.2399	2,550.4490	2,113.7789	2,231.2716
153	06	8	Black*SAT-M	-13.6739	5.8914	2,283.4569	2,837.0587	2,312.5849	-11.6745	5.4393	2,113.7789	2,650.0699	2,144.1241
153	06	9	Black*SAT-W	-12.3190	5.8269	2,384.1368	2,312.5849	2,634.7487	-10.5177	5.4197	2,231.2716	2,144.1241	2,482.9801
155	06	1	HSGPA	0.0000	0.3093	16.8639	20.3336	18.0598	-0.0233	0.0302	2.6382	3.0658	2.3384
155	06	2	SAT-CR	0.0000	16.8639	8,260.4296	5,301.8091	6,123.0387	-4.5976	2.6382	865.2136	752.9062	680.6999
155	06	3	SAT-M	0.0000	20.3336	5,301.8091	8,635.1895	4,841.5616	-5.0880	3.0658	752.9062	997.3457	650.5620
155	06	4	SAT-W	0.0000	18.0598	6,123.0387	4,841.5616	7,585.9066	-3.9120	2.3384	680.6999	650.5620	695.3574
155	06	5	Black	0.0540	-0.0233	-4.5976	-5.0880	-3.9120	0.0511	-0.0220	-4.3494	-4.8133	-3.7008
155	06	6	Black*HSGPA	-0.0233	0.0302	2.6382	3.0658	2.3384	-0.0220	0.0297	2.5312	2.9474	2.2473
155	06	7	Black*SAT-CR	-4.5972	2.6382	865.2136	752.9062	680.6999	-4.3494	2.5312	844.0774	729.5156	662.7156
155	06	8	Black*SAT-M	-5.0875	3.0658	752.9062	997.3457	650.5620	-4.8133	2.9474	729.5156	971.4603	630.6595
155	06	9	Black*SAT-W	-3.9116	2.3384	680.6999	650.5620	695.3574	-3.7008	2.2473	662.7156	630.6595	680.0549
155	07	1	HSGPA	0.0000	0.3136	17.5463	20.0284	19.3312	-0.0229	0.0348	3.0812	3.4048	3.0934
155	07	2	SAT-CR	0.0000	17.5463	8,549.3311	5,346.0843	6,375.7067	-5.0184	3.0812	989.0854	877.0892	822.4967
155	07	3	SAT-M	0.0000	20.0284	5,346.0843	8,671.3596	5,082.7161	-5.6132	3.4048	877.0892	1,137.7511	831.3073
155	07	4	SAT-W	0.0000	19.3312	6,375.7067	5,082.7161	7,774.4716	-4.7765	3.0934	822.4967	831.3073	905.7151
155	07	5	Black	0.0644	-0.0229	-5.0184	-5.6132	-4.7765	0.0603	-0.0214	-4.6952	-5.2516	-4.4688
155	07	6	Black*HSGPA	-0.0229	0.0348	3.0812	3.4048	3.0934	-0.0214	0.0342	2.9663	3.2763	2.9840
155	07	7	Black*SAT-CR	-5.0180	3.0812	989.0854	877.0892	822.4967	-4.6952	2.9663	963.9030	848.9225	798.5286
155	07	8	Black*SAT-M	-5.6126	3.4048	877.0892	1,137.7511	831.3073	-5.2516	3.2763	848.9225	1,106.2464	804.4986
155	07	9	Black*SAT-W	-4.7760	3.0934	822.4967	831.3073	905.7151	-4.4688	2.9840	798.5286	804.4986	882.9026
155	08	1	HSGPA	0.0000	0.3026	16.4718	19.0704	17.6945	-0.0224	0.0321	2.8934	3.1666	2.8219
155	08	2	SAT-CR	0.0000	16.4718	8,284.2971	5,171.6399	6,066.3826	-5.3886	2.8934	993.8024	862.2914	802.9673
155	08	3	SAT-M	0.0000	19.0704	5,171.6399	8,286.6259	4,766.0412	-5.9696	3.1666	862.2914	1,130.2708	772.2024
155	08	4	SAT-W	0.0000	17.6945	6,066.3826	4,766.0412	7,453.7819	-4.9567	2.8219	802.9673	772.2024	841.1252
155	08	5	Black	0.0643	-0.0224	-5.3886	-5.9696	-4.9567	0.0602	-0.0210	-5.0421	-5.5857	-4.6380
155	08	6	Black*HSGPA	-0.0224	0.0321	2.8934	3.1666	2.8219	-0.0210	0.0316	2.7726	3.0327	2.7107
155	08	7	Black*SAT-CR	-5.3882	2.8934	993.8024	862.2914	802.9673	-5.0421	2.7726	964.7675	830.1261	776.2596
155	08	8	Black*SAT-M	-5.9691	3.1666	862.2914	1,130.2708	772.2024	-5.5857	3.0327	830.1261	1,094.6377	742.6151
155	08	9	Black*SAT-W	-4.9563	2.8219	802.9673	772.2024	841.1252	-4.6380	2.7107	776.2596	742.6151	816.5581
156	07	1	HSGPA	0.0000	0.3627	23.7716	26.3019	25.9072	-0.0675	0.1064	7.3421	8.7884	8.5146
156	07	2	SAT-CR	0.0000	23.7716	7,619.3466	4,818.0164	5,867.6544	-8.5509	7.3421	1,656.1495	1,362.7141	1,439.0676
156	07	3	SAT-M	0.0000	26.3019	4,818.0164	7,962.3957	4,941.0984	-11.6519	8.7884	1,362.7141	2,068.4330	1,486.5145
156	07	4	SAT-W	0.0000	25.9072	5,867.6544	4,941.0984	7,736.6988	-10.2207	8.5146	1,439.0676	1,486.5145	1,865.4587
156	07	5	Black	0.1863	-0.0675	-8.5509	-11.6519	-10.2207	0.1517	-0.0549	-6.9577	-9.4809	-8.3163
156	07	6	Black*HSGPA	-0.0675	0.1064	7.3421	8.7884	8.5146	-0.0549	0.1018	6.7650	8.0020	7.8247
156	07	7	Black*SAT-CR	-8.5481	7.3421	1,656.1495	1,362.7141	1,439.0676	-6.9577	6.7650	1,583.0556	1,263.1129	1,351.7003
156	07	8	Black*SAT-M	-11.6480	8.7884	1,362.7141	2,068.4330	1,486.5145	-9.4809	8.0020	1,263.1129	1,932.7118	1,367.4636
156	07	9	Black*SAT-W	-10.2173	8.5146	1,439.0676	1,486.5145	1,865.4587	-8.3163	7.8247	1,351.7003	1,367.4636	1,761.0306

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
156	08	1	HSGPA	0.0000	0.3388	21.0442	24.6958	24.0369	-0.0548	0.0908	5.3706	6.5029	6.4042
156	08	2	SAT-CR	0.0000	21.0442	7,095.8943	4,624.8468	5,457.6449	-7.6252	5.3706	1,606.0540	1,343.3167	1,331.9928
156	08	3	SAT-M	0.0000	24.6958	4,624.8468	8,032.4789	4,727.8046	-10.8781	6.5029	1,343.3167	2,074.4276	1,424.7079
156	08	4	SAT-W	0.0000	24.0369	5,457.6449	4,727.8046	7,484.1657	-8.5363	6.4042	1,331.9928	1,424.7079	1,708.1819
156	08	5	Black	0.1753	-0.0548	-7.6252	-10.8781	-8.5363	0.1446	-0.0452	-6.2886	-8.9714	-7.0400
156	08	6	Black*HSGPA	-0.0548	0.0908	5.3706	6.5029	6.4042	-0.0452	0.0878	4.9530	5.9071	5.9366
156	08	7	Black*SAT-CR	-7.6226	5.3706	1,606.0540	1,343.3167	1,331.9928	-6.2886	4.9530	1,547.9303	1,260.3972	1,266.9241
156	08	8	Black*SAT-M	-10.8744	6.5029	1,343.3167	2,074.4276	1,424.7079	-8.9714	5.9071	1,260.3972	1,956.1341	1,331.8805
156	08	9	Black*SAT-W	-8.5334	6.4042	1,331.9928	1,424.7079	1,708.1819	-7.0400	5.9366	1,266.9241	1,331.8805	1,635.3381
157	06	1	HSGPA	0.0000	0.3117	22.6705	27.6327	24.6066	-0.0665	0.0864	7.1773	9.4594	7.9040
157	06	2	SAT-CR	0.0000	22.6705	8,637.5648	6,196.0546	6,881.4586	-10.8858	7.1773	2,109.1567	2,015.8616	1,854.1190
157	06	3	SAT-M	0.0000	27.6327	6,196.0546	9,813.7008	6,169.4500	-14.8439	9.4594	2,015.8616	2,973.3652	2,075.2724
157	06	4	SAT-W	0.0000	24.6066	6,881.4586	6,169.4500	8,790.7581	-11.3216	7.9040	1,854.1190	2,075.2724	2,149.2096
157	06	5	Black	0.1511	-0.0665	-10.8858	-14.8439	-11.3216	0.1283	-0.0565	-9.2414	-12.6016	-9.6114
157	06	6	Black*HSGPA	-0.0665	0.0864	7.1773	9.4594	7.9040	-0.0565	0.0820	6.4535	8.4725	7.1512
157	06	7	Black*SAT-CR	-10.8844	7.1773	2,109.1567	2,015.8616	1,854.1190	-9.2414	6.4535	1,990.6711	1,854.2946	1,730.8898
157	06	8	Black*SAT-M	-14.8420	9.4594	2,015.8616	2,973.3652	2,075.2724	-12.6016	8.4725	1,854.2946	2,753.0523	1,907.2369
157	06	9	Black*SAT-W	-11.3202	7.9040	1,854.1190	2,075.2724	2,149.2096	-9.6114	7.1512	1,730.8898	1,907.2369	2,021.0468
158	06	1	HSGPA	0.0000	0.3762	21.0021	24.1153	22.7618	-0.0386	0.0667	5.7098	6.6951	5.6207
158	06	2	SAT-CR	0.0000	21.0021	10,591.5191	7,092.3030	8,355.0411	-8.6334	5.7098	1,863.7668	1,509.3106	1,477.0312
158	06	3	SAT-M	0.0000	24.1153	7,092.3030	10,529.1258	6,537.5286	-9.7098	6.6951	1,509.3106	1,971.9517	1,366.3169
158	06	4	SAT-W	0.0000	22.7618	8,355.0411	6,537.5286	9,875.4310	-8.3314	5.6207	1,477.0312	1,366.3169	1,538.1995
158	06	5	Black	0.1068	-0.0386	-8.6334	-9.7098	-8.3314	0.0955	-0.0345	-7.7111	-8.6725	-7.4413
158	06	6	Black*HSGPA	-0.0386	0.0667	5.7098	6.6951	5.6207	-0.0345	0.0652	5.3767	6.3205	5.2993
158	06	7	Black*SAT-CR	-8.6265	5.7098	1,863.7668	1,509.3106	1,477.0312	-7.7111	5.3767	1,789.2909	1,425.5494	1,405.1609
158	06	8	Black*SAT-M	-9.7020	6.6951	1,509.3106	1,971.9517	1,366.3169	-8.6725	6.3205	1,425.5494	1,877.7474	1,285.4861
158	06	9	Black*SAT-W	-8.3247	5.6207	1,477.0312	1,366.3169	1,538.1995	-7.4413	5.2993	1,405.1609	1,285.4861	1,468.8437
159	07	1	HSGPA	0.0000	0.3228	27.2638	29.0908	28.9487	-0.0649	0.1066	10.1590	11.0895	10.5914
159	07	2	SAT-CR	0.0000	27.2638	10,611.6636	7,942.6597	8,694.2049	-15.6513	10.1590	3,282.1985	2,897.7932	2,863.5538
159	07	3	SAT-M	0.0000	29.0908	7,942.6597	11,563.4704	7,809.9350	-18.7009	11.0895	2,897.7932	3,795.2335	2,871.7751
159	07	4	SAT-W	0.0000	28.9487	8,694.2049	7,809.9350	10,246.6185	-15.8814	10.5914	2,863.5538	2,871.7751	3,193.9805
159	07	5	Black	0.2125	-0.0649	-15.6513	-18.7009	-15.8814	0.1674	-0.0511	-12.3251	-14.7267	-12.5064
159	07	6	Black*HSGPA	-0.0649	0.1066	10.1590	11.0895	10.5914	-0.0511	0.1024	9.1429	9.8755	9.5605
159	07	7	Black*SAT-CR	-15.6506	10.1590	3,282.1985	2,897.7932	2,863.5538	-12.3251	9.1429	3,037.2477	2,605.1129	2,615.0015
159	07	8	Black*SAT-M	-18.7001	11.0895	2,897.7932	3,795.2335	2,871.7751	-14.7267	9.8755	2,605.1129	3,445.5237	2,574.7916
159	07	9	Black*SAT-W	-15.8807	10.5914	2,863.5538	2,871.7751	3,193.9805	-12.5064	9.5605	2,615.0015	2,574.7916	2,941.7738
159	08	1	HSGPA	0.0000	0.3145	25.7964	28.8180	28.0671	-0.0669	0.1094	10.1975	11.4493	10.7339
159	08	2	SAT-CR	0.0000	25.7964	10,397.9998	7,757.4328	8,520.5231	-16.9323	10.1975	3,467.6699	3,064.5967	2,992.2580
159	08	3	SAT-M	0.0000	28.8180	7,757.4328	11,426.9585	7,749.7659	-20.5466	11.4493	3,064.5967	4,026.4076	3,050.6074
159	08	4	SAT-W	0.0000	28.0671	8,520.5231	7,749.7659	10,318.1345	-17.2167	10.7339	2,992.2580	3,050.6074	3,356.1223
159	08	5	Black	0.2250	-0.0669	-16.9323	-20.5466	-17.2167	0.1744	-0.0519	-13.1224	-15.9234	-13.3428
159	08	6	Black*HSGPA	-0.0669	0.1094	10.1975	11.4493	10.7339	-0.0519	0.1049	9.0642	10.0742	9.5816
159	08	7	Black*SAT-CR	-16.9316	10.1975	3,467.6699	3,064.5967	2,992.2580	-13.1224	9.0642	3,180.9786	2,716.7092	2,700.7517
159	08	8	Black*SAT-M	-20.5458	11.4493	3,064.5967	4,026.4076	3,050.6074	-15.9234	10.0742	2,716.7092	3,604.2613	2,696.8771
159	08	9	Black*SAT-W	-17.2160	10.7339	2,992.2580	3,050.6074	3,356.1223	-13.3428	9.5816	2,700.7517	2,696.8771	3,059.7200

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
162	06	1	HSGPA	0.0000	0.3071	13.5846	15.0720	14.9824	-0.0131	0.0212	1.0643	1.3625	1.0544
162	06	2	SAT-CR	0.0000	13.5846	6,600.1718	3,900.5148	4,608.7414	-2.5922	1.0643	474.4466	384.1460	372.3864
162	06	3	SAT-M	0.0000	15.0720	3,900.5148	7,021.0643	3,705.5912	-3.0425	1.3625	384.1460	575.8367	389.7716
162	06	4	SAT-W	0.0000	14.9824	4,608.7414	3,705.5912	6,280.9965	-2.8955	1.0544	372.3864	389.7716	445.8477
162	06	5	Black	0.0462	-0.0131	-2.5922	-3.0425	-2.8955	0.0441	-0.0125	-2.4724	-2.9019	-2.7617
162	06	6	Black*HSGPA	-0.0131	0.0212	1.0643	1.3625	1.0544	-0.0125	0.0211	1.0303	1.3226	1.0163
162	06	7	Black*SAT-CR	-2.5912	1.0643	474.4466	384.1460	372.3864	-2.4724	1.0303	467.7296	376.2621	364.8837
162	06	8	Black*SAT-M	-3.0414	1.3625	384.1460	575.8367	389.7716	-2.9019	1.3226	376.2621	566.5832	380.9654
162	06	9	Black*SAT-W	-2.8944	1.0544	372.3864	389.7716	445.8477	-2.7617	1.0163	364.8837	380.9654	437.4671
162	08	1	HSGPA	0.0000	0.3128	12.2447	13.8860	14.1745	-0.0206	0.0311	1.4262	1.5002	1.5282
162	08	2	SAT-CR	0.0000	12.2447	6,582.0234	3,842.7952	4,778.4987	-3.9141	1.4262	649.1615	473.6609	531.4494
162	08	3	SAT-M	0.0000	13.8860	3,842.7952	6,924.7695	3,842.5927	-3.8700	1.5002	473.6609	677.7891	442.3575
162	08	4	SAT-W	0.0000	14.1745	4,778.4987	3,842.5927	6,393.3739	-3.9201	1.5282	531.4494	442.3575	630.9781
162	08	5	Black	0.0646	-0.0206	-3.9141	-3.8700	-3.9201	0.0605	-0.0193	-3.6612	-3.6199	-3.6667
162	08	6	Black*HSGPA	-0.0206	0.0311	1.4262	1.5002	1.5282	-0.0193	0.0306	1.3456	1.4206	1.4475
162	08	7	Black*SAT-CR	-3.9129	1.4262	649.1615	473.6609	531.4494	-3.6612	1.3456	633.8460	458.5181	516.1107
162	08	8	Black*SAT-M	-3.8688	1.5002	473.6609	677.7891	442.3575	-3.6199	1.4206	458.5181	662.8170	427.1917
162	08	9	Black*SAT-W	-3.9188	1.5282	531.4494	442.3575	630.9781	-3.6667	1.4475	516.1107	427.1917	615.6161
164	08	1	HSGPA	0.0000	0.2572	13.4573	15.0640	15.1817	-0.0204	0.0415	3.0302	3.0191	3.1282
164	08	2	SAT-CR	0.0000	13.4573	7,934.6614	4,625.9701	5,993.5583	-8.4743	3.0302	1,655.6866	1,347.8732	1,393.4016
164	08	3	SAT-M	0.0000	15.0640	4,625.9701	7,662.0934	4,625.0480	-8.8030	3.0191	1,347.8732	1,716.8226	1,262.9311
164	08	4	SAT-W	0.0000	15.1817	5,993.5583	4,625.0480	7,704.4603	-8.6073	3.1282	1,393.4016	1,262.9311	1,532.2744
164	08	5	Black	0.1168	-0.0204	-8.4743	-8.8030	-8.6073	0.1032	-0.0180	-7.4841	-7.7744	-7.6016
164	08	6	Black*HSGPA	-0.0204	0.0415	3.0302	3.0191	3.1282	-0.0180	0.0411	2.8574	2.8395	2.9526
164	08	7	Black*SAT-CR	-8.4721	3.0302	1,655.6866	1,347.8732	1,393.4016	-7.4841	2.8574	1,583.8916	1,273.2933	1,320.4799
164	08	8	Black*SAT-M	-8.8007	3.0191	1,347.8732	1,716.8226	1,262.9311	-7.7744	2.8395	1,273.2933	1,639.3498	1,187.1808
164	08	9	Black*SAT-W	-8.6050	3.1282	1,393.4016	1,262.9311	1,532.2744	-7.6016	2.9526	1,320.4799	1,187.1808	1,458.2083
165	06	1	HSGPA	0.0000	0.2477	15.0527	16.8541	16.2259	-0.0353	0.0583	5.1071	6.0038	5.2910
165	06	2	SAT-CR	0.0000	15.0527	7,826.9132	5,235.7245	5,757.5614	-9.8242	5.1071	2,035.6118	1,851.9386	1,731.3368
165	06	3	SAT-M	0.0000	16.8541	5,235.7245	8,871.0717	5,084.4474	-12.8376	6.0038	1,851.9386	2,596.6769	1,827.9648
165	06	4	SAT-W	0.0000	16.2259	5,757.5614	5,084.4474	7,394.9035	-10.2092	5.2910	1,731.3368	1,827.9648	1,950.8362
165	06	5	Black	0.1420	-0.0353	-9.8242	-12.8376	-10.2092	0.1219	-0.0303	-8.4290	-11.0144	-8.7593
165	06	6	Black*HSGPA	-0.0353	0.0583	5.1071	6.0038	5.2910	-0.0303	0.0571	4.7602	5.5505	4.9305
165	06	7	Black*SAT-CR	-9.8225	5.1071	2,035.6118	1,851.9386	1,731.3368	-8.4290	4.7602	1,939.1132	1,725.8416	1,631.0566
165	06	8	Black*SAT-M	-12.8353	6.0038	1,851.9386	2,596.6769	1,827.9648	-11.0144	5.5505	1,725.8416	2,431.9032	1,696.9263
165	06	9	Black*SAT-W	-10.2074	5.2910	1,731.3368	1,827.9648	1,950.8362	-8.7593	4.9305	1,631.0566	1,696.9263	1,846.6261
165	07	1	HSGPA	0.0000	0.2510	14.4178	16.2844	16.1553	-0.0339	0.0520	4.5194	5.1155	4.8525
165	07	2	SAT-CR	0.0000	14.4178	7,339.4785	4,922.5277	5,567.4147	-8.4459	4.5194	1,681.9114	1,536.3607	1,520.4660
165	07	3	SAT-M	0.0000	16.2844	4,922.5277	8,496.7091	4,955.0406	-10.7967	5.1155	1,536.3607	2,229.6585	1,620.2161
165	07	4	SAT-W	0.0000	16.1553	5,567.4147	4,955.0406	7,281.1166	-9.2951	4.8525	1,520.4660	1,620.2161	1,769.9052
165	07	5	Black	0.1238	-0.0339	-8.4459	-10.7967	-9.2951	0.1085	-0.0297	-7.3999	-9.4596	-8.1439
165	07	6	Black*HSGPA	-0.0339	0.0520	4.5194	5.1155	4.8525	-0.0297	0.0509	4.2332	4.7496	4.5376
165	07	7	Black*SAT-CR	-8.4445	4.5194	1,681.9114	1,536.3607	1,520.4660	-7.3999	4.2332	1,610.5905	1,445.1885	1,441.9742
165	07	8	Black*SAT-M	-10.7949	5.1155	1,536.3607	2,229.6585	1,620.2161	-9.4596	4.7496	1,445.1885	2,113.1096	1,519.8772
165	07	9	Black*SAT-W	-9.2935	4.8525	1,520.4660	1,620.2161	1,769.9052	-8.1439	4.5376	1,441.9742	1,519.8772	1,683.5217

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
166	06	1	HSGPA	0.0000	0.2074	11.0452	12.3867	13.4930	-0.0271	0.0361	3.5172	4.4757	3.9168
166	06	2	SAT-CR	0.0000	11.0452	8,189.6489	5,424.1176	6,468.5167	-7.3589	3.5172	1,582.3539	1,639.1793	1,468.2132
166	06	3	SAT-M	0.0000	12.3867	5,424.1176	9,037.2439	5,695.8691	-9.9805	4.4757	1,639.1793	2,253.6273	1,700.9843
166	06	4	SAT-W	0.0000	13.4930	6,468.5167	5,695.8691	8,592.1254	-7.4371	3.9168	1,468.2132	1,700.9843	1,632.1877
166	06	5	Black	0.0829	-0.0271	-7.3589	-9.9805	-7.4371	0.0760	-0.0249	-6.7490	-9.1533	-6.8207
166	06	6	Black*HSGPA	-0.0271	0.0361	3.5172	4.4757	3.9168	-0.0249	0.0353	3.3176	4.2050	3.7151
166	06	7	Black*SAT-CR	-7.3570	3.5172	1,582.3539	1,639.1793	1,468.2132	-6.7490	3.3176	1,528.2139	1,565.7527	1,413.4979
166	06	8	Black*SAT-M	-9.9779	4.4757	1,639.1793	2,253.6273	1,700.9843	-9.1533	4.2050	1,565.7527	2,154.0436	1,626.7775
166	06	9	Black*SAT-W	-7.4352	3.9168	1,468.2132	1,700.9843	1,632.1877	-6.8207	3.7151	1,413.4979	1,626.7775	1,576.8910
166	07	1	HSGPA	0.0000	0.2082	13.5030	15.0824	15.3523	-0.0311	0.0405	4.4655	5.3282	4.7677
166	07	2	SAT-CR	0.0000	13.5030	8,979.8894	5,937.6326	6,980.7276	-8.5489	4.4655	1,765.0422	1,832.9810	1,692.3057
166	07	3	SAT-M	0.0000	15.0824	5,937.6326	9,617.7621	5,994.5178	-11.2510	5.3282	1,832.9810	2,507.2101	1,961.7542
166	07	4	SAT-W	0.0000	15.3523	6,980.7276	5,994.5178	8,758.6849	-8.9556	4.7677	1,692.3057	1,961.7542	1,933.3976
166	07	5	Black	0.0854	-0.0311	-8.5489	-11.2510	-8.9556	0.0781	-0.0284	-7.8188	-10.2901	-8.1908
166	07	6	Black*HSGPA	-0.0311	0.0405	4.4655	5.3282	4.7677	-0.0284	0.0396	4.2000	4.9788	4.4896
166	07	7	Black*SAT-CR	-8.5468	4.4655	1,765.0422	1,832.9810	1,692.3057	-7.8188	4.2000	1,691.9758	1,736.8207	1,615.7635
166	07	8	Black*SAT-M	-11.2482	5.3282	1,832.9810	2,507.2101	1,961.7542	-10.2901	4.9788	1,736.8207	2,380.6565	1,861.0195
166	07	9	Black*SAT-W	-8.9534	4.7677	1,692.3057	1,961.7542	1,933.3976	-8.1908	4.4896	1,615.7635	1,861.0195	1,853.2142
166	08	1	HSGPA	0.0000	0.2008	11.9868	14.2251	14.1165	-0.0255	0.0370	4.4616	5.2271	4.7417
166	08	2	SAT-CR	0.0000	11.9868	8,703.2010	5,971.6761	6,755.8462	-9.4098	4.4616	1,924.9931	2,069.4415	1,843.0085
166	08	3	SAT-M	0.0000	14.2251	5,971.6761	9,373.5596	5,982.9722	-11.6666	5.2271	2,069.4415	2,731.6840	2,108.1293
166	08	4	SAT-W	0.0000	14.1165	6,755.8462	5,982.9722	8,930.3635	-9.8248	4.7417	1,843.0085	2,108.1293	2,047.0606
166	08	5	Black	0.0855	-0.0255	-9.4098	-11.6666	-9.8248	0.0782	-0.0234	-8.6057	-10.6697	-8.9852
166	08	6	Black*HSGPA	-0.0255	0.0370	4.4616	5.2271	4.7417	-0.0234	0.0364	4.2213	4.9292	4.4908
166	08	7	Black*SAT-CR	-9.4072	4.4616	1,924.9931	2,069.4415	1,843.0085	-8.6057	4.2213	1,836.4736	1,959.6915	1,750.5852
166	08	8	Black*SAT-M	-11.6634	5.2271	2,069.4415	2,731.6840	2,108.1293	-10.6697	4.9292	1,959.6915	2,595.6116	1,993.5392
166	08	9	Black*SAT-W	-9.8220	4.7417	1,843.0085	2,108.1293	2,047.0606	-8.9852	4.4908	1,750.5852	1,993.5392	1,950.5613
169	06	1	HSGPA	0.0000	0.3095	15.9373	17.6722	17.8018	-0.0470	0.1059	5.4703	6.5074	6.1525
169	06	2	SAT-CR	0.0000	15.9373	7,317.5089	4,770.6002	5,322.4446	-14.8823	5.4703	2,639.8710	1,928.5384	1,899.6793
169	06	3	SAT-M	0.0000	17.6722	4,770.6002	7,730.0561	4,497.3035	-17.7370	6.5074	1,928.5384	2,892.5687	1,792.7106
169	06	4	SAT-W	0.0000	17.8018	5,322.4446	4,497.3035	6,807.1406	-14.5791	6.1525	1,899.6793	1,792.7106	2,314.8908
169	06	5	Black	0.3249	-0.0470	-14.8823	-17.7370	-14.5791	0.2194	-0.0317	-10.0464	-11.9735	-9.8417
169	06	6	Black*HSGPA	-0.0470	0.1059	5.4703	6.5074	6.1525	-0.0317	0.1037	4.7711	5.6742	5.4676
169	06	7	Black*SAT-CR	-14.8800	5.4703	2,639.8710	1,928.5384	1,899.6793	-10.0464	4.7711	2,418.4227	1,664.6119	1,682.7428
169	06	8	Black*SAT-M	-17.7343	6.5074	1,928.5384	2,892.5687	1,792.7106	-11.9735	5.6742	1,664.6119	2,578.0157	1,534.1613
169	06	9	Black*SAT-W	-14.5768	6.1525	1,899.6793	1,792.7106	2,314.8908	-9.8417	5.4676	1,682.7428	1,534.1613	2,102.3742
169	07	1	HSGPA	0.0000	0.3216	16.1106	17.3117	17.2228	-0.0500	0.1210	6.1877	7.0989	6.8492
169	07	2	SAT-CR	0.0000	16.1106	7,183.1001	4,590.6867	5,227.6505	-15.8369	6.1877	2,882.2150	1,979.7038	2,102.1558
169	07	3	SAT-M	0.0000	17.3117	4,590.6867	7,363.2328	4,343.5983	-17.5003	7.0989	1,979.7038	2,965.4363	1,835.6798
169	07	4	SAT-W	0.0000	17.2228	5,227.6505	4,343.5983	6,601.6522	-15.2859	6.8492	2,102.1558	1,835.6798	2,524.7480
169	07	5	Black	0.3593	-0.0500	-15.8369	-17.5003	-15.2859	0.2302	-0.0320	-10.1462	-11.2118	-9.7932
169	07	6	Black*HSGPA	-0.0500	0.1210	6.1877	7.0989	6.8492	-0.0320	0.1185	5.3956	6.2236	6.0846
169	07	7	Black*SAT-CR	-15.8347	6.1877	2,882.2150	1,979.7038	2,102.1558	-10.1462	5.3956	2,631.4423	1,702.5922	1,860.1079
169	07	8	Black*SAT-M	-17.4978	7.0989	1,979.7038	2,965.4363	1,835.6798	-11.2118	6.2236	1,702.5922	2,659.2195	1,568.2095
169	07	9	Black*SAT-W	-15.2838	6.8492	2,102.1558	1,835.6798	2,524.7480	-9.7932	6.0846	1,860.1079	1,568.2095	2,291.1213



## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
169	08	1	HSGPA	0.0000	0.3100	14.7868	15.9385	16.2784	-0.0509	0.1322	6.0157	6.7204	6.8268
169	08	2	SAT-CR	0.0000	14.7868	7,595.5499	4,842.7451	5,304.5694	-17.4326	6.0157	3,400.1577	2,258.5253	2,336.2456
169	08	3	SAT-M	0.0000	15.9385	4,842.7451	7,416.6950	4,382.2043	-18.8508	6.7204	2,258.5253	3,285.8239	2,005.3621
169	08	4	SAT-W	0.0000	16.2784	5,304.5694	4,382.2043	6,646.4970	-15.4073	6.8268	2,336.2456	2,005.3621	2,884.9831
169	08	5	Black	0.4292	-0.0509	-17.4326	-18.8508	-15.4073	0.2450	-0.0291	-9.9507	-10.7602	-8.7946
169	08	6	Black*HSGPA	-0.0509	0.1322	6.0157	6.7204	6.8268	-0.0291	0.1296	5.1277	5.7602	6.0420
169	08	7	Black*SAT-CR	-17.4303	6.0157	3,400.1577	2,258.5253	2,336.2456	-9.9507	5.1277	3,096.3015	1,929.9494	2,067.6910
169	08	8	Black*SAT-M	-18.8483	6.7204	2,258.5253	3,285.8239	2,005.3621	-10.7602	5.7602	1,929.9494	2,930.5171	1,714.9596
169	08	9	Black*SAT-W	-15.4053	6.8268	2,336.2456	2,005.3621	2,884.9831	-8.7946	6.0420	2,067.6910	1,714.9596	2,647.6287
171	06	1	HSGPA	0.0000	0.3234	18.1683	22.2522	20.4074	-0.0378	0.0560	4.1643	5.6106	4.3908
171	06	2	SAT-CR	0.0000	18.1683	7,596.2799	5,007.4797	5,641.9035	-8.3626	4.1643	1,421.7962	1,346.7980	1,271.3615
171	06	3	SAT-M	0.0000	22.2522	5,007.4797	8,508.3825	4,833.1570	-10.6058	5.6106	1,346.7980	1,929.2732	1,392.8827
171	06	4	SAT-W	0.0000	20.4074	5,641.9035	4,833.1570	7,311.5353	-8.6711	4.3908	1,271.3615	1,392.8827	1,454.4467
171	06	5	Black	0.0968	-0.0378	-8.3626	-10.6058	-8.6711	0.0875	-0.0341	-7.5529	-9.5789	-7.8316
171	06	6	Black*HSGPA	-0.0378	0.0560	4.1643	5.6106	4.3908	-0.0341	0.0546	3.8486	5.2102	4.0634
171	06	7	Black*SAT-CR	-8.3609	4.1643	1,421.7962	1,346.7980	1,271.3615	-7.5529	3.8486	1,351.8774	1,258.1241	1,198.8629
171	06	8	Black*SAT-M	-10.6037	5.6106	1,346.7980	1,929.2732	1,392.8827	-9.5789	5.2102	1,258.1241	1,816.8132	1,300.9369
171	06	9	Black*SAT-W	-8.6694	4.3908	1,271.3615	1,392.8827	1,454.4467	-7.8316	4.0634	1,198.8629	1,300.9369	1,379.2730
171	07	1	HSGPA	0.0000	0.3242	18.9113	20.8596	21.6666	-0.0345	0.0507	4.1331	4.7999	4.6358
171	07	2	SAT-CR	0.0000	18.9113	7,649.0315	4,847.2440	5,826.1368	-7.2570	4.1331	1,181.0404	1,096.7155	1,066.6273
171	07	3	SAT-M	0.0000	20.8596	4,847.2440	8,502.3476	4,806.9661	-8.5158	4.7999	1,096.7155	1,483.3481	1,156.3276
171	07	4	SAT-W	0.0000	21.6666	5,826.1368	4,806.9661	7,448.2543	-7.7240	4.6358	1,066.6273	1,156.3276	1,269.2032
171	07	5	Black	0.0858	-0.0345	-7.2570	-8.5158	-7.7240	0.0784	-0.0315	-6.6347	-7.7856	-7.0617
171	07	6	Black*HSGPA	-0.0345	0.0507	4.1331	4.7999	4.6358	-0.0315	0.0495	3.8828	4.5062	4.3694
171	07	7	Black*SAT-CR	-7.2557	4.1331	1,181.0404	1,096.7155	1,066.6273	-6.6347	3.8828	1,128.3856	1,034.9273	1,010.5844
171	07	8	Black*SAT-M	-8.5142	4.7999	1,096.7155	1,483.3481	1,156.3276	-7.7856	4.5062	1,034.9273	1,410.8422	1,090.5637
171	07	9	Black*SAT-W	-7.7225	4.6358	1,066.6273	1,156.3276	1,269.2032	-7.0617	4.3694	1,010.5844	1,090.5637	1,209.5543
173	07	1	HSGPA	0.0000	0.2082	12.7919	14.3159	13.9950	-0.0176	0.0243	2.1124	2.4821	2.2843
173	07	2	SAT-CR	0.0000	12.7919	7,940.6199	4,883.7728	6,013.7085	-4.2074	2.1124	848.6560	759.8234	751.8222
173	07	3	SAT-M	0.0000	14.3159	4,883.7728	8,226.0409	4,946.2156	-5.5051	2.4821	759.8234	1,095.2288	786.5415
173	07	4	SAT-W	0.0000	13.9950	6,013.7085	4,946.2156	7,662.8867	-4.4819	2.2843	751.8222	786.5415	851.2316
173	07	5	Black	0.0600	-0.0176	-4.2074	-5.5051	-4.4819	0.0564	-0.0165	-3.9551	-5.1751	-4.2132
173	07	6	Black*HSGPA	-0.0176	0.0243	2.1124	2.4821	2.2843	-0.0165	0.0240	2.0385	2.3854	2.2055
173	07	7	Black*SAT-CR	-4.2072	2.1124	848.6560	759.8234	751.8222	-3.9551	2.0385	830.9549	736.6624	732.9662
173	07	8	Black*SAT-M	-5.5049	2.4821	759.8234	1,095.2288	786.5415	-5.1751	2.3854	736.6624	1,064.9238	761.8692
173	07	9	Black*SAT-W	-4.4817	2.2843	751.8222	786.5415	851.2316	-4.2132	2.2055	732.9662	761.8692	831.1452
173	08	1	HSGPA	0.0000	0.2056	12.4196	14.2273	13.6694	-0.0237	0.0341	3.3085	3.8678	3.4897
173	08	2	SAT-CR	0.0000	12.4196	7,963.3279	5,081.3740	6,135.5691	-7.2079	3.3085	1,443.1086	1,337.8001	1,274.6728
173	08	3	SAT-M	0.0000	14.2273	5,081.3740	8,524.6505	5,146.3207	-9.2610	3.8678	1,337.8001	1,873.7393	1,355.4671
173	08	4	SAT-W	0.0000	13.6694	6,135.5691	5,146.3207	8,017.8662	-7.4677	3.4897	1,274.6728	1,355.4671	1,437.4983
173	08	5	Black	0.0952	-0.0237	-7.2079	-9.2610	-7.4677	0.0861	-0.0215	-6.5216	-8.3793	-6.7568
173	08	6	Black*HSGPA	-0.0237	0.0341	3.3085	3.8678	3.4897	-0.0215	0.0336	3.1375	3.6481	3.3125
173	08	7	Black*SAT-CR	-7.2075	3.3085	1,443.1086	1,337.8001	1,274.6728	-6.5216	3.1375	1,391.1580	1,271.0515	1,220.8493
173	08	8	Black*SAT-M	-9.2605	3.8678	1,337.8001	1,873.7393	1,355.4671	-8.3793	3.6481	1,271.0515	1,787.9776	1,286.3121
173	08	9	Black*SAT-W	-7.4673	3.4897	1,274.6728	1,355.4671	1,437.4983	-6.7568	3.3125	1,220.8493	1,286.3121	1,381.7343

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
174	06	1	HSGPA	0.0000	0.3074	18.3969	24.3894	19.4129	-0.0610	0.0748	6.9424	8.0265	6.9564
174	06	2	SAT-CR	0.0000	18.3969	8,254.0143	5,788.2420	6,109.9791	-15.3548	6.9424	2,427.3352	2,104.3595	1,843.3509
174	06	3	SAT-M	0.0000	24.3894	5,788.2420	8,885.6289	5,333.2630	-16.8005	8.0265	2,104.3595	2,824.6963	1,864.3777
174	06	4	SAT-W	0.0000	19.4129	6,109.9791	5,333.2630	7,331.7974	-13.3657	6.9564	1,843.3509	1,864.3777	1,909.0230
174	06	5	Black	0.1982	-0.0610	-15.3548	-16.8005	-13.3657	0.1591	-0.0489	-12.3112	-13.4703	-10.7164
174	06	6	Black*HSGPA	-0.0610	0.0748	6.9424	8.0265	6.9564	-0.0489	0.0711	6.0060	7.0019	6.1413
174	06	7	Black*SAT-CR	-15.3424	6.9424	2,427.3352	2,104.3595	1,843.3509	-12.3112	6.0060	2,191.7569	1,846.6003	1,638.2896
174	06	8	Black*SAT-M	-16.7869	8.0265	2,104.3595	2,824.6963	1,864.3777	-13.4703	7.0019	1,846.6003	2,542.6679	1,640.0089
174	06	9	Black*SAT-W	-13.3549	6.9564	1,843.3509	1,864.3777	1,909.0230	-10.7164	6.1413	1,638.2896	1,640.0089	1,730.5256
175	06	1	HSGPA	0.0000	0.2798	13.0831	16.4774	14.2473	-0.0293	0.0423	3.6990	4.3374	3.6160
175	06	2	SAT-CR	0.0000	13.0831	7,402.9306	4,719.2217	5,163.5128	-7.0626	3.6990	1,309.0279	1,109.8372	995.7845
175	06	3	SAT-M	0.0000	16.4774	4,719.2217	7,735.1726	4,277.0568	-8.7750	4.3374	1,109.8372	1,547.9143	1,016.6449
175	06	4	SAT-W	0.0000	14.2473	5,163.5128	4,277.0568	6,458.5558	-6.4895	3.6160	995.7845	1,016.6449	1,069.9759
175	06	5	Black	0.1038	-0.0293	-7.0626	-8.7750	-6.4895	0.0931	-0.0262	-6.3292	-7.8637	-5.8156
175	06	6	Black*HSGPA	-0.0293	0.0423	3.6990	4.3374	3.6160	-0.0262	0.0414	3.4921	4.0804	3.4259
175	06	7	Black*SAT-CR	-7.0620	3.6990	1,309.0279	1,109.8372	995.7845	-6.3292	3.4921	1,259.1520	1,047.8686	949.9556
175	06	8	Black*SAT-M	-8.7742	4.3374	1,109.8372	1,547.9143	1,016.6449	-7.8637	4.0804	1,047.8686	1,470.9212	959.7046
175	06	9	Black*SAT-W	-6.4890	3.6160	995.7845	1,016.6449	1,069.9759	-5.8156	3.4259	949.9556	959.7046	1,027.8657
175	07	1	HSGPA	0.0000	0.2771	13.4975	16.6647	15.1982	-0.0304	0.0422	3.4688	3.9517	3.6534
175	07	2	SAT-CR	0.0000	13.4975	7,519.1449	4,567.7228	5,511.0930	-7.7524	3.4688	1,329.3793	1,056.5181	1,078.7912
175	07	3	SAT-M	0.0000	16.6647	4,567.7228	7,440.5137	4,348.0055	-8.5702	3.9517	1,056.5181	1,446.1248	994.3840
175	07	4	SAT-W	0.0000	15.1982	5,511.0930	4,348.0055	6,829.2308	-7.4735	3.6534	1,078.7912	994.3840	1,197.5488
175	07	5	Black	0.1173	-0.0304	-7.7524	-8.5702	-7.4735	0.1035	-0.0268	-6.8431	-7.5650	-6.5970
175	07	6	Black*HSGPA	-0.0304	0.0422	3.4688	3.9517	3.6534	-0.0268	0.0413	3.2333	3.6913	3.4263
175	07	7	Black*SAT-CR	-7.7517	3.4688	1,329.3793	1,056.5181	1,078.7912	-6.8431	3.2333	1,269.2850	990.0841	1,020.8583
175	07	8	Black*SAT-M	-8.5695	3.9517	1,056.5181	1,446.1248	994.3840	-7.5650	3.6913	990.0841	1,372.6823	930.3394
175	07	9	Black*SAT-W	-7.4729	3.6534	1,078.7912	994.3840	1,197.5488	-6.5970	3.4263	1,020.8583	930.3394	1,141.6995
175	08	1	HSGPA	0.0000	0.2753	13.9153	16.8458	15.4011	-0.0316	0.0488	3.9756	4.3760	3.9529
175	08	2	SAT-CR	0.0000	13.9153	7,588.9023	4,642.3507	5,481.8802	-8.6651	3.9756	1,574.8696	1,239.1209	1,235.6712
175	08	3	SAT-M	0.0000	16.8458	4,642.3507	7,603.2807	4,395.3398	-9.8949	4.3760	1,239.1209	1,674.4552	1,157.9753
175	08	4	SAT-W	0.0000	15.4011	5,481.8802	4,395.3398	6,924.0765	-7.9797	3.9529	1,235.6712	1,157.9753	1,388.6187
175	08	5	Black	0.1390	-0.0316	-8.6651	-9.8949	-7.9797	0.1197	-0.0272	-7.4604	-8.5192	-6.8703
175	08	6	Black*HSGPA	-0.0316	0.0488	3.9756	4.3760	3.9529	-0.0272	0.0478	3.7021	4.0637	3.7011
175	08	7	Black*SAT-CR	-8.6644	3.9756	1,574.8696	1,239.1209	1,235.6712	-7.4604	3.7021	1,499.7918	1,153.3875	1,166.5314
175	08	8	Black*SAT-M	-9.8941	4.3760	1,239.1209	1,674.4552	1,157.9753	-8.5192	4.0637	1,153.3875	1,576.5539	1,079.0227
175	08	9	Black*SAT-W	-7.9791	3.9529	1,235.6712	1,157.9753	1,388.6187	-6.8703	3.7011	1,166.5314	1,079.0227	1,324.9473
176	06	1	HSGPA	0.0000	0.2738	13.8243	16.1090	15.2671	-0.0116	0.0152	1.2555	1.5125	1.1995
176	06	2	SAT-CR	0.0000	13.8243	8,328.1832	4,918.9540	6,177.6885	-2.7095	1.2555	529.9944	432.4561	420.6956
176	06	3	SAT-M	0.0000	16.1090	4,918.9540	7,956.9379	4,497.6643	-3.0307	1.5125	432.4561	551.2966	384.3811
176	06	4	SAT-W	0.0000	15.2671	6,177.6885	4,497.6643	7,595.9692	-2.5413	1.1995	420.6956	384.3811	434.5016
176	06	5	Black	0.0330	-0.0116	-2.7095	-3.0307	-2.5413	0.0319	-0.0112	-2.6201	-2.9307	-2.4575
176	06	6	Black*HSGPA	-0.0116	0.0152	1.2555	1.5125	1.1995	-0.0112	0.0151	1.2241	1.4774	1.1701
176	06	7	Black*SAT-CR	-2.7092	1.2555	529.9944	432.4561	420.6956	-2.6201	1.2241	522.6539	424.2453	413.8107
176	06	8	Black*SAT-M	-3.0304	1.5125	432.4561	551.2966	384.3811	-2.9307	1.4774	424.2453	542.1124	376.6800
176	06	9	Black*SAT-W	-2.5410	1.1995	420.6956	384.3811	434.5016	-2.4575	1.1701	413.8107	376.6800	428.0440

## Appendix C

## White-Black Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
176	07	1	HSGPA	0.0000	0.2874	14.5822	16.3085	16.6687	-0.0155	0.0211	1.8520	1.9998	1.8810
176	07	2	SAT-CR	0.0000	14.5822	8,632.3291	4,953.6920	6,326.1694	-3.7753	1.8520	745.9706	614.2262	618.8778
176	07	3	SAT-M	0.0000	16.3085	4,953.6920	7,882.7851	4,612.8425	-4.0368	1.9998	614.2262	772.0417	577.4774
176	07	4	SAT-W	0.0000	16.6687	6,326.1694	4,612.8425	7,640.8830	-3.6090	1.8810	618.8778	577.4774	654.4381
176	07	5	Black	0.0445	-0.0155	-3.7753	-4.0368	-3.6090	0.0426	-0.0148	-3.6071	-3.8570	-3.4483
176	07	6	Black*HSGPA	-0.0155	0.0211	1.8520	1.9998	1.8810	-0.0148	0.0209	1.7936	1.9374	1.8252
176	07	7	Black*SAT-CR	-3.7748	1.8520	745.9706	614.2262	618.8778	-3.6071	1.7936	731.7195	598.9880	605.2544
176	07	8	Black*SAT-M	-4.0363	1.9998	614.2262	772.0417	577.4774	-3.8570	1.9374	598.9880	755.7479	562.9103
176	07	9	Black*SAT-W	-3.6086	1.8810	618.8778	577.4774	654.4381	-3.4483	1.8252	605.2544	562.9103	641.4148
176	08	1	HSGPA	0.0000	0.2793	13.6688	15.3912	15.3713	-0.0168	0.0251	2.1733	2.3748	2.2242
176	08	2	SAT-CR	0.0000	13.6688	8,336.2833	4,698.8889	6,027.7170	-4.6399	2.1733	879.6512	725.7714	740.4617
176	08	3	SAT-M	0.0000	15.3912	4,698.8889	7,470.2804	4,385.5872	-4.8274	2.3748	725.7714	875.6933	687.2057
176	08	4	SAT-W	0.0000	15.3713	6,027.7170	4,385.5872	7,414.9124	-4.2391	2.2242	740.4617	687.2057	769.4809
176	08	5	Black	0.0500	-0.0168	-4.6399	-4.8274	-4.2391	0.0475	-0.0160	-4.4081	-4.5862	-4.0274
176	08	6	Black*HSGPA	-0.0168	0.0251	2.1733	2.3748	2.2242	-0.0160	0.0248	2.0951	2.2935	2.1528
176	08	7	Black*SAT-CR	-4.6393	2.1733	879.6512	725.7714	740.4617	-4.4081	2.0951	858.1254	703.3758	720.7951
176	08	8	Black*SAT-M	-4.8268	2.3748	725.7714	875.6933	687.2057	-4.5862	2.2935	703.3758	852.3927	666.7444
176	08	9	Black*SAT-W	-4.2386	2.2242	740.4617	687.2057	769.4809	-4.0274	2.1528	720.7951	666.7444	751.5129

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
1	07	1	HSGPA	0.0000	0.1864	4.1789	4.4571	4.9939	0.0003	0.0127	0.0892	0.4972	0.1652	0.0865
1	07	2	SAT-CR	0.0000	4.1789	6,097.6679	2,666.4332	4,063.7914	-4.0669	0.0892	561.2863	394.9443	509.7519	15.4917
1	07	3	SAT-M	0.0000	4.4571	2,666.4332	5,263.2581	2,633.1567	-4.6613	0.4972	394.9443	650.9849	483.6956	12.8467
1	07	4	SAT-W	0.0000	4.9939	4,063.7914	2,633.1567	5,863.1720	-4.5332	0.1652	509.7519	483.6956	651.7984	17.5967
1	07	5	Black	0.0609	0.0003	-4.0669	-4.6613	-4.5332	0.0572	0.0003	-3.8193	-4.3776	-4.2573	-0.0246
1	07	6	Black*HSGPA	0.0003	0.0127	0.0892	0.4972	0.1652	0.0003	0.0127	0.0906	0.4988	0.1667	0.0079
1	07	7	Black*SAT-CR	-4.0643	0.0892	561.2863	394.9443	509.7519	-3.8193	0.0906	544.7573	375.9991	491.3275	2.4988
1	07	8	Black*SAT-M	-4.6584	0.4972	394.9443	650.9849	483.6956	-4.3776	0.4988	375.9991	629.2704	462.5779	3.0128
1	07	9	Black*SAT-W	-4.5304	0.1652	509.7519	483.6956	651.7984	-4.2573	0.1667	491.3275	462.5779	631.2612	2.9230
1	07	10	FYGPA	2.9416	0.0865	15.4917	12.8467	17.5967	-0.0246	0.0079	2.4988	3.0128	2.9230	0.4520
1	08	1	HSGPA	0.0000	0.1614	4.6337	2.7902	5.0902	0.0034	0.0069	-0.1368	-0.2538	-0.1415	0.0830
1	08	2	SAT-CR	0.0000	4.6337	6,022.2813	2,690.3353	3,890.7390	-2.6746	-0.1368	426.1903	265.9767	323.5885	14.2261
1	08	3	SAT-M	0.0000	2.7902	2,690.3353	5,362.6996	2,600.4458	-2.6446	-0.2538	265.9767	349.2166	238.2457	12.2044
1	08	4	SAT-W	0.0000	5.0902	3,890.7390	2,600.4458	5,518.1282	-2.2158	-0.1415	323.5885	238.2457	357.9841	17.2459
1	08	5	Black	0.0446	0.0034	-2.6746	-2.6446	-2.2158	0.0426	0.0033	-2.5554	-2.5268	-2.1171	-0.0168
1	08	6	Black*HSGPA	0.0034	0.0069	-0.1368	-0.2538	-0.1415	0.0033	0.0069	-0.1277	-0.2448	-0.1340	0.0023
1	08	7	Black*SAT-CR	-2.6727	-0.1368	426.1903	265.9767	323.5885	-2.5554	-0.1277	419.0421	258.9085	317.6663	1.5081
1	08	8	Black*SAT-M	-2.6427	-0.2538	265.9767	349.2166	238.2457	-2.5268	-0.2448	258.9085	342.2276	232.3899	1.1807
1	08	9	Black*SAT-W	-2.2142	-0.1415	323.5885	238.2457	357.9841	-2.1171	-0.1340	317.6663	232.3899	353.0778	1.4194
1	08	10	FYGPA	3.0031	0.0830	14.2261	12.2044	17.2459	-0.0168	0.0023	1.5081	1.1807	1.4194	0.3716
2	08	1	HSGPA	0.0000	0.1717	7.8081	6.8403	8.3162	-0.0121	0.0142	0.6765	0.8581	0.9162	0.0808
2	08	2	SAT-CR	0.0000	7.8081	5,366.8436	2,310.7749	3,284.4948	-3.6027	0.6765	576.3155	345.4200	437.0179	10.2835
2	08	3	SAT-M	0.0000	6.8403	2,310.7749	4,991.7515	2,253.3213	-5.0773	0.8581	345.4200	703.6667	471.4433	8.3814
2	08	4	SAT-W	0.0000	8.3162	3,284.4948	2,253.3213	5,223.2911	-4.1681	0.9162	437.0179	471.4433	636.3775	12.6605
2	08	5	Black	0.0736	-0.0121	-3.6027	-5.0773	-4.1681	0.0683	-0.0112	-3.3374	-4.7034	-3.8612	-0.0182
2	08	6	Black*HSGPA	-0.0121	0.0142	0.6765	0.8581	0.9162	-0.0112	0.0141	0.6328	0.7965	0.8657	0.0052
2	08	7	Black*SAT-CR	-3.5989	0.6765	576.3155	345.4200	437.0179	-3.3374	0.6328	563.3498	327.1475	422.0175	1.4857
2	08	8	Black*SAT-M	-5.0719	0.8581	345.4200	703.6667	471.4433	-4.7034	0.7965	327.1475	677.9153	450.3033	1.8216
2	08	9	Black*SAT-W	-4.1636	0.9162	437.0179	471.4433	636.3775	-3.8612	0.8657	422.0175	450.3033	619.0231	1.8129
2	08	10	FYGPA	3.2570	0.0808	10.2835	8.3814	12.6605	-0.0182	0.0052	1.4857	1.8216	1.8129	0.1962
3	08	1	HSGPA	0.0000	0.1841	5.6567	6.7033	7.0475	0.0010	0.0183	0.5170	0.4418	0.6243	0.0964
3	08	2	SAT-CR	0.0000	5.6567	5,812.9368	2,387.9420	4,073.1278	-3.9306	0.5170	664.5807	364.8460	524.1440	11.5783
3	08	3	SAT-M	0.0000	6.7033	2,387.9420	5,359.5158	2,666.7792	-3.5513	0.4418	364.8460	550.2483	410.8238	11.0959
3	08	4	SAT-W	0.0000	7.0475	4,073.1278	2,666.7792	6,148.0849	-4.4856	0.6243	524.1440	410.8238	696.7785	16.6906
3	08	5	Black	0.0875	0.0010	-3.9306	-3.5513	-4.4856	0.0798	0.0009	-3.5868	-3.2408	-4.0933	-0.0160
3	08	6	Black*HSGPA	0.0010	0.0183	0.5170	0.4418	0.6243	0.0009	0.0183	0.5207	0.4452	0.6286	0.0075
3	08	7	Black*SAT-CR	-3.9292	0.5170	664.5807	364.8460	524.1440	-3.5868	0.5207	649.1368	350.8922	506.5192	1.7172
3	08	8	Black*SAT-M	-3.5501	0.4418	364.8460	550.2483	410.8238	-3.2408	0.4452	350.8922	537.6407	394.8995	1.2914
3	08	9	Black*SAT-W	-4.4840	0.6243	524.1440	410.8238	696.7785	-4.0933	0.6286	506.5192	394.8995	676.6649	1.8266
3	08	10	FYGPA	3.2858	0.0964	11.5783	11.0959	16.6906	-0.0160	0.0075	1.7172	1.2914	1.8266	0.4149

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
5	08	1	HSGPA	0.0000	0.3371	18.2570	23.9732	24.8368	-0.0434	0.0580	3.9007	4.7197	4.7691	0.2771
5	08	2	SAT-CR	0.0000	18.2570	8,168.5561	5,842.6831	6,962.8623	-7.3236	3.9007	986.6241	833.0761	1,061.7523	27.5495
5	08	3	SAT-M	0.0000	23.9732	5,842.6831	8,544.2089	6,005.9293	-9.6528	4.7197	833.0761	1,390.6302	1,004.5463	32.4968
5	08	4	SAT-W	0.0000	24.8368	6,962.8623	6,005.9293	8,823.8146	-8.7604	4.7691	1,061.7523	1,004.5463	1,394.0053	36.2276
5	08	5	Black	0.1214	-0.0434	-7.3236	-9.6528	-8.7604	0.1071	-0.0381	-6.4343	-8.4807	-7.6966	-0.0695
5	08	6	Black*HSGPA	-0.0433	0.0580	3.9007	4.7197	4.7691	-0.0381	0.0561	3.5839	4.3022	4.3902	0.0530
5	08	7	Black*SAT-CR	-7.2974	3.9007	986.6241	833.0761	1,061.7523	-6.4343	3.5839	933.1805	762.6350	997.8239	4.6755
5	08	8	Black*SAT-M	-9.6184	4.7197	833.0761	1,390.6302	1,004.5463	-8.4807	4.3022	762.6350	1,297.7857	920.2858	6.5114
5	08	9	Black*SAT-W	-8.7291	4.7691	1,061.7523	1,004.5463	1,394.0053	-7.6966	4.3902	997.8239	920.2858	1,317.5353	6.1714
5	08	10	FYGPA	2.9408	0.2771	27.5495	32.4968	36.2276	-0.0695	0.0530	4.6755	6.5114	6.1714	0.6066
7	07	1	HSGPA	0.0000	0.2158	4.2790	4.9276	5.9373	-0.0100	0.0318	-0.3527	-0.1503	-0.2005	0.1182
7	07	2	SAT-CR	0.0000	4.2790	5,416.3555	2,758.9689	3,603.8039	-5.4358	-0.3527	833.4245	514.0392	622.5479	12.6556
7	07	3	SAT-M	0.0000	4.9276	2,758.9689	6,211.1209	2,657.3704	-5.9062	-0.1503	514.0392	1,016.9134	591.7428	12.5900
7	07	4	SAT-W	0.0000	5.9373	3,603.8039	2,657.3704	4,934.5351	-5.4654	-0.2005	622.5479	591.7428	820.4338	13.7574
7	07	5	Black	0.1296	-0.0100	-5.4358	-5.9062	-5.4654	0.1129	-0.0087	-4.7314	-5.1408	-4.7572	-0.0521
7	07	6	Black*HSGPA	-0.0100	0.0318	-0.3527	-0.1503	-0.2005	-0.0087	0.0317	-0.4072	-0.2094	-0.2552	0.0140
7	07	7	Black*SAT-CR	-5.4300	-0.3527	833.4245	514.0392	622.5479	-4.7314	-0.4072	803.9081	481.9687	592.8709	3.2667
7	07	8	Black*SAT-M	-5.8998	-0.1503	514.0392	1,016.9134	591.7428	-5.1408	-0.2094	481.9687	982.0678	559.4978	4.5203
7	07	9	Black*SAT-W	-5.4595	-0.2005	622.5479	591.7428	820.4338	-4.7572	-0.2552	592.8709	559.4978	790.5954	3.4459
7	07	10	FYGPA	2.5490	0.1182	12.6556	12.5900	13.7574	-0.0521	0.0140	3.2667	4.5203	3.4459	0.6323
9	07	1	HSGPA	0.0000	0.1761	8.1382	9.7973	9.1589	-0.0126	0.0170	1.0880	1.3060	1.2853	0.1006
9	07	2	SAT-CR	0.0000	8.1382	5,960.5212	3,399.2332	4,429.4102	-4.3470	1.0880	667.3722	574.3765	568.4421	19.3947
9	07	3	SAT-M	0.0000	9.7973	3,399.2332	6,931.0707	3,666.9401	-5.3578	1.3060	574.3765	912.5600	621.4545	19.6483
9	07	4	SAT-W	0.0000	9.1589	4,429.4102	3,666.9401	6,240.6313	-4.7389	1.2853	568.4421	621.4545	702.3567	22.7787
9	07	5	Black	0.0692	-0.0126	-4.3470	-5.3578	-4.7389	0.0645	-0.0117	-4.0460	-4.9868	-4.4108	-0.0352
9	07	6	Black*HSGPA	-0.0126	0.0170	1.0880	1.3060	1.2853	-0.0117	0.0168	1.0331	1.2384	1.2256	0.0123
9	07	7	Black*SAT-CR	-4.3454	1.0880	667.3722	574.3765	568.4421	-4.0460	1.0331	648.4829	551.0946	547.8496	3.5859
9	07	8	Black*SAT-M	-5.3559	1.3060	574.3765	912.5600	621.4545	-4.9868	1.2384	551.0946	883.8640	596.0733	3.5104
9	07	9	Black*SAT-W	-4.7372	1.2853	568.4421	621.4545	702.3567	-4.4108	1.2256	547.8496	596.0733	679.9074	3.9986
9	07	10	FYGPA	2.9299	0.1006	19.3947	19.6483	22.7787	-0.0352	0.0123	3.5859	3.5104	3.9986	0.3873
9	08	1	HSGPA	0.0000	0.1722	7.8174	8.6832	9.0982	-0.0111	0.0147	0.6839	1.1130	0.9361	0.0986
9	08	2	SAT-CR	0.0000	7.8174	5,738.5254	2,988.9892	4,275.9986	-2.9207	0.6839	486.6824	379.7829	399.4074	17.7759
9	08	3	SAT-M	0.0000	8.6832	2,988.9892	6,205.2946	3,242.7025	-4.1048	1.1130	379.7829	616.8103	414.2636	16.4559
9	08	4	SAT-W	0.0000	9.0982	4,275.9986	3,242.7025	6,401.1778	-3.5545	0.9361	399.4074	414.2636	548.7969	21.0870
9	08	5	Black	0.0528	-0.0111	-2.9207	-4.1048	-3.5545	0.0500	-0.0106	-2.7666	-3.8882	-3.3669	-0.0253
9	08	6	Black*HSGPA	-0.0111	0.0147	0.6839	1.1130	0.9361	-0.0106	0.0146	0.6514	1.0673	0.8965	0.0088
9	08	7	Black*SAT-CR	-2.9196	0.6839	486.6824	379.7829	399.4074	-2.7666	0.6514	478.1552	367.7985	389.0296	1.8117
9	08	8	Black*SAT-M	-4.1033	1.1130	379.7829	616.8103	414.2636	-3.8882	1.0673	367.7985	599.9670	399.6784	2.3248
9	08	9	Black*SAT-W	-3.5532	0.9361	399.4074	414.2636	548.7969	-3.3669	0.8965	389.0296	399.6784	536.1671	2.2561
9	08	10	FYGPA	2.9642	0.0986	17.7759	16.4559	21.0870	-0.0253	0.0088	1.8117	2.3248	2.2561	0.3745

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
10	06	1	HSGPA	0.0000	0.1019	4.8731	4.1128	5.6430	-0.0150	0.0127	1.6798	1.7867	1.8658	0.0386
10	06	2	SAT-CR	0.0000	4.8731	4,452.9440	1,119.0571	2,474.3486	-3.9146	1.6798	556.6791	508.8315	571.5009	6.0290
10	06	3	SAT-M	0.0000	4.1128	1,119.0571	4,005.3000	1,130.8428	-4.6773	1.7867	508.8315	761.2481	605.6482	2.5432
10	06	4	SAT-W	0.0000	5.6430	2,474.3486	1,130.8428	4,047.0227	-4.4908	1.8658	571.5009	605.6482	679.8484	5.8554
10	06	5	Black	0.0469	-0.0150	-3.9146	-4.6773	-4.4908	0.0448	-0.0143	-3.7308	-4.4578	-4.2800	-0.0172
10	06	6	Black*HSGPA	-0.0150	0.0127	1.6798	1.7867	1.8658	-0.0143	0.0125	1.6212	1.7166	1.7985	0.0077
10	06	7	Black*SAT-CR	-3.9090	1.6798	556.6791	508.8315	571.5009	-3.7308	1.6212	541.3771	490.5479	553.9466	1.1723
10	06	8	Black*SAT-M	-4.6707	1.7867	508.8315	761.2481	605.6482	-4.4578	1.7166	490.5479	739.4018	584.6732	1.2418
10	06	9	Black*SAT-W	-4.4844	1.8658	571.5009	605.6482	679.8484	-4.2800	1.7985	553.9466	584.6732	659.7101	1.3218
10	06	10	FYGPA	3.3833	0.0386	6.0290	2.5432	5.8554	-0.0172	0.0077	1.1723	1.2418	1.3218	0.1360
10	07	1	HSGPA	0.0000	0.1082	3.0644	3.1552	2.6526	-0.0208	0.0189	1.1923	1.6190	1.0996	0.0388
10	07	2	SAT-CR	0.0000	3.0644	4,154.6705	1,102.9439	2,222.1077	-5.9178	1.1923	738.3274	556.5184	691.8721	6.2676
10	07	3	SAT-M	0.0000	3.1552	1,102.9439	3,944.7859	1,286.9015	-6.9115	1.6190	556.5184	918.2802	622.7392	5.7189
10	07	4	SAT-W	0.0000	2.6526	2,222.1077	1,286.9015	4,150.9564	-5.9850	1.0996	691.8721	622.7392	856.3446	6.9534
10	07	5	Black	0.0829	-0.0208	-5.9178	-6.9115	-5.9850	0.0761	-0.0190	-5.4272	-6.3385	-5.4888	-0.0302
10	07	6	Black*HSGPA	-0.0207	0.0189	1.1923	1.6190	1.0996	-0.0190	0.0185	1.0696	1.4757	0.9755	0.0108
10	07	7	Black*SAT-CR	-5.9102	1.1923	738.3274	556.5184	691.8721	-5.4272	1.0696	703.3518	515.6695	656.4992	2.6863
10	07	8	Black*SAT-M	-6.9027	1.6190	556.5184	918.2802	622.7392	-6.3385	1.4757	515.6695	870.5718	581.4263	2.4720
10	07	9	Black*SAT-W	-5.9774	1.0996	691.8721	622.7392	856.3446	-5.4888	0.9755	656.4992	581.4263	820.5699	2.6518
10	07	10	FYGPA	3.3929	0.0388	6.2676	5.7189	6.9534	-0.0302	0.0108	2.6863	2.4720	2.6518	0.1325
10	08	1	HSGPA	0.0000	0.1279	3.4617	4.7101	4.6324	-0.0272	0.0443	2.1510	3.2147	2.6644	0.0503
10	08	2	SAT-CR	0.0000	3.4617	4,462.0040	1,383.6252	2,519.8817	-5.8216	2.1510	903.8600	853.8591	697.6316	7.8295
10	08	3	SAT-M	0.0000	4.7101	1,383.6252	4,338.8933	1,521.3898	-8.1786	3.2147	853.8591	1,331.2614	744.0858	5.8244
10	08	4	SAT-W	0.0000	4.6324	2,519.8817	1,521.3898	4,316.9453	-5.2723	2.6644	697.6316	744.0858	698.7190	8.3610
10	08	5	Black	0.0650	-0.0272	-5.8216	-8.1786	-5.2723	0.0609	-0.0254	-5.4431	-7.6468	-4.9295	-0.0257
10	08	6	Black*HSGPA	-0.0271	0.0443	2.1510	3.2147	2.6644	-0.0254	0.0436	1.9932	2.9930	2.5215	0.0190
10	08	7	Black*SAT-CR	-5.8114	2.1510	903.8600	853.8591	697.6316	-5.4431	1.9932	870.0283	806.3301	666.9922	2.2830
10	08	8	Black*SAT-M	-8.1642	3.2147	853.8591	1,331.2614	744.0858	-7.6468	2.9930	806.3301	1,264.4893	701.0414	3.4748
10	08	9	Black*SAT-W	-5.2630	2.6644	697.6316	744.0858	698.7190	-4.9295	2.5215	666.9922	701.0414	670.9705	2.3251
10	08	10	FYGPA	3.3676	0.0503	7.8295	5.8244	8.3610	-0.0257	0.0190	2.2830	3.4748	2.3251	0.1592
11	06	1	HSGPA	0.0000	0.2371	5.3550	7.6727	6.8346	-0.0130	0.0185	0.4860	1.1899	0.7799	0.1315
11	06	2	SAT-CR	0.0000	5.3550	5,239.7737	2,228.6703	3,293.7813	0.3555	0.4860	423.5563	319.8719	262.6752	7.8726
11	06	3	SAT-M	0.0000	7.6727	2,228.6703	6,042.5830	2,184.3634	-1.8123	1.1899	319.8719	717.9505	256.4859	11.3296
11	06	4	SAT-W	0.0000	6.8346	3,293.7813	2,184.3634	5,020.2347	-0.9242	0.7799	262.6752	256.4859	284.6400	9.0390
11	06	5	Black	0.0648	-0.0130	0.3555	-1.8123	-0.9242	0.0608	-0.0121	0.3324	-1.6948	-0.8643	-0.0208
11	06	6	Black*HSGPA	-0.0129	0.0185	0.4860	1.1899	0.7799	-0.0121	0.0184	0.4906	1.1665	0.7680	0.0066
11	06	7	Black*SAT-CR	0.3544	0.4860	423.5563	319.8719	262.6752	0.3324	0.4906	423.4303	320.5141	263.0027	-0.4688
11	06	8	Black*SAT-M	-1.8067	1.1899	319.8719	717.9505	256.4859	-1.6948	1.1665	320.5141	714.6763	254.8161	-0.1030
11	06	9	Black*SAT-W	-0.9214	0.7799	262.6752	256.4859	284.6400	-0.8643	0.7680	263.0027	254.8161	283.7885	0.2537
11	06	10	FYGPA	2.8070	0.1315	7.8726	11.3296	9.0390	-0.0208	0.0066	-0.4688	-0.1030	0.2537	0.5333

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
11	07	1	HSGPA	0.0000	0.2203	6.5595	4.7166	8.3107	-0.0038	0.0272	0.6190	0.8314	0.9147	0.1213
11	07	2	SAT-CR	0.0000	6.5595	6,084.9231	2,688.1339	4,584.6011	-3.7981	0.6190	490.8740	320.6599	361.4717	12.6136
11	07	3	SAT-M	0.0000	4.7166	2,688.1339	5,746.5337	2,862.8205	-4.0769	0.8314	320.6599	504.8226	358.8616	9.1410
11	07	4	SAT-W	0.0000	8.3107	4,584.6011	2,862.8205	6,173.7892	-2.9069	0.9147	361.4717	358.8616	468.6255	14.0421
11	07	5	Black	0.0954	-0.0038	-3.7981	-4.0769	-2.9069	0.0866	-0.0035	-3.4358	-3.6880	-2.6297	-0.0001
11	07	6	Black*HSGPA	-0.0038	0.0272	0.6190	0.8314	0.9147	-0.0035	0.0272	0.6046	0.8159	0.9036	0.0118
11	07	7	Black*SAT-CR	-3.7864	0.6190	490.8740	320.6599	361.4717	-3.4358	0.6046	476.4928	305.2229	350.4648	0.4282
11	07	8	Black*SAT-M	-4.0644	0.8314	320.6599	504.8226	358.8616	-3.6880	0.8159	305.2229	488.2524	347.0468	0.7982
11	07	9	Black*SAT-W	-2.8980	0.9147	361.4717	358.8616	468.6255	-2.6297	0.9036	350.4648	347.0468	460.2012	0.2119
11	07	10	FYGPA	2.7134	0.1213	12.6136	9.1410	14.0421	-0.0001	0.0118	0.4282	0.7982	0.2119	0.6570
11	08	1	HSGPA	0.0000	0.2407	7.5068	4.7151	6.0323	-0.0076	0.0307	0.3244	-0.5013	-0.0663	0.1118
11	08	2	SAT-CR	0.0000	7.5068	6,632.9454	2,355.6592	4,175.5301	-3.5539	0.3244	740.2153	278.2305	435.5195	14.9237
11	08	3	SAT-M	0.0000	4.7151	2,355.6592	5,415.2291	2,391.7933	-1.4484	-0.5013	278.2305	636.9611	179.0390	5.8538
11	08	4	SAT-W	0.0000	6.0323	4,175.5301	2,391.7933	5,321.0134	-3.1237	-0.0663	435.5195	179.0390	540.5815	16.4266
11	08	5	Black	0.0912	-0.0076	-3.5539	-1.4484	-3.1237	0.0831	-0.0069	-3.2298	-1.3163	-2.8388	-0.0447
11	08	6	Black*HSGPA	-0.0076	0.0307	0.3244	-0.5013	-0.0663	-0.0069	0.0306	0.2973	-0.5123	-0.0901	0.0135
11	08	7	Black*SAT-CR	-3.5431	0.3244	740.2153	278.2305	435.5195	-3.2298	0.2973	727.6234	273.0987	424.4521	-0.2533
11	08	8	Black*SAT-M	-1.4440	-0.5013	278.2305	636.9611	179.0390	-1.3163	-0.5123	273.0987	634.8696	174.5284	-0.2176
11	08	9	Black*SAT-W	-3.1142	-0.0663	435.5195	179.0390	540.5815	-2.8388	-0.0901	424.4521	174.5284	530.8539	2.1897
11	08	10	FYGPA	2.6956	0.1118	14.9237	5.8538	16.4266	-0.0447	0.0135	-0.2533	-0.2176	2.1897	0.6446
12	07	1	HSGPA	0.0000	0.3585	12.2122	14.2628	16.9242	-0.0041	0.0145	0.6293	0.6893	0.6631	0.2779
12	07	2	SAT-CR	0.0000	12.2122	6,901.1380	3,835.6043	4,439.4393	-4.7515	0.6293	742.0766	564.3671	388.2648	13.5279
12	07	3	SAT-M	0.0000	14.2628	3,835.6043	6,645.4676	3,298.2020	-3.6445	0.6893	564.3671	611.6281	361.3894	13.5978
12	07	4	SAT-W	0.0000	16.9242	4,439.4393	3,298.2020	5,833.6014	-2.6106	0.6631	388.2648	361.3894	299.8617	18.9131
12	07	5	Black	0.0501	-0.0041	-4.7515	-3.6445	-2.6106	0.0477	-0.0039	-4.5135	-3.4619	-2.4798	-0.0116
12	07	6	Black*HSGPA	-0.0041	0.0145	0.6293	0.6893	0.6631	-0.0039	0.0145	0.6098	0.6743	0.6523	0.0160
12	07	7	Black*SAT-CR	-4.7427	0.6293	742.0766	564.3671	388.2648	-4.5135	0.6098	719.5414	547.0823	375.8836	1.7677
12	07	8	Black*SAT-M	-3.6377	0.6893	564.3671	611.6281	361.3894	-3.4619	0.6743	547.0823	598.3703	351.8928	1.1285
12	07	9	Black*SAT-W	-2.6057	0.6631	388.2648	361.3894	299.8617	-2.4798	0.6523	375.8836	351.8928	293.0593	1.2640
12	07	10	FYGPA	2.2199	0.2779	13.5279	13.5978	18.9131	-0.0116	0.0160	1.7677	1.1285	1.2640	1.1453
12	08	1	HSGPA	0.0000	0.3135	12.1359	15.2105	15.3165	-0.0110	0.0163	1.0387	1.5752	1.2913	0.2392
12	08	2	SAT-CR	0.0000	12.1359	6,755.2782	3,658.0988	4,363.8166	-3.1069	1.0387	365.1173	318.6547	202.8575	13.3515
12	08	3	SAT-M	0.0000	15.2105	3,658.0988	6,442.1513	3,410.5691	-4.3840	1.5752	318.6547	551.2404	205.5813	12.7854
12	08	4	SAT-W	0.0000	15.3165	4,363.8166	3,410.5691	5,634.6625	-2.1754	1.2913	202.8575	205.5813	204.1792	16.8123
12	08	5	Black	0.0524	-0.0110	-3.1069	-4.3840	-2.1754	0.0498	-0.0104	-2.9440	-4.1541	-2.0614	-0.0275
12	08	6	Black*HSGPA	-0.0110	0.0163	1.0387	1.5752	1.2913	-0.0104	0.0161	1.0045	1.5271	1.2674	0.0138
12	08	7	Black*SAT-CR	-3.1011	1.0387	365.1173	318.6547	202.8575	-2.9440	1.0045	355.4824	305.0595	196.1112	2.3707
12	08	8	Black*SAT-M	-4.3758	1.5752	318.6547	551.2404	205.5813	-4.1541	1.5271	305.0595	532.0570	196.0620	3.1030
12	08	9	Black*SAT-W	-2.1714	1.2913	202.8575	205.5813	204.1792	-2.0614	1.2674	196.1112	196.0620	199.4555	2.1296
12	08	10	FYGPA	2.2674	0.2392	13.3515	12.7854	16.8123	-0.0275	0.0138	2.3707	3.1030	2.1296	1.1398

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
13	06	1	HSGPA	0.0000	0.2165	6.7473	7.0911	8.1021	-0.0223	0.0299	1.6755	1.8715	1.7252	0.1185
13	06	2	SAT-CR	0.0000	6.7473	5,061.4626	2,397.1789	3,387.5860	-4.8215	1.6755	650.2726	533.6279	576.1507	9.5667
13	06	3	SAT-M	0.0000	7.0911	2,397.1789	5,045.8606	2,414.6400	-5.3248	1.8715	533.6279	902.2917	620.0123	8.0148
13	06	4	SAT-W	0.0000	8.1021	3,387.5860	2,414.6400	5,194.2144	-5.2065	1.7252	576.1507	620.0123	793.1223	12.1661
13	06	5	Black	0.0813	-0.0223	-4.8215	-5.3248	-5.2065	0.0748	-0.0205	-4.4293	-4.8917	-4.7830	-0.0355
13	06	6	Black*HSGPA	-0.0223	0.0299	1.6755	1.8715	1.7252	-0.0205	0.0294	1.5680	1.7528	1.6091	0.0163
13	06	7	Black*SAT-CR	-4.8182	1.6755	650.2726	533.6279	576.1507	-4.4293	1.5680	627.0419	507.9719	551.0648	2.6290
13	06	8	Black*SAT-M	-5.3212	1.8715	533.6279	902.2917	620.0123	-4.8917	1.7528	507.9719	873.9571	592.3074	2.9777
13	06	9	Black*SAT-W	-5.2029	1.7252	576.1507	620.0123	793.1223	-4.7830	1.6091	551.0648	592.3074	766.0331	2.9713
13	06	10	FYGPA	2.9495	0.1185	9.5667	8.0148	12.1661	-0.0355	0.0163	2.6290	2.9777	2.9713	0.3673
14	06	1	HSGPA	0.0000	0.1765	6.9554	7.4918	8.7210	-0.0140	0.0163	1.9619	1.5425	1.9302	0.0921
14	06	2	SAT-CR	0.0000	6.9554	5,858.5168	2,350.4158	3,914.9243	-3.7896	1.9619	646.7511	458.4626	588.8819	10.2758
14	06	3	SAT-M	0.0000	7.4918	2,350.4158	4,924.6971	2,288.3025	-3.7939	1.5425	458.4626	568.5351	472.4915	7.9813
14	06	4	SAT-W	0.0000	8.7210	3,914.9243	2,288.3025	5,718.1794	-3.4549	1.9302	588.8819	472.4915	695.2888	12.1670
14	06	5	Black	0.0512	-0.0140	-3.7896	-3.7939	-3.4549	0.0486	-0.0133	-3.5956	-3.5997	-3.2781	-0.0189
14	06	6	Black*HSGPA	-0.0140	0.0163	1.9619	1.5425	1.9302	-0.0133	0.0161	1.9089	1.4895	1.8819	0.0107
14	06	7	Black*SAT-CR	-3.7857	1.9619	646.7511	458.4626	588.8819	-3.5956	1.9089	632.4049	444.1001	575.8025	2.1721
14	06	8	Black*SAT-M	-3.7900	1.5425	458.4626	568.5351	472.4915	-3.5997	1.4895	444.1001	554.1563	459.3973	1.8125
14	06	9	Black*SAT-W	-3.4514	1.9302	588.8819	472.4915	695.2888	-3.2781	1.8819	575.8025	459.3973	683.3645	1.9055
14	06	10	FYGPA	3.0928	0.0921	10.2758	7.9813	12.1670	-0.0189	0.0107	2.1721	1.8125	1.9055	0.2659
14	07	1	HSGPA	0.0000	0.1618	5.5146	5.7803	7.4892	-0.0144	0.0143	1.5435	1.4613	1.9392	0.0985
14	07	2	SAT-CR	0.0000	5.5146	5,511.4531	2,017.8102	3,391.7854	-4.4538	1.5435	780.1956	525.7830	662.5852	10.8084
14	07	3	SAT-M	0.0000	5.7803	2,017.8102	5,083.2506	1,996.8318	-4.0671	1.4613	525.7830	624.0981	520.5999	8.1535
14	07	4	SAT-W	0.0000	7.4892	3,391.7854	1,996.8318	5,204.9157	-4.0042	1.9392	662.5852	520.5999	750.9550	12.8626
14	07	5	Black	0.0600	-0.0144	-4.4538	-4.0671	-4.0042	0.0565	-0.0135	-4.1865	-3.8231	-3.7639	-0.0229
14	07	6	Black*HSGPA	-0.0144	0.0143	1.5435	1.4613	1.9392	-0.0135	0.0140	1.4796	1.4030	1.8817	0.0122
14	07	7	Black*SAT-CR	-4.4495	1.5435	780.1956	525.7830	662.5852	-4.1865	1.4796	760.3784	507.6863	644.7685	1.8440
14	07	8	Black*SAT-M	-4.0632	1.4613	525.7830	624.0981	520.5999	-3.8231	1.4030	507.6863	607.5724	504.3299	1.5503
14	07	9	Black*SAT-W	-4.0004	1.9392	662.5852	520.5999	750.9550	-3.7639	1.8817	644.7685	504.3299	734.9367	2.1038
14	07	10	FYGPA	3.0789	0.0985	10.8084	8.1535	12.8626	-0.0229	0.0122	1.8440	1.5503	2.1038	0.2990
14	08	1	HSGPA	0.0000	0.1636	5.3594	6.6433	8.1355	-0.0185	0.0203	1.8028	2.0443	2.0311	0.0767
14	08	2	SAT-CR	0.0000	5.3594	5,805.5748	1,878.2368	3,801.7091	-4.2070	1.8028	722.1506	505.4703	625.9352	10.4263
14	08	3	SAT-M	0.0000	6.6433	1,878.2368	4,441.2508	2,093.6232	-5.1162	2.0443	505.4703	759.0036	587.8312	7.4994
14	08	4	SAT-W	0.0000	8.1355	3,801.7091	2,093.6232	5,908.1587	-5.4345	2.0311	625.9352	587.8312	873.3590	12.6831
14	08	5	Black	0.0694	-0.0185	-4.2070	-5.1162	-5.4345	0.0646	-0.0172	-3.9152	-4.7613	-5.0576	-0.0268
14	08	6	Black*HSGPA	-0.0185	0.0203	1.8028	2.0443	2.0311	-0.0172	0.0199	1.7251	1.9498	1.9306	0.0118
14	08	7	Black*SAT-CR	-4.2026	1.8028	722.1506	505.4703	625.9352	-3.9152	1.7251	704.4705	483.9691	603.0962	2.1519
14	08	8	Black*SAT-M	-5.1109	2.0443	505.4703	759.0036	587.8312	-4.7613	1.9498	483.9691	732.8553	560.0562	1.9482
14	08	9	Black*SAT-W	-5.4289	2.0311	625.9352	587.8312	873.3590	-5.0576	1.9306	603.0962	560.0562	843.8559	2.7571
14	08	10	FYGPA	3.1262	0.0767	10.4263	7.4994	12.6831	-0.0268	0.0118	2.1519	1.9482	2.7571	0.2199



## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
15	06	1	HSGPA	0.0000	0.2262	8.6467	7.0370	8.3450	-0.0148	0.0271	1.4032	1.3218	1.8698	0.1070
15	06	2	SAT-CR	0.0000	8.6467	8,411.7183	3,639.0437	6,069.9551	-7.1218	1.4032	1,523.7095	731.0516	1,058.0998	15.3150
15	06	3	SAT-M	0.0000	7.0370	3,639.0437	6,097.6302	3,368.0969	-7.7659	1.3218	731.0516	1,245.7880	815.9104	8.9276
15	06	4	SAT-W	0.0000	8.3450	6,069.9551	3,368.0969	8,128.4643	-9.8751	1.8698	1,058.0998	815.9104	1,434.1282	15.8320
15	06	5	Black	0.1032	-0.0148	-7.1218	-7.7659	-9.8751	0.0929	-0.0132	-6.3867	-6.9643	-8.8558	-0.0170
15	06	6	Black*HSGPA	-0.0147	0.0271	1.4032	1.3218	1.8698	-0.0132	0.0269	1.2984	1.2075	1.7245	0.0063
15	06	7	Black*SAT-CR	-7.0989	1.4032	1,523.7095	731.0516	1,058.0998	-6.3867	1.2984	1,473.1526	675.9223	987.9976	2.9121
15	06	8	Black*SAT-M	-7.7409	1.3218	731.0516	1,245.7880	815.9104	-6.9643	1.2075	675.9223	1,185.6726	739.4680	2.5625
15	06	9	Black*SAT-W	-9.8433	1.8698	1,058.0998	815.9104	1,434.1282	-8.8558	1.7245	987.9976	739.4680	1,336.9244	2.4485
15	06	10	FYGPA	3.1235	0.1070	15.3150	8.9276	15.8320	-0.0170	0.0063	2.9121	2.5625	2.4485	0.3140
15	07	1	HSGPA	0.0000	0.2051	9.3424	9.3476	9.3911	-0.0115	0.0363	1.6602	2.3348	2.0447	0.1225
15	07	2	SAT-CR	0.0000	9.3424	10,452.6943	5,697.4635	7,113.3414	-9.4304	1.6602	2,033.2975	1,629.6488	1,595.4763	21.2961
15	07	3	SAT-M	0.0000	9.3476	5,697.4635	8,511.6832	4,842.4623	-8.6908	2.3348	1,629.6488	1,931.6294	1,463.5057	14.8566
15	07	4	SAT-W	0.0000	9.3911	7,113.3414	4,842.4623	8,232.6607	-8.6424	2.0447	1,595.4763	1,463.5057	1,659.0919	22.9559
15	07	5	Black	0.1206	-0.0115	-9.4304	-8.6908	-8.6424	0.1064	-0.0101	-8.2934	-7.6430	-7.6004	-0.0153
15	07	6	Black*HSGPA	-0.0115	0.0363	1.6602	2.3348	2.0447	-0.0101	0.0362	1.5520	2.2351	1.9455	0.0207
15	07	7	Black*SAT-CR	-9.3969	1.6602	2,033.2975	1,629.6488	1,595.4763	-8.2934	1.5520	1,944.6813	1,547.9817	1,514.2646	3.9557
15	07	8	Black*SAT-M	-8.6600	2.3348	1,629.6488	1,931.6294	1,463.5057	-7.6430	2.2351	1,547.9817	1,856.3665	1,388.6623	4.0998
15	07	9	Black*SAT-W	-8.6117	2.0447	1,595.4763	1,463.5057	1,659.0919	-7.6004	1.9455	1,514.2646	1,388.6623	1,584.6659	4.6350
15	07	10	FYGPA	3.1098	0.1225	21.2961	14.8566	22.9559	-0.0153	0.0207	3.9557	4.0998	4.6350	0.3908
15	08	1	HSGPA	0.0000	0.2384	5.4683	6.1030	5.9931	0.0020	0.0227	2.7195	0.7270	1.1481	0.1170
15	08	2	SAT-CR	0.0000	5.4683	9,047.0902	4,841.9314	6,331.6485	-5.4730	2.7195	1,810.9391	897.5972	1,280.9335	14.0811
15	08	3	SAT-M	0.0000	6.1030	4,841.9314	7,903.2904	4,401.1863	-7.1055	0.7270	897.5972	973.8451	754.7312	11.6584
15	08	4	SAT-W	0.0000	5.9931	6,331.6485	4,401.1863	7,702.6123	-7.1779	1.1481	1,280.9335	754.7312	1,266.9425	12.4263
15	08	5	Black	0.1096	0.0020	-5.4730	-7.1055	-7.1779	0.0981	0.0018	-4.8729	-6.3263	-6.3909	-0.0279
15	08	6	Black*HSGPA	0.0020	0.0227	2.7195	0.7270	1.1481	0.0018	0.0227	2.7305	0.7413	1.1626	0.0064
15	08	7	Black*SAT-CR	-5.4490	2.7195	1,810.9391	897.5972	1,280.9335	-4.8729	2.7305	1,781.1169	858.8797	1,241.8212	2.0564
15	08	8	Black*SAT-M	-7.0743	0.7270	897.5972	973.8451	754.7312	-6.3263	0.7413	858.8797	923.5790	703.9525	2.5550
15	08	9	Black*SAT-W	-7.1464	1.1481	1,280.9335	754.7312	1,266.9425	-6.3909	1.1626	1,241.8212	703.9525	1,215.6460	2.9709
15	08	10	FYGPA	3.0238	0.1170	14.0811	11.6584	12.4263	-0.0279	0.0064	2.0564	2.5550	2.9709	0.3963
16	07	1	HSGPA	0.0000	0.4314	22.8589	31.3151	27.9098	-0.1379	0.2655	10.0909	14.5098	12.8554	0.2710
16	07	2	SAT-CR	0.0000	22.8589	6,468.0530	4,982.7044	5,011.8766	-18.0167	10.0909	3,592.4827	2,401.8822	2,621.9299	21.5204
16	07	3	SAT-M	0.0000	31.3151	4,982.7044	9,796.6205	5,584.2897	-25.5441	14.5098	2,401.8822	5,438.9159	2,819.5980	36.0081
16	07	4	SAT-W	0.0000	27.9098	5,011.8766	5,584.2897	7,307.2564	-22.5852	12.8554	2,621.9299	2,819.5980	4,221.4896	29.8738
16	07	5	Black	0.6614	-0.1379	-18.0167	-25.5441	-22.5852	0.2247	-0.0467	-6.1006	-8.6494	-7.6475	-0.1867
16	07	6	Black*HSGPA	-0.1375	0.2655	10.0909	14.5098	12.8554	-0.0467	0.2465	7.6143	10.9984	9.7508	0.1537
16	07	7	Black*SAT-CR	-17.9597	10.0909	3,592.4827	2,401.8822	2,621.9299	-6.1006	7.6143	3,268.9093	1,943.1187	2,216.3075	7.9189
16	07	8	Black*SAT-M	-25.4633	14.5098	2,401.8822	5,438.9159	2,819.5980	-8.6494	10.9984	1,943.1187	4,788.4796	2,244.5052	17.8280
16	07	9	Black*SAT-W	-22.5137	12.8554	2,621.9299	2,819.5980	4,221.4896	-7.6475	9.7508	2,216.3075	2,244.5052	3,713.0129	13.3646
16	07	10	FYGPA	2.6013	0.2710	21.5204	36.0081	29.8738	-0.1867	0.1537	7.9189	17.8280	13.3646	0.7987

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
16	08	1	HSGPA	0.0000	0.4311	20.5035	30.7092	26.4799	-0.1364	0.2671	9.3839	12.7361	10.3198	0.2761
16	08	2	SAT-CR	0.0000	20.5035	7,869.9689	5,703.6338	6,162.2236	-16.4569	9.3839	4,435.0731	2,856.1524	3,096.2728	25.6506
16	08	3	SAT-M	0.0000	30.7092	5,703.6338	9,557.5332	6,021.9545	-25.4260	12.7361	2,856.1524	4,757.1669	2,816.4636	32.5742
16	08	4	SAT-W	0.0000	26.4799	6,162.2236	6,021.9545	8,189.7550	-20.7223	10.3198	3,096.2728	2,816.4636	3,929.5981	30.4356
16	08	5	Black	0.5777	-0.1364	-16.4569	-25.4260	-20.7223	0.2447	-0.0576	-6.9495	-10.7371	-8.7508	-0.1413
16	08	6	Black*HSGPA	-0.1360	0.2671	9.3839	12.7361	10.3198	-0.0576	0.2486	7.1464	9.2792	7.5024	0.1394
16	08	7	Black*SAT-CR	-16.4086	9.3839	4,435.0731	2,856.1524	3,096.2728	-6.9495	7.1464	4,165.0386	2,438.9471	2,756.2491	12.0209
16	08	8	Black*SAT-M	-25.3514	12.7361	2,856.1524	4,757.1669	2,816.4636	-10.7371	9.2792	2,438.9471	4,112.5814	2,291.1244	13.7626
16	08	9	Black*SAT-W	-20.6615	10.3198	3,096.2728	2,816.4636	3,929.5981	-8.7508	7.5024	2,756.2491	2,291.1244	3,501.4449	12.7315
16	08	10	FYGPA	2.8073	0.2761	25.6506	32.5742	30.4356	-0.1413	0.1394	12.0209	13.7626	12.7315	0.5937
17	06	1	HSGPA	0.0000	0.2855	6.8481	12.8859	12.7118	-0.0108	0.0212	0.5920	0.1455	0.6680	0.1441
17	06	2	SAT-CR	0.0000	6.8481	4,673.3110	2,189.0615	3,362.4986	-1.9970	0.5920	296.4880	168.7368	252.1246	6.2707
17	06	3	SAT-M	0.0000	12.8859	2,189.0615	5,323.8211	2,216.6092	-2.9759	0.1455	168.7368	389.8512	234.9696	10.9991
17	06	4	SAT-W	0.0000	12.7118	3,362.4986	2,216.6092	5,028.6724	-3.3037	0.6680	252.1246	234.9696	452.9178	12.8803
17	06	5	Black	0.0588	-0.0108	-1.9970	-2.9759	-3.3037	0.0556	-0.0102	-1.8795	-2.8009	-3.1093	-0.0299
17	06	6	Black*HSGPA	-0.0107	0.0212	0.5920	0.1455	0.6680	-0.0102	0.0211	0.5705	0.1135	0.6325	0.0013
17	06	7	Black*SAT-CR	-1.9896	0.5920	296.4880	168.7368	252.1246	-1.8795	0.5705	292.5148	162.8159	245.5515	0.7911
17	06	8	Black*SAT-M	-2.9650	0.1455	168.7368	389.8512	234.9696	-2.8009	0.1135	162.8159	381.0277	225.1744	2.2288
17	06	9	Black*SAT-W	-3.2915	0.6680	252.1246	234.9696	452.9178	-3.1093	0.6325	245.5515	225.1744	442.0437	2.2775
17	06	10	FYGPA	3.0100	0.1441	6.2707	10.9991	12.8803	-0.0299	0.0013	0.7911	2.2288	2.2775	0.4634
17	08	1	HSGPA	0.0000	0.2661	7.6847	9.3935	9.9959	-0.0103	0.0168	0.5881	1.1227	0.5025	0.1204
17	08	2	SAT-CR	0.0000	7.6847	4,117.3343	1,797.5127	2,897.0683	-1.3649	0.5881	264.8087	127.2497	202.2062	7.0989
17	08	3	SAT-M	0.0000	9.3935	1,797.5127	4,816.7773	1,907.4578	-2.1731	1.1227	127.2497	257.5245	173.5126	6.2690
17	08	4	SAT-W	0.0000	9.9959	2,897.0683	1,907.4578	4,910.5370	-1.4338	0.5025	202.2062	173.5126	252.8131	11.5390
17	08	5	Black	0.0543	-0.0103	-1.3649	-2.1731	-1.4338	0.0515	-0.0097	-1.2908	-2.0551	-1.3559	-0.0143
17	08	6	Black*HSGPA	-0.0103	0.0168	0.5881	1.1227	0.5025	-0.0097	0.0167	0.5741	1.1004	0.4878	0.0101
17	08	7	Black*SAT-CR	-1.3605	0.5881	264.8087	127.2497	202.2062	-1.2908	0.5741	262.9517	124.2930	200.2555	-0.0890
17	08	8	Black*SAT-M	-2.1662	1.1227	127.2497	257.5245	173.5126	-2.0551	1.1004	124.2930	252.8171	170.4067	0.1816
17	08	9	Black*SAT-W	-1.4292	0.5025	202.2062	173.5126	252.8131	-1.3559	0.4878	200.2555	170.4067	250.7638	-0.2524
17	08	10	FYGPA	3.1062	0.1204	7.0989	6.2690	11.5390	-0.0143	0.0101	-0.0890	0.1816	-0.2524	0.3252
18	07	1	HSGPA	0.0000	0.2881	11.0034	9.8716	10.8693	-0.0109	0.0336	0.7226	-0.1103	1.8541	0.1344
18	07	2	SAT-CR	0.0000	11.0034	5,800.7378	3,374.1765	4,424.2424	-4.4256	0.7226	656.6395	396.8358	423.6948	4.7288
18	07	3	SAT-M	0.0000	9.8716	3,374.1765	6,026.0568	3,476.6704	-5.2855	-0.1103	396.8358	725.9923	382.9577	7.1882
18	07	4	SAT-W	0.0000	10.8693	4,424.2424	3,476.6704	6,033.8039	-5.3429	1.8541	423.6948	382.9577	726.0404	10.1425
18	07	5	Black	0.1082	-0.0109	-4.4256	-5.2855	-5.3429	0.0969	-0.0097	-3.9466	-4.7135	-4.7647	-0.0106
18	07	6	Black*HSGPA	-0.0109	0.0336	0.7226	-0.1103	1.8541	-0.0097	0.0335	0.6745	-0.1678	1.7960	0.0235
18	07	7	Black*SAT-CR	-4.4064	0.7226	656.6395	396.8358	423.6948	-3.9466	0.6745	637.1387	373.5456	400.1517	1.0988
18	07	8	Black*SAT-M	-5.2626	-0.1103	396.8358	725.9923	382.9577	-4.7135	-0.1678	373.5456	698.1765	354.8398	-0.3449
18	07	9	Black*SAT-W	-5.3198	1.8541	423.6948	382.9577	726.0404	-4.7647	1.7960	400.1517	354.8398	697.6171	1.7768
18	07	10	FYGPA	2.4999	0.1344	4.7288	7.1882	10.1425	-0.0106	0.0235	1.0988	-0.3449	1.7768	0.7969

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
18	08	1	HSGPA	0.0000	0.2833	9.3269	4.9039	9.4286	-0.0333	0.0590	2.1821	0.7722	1.0055	0.1890
18	08	2	SAT-CR	0.0000	9.3269	5,848.6786	3,223.6349	4,066.5031	-8.0932	2.1821	1,360.0023	687.6282	931.4954	13.1787
18	08	3	SAT-M	0.0000	4.9039	3,223.6349	6,700.0291	3,023.6446	-8.6514	0.7722	687.6282	1,098.4016	794.0782	13.7935
18	08	4	SAT-W	0.0000	9.4286	4,066.5031	3,023.6446	5,307.7180	-7.8721	1.0055	931.4954	794.0782	1,225.7904	13.9997
18	08	5	Black	0.1687	-0.0333	-8.0932	-8.6514	-7.8721	0.1408	-0.0277	-6.7281	-7.1921	-6.5443	-0.0734
18	08	6	Black*HSGPA	-0.0332	0.0590	2.1821	0.7722	1.0055	-0.0277	0.0579	1.9136	0.4851	0.7443	0.0393
18	08	7	Black*SAT-CR	-8.0607	2.1821	1,360.0023	687.6282	931.4954	-6.7281	1.9136	1,294.7658	617.8923	868.0407	7.5508
18	08	8	Black*SAT-M	-8.6166	0.7722	687.6282	1,098.4016	794.0782	-7.1921	0.4851	617.8923	1,023.8558	726.2469	5.8137
18	08	9	Black*SAT-W	-7.8405	1.0055	931.4954	794.0782	1,225.7904	-6.5443	0.7443	868.0407	726.2469	1,164.0688	5.9465
18	08	10	FYGPA	2.6619	0.1890	13.1787	13.7935	13.9997	-0.0734	0.0393	7.5508	5.8137	5.9465	0.6525
19	06	1	HSGPA	0.0000	0.2645	15.1294	16.0337	17.8035	-0.0174	0.0222	2.5445	1.7501	2.3224	0.1458
19	06	2	SAT-CR	0.0000	15.1294	6,284.9645	4,205.4565	4,910.3541	-4.4472	2.5445	654.2441	503.5142	561.5037	19.8465
19	06	3	SAT-M	0.0000	16.0337	4,205.4565	7,810.6064	4,464.9070	-5.2906	1.7501	503.5142	872.0320	575.5295	22.3099
19	06	4	SAT-W	0.0000	17.8035	4,910.3541	4,464.9070	7,112.4347	-4.4468	2.3224	561.5037	575.5295	833.2618	22.7593
19	06	5	Black	0.0885	-0.0174	-4.4472	-5.2906	-4.4468	0.0809	-0.0158	-4.0534	-4.8222	-4.0531	-0.0379
19	06	6	Black*HSGPA	-0.0173	0.0222	2.5445	1.7501	2.3224	-0.0158	0.0219	2.4675	1.6585	2.2455	0.0153
19	06	7	Black*SAT-CR	-4.4356	2.5445	654.2441	503.5142	561.5037	-4.0534	2.4675	634.5180	480.0471	541.7793	2.8728
19	06	8	Black*SAT-M	-5.2768	1.7501	503.5142	872.0320	575.5295	-4.8222	1.6585	480.0471	844.1143	552.0645	2.8551
19	06	9	Black*SAT-W	-4.4352	2.3224	561.5037	575.5295	833.2618	-4.0531	2.2455	541.7793	552.0645	813.5392	3.1341
19	06	10	FYGPA	3.0137	0.1458	19.8465	22.3099	22.7593	-0.0379	0.0153	2.8728	2.8551	3.1341	0.2861
19	07	1	HSGPA	0.0000	0.2887	14.9289	17.1166	13.3136	-0.0073	0.0369	1.5658	0.8331	1.4072	0.1442
19	07	2	SAT-CR	0.0000	14.9289	5,966.1385	3,573.1015	4,247.5195	-3.6271	1.5658	720.2191	469.0568	467.6110	18.3178
19	07	3	SAT-M	0.0000	17.1166	3,573.1015	6,983.8763	3,338.9557	-4.5815	0.8331	469.0568	943.6931	362.4973	18.1448
19	07	4	SAT-W	0.0000	13.3136	4,247.5195	3,338.9557	5,700.4198	-3.9802	1.4072	467.6110	362.4973	595.1049	18.9105
19	07	5	Black	0.1114	-0.0073	-3.6271	-4.5815	-3.9802	0.0993	-0.0065	-3.2230	-4.0711	-3.5368	-0.0389
19	07	6	Black*HSGPA	-0.0073	0.0369	1.5658	0.8331	1.4072	-0.0065	0.0368	1.5394	0.7998	1.3782	0.0215
19	07	7	Black*SAT-CR	-3.6172	1.5658	720.2191	469.0568	467.6110	-3.2230	1.5394	707.0991	452.4845	453.2137	2.1213
19	07	8	Black*SAT-M	-4.5691	0.8331	469.0568	943.6931	362.4973	-4.0711	0.7998	452.4845	922.7599	344.3115	2.6791
19	07	9	Black*SAT-W	-3.9694	1.4072	467.6110	362.4973	595.1049	-3.5368	1.3782	453.2137	344.3115	579.3059	2.8365
19	07	10	FYGPA	2.9703	0.1442	18.3178	18.1448	18.9105	-0.0389	0.0215	2.1213	2.6791	2.8365	0.3326
19	08	1	HSGPA	0.0000	0.2832	13.5116	15.2758	14.4877	-0.0181	0.0445	1.3117	1.8247	1.7054	0.1785
19	08	2	SAT-CR	0.0000	13.5116	6,463.3874	3,889.3527	4,520.9479	-6.1245	1.3117	894.0826	704.3577	696.8054	17.5400
19	08	3	SAT-M	0.0000	15.2758	3,889.3527	7,071.3180	3,621.5654	-7.0433	1.8247	704.3577	1,131.7513	694.8064	19.9362
19	08	4	SAT-W	0.0000	14.4877	4,520.9479	3,621.5654	6,166.2652	-5.4502	1.7054	696.8054	694.8064	872.7988	20.3013
19	08	5	Black	0.1211	-0.0181	-6.1245	-7.0433	-5.4502	0.1065	-0.0159	-5.3831	-6.1907	-4.7905	-0.0379
19	08	6	Black*HSGPA	-0.0181	0.0445	1.3117	1.8247	1.7054	-0.0159	0.0442	1.2011	1.6975	1.6069	0.0279
19	08	7	Black*SAT-CR	-6.1165	1.3117	894.0826	704.3577	696.8054	-5.3831	1.2011	856.6219	661.2776	663.4691	2.6715
19	08	8	Black*SAT-M	-7.0340	1.8247	704.3577	1,131.7513	694.8064	-6.1907	1.6975	661.2776	1,082.2089	656.4694	3.5442
19	08	9	Black*SAT-W	-5.4431	1.7054	696.8054	694.8064	872.7988	-4.7905	1.6069	663.4691	656.4694	843.1327	3.4266
19	08	10	FYGPA	2.9007	0.1785	17.5400	19.9362	20.3013	-0.0379	0.0279	2.6715	3.5442	3.4266	0.5286

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
20	08	1	HSGPA	0.0000	0.1435	3.4080	4.4309	1.6117	-0.0282	0.0294	1.6501	2.2089	1.4071	0.0597
20	08	2	SAT-CR	0.0000	3.4080	6,005.9201	2,666.4192	4,026.4999	-5.4533	1.6501	996.7140	726.1536	726.0489	12.2611
20	08	3	SAT-M	0.0000	4.4309	2,666.4192	5,543.2693	2,637.8999	-7.8903	2.2089	726.1536	1,205.8494	760.4413	9.9322
20	08	4	SAT-W	0.0000	1.6117	4,026.4999	2,637.8999	5,967.9402	-5.5054	1.4071	726.0489	760.4413	835.3660	15.7696
20	08	5	Black	0.0760	-0.0282	-5.4533	-7.8903	-5.5054	0.0703	-0.0261	-5.0390	-7.2909	-5.0872	-0.0267
20	08	6	Black*HSGPA	-0.0282	0.0294	1.6501	2.2089	1.4071	-0.0261	0.0287	1.4965	1.9868	1.2520	0.0125
20	08	7	Black*SAT-CR	-5.4437	1.6501	996.7140	726.1536	726.0489	-5.0390	1.4965	967.0277	683.2010	696.0791	2.9148
20	08	8	Black*SAT-M	-7.8764	2.2089	726.1536	1,205.8494	760.4413	-7.2909	1.9868	683.2010	1,143.7020	717.0784	3.0282
20	08	9	Black*SAT-W	-5.4957	1.4071	726.0489	760.4413	835.3660	-5.0872	1.2520	696.0791	717.0784	805.1098	2.7006
20	08	10	FYGPA	3.2853	0.0597	12.2611	9.9322	15.7696	-0.0267	0.0125	2.9148	3.0282	2.7006	0.2497
22	06	1	HSGPA	0.0000	0.0840	5.8145	5.3564	5.2580	-0.0092	0.0087	0.9925	1.0988	0.9314	0.0471
22	06	2	SAT-CR	0.0000	5.8145	5,313.7085	2,151.6119	3,243.7918	-3.7728	0.9925	561.4698	480.8453	465.0194	10.6151
22	06	3	SAT-M	0.0000	5.3564	2,151.6119	4,524.6559	1,932.8735	-5.3239	1.0988	480.8453	797.2604	515.4101	8.0205
22	06	4	SAT-W	0.0000	5.2580	3,243.7918	1,932.8735	4,851.0162	-3.7892	0.9314	465.0194	515.4101	551.3825	10.8170
22	06	5	Black	0.0556	-0.0092	-3.7728	-5.3239	-3.7892	0.0525	-0.0087	-3.5632	-5.0281	-3.5787	-0.0216
22	06	6	Black*HSGPA	-0.0092	0.0087	0.9925	1.0988	0.9314	-0.0087	0.0086	0.9578	1.0498	0.8965	0.0064
22	06	7	Black*SAT-CR	-3.7696	0.9925	561.4698	480.8453	465.0194	-3.5632	0.9578	547.2477	460.7761	450.7355	2.2053
22	06	8	Black*SAT-M	-5.3194	1.0988	480.8453	797.2604	515.4101	-5.0281	1.0498	460.7761	768.9406	495.2538	2.2773
22	06	9	Black*SAT-W	-3.7860	0.9314	465.0194	515.4101	551.3825	-3.5787	0.8965	450.7355	495.2538	537.0365	2.3240
22	06	10	FYGPA	3.3777	0.0471	10.6151	8.0205	10.8170	-0.0216	0.0064	2.2053	2.2773	2.3240	0.1735
26	06	1	HSGPA	0.0000	0.1202	3.7090	4.1528	4.9302	-0.0152	0.0176	1.6929	2.1294	1.8515	0.0578
26	06	2	SAT-CR	0.0000	3.7090	7,053.6364	3,906.1291	5,083.3925	-6.5356	1.6929	1,149.8830	1,074.5480	965.2935	20.2207
26	06	3	SAT-M	0.0000	4.1528	3,906.1291	6,877.3125	3,829.9405	-7.8395	2.1294	1,074.5480	1,459.7604	1,050.4296	19.0745
26	06	4	SAT-W	0.0000	4.9302	5,083.3925	3,829.9405	6,678.0516	-6.2095	1.8515	965.2935	1,050.4296	1,096.1650	21.1204
26	06	5	Black	0.0852	-0.0152	-6.5356	-7.8395	-6.2095	0.0780	-0.0139	-5.9786	-7.1714	-5.6803	-0.0394
26	06	6	Black*HSGPA	-0.0152	0.0176	1.6929	2.1294	1.8515	-0.0139	0.0174	1.5933	2.0100	1.7570	0.0138
26	06	7	Black*SAT-CR	-6.5337	1.6929	1,149.8830	1,074.5480	965.2935	-5.9786	1.5933	1,107.1815	1,023.3271	924.7224	4.8384
26	06	8	Black*SAT-M	-7.8373	2.1294	1,074.5480	1,459.7604	1,050.4296	-7.1714	2.0100	1,023.3271	1,398.3202	1,001.7641	5.3912
26	06	9	Black*SAT-W	-6.2078	1.8515	965.2935	1,050.4296	1,096.1650	-5.6803	1.7570	924.7224	1,001.7641	1,057.6180	4.6908
26	06	10	FYGPA	3.1909	0.0578	20.2207	19.0745	21.1204	-0.0394	0.0138	4.8384	5.3912	4.6908	0.4192
26	07	1	HSGPA	0.0000	0.1151	4.3077	5.1441	4.6496	-0.0175	0.0187	2.3955	2.4374	2.3653	0.0610
26	07	2	SAT-CR	0.0000	4.3077	7,281.9194	4,112.9342	5,234.2252	-8.0572	2.3955	1,405.8191	1,212.5235	1,214.2214	20.9713
26	07	3	SAT-M	0.0000	5.1441	4,112.9342	7,068.3187	4,039.2739	-8.9147	2.4374	1,212.5235	1,539.4295	1,176.1194	18.6360
26	07	4	SAT-W	0.0000	4.6496	5,234.2252	4,039.2739	6,965.0847	-7.9351	2.3653	1,214.2214	1,176.1194	1,342.0460	23.0486
26	07	5	Black	0.1003	-0.0175	-8.0572	-8.9147	-7.9351	0.0903	-0.0157	-7.2490	-8.0204	-7.1391	-0.0492
26	07	6	Black*HSGPA	-0.0175	0.0187	2.3955	2.4374	2.3653	-0.0157	0.0184	2.2548	2.2818	2.2267	0.0149
26	07	7	Black*SAT-CR	-8.0549	2.3955	1,405.8191	1,212.5235	1,214.2214	-7.2490	2.2548	1,340.9187	1,140.7165	1,150.3049	6.1619
26	07	8	Black*SAT-M	-8.9121	2.4374	1,212.5235	1,539.4295	1,176.1194	-8.0204	2.2818	1,140.7165	1,459.9808	1,105.4009	6.5575
26	07	9	Black*SAT-W	-7.9328	2.3653	1,214.2214	1,176.1194	1,342.0460	-7.1391	2.2267	1,150.3049	1,105.4009	1,279.0984	5.9380
26	07	10	FYGPA	3.1300	0.0610	20.9713	18.6360	23.0486	-0.0492	0.0149	6.1619	6.5575	5.9380	0.4686

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
26	08	1	HSGPA	0.0000	0.1083	3.7558	5.2772	4.2352	-0.0175	0.0208	2.3169	2.7826	2.3608	0.0511
26	08	2	SAT-CR	0.0000	3.7558	6,983.8060	3,951.1526	4,945.9254	-7.5436	2.3169	1,336.1756	1,087.4526	1,113.2683	17.1388
26	08	3	SAT-M	0.0000	5.2772	3,951.1526	6,743.6172	3,862.3188	-9.0741	2.7826	1,087.4526	1,492.4872	1,108.1690	17.3679
26	08	4	SAT-W	0.0000	4.2352	4,945.9254	3,862.3188	6,748.0238	-7.5108	2.3608	1,113.2683	1,108.1690	1,282.7299	19.9577
26	08	5	Black	0.0989	-0.0175	-7.5436	-9.0741	-7.5108	0.0891	-0.0158	-6.7976	-8.1768	-6.7680	-0.0438
26	08	6	Black*HSGPA	-0.0175	0.0208	2.3169	2.7826	2.3608	-0.0158	0.0205	2.1850	2.6240	2.2295	0.0156
26	08	7	Black*SAT-CR	-7.5412	2.3169	1,336.1756	1,087.4526	1,113.2683	-6.7976	2.1850	1,279.2883	1,019.0231	1,056.6283	5.1701
26	08	8	Black*SAT-M	-9.0712	2.7826	1,087.4526	1,492.4872	1,108.1690	-8.1768	2.6240	1,019.0231	1,410.1738	1,040.0370	5.8772
26	08	9	Black*SAT-W	-7.5084	2.3608	1,113.2683	1,108.1690	1,282.7299	-6.7680	2.2295	1,056.6283	1,040.0370	1,226.3361	5.6520
26	08	10	FYGPA	3.1912	0.0511	17.1388	17.3679	19.9577	-0.0438	0.0156	5.1701	5.8772	5.6520	0.4089
27	06	1	HSGPA	0.0000	0.2125	13.8837	16.1302	14.5998	-0.0349	0.0462	4.2191	5.6163	4.4851	0.0861
27	06	2	SAT-CR	0.0000	13.8837	7,404.9344	4,527.4123	5,385.1081	-5.8251	4.2191	1,083.4787	1,059.1591	973.0500	11.0325
27	06	3	SAT-M	0.0000	16.1302	4,527.4123	8,335.9248	4,403.1161	-7.8892	5.6163	1,059.1591	1,586.5145	1,099.7570	9.7049
27	06	4	SAT-W	0.0000	14.5998	5,385.1081	4,403.1161	7,095.8152	-6.1072	4.4851	973.0500	1,099.7570	1,176.6004	12.7594
27	06	5	Black	0.0823	-0.0349	-5.8251	-7.8892	-6.1072	0.0756	-0.0320	-5.3459	-7.2402	-5.6047	-0.0407
27	06	6	Black*HSGPA	-0.0349	0.0462	4.2191	5.6163	4.4851	-0.0320	0.0449	4.0158	5.3411	4.2721	0.0257
27	06	7	Black*SAT-CR	-5.8208	4.2191	1,083.4787	1,059.1591	973.0500	-5.3459	4.0158	1,049.5718	1,013.2376	937.5014	2.6527
27	06	8	Black*SAT-M	-7.8833	5.6163	1,059.1591	1,586.5145	1,099.7570	-7.2402	5.3411	1,013.2376	1,524.3210	1,051.6121	3.8546
27	06	9	Black*SAT-W	-6.1026	4.4851	973.0500	1,099.7570	1,176.6004	-5.6047	4.2721	937.5014	1,051.6121	1,139.3307	3.0982
27	06	10	FYGPA	3.2354	0.0861	11.0325	9.7049	12.7594	-0.0407	0.0257	2.6527	3.8546	3.0982	0.3498
27	07	1	HSGPA	0.0000	0.1578	6.6189	8.8692	7.5820	-0.0182	0.0206	2.2742	3.0131	2.4007	0.0820
27	07	2	SAT-CR	0.0000	6.6189	6,888.8725	3,360.9328	4,579.6777	-4.9809	2.2742	959.0534	747.3892	834.3444	12.9933
27	07	3	SAT-M	0.0000	8.8692	3,360.9328	6,815.1134	3,010.2514	-5.9896	3.0131	747.3892	1,054.4429	775.8462	8.7197
27	07	4	SAT-W	0.0000	7.5820	4,579.6777	3,010.2514	5,698.3384	-4.8069	2.4007	834.3444	775.8462	958.1161	14.6811
27	07	5	Black	0.0563	-0.0182	-4.9809	-5.9896	-4.8069	0.0532	-0.0172	-4.7006	-5.6525	-4.5363	-0.0221
27	07	6	Black*HSGPA	-0.0182	0.0206	2.2742	3.0131	2.4007	-0.0172	0.0203	2.1836	2.9041	2.3132	0.0154
27	07	7	Black*SAT-CR	-4.9759	2.2742	959.0534	747.3892	834.3444	-4.7006	2.1836	934.2688	717.5856	810.4258	2.4662
27	07	8	Black*SAT-M	-5.9836	3.0131	747.3892	1,054.4429	775.8462	-5.6525	2.9041	717.5856	1,018.6039	747.0841	3.4117
27	07	9	Black*SAT-W	-4.8020	2.4007	834.3444	775.8462	958.1161	-4.5363	2.3132	810.4258	747.0841	935.0334	3.1042
27	07	10	FYGPA	3.2626	0.0820	12.9933	8.7197	14.6811	-0.0221	0.0154	2.4662	3.4117	3.1042	0.3520
27	08	1	HSGPA	0.0000	0.1528	8.4268	10.8032	8.5059	-0.0258	0.0275	2.4019	3.2167	2.9482	0.0657
27	08	2	SAT-CR	0.0000	8.4268	6,863.9970	4,122.4147	4,665.7818	-7.0810	2.4019	1,111.0237	1,082.4158	953.5572	11.3005
27	08	3	SAT-M	0.0000	10.8032	4,122.4147	7,499.8537	3,782.6126	-8.8920	3.2167	1,082.4158	1,649.4964	1,105.7387	10.6277
27	08	4	SAT-W	0.0000	8.5059	4,665.7818	3,782.6126	6,103.3411	-7.0768	2.9482	953.5572	1,105.7387	1,155.1237	13.5208
27	08	5	Black	0.0870	-0.0258	-7.0810	-8.8920	-7.0768	0.0795	-0.0236	-6.4652	-8.1188	-6.4614	-0.0340
27	08	6	Black*HSGPA	-0.0258	0.0275	2.4019	3.2167	2.9482	-0.0236	0.0268	2.2194	2.9875	2.7658	0.0149
27	08	7	Black*SAT-CR	-7.0741	2.4019	1,111.0237	1,082.4158	953.5572	-6.4652	2.2194	1,060.9318	1,019.5124	903.4950	3.8012
27	08	8	Black*SAT-M	-8.8834	3.2167	1,082.4158	1,649.4964	1,105.7387	-8.1188	2.9875	1,019.5124	1,570.5048	1,042.8726	4.1612
27	08	9	Black*SAT-W	-7.0699	2.9482	953.5572	1,105.7387	1,155.1237	-6.4614	2.7658	903.4950	1,042.8726	1,105.0913	4.1337
27	08	10	FYGPA	3.2668	0.0657	11.3005	10.6277	13.5208	-0.0340	0.0149	3.8012	4.1612	4.1337	0.3108

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
28	07	1	HSGPA	0.0000	0.4151	20.6158	24.4562	23.1182	-0.0336	0.0588	2.3573	3.0836	2.2614	0.2666
28	07	2	SAT-CR	0.0000	20.6158	7,331.7397	4,178.9461	4,558.6775	-6.1758	2.3573	1,148.2901	740.8357	584.5903	16.1539
28	07	3	SAT-M	0.0000	24.4562	4,178.9461	8,044.7221	3,995.0067	-8.3377	3.0836	740.8357	1,283.9200	576.9727	26.7872
28	07	4	SAT-W	0.0000	23.1182	4,558.6775	3,995.0067	5,832.0108	-5.1120	2.2614	584.5903	576.9727	584.6320	17.6910
28	07	5	Black	0.1434	-0.0336	-6.1758	-8.3377	-5.1120	0.1232	-0.0287	-5.2905	-7.1425	-4.3792	-0.0423
28	07	6	Black*HSGPA	-0.0334	0.0588	2.3573	3.0836	2.2614	-0.0287	0.0577	2.1508	2.8048	2.0905	0.0280
28	07	7	Black*SAT-CR	-6.1542	2.3573	1,148.2901	740.8357	584.5903	-5.2905	2.1508	1,110.2828	689.5234	553.1299	0.1945
28	07	8	Black*SAT-M	-8.3086	3.0836	740.8357	1,283.9200	576.9727	-7.1425	2.8048	689.5234	1,214.6450	534.4991	2.2746
28	07	9	Black*SAT-W	-5.0941	2.2614	584.5903	576.9727	584.6320	-4.3792	2.0905	553.1299	534.4991	558.5907	1.3404
28	07	10	FYGPA	2.3202	0.2666	16.1539	26.7872	17.6910	-0.0423	0.0280	0.1945	2.2746	1.3404	1.0857
28	08	1	HSGPA	0.0000	0.4523	23.9687	26.6884	23.8922	-0.0274	0.0414	2.8861	3.4398	2.4916	0.2524
28	08	2	SAT-CR	0.0000	23.9687	6,106.0385	4,251.3205	4,400.2853	-5.3351	2.8861	878.3230	931.4367	604.2753	20.7911
28	08	3	SAT-M	0.0000	26.6884	4,251.3205	7,872.0027	3,734.7419	-6.1413	3.4398	931.4367	1,490.0104	748.2073	22.4051
28	08	4	SAT-W	0.0000	23.8922	4,400.2853	3,734.7419	5,694.2216	-4.1506	2.4916	604.2753	748.2073	561.7211	19.7087
28	08	5	Black	0.0909	-0.0274	-5.3351	-6.1413	-4.1506	0.0829	-0.0249	-4.8501	-5.5830	-3.7733	-0.0504
28	08	6	Black*HSGPA	-0.0273	0.0414	2.8861	3.4398	2.4916	-0.0249	0.0407	2.7407	3.2724	2.3784	0.0232
28	08	7	Black*SAT-CR	-5.3157	2.8861	878.3230	931.4367	604.2753	-4.8501	2.7407	849.9632	898.7912	582.2118	5.1770
28	08	8	Black*SAT-M	-6.1190	3.4398	931.4367	1,490.0104	748.2073	-5.5830	3.2724	898.7912	1,452.4315	722.8095	4.4371
28	08	9	Black*SAT-W	-4.1355	2.4916	604.2753	748.2073	561.7211	-3.7733	2.3784	582.2118	722.8095	544.5560	3.4757
28	08	10	FYGPA	2.3813	0.2524	20.7911	22.4051	19.7087	-0.0504	0.0232	5.1770	4.4371	3.4757	1.0775
29	06	1	HSGPA	0.0000	0.3045	12.4792	11.5743	13.8509	-0.0094	0.0134	0.7071	0.7096	0.8695	0.2080
29	06	2	SAT-CR	0.0000	12.4792	7,009.2764	3,725.8198	4,864.4201	-1.4340	0.7071	268.7545	198.4811	185.2522	19.8083
29	06	3	SAT-M	0.0000	11.5743	3,725.8198	6,718.4317	3,510.9984	-1.6619	0.7096	198.4811	288.4179	176.6331	17.6552
29	06	4	SAT-W	0.0000	13.8509	4,864.4201	3,510.9984	6,552.4827	-1.8224	0.8695	185.2522	176.6331	247.5434	22.7638
29	06	5	Black	0.0340	-0.0094	-1.4340	-1.6619	-1.8224	0.0329	-0.0091	-1.3852	-1.6054	-1.7603	-0.0156
29	06	6	Black*HSGPA	-0.0094	0.0134	0.7071	0.7096	0.8695	-0.0091	0.0133	0.6936	0.6940	0.8524	0.0066
29	06	7	Black*SAT-CR	-1.4329	0.7071	268.7545	198.4811	185.2522	-1.3852	0.6936	266.6997	196.0996	182.6409	1.3908
29	06	8	Black*SAT-M	-1.6607	0.7096	198.4811	288.4179	176.6331	-1.6054	0.6940	196.0996	285.6580	173.6067	1.2431
29	06	9	Black*SAT-W	-1.8210	0.8695	185.2522	176.6331	247.5434	-1.7603	0.8524	182.6409	173.6067	244.2248	1.5422
29	06	10	FYGPA	2.8245	0.2080	19.8083	17.6552	22.7638	-0.0156	0.0066	1.3908	1.2431	1.5422	0.7170
29	07	1	HSGPA	0.0000	0.2942	12.2459	11.7480	11.8712	-0.0091	0.0164	0.9307	1.2224	0.9644	0.2064
29	07	2	SAT-CR	0.0000	12.2459	7,266.7700	4,040.2831	5,047.2746	-3.3739	0.9307	561.5508	452.4131	465.3559	18.4076
29	07	3	SAT-M	0.0000	11.7480	4,040.2831	7,088.3395	3,571.9836	-3.7174	1.2224	452.4131	595.6960	433.8167	16.8509
29	07	4	SAT-W	0.0000	11.8712	5,047.2746	3,571.9836	6,296.0774	-3.1256	0.9644	465.3559	433.8167	518.0847	20.1280
29	07	5	Black	0.0492	-0.0091	-3.3739	-3.7174	-3.1256	0.0468	-0.0087	-3.2079	-3.5346	-2.9718	-0.0211
29	07	6	Black*HSGPA	-0.0091	0.0164	0.9307	1.2224	0.9644	-0.0087	0.0164	0.8999	1.1884	0.9358	0.0095
29	07	7	Black*SAT-CR	-3.3717	0.9307	561.5508	452.4131	465.3559	-3.2079	0.8999	550.1750	439.8790	454.8174	2.2492
29	07	8	Black*SAT-M	-3.7150	1.2224	452.4131	595.6960	433.8167	-3.5346	1.1884	439.8790	581.8857	422.2052	2.5999
29	07	9	Black*SAT-W	-3.1235	0.9644	465.3559	433.8167	518.0847	-2.9718	0.9358	454.8174	422.2052	508.3218	2.3791
29	07	10	FYGPA	2.8769	0.2064	18.4076	16.8509	20.1280	-0.0211	0.0095	2.2492	2.5999	2.3791	0.6983

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
29	08	1	HSGPA	0.0000	0.2806	10.7896	10.6924	11.8685	-0.0086	0.0162	0.7675	0.7164	0.7613	0.1815
29	08	2	SAT-CR	0.0000	10.7896	6,811.0353	3,707.7003	4,874.6109	-2.6142	0.7675	515.4533	340.3912	376.5228	17.6279
29	08	3	SAT-M	0.0000	10.6924	3,707.7003	6,825.7192	3,393.6095	-2.7308	0.7164	340.3912	540.8946	336.8630	12.9596
29	08	4	SAT-W	0.0000	11.8685	4,874.6109	3,393.6095	6,230.8811	-2.2708	0.7613	376.5228	336.8630	427.9187	20.8986
29	08	5	Black	0.0484	-0.0086	-2.6142	-2.7308	-2.2708	0.0461	-0.0082	-2.4877	-2.5986	-2.1609	-0.0158
29	08	6	Black*HSGPA	-0.0086	0.0162	0.7675	0.7164	0.7613	-0.0082	0.0161	0.7450	0.6929	0.7418	0.0105
29	08	7	Black*SAT-CR	-2.6127	0.7675	515.4533	340.3912	376.5228	-2.4877	0.7450	508.6232	333.2565	370.5899	1.9066
29	08	8	Black*SAT-M	-2.7292	0.7164	340.3912	540.8946	336.8630	-2.5986	0.6929	333.2565	533.4418	330.6655	1.4127
29	08	9	Black*SAT-W	-2.2695	0.7613	376.5228	336.8630	427.9187	-2.1609	0.7418	370.5899	330.6655	422.7651	1.6491
29	08	10	FYGPA	2.9336	0.1815	17.6279	12.9596	20.8986	-0.0158	0.0105	1.9066	1.4127	1.6491	0.5810
31	07	1	HSGPA	0.0000	0.2450	8.3910	10.8261	8.4914	-0.0335	0.0653	2.1547	3.0039	2.0869	0.1706
31	07	2	SAT-CR	0.0000	8.3910	7,093.3930	3,885.7632	4,709.3703	-13.6671	2.1547	1,864.9148	1,330.9348	1,331.8110	24.3515
31	07	3	SAT-M	0.0000	10.8261	3,885.7632	6,631.0968	3,539.2752	-14.7207	3.0039	1,330.9348	2,077.9237	1,205.8937	25.9730
31	07	4	SAT-W	0.0000	8.4914	4,709.3703	3,539.2752	5,869.1197	-12.7186	2.0869	1,331.8110	1,205.8937	1,755.2047	22.8695
31	07	5	Black	0.2794	-0.0335	-13.6671	-14.7207	-12.7186	0.2015	-0.0242	-9.8482	-10.6074	-9.1647	-0.0926
31	07	6	Black*HSGPA	-0.0335	0.0653	2.1547	3.0039	2.0869	-0.0242	0.0642	1.6969	2.5109	1.6609	0.0374
31	07	7	Black*SAT-CR	-13.6572	2.1547	1,864.9148	1,330.9348	1,331.8110	-9.8482	1.6969	1,678.2611	1,129.8916	1,158.1106	6.7607
31	07	8	Black*SAT-M	-14.7101	3.0039	1,330.9348	2,077.9237	1,205.8937	-10.6074	2.5109	1,129.8916	1,861.3817	1,018.8024	8.5146
31	07	9	Black*SAT-W	-12.7094	2.0869	1,331.8110	1,205.8937	1,755.2047	-9.1647	1.6609	1,158.1106	1,018.8024	1,593.5587	7.6558
31	07	10	FYGPA	2.2891	0.1706	24.3515	25.9730	22.8695	-0.0926	0.0374	6.7607	8.5146	7.6558	0.9171
31	08	1	HSGPA	0.0000	0.2495	10.4964	14.1866	12.7114	-0.0460	0.0805	3.4660	4.7533	4.3307	0.1822
31	08	2	SAT-CR	0.0000	10.4964	7,140.1857	4,411.6063	5,309.1387	-15.7040	3.4660	2,357.4278	1,503.2131	1,647.7241	25.1987
31	08	3	SAT-M	0.0000	14.1866	4,411.6063	7,131.6652	4,210.5221	-16.7326	4.7533	1,503.2131	2,459.7103	1,408.5831	27.3875
31	08	4	SAT-W	0.0000	12.7114	5,309.1387	4,210.5221	6,750.2895	-13.3318	4.3307	1,647.7241	1,408.5831	2,068.0985	27.3316
31	08	5	Black	0.3304	-0.0460	-15.7040	-16.7326	-13.3318	0.2214	-0.0308	-10.5160	-11.2048	-8.9275	-0.1120
31	08	6	Black*HSGPA	-0.0460	0.0805	3.4660	4.7533	4.3307	-0.0308	0.0784	2.7433	3.9833	3.7172	0.0405
31	08	7	Black*SAT-CR	-15.6933	3.4660	2,357.4278	1,503.2131	1,647.7241	-10.5160	2.7433	2,110.9798	1,240.6237	1,438.5041	8.1207
31	08	8	Black*SAT-M	-16.7211	4.7533	1,503.2131	2,459.7103	1,408.5831	-11.2048	3.9833	1,240.6237	2,179.9222	1,185.6599	9.6891
31	08	9	Black*SAT-W	-13.3227	4.3307	1,647.7241	1,408.5831	2,068.0985	-8.9275	3.7172	1,438.5041	1,185.6599	1,890.4829	8.5316
31	08	10	FYGPA	2.3640	0.1822	25.1987	27.3875	27.3316	-0.1120	0.0405	8.1207	9.6891	8.5316	0.8410
33	06	1	HSGPA	0.0000	0.1778	10.6460	11.9433	11.2564	-0.0454	0.0606	4.9960	5.7276	4.8122	0.1181
33	06	2	SAT-CR	0.0000	10.6460	7,604.8850	4,784.4524	5,543.1167	-18.1524	4.9960	2,803.9827	2,473.2113	2,245.7516	22.8062
33	06	3	SAT-M	0.0000	11.9433	4,784.4524	8,037.5396	4,585.2837	-22.1576	5.7276	2,473.2113	3,520.2271	2,347.3854	20.8135
33	06	4	SAT-W	0.0000	11.2564	5,543.1167	4,585.2837	7,207.0070	-17.1602	4.8122	2,245.7516	2,347.3854	2,626.0264	23.9825
33	06	5	Black	0.2304	-0.0454	-18.1524	-22.1576	-17.1602	0.1774	-0.0350	-13.9693	-17.0516	-13.2058	-0.0995
33	06	6	Black*HSGPA	-0.0454	0.0606	4.9960	5.7276	4.8122	-0.0350	0.0586	4.1714	4.7210	4.0327	0.0414
33	06	7	Black*SAT-CR	-18.1447	4.9960	2,803.9827	2,473.2113	2,245.7516	-13.9693	4.1714	2,474.6133	2,071.1681	1,934.3850	10.7871
33	06	8	Black*SAT-M	-22.1482	5.7276	2,473.2113	3,520.2271	2,347.3854	-17.0516	4.7210	2,071.1681	3,029.4750	1,967.3172	11.8803
33	06	9	Black*SAT-W	-17.1529	4.8122	2,245.7516	2,347.3854	2,626.0264	-13.2058	4.0327	1,934.3850	1,967.3172	2,331.6786	9.9880
33	06	10	FYGPA	3.0933	0.1181	22.8062	20.8135	23.9825	-0.0995	0.0414	10.7871	11.8803	9.9880	0.4022

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
34	06	1	HSGPA	0.0000	0.2264	7.8526	9.8125	10.4927	-0.0184	0.0197	0.6352	1.2052	0.9471	0.1537
34	06	2	SAT-CR	0.0000	7.8526	6,071.5654	2,719.2215	4,175.3018	-2.1362	0.6352	338.7896	254.9983	273.9561	10.5659
34	06	3	SAT-M	0.0000	9.8125	2,719.2215	5,592.3912	2,528.4793	-3.5368	1.2052	254.9983	541.6455	265.2156	13.2987
34	06	4	SAT-W	0.0000	10.4927	4,175.3018	2,528.4793	6,047.7934	-2.2520	0.9471	273.9561	265.2156	392.3992	15.2327
34	06	5	Black	0.0562	-0.0184	-2.1362	-3.5368	-2.2520	0.0531	-0.0174	-2.0161	-3.3379	-2.1254	-0.0221
34	06	6	Black*HSGPA	-0.0184	0.0197	0.6352	1.2052	0.9471	-0.0174	0.0193	0.5959	1.1401	0.9056	0.0092
34	06	7	Black*SAT-CR	-2.1347	0.6352	338.7896	254.9983	273.9561	-2.0161	0.5959	334.2296	247.4485	269.1487	1.4054
34	06	8	Black*SAT-M	-3.5343	1.2052	254.9983	541.6455	265.2156	-3.3379	1.1401	247.4485	529.1455	257.2563	2.0682
34	06	9	Black*SAT-W	-2.2505	0.9471	273.9561	265.2156	392.3992	-2.1254	0.9056	269.1487	257.2563	387.3310	1.6100
34	06	10	FYGPA	2.9764	0.1537	10.5659	13.2987	15.2327	-0.0221	0.0092	1.4054	2.0682	1.6100	0.4685
34	07	1	HSGPA	0.0000	0.2257	7.8351	7.4694	8.5974	-0.0156	0.0217	0.8692	0.7997	0.8262	0.1494
34	07	2	SAT-CR	0.0000	7.8351	6,458.3043	3,244.5590	4,358.3801	-2.5405	0.8692	431.3323	321.4643	315.7322	11.4264
34	07	3	SAT-M	0.0000	7.4694	3,244.5590	5,981.7949	2,724.0561	-3.7668	0.7997	321.4643	542.6644	301.7835	13.1430
34	07	4	SAT-W	0.0000	8.5974	4,358.3801	2,724.0561	6,202.1992	-2.2517	0.8262	315.7322	301.7835	429.9153	16.0068
34	07	5	Black	0.0618	-0.0156	-2.5405	-3.7668	-2.2517	0.0580	-0.0146	-2.3836	-3.5342	-2.1126	-0.0264
34	07	6	Black*HSGPA	-0.0156	0.0217	0.8692	0.7997	0.8262	-0.0146	0.0215	0.8297	0.7411	0.7912	0.0146
34	07	7	Black*SAT-CR	-2.5387	0.8692	431.3323	321.4643	315.7322	-2.3836	0.8297	424.8826	311.9013	310.0157	0.9501
34	07	8	Black*SAT-M	-3.7642	0.7997	321.4643	542.6644	301.7835	-3.5342	0.7411	311.9013	528.4851	293.3075	1.6713
34	07	9	Black*SAT-W	-2.2502	0.8262	315.7322	301.7835	429.9153	-2.1126	0.7912	310.0157	293.3075	424.8486	1.2019
34	07	10	FYGPA	3.0132	0.1494	11.4264	13.1430	16.0068	-0.0264	0.0146	0.9501	1.6713	1.2019	0.4198
34	08	1	HSGPA	0.0000	0.2159	7.3775	8.6687	9.3154	-0.0131	0.0225	0.9401	1.2852	1.2112	0.1490
34	08	2	SAT-CR	0.0000	7.3775	6,976.5768	3,373.8007	4,975.0475	-4.5393	0.9401	713.4357	408.0793	539.8285	15.4569
34	08	3	SAT-M	0.0000	8.6687	3,373.8007	6,280.6821	3,315.2743	-5.1065	1.2852	408.0793	653.9514	395.8046	15.3477
34	08	4	SAT-W	0.0000	9.3154	4,975.0475	3,315.2743	6,889.4565	-4.1328	1.2112	539.8285	395.8046	674.8512	19.3690
34	08	5	Black	0.0724	-0.0131	-4.5393	-5.1065	-4.1328	0.0672	-0.0122	-4.2105	-4.7366	-3.8334	-0.0337
34	08	6	Black*HSGPA	-0.0131	0.0225	0.9401	1.2852	1.2112	-0.0122	0.0224	0.8805	1.2182	1.1569	0.0143
34	08	7	Black*SAT-CR	-4.5364	0.9401	713.4357	408.0793	539.8285	-4.2105	0.8805	692.8436	384.9142	521.0806	2.0682
34	08	8	Black*SAT-M	-5.1032	1.2852	408.0793	653.9514	395.8046	-4.7366	1.2182	384.9142	627.8919	374.7142	2.9642
34	08	9	Black*SAT-W	-4.1301	1.2112	539.8285	395.8046	674.8512	-3.8334	1.1569	521.0806	374.7142	657.7825	2.6216
34	08	10	FYGPA	2.9915	0.1490	15.4569	15.3477	19.3690	-0.0337	0.0143	2.0682	2.9642	2.6216	0.4803
35	06	1	HSGPA	0.0000	0.1311	4.1181	5.4594	4.8379	-0.0170	0.0178	1.5180	1.6206	1.6762	0.0642
35	06	2	SAT-CR	0.0000	4.1181	4,360.6705	1,604.0186	2,953.0296	-3.9265	1.5180	690.4162	497.3811	555.3583	9.7755
35	06	3	SAT-M	0.0000	5.4594	1,604.0186	4,447.1860	1,824.2150	-5.6337	1.6206	497.3811	763.0038	561.3457	10.2663
35	06	4	SAT-W	0.0000	4.8379	2,953.0296	1,824.2150	5,185.3318	-4.3476	1.6762	555.3583	561.3457	693.4497	11.4816
35	06	5	Black	0.0599	-0.0170	-3.9265	-5.6337	-4.3476	0.0564	-0.0159	-3.6913	-5.2963	-4.0872	-0.0251
35	06	6	Black*HSGPA	-0.0169	0.0178	1.5180	1.6206	1.6762	-0.0159	0.0175	1.4515	1.5252	1.6026	0.0125
35	06	7	Black*SAT-CR	-3.9213	1.5180	690.4162	497.3811	555.3583	-3.6913	1.4515	675.0193	475.2895	538.3097	2.6131
35	06	8	Black*SAT-M	-5.6264	1.6206	497.3811	763.0038	561.3457	-5.2963	1.5252	475.2895	731.3067	536.8843	2.5777
35	06	9	Black*SAT-W	-4.3420	1.6762	555.3583	561.3457	693.4497	-4.0872	1.6026	538.3097	536.8843	674.5724	2.4658
35	06	10	FYGPA	3.1992	0.0642	9.7755	10.2663	11.4816	-0.0251	0.0125	2.6131	2.5777	2.4658	0.2486



## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
35	07	1	HSGPA	0.0000	0.1438	3.1640	3.6388	4.5699	-0.0116	0.0082	0.4274	1.1709	0.5916	0.0694
35	07	2	SAT-CR	0.0000	3.1640	4,606.4204	1,784.1261	2,988.1767	-3.4440	0.4274	425.0997	432.2742	421.7478	8.7560
35	07	3	SAT-M	0.0000	3.6388	1,784.1261	4,433.3033	1,666.3422	-4.7500	1.1709	432.2742	728.0385	461.6202	10.7492
35	07	4	SAT-W	0.0000	4.5699	2,988.1767	1,666.3422	5,328.5689	-3.5567	0.5916	421.7478	461.6202	540.4793	11.8829
35	07	5	Black	0.0469	-0.0116	-3.4440	-4.7500	-3.5567	0.0447	-0.0110	-3.2826	-4.5274	-3.3900	-0.0287
35	07	6	Black*HSGPA	-0.0116	0.0082	0.4274	1.1709	0.5916	-0.0110	0.0081	0.3876	1.1160	0.5505	0.0069
35	07	7	Black*SAT-CR	-3.4395	0.4274	425.0997	432.2742	421.7478	-3.2826	0.3876	413.2539	415.9363	409.5145	2.3747
35	07	8	Black*SAT-M	-4.7439	1.1709	432.2742	728.0385	461.6202	-4.5274	1.1160	415.9363	705.5050	444.7479	3.2576
35	07	9	Black*SAT-W	-3.5520	0.5916	421.7478	461.6202	540.4793	-3.3900	0.5505	409.5145	444.7479	527.8458	2.7847
35	07	10	FYGPA	3.1154	0.0694	8.7560	10.7492	11.8829	-0.0287	0.0069	2.3747	3.2576	2.7847	0.2412
35	08	1	HSGPA	0.0000	0.1377	4.7754	5.0191	4.3278	-0.0106	0.0126	0.5197	1.2201	0.7596	0.0767
35	08	2	SAT-CR	0.0000	4.7754	4,907.0720	2,252.4422	2,921.5218	-4.9348	0.5197	737.4571	616.5693	588.6476	11.2795
35	08	3	SAT-M	0.0000	5.0191	2,252.4422	5,125.3672	1,929.5038	-6.2291	1.2201	616.5693	862.2594	613.4980	11.6655
35	08	4	SAT-W	0.0000	4.3278	2,921.5218	1,929.5038	5,051.7163	-4.5488	0.7596	588.6476	613.4980	599.8599	11.7713
35	08	5	Black	0.0583	-0.0106	-4.9348	-6.2291	-4.5488	0.0550	-0.0100	-4.6471	-5.8660	-4.2836	-0.0313
35	08	6	Black*HSGPA	-0.0106	0.0126	0.5197	1.2201	0.7596	-0.0100	0.0125	0.4677	1.1544	0.7116	0.0084
35	08	7	Black*SAT-CR	-4.9274	0.5197	737.4571	616.5693	588.6476	-4.6471	0.4677	713.1410	585.8758	566.2336	3.6647
35	08	8	Black*SAT-M	-6.2198	1.2201	616.5693	862.2594	613.4980	-5.8660	1.1544	585.8758	823.5159	585.2054	3.9587
35	08	9	Black*SAT-W	-4.5420	0.7596	588.6476	613.4980	599.8599	-4.2836	0.7116	566.2336	585.2054	579.1991	3.1145
35	08	10	FYGPA	3.1788	0.0767	11.2795	11.6655	11.7713	-0.0313	0.0084	3.6647	3.9587	3.1145	0.2622
40	06	1	HSGPA	0.0000	0.1917	9.1691	7.9841	9.0177	-0.0139	0.0232	1.3316	1.3317	1.1734	0.0978
40	06	2	SAT-CR	0.0000	9.1691	5,891.1943	3,026.4957	4,155.4144	-5.8136	1.3316	1,086.4284	767.4490	862.7071	15.6207
40	06	3	SAT-M	0.0000	7.9841	3,026.4957	5,892.6705	2,990.8507	-7.5032	1.3317	767.4490	1,110.7539	736.5215	12.3806
40	06	4	SAT-W	0.0000	9.0177	4,155.4144	2,990.8507	6,209.6351	-6.5655	1.1734	862.7071	736.5215	1,026.1851	17.3260
40	06	5	Black	0.1006	-0.0139	-5.8136	-7.5032	-6.5655	0.0906	-0.0125	-5.2285	-6.7481	-5.9047	-0.0328
40	06	6	Black*HSGPA	-0.0139	0.0232	1.3316	1.3317	1.1734	-0.0125	0.0230	1.2508	1.2274	1.0821	0.0100
40	06	7	Black*SAT-CR	-5.8105	1.3316	1,086.4284	767.4490	862.7071	-5.2285	1.2508	1,052.6483	723.8514	824.5583	3.4827
40	06	8	Black*SAT-M	-7.4992	1.3317	767.4490	1,110.7539	736.5215	-6.7481	1.2274	723.8514	1,054.4856	687.2856	3.4120
40	06	9	Black*SAT-W	-6.5620	1.1734	862.7071	736.5215	1,026.1851	-5.9047	1.0821	824.5583	687.2856	983.1026	3.3837
40	06	10	FYGPA	3.1682	0.0978	15.6207	12.3806	17.3260	-0.0328	0.0100	3.4827	3.4120	3.3837	0.3063
40	07	1	HSGPA	0.0000	0.1882	11.4451	11.6805	11.7611	-0.0240	0.0301	3.0191	3.0079	3.5385	0.0999
40	07	2	SAT-CR	0.0000	11.4451	6,282.7569	3,449.9684	4,834.9166	-7.1193	3.0191	1,226.8379	961.3684	1,131.4548	15.7293
40	07	3	SAT-M	0.0000	11.6805	3,449.9684	6,735.9792	3,538.3626	-8.3452	3.0079	961.3684	1,405.9672	1,023.6206	13.7128
40	07	4	SAT-W	0.0000	11.7611	4,834.9166	3,538.3626	7,014.5150	-7.8308	3.5385	1,131.4548	1,023.6206	1,355.2632	17.6926
40	07	5	Black	0.1059	-0.0240	-7.1193	-8.3452	-7.8308	0.0948	-0.0215	-6.3651	-7.4611	-7.0013	-0.0398
40	07	6	Black*HSGPA	-0.0240	0.0301	3.0191	3.0079	3.5385	-0.0215	0.0295	2.8480	2.8074	3.3504	0.0193
40	07	7	Black*SAT-CR	-7.1155	3.0191	1,226.8379	961.3684	1,131.4548	-6.3651	2.8480	1,176.1811	901.9885	1,075.7347	4.6395
40	07	8	Black*SAT-M	-8.3407	3.0079	961.3684	1,405.9672	1,023.6206	-7.4611	2.8074	901.9885	1,336.3623	958.3057	4.1586
40	07	9	Black*SAT-W	-7.8267	3.5385	1,131.4548	1,023.6206	1,355.2632	-7.0013	3.3504	1,075.7347	958.3057	1,293.9737	5.3738
40	07	10	FYGPA	3.2094	0.0999	15.7293	13.7128	17.6926	-0.0398	0.0193	4.6395	4.1586	5.3738	0.2875

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
40	08	1	HSGPA	0.0000	0.1729	7.4363	8.1166	7.1055	-0.0172	0.0256	1.9532	2.2152	2.2087	0.0885
40	08	2	SAT-CR	0.0000	7.4363	5,948.6451	2,991.6758	4,382.5313	-6.4924	1.9532	1,099.9309	814.5999	1,001.6012	13.7277
40	08	3	SAT-M	0.0000	8.1166	2,991.6758	6,045.5289	2,993.3888	-7.9634	2.2152	814.5999	1,266.4243	905.7295	11.1210
40	08	4	SAT-W	0.0000	7.1055	4,382.5313	2,993.3888	6,394.8177	-7.8555	2.2087	1,001.6012	905.7295	1,289.3074	14.5764
40	08	5	Black	0.1066	-0.0172	-6.4924	-7.9634	-7.8555	0.0953	-0.0154	-5.8005	-7.1148	-7.0184	-0.0397
40	08	6	Black*HSGPA	-0.0172	0.0256	1.9532	2.2152	2.2087	-0.0154	0.0253	1.8416	2.0782	2.0736	0.0160
40	08	7	Black*SAT-CR	-6.4887	1.9532	1,099.9309	814.5999	1,001.6012	-5.8005	1.8416	1,057.8037	762.9279	950.6291	3.5459
40	08	8	Black*SAT-M	-7.9589	2.2152	814.5999	1,266.4243	905.7295	-7.1148	2.0782	762.9279	1,203.0449	843.2086	3.7298
40	08	9	Black*SAT-W	-7.8511	2.2087	1,001.6012	905.7295	1,289.3074	-7.0184	2.0736	950.6291	843.2086	1,227.6333	4.1275
40	08	10	FYGPA	3.1566	0.0885	13.7277	11.1210	14.5764	-0.0397	0.0160	3.5459	3.7298	4.1275	0.3027
41	07	1	HSGPA	0.0000	0.1851	4.2236	5.3394	5.8658	-0.0101	0.0223	0.7817	0.9074	0.8763	0.0779
41	07	2	SAT-CR	0.0000	4.2236	5,061.9906	2,196.6281	3,331.5192	-4.5077	0.7817	652.5329	473.3609	526.0235	10.2670
41	07	3	SAT-M	0.0000	5.3394	2,196.6281	4,851.0065	2,006.1024	-5.1542	0.9074	473.3609	743.5219	469.3795	8.4339
41	07	4	SAT-W	0.0000	5.8658	3,331.5192	2,006.1024	5,362.5996	-4.6442	0.8763	526.0235	469.3795	739.7715	12.7340
41	07	5	Black	0.0943	-0.0101	-4.5077	-5.1542	-4.6442	0.0854	-0.0091	-4.0827	-4.6683	-4.2064	-0.0291
41	07	6	Black*HSGPA	-0.0101	0.0223	0.7817	0.9074	0.8763	-0.0091	0.0222	0.7362	0.8554	0.8294	0.0109
41	07	7	Black*SAT-CR	-4.5066	0.7817	652.5329	473.3609	526.0235	-4.0827	0.7362	632.2183	450.1327	505.0936	2.1935
41	07	8	Black*SAT-M	-5.1530	0.9074	473.3609	743.5219	469.3795	-4.6683	0.8554	450.1327	716.9622	445.4477	2.3416
41	07	9	Black*SAT-W	-4.6431	0.8763	526.0235	469.3795	739.7715	-4.2064	0.8294	505.0936	445.4477	718.2076	2.3434
41	07	10	FYGPA	3.1242	0.0779	10.2670	8.4339	12.7340	-0.0291	0.0109	2.1935	2.3416	2.3434	0.3386
41	08	1	HSGPA	0.0000	0.1686	4.5282	5.0866	5.1107	-0.0163	0.0258	1.5701	1.8573	1.7134	0.0700
41	08	2	SAT-CR	0.0000	4.5282	5,139.7036	2,322.2614	3,466.5430	-5.1505	1.5701	869.6308	642.8209	663.4811	10.0314
41	08	3	SAT-M	0.0000	5.0866	2,322.2614	4,912.7141	2,246.4288	-6.4891	1.8573	642.8209	947.3048	620.0727	8.4914
41	08	4	SAT-W	0.0000	5.1107	3,466.5430	2,246.4288	5,365.9796	-4.9419	1.7134	663.4811	620.0727	808.2558	11.5577
41	08	5	Black	0.1019	-0.0163	-5.1505	-6.4891	-4.9419	0.0916	-0.0146	-4.6255	-5.8276	-4.4381	-0.0282
41	08	6	Black*HSGPA	-0.0163	0.0258	1.5701	1.8573	1.7134	-0.0146	0.0256	1.4862	1.7516	1.6329	0.0155
41	08	7	Black*SAT-CR	-5.1490	1.5701	869.6308	642.8209	663.4811	-4.6255	1.4862	843.1110	609.4086	638.0355	2.7287
41	08	8	Black*SAT-M	-6.4872	1.8573	642.8209	947.3048	620.0727	-5.8276	1.7516	609.4086	905.2086	588.0137	2.9377
41	08	9	Black*SAT-W	-4.9404	1.7134	663.4811	620.0727	808.2558	-4.4381	1.6329	638.0355	588.0137	783.8408	2.4905
41	08	10	FYGPA	3.1903	0.0700	10.0314	8.4914	11.5577	-0.0282	0.0155	2.7287	2.9377	2.4905	0.3035
42	07	1	HSGPA	0.0000	0.0994	2.1969	0.9304	0.7601	-0.0054	0.0154	0.0691	0.4077	-0.1934	0.0267
42	07	2	SAT-CR	0.0000	2.1969	4,618.2405	1,526.0200	2,558.0054	-7.0019	0.0691	928.9892	761.0647	774.0043	6.9707
42	07	3	SAT-M	0.0000	0.9304	1,526.0200	4,117.9703	1,540.7174	-8.9252	0.4077	761.0647	1,216.1188	818.6180	6.3970
42	07	4	SAT-W	0.0000	0.7601	2,558.0054	1,540.7174	4,582.0700	-6.8694	-0.1934	774.0043	818.6180	1,113.3624	5.9771
42	07	5	Black	0.1327	-0.0054	-7.0019	-8.9252	-6.8694	0.1153	-0.0046	-6.0729	-7.7410	-5.9579	-0.0439
42	07	6	Black*HSGPA	-0.0053	0.0154	0.0691	0.4077	-0.1934	-0.0046	0.0153	0.0317	0.3600	-0.2301	0.0061
42	07	7	Black*SAT-CR	-6.9906	0.0691	928.9892	761.0647	774.0043	-6.0729	0.0317	880.0414	698.6720	725.9831	2.8084
42	07	8	Black*SAT-M	-8.9108	0.4077	761.0647	1,216.1188	818.6180	-7.7410	0.3600	698.6720	1,136.5882	757.4063	4.3680
42	07	9	Black*SAT-W	-6.8583	-0.1934	774.0043	818.6180	1,113.3624	-5.9579	-0.2301	725.9831	757.4063	1,066.2502	3.1138
42	07	10	FYGPA	3.4513	0.0267	6.9707	6.3970	5.9771	-0.0439	0.0061	2.8084	4.3680	3.1138	0.1542

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
42	08	1	HSGPA	0.0000	0.0806	1.7867	1.3184	1.8224	-0.0067	0.0165	-0.1053	0.1661	0.5470	0.0208
42	08	2	SAT-CR	0.0000	1.7867	4,481.3300	1,277.1946	2,420.8259	-8.3025	-0.1053	919.4391	552.8000	712.7086	6.8456
42	08	3	SAT-M	0.0000	1.3184	1,277.1946	4,019.2999	1,844.3221	-10.2950	0.1661	552.8000	1,029.7700	746.3485	6.5033
42	08	4	SAT-W	0.0000	1.8224	2,420.8259	1,844.3221	4,560.5277	-9.6530	0.5470	712.7086	746.3485	1,115.1333	9.6155
42	08	5	Black	0.1538	-0.0067	-8.3025	-10.2950	-9.6530	0.1304	-0.0056	-7.0252	-8.7111	-8.1679	-0.0490
42	08	6	Black*HSGPA	-0.0067	0.0165	-0.1053	0.1661	0.5470	-0.0056	0.0165	-0.1606	0.0975	0.4827	0.0016
42	08	7	Black*SAT-CR	-8.2869	-0.1053	919.4391	552.8000	712.7086	-7.0252	-0.1606	850.6371	467.4865	632.7152	3.7847
42	08	8	Black*SAT-M	-10.2757	0.1661	552.8000	1,029.7700	746.3485	-8.7111	0.0975	467.4865	923.9825	647.1578	3.3730
42	08	9	Black*SAT-W	-9.6349	0.5470	712.7086	746.3485	1,115.1333	-8.1679	0.4827	632.7152	647.1578	1,022.1281	4.3577
42	08	10	FYGPA	3.4995	0.0208	6.8456	6.5033	9.6155	-0.0490	0.0016	3.7847	3.3730	4.3577	0.1365
43	06	1	HSGPA	0.0000	0.1327	9.4937	9.5527	9.4299	-0.0260	0.0215	1.5139	2.3625	2.0161	0.0612
43	06	2	SAT-CR	0.0000	9.4937	5,319.5517	2,927.2338	3,438.3022	-5.4701	1.5139	680.3494	721.1058	707.4463	15.3607
43	06	3	SAT-M	0.0000	9.5527	2,927.2338	6,327.0958	3,258.3270	-11.7982	2.3625	721.1058	2,003.4986	1,213.3642	14.3635
43	06	4	SAT-W	0.0000	9.4299	3,438.3022	3,258.3270	5,566.2781	-8.4084	2.0161	707.4463	1,213.3642	1,283.0715	14.0807
43	06	5	Black	0.1124	-0.0260	-5.4701	-11.7982	-8.4084	0.1001	-0.0231	-4.8555	-10.4725	-7.4636	-0.0512
43	06	6	Black*HSGPA	-0.0259	0.0215	1.5139	2.3625	2.0161	-0.0231	0.0208	1.3722	2.0568	1.7982	0.0181
43	06	7	Black*SAT-CR	-5.4496	1.5139	680.3494	721.1058	707.4463	-4.8555	1.3722	650.5391	656.8099	661.6235	3.3660
43	06	8	Black*SAT-M	-11.7540	2.3625	721.1058	2,003.4986	1,213.3642	-10.4725	2.0568	656.8099	1,864.8230	1,114.5322	5.0092
43	06	9	Black*SAT-W	-8.3769	2.0161	707.4463	1,213.3642	1,283.0715	-7.4636	1.7982	661.6235	1,114.5322	1,212.6354	4.8862
43	06	10	FYGPA	3.2891	0.0612	15.3607	14.3635	14.0807	-0.0512	0.0181	3.3660	5.0092	4.8862	0.1824
43	07	1	HSGPA	0.0000	0.1342	8.7459	6.9111	6.8737	-0.0318	0.0281	2.6823	2.7712	2.0560	0.0735
43	07	2	SAT-CR	0.0000	8.7459	4,658.5297	1,940.3504	3,083.3365	-6.8697	2.6823	993.4196	742.9856	858.7156	13.6404
43	07	3	SAT-M	0.0000	6.9111	1,940.3504	5,142.1409	2,157.0991	-9.6623	2.7712	742.9856	1,409.7281	726.6433	14.3240
43	07	4	SAT-W	0.0000	6.8737	3,083.3365	2,157.0991	5,005.9143	-6.5071	2.0560	858.7156	726.6433	1,213.0691	13.1654
43	07	5	Black	0.1205	-0.0318	-6.8697	-9.6623	-6.5071	0.1063	-0.0280	-6.0417	-8.4978	-5.7229	-0.0458
43	07	6	Black*HSGPA	-0.0317	0.0281	2.6823	2.7712	2.0560	-0.0280	0.0271	2.4647	2.4651	1.8499	0.0201
43	07	7	Black*SAT-CR	-6.8473	2.6823	993.4196	742.9856	858.7156	-6.0417	2.4647	946.3811	676.8247	814.1596	4.3983
43	07	8	Black*SAT-M	-9.6309	2.7712	742.9856	1,409.7281	726.6433	-8.4978	2.4651	676.8247	1,316.6713	663.9743	4.1242
43	07	9	Black*SAT-W	-6.4859	2.0560	858.7156	726.6433	1,213.0691	-5.7229	1.8499	814.1596	663.9743	1,170.8647	3.2714
43	07	10	FYGPA	3.2901	0.0735	13.6404	14.3240	13.1654	-0.0458	0.0201	4.3983	4.1242	3.2714	0.1786
43	08	1	HSGPA	0.0000	0.1365	7.4634	7.0055	6.7949	-0.0229	0.0364	1.1818	2.5338	2.5736	0.0619
43	08	2	SAT-CR	0.0000	7.4634	5,341.1168	2,632.5339	3,541.9792	-11.8650	1.1818	1,580.7028	1,198.6479	1,619.5108	12.3377
43	08	3	SAT-M	0.0000	7.0055	2,632.5339	5,343.5201	2,992.2641	-15.2888	2.5338	1,198.6479	2,053.3171	1,558.8224	14.4615
43	08	4	SAT-W	0.0000	6.7949	3,541.9792	2,992.2641	5,643.8879	-14.6004	2.5736	1,619.5108	1,558.8224	2,109.6766	15.7926
43	08	5	Black	0.1726	-0.0229	-11.8650	-15.2888	-14.6004	0.1435	-0.0190	-9.8172	-12.6501	-12.0805	-0.0686
43	08	6	Black*HSGPA	-0.0228	0.0364	1.1818	2.5338	2.5736	-0.0190	0.0359	0.9109	2.1848	2.2402	0.0237
43	08	7	Black*SAT-CR	-11.8047	1.1818	1,580.7028	1,198.6479	1,619.5108	-9.8172	0.9109	1,440.6401	1,018.1680	1,447.1571	5.2910
43	08	8	Black*SAT-M	-15.2112	2.5338	1,198.6479	2,053.3171	1,558.8224	-12.6501	2.1848	1,018.1680	1,820.7572	1,336.7336	7.3997
43	08	9	Black*SAT-W	-14.5263	2.5736	1,619.5108	1,558.8224	2,109.6766	-12.0805	2.2402	1,447.1571	1,336.7336	1,897.5874	7.3435
43	08	10	FYGPA	3.3191	0.0619	12.3377	14.4615	15.7926	-0.0686	0.0237	5.2910	7.3997	7.3435	0.1474

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
44	06	1	HSGPA	0.0000	0.3418	14.9840	15.7004	14.1328	-0.0181	0.0385	0.7816	1.5607	1.5183	0.2209
44	06	2	SAT-CR	0.0000	14.9840	6,757.9350	3,539.2402	4,724.5895	-4.7684	0.7816	471.2949	365.9693	536.9791	23.6957
44	06	3	SAT-M	0.0000	15.7004	3,539.2402	7,439.9020	3,508.3088	-6.0637	1.5607	365.9693	935.0567	526.8049	20.5696
44	06	4	SAT-W	0.0000	14.1328	4,724.5895	3,508.3088	6,298.6703	-6.6973	1.5183	536.9791	526.8049	881.6909	23.0372
44	06	5	Black	0.0781	-0.0181	-4.7684	-6.0637	-6.6973	0.0723	-0.0167	-4.3959	-5.5900	-6.1741	-0.0361
44	06	6	Black*HSGPA	-0.0180	0.0385	0.7816	1.5607	1.5183	-0.0167	0.0382	0.6958	1.4516	1.3977	0.0285
44	06	7	Black*SAT-CR	-4.7498	0.7816	471.2949	365.9693	536.9791	-4.3959	0.6958	448.6463	337.1681	505.1685	2.3020
44	06	8	Black*SAT-M	-6.0400	1.5607	365.9693	935.0567	526.8049	-5.5900	1.4516	337.1681	898.4315	486.3529	3.1561
44	06	9	Black*SAT-W	-6.6711	1.5183	536.9791	526.8049	881.6909	-6.1741	1.3977	505.1685	486.3529	837.0122	3.8323
44	06	10	FYGPA	2.8279	0.2209	23.6957	20.5696	23.0372	-0.0361	0.0285	2.3020	3.1561	3.8323	0.4991
45	06	1	HSGPA	0.0000	0.2623	5.1412	7.5604	7.5265	0.0025	0.0196	-0.1278	-0.0056	0.1050	0.1131
45	06	2	SAT-CR	0.0000	5.1412	4,591.3001	1,827.6826	2,948.7309	-3.2166	-0.1278	458.9237	195.8411	292.6459	8.8237
45	06	3	SAT-M	0.0000	7.5604	1,827.6826	4,912.1502	1,734.0727	-3.5221	-0.0056	195.8411	428.9503	225.8768	9.8091
45	06	4	SAT-W	0.0000	7.5265	2,948.7309	1,734.0727	4,606.6958	-3.5336	0.1050	292.6459	225.8768	484.1549	13.0196
45	06	5	Black	0.0975	0.0025	-3.2166	-3.5221	-3.5336	0.0881	0.0023	-2.9031	-3.1789	-3.1892	-0.0287
45	06	6	Black*HSGPA	0.0025	0.0196	-0.1278	-0.0056	0.1050	0.0023	0.0196	-0.1197	0.0032	0.1138	0.0073
45	06	7	Black*SAT-CR	-3.2135	-0.1278	458.9237	195.8411	292.6459	-2.9031	-0.1197	448.5870	184.5227	281.2907	0.3420
45	06	8	Black*SAT-M	-3.5187	-0.0056	195.8411	428.9503	225.8768	-3.1789	0.0032	184.5227	416.5569	213.4431	1.5666
45	06	9	Black*SAT-W	-3.5301	0.1050	292.6459	225.8768	484.1549	-3.1892	0.1138	281.2907	213.4431	471.6808	1.2242
45	06	10	FYGPA	2.9435	0.1131	8.8237	9.8091	13.0196	-0.0287	0.0073	0.3420	1.5666	1.2242	0.5533
45	07	1	HSGPA	0.0000	0.2694	5.0810	9.2306	6.2023	0.0035	0.0372	0.1393	0.1112	0.3466	0.1476
45	07	2	SAT-CR	0.0000	5.0810	4,454.5864	1,698.5413	2,859.5134	-3.5993	0.1393	549.4510	242.3377	417.4290	10.9267
45	07	3	SAT-M	0.0000	9.2306	1,698.5413	4,548.8167	1,749.5216	-4.0398	0.1112	242.3377	441.2039	280.7247	8.8361
45	07	4	SAT-W	0.0000	6.2023	2,859.5134	1,749.5216	4,556.4248	-4.5254	0.3466	417.4290	280.7247	596.5605	13.1418
45	07	5	Black	0.1156	0.0035	-3.5993	-4.0398	-4.5254	0.1023	0.0031	-3.1833	-3.5729	-4.0023	-0.0160
45	07	6	Black*HSGPA	0.0035	0.0372	0.1393	0.1112	0.3466	0.0031	0.0372	0.1519	0.1254	0.3624	0.0108
45	07	7	Black*SAT-CR	-3.5963	0.1393	549.4510	242.3377	417.4290	-3.1833	0.1519	536.5065	227.8092	401.1544	1.2809
45	07	8	Black*SAT-M	-4.0364	0.1112	242.3377	441.2039	280.7247	-3.5729	0.1254	227.8092	424.8974	262.4584	0.6496
45	07	9	Black*SAT-W	-4.5216	0.3466	417.4290	280.7247	596.5605	-4.0023	0.3624	401.1544	262.4584	576.0988	1.8273
45	07	10	FYGPA	2.9209	0.1476	10.9267	8.8361	13.1418	-0.0160	0.0108	1.2809	0.6496	1.8273	0.5706
45	08	1	HSGPA	0.0000	0.2650	4.3984	5.7137	6.5141	0.0051	0.0370	-0.4338	-0.0178	0.3752	0.1457
45	08	2	SAT-CR	0.0000	4.3984	5,015.3244	2,143.6475	3,292.3545	-5.4533	-0.4338	857.5321	439.1660	597.9248	9.4686
45	08	3	SAT-M	0.0000	5.7137	2,143.6475	4,981.0444	2,073.3561	-5.9621	-0.0178	439.1660	766.1599	394.0522	10.1338
45	08	4	SAT-W	0.0000	6.5141	3,292.3545	2,073.3561	4,784.2805	-5.3734	0.3752	597.9248	394.0522	779.1984	11.9948
45	08	5	Black	0.1518	0.0051	-5.4533	-5.9621	-5.3734	0.1289	0.0043	-4.6254	-5.0570	-4.5577	-0.0393
45	08	6	Black*HSGPA	0.0051	0.0370	-0.4338	-0.0178	0.3752	0.0043	0.0370	-0.4062	0.0124	0.4023	0.0123
45	08	7	Black*SAT-CR	-5.4484	-0.4338	857.5321	439.1660	597.9248	-4.6254	-0.4062	827.8204	406.6820	568.6481	1.1952
45	08	8	Black*SAT-M	-5.9568	-0.0178	439.1660	766.1599	394.0522	-5.0570	0.0124	406.6820	730.6449	362.0438	1.6500
45	08	9	Black*SAT-W	-5.3687	0.3752	597.9248	394.0522	779.1984	-4.5577	0.4023	568.6481	362.0438	750.3504	2.1308
45	08	10	FYGPA	2.8186	0.1457	9.4686	10.1338	11.9948	-0.0393	0.0123	1.1952	1.6500	2.1308	0.6366

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
47	08	1	HSGPA	0.0000	0.2821	8.5650	10.6860	11.2471	-0.0124	0.0315	0.1163	0.8110	1.1822	0.1926
47	08	2	SAT-CR	0.0000	8.5650	5,281.3185	2,624.5636	3,818.2779	-3.4475	0.1163	467.5558	337.5904	399.7889	17.9052
47	08	3	SAT-M	0.0000	10.6860	2,624.5636	5,471.5014	2,495.5857	-5.1973	0.8110	337.5904	729.7103	414.2643	14.4633
47	08	4	SAT-W	0.0000	11.2471	3,818.2779	2,495.5857	5,565.6894	-4.5043	1.1822	399.7889	414.2643	738.3489	21.2471
47	08	5	Black	0.0953	-0.0124	-3.4475	-5.1973	-4.5043	0.0863	-0.0113	-3.1188	-4.7017	-4.0748	-0.0261
47	08	6	Black*HSGPA	-0.0124	0.0315	0.1163	0.8110	1.1822	-0.0113	0.0314	0.0734	0.7464	1.1262	0.0179
47	08	7	Black*SAT-CR	-3.4437	0.1163	467.5558	337.5904	399.7889	-3.1188	0.0734	455.6837	319.6926	384.2776	1.9005
47	08	8	Black*SAT-M	-5.1915	0.8110	337.5904	729.7103	414.2643	-4.7017	0.7464	319.6926	702.7288	390.8805	2.2407
47	08	9	Black*SAT-W	-4.4993	1.1822	399.7889	414.2643	738.3489	-4.0748	1.1262	384.2776	390.8805	718.0830	3.1431
47	08	10	FYGPA	2.4159	0.1926	17.9052	14.4633	21.2471	-0.0261	0.0179	1.9005	2.2407	3.1431	0.7552
48	06	1	HSGPA	0.0000	0.2136	8.4408	7.3134	9.3567	-0.0038	0.0049	0.4963	0.4768	0.1045	0.1070
48	06	2	SAT-CR	0.0000	8.4408	6,342.3246	2,918.1222	4,174.9291	-1.5561	0.4963	248.1337	220.8250	196.8607	10.4076
48	06	3	SAT-M	0.0000	7.3134	2,918.1222	5,940.7530	2,860.8747	-1.9605	0.4768	220.8250	359.3234	230.7924	7.9878
48	06	4	SAT-W	0.0000	9.3567	4,174.9291	2,860.8747	5,909.5162	-1.4123	0.1045	196.8607	230.7924	232.1305	11.0545
48	06	5	Black	0.0285	-0.0038	-1.5561	-1.9605	-1.4123	0.0277	-0.0037	-1.5118	-1.9047	-1.3721	-0.0126
48	06	6	Black*HSGPA	-0.0038	0.0049	0.4963	0.4768	0.1045	-0.0037	0.0049	0.4904	0.4695	0.0992	0.0048
48	06	7	Black*SAT-CR	-1.5533	0.4963	248.1337	220.8250	196.8607	-1.5118	0.4904	245.7167	217.7797	194.6670	1.1714
48	06	8	Black*SAT-M	-1.9570	0.4768	220.8250	359.3234	230.7924	-1.9047	0.4695	217.7797	355.4866	228.0285	0.6697
48	06	9	Black*SAT-W	-1.4097	0.1045	196.8607	230.7924	232.1305	-1.3721	0.0992	194.6670	228.0285	230.1396	0.6523
48	06	10	FYGPA	3.3142	0.1070	10.4076	7.9878	11.0545	-0.0126	0.0048	1.1714	0.6697	0.6523	0.2366
48	07	1	HSGPA	0.0000	0.2281	3.5357	7.1076	7.1377	-0.0219	0.0368	-0.2609	0.7251	0.7066	0.0937
48	07	2	SAT-CR	0.0000	3.5357	5,409.9562	2,849.3845	3,797.5254	-0.7653	-0.2609	274.6344	171.0098	317.0915	7.1870
48	07	3	SAT-M	0.0000	7.1076	2,849.3845	5,730.8954	2,811.2302	-2.0839	0.7251	171.0098	352.4160	328.2387	5.6095
48	07	4	SAT-W	0.0000	7.1377	3,797.5254	2,811.2302	5,603.9704	-2.6718	0.7066	317.0915	328.2387	534.9274	7.8911
48	07	5	Black	0.0434	-0.0219	-0.7653	-2.0839	-2.6718	0.0416	-0.0210	-0.7321	-1.9935	-2.5558	-0.0142
48	07	6	Black*HSGPA	-0.0219	0.0368	-0.2609	0.7251	0.7066	-0.0210	0.0363	-0.2776	0.6795	0.6482	0.0135
48	07	7	Black*SAT-CR	-0.7639	-0.2609	274.6344	171.0098	317.0915	-0.7321	-0.2776	274.0498	169.4179	315.0505	0.5609
48	07	8	Black*SAT-M	-2.0801	0.7251	171.0098	352.4160	328.2387	-1.9935	0.6795	169.4179	348.0813	322.6810	0.6823
48	07	9	Black*SAT-W	-2.6670	0.7066	317.0915	328.2387	534.9274	-2.5558	0.6482	315.0505	322.6810	527.8018	1.4671
48	07	10	FYGPA	3.3126	0.0937	7.1870	5.6095	7.8911	-0.0142	0.0135	0.5609	0.6823	1.4671	0.2503
48	08	1	HSGPA	0.0000	0.1819	7.7377	5.9199	7.0216	-0.0091	0.0177	0.1496	1.1160	0.2992	0.1002
48	08	2	SAT-CR	0.0000	7.7377	6,092.7417	2,678.6985	4,090.7039	-1.8538	0.1496	289.4196	285.9225	262.8508	13.4771
48	08	3	SAT-M	0.0000	5.9199	2,678.6985	5,903.8769	2,826.5334	-3.8695	1.1160	285.9225	587.9890	318.7804	9.5297
48	08	4	SAT-W	0.0000	7.0216	4,090.7039	2,826.5334	5,811.2572	-2.2407	0.2992	262.8508	318.7804	333.8342	13.3890
48	08	5	Black	0.0344	-0.0091	-1.8538	-3.8695	-2.2407	0.0333	-0.0088	-1.7900	-3.7363	-2.1636	-0.0153
48	08	6	Black*HSGPA	-0.0091	0.0177	0.1496	1.1160	0.2992	-0.0088	0.0176	0.1327	1.0807	0.2787	0.0109
48	08	7	Black*SAT-CR	-1.8500	0.1496	289.4196	285.9225	262.8508	-1.7900	0.1327	285.9901	278.7639	258.7055	1.1782
48	08	8	Black*SAT-M	-3.8616	1.1160	285.9225	587.9890	318.7804	-3.7363	1.0807	278.7639	573.0464	310.1277	2.1584
48	08	9	Black*SAT-W	-2.2361	0.2992	262.8508	318.7804	333.8342	-2.1636	0.2787	258.7055	310.1277	328.8237	1.2712
48	08	10	FYGPA	3.2736	0.1002	13.4771	9.5297	13.3890	-0.0153	0.0109	1.1782	2.1584	1.2712	0.2464

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
49	06	1	HSGPA	0.0000	0.2140	10.6258	11.3612	11.9382	-0.0212	0.0231	2.1603	2.4692	2.6267	0.1310
49	06	2	SAT-CR	0.0000	10.6258	5,781.5159	3,130.4437	4,076.1839	-5.3038	2.1603	856.4936	791.4015	818.4776	17.9835
49	06	3	SAT-M	0.0000	11.3612	3,130.4437	6,194.1900	3,097.4160	-6.0464	2.4692	791.4015	1,084.6998	843.0981	15.0119
49	06	4	SAT-W	0.0000	11.9382	4,076.1839	3,097.4160	5,834.0043	-5.7815	2.6267	818.4776	843.0981	986.5408	20.1865
49	06	5	Black	0.0592	-0.0212	-5.3038	-6.0464	-5.7815	0.0557	-0.0199	-4.9898	-5.6884	-5.4392	-0.0324
49	06	6	Black*HSGPA	-0.0211	0.0231	2.1603	2.4692	2.6267	-0.0199	0.0226	2.0482	2.3413	2.5044	0.0164
49	06	7	Black*SAT-CR	-5.3012	2.1603	856.4936	791.4015	818.4776	-4.9898	2.0482	828.3770	759.3484	787.8290	4.0754
49	06	8	Black*SAT-M	-6.0434	2.4692	791.4015	1,084.6998	843.0981	-5.6884	2.3413	759.3484	1,048.1589	808.1583	4.6547
49	06	9	Black*SAT-W	-5.7786	2.6267	818.4776	843.0981	986.5408	-5.4392	2.5044	787.8290	808.1583	953.1320	4.6885
49	06	10	FYGPA	2.7914	0.1310	17.9835	15.0119	20.1865	-0.0324	0.0164	4.0754	4.6547	4.6885	0.4802
49	07	1	HSGPA	0.0000	0.2011	9.9641	11.3129	9.8848	-0.0124	0.0168	1.3442	1.7298	1.3567	0.1214
49	07	2	SAT-CR	0.0000	9.9641	6,062.3281	3,427.3475	4,185.7745	-3.5288	1.3442	615.1941	593.2405	564.0110	19.1023
49	07	3	SAT-M	0.0000	11.3129	3,427.3475	6,599.3444	3,047.5035	-4.1679	1.7298	593.2405	822.2447	625.4517	17.9367
49	07	4	SAT-W	0.0000	9.8848	4,185.7745	3,047.5035	5,685.3438	-3.7338	1.3567	564.0110	625.4517	683.9476	19.0401
49	07	5	Black	0.0391	-0.0124	-3.5288	-4.1679	-3.7338	0.0376	-0.0119	-3.3909	-4.0050	-3.5878	-0.0208
49	07	6	Black*HSGPA	-0.0124	0.0168	1.3442	1.7298	1.3567	-0.0119	0.0166	1.3005	1.6783	1.3105	0.0097
49	07	7	Black*SAT-CR	-3.5272	1.3442	615.1941	593.2405	564.0110	-3.3909	1.3005	602.7474	578.5395	550.8413	2.7215
49	07	8	Black*SAT-M	-4.1660	1.7298	593.2405	822.2447	625.4517	-4.0050	1.6783	578.5395	804.8811	609.8968	2.9255
49	07	9	Black*SAT-W	-3.7321	1.3567	564.0110	625.4517	683.9476	-3.5878	1.3105	550.8413	609.8968	670.0130	2.7630
49	07	10	FYGPA	2.8041	0.1214	19.1023	17.9367	19.0401	-0.0208	0.0097	2.7215	2.9255	2.7630	0.4646
49	08	1	HSGPA	0.0000	0.2045	8.3767	7.9831	9.0566	-0.0115	0.0166	0.9206	1.4521	1.1391	0.1269
49	08	2	SAT-CR	0.0000	8.3767	5,963.3660	3,132.2591	4,147.8797	-3.7050	0.9206	601.0767	507.6516	536.0441	16.3749
49	08	3	SAT-M	0.0000	7.9831	3,132.2591	6,073.9547	2,833.4893	-4.9652	1.4521	507.6516	753.1003	560.6737	11.7953
49	08	4	SAT-W	0.0000	9.0566	4,147.8797	2,833.4893	5,573.4375	-4.2496	1.1391	536.0441	560.6737	672.6877	18.0603
49	08	5	Black	0.0529	-0.0115	-3.7050	-4.9652	-4.2496	0.0501	-0.0109	-3.5091	-4.7028	-4.0249	-0.0211
49	08	6	Black*HSGPA	-0.0115	0.0166	0.9206	1.4521	1.1391	-0.0109	0.0164	0.8778	1.3949	1.0901	0.0082
49	08	7	Black*SAT-CR	-3.7032	0.9206	601.0767	507.6516	536.0441	-3.5091	0.8778	587.3563	489.2642	520.3070	1.7893
49	08	8	Black*SAT-M	-4.9629	1.4521	507.6516	753.1003	560.6737	-4.7028	1.3949	489.2642	728.4584	539.5836	2.5000
49	08	9	Black*SAT-W	-4.2475	1.1391	536.0441	560.6737	672.6877	-4.0249	1.0901	520.3070	539.5836	654.6375	2.3469
49	08	10	FYGPA	2.7601	0.1269	16.3749	11.7953	18.0603	-0.0211	0.0082	1.7893	2.5000	2.3469	0.4860
52	06	1	HSGPA	0.0000	0.2693	12.5301	16.4018	13.7555	-0.0133	0.0324	0.4977	2.1346	0.0228	0.2360
52	06	2	SAT-CR	0.0000	12.5301	6,473.1199	3,195.1551	4,495.0651	-4.5569	0.4977	566.8600	286.4514	406.3262	28.1963
52	06	3	SAT-M	0.0000	16.4018	3,195.1551	6,252.1400	3,414.6083	-4.2242	2.1346	286.4514	475.3319	245.0737	33.4866
52	06	4	SAT-W	0.0000	13.7555	4,495.0651	3,414.6083	6,009.8436	-4.3229	0.0228	406.3262	245.0737	452.6956	33.7929
52	06	5	Black	0.0829	-0.0133	-4.5569	-4.2242	-4.3229	0.0762	-0.0122	-4.1793	-3.8742	-3.9647	-0.0531
52	06	6	Black*HSGPA	-0.0132	0.0324	0.4977	2.1346	0.0228	-0.0122	0.0322	0.4375	2.0787	-0.0343	0.0264
52	06	7	Black*SAT-CR	-4.5438	0.4977	566.8600	286.4514	406.3262	-4.1793	0.4375	546.1544	267.2571	386.6837	2.4881
52	06	8	Black*SAT-M	-4.2122	2.1346	286.4514	475.3319	245.0737	-3.8742	2.0787	267.2571	457.5387	226.8650	3.3144
52	06	9	Black*SAT-W	-4.3105	0.0228	406.3262	245.0737	452.6956	-3.9647	-0.0343	386.6837	226.8650	434.0617	2.7468
52	06	10	FYGPA	2.6975	0.2360	28.1963	33.4866	33.7929	-0.0531	0.0264	2.4881	3.3144	2.7468	0.8523

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
52	07	1	HSGPA	0.0000	0.2541	14.6725	12.9978	10.5271	-0.0050	0.0343	1.1331	0.8848	1.2987	0.2190
52	07	2	SAT-CR	0.0000	14.6725	7,471.2361	3,681.4469	4,936.5304	-5.9279	1.1331	936.4895	485.7582	675.7420	30.7882
52	07	3	SAT-M	0.0000	12.9978	3,681.4469	5,317.4162	3,390.6695	-4.5947	0.8848	485.7582	656.9998	531.0659	22.3411
52	07	4	SAT-W	0.0000	10.5271	4,936.5304	3,390.6695	5,942.0098	-6.1156	1.2987	675.7420	531.0659	951.1642	24.1446
52	07	5	Black	0.1089	-0.0050	-5.9279	-4.5947	-6.1156	0.0973	-0.0045	-5.2821	-4.0942	-5.4494	-0.0417
52	07	6	Black*HSGPA	-0.0050	0.0343	1.1331	0.8848	1.2987	-0.0045	0.0343	1.1034	0.8618	1.2681	0.0143
52	07	7	Black*SAT-CR	-5.9113	1.1331	936.4895	485.7582	675.7420	-5.2821	1.1034	901.4478	458.5974	639.5907	5.5751
52	07	8	Black*SAT-M	-4.5819	0.8848	485.7582	656.9998	531.0659	-4.0942	0.8618	458.5974	635.9475	503.0451	3.6482
52	07	9	Black*SAT-W	-6.0985	1.2987	675.7420	531.0659	951.1642	-5.4494	1.2681	639.5907	503.0451	913.8682	5.0075
52	07	10	FYGPA	2.7665	0.2190	30.7882	22.3411	24.1446	-0.0417	0.0143	5.5751	3.6482	5.0075	0.6714
52	08	1	HSGPA	0.0000	0.2603	10.0276	13.6937	13.1749	-0.0221	0.0319	1.8850	1.6796	2.6896	0.2378
52	08	2	SAT-CR	0.0000	10.0276	6,214.9528	3,034.4790	4,248.7380	-4.9977	1.8850	519.4192	157.7661	371.7104	20.4544
52	08	3	SAT-M	0.0000	13.6937	3,034.4790	5,418.6479	3,135.0459	-2.5788	1.6796	157.7661	264.6748	229.0155	27.6996
52	08	4	SAT-W	0.0000	13.1749	4,248.7380	3,135.0459	5,547.9867	-5.3491	2.6896	371.7104	229.0155	621.6704	29.9647
52	08	5	Black	0.0803	-0.0221	-4.9977	-2.5788	-5.3491	0.0741	-0.0203	-4.5964	-2.3718	-4.9196	-0.0410
52	08	6	Black*HSGPA	-0.0220	0.0319	1.8850	1.6796	2.6896	-0.0203	0.0314	1.7751	1.6228	2.5719	0.0260
52	08	7	Black*SAT-CR	-4.9795	1.8850	519.4192	157.7661	371.7104	-4.5964	1.7751	494.5331	144.9249	345.0748	1.9619
52	08	8	Black*SAT-M	-2.5694	1.6796	157.7661	264.6748	229.0155	-2.3718	1.6228	144.9249	258.0488	215.2716	2.4272
52	08	9	Black*SAT-W	-5.3295	2.6896	371.7104	229.0155	621.6704	-4.9196	2.5719	345.0748	215.2716	593.1625	5.0460
52	08	10	FYGPA	2.6214	0.2378	20.4544	27.6996	29.9647	-0.0410	0.0260	1.9619	2.4272	5.0460	0.8892
53	06	1	HSGPA	0.0000	0.1578	6.2516	6.6473	6.8392	-0.0182	0.0256	1.7122	2.4357	2.0211	0.0937
53	06	2	SAT-CR	0.0000	6.2516	5,983.9819	2,678.0225	4,296.9680	-3.9195	1.7122	747.5898	606.5497	627.4789	14.6257
53	06	3	SAT-M	0.0000	6.6473	2,678.0225	5,667.9561	2,722.7556	-5.3062	2.4357	606.5497	983.2183	644.3289	10.1109
53	06	4	SAT-W	0.0000	6.8392	4,296.9680	2,722.7556	6,095.5111	-4.1658	2.0211	627.4789	644.3289	821.1915	15.9971
53	06	5	Black	0.0834	-0.0182	-3.9195	-5.3062	-4.1658	0.0765	-0.0167	-3.5925	-4.8636	-3.8183	-0.0284
53	06	6	Black*HSGPA	-0.0182	0.0256	1.7122	2.4357	2.0211	-0.0167	0.0252	1.6410	2.3393	1.9454	0.0185
53	06	7	Black*SAT-CR	-3.9177	1.7122	747.5898	606.5497	627.4789	-3.5925	1.6410	732.2346	585.7615	611.1585	3.2023
53	06	8	Black*SAT-M	-5.3039	2.4357	606.5497	983.2183	644.3289	-4.8636	2.3393	585.7615	955.0749	622.2341	3.7343
53	06	9	Black*SAT-W	-4.1640	2.0211	627.4789	644.3289	821.1915	-3.8183	1.9454	611.1585	622.2341	803.8453	3.1902
53	06	10	FYGPA	3.1098	0.0937	14.6257	10.1109	15.9971	-0.0284	0.0185	3.2023	3.7343	3.1902	0.3556
53	07	1	HSGPA	0.0000	0.1834	9.6211	10.6488	11.0796	-0.0192	0.0305	2.3191	2.6213	2.2952	0.1034
53	07	2	SAT-CR	0.0000	9.6211	6,801.6755	3,400.1753	4,920.2738	-4.0050	2.3191	829.9739	628.7688	665.0567	17.1599
53	07	3	SAT-M	0.0000	10.6488	3,400.1753	6,172.7330	3,352.7116	-5.3173	2.6213	628.7688	907.6718	616.3845	13.6338
53	07	4	SAT-W	0.0000	11.0796	4,920.2738	3,352.7116	6,837.9457	-3.5236	2.2952	665.0567	616.3845	853.2541	18.0395
53	07	5	Black	0.0841	-0.0192	-4.0050	-5.3173	-3.5236	0.0770	-0.0176	-3.6684	-4.8704	-3.2275	-0.0303
53	07	6	Black*HSGPA	-0.0192	0.0305	2.3191	2.6213	2.2952	-0.0176	0.0302	2.2421	2.5191	2.2275	0.0147
53	07	7	Black*SAT-CR	-4.0036	2.3191	829.9739	628.7688	665.0567	-3.6684	2.2421	813.9396	607.4807	650.9496	2.8803
53	07	8	Black*SAT-M	-5.3154	2.6213	628.7688	907.6718	616.3845	-4.8704	2.5191	607.4807	879.4082	597.6550	3.2832
53	07	9	Black*SAT-W	-3.5224	2.2952	665.0567	616.3845	853.2541	-3.2275	2.2275	650.9496	597.6550	840.8425	2.8135
53	07	10	FYGPA	3.1248	0.1034	17.1599	13.6338	18.0395	-0.0303	0.0147	2.8803	3.2832	2.8135	0.3180

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
53	08	1	HSGPA	0.0000	0.1495	5.0159	5.1771	6.7876	-0.0159	0.0239	1.5715	1.2095	2.0082	0.0785
53	08	2	SAT-CR	0.0000	5.0159	5,805.3150	2,198.0366	3,868.6149	-4.3894	1.5715	809.2711	579.8985	686.6108	13.0812
53	08	3	SAT-M	0.0000	5.1771	2,198.0366	5,141.7517	2,263.6770	-5.2664	1.2095	579.8985	905.6662	611.3478	11.1709
53	08	4	SAT-W	0.0000	6.7876	3,868.6149	2,263.6770	5,683.8991	-4.3288	2.0082	686.6108	611.3478	848.6797	15.2352
53	08	5	Black	0.0882	-0.0159	-4.3894	-5.2664	-4.3288	0.0804	-0.0145	-4.0023	-4.8021	-3.9471	-0.0287
53	08	6	Black*HSGPA	-0.0159	0.0239	1.5715	1.2095	2.0082	-0.0145	0.0237	1.5017	1.1258	1.9394	0.0125
53	08	7	Black*SAT-CR	-4.3876	1.5715	809.2711	579.8985	686.6108	-4.0023	1.5017	790.0122	556.7914	667.6176	2.6816
53	08	8	Black*SAT-M	-5.2643	1.2095	579.8985	905.6662	611.3478	-4.8021	1.1258	556.7914	877.9419	588.5595	3.2779
53	08	9	Black*SAT-W	-4.3271	2.0082	686.6108	611.3478	848.6797	-3.9471	1.9394	667.6176	588.5595	829.9485	3.2033
53	08	10	FYGPA	3.1245	0.0785	13.0812	11.1709	15.2352	-0.0287	0.0125	2.6816	3.2779	3.2033	0.2944
54	06	1	HSGPA	0.0000	0.3100	18.9320	20.5802	19.4465	-0.0364	0.0416	4.9164	3.3593	3.7546	0.2872
54	06	2	SAT-CR	0.0000	18.9320	8,196.0270	4,243.6461	6,000.4227	-6.2014	4.9164	1,141.2644	745.4346	908.9555	31.6972
54	06	3	SAT-M	0.0000	20.5802	4,243.6461	7,600.7890	4,661.7322	-2.9871	3.3593	745.4346	936.5096	725.9004	24.6240
54	06	4	SAT-W	0.0000	19.4465	6,000.4227	4,661.7322	7,063.1516	-3.7792	3.7546	908.9555	725.9004	987.9138	37.0155
54	06	5	Black	0.0947	-0.0364	-6.2014	-2.9871	-3.7792	0.0862	-0.0329	-5.6143	-2.7043	-3.4214	-0.0394
54	06	6	Black*HSGPA	-0.0362	0.0416	4.9164	3.3593	3.7546	-0.0329	0.0402	4.6921	3.2513	3.6179	0.0371
54	06	7	Black*SAT-CR	-6.1647	4.9164	1,141.2644	745.4346	908.9555	-5.6143	4.6921	1,103.0347	727.0200	885.6576	6.2826
54	06	8	Black*SAT-M	-2.9694	3.3593	745.4346	936.5096	725.9004	-2.7043	3.2513	727.0200	927.6395	714.6782	1.7776
54	06	9	Black*SAT-W	-3.7569	3.7546	908.9555	725.9004	987.9138	-3.4214	3.6179	885.6576	714.6782	973.7157	3.5211
54	06	10	FYGPA	2.7317	0.2872	31.6972	24.6240	37.0155	-0.0394	0.0371	6.2826	1.7776	3.5211	0.9010
57	07	1	HSGPA	0.0000	0.1965	6.7794	5.1779	8.9222	0.0003	0.0119	0.4882	-0.2099	0.6280	0.1270
57	07	2	SAT-CR	0.0000	6.7794	6,732.1073	3,040.9488	4,638.2871	-3.1576	0.4882	434.2293	299.2422	289.6549	15.6114
57	07	3	SAT-M	0.0000	5.1779	3,040.9488	6,322.6972	3,203.5181	-4.2862	-0.2099	299.2422	523.8259	351.5722	11.3399
57	07	4	SAT-W	0.0000	8.9222	4,638.2871	3,203.5181	6,661.4783	-3.2576	0.6280	289.6549	351.5722	524.6631	17.7207
57	07	5	Black	0.0506	0.0003	-3.1576	-4.2862	-3.2576	0.0482	0.0003	-2.9978	-4.0694	-3.0928	-0.0193
57	07	6	Black*HSGPA	0.0003	0.0119	0.4882	-0.2099	0.6280	0.0003	0.0119	0.4891	-0.2086	0.6289	0.0008
57	07	7	Black*SAT-CR	-3.1482	0.4882	434.2293	299.2422	289.6549	-2.9978	0.4891	424.2885	285.7482	279.3992	2.4221
57	07	8	Black*SAT-M	-4.2735	-0.2099	299.2422	523.8259	351.5722	-4.0694	-0.2086	285.7482	505.5086	337.6507	1.8261
57	07	9	Black*SAT-W	-3.2479	0.6280	289.6549	351.5722	524.6631	-3.0928	0.6289	279.3992	337.6507	514.0825	2.5858
57	07	10	FYGPA	3.0429	0.1270	15.6114	11.3399	17.7207	-0.0193	0.0008	2.4221	1.8261	2.5858	0.3722
58	06	1	HSGPA	0.0000	0.2047	4.7459	6.6710	6.3941	-0.0159	0.0339	1.4434	1.3129	1.7344	0.1465
58	06	2	SAT-CR	0.0000	4.7459	7,038.9110	3,525.4042	4,869.3752	-9.3266	1.4434	1,364.5292	867.6232	1,036.2151	15.3152
58	06	3	SAT-M	0.0000	6.6710	3,525.4042	6,063.7880	3,243.7142	-9.3345	1.3129	867.6232	1,247.8370	813.0909	14.0554
58	06	4	SAT-W	0.0000	6.3941	4,869.3752	3,243.7142	6,164.7941	-8.6830	1.7344	1,036.2151	813.0909	1,304.9668	17.3740
58	06	5	Black	0.1726	-0.0159	-9.3266	-9.3345	-8.6830	0.1429	-0.0132	-7.7164	-7.7229	-7.1839	-0.0560
58	06	6	Black*HSGPA	-0.0159	0.0339	1.4434	1.3129	1.7344	-0.0132	0.0336	1.2948	1.1643	1.5962	0.0262
58	06	7	Black*SAT-CR	-9.3221	1.4434	1,364.5292	867.6232	1,036.2151	-7.7164	1.2948	1,277.5862	780.6063	955.2714	4.5463
58	06	8	Black*SAT-M	-9.3300	1.3129	867.6232	1,247.8370	813.0909	-7.7229	1.1643	780.6063	1,160.7461	732.0785	5.0802
58	06	9	Black*SAT-W	-8.6788	1.7344	1,036.2151	813.0909	1,304.9668	-7.1839	1.5962	955.2714	732.0785	1,229.6085	5.5406
58	06	10	FYGPA	2.5792	0.1465	15.3152	14.0554	17.3740	-0.0560	0.0262	4.5463	5.0802	5.5406	0.9842



## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
58	07	1	HSGPA	0.0000	0.2156	5.5861	8.3428	8.4468	-0.0253	0.0403	1.5900	2.3446	1.7664	0.1608
58	07	2	SAT-CR	0.0000	5.5861	6,405.0144	3,108.5235	4,388.4336	-9.2701	1.5900	1,378.1638	806.5277	986.2102	17.1869
58	07	3	SAT-M	0.0000	8.3428	3,108.5235	5,945.6422	2,971.0860	-8.9760	2.3446	806.5277	1,372.2089	835.7625	17.5961
58	07	4	SAT-W	0.0000	8.4468	4,388.4336	2,971.0860	6,059.2340	-8.7445	1.7664	986.2102	835.7625	1,283.1390	22.2528
58	07	5	Black	0.1885	-0.0253	-9.2701	-8.9760	-8.7445	0.1530	-0.0205	-7.5227	-7.2840	-7.0961	-0.0673
58	07	6	Black*HSGPA	-0.0253	0.0403	1.5900	2.3446	1.7664	-0.0205	0.0396	1.3557	2.1177	1.5454	0.0333
58	07	7	Black*SAT-CR	-9.2655	1.5900	1,378.1638	806.5277	986.2102	-7.5227	1.3557	1,292.2721	723.3611	905.1887	5.4013
58	07	8	Black*SAT-M	-8.9715	2.3446	806.5277	1,372.2089	835.7625	-7.2840	2.1177	723.3611	1,291.6810	757.3117	5.3103
58	07	9	Black*SAT-W	-8.7401	1.7664	986.2102	835.7625	1,283.1390	-7.0961	1.5454	905.1887	757.3117	1,206.7117	5.9425
58	07	10	FYGPA	2.5791	0.1608	17.1869	17.5961	22.2528	-0.0673	0.0333	5.4013	5.3103	5.9425	0.9029
58	08	1	HSGPA	0.0000	0.2065	5.5817	7.7870	6.9745	-0.0163	0.0340	1.6791	0.9758	1.5118	0.1588
58	08	2	SAT-CR	0.0000	5.5817	6,642.4715	3,266.4012	4,563.7526	-8.7697	1.6791	1,327.4760	758.7492	887.5998	16.7324
58	08	3	SAT-M	0.0000	7.7870	3,266.4012	6,180.2846	3,096.6802	-8.8060	0.9758	758.7492	1,090.9963	617.3901	16.5238
58	08	4	SAT-W	0.0000	6.9745	4,563.7526	3,096.6802	6,118.3927	-7.0178	1.5118	887.5998	617.3901	1,064.4391	19.3618
58	08	5	Black	0.1724	-0.0163	-8.7697	-8.8060	-7.0178	0.1428	-0.0135	-7.2577	-7.2877	-5.8078	-0.0611
58	08	6	Black*HSGPA	-0.0163	0.0340	1.6791	0.9758	1.5118	-0.0135	0.0337	1.5364	0.8325	1.3977	0.0242
58	08	7	Black*SAT-CR	-8.7653	1.6791	1,327.4760	758.7492	887.5998	-7.2577	1.5364	1,250.6066	681.5623	826.0867	5.3716
58	08	8	Black*SAT-M	-8.8015	0.9758	758.7492	1,090.9963	617.3901	-7.2877	0.8325	681.5623	1,013.4907	555.6230	4.1227
58	08	9	Black*SAT-W	-7.0142	1.5118	887.5998	617.3901	1,064.4391	-5.8078	1.3977	826.0867	555.6230	1,015.2147	4.1257
58	08	10	FYGPA	2.6594	0.1588	16.7324	16.5238	19.3618	-0.0611	0.0242	5.3716	4.1227	4.1257	0.9102
59	06	1	HSGPA	0.0000	0.1879	7.1192	8.9440	9.4217	-0.0034	0.0129	0.4606	0.6391	0.7033	0.0945
59	06	2	SAT-CR	0.0000	7.1192	6,232.4389	3,278.3174	4,529.8459	-3.0952	0.4606	564.4822	501.4723	463.4482	9.4877
59	06	3	SAT-M	0.0000	8.9440	3,278.3174	6,381.6849	3,273.7416	-4.0297	0.6391	501.4723	807.8625	462.4063	9.3377
59	06	4	SAT-W	0.0000	9.4217	4,529.8459	3,273.7416	6,379.7481	-3.1404	0.7033	463.4482	462.4063	579.8158	12.9169
59	06	5	Black	0.0597	-0.0034	-3.0952	-4.0297	-3.1404	0.0562	-0.0032	-2.9103	-3.7889	-2.9528	-0.0120
59	06	6	Black*HSGPA	-0.0034	0.0129	0.4606	0.6391	0.7033	-0.0032	0.0129	0.4502	0.6255	0.6927	0.0030
59	06	7	Black*SAT-CR	-3.0942	0.4606	564.4822	501.4723	463.4482	-2.9103	0.4502	554.9048	489.0035	453.7311	1.0376
59	06	8	Black*SAT-M	-4.0283	0.6391	501.4723	807.8625	462.4063	-3.7889	0.6255	489.0035	791.6295	449.7558	1.3352
59	06	9	Black*SAT-W	-3.1393	0.7033	463.4482	462.4063	579.8158	-2.9528	0.6927	453.7311	449.7558	569.9571	1.1884
59	06	10	FYGPA	3.1749	0.0945	9.4877	9.3377	12.9169	-0.0120	0.0030	1.0376	1.3352	1.1884	0.2994
59	07	1	HSGPA	0.0000	0.1328	4.2378	4.8168	5.2088	-0.0075	0.0151	0.5241	0.8537	0.5765	0.0600
59	07	2	SAT-CR	0.0000	4.2378	5,885.8346	2,760.4118	3,987.8591	-3.7835	0.5241	653.6153	536.7403	572.1696	9.4349
59	07	3	SAT-M	0.0000	4.8168	2,760.4118	5,848.2745	2,688.4498	-5.0070	0.8537	536.7403	817.8005	563.1418	7.3532
59	07	4	SAT-W	0.0000	5.2088	3,987.8591	2,688.4498	5,754.6807	-4.1031	0.5765	572.1696	563.1418	708.5257	10.7523
59	07	5	Black	0.0660	-0.0075	-3.7835	-5.0070	-4.1031	0.0616	-0.0070	-3.5339	-4.6768	-3.8325	-0.0204
59	07	6	Black*HSGPA	-0.0075	0.0151	0.5241	0.8537	0.5765	-0.0070	0.0150	0.4956	0.8161	0.5457	0.0052
59	07	7	Black*SAT-CR	-3.7822	0.5241	653.6153	536.7403	572.1696	-3.5339	0.4956	639.3055	517.8029	556.6509	1.8017
59	07	8	Black*SAT-M	-5.0053	0.8537	536.7403	817.8005	563.1418	-4.6768	0.8161	517.8029	792.7389	542.6044	2.0754
59	07	9	Black*SAT-W	-4.1017	0.5765	572.1696	563.1418	708.5257	-3.8325	0.5457	556.6509	542.6044	691.6959	2.0062
59	07	10	FYGPA	3.2625	0.0600	9.4349	7.3532	10.7523	-0.0204	0.0052	1.8017	2.0754	2.0062	0.2568

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
59	08	1	HSGPA	0.0000	0.1330	3.4740	5.1779	4.9581	-0.0037	0.0117	0.1188	0.2327	0.2351	0.0543
59	08	2	SAT-CR	0.0000	3.4740	5,954.6049	2,657.2917	3,821.4092	-3.1777	0.1188	603.3355	480.4996	452.6393	8.4144
59	08	3	SAT-M	0.0000	5.1779	2,657.2917	5,770.3204	2,408.9528	-4.0972	0.2327	480.4996	714.0285	435.2230	8.1697
59	08	4	SAT-W	0.0000	4.9581	3,821.4092	2,408.9528	5,539.2208	-2.9090	0.2351	452.6393	435.2230	529.9234	11.0264
59	08	5	Black	0.0571	-0.0037	-3.1777	-4.0972	-2.9090	0.0539	-0.0035	-2.9962	-3.8632	-2.7428	-0.0152
59	08	6	Black*HSGPA	-0.0037	0.0117	0.1188	0.2327	0.2351	-0.0035	0.0117	0.1071	0.2177	0.2245	0.0024
59	08	7	Black*SAT-CR	-3.1765	0.1188	603.3355	480.4996	452.6393	-2.9962	0.1071	593.2414	467.4847	443.3989	1.7786
59	08	8	Black*SAT-M	-4.0957	0.2327	480.4996	714.0285	435.2230	-3.8632	0.2177	467.4847	697.2476	423.3089	1.7736
59	08	9	Black*SAT-W	-2.9079	0.2351	452.6393	435.2230	529.9234	-2.7428	0.2245	443.3989	423.3089	521.4645	1.6926
59	08	10	FYGPA	3.2747	0.0543	8.4144	8.1697	11.0264	-0.0152	0.0024	1.7786	1.7736	1.6926	0.2366
60	06	1	HSGPA	0.0000	0.2503	4.8903	6.6635	6.7770	-0.0206	0.0323	1.2706	1.5111	1.2449	0.0768
60	06	2	SAT-CR	0.0000	4.8903	5,619.8766	2,736.7757	3,696.7049	-2.6987	1.2706	484.3506	453.3903	430.5854	4.8367
60	06	3	SAT-M	0.0000	6.6635	2,736.7757	6,085.3076	2,503.8424	-4.2337	1.5111	453.3903	728.4670	449.7052	1.3067
60	06	4	SAT-W	0.0000	6.7770	3,696.7049	2,503.8424	5,205.0405	-2.8750	1.2449	430.5854	449.7052	522.3675	7.9900
60	06	5	Black	0.0620	-0.0206	-2.6987	-4.2337	-2.8750	0.0582	-0.0193	-2.5315	-3.9713	-2.6969	-0.0078
60	06	6	Black*HSGPA	-0.0205	0.0323	1.2706	1.5111	1.2449	-0.0193	0.0319	1.2152	1.4242	1.1858	0.0005
60	06	7	Black*SAT-CR	-2.6964	1.2706	484.3506	453.3903	430.5854	-2.5315	1.2152	477.0740	441.9749	422.8333	0.1642
60	06	8	Black*SAT-M	-4.2300	1.5111	453.3903	728.4670	449.7052	-3.9713	1.4242	441.9749	710.5586	437.5439	0.2843
60	06	9	Black*SAT-W	-2.8725	1.2449	430.5854	449.7052	522.3675	-2.6969	1.1858	422.8333	437.5439	514.1091	0.6335
60	06	10	FYGPA	2.7981	0.0768	4.8367	1.3067	7.9900	-0.0078	0.0005	0.1642	0.2843	0.6335	0.4234
60	07	1	HSGPA	0.0000	0.2446	4.6720	3.5796	6.1968	-0.0179	0.0242	2.0908	2.0960	1.8691	0.1336
60	07	2	SAT-CR	0.0000	4.6720	5,646.8869	2,523.6038	3,631.0974	-4.7335	2.0908	869.5690	688.7595	644.9212	6.0595
60	07	3	SAT-M	0.0000	3.5796	2,523.6038	5,932.3121	2,451.0607	-4.6082	2.0960	688.7595	888.5256	644.1058	5.5574
60	07	4	SAT-W	0.0000	6.1968	3,631.0974	2,451.0607	5,178.2124	-3.8257	1.8691	644.9212	644.1058	649.8073	9.8279
60	07	5	Black	0.0542	-0.0179	-4.7335	-4.6082	-3.8257	0.0513	-0.0169	-4.4768	-4.3583	-3.6182	-0.0110
60	07	6	Black*HSGPA	-0.0179	0.0242	2.0908	2.0960	1.8691	-0.0169	0.0239	2.0061	2.0136	1.8007	0.0071
60	07	7	Black*SAT-CR	-4.7297	2.0908	869.5690	688.7595	644.9212	-4.4768	2.0061	847.1806	666.9639	626.8268	1.6254
60	07	8	Black*SAT-M	-4.6045	2.0960	688.7595	888.5256	644.1058	-4.3583	2.0136	666.9639	867.3069	626.4904	1.8515
60	07	9	Black*SAT-W	-3.8226	1.8691	644.9212	644.1058	649.8073	-3.6182	1.8007	626.8268	626.4904	635.1833	1.7720
60	07	10	FYGPA	2.6566	0.1336	6.0595	5.5574	9.8279	-0.0110	0.0071	1.6254	1.8515	1.7720	0.7345
60	08	1	HSGPA	0.0000	0.2552	5.2885	6.6910	8.4145	-0.0120	0.0235	0.3823	0.7971	0.6011	0.1288
60	08	2	SAT-CR	0.0000	5.2885	5,531.0297	2,555.2598	3,827.6358	-3.4861	0.3823	477.8884	368.4255	412.6651	4.2888
60	08	3	SAT-M	0.0000	6.6910	2,555.2598	5,551.9301	2,413.2108	-4.2422	0.7971	368.4255	680.6489	369.4387	0.4586
60	08	4	SAT-W	0.0000	8.4145	3,827.6358	2,413.2108	5,703.0985	-3.4797	0.6011	412.6651	369.4387	551.7942	10.7692
60	08	5	Black	0.0663	-0.0120	-3.4861	-4.2422	-3.4797	0.0619	-0.0112	-3.2550	-3.9610	-3.2491	-0.0089
60	08	6	Black*HSGPA	-0.0120	0.0235	0.3823	0.7971	0.6011	-0.0112	0.0234	0.3406	0.7464	0.5595	0.0080
60	08	7	Black*SAT-CR	-3.4832	0.3823	477.8884	368.4255	412.6651	-3.2550	0.3406	465.7456	353.6489	400.5443	0.2298
60	08	8	Black*SAT-M	-4.2388	0.7971	368.4255	680.6489	369.4387	-3.9610	0.7464	353.6489	662.6672	354.6889	0.1647
60	08	9	Black*SAT-W	-3.4769	0.6011	412.6651	369.4387	551.7942	-3.2491	0.5595	400.5443	354.6889	539.6955	0.6810
60	08	10	FYGPA	2.6900	0.1288	4.2888	0.4586	10.7692	-0.0089	0.0080	0.2298	0.1647	0.6810	0.6825

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
61	06	1	HSGPA	0.0000	0.2252	4.6589	4.2922	5.6593	-0.0218	0.0216	1.3569	1.8242	1.0608	0.1331
61	06	2	SAT-CR	0.0000	4.6589	4,998.1923	2,079.1154	3,379.7753	-5.0619	1.3569	722.7165	608.1229	590.6141	9.4901
61	06	3	SAT-M	0.0000	4.2922	2,079.1154	5,530.5075	2,032.6233	-6.3283	1.8242	608.1229	937.3246	635.1013	8.7289
61	06	4	SAT-W	0.0000	5.6593	3,379.7753	2,032.6233	4,982.6960	-5.2268	1.0608	590.6141	635.1013	735.6053	12.1026
61	06	5	Black	0.0718	-0.0218	-5.0619	-6.3283	-5.2268	0.0667	-0.0202	-4.6987	-5.8742	-4.8517	-0.0308
61	06	6	Black*HSGPA	-0.0218	0.0216	1.3569	1.8242	1.0608	-0.0202	0.0212	1.2467	1.6864	0.9470	0.0123
61	06	7	Black*SAT-CR	-5.0540	1.3569	722.7165	608.1229	590.6141	-4.6987	1.2467	697.1335	576.1393	564.1976	2.9319
61	06	8	Black*SAT-M	-6.3185	1.8242	608.1229	937.3246	635.1013	-5.8742	1.6864	576.1393	897.3392	602.0758	3.8962
61	06	9	Black*SAT-W	-5.2187	1.0608	590.6141	635.1013	735.6053	-4.8517	0.9470	564.1976	602.0758	708.3283	3.2968
61	06	10	FYGPA	2.7256	0.1331	9.4901	8.7289	12.1026	-0.0308	0.0123	2.9319	3.8962	3.2968	0.5833
61	07	1	HSGPA	0.0000	0.2320	3.1555	6.3139	6.5491	-0.0167	0.0269	1.1719	2.1048	1.1867	0.1675
61	07	2	SAT-CR	0.0000	3.1555	5,261.0794	2,249.9523	3,645.1790	-5.3540	1.1719	782.6841	660.9595	640.7626	10.4171
61	07	3	SAT-M	0.0000	6.3139	2,249.9523	5,522.4046	2,447.8690	-7.6809	2.1048	660.9595	1,138.9392	722.8306	9.4436
61	07	4	SAT-W	0.0000	6.5491	3,645.1790	2,447.8690	5,198.2243	-5.7680	1.1867	640.7626	722.8306	820.7383	12.3325
61	07	5	Black	0.0851	-0.0167	-5.3540	-7.6809	-5.7680	0.0780	-0.0152	-4.8986	-7.0275	-5.2773	-0.0222
61	07	6	Black*HSGPA	-0.0166	0.0269	1.1719	2.1048	1.1867	-0.0152	0.0266	1.0828	1.9771	1.0908	0.0199
61	07	7	Black*SAT-CR	-5.3447	1.1719	782.6841	660.9595	640.7626	-4.8986	1.0828	754.0684	619.9075	609.9345	3.1310
61	07	8	Black*SAT-M	-7.6675	2.1048	660.9595	1,138.9392	722.8306	-7.0275	1.9771	619.9075	1,080.0460	678.6046	3.0985
61	07	9	Black*SAT-W	-5.7580	1.1867	640.7626	722.8306	820.7383	-5.2773	1.0908	609.9345	678.6046	787.5267	2.6259
61	07	10	FYGPA	2.7398	0.1675	10.4171	9.4436	12.3325	-0.0222	0.0199	3.1310	3.0985	2.6259	0.7340
61	08	1	HSGPA	0.0000	0.2285	6.9647	5.8758	9.1234	-0.0173	0.0320	1.6448	1.1209	1.6995	0.1539
61	08	2	SAT-CR	0.0000	6.9647	5,613.7266	2,395.5040	3,903.4462	-6.0292	1.6448	1,042.0939	763.8892	889.6805	13.2857
61	08	3	SAT-M	0.0000	5.8758	2,395.5040	5,463.5777	2,536.6250	-6.4081	1.1209	763.8892	1,003.0358	813.1528	9.4933
61	08	4	SAT-W	0.0000	9.1234	3,903.4462	2,536.6250	5,519.8753	-6.3795	1.6995	889.6805	813.1528	987.9300	14.4800
61	08	5	Black	0.0743	-0.0173	-6.0292	-6.4081	-6.3795	0.0689	-0.0160	-5.5810	-5.9317	-5.9053	-0.0357
61	08	6	Black*HSGPA	-0.0173	0.0320	1.6448	1.1209	1.6995	-0.0160	0.0317	1.5405	1.0100	1.5891	0.0239
61	08	7	Black*SAT-CR	-6.0207	1.6448	1,042.0939	763.8892	889.6805	-5.5810	1.5405	1,005.7936	725.3080	851.2711	2.9243
61	08	8	Black*SAT-M	-6.3991	1.1209	763.8892	1,003.0358	813.1528	-5.9317	1.0100	725.3080	962.0301	772.3299	3.5737
61	08	9	Black*SAT-W	-6.3706	1.6995	889.6805	813.1528	987.9300	-5.9053	1.5891	851.2711	772.3299	947.2888	3.5064
61	08	10	FYGPA	2.8338	0.1539	13.2857	9.4933	14.4800	-0.0357	0.0239	2.9243	3.5737	3.5064	0.5982
62	06	1	HSGPA	0.0000	0.1706	6.0971	6.5227	7.3355	-0.0091	0.0126	0.5069	0.6078	0.7669	0.0832
62	06	2	SAT-CR	0.0000	6.0971	6,907.5393	3,491.6895	4,772.0504	-4.1457	0.5069	658.3419	522.8345	542.1022	13.9431
62	06	3	SAT-M	0.0000	6.5227	3,491.6895	6,796.2027	3,168.6898	-4.7345	0.6078	522.8345	824.8368	540.0360	11.9416
62	06	4	SAT-W	0.0000	7.3355	4,772.0504	3,168.6898	6,237.7556	-3.9918	0.7669	542.1022	540.0360	627.9066	14.7311
62	06	5	Black	0.0555	-0.0091	-4.1457	-4.7345	-3.9918	0.0525	-0.0086	-3.9156	-4.4717	-3.7702	-0.0234
62	06	6	Black*HSGPA	-0.0091	0.0126	0.5069	0.6078	0.7669	-0.0086	0.0125	0.4692	0.5648	0.7306	0.0040
62	06	7	Black*SAT-CR	-4.1442	0.5069	658.3419	522.8345	542.1022	-3.9156	0.4692	641.1612	503.2139	525.5595	2.1509
62	06	8	Black*SAT-M	-4.7327	0.6078	522.8345	824.8368	540.0360	-4.4717	0.5648	503.2139	802.4297	521.1439	2.4035
62	06	9	Black*SAT-W	-3.9903	0.7669	542.1022	540.0360	627.9066	-3.7702	0.7306	525.5595	521.1439	611.9782	2.3814
62	06	10	FYGPA	3.0285	0.0832	13.9431	11.9416	14.7311	-0.0234	0.0040	2.1509	2.4035	2.3814	0.4284

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
63	06	1	HSGPA	0.0000	0.1239	5.2445	2.6303	6.6025	-0.0273	0.0240	2.1645	1.8027	2.4714	0.0588
63	06	2	SAT-CR	0.0000	5.2445	7,721.4254	3,637.3480	5,115.8313	-12.7557	2.1645	2,431.5914	1,463.8586	1,756.0088	13.3128
63	06	3	SAT-M	0.0000	2.6303	3,637.3480	5,481.9935	3,253.5821	-9.7104	1.8027	1,463.8586	1,436.8068	1,322.2970	10.3044
63	06	4	SAT-W	0.0000	6.6025	5,115.8313	3,253.5821	6,436.7830	-12.0851	2.4714	1,756.0088	1,322.2970	1,644.5079	12.1341
63	06	5	Black	0.1159	-0.0273	-12.7557	-9.7104	-12.0851	0.1027	-0.0241	-11.2779	-8.5854	-10.6850	-0.0598
63	06	6	Black*HSGPA	-0.0272	0.0240	2.1645	1.8027	2.4714	-0.0241	0.0233	1.8178	1.5387	2.1429	0.0197
63	06	7	Black*SAT-CR	-12.7168	2.1645	2,431.5914	1,463.8586	1,756.0088	-11.2779	1.8178	2,269.3809	1,340.3736	1,602.3254	7.5760
63	06	8	Black*SAT-M	-9.6808	1.8027	1,463.8586	1,436.8068	1,322.2970	-8.5854	1.5387	1,340.3736	1,342.8021	1,205.3034	4.6745
63	06	9	Black*SAT-W	-12.0483	2.4714	1,756.0088	1,322.2970	1,644.5079	-10.6850	2.1429	1,602.3254	1,205.3034	1,498.9034	6.1659
63	06	10	FYGPA	3.3504	0.0588	13.3128	10.3044	12.1341	-0.0598	0.0197	7.5760	4.6745	6.1659	0.1876
63	07	1	HSGPA	0.0000	0.1260	5.0667	3.2135	5.1592	-0.0218	0.0266	1.1423	0.9222	1.7726	0.0419
63	07	2	SAT-CR	0.0000	5.0667	7,125.5789	3,173.2578	4,778.4802	-9.3073	1.1423	1,625.7127	875.3545	1,287.9263	15.4416
63	07	3	SAT-M	0.0000	3.2135	3,173.2578	6,114.2268	2,983.8501	-6.7407	0.9222	875.3545	1,153.0913	857.3169	8.3045
63	07	4	SAT-W	0.0000	5.1592	4,778.4802	2,983.8501	6,485.2685	-9.9534	1.7726	1,287.9263	857.3169	1,428.7227	16.2805
63	07	5	Black	0.1121	-0.0218	-9.3073	-6.7407	-9.9534	0.0999	-0.0194	-8.2637	-5.9849	-8.8374	-0.0359
63	07	6	Black*HSGPA	-0.0217	0.0266	1.1423	0.9222	1.7726	-0.0194	0.0262	0.9400	0.7757	1.5561	0.0101
63	07	7	Black*SAT-CR	-9.2791	1.1423	1,625.7127	875.3545	1,287.9263	-8.2637	0.9400	1,539.3500	812.8069	1,195.5681	4.8317
63	07	8	Black*SAT-M	-6.7203	0.9222	875.3545	1,153.0913	857.3169	-5.9849	0.7757	812.8069	1,107.7916	790.4271	1.6360
63	07	9	Black*SAT-W	-9.9232	1.7726	1,287.9263	857.3169	1,428.7227	-8.8374	1.5561	1,195.5681	790.4271	1,329.9529	4.8717
63	07	10	FYGPA	3.3136	0.0419	15.4416	8.3045	16.2805	-0.0359	0.0101	4.8317	1.6360	4.8717	0.1769
63	08	1	HSGPA	0.0000	0.1011	2.5290	3.8187	4.0493	-0.0062	0.0087	0.9721	0.5479	0.9452	0.0445
63	08	2	SAT-CR	0.0000	2.5290	6,601.4878	2,882.2122	4,514.8437	-8.4999	0.9721	1,338.8934	685.4055	1,040.4441	10.5033
63	08	3	SAT-M	0.0000	3.8187	2,882.2122	5,927.1466	3,053.3539	-6.0658	0.5479	685.4055	766.3703	761.6499	6.2382
63	08	4	SAT-W	0.0000	4.0493	4,514.8437	3,053.3539	5,872.3007	-7.6423	0.9452	1,040.4441	761.6499	1,083.6057	11.1256
63	08	5	Black	0.0744	-0.0062	-8.4999	-6.0658	-7.6423	0.0691	-0.0058	-7.8672	-5.6143	-7.0734	-0.0362
63	08	6	Black*HSGPA	-0.0062	0.0087	0.9721	0.5479	0.9452	-0.0058	0.0086	0.9192	0.5102	0.8977	0.0063
63	08	7	Black*SAT-CR	-8.4724	0.9721	1,338.8934	685.4055	1,040.4441	-7.8672	0.9192	1,266.8793	634.0142	975.6960	4.3234
63	08	8	Black*SAT-M	-6.0461	0.5479	685.4055	766.3703	761.6499	-5.6143	0.5102	634.0142	729.6960	715.4438	2.6574
63	08	9	Black*SAT-W	-7.6175	0.9452	1,040.4441	761.6499	1,083.6057	-7.0734	0.8977	975.6960	715.4438	1,025.3904	4.2763
63	08	10	FYGPA	3.3519	0.0445	10.5033	6.2382	11.1256	-0.0362	0.0063	4.3234	2.6574	4.2763	0.1740
64	06	1	HSGPA	0.0000	0.2750	10.8330	13.7099	11.3846	-0.0193	0.0507	1.6951	2.4647	1.5229	0.1865
64	06	2	SAT-CR	0.0000	10.8330	6,837.5733	4,029.9794	4,709.3335	-5.9035	1.6951	1,303.9390	849.8369	835.8195	21.2728
64	06	3	SAT-M	0.0000	13.7099	4,029.9794	7,414.7505	3,653.4601	-8.4020	2.4647	849.8369	1,454.7190	789.6468	25.1670
64	06	4	SAT-W	0.0000	11.3846	4,709.3335	3,653.4601	6,058.9811	-5.8093	1.5229	835.8195	789.6468	1,068.6863	23.1180
64	06	5	Black	0.1677	-0.0193	-5.9035	-8.4020	-5.8093	0.1397	-0.0161	-4.9133	-6.9927	-4.8349	-0.0485
64	06	6	Black*HSGPA	-0.0193	0.0507	1.6951	2.4647	1.5229	-0.0161	0.0503	1.5812	2.3026	1.4108	0.0272
64	06	7	Black*SAT-CR	-5.9004	1.6951	1,303.9390	849.8369	835.8195	-4.9133	1.5812	1,269.1062	800.2623	801.5424	4.1201
64	06	8	Black*SAT-M	-8.3975	2.4647	849.8369	1,454.7190	789.6468	-6.9927	2.3026	800.2623	1,384.1638	740.8631	5.2120
64	06	9	Black*SAT-W	-5.8062	1.5229	835.8195	789.6468	1,068.6863	-4.8349	1.4108	801.5424	740.8631	1,034.9560	4.3147
64	06	10	FYGPA	2.5692	0.1865	21.2728	25.1670	23.1180	-0.0485	0.0272	4.1201	5.2120	4.3147	0.8815

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
66	06	1	HSGPA	0.0000	0.1964	6.5698	7.4048	7.3273	-0.0087	0.0121	0.9089	1.2143	0.9607	0.1437
66	06	2	SAT-CR	0.0000	6.5698	5,824.2653	2,981.4473	3,817.1914	-1.9769	0.9089	464.4999	363.2406	366.5103	11.7003
66	06	3	SAT-M	0.0000	7.4048	2,981.4473	6,032.0926	2,686.3943	-2.7684	1.2143	363.2406	533.0267	347.4277	11.4176
66	06	4	SAT-W	0.0000	7.3273	3,817.1914	2,686.3943	5,342.3092	-2.2631	0.9607	366.5103	347.4277	401.2887	14.6657
66	06	5	Black	0.0455	-0.0087	-1.9769	-2.7684	-2.2631	0.0434	-0.0083	-1.8870	-2.6426	-2.1602	-0.0189
66	06	6	Black*HSGPA	-0.0087	0.0121	0.9089	1.2143	0.9607	-0.0083	0.0121	0.8917	1.1901	0.9410	0.0131
66	06	7	Black*SAT-CR	-1.9761	0.9089	464.4999	363.2406	366.5103	-1.8870	0.8917	460.5934	357.7700	362.0383	1.7440
66	06	8	Black*SAT-M	-2.7673	1.2143	363.2406	533.0267	347.4277	-2.6426	1.1901	357.7700	525.3657	341.1653	2.1720
66	06	9	Black*SAT-W	-2.2621	0.9607	366.5103	347.4277	401.2887	-2.1602	0.9410	362.0383	341.1653	396.1694	1.8040
66	06	10	FYGPA	2.9103	0.1437	11.7003	11.4176	14.6657	-0.0189	0.0131	1.7440	2.1720	1.8040	0.6667
66	07	1	HSGPA	0.0000	0.2252	6.4062	8.4623	8.0327	-0.0095	0.0160	0.4394	0.4602	0.4262	0.1864
66	07	2	SAT-CR	0.0000	6.4062	5,552.0250	2,772.9866	3,758.1542	-2.4253	0.4394	371.2622	232.7058	263.6683	13.3758
66	07	3	SAT-M	0.0000	8.4623	2,772.9866	5,798.6776	2,715.5032	-3.2805	0.4602	232.7058	469.2824	238.1586	13.2614
66	07	4	SAT-W	0.0000	8.0327	3,758.1542	2,715.5032	5,182.8955	-2.3938	0.4262	263.6683	238.1586	340.3688	16.6322
66	07	5	Black	0.0632	-0.0095	-2.4253	-3.2805	-2.3938	0.0592	-0.0089	-2.2721	-3.0732	-2.2426	-0.0203
66	07	6	Black*HSGPA	-0.0095	0.0160	0.4394	0.4602	0.4262	-0.0089	0.0159	0.4163	0.4289	0.4034	0.0110
66	07	7	Black*SAT-CR	-2.4244	0.4394	371.2622	232.7058	263.6683	-2.2721	0.4163	365.3823	224.7526	257.8648	1.3819
66	07	8	Black*SAT-M	-3.2793	0.4602	232.7058	469.2824	238.1586	-3.0732	0.4289	224.7526	458.5249	230.3088	1.3793
66	07	9	Black*SAT-W	-2.3929	0.4262	263.6683	238.1586	340.3688	-2.2426	0.4034	257.8648	230.3088	334.6406	1.3691
66	07	10	FYGPA	2.7648	0.1864	13.3758	13.2614	16.6322	-0.0203	0.0110	1.3819	1.3793	1.3691	0.8000
67	08	1	HSGPA	0.0000	0.3768	20.8210	21.7851	23.9388	-0.1045	0.1283	8.7131	8.8517	7.4455	0.3009
67	08	2	SAT-CR	0.0000	20.8210	7,201.7389	4,752.4297	5,207.4367	-14.0506	8.7131	1,664.0186	1,172.1771	1,072.1077	22.1302
67	08	3	SAT-M	0.0000	21.7851	4,752.4297	8,108.6555	4,193.0756	-14.8758	8.8517	1,172.1771	1,953.7143	975.4278	29.0503
67	08	4	SAT-W	0.0000	23.9388	5,207.4367	4,193.0756	6,702.5307	-10.2764	7.4455	1,072.1077	975.4278	1,161.7878	29.4553
67	08	5	Black	0.2193	-0.1045	-14.0506	-14.8758	-10.2764	0.1727	-0.0816	-10.9693	-11.6136	-8.0228	-0.1385
67	08	6	Black*HSGPA	-0.1036	0.1283	8.7131	8.8517	7.4455	-0.0816	0.1175	7.2576	7.3108	6.3810	0.1436
67	08	7	Black*SAT-CR	-13.9274	8.7131	1,664.0186	1,172.1771	1,072.1077	-10.9693	7.2576	1,468.3306	964.9965	928.9852	10.6653
67	08	8	Black*SAT-M	-14.7453	8.8517	1,172.1771	1,953.7143	975.4278	-11.6136	7.3108	964.9965	1,734.3662	823.8998	9.2024
67	08	9	Black*SAT-W	-10.1862	7.4455	1,072.1077	975.4278	1,161.7878	-8.0228	6.3810	928.9852	823.8998	1,057.1107	8.2884
67	08	10	FYGPA	3.0162	0.3009	22.1302	29.0503	29.4553	-0.1385	0.1436	10.6653	9.2024	8.2884	0.9043
69	07	1	HSGPA	0.0000	0.2908	18.3156	19.4057	19.4670	-0.0164	0.0279	2.2734	2.5352	1.9428	0.2133
69	07	2	SAT-CR	0.0000	18.3156	7,043.6706	4,350.8899	5,058.2394	-4.7997	2.2734	947.9142	719.8764	636.6579	20.1017
69	07	3	SAT-M	0.0000	19.4057	4,350.8899	7,337.3057	4,049.3012	-5.9488	2.5352	719.8764	923.5035	559.0685	20.1031
69	07	4	SAT-W	0.0000	19.4670	5,058.2394	4,049.3012	6,248.4204	-4.0302	1.9428	636.6579	559.0685	629.7307	24.2591
69	07	5	Black	0.0856	-0.0164	-4.7997	-5.9488	-4.0302	0.0783	-0.0150	-4.3889	-5.4397	-3.6852	-0.0352
69	07	6	Black*HSGPA	-0.0164	0.0279	2.2734	2.5352	1.9428	-0.0150	0.0276	2.1946	2.4376	1.8767	0.0189
69	07	7	Black*SAT-CR	-4.7967	2.2734	947.9142	719.8764	636.6579	-4.3889	2.1946	924.8915	691.3417	617.3264	3.3163
69	07	8	Black*SAT-M	-5.9451	2.5352	719.8764	923.5035	559.0685	-5.4397	2.4376	691.3417	888.1372	535.1088	4.2540
69	07	9	Black*SAT-W	-4.0276	1.9428	636.6579	559.0685	629.7307	-3.6852	1.8767	617.3264	535.1088	613.4986	2.9824
69	07	10	FYGPA	2.5796	0.2133	20.1017	20.1031	24.2591	-0.0352	0.0189	3.3163	4.2540	2.9824	1.0325

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
69	08	1	HSGPA	0.0000	0.2791	13.4020	16.9287	16.4787	-0.0118	0.0276	1.6149	1.7843	1.5000	0.1966
69	08	2	SAT-CR	0.0000	13.4020	6,578.6944	3,858.6969	4,392.5061	-5.1081	1.6149	893.8826	644.8153	550.9870	14.6117
69	08	3	SAT-M	0.0000	16.9287	3,858.6969	7,000.5712	3,552.8246	-5.8354	1.7843	644.8153	981.2199	506.5792	15.5615
69	08	4	SAT-W	0.0000	16.4787	4,392.5061	3,552.8246	5,800.8547	-4.3401	1.5000	550.9870	506.5792	596.3733	19.7499
69	08	5	Black	0.0947	-0.0118	-5.1081	-5.8354	-4.3401	0.0858	-0.0107	-4.6245	-5.2830	-3.9292	-0.0251
69	08	6	Black*HSGPA	-0.0118	0.0276	1.6149	1.7843	1.5000	-0.0107	0.0275	1.5546	1.7154	1.4488	0.0174
69	08	7	Black*SAT-CR	-5.1050	1.6149	893.8826	644.8153	550.9870	-4.6245	1.5546	867.8059	615.0257	528.8310	3.0312
69	08	8	Black*SAT-M	-5.8318	1.7843	644.8153	981.2199	506.5792	-5.2830	1.7154	615.0257	947.1889	481.2687	2.8859
69	08	9	Black*SAT-W	-4.3374	1.5000	550.9870	506.5792	596.3733	-3.9292	1.4488	528.8310	481.2687	577.5486	2.8535
69	08	10	FYGPA	2.6245	0.1966	14.6117	15.5615	19.7499	-0.0251	0.0174	3.0312	2.8859	2.8535	0.9623
70	08	1	HSGPA	0.0000	0.1397	6.4857	6.0455	6.6287	-0.0193	0.0184	3.0581	2.8981	2.3961	0.0930
70	08	2	SAT-CR	0.0000	6.4857	6,204.3367	2,826.6427	4,260.4041	-7.6168	3.0581	1,492.4508	1,282.7183	1,125.6374	14.7461
70	08	3	SAT-M	0.0000	6.0455	2,826.6427	5,449.3657	2,421.5583	-8.4459	2.8981	1,282.7183	1,480.6524	1,000.6190	8.6910
70	08	4	SAT-W	0.0000	6.6287	4,260.4041	2,421.5583	6,368.9103	-6.0925	2.3961	1,125.6374	1,000.6190	1,042.7125	17.5720
70	08	5	Black	0.0832	-0.0193	-7.6168	-8.4459	-6.0925	0.0763	-0.0177	-6.9831	-7.7433	-5.5856	-0.0284
70	08	6	Black*HSGPA	-0.0193	0.0184	3.0581	2.8981	2.3961	-0.0177	0.0180	2.9110	2.7349	2.2784	0.0140
70	08	7	Black*SAT-CR	-7.6104	3.0581	1,492.4508	1,282.7183	1,125.6374	-6.9831	2.9110	1,434.4841	1,218.4417	1,079.2712	4.3251
70	08	8	Black*SAT-M	-8.4388	2.8981	1,282.7183	1,480.6524	1,000.6190	-7.7433	2.7349	1,218.4417	1,409.3790	949.2057	3.7630
70	08	9	Black*SAT-W	-6.0874	2.3961	1,125.6374	1,000.6190	1,042.7125	-5.5856	2.2784	1,079.2712	949.2057	1,005.6254	3.5103
70	08	10	FYGPA	3.0579	0.0930	14.7461	8.6910	17.5720	-0.0284	0.0140	4.3251	3.7630	3.5103	0.3941
72	06	1	HSGPA	0.0000	0.1708	4.2608	6.0046	5.9278	-0.0205	0.0281	1.3396	2.1938	1.7240	0.1060
72	06	2	SAT-CR	0.0000	4.2608	4,957.5944	1,950.4052	3,234.3126	-5.7433	1.3396	942.1434	656.4657	668.9514	11.4049
72	06	3	SAT-M	0.0000	6.0046	1,950.4052	5,190.6293	1,863.9452	-8.0794	2.1938	656.4657	1,225.2852	665.0594	8.3205
72	06	4	SAT-W	0.0000	5.9278	3,234.3126	1,863.9452	5,092.1297	-5.6253	1.7240	668.9514	665.0594	939.9971	11.3561
72	06	5	Black	0.1380	-0.0205	-5.7433	-8.0794	-5.6253	0.1191	-0.0177	-4.9504	-6.9641	-4.8488	-0.0202
72	06	6	Black*HSGPA	-0.0205	0.0281	1.3396	2.1938	1.7240	-0.0177	0.0277	1.2218	2.0280	1.6086	0.0170
72	06	7	Black*SAT-CR	-5.7394	1.3396	942.1434	656.4657	668.9514	-4.9504	1.2218	909.1806	610.0947	636.6653	1.4877
72	06	8	Black*SAT-M	-8.0740	2.1938	656.4657	1,225.2852	665.0594	-6.9641	2.0280	610.0947	1,160.0521	619.6404	2.5855
72	06	9	Black*SAT-W	-5.6216	1.7240	668.9514	665.0594	939.9971	-4.8488	1.6086	636.6653	619.6404	908.3739	1.4666
72	06	10	FYGPA	2.8692	0.1060	11.4049	8.3205	11.3561	-0.0202	0.0170	1.4877	2.5855	1.4666	0.4510
73	06	1	HSGPA	0.0000	0.2553	8.9836	9.2894	10.6523	-0.0154	0.0259	0.9610	0.7050	1.0369	0.1570
73	06	2	SAT-CR	0.0000	8.9836	5,825.3250	2,769.1449	3,868.7759	-3.5153	0.9610	500.6560	370.3807	430.3099	13.5887
73	06	3	SAT-M	0.0000	9.2894	2,769.1449	5,569.1438	2,576.9000	-3.8041	0.7050	370.3807	616.7886	422.2100	12.9808
73	06	4	SAT-W	0.0000	10.6523	3,868.7759	2,576.9000	5,434.1924	-4.2165	1.0369	430.3099	422.2100	606.3035	14.3774
73	06	5	Black	0.0714	-0.0154	-3.5153	-3.8041	-4.2165	0.0663	-0.0143	-3.2644	-3.5326	-3.9155	-0.0311
73	06	6	Black*HSGPA	-0.0154	0.0259	0.9610	0.7050	1.0369	-0.0143	0.0257	0.9069	0.6465	0.9720	0.0120
73	06	7	Black*SAT-CR	-3.5127	0.9610	500.6560	370.3807	430.3099	-3.2644	0.9069	488.3075	357.0178	415.4986	1.6784
73	06	8	Black*SAT-M	-3.8013	0.7050	370.3807	616.7886	422.2100	-3.5326	0.6465	357.0178	602.3280	406.1819	1.8412
73	06	9	Black*SAT-W	-4.2134	1.0369	430.3099	422.2100	606.3035	-3.9155	0.9720	415.4986	406.1819	588.5381	1.5541
73	06	10	FYGPA	2.7525	0.1570	13.5887	12.9808	14.3774	-0.0311	0.0120	1.6784	1.8412	1.5541	0.4893

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
73	07	1	HSGPA	0.0000	0.2632	7.2600	7.2848	9.7428	-0.0127	0.0275	0.8043	0.8003	1.0531	0.1795
73	07	2	SAT-CR	0.0000	7.2600	5,409.1613	2,427.8196	3,612.2207	-2.2492	0.8043	438.7716	319.7478	393.0395	11.6767
73	07	3	SAT-M	0.0000	7.2848	2,427.8196	5,656.7606	2,239.1980	-3.0743	0.8003	319.7478	488.5706	350.5005	9.7082
73	07	4	SAT-W	0.0000	9.7428	3,612.2207	2,239.1980	4,980.6339	-2.6700	1.0531	393.0395	350.5005	539.1456	17.5380
73	07	5	Black	0.0666	-0.0127	-2.2492	-3.0743	-2.6700	0.0622	-0.0119	-2.0994	-2.8696	-2.4922	-0.0283
73	07	6	Black*HSGPA	-0.0127	0.0275	0.8043	0.8003	1.0531	-0.0119	0.0273	0.7756	0.7611	1.0191	0.0164
73	07	7	Black*SAT-CR	-2.2476	0.8043	438.7716	319.7478	393.0395	-2.0994	0.7756	433.7164	312.8381	387.0385	1.1619
73	07	8	Black*SAT-M	-3.0721	0.8003	319.7478	488.5706	350.5005	-2.8696	0.7611	312.8381	479.1260	342.2980	1.4791
73	07	9	Black*SAT-W	-2.6681	1.0531	393.0395	350.5005	539.1456	-2.4922	1.0191	387.0385	342.2980	532.0218	2.0847
73	07	10	FYGPA	2.6694	0.1795	11.6767	9.7082	17.5380	-0.0283	0.0164	1.1619	1.4791	2.0847	0.7093
73	08	1	HSGPA	0.0000	0.2309	5.0965	6.4675	8.3158	-0.0080	0.0172	-0.2304	0.0241	0.3365	0.1691
73	08	2	SAT-CR	0.0000	5.0965	5,107.3310	2,231.8728	3,349.0288	-1.5502	-0.2304	313.6239	188.5665	238.3032	10.2335
73	08	3	SAT-M	0.0000	6.4675	2,231.8728	4,928.4906	1,939.0746	-2.1200	0.0241	188.5665	327.2288	210.3614	9.0729
73	08	4	SAT-W	0.0000	8.3158	3,349.0288	1,939.0746	4,910.1810	-2.0044	0.3365	238.3032	210.3614	335.4182	16.8388
73	08	5	Black	0.0505	-0.0080	-1.5502	-2.1200	-2.0044	0.0480	-0.0076	-1.4719	-2.0129	-1.9031	-0.0278
73	08	6	Black*HSGPA	-0.0080	0.0172	-0.2304	0.0241	0.3365	-0.0076	0.0171	-0.2428	0.0071	0.3205	0.0111
73	08	7	Black*SAT-CR	-1.5489	-0.2304	313.6239	188.5665	238.3032	-1.4719	-0.2428	311.2227	185.2827	235.1985	1.2289
73	08	8	Black*SAT-M	-2.1183	0.0241	188.5665	327.2288	210.3614	-2.0129	0.0071	185.2827	322.7380	206.1156	1.2486
73	08	9	Black*SAT-W	-2.0028	0.3365	238.3032	210.3614	335.4182	-1.9031	0.3205	235.1985	206.1156	331.4039	1.8569
73	08	10	FYGPA	2.7139	0.1691	10.2335	9.0729	16.8388	-0.0278	0.0111	1.2289	1.2486	1.8569	0.6218
74	07	1	HSGPA	0.0000	0.2289	4.7389	7.2922	7.5903	-0.0164	0.0954	1.4267	2.0070	2.5788	0.1480
74	07	2	SAT-CR	0.0000	4.7389	7,361.1926	4,396.4221	5,445.4786	-18.0471	1.4267	2,734.0656	1,784.5178	2,028.7556	22.4711
74	07	3	SAT-M	0.0000	7.2922	4,396.4221	7,327.0825	4,239.8616	-20.0036	2.0070	1,784.5178	2,873.3599	1,618.8331	24.3336
74	07	4	SAT-W	0.0000	7.5903	5,445.4786	4,239.8616	6,969.9674	-16.3036	2.5788	2,028.7556	1,618.8331	2,636.5202	27.2139
74	07	5	Black	0.4306	-0.0164	-18.0471	-20.0036	-16.3036	0.2454	-0.0093	-10.2752	-11.3892	-9.2825	-0.0975
74	07	6	Black*HSGPA	-0.0164	0.0954	1.4267	2.0070	2.5788	-0.0093	0.0951	1.1306	1.6788	2.3113	0.0534
74	07	7	Black*SAT-CR	-18.0307	1.4267	2,734.0656	1,784.5178	2,028.7556	-10.2752	1.1306	2,408.6648	1,423.8393	1,734.7911	11.2146
74	07	8	Black*SAT-M	-19.9855	2.0070	1,784.5178	2,873.3599	1,618.8331	-11.3892	1.6788	1,423.8393	2,473.5792	1,292.9990	10.9119
74	07	9	Black*SAT-W	-16.2888	2.5788	2,028.7556	1,618.8331	2,636.5202	-9.2825	2.3113	1,734.7911	1,292.9990	2,370.9550	12.1558
74	07	10	FYGPA	2.3487	0.1480	22.4711	24.3336	27.2139	-0.0975	0.0534	11.2146	10.9119	12.1558	0.9034
74	08	1	HSGPA	0.0000	0.2470	6.0479	8.3923	8.0718	-0.0192	0.1036	1.2964	1.8953	2.6614	0.1707
74	08	2	SAT-CR	0.0000	6.0479	7,795.4531	4,642.5183	5,772.1216	-17.2933	1.2964	3,569.4751	2,100.8794	2,710.6270	24.7730
74	08	3	SAT-M	0.0000	8.3923	4,642.5183	7,500.7068	4,403.4808	-19.0414	1.8953	2,100.8794	3,306.1688	1,999.4963	28.0819
74	08	4	SAT-W	0.0000	8.0718	5,772.1216	4,403.4808	7,232.4542	-15.7568	2.6614	2,710.6270	1,999.4963	3,275.6129	30.0017
74	08	5	Black	0.4431	-0.0192	-17.2933	-19.0414	-15.7568	0.2470	-0.0107	-9.6301	-10.6035	-8.7744	-0.1244
74	08	6	Black*HSGPA	-0.0192	0.1036	1.2964	1.8953	2.6614	-0.0107	0.1033	0.9647	1.5301	2.3592	0.0590
74	08	7	Black*SAT-CR	-17.2787	1.2964	3,569.4751	2,100.8794	2,710.6270	-9.6301	0.9647	3,270.6685	1,771.8672	2,438.3699	12.8318
74	08	8	Black*SAT-M	-19.0254	1.8953	2,100.8794	3,306.1688	1,999.4963	-10.6035	1.5301	1,771.8672	2,943.8977	1,699.7175	13.8340
74	08	9	Black*SAT-W	-15.7435	2.6614	2,710.6270	1,999.4963	3,275.6129	-8.7744	2.3592	2,438.3699	1,699.7175	3,027.5464	15.5526
74	08	10	FYGPA	2.3384	0.1707	24.7730	28.0819	30.0017	-0.1244	0.0590	12.8318	13.8340	15.5526	1.0775

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
75	06	1	HSGPA	0.0000	0.2381	14.0284	16.9923	15.8885	-0.0106	0.0133	0.8939	1.2378	0.6975	0.1826
75	06	2	SAT-CR	0.0000	14.0284	6,856.9105	4,187.8562	4,943.6073	-1.9823	0.8939	375.6951	300.2027	281.7441	17.4054
75	06	3	SAT-M	0.0000	16.9923	4,187.8562	7,545.6387	3,958.6016	-2.8143	1.2378	300.2027	482.5873	272.4333	19.3858
75	06	4	SAT-W	0.0000	15.8885	4,943.6073	3,958.6016	6,490.1629	-1.5999	0.6975	281.7441	272.4333	315.3187	21.2810
75	06	5	Black	0.0397	-0.0106	-1.9823	-2.8143	-1.5999	0.0381	-0.0102	-1.9036	-2.7026	-1.5364	-0.0201
75	06	6	Black*HSGPA	-0.0106	0.0133	0.8939	1.2378	0.6975	-0.0102	0.0131	0.8729	1.2079	0.6806	0.0093
75	06	7	Black*SAT-CR	-1.9819	0.8939	375.6951	300.2027	281.7441	-1.9036	0.8729	371.7663	294.6250	278.5733	1.1410
75	06	8	Black*SAT-M	-2.8137	1.2378	300.2027	482.5873	272.4333	-2.7026	1.2079	294.6250	474.6688	267.9317	1.4493
75	06	9	Black*SAT-W	-1.5996	0.6975	281.7441	272.4333	315.3187	-1.5364	0.6806	278.5733	267.9317	312.7596	0.9486
75	06	10	FYGPA	2.7844	0.1826	17.4054	19.3858	21.2810	-0.0201	0.0093	1.1410	1.4493	0.9486	0.6771
75	08	1	HSGPA	0.0000	0.2180	14.1292	14.9052	15.7323	-0.0067	0.0096	0.5691	0.8790	0.6866	0.1541
75	08	2	SAT-CR	0.0000	14.1292	6,359.3246	3,801.1329	4,493.3557	-1.5813	0.5691	274.1197	237.1639	193.8397	14.0811
75	08	3	SAT-M	0.0000	14.9052	3,801.1329	6,926.6557	3,539.8302	-2.6387	0.8790	237.1639	417.2263	222.5365	14.1041
75	08	4	SAT-W	0.0000	15.7323	4,493.3557	3,539.8302	6,213.9970	-1.5376	0.6866	193.8397	222.5365	248.4580	18.2022
75	08	5	Black	0.0352	-0.0067	-1.5813	-2.6387	-1.5376	0.0340	-0.0065	-1.5256	-2.5457	-1.4835	-0.0135
75	08	6	Black*HSGPA	-0.0067	0.0096	0.5691	0.8790	0.6866	-0.0065	0.0095	0.5585	0.8613	0.6763	0.0067
75	08	7	Black*SAT-CR	-1.5809	0.5691	274.1197	237.1639	193.8397	-1.5256	0.5585	271.6197	232.9924	191.4088	1.0879
75	08	8	Black*SAT-M	-2.6380	0.8790	237.1639	417.2263	222.5365	-2.5457	0.8613	232.9924	410.2655	218.4802	1.5926
75	08	9	Black*SAT-W	-1.5373	0.6866	193.8397	222.5365	248.4580	-1.4835	0.6763	191.4088	218.4802	246.0942	1.0610
75	08	10	FYGPA	2.8895	0.1541	14.0811	14.1041	18.2022	-0.0135	0.0067	1.0879	1.5926	1.0610	0.5250
77	06	1	HSGPA	0.0000	0.2912	17.2108	19.6262	18.1246	-0.0230	0.0290	1.9284	1.8010	1.9821	0.1856
77	06	2	SAT-CR	0.0000	17.2108	7,156.7459	4,530.2237	5,362.0080	-3.9182	1.9284	603.9282	493.1084	515.4515	18.3048
77	06	3	SAT-M	0.0000	19.6262	4,530.2237	8,071.5237	4,223.0122	-4.7725	1.8010	493.1084	695.4420	433.6441	18.4769
77	06	4	SAT-W	0.0000	18.1246	5,362.0080	4,223.0122	6,951.8499	-3.7807	1.9821	515.4515	433.6441	620.3562	21.5168
77	06	5	Black	0.0631	-0.0230	-3.9182	-4.7725	-3.7807	0.0591	-0.0215	-3.6711	-4.4714	-3.5422	-0.0396
77	06	6	Black*HSGPA	-0.0229	0.0290	1.9284	1.8010	1.9821	-0.0215	0.0285	1.8385	1.6915	1.8953	0.0215
77	06	7	Black*SAT-CR	-3.9158	1.9284	603.9282	493.1084	515.4515	-3.6711	1.8385	588.5851	474.4203	500.6471	3.1481
77	06	8	Black*SAT-M	-4.7695	1.8010	493.1084	695.4420	433.6441	-4.4714	1.6915	474.4203	672.6794	415.6119	3.5179
77	06	9	Black*SAT-W	-3.7783	1.9821	515.4515	433.6441	620.3562	-3.5422	1.8953	500.6471	415.6119	606.0715	3.0220
77	06	10	FYGPA	2.9898	0.1856	18.3048	18.4769	21.5168	-0.0396	0.0215	3.1481	3.5179	3.0220	0.5167
77	07	1	HSGPA	0.0000	0.2089	14.4575	15.5576	15.9505	-0.0034	0.0071	-0.0128	0.2477	-0.0086	0.0561
77	07	2	SAT-CR	0.0000	14.4575	6,874.9420	3,926.7895	5,058.5077	-1.3982	-0.0128	288.3680	186.8128	217.0367	9.4646
77	07	3	SAT-M	0.0000	15.5576	3,926.7895	7,445.8951	4,082.8684	-1.8452	0.2477	186.8128	309.9420	186.9306	7.4011
77	07	4	SAT-W	0.0000	15.9505	5,058.5077	4,082.8684	6,785.6364	-1.7217	-0.0086	217.0367	186.9306	235.9691	10.1422
77	07	5	Black	0.0346	-0.0034	-1.3982	-1.8452	-1.7217	0.0334	-0.0033	-1.3498	-1.7813	-1.6621	-0.0033
77	07	6	Black*HSGPA	-0.0034	0.0071	-0.0128	0.2477	-0.0086	-0.0033	0.0071	-0.0175	0.2415	-0.0144	0.0004
77	07	7	Black*SAT-CR	-1.3969	-0.0128	288.3680	186.8128	217.0367	-1.3498	-0.0175	286.4149	184.2353	214.6318	0.4979
77	07	8	Black*SAT-M	-1.8435	0.2477	186.8128	309.9420	186.9306	-1.7813	0.2415	184.2353	306.5403	183.7567	0.4405
77	07	9	Black*SAT-W	-1.7201	-0.0086	217.0367	186.9306	235.9691	-1.6621	-0.0144	214.6318	183.7567	233.0077	0.4650
77	07	10	FYGPA	3.4639	0.0561	9.4646	7.4011	10.1422	-0.0033	0.0004	0.4979	0.4405	0.4650	0.0878



## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
77	08	1	HSGPA	0.0000	0.2386	11.9301	14.3800	15.1480	-0.0056	0.0190	0.6056	0.1180	0.6203	0.1573
77	08	2	SAT-CR	0.0000	11.9301	6,742.6310	3,924.8999	5,177.6089	-2.7930	0.6056	456.6295	380.3470	358.2313	17.5918
77	08	3	SAT-M	0.0000	14.3800	3,924.8999	7,377.2102	3,820.1766	-4.0135	0.1180	380.3470	688.3722	358.8924	15.9394
77	08	4	SAT-W	0.0000	15.1480	5,177.6089	3,820.1766	7,193.0242	-2.4656	0.6203	358.2313	358.8924	460.4396	22.6810
77	08	5	Black	0.0581	-0.0056	-2.7930	-4.0135	-2.4656	0.0548	-0.0052	-2.6306	-3.7801	-2.3223	-0.0235
77	08	6	Black*HSGPA	-0.0056	0.0190	0.6056	0.1180	0.6203	-0.0052	0.0189	0.5901	0.0957	0.6066	0.0103
77	08	7	Black*SAT-CR	-2.7911	0.6056	456.6295	380.3470	358.2313	-2.6306	0.5901	448.8340	369.1448	351.3494	2.1112
77	08	8	Black*SAT-M	-4.0109	0.1180	380.3470	688.3722	358.8924	-3.7801	0.0957	369.1448	672.2747	349.0031	2.3763
77	08	9	Black*SAT-W	-2.4640	0.6203	358.2313	358.8924	460.4396	-2.3223	0.6066	351.3494	349.0031	454.3643	2.5274
77	08	10	FYGPA	3.0797	0.1573	17.5918	15.9394	22.6810	-0.0235	0.0103	2.1112	2.3763	2.5274	0.4272
78	06	1	HSGPA	0.0000	0.1519	6.5996	6.3577	6.9227	-0.0055	0.0068	0.5965	0.5354	0.5607	0.0642
78	06	2	SAT-CR	0.0000	6.5996	5,018.7134	1,738.3388	3,024.7242	-1.7677	0.5965	306.2144	147.4226	209.4684	12.8616
78	06	3	SAT-M	0.0000	6.3577	1,738.3388	4,628.9438	1,783.8814	-2.0433	0.5354	147.4226	257.0784	162.7502	8.8372
78	06	4	SAT-W	0.0000	6.9227	3,024.7242	1,783.8814	4,692.1575	-1.6791	0.5607	209.4684	162.7502	258.1654	12.0631
78	06	5	Black	0.0351	-0.0055	-1.7677	-2.0433	-1.6791	0.0339	-0.0053	-1.7057	-1.9716	-1.6202	-0.0111
78	06	6	Black*HSGPA	-0.0055	0.0068	0.5965	0.5354	0.5607	-0.0053	0.0068	0.5867	0.5241	0.5514	0.0052
78	06	7	Black*SAT-CR	-1.7669	0.5965	306.2144	147.4226	209.4684	-1.7057	0.5867	303.0910	143.8123	206.5016	1.1916
78	06	8	Black*SAT-M	-2.0423	0.5354	147.4226	257.0784	162.7502	-1.9716	0.5241	143.8123	252.9053	159.3210	0.9528
78	06	9	Black*SAT-W	-1.6783	0.5607	209.4684	162.7502	258.1654	-1.6202	0.5514	206.5016	159.3210	255.3473	0.8762
78	06	10	FYGPA	3.0262	0.0642	12.8616	8.8372	12.0631	-0.0111	0.0052	1.1916	0.9528	0.8762	0.2364
78	07	1	HSGPA	0.0000	0.1577	5.5544	5.6805	5.6558	-0.0067	0.0074	0.5059	0.6491	0.3102	0.0640
78	07	2	SAT-CR	0.0000	5.5544	4,918.2566	1,567.9479	2,809.8783	-1.6677	0.5059	255.4692	142.8249	147.2028	11.0614
78	07	3	SAT-M	0.0000	5.6805	1,567.9479	4,417.8724	1,462.8259	-2.1333	0.6491	142.8249	247.4105	123.6119	7.8511
78	07	4	SAT-W	0.0000	5.6558	2,809.8783	1,462.8259	4,358.9756	-1.2719	0.3102	147.2028	123.6119	192.9285	10.8376
78	07	5	Black	0.0396	-0.0067	-1.6677	-2.1333	-1.2719	0.0381	-0.0064	-1.6016	-2.0488	-1.2215	-0.0118
78	07	6	Black*HSGPA	-0.0067	0.0074	0.5059	0.6491	0.3102	-0.0064	0.0073	0.4948	0.6349	0.3017	0.0034
78	07	7	Black*SAT-CR	-1.6669	0.5059	255.4692	142.8249	147.2028	-1.6016	0.4948	252.6893	139.2688	145.0826	0.7242
78	07	8	Black*SAT-M	-2.1324	0.6491	142.8249	247.4105	123.6119	-2.0488	0.6349	139.2688	242.8615	120.8998	0.8022
78	07	9	Black*SAT-W	-1.2713	0.3102	147.2028	123.6119	192.9285	-1.2215	0.3017	145.0826	120.8998	191.3114	0.4990
78	07	10	FYGPA	3.0331	0.0640	11.0614	7.8511	10.8376	-0.0118	0.0034	0.7242	0.8022	0.4990	0.2585
78	08	1	HSGPA	0.0000	0.1490	4.8353	5.3042	4.0172	-0.0090	0.0125	0.4130	0.6600	0.3487	0.0566
78	08	2	SAT-CR	0.0000	4.8353	4,425.6811	1,403.1797	2,573.4733	-1.8871	0.4130	289.3541	194.5370	213.8427	10.0393
78	08	3	SAT-M	0.0000	5.3042	1,403.1797	4,162.4044	1,371.3195	-2.7506	0.6600	194.5370	370.5977	239.9905	7.4438
78	08	4	SAT-W	0.0000	4.0172	2,573.4733	1,371.3195	4,270.8096	-2.7396	0.3487	213.8427	239.9905	359.8682	10.3395
78	08	5	Black	0.0478	-0.0090	-1.8871	-2.7506	-2.7396	0.0455	-0.0086	-1.7969	-2.6192	-2.6087	-0.0178
78	08	6	Black*HSGPA	-0.0090	0.0125	0.4130	0.6600	0.3487	-0.0086	0.0124	0.3959	0.6352	0.3239	0.0061
78	08	7	Black*SAT-CR	-1.8861	0.4130	289.3541	194.5370	213.8427	-1.7969	0.3959	285.7949	189.3492	208.6756	0.8875
78	08	8	Black*SAT-M	-2.7492	0.6600	194.5370	370.5977	239.9905	-2.6192	0.6352	189.3492	363.0359	232.4589	1.3187
78	08	9	Black*SAT-W	-2.7381	0.3487	213.8427	239.9905	359.8682	-2.6087	0.3239	208.6756	232.4589	352.3668	1.4211
78	08	10	FYGPA	3.0528	0.0566	10.0393	7.4438	10.3395	-0.0178	0.0061	0.8875	1.3187	1.4211	0.2188

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
80	07	1	HSGPA	0.0000	0.1596	3.2296	4.0394	4.0740	-0.0046	0.0059	0.4060	0.4563	0.4384	0.0820
80	07	2	SAT-CR	0.0000	3.2296	5,836.2503	2,428.5934	3,667.4674	-1.4605	0.4060	200.8696	184.5047	194.8412	8.9532
80	07	3	SAT-M	0.0000	4.0394	2,428.5934	5,760.6423	2,242.9667	-1.5054	0.4563	184.5047	237.0209	172.6270	5.5616
80	07	4	SAT-W	0.0000	4.0740	3,667.4674	2,242.9667	5,184.8708	-1.3748	0.4384	194.8412	172.6270	251.0603	10.7790
80	07	5	Black	0.0157	-0.0046	-1.4605	-1.5054	-1.3748	0.0155	-0.0046	-1.4376	-1.4818	-1.3532	-0.0089
80	07	6	Black*HSGPA	-0.0046	0.0059	0.4060	0.4563	0.4384	-0.0046	0.0059	0.3992	0.4493	0.4320	0.0049
80	07	7	Black*SAT-CR	-1.4596	0.4060	200.8696	184.5047	194.8412	-1.4376	0.3992	198.7378	182.3073	192.8345	0.8366
80	07	8	Black*SAT-M	-1.5046	0.4563	184.5047	237.0209	172.6270	-1.4818	0.4493	182.3073	234.7559	170.5585	0.8274
80	07	9	Black*SAT-W	-1.3740	0.4384	194.8412	172.6270	251.0603	-1.3532	0.4320	192.8345	170.5585	249.1713	0.8705
80	07	10	FYGPA	3.0431	0.0820	8.9532	5.5616	10.7790	-0.0089	0.0049	0.8366	0.8274	0.8705	0.3004
82	06	1	HSGPA	0.0000	0.2161	7.7719	6.8136	9.9421	-0.0091	0.0483	1.3460	1.6579	2.2301	0.1187
82	06	2	SAT-CR	0.0000	7.7719	6,487.7942	2,771.4569	4,206.1184	-7.5701	1.3460	1,379.1534	850.8675	1,050.2225	14.1872
82	06	3	SAT-M	0.0000	6.8136	2,771.4569	5,662.6541	2,816.8675	-8.1645	1.6579	850.8675	1,232.6302	925.9122	9.8215
82	06	4	SAT-W	0.0000	9.9421	4,206.1184	2,816.8675	5,928.6440	-8.5751	2.2301	1,050.2225	925.9122	1,361.9603	17.0410
82	06	5	Black	0.1352	-0.0091	-7.5701	-8.1645	-8.5751	0.1170	-0.0079	-6.5467	-7.0608	-7.4159	-0.0433
82	06	6	Black*HSGPA	-0.0091	0.0483	1.3460	1.6579	2.2301	-0.0079	0.0482	1.2772	1.5836	2.1521	0.0273
82	06	7	Black*SAT-CR	-7.5637	1.3460	1,379.1534	850.8675	1,050.2225	-6.5467	1.2772	1,321.8958	789.1138	985.3629	4.9288
82	06	8	Black*SAT-M	-8.1576	1.6579	850.8675	1,232.6302	925.9122	-7.0608	1.5836	789.1138	1,166.0272	855.9594	4.7094
82	06	9	Black*SAT-W	-8.5679	2.2301	1,050.2225	925.9122	1,361.9603	-7.4159	2.1521	985.3629	855.9594	1,288.4893	5.4796
82	06	10	FYGPA	2.9031	0.1187	14.1872	9.8215	17.0410	-0.0433	0.0273	4.9288	4.7094	5.4796	0.4741
84	06	1	HSGPA	0.0000	0.2720	13.3239	13.6308	14.2636	-0.0385	0.0583	1.7754	3.0969	3.2637	0.1563
84	06	2	SAT-CR	0.0000	13.3239	6,160.6570	3,480.6684	4,315.0991	-8.2550	1.7754	1,331.2541	904.1829	1,025.0706	15.3015
84	06	3	SAT-M	0.0000	13.6308	3,480.6684	6,450.2651	3,321.3579	-10.8275	3.0969	904.1829	1,711.9941	884.7093	14.6988
84	06	4	SAT-W	0.0000	14.2636	4,315.0991	3,321.3579	6,011.2937	-8.3287	3.2637	1,025.0706	884.7093	1,339.6280	15.7730
84	06	5	Black	0.1782	-0.0385	-8.2550	-10.8275	-8.3287	0.1467	-0.0316	-6.7837	-8.8977	-6.8443	-0.0473
84	06	6	Black*HSGPA	-0.0384	0.0583	1.7754	3.0969	3.2637	-0.0316	0.0568	1.4585	2.6813	2.9440	0.0359
84	06	7	Black*SAT-CR	-8.2420	1.7754	1,331.2541	904.1829	1,025.0706	-6.7837	1.4585	1,263.2163	814.9423	956.4253	3.1032
84	06	8	Black*SAT-M	-10.8105	3.0969	904.1829	1,711.9941	884.7093	-8.8977	2.6813	814.9423	1,594.9434	794.6719	4.3195
84	06	9	Black*SAT-W	-8.3156	3.2637	1,025.0706	884.7093	1,339.6280	-6.8443	2.9440	956.4253	794.6719	1,270.3697	3.5082
84	06	10	FYGPA	3.1273	0.1563	15.3015	14.6988	15.7730	-0.0473	0.0359	3.1032	4.3195	3.5082	0.4223
85	06	1	HSGPA	0.0000	0.1428	4.2600	4.9197	6.0224	-0.0069	0.0089	0.8375	1.0231	0.9028	0.0778
85	06	2	SAT-CR	0.0000	4.2600	6,304.9200	3,201.6303	4,177.1173	-2.2501	0.8375	376.2359	316.2381	304.7868	15.5426
85	06	3	SAT-M	0.0000	4.9197	3,201.6303	5,991.9622	3,037.4653	-3.3187	1.0231	316.2381	509.5485	327.3917	15.0408
85	06	4	SAT-W	0.0000	6.0224	4,177.1173	3,037.4653	5,819.7394	-2.3898	0.9028	304.7868	327.3917	375.5908	17.0533
85	06	5	Black	0.0432	-0.0069	-2.2501	-3.3187	-2.3898	0.0414	-0.0066	-2.1528	-3.1753	-2.2865	-0.0141
85	06	6	Black*HSGPA	-0.0069	0.0089	0.8375	1.0231	0.9028	-0.0066	0.0088	0.8220	1.0003	0.8864	0.0058
85	06	7	Black*SAT-CR	-2.2496	0.8375	376.2359	316.2381	304.7868	-2.1528	0.8220	371.1740	308.7721	299.4107	1.0103
85	06	8	Black*SAT-M	-3.3181	1.0231	316.2381	509.5485	327.3917	-3.1753	1.0003	308.7721	498.5367	319.4623	1.5816
85	06	9	Black*SAT-W	-2.3893	0.9028	304.7868	327.3917	375.5908	-2.2865	0.8864	299.4107	319.4623	369.8809	1.1015
85	06	10	FYGPA	2.8837	0.0778	15.5426	15.0408	17.0533	-0.0141	0.0058	1.0103	1.5816	1.1015	0.4304

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
85	07	1	HSGPA	0.0000	0.1446	5.0038	5.4077	5.8419	-0.0069	0.0092	0.8495	0.9081	0.8421	0.0758
85	07	2	SAT-CR	0.0000	5.0038	6,768.1554	3,718.7032	4,735.9332	-2.2043	0.8495	420.8231	366.5237	335.9262	17.3358
85	07	3	SAT-M	0.0000	5.4077	3,718.7032	6,334.3927	3,450.9759	-2.7812	0.9081	366.5237	506.8953	330.0444	15.5436
85	07	4	SAT-W	0.0000	5.8419	4,735.9332	3,450.9759	6,233.0986	-2.2188	0.8421	335.9262	330.0444	385.3154	18.3632
85	07	5	Black	0.0411	-0.0069	-2.2043	-2.7812	-2.2188	0.0394	-0.0066	-2.1137	-2.6668	-2.1275	-0.0143
85	07	6	Black*HSGPA	-0.0069	0.0092	0.8495	0.9081	0.8421	-0.0066	0.0091	0.8343	0.8890	0.8268	0.0049
85	07	7	Black*SAT-CR	-2.2039	0.8495	420.8231	366.5237	335.9262	-2.1137	0.8343	415.9650	360.3942	331.0363	1.4281
85	07	8	Black*SAT-M	-2.7807	0.9081	366.5237	506.8953	330.0444	-2.6668	0.8890	360.3942	499.1618	323.8747	1.5915
85	07	9	Black*SAT-W	-2.2183	0.8421	335.9262	330.0444	385.3154	-2.1275	0.8268	331.0363	323.8747	380.3934	1.4895
85	07	10	FYGPA	2.9013	0.0758	17.3358	15.5436	18.3632	-0.0143	0.0049	1.4281	1.5915	1.4895	0.4368
85	08	1	HSGPA	0.0000	0.1323	3.5619	4.2573	4.7588	-0.0105	0.0115	0.7437	0.9841	0.8779	0.0682
85	08	2	SAT-CR	0.0000	3.5619	6,590.4475	3,416.2337	4,477.9448	-2.4450	0.7437	472.9544	356.4357	357.4578	14.2542
85	08	3	SAT-M	0.0000	4.2573	3,416.2337	6,045.1213	3,069.7812	-3.0273	0.9841	356.4357	491.9789	335.3814	12.7142
85	08	4	SAT-W	0.0000	4.7588	4,477.9448	3,069.7812	6,003.1266	-2.4130	0.8779	357.4578	335.3814	413.8874	16.2747
85	08	5	Black	0.0470	-0.0105	-2.4450	-3.0273	-2.4130	0.0448	-0.0100	-2.3300	-2.8849	-2.2996	-0.0185
85	08	6	Black*HSGPA	-0.0105	0.0115	0.7437	0.9841	0.8779	-0.0100	0.0114	0.7181	0.9524	0.8526	0.0079
85	08	7	Black*SAT-CR	-2.4445	0.7437	472.9544	356.4357	357.4578	-2.3300	0.7181	466.9777	349.0356	351.5591	1.4992
85	08	8	Black*SAT-M	-3.0267	0.9841	356.4357	491.9789	335.3814	-2.8849	0.9524	349.0356	482.8164	328.0780	1.6986
85	08	9	Black*SAT-W	-2.4126	0.8779	357.4578	335.3814	413.8874	-2.2996	0.8526	351.5591	328.0780	408.0658	1.4995
85	08	10	FYGPA	2.9531	0.0682	14.2542	12.7142	16.2747	-0.0185	0.0079	1.4992	1.6986	1.4995	0.4065
86	08	1	HSGPA	0.0000	0.3015	9.6573	10.2111	13.4045	-0.0025	0.0160	0.6676	-0.0077	0.7278	0.2702
86	08	2	SAT-CR	0.0000	9.6573	6,817.9137	2,881.3682	4,530.9125	-2.9111	0.6676	893.4999	322.0164	556.1026	12.2890
86	08	3	SAT-M	0.0000	10.2111	2,881.3682	7,254.1108	2,568.0384	-5.0692	-0.0077	322.0164	646.3838	282.3199	10.9401
86	08	4	SAT-W	0.0000	13.4045	4,530.9125	2,568.0384	5,824.2862	-0.8957	0.7278	556.1026	282.3199	559.8829	20.4406
86	08	5	Black	0.1046	-0.0025	-2.9111	-5.0692	-0.8957	0.0943	-0.0022	-2.6067	-4.5391	-0.8020	-0.0450
86	08	6	Black*HSGPA	-0.0025	0.0160	0.6676	-0.0077	0.7278	-0.0022	0.0160	0.6604	-0.0202	0.7256	0.0201
86	08	7	Black*SAT-CR	-2.8921	0.6676	893.4999	322.0164	556.1026	-2.6067	0.6604	885.0809	307.3559	553.5122	3.5415
86	08	8	Black*SAT-M	-5.0361	-0.0077	322.0164	646.3838	282.3199	-4.5391	-0.0202	307.3559	620.8547	277.8091	1.2969
86	08	9	Black*SAT-W	-0.8898	0.7278	556.1026	282.3199	559.8829	-0.8020	0.7256	553.5122	277.8091	559.0859	2.4280
86	08	10	FYGPA	2.8311	0.2702	12.2890	10.9401	20.4406	-0.0450	0.0201	3.5415	1.2969	2.4280	0.8923
88	06	1	HSGPA	0.0000	0.2278	9.9285	11.4626	11.3177	-0.0077	0.0101	1.0806	1.2925	1.0112	0.1260
88	06	2	SAT-CR	0.0000	9.9285	7,457.3987	4,107.6077	5,561.1154	-2.2652	1.0806	412.9994	325.2781	313.3410	18.6240
88	06	3	SAT-M	0.0000	11.4626	4,107.6077	6,571.6574	3,942.3701	-2.3352	1.2925	325.2781	398.6790	280.5954	16.4927
88	06	4	SAT-W	0.0000	11.3177	5,561.1154	3,942.3701	7,263.9702	-1.9002	1.0112	313.3410	280.5954	329.6377	21.0254
88	06	5	Black	0.0281	-0.0077	-2.2652	-2.3352	-1.9002	0.0273	-0.0075	-2.2016	-2.2696	-1.8468	-0.0065
88	06	6	Black*HSGPA	-0.0077	0.0101	1.0806	1.2925	1.0112	-0.0075	0.0100	1.0632	1.2745	0.9966	0.0044
88	06	7	Black*SAT-CR	-2.2641	1.0806	412.9994	325.2781	313.3410	-2.2016	1.0632	407.8708	319.9910	309.0389	0.5118
88	06	8	Black*SAT-M	-2.3340	1.2925	325.2781	398.6790	280.5954	-2.2696	1.2745	319.9910	393.2285	276.1604	0.6755
88	06	9	Black*SAT-W	-1.8992	1.0112	313.3410	280.5954	329.6377	-1.8468	0.9966	309.0389	276.1604	326.0290	0.5182
88	06	10	FYGPA	3.0206	0.1260	18.6240	16.4927	21.0254	-0.0065	0.0044	0.5118	0.6755	0.5182	0.3752

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
88	07	1	HSGPA	0.0000	0.2259	9.7678	10.0301	10.1984	-0.0064	0.0093	0.6926	0.7381	0.7313	0.1290
88	07	2	SAT-CR	0.0000	9.7678	7,491.7048	4,036.4284	5,550.1328	-1.8313	0.6926	291.4752	217.1132	238.4293	21.6404
88	07	3	SAT-M	0.0000	10.0301	4,036.4284	6,977.0673	3,855.8578	-1.6671	0.7381	217.1132	266.8814	187.9620	15.3874
88	07	4	SAT-W	0.0000	10.1984	5,550.1328	3,855.8578	7,087.4476	-1.7381	0.7313	238.4293	187.9620	265.1121	22.0433
88	07	5	Black	0.0232	-0.0064	-1.8313	-1.6671	-1.7381	0.0226	-0.0063	-1.7889	-1.6284	-1.6978	-0.0047
88	07	6	Black*HSGPA	-0.0064	0.0093	0.6926	0.7381	0.7313	-0.0063	0.0093	0.6808	0.7274	0.7201	0.0055
88	07	7	Black*SAT-CR	-1.8304	0.6926	291.4752	217.1132	238.4293	-1.7889	0.6808	288.1230	214.0617	235.2479	0.8450
88	07	8	Black*SAT-M	-1.6662	0.7381	217.1132	266.8814	187.9620	-1.6284	0.7274	214.0617	264.1037	185.0660	0.8014
88	07	9	Black*SAT-W	-1.7372	0.7313	238.4293	187.9620	265.1121	-1.6978	0.7201	235.2479	185.0660	262.0928	0.7369
88	07	10	FYGPA	3.0016	0.1290	21.6404	15.3874	22.0433	-0.0047	0.0055	0.8450	0.8014	0.7369	0.3717
88	08	1	HSGPA	0.0000	0.2139	8.0701	9.3699	8.0407	-0.0027	0.0062	0.4637	0.5091	0.4009	0.1171
88	08	2	SAT-CR	0.0000	8.0701	7,064.3943	3,749.9849	5,124.6583	-1.6615	0.4637	307.7495	249.6034	240.5349	18.5690
88	08	3	SAT-M	0.0000	9.3699	3,749.9849	6,707.9210	3,644.0092	-1.6443	0.5091	249.6034	287.8036	233.2883	14.3693
88	08	4	SAT-W	0.0000	8.0407	5,124.6583	3,644.0092	6,796.1378	-1.7435	0.4009	240.5349	233.2883	266.4573	18.9985
88	08	5	Black	0.0216	-0.0027	-1.6615	-1.6443	-1.7435	0.0211	-0.0027	-1.6257	-1.6089	-1.7059	-0.0060
88	08	6	Black*HSGPA	-0.0027	0.0062	0.4637	0.5091	0.4009	-0.0027	0.0062	0.4592	0.5047	0.3962	0.0019
88	08	7	Black*SAT-CR	-1.6608	0.4637	307.7495	249.6034	240.5349	-1.6257	0.4592	304.9900	246.8724	237.6393	0.8021
88	08	8	Black*SAT-M	-1.6437	0.5091	249.6034	287.8036	233.2883	-1.6089	0.5047	246.8724	285.1009	230.4226	0.7690
88	08	9	Black*SAT-W	-1.7428	0.4009	240.5349	233.2883	266.4573	-1.7059	0.3962	237.6393	230.4226	263.4189	0.6820
88	08	10	FYGPA	3.0509	0.1171	18.5690	14.3693	18.9985	-0.0060	0.0019	0.8021	0.7690	0.6820	0.3431
89	06	1	HSGPA	0.0000	0.4097	22.9805	28.0094	24.7535	-0.0308	0.0315	1.8975	3.3030	2.1456	0.2987
89	06	2	SAT-CR	0.0000	22.9805	7,404.6315	4,596.1093	5,169.2382	-2.7760	1.8975	505.0432	493.9635	414.6353	26.3704
89	06	3	SAT-M	0.0000	28.0094	4,596.1093	7,681.0167	4,314.4805	-4.3390	3.3030	493.9635	761.3201	525.5408	29.1966
89	06	4	SAT-W	0.0000	24.7535	5,169.2382	4,314.4805	6,614.4475	-2.7558	2.1456	414.6353	525.5408	480.2190	27.9883
89	06	5	Black	0.0473	-0.0308	-2.7760	-4.3390	-2.7558	0.0451	-0.0294	-2.6447	-4.1337	-2.6254	-0.0384
89	06	6	Black*HSGPA	-0.0308	0.0315	1.8975	3.3030	2.1456	-0.0294	0.0305	1.8120	3.1694	2.0608	0.0289
89	06	7	Black*SAT-CR	-2.7735	1.8975	505.0432	493.9635	414.6353	-2.6447	1.8120	497.3438	481.9291	406.9921	3.1624
89	06	8	Black*SAT-M	-4.3351	3.3030	493.9635	761.3201	525.5408	-4.1337	3.1694	481.9291	742.5099	513.5941	4.8525
89	06	9	Black*SAT-W	-2.7533	2.1456	414.6353	525.5408	480.2190	-2.6254	2.0608	406.9921	513.5941	472.6315	3.3286
89	06	10	FYGPA	2.7120	0.2987	26.3704	29.1966	27.9883	-0.0384	0.0289	3.1624	4.8525	3.3286	0.7523
89	07	1	HSGPA	0.0000	0.4006	15.8491	22.4695	19.6008	-0.0201	0.0231	0.7908	1.8143	1.6209	0.2944
89	07	2	SAT-CR	0.0000	15.8491	6,540.7323	3,887.0163	4,392.1600	-1.7765	0.7908	296.8034	289.9958	178.7894	17.2963
89	07	3	SAT-M	0.0000	22.4695	3,887.0163	6,936.9682	3,767.9269	-3.2901	1.8143	289.9958	566.2645	302.2724	20.1146
89	07	4	SAT-W	0.0000	19.6008	4,392.1600	3,767.9269	5,874.4573	-2.1206	1.6209	178.7894	302.2724	285.9522	20.9277
89	07	5	Black	0.0449	-0.0201	-1.7765	-3.2901	-2.1206	0.0429	-0.0192	-1.6967	-3.1424	-2.0254	-0.0264
89	07	6	Black*HSGPA	-0.0201	0.0231	0.7908	1.8143	1.6209	-0.0192	0.0227	0.7551	1.7481	1.5782	0.0130
89	07	7	Black*SAT-CR	-1.7751	0.7908	296.8034	289.9958	178.7894	-1.6967	0.7551	293.6500	284.1556	175.0251	0.8488
89	07	8	Black*SAT-M	-3.2875	1.8143	289.9958	566.2645	302.2724	-3.1424	1.7481	284.1556	555.4484	295.3010	1.8066
89	07	9	Black*SAT-W	-2.1189	1.6209	178.7894	302.2724	285.9522	-2.0254	1.5782	175.0251	295.3010	281.4587	1.5297
89	07	10	FYGPA	2.5892	0.2944	17.2963	20.1146	20.9277	-0.0264	0.0130	0.8488	1.8066	1.5297	0.8899

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
89	08	1	HSGPA	0.0000	0.4277	19.6096	24.0907	24.4337	-0.0282	0.0345	2.3811	3.0811	2.4721	0.3248
89	08	2	SAT-CR	0.0000	19.6096	6,737.8381	4,107.7917	4,699.3013	-3.6565	2.3811	501.7282	458.9932	415.3475	19.0967
89	08	3	SAT-M	0.0000	24.0907	4,107.7917	7,191.7984	3,820.6685	-3.8004	3.0811	458.9932	620.6014	399.0011	23.4280
89	08	4	SAT-W	0.0000	24.4337	4,699.3013	3,820.6685	6,295.7900	-3.1177	2.4721	415.3475	399.0011	487.5569	26.3893
89	08	5	Black	0.0560	-0.0282	-3.6565	-3.8004	-3.1177	0.0529	-0.0266	-3.4516	-3.5874	-2.9430	-0.0243
89	08	6	Black*HSGPA	-0.0282	0.0345	2.3811	3.0811	2.4721	-0.0266	0.0337	2.2780	2.9739	2.3841	0.0190
89	08	7	Black*SAT-CR	-3.6534	2.3811	501.7282	458.9932	415.3475	-3.4516	2.2780	488.3697	445.1092	403.9575	2.4193
89	08	8	Black*SAT-M	-3.7971	3.0811	458.9932	620.6014	399.0011	-3.5874	2.9739	445.1092	606.1712	387.1630	2.6558
89	08	9	Black*SAT-W	-3.1150	2.4721	415.3475	399.0011	487.5569	-2.9430	2.3841	403.9575	387.1630	477.8452	2.6193
89	08	10	FYGPA	2.6353	0.3248	19.0967	23.4280	26.3893	-0.0243	0.0190	2.4193	2.6558	2.6193	0.9625
90	08	1	HSGPA	0.0000	0.1965	11.5415	12.8883	12.8373	-0.0099	0.0257	1.7037	1.3777	1.7826	0.1326
90	08	2	SAT-CR	0.0000	11.5415	6,620.1636	3,538.1328	4,794.1054	-4.3094	1.7037	808.3720	512.5929	610.1104	20.0493
90	08	3	SAT-M	0.0000	12.8883	3,538.1328	6,676.6831	3,733.8534	-5.2424	1.3777	512.5929	903.3111	549.5298	20.8220
90	08	4	SAT-W	0.0000	12.8373	4,794.1054	3,733.8534	6,735.3505	-4.3831	1.7826	610.1104	549.5298	813.5527	23.3231
90	08	5	Black	0.1092	-0.0099	-4.3094	-5.2424	-4.3831	0.0973	-0.0088	-3.8390	-4.6702	-3.9046	-0.0412
90	08	6	Black*HSGPA	-0.0099	0.0257	1.7037	1.3777	1.7826	-0.0088	0.0256	1.6612	1.3260	1.7394	0.0182
90	08	7	Black*SAT-CR	-4.3069	1.7037	808.3720	512.5929	610.1104	-3.8390	1.6612	789.8119	490.0141	591.2329	2.7748
90	08	8	Black*SAT-M	-5.2395	1.3777	512.5929	903.3111	549.5298	-4.6702	1.3260	490.0141	875.8434	526.5648	3.4226
90	08	9	Black*SAT-W	-4.3806	1.7826	610.1104	549.5298	813.5527	-3.9046	1.7394	591.2329	526.5648	794.3523	3.0384
90	08	10	FYGPA	3.0895	0.1326	20.0493	20.8220	23.3231	-0.0412	0.0182	2.7748	3.4226	3.0384	0.4895
91	06	1	HSGPA	0.0000	0.1198	4.2698	4.5545	4.4816	-0.0100	0.0164	0.9841	1.1549	0.8493	0.0619
91	06	2	SAT-CR	0.0000	4.2698	5,972.4398	2,918.2215	4,093.1326	-4.6744	0.9841	733.7028	572.1007	615.7855	13.6606
91	06	3	SAT-M	0.0000	4.5545	2,918.2215	5,834.9772	3,026.5510	-6.6395	1.1549	572.1007	1,025.5356	642.8707	13.2567
91	06	4	SAT-W	0.0000	4.4816	4,093.1326	3,026.5510	5,790.6722	-5.4650	0.8493	615.7855	642.8707	798.7392	14.2614
91	06	5	Black	0.0831	-0.0100	-4.6744	-6.6395	-5.4650	0.0762	-0.0091	-4.2862	-6.0881	-5.0112	-0.0287
91	06	6	Black*HSGPA	-0.0100	0.0164	0.9841	1.1549	0.8493	-0.0091	0.0163	0.9375	1.0888	0.7949	0.0094
91	06	7	Black*SAT-CR	-4.6732	0.9841	733.7028	572.1007	615.7855	-4.2862	0.9375	711.8586	541.0732	590.2463	2.4431
91	06	8	Black*SAT-M	-6.6378	1.1549	572.1007	1,025.5356	642.8707	-6.0881	1.0888	541.0732	981.4644	606.5951	3.2197
91	06	9	Black*SAT-W	-5.4636	0.8493	615.7855	642.8707	798.7392	-5.0112	0.7949	590.2463	606.5951	768.8802	2.6551
91	06	10	FYGPA	3.2009	0.0619	13.6606	13.2567	14.2614	-0.0287	0.0094	2.4431	3.2197	2.6551	0.2604
91	07	1	HSGPA	0.0000	0.1116	3.1193	2.5789	3.3811	-0.0047	0.0132	0.5088	0.6928	0.7755	0.0557
91	07	2	SAT-CR	0.0000	3.1193	5,854.8918	2,680.6905	3,881.1095	-4.6605	0.5088	773.5475	530.8132	651.5961	10.9173
91	07	3	SAT-M	0.0000	2.5789	2,680.6905	5,568.2851	2,728.1369	-5.3497	0.6928	530.8132	830.8344	606.8642	11.5875
91	07	4	SAT-W	0.0000	3.3811	3,881.1095	2,728.1369	5,674.1019	-5.4360	0.7755	651.5961	606.8642	875.2035	12.2970
91	07	5	Black	0.0781	-0.0047	-4.6605	-5.3497	-5.4360	0.0720	-0.0043	-4.2966	-4.9320	-5.0116	-0.0230
91	07	6	Black*HSGPA	-0.0047	0.0132	0.5088	0.6928	0.7755	-0.0043	0.0132	0.4870	0.6678	0.7501	0.0071
91	07	7	Black*SAT-CR	-4.6591	0.5088	773.5475	530.8132	651.5961	-4.2966	0.4870	751.8339	505.8886	626.2693	2.2163
91	07	8	Black*SAT-M	-5.3481	0.6928	530.8132	830.8344	606.8642	-4.9320	0.6678	505.8886	802.2241	577.7921	2.5959
91	07	9	Black*SAT-W	-5.4344	0.7755	651.5961	606.8642	875.2035	-5.0116	0.7501	626.2693	577.7921	845.6622	2.6461
91	07	10	FYGPA	3.1942	0.0557	10.9173	11.5875	12.2970	-0.0230	0.0071	2.2163	2.5959	2.6461	0.3146

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
92	06	1	HSGPA	0.0000	0.2368	8.0069	7.6944	8.1414	-0.0045	0.0185	0.7758	0.9039	0.9635	0.1035
92	06	2	SAT-CR	0.0000	8.0069	5,718.1593	2,994.5570	3,831.7428	-1.4640	0.7758	342.4083	407.2031	290.4761	8.3095
92	06	3	SAT-M	0.0000	7.6944	2,994.5570	6,541.8796	3,016.1922	-3.1786	0.9039	407.2031	668.3729	371.4425	6.4208
92	06	4	SAT-W	0.0000	8.1414	3,831.7428	3,016.1922	5,294.9391	-1.4738	0.9635	290.4761	371.4425	277.4663	9.3477
92	06	5	Black	0.0288	-0.0045	-1.4640	-3.1786	-1.4738	0.0280	-0.0044	-1.4219	-3.0871	-1.4314	-0.0060
92	06	6	Black*HSGPA	-0.0045	0.0185	0.7758	0.9039	0.9635	-0.0044	0.0185	0.7692	0.8895	0.9569	0.0018
92	06	7	Black*SAT-CR	-1.4614	0.7758	342.4083	407.2031	290.4761	-1.4219	0.7692	340.2688	402.5581	288.3223	0.7146
92	06	8	Black*SAT-M	-3.1728	0.9039	407.2031	668.3729	371.4425	-3.0871	0.8895	402.5581	658.2878	366.7662	1.2237
92	06	9	Black*SAT-W	-1.4712	0.9635	290.4761	371.4425	277.4663	-1.4314	0.9569	288.3223	366.7662	275.2979	0.8668
92	06	10	FYGPA	3.4081	0.1035	8.3095	6.4208	9.3477	-0.0060	0.0018	0.7146	1.2237	0.8668	0.2347
94	07	1	HSGPA	0.0000	0.2454	6.7991	8.7390	9.2127	-0.0120	0.0194	-0.1324	0.4356	0.3216	0.1205
94	07	2	SAT-CR	0.0000	6.7991	5,849.1612	2,934.1947	4,310.5293	-2.1663	-0.1324	354.0772	275.9146	293.1468	15.3085
94	07	3	SAT-M	0.0000	8.7390	2,934.1947	6,013.2039	3,149.7720	-2.5638	0.4356	275.9146	504.7210	298.8660	16.4944
94	07	4	SAT-W	0.0000	9.2127	4,310.5293	3,149.7720	5,726.1061	-2.6060	0.3216	293.1468	298.8660	362.5621	16.6949
94	07	5	Black	0.0450	-0.0120	-2.1663	-2.5638	-2.6060	0.0431	-0.0115	-2.0687	-2.4484	-2.4887	-0.0228
94	07	6	Black*HSGPA	-0.0120	0.0194	-0.1324	0.4356	0.3216	-0.0115	0.0193	-0.1584	0.4047	0.2902	0.0038
94	07	7	Black*SAT-CR	-2.1634	-0.1324	354.0772	275.9146	293.1468	-2.0687	-0.1584	349.3906	270.3679	287.5088	1.5816
94	07	8	Black*SAT-M	-2.5604	0.4356	275.9146	504.7210	298.8660	-2.4484	0.4047	270.3679	498.1564	292.1934	2.4181
94	07	9	Black*SAT-W	-2.6026	0.3216	293.1468	298.8660	362.5621	-2.4887	0.2902	287.5088	292.1934	355.7797	1.8345
94	07	10	FYGPA	3.0232	0.1205	15.3085	16.4944	16.6949	-0.0228	0.0038	1.5816	2.4181	1.8345	0.3761
96	08	1	HSGPA	0.0000	0.3095	14.4212	7.2036	10.9990	-0.0220	0.0251	3.7422	2.2027	2.9426	0.1693
96	08	2	SAT-CR	0.0000	14.4212	10,050.6170	5,073.3222	7,412.1885	-10.2870	3.7422	1,978.1841	1,234.5928	1,567.3747	28.0054
96	08	3	SAT-M	0.0000	7.2036	5,073.3222	7,928.5407	4,822.4982	-8.7473	2.2027	1,234.5928	1,441.6268	1,022.8654	18.8624
96	08	4	SAT-W	0.0000	10.9990	7,412.1885	4,822.4982	8,769.0550	-10.5867	2.9426	1,567.3747	1,022.8654	1,730.1978	30.6644
96	08	5	Black	0.1006	-0.0220	-10.2870	-8.7473	-10.5867	0.0911	-0.0198	-9.2518	-7.8671	-9.5214	-0.0502
96	08	6	Black*HSGPA	-0.0218	0.0251	3.7422	2.2027	2.9426	-0.0198	0.0246	3.5174	2.0115	2.7113	0.0174
96	08	7	Black*SAT-CR	-10.2223	3.7422	1,978.1841	1,234.5928	1,567.3747	-9.2518	3.5174	1,873.0273	1,145.1752	1,459.1539	7.3095
96	08	8	Black*SAT-M	-8.6923	2.2027	1,234.5928	1,441.6268	1,022.8654	-7.8671	2.0115	1,145.1752	1,365.5926	930.8423	5.5510
96	08	9	Black*SAT-W	-10.5202	2.9426	1,567.3747	1,022.8654	1,730.1978	-9.5214	2.7113	1,459.1539	930.8423	1,618.8237	8.2074
96	08	10	FYGPA	3.0770	0.1693	28.0054	18.8624	30.6644	-0.0502	0.0174	7.3095	5.5510	8.2074	0.5383
97	06	1	HSGPA	0.0000	0.1128	7.6047	4.2179	6.0264	-0.0212	0.0158	2.2890	1.2905	1.9296	0.0572
97	06	2	SAT-CR	0.0000	7.6047	5,873.3107	2,099.1077	3,078.4413	-7.0631	2.2890	1,078.8259	728.6975	738.8385	13.6254
97	06	3	SAT-M	0.0000	4.2179	2,099.1077	4,059.5170	1,879.7708	-6.2538	1.2905	728.6975	843.1252	521.2309	8.8579
97	06	4	SAT-W	0.0000	6.0264	3,078.4413	1,879.7708	4,495.0831	-5.4797	1.9296	738.8385	521.2309	667.4205	11.8367
97	06	5	Black	0.0743	-0.0212	-7.0631	-6.2538	-5.4797	0.0690	-0.0196	-6.5384	-5.7892	-5.0726	-0.0331
97	06	6	Black*HSGPA	-0.0212	0.0158	2.2890	1.2905	1.9296	-0.0196	0.0153	2.1396	1.1582	1.8136	0.0156
97	06	7	Black*SAT-CR	-7.0429	2.2890	1,078.8259	728.6975	738.8385	-6.5384	2.1396	1,029.0807	684.6524	700.2456	3.9652
97	06	8	Black*SAT-M	-6.2359	1.2905	728.6975	843.1252	521.2309	-5.7892	1.1582	684.6524	804.1271	487.0603	2.9157
97	06	9	Black*SAT-W	-5.4640	1.9296	738.8385	521.2309	667.4205	-5.0726	1.8136	700.2456	487.0603	637.4797	3.1957
97	06	10	FYGPA	3.4288	0.0572	13.6254	8.8579	11.8367	-0.0331	0.0156	3.9652	2.9157	3.1957	0.1371

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
98	06	1	HSGPA	0.0000	0.1931	8.4297	9.1779	7.9081	-0.0077	0.0121	0.6665	1.0308	0.8671	0.1048
98	06	2	SAT-CR	0.0000	8.4297	5,978.0099	2,890.2362	3,988.4924	-2.0787	0.6665	370.5902	276.5304	307.3864	12.5881
98	06	3	SAT-M	0.0000	9.1779	2,890.2362	6,090.8358	2,818.1308	-2.7825	1.0308	276.5304	470.8298	297.5382	11.7886
98	06	4	SAT-W	0.0000	7.9081	3,988.4924	2,818.1308	5,753.6989	-2.0753	0.8671	307.3864	297.5382	399.1235	12.8060
98	06	5	Black	0.0362	-0.0077	-2.0787	-2.7825	-2.0753	0.0349	-0.0074	-2.0034	-2.6817	-2.0002	-0.0152
98	06	6	Black*HSGPA	-0.0077	0.0121	0.6665	1.0308	0.8671	-0.0074	0.0120	0.6505	1.0094	0.8511	0.0061
98	06	7	Black*SAT-CR	-2.0777	0.6665	370.5902	276.5304	307.3864	-2.0034	0.6505	366.2712	270.7491	303.0745	1.0748
98	06	8	Black*SAT-M	-2.7812	1.0308	276.5304	470.8298	297.5382	-2.6817	1.0094	270.7491	463.0910	291.7662	1.6116
98	06	9	Black*SAT-W	-2.0744	0.8671	307.3864	297.5382	399.1235	-2.0002	0.8511	303.0745	291.7662	394.8185	1.1665
98	06	10	FYGPA	3.1285	0.1048	12.5881	11.7886	12.8060	-0.0152	0.0061	1.0748	1.6116	1.1665	0.2899
100	06	1	HSGPA	0.0000	0.1446	5.3062	3.5915	7.0997	-0.0078	0.0136	0.6493	0.3836	0.8833	0.1038
100	06	2	SAT-CR	0.0000	5.3062	4,992.6914	1,592.5349	3,175.3762	-2.7180	0.6493	467.3727	272.1372	333.0697	10.6775
100	06	3	SAT-M	0.0000	3.5915	1,592.5349	4,538.2977	1,819.7221	-4.4960	0.3836	272.1372	653.4619	309.5666	12.4955
100	06	4	SAT-W	0.0000	7.0997	3,175.3762	1,819.7221	5,320.2875	-2.7622	0.8833	333.0697	309.5666	512.1841	14.8663
100	06	5	Black	0.0770	-0.0078	-2.7180	-4.4960	-2.7622	0.0711	-0.0072	-2.5087	-4.1497	-2.5495	-0.0250
100	06	6	Black*HSGPA	-0.0078	0.0136	0.6493	0.3836	0.8833	-0.0072	0.0135	0.6281	0.3487	0.8619	0.0069
100	06	7	Black*SAT-CR	-2.7165	0.6493	467.3727	272.1372	333.0697	-2.5087	0.6281	459.9892	259.9240	325.5663	1.7430
100	06	8	Black*SAT-M	-4.4934	0.3836	272.1372	653.4619	309.5666	-4.1497	0.3487	259.9240	633.2599	297.1551	2.0166
100	06	9	Black*SAT-W	-2.7606	0.8833	333.0697	309.5666	512.1841	-2.5495	0.8619	325.5663	297.1551	504.5588	2.1679
100	06	10	FYGPA	2.9244	0.1038	10.6775	12.4955	14.8663	-0.0250	0.0069	1.7430	2.0166	2.1679	0.5214
100	07	1	HSGPA	0.0000	0.1168	4.0807	4.4385	5.3955	-0.0069	0.0100	0.8907	1.1978	1.1013	0.0889
100	07	2	SAT-CR	0.0000	4.0807	5,454.3838	2,067.2710	3,636.1212	-2.6781	0.8907	545.8868	506.3398	513.8086	10.2147
100	07	3	SAT-M	0.0000	4.4385	2,067.2710	4,600.9174	2,061.5408	-3.2756	1.1978	506.3398	776.7843	548.3951	12.7587
100	07	4	SAT-W	0.0000	5.3955	3,636.1212	2,061.5408	5,740.8291	-2.7190	1.1013	513.8086	548.3951	651.4994	13.2940
100	07	5	Black	0.0555	-0.0069	-2.6781	-3.2756	-2.7190	0.0524	-0.0065	-2.5295	-3.0939	-2.5681	-0.0150
100	07	6	Black*HSGPA	-0.0069	0.0100	0.8907	1.1978	1.1013	-0.0065	0.0099	0.8721	1.1751	1.0824	0.0073
100	07	7	Black*SAT-CR	-2.6765	0.8907	545.8868	506.3398	513.8086	-2.5295	0.8721	538.7189	497.5727	506.5313	1.2338
100	07	8	Black*SAT-M	-3.2736	1.1978	506.3398	776.7843	548.3951	-3.0939	1.1751	497.5727	766.0611	539.4942	1.8863
100	07	9	Black*SAT-W	-2.7173	1.1013	513.8086	548.3951	651.4994	-2.5681	1.0824	506.5313	539.4942	644.1111	1.2569
100	07	10	FYGPA	3.0265	0.0889	10.2147	12.7587	13.2940	-0.0150	0.0073	1.2338	1.8863	1.2569	0.4545
100	08	1	HSGPA	0.0000	0.1133	3.3965	2.7072	4.8142	-0.0062	0.0102	0.7193	0.8218	0.6403	0.0763
100	08	2	SAT-CR	0.0000	3.3965	5,111.3697	1,480.8989	2,990.3043	-2.6995	0.7193	679.0872	412.1097	449.8871	10.0071
100	08	3	SAT-M	0.0000	2.7072	1,480.8989	4,222.8331	1,556.6092	-3.8737	0.8218	412.1097	784.6661	372.7439	11.4290
100	08	4	SAT-W	0.0000	4.8142	2,990.3043	1,556.6092	4,949.9154	-2.2985	0.6403	449.8871	372.7439	535.7844	13.2125
100	08	5	Black	0.0717	-0.0062	-2.6995	-3.8737	-2.2985	0.0666	-0.0058	-2.5060	-3.5960	-2.1337	-0.0211
100	08	6	Black*HSGPA	-0.0062	0.0102	0.7193	0.8218	0.6403	-0.0058	0.0102	0.7025	0.7977	0.6261	0.0077
100	08	7	Black*SAT-CR	-2.6976	0.7193	679.0872	412.1097	449.8871	-2.5060	0.7025	671.8050	401.6600	443.6867	1.5742
100	08	8	Black*SAT-M	-3.8710	0.8218	412.1097	784.6661	372.7439	-3.5960	0.7977	401.6600	769.6712	363.8466	2.6802
100	08	9	Black*SAT-W	-2.2969	0.6403	449.8871	372.7439	535.7844	-2.1337	0.6261	443.6867	363.8466	530.5051	1.9307
100	08	10	FYGPA	3.0327	0.0763	10.0071	11.4290	13.2125	-0.0211	0.0077	1.5742	2.6802	1.9307	0.4303

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
101	07	1	HSGPA	0.0000	0.1024	5.3164	5.5068	5.2554	-0.0147	0.0150	1.6659	2.1559	1.6245	0.0416
101	07	2	SAT-CR	0.0000	5.3164	5,871.7806	2,743.9963	3,980.5571	-3.7764	1.6659	666.1595	595.5472	609.4276	12.9357
101	07	3	SAT-M	0.0000	5.5068	2,743.9963	5,761.4283	2,887.3134	-5.5533	2.1559	595.5472	936.4204	679.4187	9.6900
101	07	4	SAT-W	0.0000	5.2554	3,980.5571	2,887.3134	6,123.1743	-4.0333	1.6245	609.4276	679.4187	742.9456	13.8194
101	07	5	Black	0.0556	-0.0147	-3.7764	-5.5533	-4.0333	0.0525	-0.0139	-3.5665	-5.2446	-3.8091	-0.0179
101	07	6	Black*HSGPA	-0.0147	0.0150	1.6659	2.1559	1.6245	-0.0139	0.0148	1.6104	2.0742	1.5652	0.0087
101	07	7	Black*SAT-CR	-3.7747	1.6659	666.1595	595.5472	609.4276	-3.5665	1.6104	651.9049	574.5855	594.2034	1.8948
101	07	8	Black*SAT-M	-5.5507	2.1559	595.5472	936.4204	679.4187	-5.2446	2.0742	574.5855	905.5958	657.0313	2.3946
101	07	9	Black*SAT-W	-4.0314	1.6245	609.4276	679.4187	742.9456	-3.8091	1.5652	594.2034	657.0313	726.6860	1.9512
101	07	10	FYGPA	3.3266	0.0416	12.9357	9.6900	13.8194	-0.0179	0.0087	1.8948	2.3946	1.9512	0.1956
101	08	1	HSGPA	0.0000	0.1056	6.1565	6.4034	4.6801	-0.0145	0.0175	1.4130	2.1131	1.4296	0.0457
101	08	2	SAT-CR	0.0000	6.1565	5,884.3443	2,799.4197	3,945.1977	-3.2123	1.4130	699.4253	608.2072	568.2935	13.4432
101	08	3	SAT-M	0.0000	6.4034	2,799.4197	5,943.8354	2,785.7344	-5.5191	2.1131	608.2072	1,008.8879	646.2446	11.8915
101	08	4	SAT-W	0.0000	4.6801	3,945.1977	2,785.7344	5,956.8337	-4.2661	1.4296	568.2935	646.2446	686.5346	14.0446
101	08	5	Black	0.0628	-0.0145	-3.2123	-5.5191	-4.2661	0.0589	-0.0136	-3.0107	-5.1727	-3.9983	-0.0241
101	08	6	Black*HSGPA	-0.0145	0.0175	1.4130	2.1131	1.4296	-0.0136	0.0173	1.3665	2.0332	1.3678	0.0091
101	08	7	Black*SAT-CR	-3.2104	1.4130	699.4253	608.2072	568.2935	-3.0107	1.3665	689.1129	590.4889	554.5980	2.3816
101	08	8	Black*SAT-M	-5.5159	2.1131	608.2072	1,008.8879	646.2446	-5.1727	2.0332	590.4889	978.4453	622.7136	3.5742
101	08	9	Black*SAT-W	-4.2635	1.4296	568.2935	646.2446	686.5346	-3.9983	1.3678	554.5980	622.7136	668.3461	2.6269
101	08	10	FYGPA	3.3262	0.0457	13.4432	11.8915	14.0446	-0.0241	0.0091	2.3816	3.5742	2.6269	0.2176
102	06	1	HSGPA	0.0000	0.1340	4.1633	6.6808	5.5794	-0.0115	0.0147	1.2758	1.4492	1.4577	0.0542
102	06	2	SAT-CR	0.0000	4.1633	7,136.0971	3,618.7748	5,141.4418	-3.7851	1.2758	687.7988	580.8549	617.3151	12.6276
102	06	3	SAT-M	0.0000	6.6808	3,618.7748	6,812.7191	3,478.2569	-4.1529	1.4492	580.8549	733.0451	539.8671	10.6369
102	06	4	SAT-W	0.0000	5.5794	5,141.4418	3,478.2569	6,881.6189	-3.6089	1.4577	617.3151	539.8671	661.7675	13.4717
102	06	5	Black	0.0455	-0.0115	-3.7851	-4.1529	-3.6089	0.0434	-0.0110	-3.6129	-3.9640	-3.4448	-0.0185
102	06	6	Black*HSGPA	-0.0115	0.0147	1.2758	1.4492	1.4577	-0.0110	0.0145	1.2322	1.4013	1.4160	0.0086
102	06	7	Black*SAT-CR	-3.7837	1.2758	687.7988	580.8549	617.3151	-3.6129	1.2322	673.4773	565.1419	603.6602	2.0386
102	06	8	Black*SAT-M	-4.1513	1.4492	580.8549	733.0451	539.8671	-3.9640	1.4013	565.1419	715.8054	524.8853	2.0129
102	06	9	Black*SAT-W	-3.6076	1.4577	617.3151	539.8671	661.7675	-3.4448	1.4160	603.6602	524.8853	648.7480	2.1720
102	06	10	FYGPA	3.2215	0.0542	12.6276	10.6369	13.4717	-0.0185	0.0086	2.0386	2.0129	2.1720	0.1992
102	08	1	HSGPA	0.0000	0.1143	4.8741	5.8555	5.5707	-0.0160	0.0173	2.1667	2.3497	2.1803	0.0432
102	08	2	SAT-CR	0.0000	4.8741	7,127.8431	3,516.1207	4,728.1984	-5.1942	2.1667	913.6754	800.6571	778.7393	13.2278
102	08	3	SAT-M	0.0000	5.8555	3,516.1207	6,128.5732	3,269.6267	-5.4626	2.3497	800.6571	965.5185	750.5622	9.9625
102	08	4	SAT-W	0.0000	5.5707	4,728.1984	3,269.6267	6,161.2413	-4.9101	2.1803	778.7393	750.5622	837.0392	12.9785
102	08	5	Black	0.0510	-0.0160	-5.1942	-5.4626	-4.9101	0.0484	-0.0151	-4.9294	-5.1842	-4.6598	-0.0172
102	08	6	Black*HSGPA	-0.0159	0.0173	2.1667	2.3497	2.1803	-0.0151	0.0170	2.0839	2.2626	2.1020	0.0090
102	08	7	Black*SAT-CR	-5.1922	2.1667	913.6754	800.6571	778.7393	-4.9294	2.0839	886.7058	772.2939	753.2451	2.2979
102	08	8	Black*SAT-M	-5.4605	2.3497	800.6571	965.5185	750.5622	-5.1842	2.2626	772.2939	935.6895	723.7506	2.5609
102	08	9	Black*SAT-W	-4.9082	2.1803	778.7393	750.5622	837.0392	-4.6598	2.1020	753.2451	723.7506	812.9396	2.3188
102	08	10	FYGPA	3.2793	0.0432	13.2278	9.9625	12.9785	-0.0172	0.0090	2.2979	2.5609	2.3188	0.1679



## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
103	06	1	HSGPA	0.0000	0.2389	12.2342	16.5918	12.1614	-0.0532	0.0778	4.7596	4.7589	4.1107	0.2174
103	06	2	SAT-CR	0.0000	12.2342	7,500.2836	4,102.6849	4,830.4084	-13.3959	4.7596	2,669.5163	1,512.1145	1,603.2839	24.4425
103	06	3	SAT-M	0.0000	16.5918	4,102.6849	7,934.6956	3,819.8931	-16.1723	4.7589	1,512.1145	2,786.3256	1,334.7580	27.9257
103	06	4	SAT-W	0.0000	12.1614	4,830.4084	3,819.8931	6,141.6974	-10.0974	4.1107	1,603.2839	1,334.7580	1,952.9616	22.5276
103	06	5	Black	0.3231	-0.0532	-13.3959	-16.1723	-10.0974	0.2195	-0.0360	-9.0680	-10.9474	-6.8352	-0.1090
103	06	6	Black*HSGPA	-0.0530	0.0778	4.7596	4.7589	4.1107	-0.0360	0.0749	4.0492	3.9012	3.5752	0.0727
103	06	7	Black*SAT-CR	-13.3444	4.7596	2,669.5163	1,512.1145	1,603.2839	-9.0680	4.0492	2,490.7563	1,296.3057	1,468.5401	7.5150
103	06	8	Black*SAT-M	-16.1101	4.7589	1,512.1145	2,786.3256	1,334.7580	-10.9474	3.9012	1,296.3057	2,525.7895	1,172.0881	6.9789
103	06	9	Black*SAT-W	-10.0586	4.1107	1,603.2839	1,334.7580	1,952.9616	-6.8352	3.5752	1,468.5401	1,172.0881	1,851.3959	7.1678
103	06	10	FYGPA	2.4542	0.2174	24.4425	27.9257	22.5276	-0.1090	0.0727	7.5150	6.9789	7.1678	0.9470
103	07	1	HSGPA	0.0000	0.3011	13.6210	13.4098	16.0969	-0.0898	0.0854	3.9112	5.5227	4.3796	0.2801
103	07	2	SAT-CR	0.0000	13.6210	7,222.9070	3,546.7505	4,538.1111	-14.5070	3.9112	2,216.1640	1,296.7223	1,301.4224	30.9090
103	07	3	SAT-M	0.0000	13.4098	3,546.7505	6,312.0530	3,447.8976	-15.8771	5.5227	1,296.7223	2,389.1133	1,187.4873	22.2798
103	07	4	SAT-W	0.0000	16.0969	4,538.1111	3,447.8976	5,451.3427	-12.4524	4.3796	1,301.4224	1,187.4873	1,548.4109	32.1819
103	07	5	Black	0.3014	-0.0898	-14.5070	-15.8771	-12.4524	0.2113	-0.0627	-10.1343	-11.0914	-8.6990	-0.1627
103	07	6	Black*HSGPA	-0.0895	0.0854	3.9112	5.5227	4.3796	-0.0627	0.0773	2.6129	4.1018	3.2651	0.0749
103	07	7	Black*SAT-CR	-14.4555	3.9112	2,216.1640	1,296.7223	1,301.4224	-10.1343	2.6129	2,006.4586	1,067.2113	1,121.4172	7.8543
103	07	8	Black*SAT-M	-15.8208	5.5227	1,296.7223	2,389.1133	1,187.4873	-11.0914	4.1018	1,067.2113	2,137.9262	990.4815	5.7715
103	07	9	Black*SAT-W	-12.4082	4.3796	1,301.4224	1,187.4873	1,548.4109	-8.6990	3.2651	1,121.4172	990.4815	1,393.8995	8.4525
103	07	10	FYGPA	2.1498	0.2801	30.9090	22.2798	32.1819	-0.1627	0.0749	7.8543	5.7715	8.4525	1.0380
103	08	1	HSGPA	0.0000	0.3045	19.5956	21.6092	20.4353	-0.0852	0.0912	6.5315	5.5968	5.5726	0.2386
103	08	2	SAT-CR	0.0000	19.5956	8,260.7600	4,531.0765	6,190.6228	-18.7647	6.5315	2,333.2533	1,283.9168	1,856.2920	24.9355
103	08	3	SAT-M	0.0000	21.6092	4,531.0765	6,930.6355	4,575.3470	-13.7001	5.5968	1,283.9168	1,793.3038	1,159.1440	22.7989
103	08	4	SAT-W	0.0000	20.4353	6,190.6228	4,575.3470	8,173.7544	-14.8634	5.5726	1,856.2920	1,159.1440	2,518.6044	25.5287
103	08	5	Black	0.3132	-0.0852	-18.7647	-13.7001	-14.8634	0.2159	-0.0585	-12.8882	-9.4096	-10.2086	-0.1221
103	08	6	Black*HSGPA	-0.0849	0.0912	6.5315	5.5968	5.5726	-0.0585	0.0840	4.9381	4.4335	4.3105	0.0699
103	08	7	Black*SAT-CR	-18.6980	6.5315	2,333.2533	1,283.9168	1,856.2920	-12.8882	4.9381	1,982.3908	1,027.7537	1,578.3772	9.1639
103	08	8	Black*SAT-M	-13.6513	5.5968	1,283.9168	1,793.3038	1,159.1440	-9.4096	4.4335	1,027.7537	1,606.2803	956.2397	7.4755
103	08	9	Black*SAT-W	-14.8105	5.5726	1,856.2920	1,159.1440	2,518.6044	-10.2086	4.3105	1,578.3772	956.2397	2,298.4708	8.3830
103	08	10	FYGPA	2.5895	0.2386	24.9355	22.7989	25.5287	-0.1221	0.0699	9.1639	7.4755	8.3830	1.0637
106	06	1	HSGPA	0.0000	0.1574	6.1175	5.6923	7.2087	-0.0058	0.0170	0.8603	0.7337	0.9806	0.0946
106	06	2	SAT-CR	0.0000	6.1175	5,866.1550	2,660.8891	3,854.4762	-5.6939	0.8603	872.7187	666.9289	654.8437	15.6826
106	06	3	SAT-M	0.0000	5.6923	2,660.8891	5,696.3801	2,599.9097	-6.5104	0.7337	666.9289	935.2893	626.9570	14.4286
106	06	4	SAT-W	0.0000	7.2087	3,854.4762	2,599.9097	5,673.8496	-5.4420	0.9806	654.8437	626.9570	786.3530	17.2096
106	06	5	Black	0.0888	-0.0058	-5.6939	-6.5104	-5.4420	0.0809	-0.0053	-5.1885	-5.9326	-4.9590	-0.0416
106	06	6	Black*HSGPA	-0.0058	0.0170	0.8603	0.7337	0.9806	-0.0053	0.0170	0.8272	0.6960	0.9490	0.0097
106	06	7	Black*SAT-CR	-5.6914	0.8603	872.7187	666.9289	654.8437	-5.1885	0.8272	840.3122	629.8754	623.8710	4.4055
106	06	8	Black*SAT-M	-6.5076	0.7337	666.9289	935.2893	626.9570	-5.9326	0.6960	629.8754	892.9224	591.5428	4.3728
106	06	9	Black*SAT-W	-5.4396	0.9806	654.8437	626.9570	786.3530	-4.9590	0.9490	623.8710	591.5428	756.7505	4.5648
106	06	10	FYGPA	3.0873	0.0946	15.6826	14.4286	17.2096	-0.0416	0.0097	4.4055	4.3728	4.5648	0.4350

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
106	07	1	HSGPA	0.0000	0.1467	5.5156	5.8836	5.8710	-0.0079	0.0189	1.2253	1.3644	1.4239	0.0890
106	07	2	SAT-CR	0.0000	5.5156	6,751.0638	3,275.4133	4,628.7011	-7.2431	1.2253	1,191.7686	977.5980	1,028.8982	15.5636
106	07	3	SAT-M	0.0000	5.8836	3,275.4133	6,246.3173	3,079.4084	-8.2805	1.3644	977.5980	1,306.2792	975.3245	15.9109
106	07	4	SAT-W	0.0000	5.8710	4,628.7011	3,079.4084	6,123.3700	-7.4428	1.4239	1,028.8982	975.3245	1,155.5880	18.3449
106	07	5	Black	0.0903	-0.0079	-7.2431	-8.2805	-7.4428	0.0822	-0.0072	-6.5889	-7.5326	-6.7706	-0.0482
106	07	6	Black*HSGPA	-0.0079	0.0189	1.2253	1.3644	1.4239	-0.0072	0.0188	1.1678	1.2988	1.3649	0.0116
106	07	7	Black*SAT-CR	-7.2399	1.2253	1,191.7686	977.5980	1,028.8982	-6.5889	1.1678	1,139.3293	917.6480	975.0131	5.2033
106	07	8	Black*SAT-M	-8.2769	1.3644	977.5980	1,306.2792	975.3245	-7.5326	1.2988	917.6480	1,237.7427	913.7216	5.6579
106	07	9	Black*SAT-W	-7.4395	1.4239	1,028.8982	975.3245	1,155.5880	-6.7706	1.3649	975.0131	913.7216	1,100.2173	5.7084
106	07	10	FYGPA	3.1671	0.0890	15.5636	15.9109	18.3449	-0.0482	0.0116	5.2033	5.6579	5.7084	0.4075
106	08	1	HSGPA	0.0000	0.1400	4.6468	3.7988	5.2612	-0.0085	0.0172	1.0734	1.2560	1.1844	0.0901
106	08	2	SAT-CR	0.0000	4.6468	5,867.4055	2,761.6662	4,044.8800	-6.0232	1.0734	877.3641	703.3601	754.9664	14.8204
106	08	3	SAT-M	0.0000	3.7988	2,761.6662	5,726.6107	2,722.0959	-6.6412	1.2560	703.3601	999.0159	759.5919	13.2678
106	08	4	SAT-W	0.0000	5.2612	4,044.8800	2,722.0959	5,915.7717	-6.2882	1.1844	754.9664	759.5919	919.5484	17.0555
106	08	5	Black	0.0785	-0.0085	-6.0232	-6.6412	-6.2882	0.0724	-0.0079	-5.5501	-6.1196	-5.7943	-0.0476
106	08	6	Black*HSGPA	-0.0085	0.0172	1.0734	1.2560	1.1844	-0.0079	0.0172	1.0221	1.1994	1.1309	0.0100
106	08	7	Black*SAT-CR	-6.0204	1.0734	877.3641	703.3601	754.9664	-5.5501	1.0221	841.1023	663.3777	717.1091	4.5648
106	08	8	Black*SAT-M	-6.6381	1.2560	703.3601	999.0159	759.5919	-6.1196	1.1994	663.3777	954.9311	717.8503	4.8424
106	08	9	Black*SAT-W	-6.2853	1.1844	754.9664	759.5919	919.5484	-5.7943	1.1309	717.1091	717.8503	880.0255	4.7072
106	08	10	FYGPA	3.2080	0.0901	14.8204	13.2678	17.0555	-0.0476	0.0100	4.5648	4.8424	4.7072	0.3927
109	06	1	HSGPA	0.0000	0.1672	14.6632	15.4364	15.8683	-0.0245	0.0378	6.0761	6.1348	6.8705	0.0789
109	06	2	SAT-CR	0.0000	14.6632	7,156.5008	4,291.7225	5,458.6494	-8.1218	6.0761	1,872.8257	1,681.0918	1,825.2116	15.4331
109	06	3	SAT-M	0.0000	15.4364	4,291.7225	7,471.8870	4,610.8924	-9.6564	6.1348	1,681.0918	2,021.6002	1,802.6004	10.5338
109	06	4	SAT-W	0.0000	15.8683	5,458.6494	4,610.8924	7,478.8628	-8.9591	6.8705	1,825.2116	1,802.6004	2,198.9298	16.4369
109	06	5	Black	0.0956	-0.0245	-8.1218	-9.6564	-8.9591	0.0866	-0.0221	-7.3450	-8.7328	-8.1022	-0.0307
109	06	6	Black*HSGPA	-0.0245	0.0378	6.0761	6.1348	6.8705	-0.0221	0.0372	5.8775	5.8987	6.6514	0.0187
109	06	7	Black*SAT-CR	-8.1149	6.0761	1,872.8257	1,681.0918	1,825.2116	-7.3450	5.8775	1,806.9176	1,602.7313	1,752.5097	4.9946
109	06	8	Black*SAT-M	-9.6481	6.1348	1,681.0918	2,021.6002	1,802.6004	-8.7328	5.8987	1,602.7313	1,928.4343	1,716.1624	4.3869
109	06	9	Black*SAT-W	-8.9514	6.8705	1,825.2116	1,802.6004	2,198.9298	-8.1022	6.6514	1,752.5097	1,716.1624	2,118.7337	4.8772
109	06	10	FYGPA	3.2613	0.0789	15.4331	10.5338	16.4369	-0.0307	0.0187	4.9946	4.3869	4.8772	0.2388
109	07	1	HSGPA	0.0000	0.1301	5.7983	7.1413	6.1311	-0.0105	0.0241	2.2365	2.3814	2.2743	0.0549
109	07	2	SAT-CR	0.0000	5.7983	5,771.6861	2,227.1664	3,634.9543	-4.9255	2.2365	1,153.4016	847.8304	947.5496	11.2621
109	07	3	SAT-M	0.0000	7.1413	2,227.1664	5,594.2571	2,513.4066	-6.7659	2.3814	847.8304	1,278.9924	866.8653	7.1515
109	07	4	SAT-W	0.0000	6.1311	3,634.9543	2,513.4066	5,258.2383	-5.5644	2.2743	947.5496	866.8653	1,136.3776	11.1645
109	07	5	Black	0.0974	-0.0105	-4.9255	-6.7659	-5.5644	0.0880	-0.0094	-4.4457	-6.1068	-5.0224	-0.0251
109	07	6	Black*HSGPA	-0.0104	0.0241	2.2365	2.3814	2.2743	-0.0094	0.0240	2.1850	2.3107	2.2161	0.0098
109	07	7	Black*SAT-CR	-4.9214	2.2365	1,153.4016	847.8304	947.5496	-4.4457	2.1850	1,129.1611	814.5324	920.1647	3.6089
109	07	8	Black*SAT-M	-6.7603	2.3814	847.8304	1,278.9924	866.8653	-6.1068	2.3107	814.5324	1,233.2525	829.2479	3.3208
109	07	9	Black*SAT-W	-5.5598	2.2743	947.5496	866.8653	1,136.3776	-5.0224	2.2161	920.1647	829.2479	1,105.4403	3.6697
109	07	10	FYGPA	3.3036	0.0549	11.2621	7.1515	11.1645	-0.0251	0.0098	3.6089	3.3208	3.6697	0.2009

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
109	08	1	HSGPA	0.0000	0.1468	11.0391	11.7314	10.9610	-0.0174	0.0404	3.6390	4.2333	3.9233	0.0753
109	08	2	SAT-CR	0.0000	11.0391	6,482.2619	3,807.3583	4,763.8396	-7.5435	3.6390	1,355.2696	1,209.4184	1,202.1977	16.0396
109	08	3	SAT-M	0.0000	11.7314	3,807.3583	6,530.6546	3,766.6042	-9.3013	4.2333	1,209.4184	1,772.1886	1,277.0405	13.9467
109	08	4	SAT-W	0.0000	10.9610	4,763.8396	3,766.6042	6,539.6982	-8.1296	3.9233	1,202.1977	1,277.0405	1,442.5235	17.6312
109	08	5	Black	0.1309	-0.0174	-7.5435	-9.3013	-8.1296	0.1139	-0.0151	-6.5562	-8.0840	-7.0656	-0.0346
109	08	6	Black*HSGPA	-0.0174	0.0404	3.6390	4.2333	3.9233	-0.0151	0.0401	3.5080	4.0718	3.7822	0.0204
109	08	7	Black*SAT-CR	-7.5358	3.6390	1,355.2696	1,209.4184	1,202.1977	-6.5562	3.5080	1,298.4237	1,139.3258	1,140.9346	4.5851
109	08	8	Black*SAT-M	-9.2918	4.2333	1,209.4184	1,772.1886	1,277.0405	-8.0840	4.0718	1,139.3258	1,685.7627	1,201.5015	5.1473
109	08	9	Black*SAT-W	-8.1213	3.9233	1,202.1977	1,277.0405	1,442.5235	-7.0656	3.7822	1,140.9346	1,201.5015	1,376.5001	4.8246
109	08	10	FYGPA	3.2566	0.0753	16.0396	13.9467	17.6312	-0.0346	0.0204	4.5851	5.1473	4.8246	0.2251
110	07	1	HSGPA	0.0000	0.1607	11.9723	8.4989	11.9721	-0.0048	0.0150	0.4678	0.4833	1.1891	0.0971
110	07	2	SAT-CR	0.0000	11.9723	6,937.6642	3,365.7773	4,788.4139	-5.4058	0.4678	627.1601	597.2794	619.5329	22.7736
110	07	3	SAT-M	0.0000	8.4989	3,365.7773	5,797.3766	3,023.7632	-6.4499	0.4833	597.2794	976.1642	653.6433	17.2434
110	07	4	SAT-W	0.0000	11.9721	4,788.4139	3,023.7632	6,198.6746	-6.6668	1.1891	619.5329	653.6433	856.6117	21.3999
110	07	5	Black	0.0797	-0.0048	-5.4058	-6.4499	-6.6668	0.0735	-0.0044	-4.9749	-5.9359	-6.1354	-0.0322
110	07	6	Black*HSGPA	-0.0048	0.0150	0.4678	0.4833	1.1891	-0.0044	0.0150	0.4419	0.4524	1.1572	0.0071
110	07	7	Black*SAT-CR	-5.3955	0.4678	627.1601	597.2794	619.5329	-4.9749	0.4419	597.9932	562.4788	583.5623	3.5102
110	07	8	Black*SAT-M	-6.4377	0.4833	597.2794	976.1642	653.6433	-5.9359	0.4524	562.4788	934.6417	610.7248	3.9692
110	07	9	Black*SAT-W	-6.6541	1.1891	619.5329	653.6433	856.6117	-6.1354	1.1572	583.5623	610.7248	812.2503	4.0073
110	07	10	FYGPA	3.1211	0.0971	22.7736	17.2434	21.3999	-0.0322	0.0071	3.5102	3.9692	4.0073	0.2663
110	08	1	HSGPA	0.0000	0.1476	5.9387	7.0638	6.5374	-0.0031	0.0163	1.1419	0.7176	1.1891	0.0944
110	08	2	SAT-CR	0.0000	5.9387	6,210.3861	2,706.0646	4,530.4809	-6.4218	1.1419	1,272.5484	729.2553	1,061.4710	19.5712
110	08	3	SAT-M	0.0000	7.0638	2,706.0646	5,181.3622	2,624.1033	-5.2087	0.7176	729.2553	770.0931	712.8158	16.3657
110	08	4	SAT-W	0.0000	6.5374	4,530.4809	2,624.1033	6,420.0719	-6.0264	1.1891	1,061.4710	712.8158	1,133.9740	21.2444
110	08	5	Black	0.0911	-0.0031	-6.4218	-5.2087	-6.0264	0.0829	-0.0028	-5.8368	-4.7343	-5.4775	-0.0388
110	08	6	Black*HSGPA	-0.0031	0.0163	1.1419	0.7176	1.1891	-0.0028	0.0163	1.1219	0.7013	1.1703	0.0132
110	08	7	Black*SAT-CR	-6.4093	1.1419	1,272.5484	729.2553	1,061.4710	-5.8368	1.1219	1,231.3892	695.8711	1,022.8460	6.0960
110	08	8	Black*SAT-M	-5.1986	0.7176	729.2553	770.0931	712.8158	-4.7343	0.7013	695.8711	743.0151	681.4871	4.2659
110	08	9	Black*SAT-W	-6.0147	1.1891	1,061.4710	712.8158	1,133.9740	-5.4775	1.1703	1,022.8460	681.4871	1,097.7272	5.7562
110	08	10	FYGPA	3.1071	0.0944	19.5712	16.3657	21.2444	-0.0388	0.0132	6.0960	4.2659	5.7562	0.2944
112	07	1	HSGPA	0.0000	0.1890	7.9259	9.4814	8.2680	-0.0076	0.0159	1.3549	1.4459	1.1459	0.0926
112	07	2	SAT-CR	0.0000	7.9259	5,630.2061	2,734.5437	3,839.6860	-1.8832	1.3549	559.5476	386.3095	440.1938	15.1267
112	07	3	SAT-M	0.0000	9.4814	2,734.5437	5,600.2078	2,654.6845	-2.9464	1.4459	386.3095	623.7841	397.9032	14.5677
112	07	4	SAT-W	0.0000	8.2680	3,839.6860	2,654.6845	5,404.3511	-2.9277	1.1459	440.1938	397.9032	497.2990	17.7218
112	07	5	Black	0.0578	-0.0076	-1.8832	-2.9464	-2.9277	0.0546	-0.0072	-1.7743	-2.7759	-2.7584	-0.0240
112	07	6	Black*HSGPA	-0.0076	0.0159	1.3549	1.4459	1.1459	-0.0072	0.0159	1.3405	1.4233	1.1235	0.0086
112	07	7	Black*SAT-CR	-1.8814	1.3549	559.5476	386.3095	440.1938	-1.7743	1.3405	556.0046	380.7663	434.6856	2.2502
112	07	8	Black*SAT-M	-2.9435	1.4459	386.3095	623.7841	397.9032	-2.7759	1.4233	380.7663	615.1115	389.2854	2.3474
112	07	9	Black*SAT-W	-2.9249	1.1459	440.1938	397.9032	497.2990	-2.7584	1.1235	434.6856	389.2854	488.7357	2.5772
112	07	10	FYGPA	3.0719	0.0926	15.1267	14.5677	17.7218	-0.0240	0.0086	2.2502	2.3474	2.5772	0.3735

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
112	08	1	HSGPA	0.0000	0.2000	9.7591	3,343.4935	4,586.6623	-0.0071	0.0151	0.9547	1.3083	0.9027	0.1123
112	08	2	SAT-CR	0.0000	9.7591	6,470.7299	3,343.4935	4,586.6623	-4.0766	0.9547	785.8934	541.7188	602.6752	17.7493
112	08	3	SAT-M	0.0000	9.0944	3,343.4935	5,651.7830	3,154.8477	-4.5996	1.3083	541.7188	594.2388	494.7855	15.8416
112	08	4	SAT-W	0.0000	10.0149	4,586.6623	3,154.8477	6,248.4010	-4.1846	0.9027	602.6752	494.7855	687.5775	19.5475
112	08	5	Black	0.0669	-0.0071	-4.0766	-4.5996	-4.1846	0.0625	-0.0066	-3.8038	-4.2918	-3.9045	-0.0277
112	08	6	Black*HSGPA	-0.0071	0.0151	0.9547	1.3083	0.9027	-0.0066	0.0150	0.9259	1.2759	0.8731	0.0131
112	08	7	Black*SAT-CR	-4.0726	0.9547	785.8934	541.7188	602.6752	-3.8038	0.9259	769.2911	522.9866	585.6331	3.1259
112	08	8	Black*SAT-M	-4.5950	1.3083	541.7188	594.2388	494.7855	-4.2918	1.2759	522.9866	573.1033	475.5570	3.4038
112	08	9	Black*SAT-W	-4.1804	0.9027	602.6752	494.7855	687.5775	-3.9045	0.8731	585.6331	475.5570	670.0839	3.6017
112	08	10	FYGPA	3.0822	0.1123	17.7493	15.8416	19.5475	-0.0277	0.0131	3.1259	3.4038	3.6017	0.3894
113	06	1	HSGPA	0.0000	0.1837	5.4376	6.7444	7.4540	-0.0123	0.0131	-0.1416	1.5148	0.8251	0.0526
113	06	2	SAT-CR	0.0000	5.4376	6,713.4973	2,893.1160	4,583.2753	-2.3806	-0.1416	572.1355	233.5188	378.0394	14.8882
113	06	3	SAT-M	0.0000	6.7444	2,893.1160	5,525.8626	2,704.7094	-4.0374	1.5148	233.5188	521.4835	400.5564	9.6544
113	06	4	SAT-W	0.0000	7.4540	4,583.2753	2,704.7094	5,608.9352	-3.4078	0.8251	378.0394	400.5564	473.7235	15.0684
113	06	5	Black	0.0485	-0.0123	-2.3806	-4.0374	-3.4078	0.0463	-0.0117	-2.2652	-3.8416	-3.2425	-0.0130
113	06	6	Black*HSGPA	-0.0122	0.0131	-0.1416	1.5148	0.8251	-0.0117	0.0130	-0.1707	1.4655	0.7835	0.0005
113	06	7	Black*SAT-CR	-2.3734	-0.1416	572.1355	233.5188	378.0394	-2.2652	-0.1707	566.4855	223.9366	369.9515	1.4447
113	06	8	Black*SAT-M	-4.0252	1.5148	233.5188	521.4835	400.5564	-3.8416	1.4655	223.9366	505.2323	386.8396	1.5932
113	06	9	Black*SAT-W	-3.3974	0.8251	378.0394	400.5564	473.7235	-3.2425	0.7835	369.9515	386.8396	462.1459	1.9023
113	06	10	FYGPA	3.3439	0.0526	14.8882	9.6544	15.0684	-0.0130	0.0005	1.4447	1.5932	1.9023	0.1912
113	07	1	HSGPA	0.0000	0.1818	5.5547	7.5939	7.2854	-0.0110	0.0160	1.0162	0.9907	0.9246	0.0817
113	07	2	SAT-CR	0.0000	5.5547	6,930.7799	2,794.0111	4,509.5172	-3.8742	1.0162	611.1440	404.5617	505.6715	13.1969
113	07	3	SAT-M	0.0000	7.5939	2,794.0111	5,754.2897	2,662.9619	-4.6773	0.9907	404.5617	580.4569	310.7336	10.2926
113	07	4	SAT-W	0.0000	7.2854	4,509.5172	2,662.9619	6,314.7601	-3.1159	0.9246	505.6715	310.7336	650.2385	11.3451
113	07	5	Black	0.0694	-0.0110	-3.8742	-4.6773	-3.1159	0.0648	-0.0103	-3.6051	-4.3525	-2.8995	-0.0250
113	07	6	Black*HSGPA	-0.0110	0.0160	1.0162	0.9907	0.9246	-0.0103	0.0159	0.9735	0.9392	0.8903	0.0080
113	07	7	Black*SAT-CR	-3.8634	1.0162	611.1440	404.5617	505.6715	-3.6051	0.9735	596.1764	386.4911	493.6334	2.1201
113	07	8	Black*SAT-M	-4.6644	0.9907	404.5617	580.4569	310.7336	-4.3525	0.9392	386.4911	558.6401	296.2000	2.0695
113	07	9	Black*SAT-W	-3.1073	0.9246	505.6715	310.7336	650.2385	-2.8995	0.8903	493.6334	296.2000	640.5566	1.9787
113	07	10	FYGPA	3.2895	0.0817	13.1969	10.2926	11.3451	-0.0250	0.0080	2.1201	2.0695	1.9787	0.2389
113	08	1	HSGPA	0.0000	0.1640	6.8163	8.8890	7.7712	-0.0124	0.0159	1.1490	1.0280	1.4042	0.0680
113	08	2	SAT-CR	0.0000	6.8163	5,627.6497	2,680.1645	4,038.2098	-5.4832	1.1490	702.7387	465.5199	730.0583	14.7109
113	08	3	SAT-M	0.0000	8.8890	2,680.1645	5,453.5092	2,619.6410	-5.4317	1.0280	465.5199	702.7837	525.0878	10.7266
113	08	4	SAT-W	0.0000	7.7712	4,038.2098	2,619.6410	6,053.0467	-6.5327	1.4042	730.0583	525.0878	961.2367	15.9126
113	08	5	Black	0.0837	-0.0124	-5.4832	-5.4317	-6.5327	0.0769	-0.0113	-5.0242	-4.9771	-5.9859	-0.0276
113	08	6	Black*HSGPA	-0.0124	0.0159	1.1490	1.0280	1.4042	-0.0113	0.0158	1.0812	0.9608	1.3234	0.0135
113	08	7	Black*SAT-CR	-5.4711	1.1490	702.7387	465.5199	730.0583	-5.0242	1.0812	672.7397	435.8024	694.3175	3.3494
113	08	8	Black*SAT-M	-5.4198	1.0280	465.5199	702.7837	525.0878	-4.9771	0.9608	435.8024	673.3450	489.6823	2.5387
113	08	9	Black*SAT-W	-6.5183	1.4042	730.0583	525.0878	961.2367	-5.9859	1.3234	694.3175	489.6823	918.6550	3.7660
113	08	10	FYGPA	3.2680	0.0680	14.7109	10.7266	15.9126	-0.0276	0.0135	3.3494	2.5387	3.7660	0.2432

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
114	06	1	HSGPA	0.0000	0.2000	0.2557	1.0281	2.7963	-0.0132	0.0508	-0.1783	-0.2029	0.0943	0.0874
114	06	2	SAT-CR	0.0000	0.2557	5,666.1930	2,431.2380	3,856.1905	-5.9914	-0.1783	1,331.5421	630.3383	906.6383	10.7260
114	06	3	SAT-M	0.0000	1.0281	2,431.2380	5,458.8187	2,470.8218	-6.7562	-0.2029	630.3383	1,339.8106	670.4015	8.9274
114	06	4	SAT-W	0.0000	2.7963	3,856.1905	2,470.8218	5,630.5765	-5.8861	0.0943	906.6383	670.4015	1,300.6355	13.1691
114	06	5	Black	0.2281	-0.0132	-5.9914	-6.7562	-5.8861	0.1761	-0.0102	-4.6249	-5.2153	-4.5437	-0.0453
114	06	6	Black*HSGPA	-0.0132	0.0508	-0.1783	-0.2029	0.0943	-0.0102	0.0506	-0.2571	-0.2918	0.0168	0.0194
114	06	7	Black*SAT-CR	-5.9890	-0.1783	1,331.5421	630.3383	906.6383	-4.6249	-0.2571	1,295.6598	589.8758	871.3864	3.1239
114	06	8	Black*SAT-M	-6.7534	-0.2029	630.3383	1,339.8106	670.4015	-5.2153	-0.2918	589.8758	1,294.1833	630.6499	3.0778
114	06	9	Black*SAT-W	-5.8837	0.0943	906.6383	670.4015	1,300.6355	-4.5437	0.0168	871.3864	630.6499	1,266.0030	3.4557
114	06	10	FYGPA	2.8814	0.0874	10.7260	8.9274	13.1691	-0.0453	0.0194	3.1239	3.0778	3.4557	0.4264
114	07	1	HSGPA	0.0000	0.2043	3.9371	4.7505	5.5265	-0.0194	0.0482	0.9811	0.8993	1.2522	0.0955
114	07	2	SAT-CR	0.0000	3.9371	5,846.8744	2,664.4658	4,059.4984	-7.0460	0.9811	1,159.8996	662.1261	865.5834	13.0624
114	07	3	SAT-M	0.0000	4.7505	2,664.4658	5,898.5267	2,799.5438	-7.9967	0.8993	662.1261	1,295.4432	741.1768	10.1721
114	07	4	SAT-W	0.0000	5.5265	4,059.4984	2,799.5438	5,669.4662	-7.0849	1.2522	865.5834	741.1768	1,154.3387	14.6273
114	07	5	Black	0.1987	-0.0194	-7.0460	-7.9967	-7.0849	0.1593	-0.0156	-5.6457	-6.4075	-5.6769	-0.0483
114	07	6	Black*HSGPA	-0.0194	0.0482	0.9811	0.8993	1.2522	-0.0156	0.0478	0.8443	0.7441	1.1147	0.0173
114	07	7	Black*SAT-CR	-7.0435	0.9811	1,159.8996	662.1261	865.5834	-5.6457	0.8443	1,110.2715	605.8016	815.6808	3.3239
114	07	8	Black*SAT-M	-7.9939	0.8993	662.1261	1,295.4432	741.1768	-6.4075	0.7441	605.8016	1,231.5186	684.5406	3.4555
114	07	9	Black*SAT-W	-7.0824	1.2522	865.5834	741.1768	1,154.3387	-5.6769	1.1147	815.6808	684.5406	1,104.1600	3.6348
114	07	10	FYGPA	2.9305	0.0955	13.0624	10.1721	14.6273	-0.0483	0.0173	3.3239	3.4555	3.6348	0.3906
114	08	1	HSGPA	0.0000	0.2062	3.8494	4.4972	5.9133	-0.0189	0.0432	0.4979	0.6846	0.7735	0.1095
114	08	2	SAT-CR	0.0000	3.8494	5,864.1220	2,667.0662	4,052.9702	-7.3421	0.4979	1,233.2375	788.0661	912.4046	13.1663
114	08	3	SAT-M	0.0000	4.4972	2,667.0662	5,794.4490	2,670.3094	-9.2831	0.6846	788.0661	1,392.6149	792.2358	12.2211
114	08	4	SAT-W	0.0000	5.9133	4,052.9702	2,670.3094	5,924.2162	-7.1895	0.7735	912.4046	792.2358	1,245.2371	16.3245
114	08	5	Black	0.1822	-0.0189	-7.3421	-9.2831	-7.1895	0.1491	-0.0154	-6.0041	-7.5914	-5.8793	-0.0635
114	08	6	Black*HSGPA	-0.0189	0.0432	0.4979	0.6846	0.7735	-0.0154	0.0428	0.3592	0.5093	0.6378	0.0201
114	08	7	Black*SAT-CR	-7.3393	0.4979	1,233.2375	788.0661	912.4046	-6.0041	0.3592	1,179.3517	719.9346	859.6386	5.1157
114	08	8	Black*SAT-M	-9.2796	0.6846	788.0661	1,392.6149	792.2358	-7.5914	0.5093	719.9346	1,306.4717	725.5203	5.3626
114	08	9	Black*SAT-W	-7.1868	0.7735	912.4046	792.2358	1,245.2371	-5.8793	0.6378	859.6386	725.5203	1,193.5677	5.3094
114	08	10	FYGPA	2.9905	0.1095	13.1663	12.2211	16.3245	-0.0635	0.0201	5.1157	5.3626	5.3094	0.4133
115	06	1	HSGPA	0.0000	0.0973	4.3882	4.3210	3.6294	-0.0164	0.0162	1.1614	2.0911	1.0498	0.0415
115	06	2	SAT-CR	0.0000	4.3882	4,844.8999	1,512.5577	2,641.0596	-5.3034	1.1614	715.3169	607.6665	478.6292	8.7052
115	06	3	SAT-M	0.0000	4.3210	1,512.5577	4,603.6065	1,722.6660	-7.5221	2.0911	607.6665	1,109.2077	617.5832	6.2485
115	06	4	SAT-W	0.0000	3.6294	2,641.0596	1,722.6660	4,459.0109	-4.9171	1.0498	478.6292	617.5832	686.8122	8.8717
115	06	5	Black	0.0731	-0.0164	-5.3034	-7.5221	-4.9171	0.0679	-0.0152	-4.9154	-6.9719	-4.5574	-0.0246
115	06	6	Black*HSGPA	-0.0164	0.0162	1.1614	2.0911	1.0498	-0.0152	0.0159	1.0743	1.9675	0.9690	0.0101
115	06	7	Black*SAT-CR	-5.2978	1.1614	715.3169	607.6665	478.6292	-4.9154	1.0743	687.2207	567.8159	452.5792	1.9396
115	06	8	Black*SAT-M	-7.5142	2.0911	607.6665	1,109.2077	617.5832	-6.9719	1.9675	567.8159	1,052.6850	580.6349	2.9002
115	06	9	Black*SAT-W	-4.9120	1.0498	478.6292	617.5832	686.8122	-4.5574	0.9690	452.5792	580.6349	662.6595	2.1187
115	06	10	FYGPA	3.4184	0.0415	8.7052	6.2485	8.8717	-0.0246	0.0101	1.9396	2.9002	2.1187	0.1507

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
115	07	1	HSGPA	0.0000	0.0932	2.9493	4.7701	3.4909	-0.0164	0.0146	1.1919	1.9825	1.3996	0.0288
115	07	2	SAT-CR	0.0000	2.9493	4,951.8520	1,774.8718	3,047.7172	-6.1774	1.1919	896.1324	821.7916	799.6963	9.1601
115	07	3	SAT-M	0.0000	4.7701	1,774.8718	4,783.2386	1,900.1117	-7.9872	1.9825	821.7916	1,317.9168	806.4304	7.4811
115	07	4	SAT-W	0.0000	3.4909	3,047.7172	1,900.1117	4,552.8772	-5.8042	1.3996	799.6963	806.4304	903.3373	9.4802
115	07	5	Black	0.0718	-0.0164	-6.1774	-7.9872	-5.8042	0.0668	-0.0152	-5.7336	-7.4134	-5.3873	-0.0288
115	07	6	Black*HSGPA	-0.0164	0.0146	1.1919	1.9825	1.3996	-0.0152	0.0143	1.0908	1.8517	1.3045	0.0076
115	07	7	Black*SAT-CR	-6.1703	1.1919	896.1324	821.7916	799.6963	-5.7336	1.0908	858.0158	772.5079	763.8822	3.1641
115	07	8	Black*SAT-M	-7.9781	1.9825	821.7916	1,317.9168	806.4304	-7.4134	1.8517	772.5079	1,254.1942	760.1237	3.6224
115	07	9	Black*SAT-W	-5.7976	1.3996	799.6963	806.4304	903.3373	-5.3873	1.3045	763.8822	760.1237	869.6867	2.9820
115	07	10	FYGPA	3.4373	0.0288	9.1601	7.4811	9.4802	-0.0288	0.0076	3.1641	3.6224	2.9820	0.1446
115	08	1	HSGPA	0.0000	0.1017	3.8167	3.6416	3.3409	-0.0115	0.0139	0.9801	0.8803	1.0233	0.0313
115	08	2	SAT-CR	0.0000	3.8167	4,848.1870	1,869.6874	2,742.5156	-4.2807	0.9801	653.7562	410.2039	535.4896	8.3364
115	08	3	SAT-M	0.0000	3.6416	1,869.6874	4,649.8435	1,722.3363	-5.4805	0.8803	410.2039	713.5508	501.8241	6.4577
115	08	4	SAT-W	0.0000	3.3409	2,742.5156	1,722.3363	4,820.4294	-4.8616	1.0233	535.4896	501.8241	702.4377	8.7341
115	08	5	Black	0.0645	-0.0115	-4.2807	-5.4805	-4.8616	0.0604	-0.0107	-4.0045	-5.1270	-4.5480	-0.0306
115	08	6	Black*HSGPA	-0.0115	0.0139	0.9801	0.8803	1.0233	-0.0107	0.0138	0.9310	0.8175	0.9676	0.0083
115	08	7	Black*SAT-CR	-4.2751	0.9801	653.7562	410.2039	535.4896	-4.0045	0.9310	635.4559	386.7739	514.7055	2.9957
115	08	8	Black*SAT-M	-5.4735	0.8803	410.2039	713.5508	501.8241	-5.1270	0.8175	386.7739	683.5533	475.2141	2.6542
115	08	9	Black*SAT-W	-4.8554	1.0233	535.4896	501.8241	702.4377	-4.5480	0.9676	514.7055	475.2141	678.8328	3.1855
115	08	10	FYGPA	3.4246	0.0313	8.3364	6.4577	8.7341	-0.0306	0.0083	2.9957	2.6542	3.1855	0.1509
117	06	1	HSGPA	0.0000	0.1300	3.5471	2.6268	3.8586	-0.0148	0.0236	0.6294	1.1898	1.2198	0.0552
117	06	2	SAT-CR	0.0000	3.5471	4,851.6134	2,090.2077	2,943.5722	-6.2743	0.6294	934.5007	883.3967	803.7941	9.0160
117	06	3	SAT-M	0.0000	2.6268	2,090.2077	5,007.8949	2,068.3841	-8.5771	1.1898	883.3967	1,256.1641	846.8010	6.2973
117	06	4	SAT-W	0.0000	3.8586	2,943.5722	2,068.3841	4,682.6384	-5.7538	1.2198	803.7941	846.8010	985.6484	10.0429
117	06	5	Black	0.0924	-0.0148	-6.2743	-8.5771	-5.7538	0.0839	-0.0134	-5.6947	-7.7848	-5.2223	-0.0402
117	06	6	Black*HSGPA	-0.0148	0.0236	0.6294	1.1898	1.2198	-0.0134	0.0233	0.5367	1.0631	1.1348	0.0174
117	06	7	Black*SAT-CR	-6.2680	0.6294	934.5007	883.3967	803.7941	-5.6947	0.5367	895.1734	829.6354	767.7293	3.5405
117	06	8	Black*SAT-M	-8.5685	1.1898	883.3967	1,256.1641	846.8010	-7.7848	1.0631	829.6354	1,182.6712	797.4997	4.2846
117	06	9	Black*SAT-W	-5.7480	1.2198	803.7941	846.8010	985.6484	-5.2223	1.1348	767.7293	797.4997	952.5756	3.9567
117	06	10	FYGPA	3.2452	0.0552	9.0160	6.2973	10.0429	-0.0402	0.0174	3.5405	4.2846	3.9567	0.2322
117	07	1	HSGPA	0.0000	0.1195	4.0173	4.0425	3.8968	-0.0114	0.0163	0.8399	1.0215	1.3213	0.0513
117	07	2	SAT-CR	0.0000	4.0173	5,133.2128	2,218.4079	3,057.2470	-7.3939	0.8399	990.3204	882.2734	852.0461	9.6428
117	07	3	SAT-M	0.0000	4.0425	2,218.4079	4,857.6404	2,185.6019	-10.6401	1.0215	882.2734	1,556.0418	1,000.0222	8.8410
117	07	4	SAT-W	0.0000	3.8968	3,057.2470	2,185.6019	4,725.9257	-7.9421	1.3213	852.0461	1,000.0222	1,081.4671	9.7978
117	07	5	Black	0.1032	-0.0114	-7.3939	-10.6401	-7.9421	0.0926	-0.0102	-6.6312	-9.5426	-7.1228	-0.0483
117	07	6	Black*HSGPA	-0.0114	0.0163	0.8399	1.0215	1.3213	-0.0102	0.0162	0.7555	0.9001	1.2307	0.0075
117	07	7	Black*SAT-CR	-7.3869	0.8399	990.3204	882.2734	852.0461	-6.6312	0.7555	935.7022	803.6760	793.3790	4.4242
117	07	8	Black*SAT-M	-10.6300	1.0215	882.2734	1,556.0418	1,000.0222	-9.5426	0.9001	803.6760	1,442.9377	915.5984	5.0207
117	07	9	Black*SAT-W	-7.9345	1.3213	852.0461	1,000.0222	1,081.4671	-7.1228	1.2307	793.3790	915.5984	1,018.4510	4.5171
117	07	10	FYGPA	3.2851	0.0513	9.6428	8.8410	9.7978	-0.0483	0.0075	4.4242	5.0207	4.5171	0.1986

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
117	08	1	HSGPA	0.0000	0.1185	6.5172	5.5911	5.0412	-0.0187	0.0190	2.1528	1.9340	2.4936	0.0454
117	08	2	SAT-CR	0.0000	6.5172	5,623.1049	2,833.7954	3,648.6060	-8.3739	2.1528	1,281.6253	992.3488	1,239.4800	11.4242
117	08	3	SAT-M	0.0000	5.5911	2,833.7954	5,041.9676	2,812.4436	-8.6975	1.9340	992.3488	1,222.7967	1,162.2146	10.0990
117	08	4	SAT-W	0.0000	5.0412	3,648.6060	2,812.4436	5,887.0592	-9.2913	2.4936	1,239.4800	1,162.2146	1,622.3293	13.5388
117	08	5	Black	0.0984	-0.0187	-8.3739	-8.6975	-9.2913	0.0889	-0.0169	-7.5495	-7.8413	-8.3766	-0.0433
117	08	6	Black*HSGPA	-0.0187	0.0190	2.1528	1.9340	2.4936	-0.0169	0.0186	1.9962	1.7713	2.3198	0.0138
117	08	7	Black*SAT-CR	-8.3630	2.1528	1,281.6253	992.3488	1,239.4800	-7.5495	1.9962	1,211.5941	919.6109	1,161.7767	4.7096
117	08	8	Black*SAT-M	-8.6863	1.9340	992.3488	1,222.7967	1,162.2146	-7.8413	1.7713	919.6109	1,147.2475	1,081.5080	5.1170
117	08	9	Black*SAT-W	-9.2792	2.4936	1,239.4800	1,162.2146	1,622.3293	-8.3766	2.3198	1,161.7767	1,081.5080	1,536.1133	5.6388
117	08	10	FYGPA	3.3070	0.0454	11.4242	10.0990	13.5388	-0.0433	0.0138	4.7096	5.1170	5.6388	0.1830
118	06	1	HSGPA	0.0000	0.3201	17.0984	13.5893	14.9892	-0.0308	0.1426	3.2854	1.9588	3.4327	0.1446
118	06	2	SAT-CR	0.0000	17.0984	8,057.1740	4,424.8963	5,092.8239	-17.3204	3.2854	2,470.7059	1,061.2445	1,366.0823	27.6356
118	06	3	SAT-M	0.0000	13.5893	4,424.8963	7,423.5139	3,561.6690	-15.2212	1.9588	1,061.2445	2,688.5629	838.1776	19.4165
118	06	4	SAT-W	0.0000	14.9892	5,092.8239	3,561.6690	6,627.2339	-12.5719	3.4327	1,366.0823	838.1776	2,263.2371	26.0161
118	06	5	Black	0.4612	-0.0308	-17.3204	-15.2212	-12.5719	0.2496	-0.0166	-9.3324	-8.2014	-6.7739	-0.1486
118	06	6	Black*HSGPA	-0.0307	0.1426	3.2854	1.9588	3.4327	-0.0166	0.1416	2.7542	1.4919	3.0471	0.0239
118	06	7	Black*SAT-CR	-17.2413	3.2854	2,470.7059	1,061.2445	1,366.0823	-9.3324	2.7542	2,172.0799	798.8114	1,149.3256	12.4082
118	06	8	Black*SAT-M	-15.1517	1.9588	1,061.2445	2,688.5629	838.1776	-8.2014	1.4919	798.8114	2,457.9363	647.6913	5.6385
118	06	9	Black*SAT-W	-12.5145	3.4327	1,366.0823	838.1776	2,263.2371	-6.7739	3.0471	1,149.3256	647.6913	2,105.9049	11.3703
118	06	10	FYGPA	2.5991	0.1446	27.6356	19.4165	26.0161	-0.1486	0.0239	12.4082	5.6385	11.3703	0.6517
119	07	1	HSGPA	0.0000	0.2071	11.9892	13.2563	13.9614	-0.0162	0.0192	2.1463	2.5549	2.3879	0.1218
119	07	2	SAT-CR	0.0000	11.9892	6,696.6867	3,600.0455	4,912.5343	-4.1906	2.1463	752.3173	632.8927	658.6338	16.1526
119	07	3	SAT-M	0.0000	13.2563	3,600.0455	6,700.6565	3,635.6816	-4.7416	2.5549	632.8927	820.7089	651.4334	15.3785
119	07	4	SAT-W	0.0000	13.9614	4,912.5343	3,635.6816	6,662.7272	-4.0410	2.3879	658.6338	651.4334	766.5049	18.3294
119	07	5	Black	0.0545	-0.0162	-4.1906	-4.7416	-4.0410	0.0516	-0.0153	-3.9620	-4.4830	-3.8206	-0.0184
119	07	6	Black*HSGPA	-0.0161	0.0192	2.1463	2.5549	2.3879	-0.0153	0.0190	2.0787	2.4783	2.3227	0.0130
119	07	7	Black*SAT-CR	-4.1896	2.1463	752.3173	632.8927	658.6338	-3.9620	2.0787	734.7602	613.0271	641.7034	2.2922
119	07	8	Black*SAT-M	-4.7405	2.5549	632.8927	820.7089	651.4334	-4.4830	2.4783	613.0271	798.2313	632.2770	2.6400
119	07	9	Black*SAT-W	-4.0401	2.3879	658.6338	651.4334	766.5049	-3.8206	2.3227	641.7034	632.2770	750.1788	2.6767
119	07	10	FYGPA	3.1151	0.1218	16.1526	15.3785	18.3294	-0.0184	0.0130	2.2922	2.6400	2.6767	0.3568
119	08	1	HSGPA	0.0000	0.1784	10.7743	11.0529	12.3140	-0.0168	0.0185	1.8314	2.2471	2.0130	0.1176
119	08	2	SAT-CR	0.0000	10.7743	6,832.1616	3,578.8723	5,006.2670	-3.9970	1.8314	685.8875	586.1183	606.0676	16.8618
119	08	3	SAT-M	0.0000	11.0529	3,578.8723	6,389.1771	3,651.8319	-4.9777	2.2471	586.1183	801.5338	622.7945	15.2251
119	08	4	SAT-W	0.0000	12.3140	5,006.2670	3,651.8319	6,829.3582	-4.3350	2.0130	606.0676	622.7945	719.5322	19.1076
119	08	5	Black	0.0553	-0.0168	-3.9970	-4.9777	-4.3350	0.0522	-0.0159	-3.7760	-4.7026	-4.0954	-0.0218
119	08	6	Black*HSGPA	-0.0168	0.0185	1.8314	2.2471	2.0130	-0.0159	0.0182	1.7643	2.1635	1.9402	0.0148
119	08	7	Black*SAT-CR	-3.9961	1.8314	685.8875	586.1183	606.0676	-3.7760	1.7643	669.9153	566.2268	588.7444	2.6297
119	08	8	Black*SAT-M	-4.9767	2.2471	586.1183	801.5338	622.7945	-4.7026	2.1635	566.2268	776.7613	601.2206	2.7749
119	08	9	Black*SAT-W	-4.3341	2.0130	606.0676	622.7945	719.5322	-4.0954	1.9402	588.7444	601.2206	700.7438	2.6617
119	08	10	FYGPA	3.1393	0.1176	16.8618	15.2251	19.1076	-0.0218	0.0148	2.6297	2.7749	2.6617	0.3341

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
121	06	1	HSGPA	0.0000	0.1575	10.5192	9.5108	11.0610	-0.0206	0.0383	4.5474	4.4807	5.2748	0.0864
121	06	2	SAT-CR	0.0000	10.5192	6,699.6575	2,901.6098	4,568.1389	-4.2517	4.5474	861.4386	749.4159	857.5282	17.0636
121	06	3	SAT-M	0.0000	9.5108	2,901.6098	5,515.9947	3,076.9986	-5.7491	4.4807	749.4159	910.2239	848.5212	13.5505
121	06	4	SAT-W	0.0000	11.0610	4,568.1389	3,076.9986	6,391.0979	-4.6514	5.2748	857.5282	848.5212	1,024.6751	17.8237
121	06	5	Black	0.0467	-0.0206	-4.2517	-5.7491	-4.6514	0.0446	-0.0196	-4.0532	-5.4808	-4.4343	-0.0251
121	06	6	Black*HSGPA	-0.0205	0.0383	4.5474	4.4807	5.2748	-0.0196	0.0379	4.4601	4.3626	5.1793	0.0258
121	06	7	Black*SAT-CR	-4.2413	4.5474	861.4386	749.4159	857.5282	-4.0532	4.4601	843.4061	725.0323	837.8003	3.9778
121	06	8	Black*SAT-M	-5.7350	4.4807	749.4159	910.2239	848.5212	-5.4808	4.3626	725.0323	877.2525	821.8452	4.1365
121	06	9	Black*SAT-W	-4.6400	5.2748	857.5282	848.5212	1,024.6751	-4.4343	5.1793	837.8003	821.8452	1,003.0926	4.2180
121	06	10	FYGPA	3.4217	0.0864	17.0636	13.5505	17.8237	-0.0251	0.0258	3.9778	4.1365	4.2180	0.1943
121	07	1	HSGPA	0.0000	0.1316	11.3474	9.1307	11.4776	-0.0060	0.0107	1.8530	1.4781	2.0618	0.0653
121	07	2	SAT-CR	0.0000	11.3474	6,596.4969	3,352.0164	4,621.6897	-4.6713	1.8530	1,201.1793	939.0375	1,115.5154	14.0956
121	07	3	SAT-M	0.0000	9.1307	3,352.0164	5,279.2174	3,365.0282	-6.0033	1.4781	939.0375	1,028.4704	1,030.5174	10.7974
121	07	4	SAT-W	0.0000	11.4776	4,621.6897	3,365.0282	6,572.2603	-6.3643	2.0618	1,115.5154	1,030.5174	1,360.0395	16.8341
121	07	5	Black	0.0571	-0.0060	-4.6713	-6.0033	-6.3643	0.0540	-0.0056	-4.4044	-5.6602	-6.0006	-0.0178
121	07	6	Black*HSGPA	-0.0059	0.0107	1.8530	1.4781	2.0618	-0.0056	0.0107	1.8252	1.4424	2.0240	0.0046
121	07	7	Black*SAT-CR	-4.6580	1.8530	1,201.1793	939.0375	1,115.5154	-4.4044	1.8252	1,179.4205	911.0745	1,085.8707	3.1995
121	07	8	Black*SAT-M	-5.9861	1.4781	939.0375	1,028.4704	1,030.5174	-5.6602	1.4424	911.0745	992.5341	992.4199	2.8201
121	07	9	Black*SAT-W	-6.3461	2.0618	1,115.5154	1,030.5174	1,360.0395	-6.0006	2.0240	1,085.8707	992.4199	1,319.6508	3.4812
121	07	10	FYGPA	3.4007	0.0653	14.0956	10.7974	16.8341	-0.0178	0.0046	3.1995	2.8201	3.4812	0.1696
121	08	1	HSGPA	0.0000	0.1452	5.1920	3.8512	5.7109	-0.0116	0.0210	1.3111	0.8601	1.5767	0.0511
121	08	2	SAT-CR	0.0000	5.1920	5,482.4343	2,315.4047	3,319.3929	-5.2152	1.3111	953.1258	779.9556	850.3210	11.5112
121	08	3	SAT-M	0.0000	3.8512	2,315.4047	4,629.9120	2,371.1301	-5.8663	0.8601	779.9556	844.9148	794.5396	9.1056
121	08	4	SAT-W	0.0000	5.7109	3,319.3929	2,371.1301	5,476.5879	-5.6824	1.5767	850.3210	794.5396	1,026.1742	13.8008
121	08	5	Black	0.0653	-0.0116	-5.2152	-5.8663	-5.6824	0.0612	-0.0108	-4.8748	-5.4833	-5.3114	-0.0330
121	08	6	Black*HSGPA	-0.0115	0.0210	1.3111	0.8601	1.5767	-0.0108	0.0208	1.2510	0.7925	1.5112	0.0050
121	08	7	Black*SAT-CR	-5.1997	1.3111	953.1258	779.9556	850.3210	-4.8748	1.2510	926.0080	749.4524	820.7739	2.4186
121	08	8	Black*SAT-M	-5.8489	0.8601	779.9556	844.9148	794.5396	-5.4833	0.7925	749.4524	810.6037	761.3040	2.8603
121	08	9	Black*SAT-W	-5.6655	1.5767	850.3210	794.5396	1,026.1742	-5.3114	1.5112	820.7739	761.3040	993.9803	3.6266
121	08	10	FYGPA	3.3911	0.0511	11.5112	9.1056	13.8008	-0.0330	0.0050	2.4186	2.8603	3.6266	0.1996
122	06	1	HSGPA	0.0000	0.2650	11.5769	13.1344	12.4918	-0.0261	0.0263	1.3941	2.8241	1.4437	0.1379
122	06	2	SAT-CR	0.0000	11.5769	7,112.0441	3,895.7242	5,169.2799	-3.5004	1.3941	794.5451	638.5765	523.1915	18.9339
122	06	3	SAT-M	0.0000	13.1344	3,895.7242	7,544.7237	4,012.7377	-4.6645	2.8241	638.5765	1,279.3284	668.5805	13.5183
122	06	4	SAT-W	0.0000	12.4918	5,169.2799	4,012.7377	6,598.0969	-2.3692	1.4437	523.1915	668.5805	539.5724	20.1822
122	06	5	Black	0.0691	-0.0261	-3.5004	-4.6645	-2.3692	0.0646	-0.0243	-3.2585	-4.3422	-2.2054	-0.0252
122	06	6	Black*HSGPA	-0.0260	0.0263	1.3941	2.8241	1.4437	-0.0243	0.0256	1.3032	2.7030	1.3822	0.0173
122	06	7	Black*SAT-CR	-3.4862	1.3941	794.5451	638.5765	523.1915	-3.2585	1.3032	782.3421	622.3152	514.9321	2.8500
122	06	8	Black*SAT-M	-4.6455	2.8241	638.5765	1,279.3284	668.5805	-4.3422	2.7030	622.3152	1,257.6592	657.5744	2.9309
122	06	9	Black*SAT-W	-2.3595	1.4437	523.1915	668.5805	539.5724	-2.2054	1.3822	514.9321	657.5744	533.9822	1.5121
122	06	10	FYGPA	2.8919	0.1379	18.9339	13.5183	20.1822	-0.0252	0.0173	2.8500	2.9309	1.5121	0.4787



## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
122	07	1	HSGPA	0.0000	0.2474	11.5176	9.4327	9.4206	-0.0222	0.0429	0.6828	2.1726	1.2709	0.1860
122	07	2	SAT-CR	0.0000	11.5176	6,026.6656	2,577.1295	4,013.8065	-2.3685	0.6828	569.1385	270.9922	371.5932	16.9559
122	07	3	SAT-M	0.0000	9.4327	2,577.1295	6,375.6579	2,616.4925	-4.3640	2.1726	270.9922	567.4463	283.2546	9.1332
122	07	4	SAT-W	0.0000	9.4206	4,013.8065	2,616.4925	5,544.7000	-3.2923	1.2709	371.5932	283.2546	434.8535	14.2792
122	07	5	Black	0.0925	-0.0222	-2.3685	-4.3640	-3.2923	0.0843	-0.0201	-2.1494	-3.9602	-2.9877	-0.0079
122	07	6	Black*HSGPA	-0.0221	0.0429	0.6828	2.1726	1.2709	-0.0201	0.0424	0.6305	2.0762	1.1982	0.0243
122	07	7	Black*SAT-CR	-2.3581	0.6828	569.1385	270.9922	371.5932	-2.1494	0.6305	563.5533	260.7016	363.8297	2.4027
122	07	8	Black*SAT-M	-4.3447	2.1726	270.9922	567.4463	283.2546	-3.9602	2.0762	260.7016	548.4860	268.9505	1.8979
122	07	9	Black*SAT-W	-3.2778	1.2709	371.5932	283.2546	434.8535	-2.9877	1.1982	363.8297	268.9505	424.0622	1.6252
122	07	10	FYGPA	2.9388	0.1860	16.9559	9.1332	14.2792	-0.0079	0.0243	2.4027	1.8979	1.6252	0.4812
122	08	1	HSGPA	0.0000	0.2322	10.9085	12.3845	9.7085	-0.0127	0.0252	1.0502	-0.0481	1.1719	0.1287
122	08	2	SAT-CR	0.0000	10.9085	6,724.1361	4,094.7791	4,741.4726	-7.5194	1.0502	1,394.4458	1,150.0780	1,086.8487	14.2551
122	08	3	SAT-M	0.0000	12.3845	4,094.7791	8,012.0540	4,124.5783	-10.7023	-0.0481	1,150.0780	2,084.4989	1,125.6432	13.4708
122	08	4	SAT-W	0.0000	9.7085	4,741.4726	4,124.5783	6,842.4765	-8.0900	1.1719	1,086.8487	1,125.6432	1,134.7746	20.7462
122	08	5	Black	0.1293	-0.0127	-7.5194	-10.7023	-8.0900	0.1131	-0.0111	-6.5471	-9.3184	-7.0439	-0.0300
122	08	6	Black*HSGPA	-0.0127	0.0252	1.0502	-0.0481	1.1719	-0.0111	0.0251	0.9549	-0.1837	1.0694	0.0236
122	08	7	Black*SAT-CR	-7.4870	1.0502	1,394.4458	1,150.0780	1,086.8487	-6.5471	0.9549	1,338.1480	1,069.9496	1,026.2788	3.5403
122	08	8	Black*SAT-M	-10.6562	-0.0481	1,150.0780	2,084.4989	1,125.6432	-9.3184	-0.1837	1,069.9496	1,970.4525	1,039.4343	3.5153
122	08	9	Black*SAT-W	-8.0551	1.1719	1,086.8487	1,125.6432	1,134.7746	-7.0439	1.0694	1,026.2788	1,039.4343	1,069.6083	3.3759
122	08	10	FYGPA	2.9426	0.1287	14.2551	13.4708	20.7462	-0.0300	0.0236	3.5403	3.5153	3.3759	0.4004
123	06	1	HSGPA	0.0000	0.2871	5.9481	7.8923	8.7572	0.0003	0.2811	5.7015	7.5145	8.1390	0.1544
123	06	2	SAT-CR	0.0000	5.9481	5,266.4338	2,434.2529	3,768.1377	-0.3385	5.7015	5,139.9517	2,335.2644	3,657.9658	15.5760
123	06	3	SAT-M	0.0000	7.8923	2,434.2529	5,564.8126	2,517.2934	-0.6250	7.5145	2,335.2644	5,397.5976	2,415.2227	15.7416
123	06	4	SAT-W	0.0000	8.7572	3,768.1377	2,517.2934	5,635.8189	-0.5823	8.1390	3,657.9658	2,415.2227	5,473.3455	17.1871
123	06	5	Black	0.9835	0.0003	-0.3385	-0.6250	-0.5823	0.0163	0.0000	-0.0056	-0.0103	-0.0096	0.0012
123	06	6	Black*HSGPA	0.0003	0.2811	5.7015	7.5145	8.1390	0.0000	0.2811	5.7016	7.5147	8.1391	0.1542
123	06	7	Black*SAT-CR	-0.3382	5.7015	5,139.9517	2,335.2644	3,657.9658	-0.0056	5.7016	5,139.8373	2,335.0531	3,657.7689	15.4596
123	06	8	Black*SAT-M	-0.6244	7.5145	2,335.2644	5,397.5976	2,415.2227	-0.0103	7.5147	2,335.0531	5,397.2074	2,414.8591	15.9179
123	06	9	Black*SAT-W	-0.5817	8.1390	3,657.9658	2,415.2227	5,473.3455	-0.0096	8.1391	3,657.7689	2,414.8591	5,473.0068	17.0009
123	06	10	FYGPA	2.7880	0.1544	15.5760	15.7416	17.1871	0.0012	0.1542	15.4596	15.9179	17.0009	0.6466
124	06	1	HSGPA	0.0000	0.2929	13.6094	15.3946	17.3212	-0.0136	0.0327	0.6371	2.0085	1.3879	0.1601
124	06	2	SAT-CR	0.0000	13.6094	7,316.8639	4,121.4941	5,414.3520	-6.7593	0.6371	877.4887	947.0041	686.0893	20.7980
124	06	3	SAT-M	0.0000	15.3946	4,121.4941	7,690.1172	4,340.2231	-10.2635	2.0085	947.0041	1,539.6524	942.3371	18.5095
124	06	4	SAT-W	0.0000	17.3212	5,414.3520	4,340.2231	7,264.7509	-6.5948	1.3879	686.0893	942.3371	861.9639	24.9424
124	06	5	Black	0.0931	-0.0136	-6.7593	-10.2635	-6.5948	0.0847	-0.0124	-6.1300	-9.3080	-5.9808	-0.0516
124	06	6	Black*HSGPA	-0.0136	0.0327	0.6371	2.0085	1.3879	-0.0124	0.0325	0.5453	1.8690	1.2982	0.0106
124	06	7	Black*SAT-CR	-6.7390	0.6371	877.4887	947.0041	686.0893	-6.1300	0.5453	831.9379	877.8385	641.6473	4.4089
124	06	8	Black*SAT-M	-10.2327	2.0085	947.0041	1,539.6524	942.3371	-9.3080	1.8690	877.8385	1,434.6296	874.8552	6.1125
124	06	9	Black*SAT-W	-6.5750	1.3879	686.0893	942.3371	861.9639	-5.9808	1.2982	641.6473	874.8552	818.6037	5.1686
124	06	10	FYGPA	3.0369	0.1601	20.7980	18.5095	24.9424	-0.0516	0.0106	4.4089	6.1125	5.1686	0.4647

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
124	07	1	HSGPA	0.0000	0.2607	12.4196	15.1654	13.1179	-0.0238	0.0439	1.7522	2.9884	1.9507	0.1747
124	07	2	SAT-CR	0.0000	12.4196	7,506.6550	3,681.9023	5,253.7305	-6.8167	1.7522	1,157.3213	794.2514	829.2751	21.6037
124	07	3	SAT-M	0.0000	15.1654	3,681.9023	6,216.0475	3,121.2607	-5.9868	2.9884	794.2514	782.9189	748.1905	22.2065
124	07	4	SAT-W	0.0000	13.1179	5,253.7305	3,121.2607	6,591.2870	-6.2639	1.9507	829.2751	748.1905	984.8777	22.2569
124	07	5	Black	0.0685	-0.0238	-6.8167	-5.9868	-6.2639	0.0640	-0.0221	-6.3495	-5.5765	-5.8346	-0.0432
124	07	6	Black*HSGPA	-0.0237	0.0439	1.7522	2.9884	1.9507	-0.0221	0.0434	1.5907	2.8466	1.8024	0.0373
124	07	7	Black*SAT-CR	-6.7955	1.7522	1,157.3213	794.2514	829.2751	-6.3495	1.5907	1,110.9989	753.5687	786.7089	4.3450
124	07	8	Black*SAT-M	-5.9681	2.9884	794.2514	782.9189	748.1905	-5.5765	2.8466	753.5687	747.1892	710.8067	5.7206
124	07	9	Black*SAT-W	-6.2444	1.9507	829.2751	748.1905	984.8777	-5.8346	1.8024	786.7089	710.8067	945.7632	6.0995
124	07	10	FYGPA	3.0735	0.1747	21.6037	22.2065	22.2569	-0.0432	0.0373	4.3450	5.7206	6.0995	0.4413
124	08	1	HSGPA	0.0000	0.2944	15.9079	20.0140	19.0109	-0.0406	0.0542	2.6559	3.9877	3.6665	0.1686
124	08	2	SAT-CR	0.0000	15.9079	7,346.8907	4,406.5591	5,926.3889	-5.3360	2.6559	913.9751	974.8778	1,022.5901	22.5090
124	08	3	SAT-M	0.0000	20.0140	4,406.5591	8,024.2908	4,347.9519	-9.8490	3.9877	974.8778	1,753.3074	1,226.2127	24.6953
124	08	4	SAT-W	0.0000	19.0109	5,926.3889	4,347.9519	7,826.4401	-7.4558	3.6665	1,022.5901	1,226.2127	1,527.6764	23.6595
124	08	5	Black	0.0893	-0.0406	-5.3360	-9.8490	-7.4558	0.0816	-0.0370	-4.8596	-8.9696	-6.7901	-0.0613
124	08	6	Black*HSGPA	-0.0404	0.0542	2.6559	3.9877	3.6665	-0.0370	0.0526	2.4402	3.5895	3.3650	0.0313
124	08	7	Black*SAT-CR	-5.3170	2.6559	913.9751	974.8778	1,022.5901	-4.8596	2.4402	885.6037	922.5112	982.9477	5.5198
124	08	8	Black*SAT-M	-9.8138	3.9877	974.8778	1,753.3074	1,226.2127	-8.9696	3.5895	922.5112	1,656.6520	1,153.0428	8.5907
124	08	9	Black*SAT-W	-7.4292	3.6665	1,022.5901	1,226.2127	1,527.6764	-6.7901	3.3650	982.9477	1,153.0428	1,472.2854	5.8584
124	08	10	FYGPA	3.1000	0.1686	22.5090	24.6953	23.6595	-0.0613	0.0313	5.5198	8.5907	5.8584	0.4396
125	06	1	HSGPA	0.0000	0.3308	11.6857	13.6196	12.2335	-0.0271	0.0499	0.5062	1.1935	1.2432	0.1945
125	06	2	SAT-CR	0.0000	11.6857	6,313.5421	3,694.6248	4,331.9661	-4.4394	0.5062	746.6320	400.2120	475.7525	15.4915
125	06	3	SAT-M	0.0000	13.6196	3,694.6248	7,024.0132	3,497.1315	-6.4213	1.1935	400.2120	916.7355	405.3367	13.9093
125	06	4	SAT-W	0.0000	12.2335	4,331.9661	3,497.1315	5,784.8835	-4.7800	1.2432	475.7525	405.3367	642.1641	16.4840
125	06	5	Black	0.1341	-0.0271	-4.4394	-6.4213	-4.7800	0.1163	-0.0235	-3.8439	-5.5600	-4.1388	-0.0325
125	06	6	Black*HSGPA	-0.0271	0.0499	0.5062	1.1935	1.2432	-0.0235	0.0492	0.3861	1.0197	1.1139	0.0140
125	06	7	Black*SAT-CR	-4.4346	0.5062	746.6320	400.2120	475.7525	-3.8439	0.3861	726.9452	371.7362	454.5555	1.1184
125	06	8	Black*SAT-M	-6.4143	1.1935	400.2120	916.7355	405.3367	-5.5600	1.0197	371.7362	875.5468	374.6764	1.8646
125	06	9	Black*SAT-W	-4.7747	1.2432	475.7525	405.3367	642.1641	-4.1388	1.1139	454.5555	374.6764	619.3410	1.3515
125	06	10	FYGPA	2.7686	0.1945	15.4915	13.9093	16.4840	-0.0325	0.0140	1.1184	1.8646	1.3515	0.6623
127	06	1	HSGPA	0.0000	0.2434	9.3204	6.8587	10.6158	-0.0092	0.0169	0.1667	-0.2542	0.7775	0.1272
127	06	2	SAT-CR	0.0000	9.3204	7,360.7570	4,008.5178	4,840.5952	-1.1108	0.1667	381.4333	257.7608	272.1502	19.3196
127	06	3	SAT-M	0.0000	6.8587	4,008.5178	6,710.5155	3,416.6691	-1.6932	-0.2542	257.7608	363.6518	248.1144	15.9403
127	06	4	SAT-W	0.0000	10.6158	4,840.5952	3,416.6691	6,296.0223	-1.8676	0.7775	272.1502	248.1144	389.4837	18.0393
127	06	5	Black	0.0405	-0.0092	-1.1108	-1.6932	-1.8676	0.0389	-0.0089	-1.0659	-1.6246	-1.7920	-0.0125
127	06	6	Black*HSGPA	-0.0092	0.0169	0.1667	-0.2542	0.7775	-0.0089	0.0168	0.1564	-0.2698	0.7602	0.0059
127	06	7	Black*SAT-CR	-1.1092	0.1667	381.4333	257.7608	272.1502	-1.0659	0.1564	380.2012	255.8828	270.0787	0.8417
127	06	8	Black*SAT-M	-1.6906	-0.2542	257.7608	363.6518	248.1144	-1.6246	-0.2698	255.8828	360.7893	244.9569	1.3021
127	06	9	Black*SAT-W	-1.8648	0.7775	272.1502	248.1144	389.4837	-1.7920	0.7602	270.0787	244.9569	386.0010	2.1686
127	06	10	FYGPA	2.5655	0.1272	19.3196	15.9403	18.0393	-0.0125	0.0059	0.8417	1.3021	2.1686	0.7013

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
129	07	1	HSGPA	0.0000	0.1631	6.7050	5.8555	7.7453	-0.0187	0.0175	2.2407	1.8522	1.7263	0.0564
129	07	2	SAT-CR	0.0000	6.7050	4,610.7287	1,692.3081	3,029.2289	-5.0029	2.2407	795.1815	615.8408	616.7946	6.6690
129	07	3	SAT-M	0.0000	5.8555	1,692.3081	4,374.4367	2,033.6120	-5.1937	1.8522	615.8408	696.0809	527.4028	7.4734
129	07	4	SAT-W	0.0000	7.7453	3,029.2289	2,033.6120	5,070.4503	-4.3058	1.7263	616.7946	527.4028	605.7002	8.1585
129	07	5	Black	0.0536	-0.0187	-5.0029	-5.1937	-4.3058	0.0508	-0.0177	-4.7346	-4.9151	-4.0749	-0.0189
129	07	6	Black*HSGPA	-0.0187	0.0175	2.2407	1.8522	1.7263	-0.0177	0.0171	2.1473	1.7552	1.6459	0.0085
129	07	7	Black*SAT-CR	-4.9942	2.2407	795.1815	615.8408	616.7946	-4.7346	2.1473	770.1960	589.9023	595.2903	2.3311
129	07	8	Black*SAT-M	-5.1847	1.8522	615.8408	696.0809	527.4028	-4.9151	1.7552	589.9023	669.1530	505.0783	1.8845
129	07	9	Black*SAT-W	-4.2984	1.7263	616.7946	527.4028	605.7002	-4.0749	1.6459	595.2903	505.0783	587.1921	2.0471
129	07	10	FYGPA	3.3824	0.0564	6.6690	7.4734	8.1585	-0.0189	0.0085	2.3311	1.8845	2.0471	0.1443
131	08	1	HSGPA	0.0000	0.3100	13.2200	12.8576	14.0050	-0.0119	0.0231	2.1098	1.5180	2.5427	0.1561
131	08	2	SAT-CR	0.0000	13.2200	9,373.0682	5,634.7087	6,864.4176	-6.1484	2.1098	1,228.2555	1,149.9843	1,084.4493	23.3310
131	08	3	SAT-M	0.0000	12.8576	5,634.7087	8,743.3393	4,934.9877	-8.0241	1.5180	1,149.9843	1,654.2235	954.4566	20.9157
131	08	4	SAT-W	0.0000	14.0050	6,864.4176	4,934.9877	8,204.2422	-5.2156	2.5427	1,084.4493	954.4566	1,136.7569	24.1903
131	08	5	Black	0.0920	-0.0119	-6.1484	-8.0241	-5.2156	0.0840	-0.0108	-5.5831	-7.2862	-4.7360	-0.0275
131	08	6	Black*HSGPA	-0.0119	0.0231	2.1098	1.5180	2.5427	-0.0108	0.0229	2.0368	1.4227	2.4807	0.0190
131	08	7	Black*SAT-CR	-6.1131	2.1098	1,228.2555	1,149.9843	1,084.4493	-5.5831	2.0368	1,190.6696	1,100.9325	1,052.5658	3.2202
131	08	8	Black*SAT-M	-7.9779	1.5180	1,149.9843	1,654.2235	954.4566	-7.2862	1.4227	1,100.9325	1,590.2082	912.8469	2.7917
131	08	9	Black*SAT-W	-5.1856	2.5427	1,084.4493	954.4566	1,136.7569	-4.7360	2.4807	1,052.5658	912.8469	1,109.7108	3.9892
131	08	10	FYGPA	2.8308	0.1561	23.3310	20.9157	24.1903	-0.0275	0.0190	3.2202	2.7917	3.9892	0.5034
133	06	1	HSGPA	0.0000	0.3166	10.0719	12.6820	13.6714	-0.0205	0.0340	1.0518	0.9963	1.5269	0.2033
133	06	2	SAT-CR	0.0000	10.0719	5,126.3509	2,587.3586	3,292.4126	-2.3824	1.0518	442.9431	292.4142	261.2506	16.3005
133	06	3	SAT-M	0.0000	12.6820	2,587.3586	5,173.7521	2,383.0219	-2.4907	0.9963	292.4142	451.5073	242.1688	16.5026
133	06	4	SAT-W	0.0000	13.6714	3,292.4126	2,383.0219	4,958.4523	-2.6869	1.5269	261.2506	242.1688	372.6512	18.1396
133	06	5	Black	0.0776	-0.0205	-2.3824	-2.4907	-2.6869	0.0717	-0.0189	-2.1974	-2.2973	-2.4783	-0.0413
133	06	6	Black*HSGPA	-0.0205	0.0340	1.0518	0.9963	1.5269	-0.0189	0.0336	1.0030	0.9452	1.4718	0.0239
133	06	7	Black*SAT-CR	-2.3796	1.0518	442.9431	292.4142	261.2506	-2.1974	1.0030	437.2739	286.4874	254.8568	2.3365
133	06	8	Black*SAT-M	-2.4878	0.9963	292.4142	451.5073	242.1688	-2.2973	0.9452	286.4874	445.3112	235.4845	2.3579
133	06	9	Black*SAT-W	-2.6838	1.5269	261.2506	242.1688	372.6512	-2.4783	1.4718	254.8568	235.4845	365.4402	2.1409
133	06	10	FYGPA	2.7591	0.2033	16.3005	16.5026	18.1396	-0.0413	0.0239	2.3365	2.3579	2.1409	0.6684
134	06	1	HSGPA	0.0000	0.1455	9.5146	8.7424	9.0374	-0.0207	0.0223	2.4469	2.8352	2.3973	0.0671
134	06	2	SAT-CR	0.0000	9.5146	5,620.3833	2,746.9736	3,674.0938	-5.1290	2.4469	827.1813	718.2236	690.6041	12.5243
134	06	3	SAT-M	0.0000	8.7424	2,746.9736	5,394.2161	2,815.0375	-6.0642	2.8352	718.2236	950.0935	698.1968	10.9971
134	06	4	SAT-W	0.0000	9.0374	3,674.0938	2,815.0375	5,307.5255	-5.0052	2.3973	690.6041	698.1968	808.7657	13.6490
134	06	5	Black	0.0610	-0.0207	-5.1290	-6.0642	-5.0052	0.0573	-0.0194	-4.8162	-5.6944	-4.7000	-0.0309
134	06	6	Black*HSGPA	-0.0207	0.0223	2.4469	2.8352	2.3973	-0.0194	0.0219	2.3408	2.7097	2.2937	0.0129
134	06	7	Black*SAT-CR	-5.1253	2.4469	827.1813	718.2236	690.6041	-4.8162	2.3408	800.8940	687.1428	664.9513	3.6220
134	06	8	Black*SAT-M	-6.0599	2.8352	718.2236	950.0935	698.1968	-5.6944	2.7097	687.1428	913.3453	667.8662	3.8780
134	06	9	Black*SAT-W	-5.0016	2.3973	690.6041	698.1968	808.7657	-4.7000	2.2937	664.9513	667.8662	783.7320	3.8023
134	06	10	FYGPA	3.3310	0.0671	12.5243	10.9971	13.6490	-0.0309	0.0129	3.6220	3.8780	3.8023	0.1877

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
134	07	1	HSGPA	0.0000	0.1360	8.6863	8.2983	9.0582	-0.0162	0.0166	1.8571	1.8762	1.7568	0.0630
134	07	2	SAT-CR	0.0000	8.6863	5,825.0176	2,623.8842	4,006.3919	-5.3706	1.8571	882.8747	689.6750	721.4693	14.4370
134	07	3	SAT-M	0.0000	8.2983	2,623.8842	4,747.2750	2,616.8923	-6.1682	1.8762	689.6750	877.3363	654.1402	11.9084
134	07	4	SAT-W	0.0000	9.0582	4,006.3919	2,616.8923	5,604.2193	-5.1263	1.7568	721.4693	654.1402	793.4863	14.5092
134	07	5	Black	0.0593	-0.0162	-5.3706	-6.1682	-5.1263	0.0558	-0.0153	-5.0520	-5.8023	-4.8222	-0.0338
134	07	6	Black*HSGPA	-0.0162	0.0166	1.8571	1.8762	1.7568	-0.0153	0.0164	1.7699	1.7761	1.6736	0.0107
134	07	7	Black*SAT-CR	-5.3668	1.8571	882.8747	689.6750	721.4693	-5.0520	1.7699	854.0516	656.5715	693.9573	3.9211
134	07	8	Black*SAT-M	-6.1638	1.8762	689.6750	877.3363	654.1402	-5.8023	1.7761	656.5715	839.3168	622.5425	4.0690
134	07	9	Black*SAT-W	-5.1227	1.7568	721.4693	654.1402	793.4863	-4.8222	1.6736	693.9573	622.5425	767.2258	3.5878
134	07	10	FYGPA	3.2955	0.0630	14.4370	11.9084	14.5092	-0.0338	0.0107	3.9211	4.0690	3.5878	0.2219
134	08	1	HSGPA	0.0000	0.1384	8.4288	9.5404	9.7839	-0.0179	0.0199	2.4636	2.7384	2.8358	0.0664
134	08	2	SAT-CR	0.0000	8.4288	5,589.7471	2,928.1918	3,752.6370	-6.1832	2.4636	1,078.5030	926.9817	964.6528	12.5745
134	08	3	SAT-M	0.0000	9.5404	2,928.1918	5,494.2030	2,849.6864	-6.7195	2.7384	926.9817	1,217.0247	974.0156	12.4138
134	08	4	SAT-W	0.0000	9.7839	3,752.6370	2,849.6864	5,852.1029	-6.0023	2.8358	964.6528	974.0156	1,074.4457	14.2140
134	08	5	Black	0.0645	-0.0179	-6.1832	-6.7195	-6.0023	0.0604	-0.0168	-5.7841	-6.2858	-5.6149	-0.0281
134	08	6	Black*HSGPA	-0.0179	0.0199	2.4636	2.7384	2.8358	-0.0168	0.0196	2.3528	2.6180	2.7282	0.0133
134	08	7	Black*SAT-CR	-6.1780	2.4636	1,078.5030	926.9817	964.6528	-5.7841	2.3528	1,040.3036	885.4687	927.5706	3.6183
134	08	8	Black*SAT-M	-6.7139	2.7384	926.9817	1,217.0247	974.0156	-6.2858	2.6180	885.4687	1,171.9107	933.7167	3.8554
134	08	9	Black*SAT-W	-5.9973	2.8358	964.6528	974.0156	1,074.4457	-5.6149	2.7282	927.5706	933.7167	1,038.4480	3.9520
134	08	10	FYGPA	3.3030	0.0664	12.5745	12.4138	14.2140	-0.0281	0.0133	3.6183	3.8554	3.9520	0.1982
135	06	1	HSGPA	0.0000	0.1683	8.4998	8.4516	9.6046	-0.0089	0.0235	0.6234	0.4869	0.8218	0.0834
135	06	2	SAT-CR	0.0000	8.4998	5,173.1937	2,549.9751	3,322.4980	-2.7002	0.6234	512.4967	331.7571	418.8101	14.0709
135	06	3	SAT-M	0.0000	8.4516	2,549.9751	5,435.0821	2,423.7956	-3.8066	0.4869	331.7571	521.9945	354.3167	12.1879
135	06	4	SAT-W	0.0000	9.6046	3,322.4980	2,423.7956	5,268.2435	-2.9079	0.8218	418.8101	354.3167	476.7413	16.0637
135	06	5	Black	0.0471	-0.0089	-2.7002	-3.8066	-2.9079	0.0449	-0.0085	-2.5732	-3.6275	-2.7711	-0.0143
135	06	6	Black*HSGPA	-0.0089	0.0235	0.6234	0.4869	0.8218	-0.0085	0.0235	0.5994	0.4532	0.7960	0.0047
135	06	7	Black*SAT-CR	-2.6978	0.6234	512.4967	331.7571	418.8101	-2.5732	0.5994	505.2121	321.4877	410.9651	1.5448
135	06	8	Black*SAT-M	-3.8031	0.4869	331.7571	521.9945	354.3167	-3.6275	0.4532	321.4877	507.5175	343.2575	1.5799
135	06	9	Black*SAT-W	-2.9053	0.8218	418.8101	354.3167	476.7413	-2.7711	0.7960	410.9651	343.2575	468.2929	1.7791
135	06	10	FYGPA	3.2316	0.0834	14.0709	12.1879	16.0637	-0.0143	0.0047	1.5448	1.5799	1.7791	0.2380
136	07	1	HSGPA	0.0000	0.2453	19.5549	22.7761	20.8292	-0.0203	0.0242	2.0082	2.8310	2.1030	0.1440
136	07	2	SAT-CR	0.0000	19.5549	8,299.2599	6,000.7581	6,685.8530	-4.7598	2.0082	768.5976	739.9461	646.1277	22.4365
136	07	3	SAT-M	0.0000	22.7761	6,000.7581	10,061.8415	6,034.9484	-6.3113	2.8310	739.9461	1,145.0834	734.2477	21.8499
136	07	4	SAT-W	0.0000	20.8292	6,685.8530	6,034.9484	8,475.0984	-4.4808	2.1030	646.1277	734.2477	706.0840	23.6488
136	07	5	Black	0.0612	-0.0203	-4.7598	-6.3113	-4.4808	0.0575	-0.0190	-4.4684	-5.9248	-4.2064	-0.0270
136	07	6	Black*HSGPA	-0.0203	0.0242	2.0082	2.8310	2.1030	-0.0190	0.0238	1.9117	2.7031	2.0122	0.0153
136	07	7	Black*SAT-CR	-4.7592	2.0082	768.5976	739.9461	646.1277	-4.4684	1.9117	745.9446	709.9095	624.8028	2.8587
136	07	8	Black*SAT-M	-6.3104	2.8310	739.9461	1,145.0834	734.2477	-5.9248	2.7031	709.9095	1,105.2565	705.9720	3.7382
136	07	9	Black*SAT-W	-4.4802	2.1030	646.1277	734.2477	706.0840	-4.2064	2.0122	624.8028	705.9720	686.0093	2.9620
136	07	10	FYGPA	3.0718	0.1440	22.4365	21.8499	23.6488	-0.0270	0.0153	2.8587	3.7382	2.9620	0.3807

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
136	08	1	HSGPA	0.0000	0.2718	21.6157	25.6921	23.3777	-0.0319	0.0406	3.4018	4.3453	3.1232	0.1859
136	08	2	SAT-CR	0.0000	21.6157	8,797.6228	6,506.2556	7,066.6994	-6.2953	3.4018	1,152.1012	1,058.5776	910.7026	26.4173
136	08	3	SAT-M	0.0000	25.6921	6,506.2556	10,311.6703	6,545.9371	-8.3707	4.3453	1,058.5776	1,533.0004	990.7862	28.1771
136	08	4	SAT-W	0.0000	23.3777	7,066.6994	6,545.9371	9,014.7483	-5.9783	3.1232	910.7026	990.7862	1,007.9412	30.2876
136	08	5	Black	0.0827	-0.0319	-6.2953	-8.3707	-5.9783	0.0759	-0.0292	-5.7746	-7.6784	-5.4838	-0.0446
136	08	6	Black*HSGPA	-0.0318	0.0406	3.4018	4.3453	3.1232	-0.0292	0.0396	3.2014	4.0787	2.9328	0.0318
136	08	7	Black*SAT-CR	-6.2945	3.4018	1,152.1012	1,058.5776	910.7026	-5.7746	3.2014	1,112.4756	1,005.8884	873.0723	4.9079
136	08	8	Black*SAT-M	-8.3697	4.3453	1,058.5776	1,533.0004	990.7862	-7.6784	4.0787	1,005.8884	1,462.9409	940.7501	6.0509
136	08	9	Black*SAT-W	-5.9776	3.1232	910.7026	990.7862	1,007.9412	-5.4838	2.9328	873.0723	940.7501	972.2057	4.8943
136	08	10	FYGPA	2.9545	0.1859	26.4173	28.1771	30.2876	-0.0446	0.0318	4.9079	6.0509	4.8943	0.5341
137	06	1	HSGPA	0.0000	0.2382	9.9353	11.0287	10.4950	-0.0066	0.0216	0.0537	0.3478	0.3919	0.1457
137	06	2	SAT-CR	0.0000	9.9353	4,967.0163	2,470.2448	3,221.8396	-1.0692	0.0537	279.5836	98.8638	172.8857	14.8998
137	06	3	SAT-M	0.0000	11.0287	2,470.2448	5,106.0459	2,351.3312	-3.2546	0.3478	98.8638	461.3641	168.2650	12.1978
137	06	4	SAT-W	0.0000	10.4950	3,221.8396	2,351.3312	5,015.1114	-1.7618	0.3919	172.8857	168.2650	424.0956	13.9382
137	06	5	Black	0.0761	-0.0066	-1.0692	-3.2546	-1.7618	0.0704	-0.0061	-0.9879	-3.0069	-1.6277	-0.0223
137	06	6	Black*HSGPA	-0.0066	0.0216	0.0537	0.3478	0.3919	-0.0061	0.0215	0.0466	0.3262	0.3802	0.0183
137	06	7	Black*SAT-CR	-1.0673	0.0537	279.5836	98.8638	172.8857	-0.9879	0.0466	278.4424	95.3900	171.0052	0.8971
137	06	8	Black*SAT-M	-3.2488	0.3478	98.8638	461.3641	168.2650	-3.0069	0.3262	95.3900	450.7904	162.5411	1.2298
137	06	9	Black*SAT-W	-1.7587	0.3919	172.8857	168.2650	424.0956	-1.6277	0.3802	171.0052	162.5411	420.9971	0.9660
137	06	10	FYGPA	3.0469	0.1457	14.8998	12.1978	13.9382	-0.0223	0.0183	0.8971	1.2298	0.9660	0.3220
137	07	1	HSGPA	0.0000	0.2492	8.3905	12.2287	10.5171	-0.0079	0.0142	-0.0039	0.4918	0.4165	0.1422
137	07	2	SAT-CR	0.0000	8.3905	4,940.5389	2,637.3464	3,237.7138	-1.7924	-0.0039	392.1035	180.9916	238.4123	9.3614
137	07	3	SAT-M	0.0000	12.2287	2,637.3464	5,934.3403	2,598.7340	-2.3966	0.4918	180.9916	311.2602	190.3949	12.9235
137	07	4	SAT-W	0.0000	10.5171	3,237.7138	2,598.7340	5,131.9515	-2.3385	0.4165	238.4123	190.3949	322.8910	14.5468
137	07	5	Black	0.0637	-0.0079	-1.7924	-2.3966	-2.3385	0.0597	-0.0074	-1.6782	-2.2440	-2.1896	-0.0236
137	07	6	Black*HSGPA	-0.0078	0.0142	-0.0039	0.4918	0.4165	-0.0074	0.0142	-0.0179	0.4730	0.3982	0.0030
137	07	7	Black*SAT-CR	-1.7893	-0.0039	392.1035	180.9916	238.4123	-1.6782	-0.0179	388.8964	176.7033	234.2280	0.6389
137	07	8	Black*SAT-M	-2.3925	0.4918	180.9916	311.2602	190.3949	-2.2440	0.4730	176.7033	305.5262	184.8000	1.0853
137	07	9	Black*SAT-W	-2.3345	0.4165	238.4123	190.3949	322.8910	-2.1896	0.3982	234.2280	184.8000	317.4318	1.0457
137	07	10	FYGPA	3.0853	0.1422	9.3614	12.9235	14.5468	-0.0236	0.0030	0.6389	1.0853	1.0457	0.3223
137	08	1	HSGPA	0.0000	0.2380	6.5600	9.4496	9.8750	-0.0112	0.0132	0.7385	0.9754	0.5418	0.1154
137	08	2	SAT-CR	0.0000	6.5600	5,494.3392	2,618.8034	3,946.8323	-2.4045	0.7385	266.9542	209.2666	219.8774	10.2717
137	08	3	SAT-M	0.0000	9.4496	2,618.8034	5,494.6873	2,567.7648	-3.9540	0.9754	209.2666	384.3429	232.6441	9.7607
137	08	4	SAT-W	0.0000	9.8750	3,946.8323	2,567.7648	5,696.1998	-2.8260	0.5418	219.8774	232.6441	396.3637	13.2173
137	08	5	Black	0.0682	-0.0112	-2.4045	-3.9540	-2.8260	0.0636	-0.0104	-2.2405	-3.6844	-2.6333	-0.0233
137	08	6	Black*HSGPA	-0.0112	0.0132	0.7385	0.9754	0.5418	-0.0104	0.0131	0.7117	0.9313	0.5103	0.0095
137	08	7	Black*SAT-CR	-2.4003	0.7385	266.9542	209.2666	219.8774	-2.2405	0.7117	261.1829	199.7759	213.0943	0.7481
137	08	8	Black*SAT-M	-3.9471	0.9754	209.2666	384.3429	232.6441	-3.6844	0.9313	199.7759	368.7362	221.4897	1.8818
137	08	9	Black*SAT-W	-2.8210	0.5418	219.8774	232.6441	396.3637	-2.6333	0.5103	213.0943	221.4897	388.3914	0.8539
137	08	10	FYGPA	3.0587	0.1154	10.2717	9.7607	13.2173	-0.0233	0.0095	0.7481	1.8818	0.8539	0.3285

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
138	06	1	HSGPA	0.0000	0.1653	10.8878	10.1967	9.6025	-0.0203	0.0204	1.2635	2.3223	2.1540	0.0859
138	06	2	SAT-CR	0.0000	10.8878	6,239.4658	2,814.0989	4,246.7742	-4.9069	1.2635	653.7751	664.2812	660.6095	21.0008
138	06	3	SAT-M	0.0000	10.1967	2,814.0989	6,012.2354	2,573.2565	-6.8776	2.3223	664.2812	1,054.9380	800.9425	15.8669
138	06	4	SAT-W	0.0000	9.6025	4,246.7742	2,573.2565	5,944.3562	-6.1187	2.1540	660.6095	800.9425	947.4081	19.8624
138	06	5	Black	0.0668	-0.0203	-4.9069	-6.8776	-6.1187	0.0625	-0.0190	-4.5790	-6.4180	-5.7098	-0.0271
138	06	6	Black*HSGPA	-0.0203	0.0204	1.2635	2.3223	2.1540	-0.0190	0.0199	1.1640	2.1828	2.0299	0.0101
138	06	7	Black*SAT-CR	-4.8956	1.2635	653.7751	664.2812	660.6095	-4.5790	1.1640	629.7532	630.6115	630.6552	2.8771
138	06	8	Black*SAT-M	-6.8617	2.3223	664.2812	1,054.9380	800.9425	-6.4180	2.1828	630.6115	1,007.7458	758.9579	3.4526
138	06	9	Black*SAT-W	-6.1046	2.1540	660.6095	800.9425	947.4081	-5.7098	2.0299	630.6552	758.9579	910.0564	3.3772
138	06	10	FYGPA	3.1476	0.0859	21.0008	15.8669	19.8624	-0.0271	0.0101	2.8771	3.4526	3.3772	0.3187
138	07	1	HSGPA	0.0000	0.1329	4.5109	3.9605	4.4624	-0.0098	0.0091	0.9440	0.2871	0.8583	0.0674
138	07	2	SAT-CR	0.0000	4.5109	5,753.0895	2,397.3630	3,724.6007	-6.9981	0.9440	938.0665	812.2303	788.5689	15.7863
138	07	3	SAT-M	0.0000	3.9605	2,397.3630	5,312.1790	2,355.6687	-6.4679	0.2871	812.2303	1,070.2166	737.8451	11.8006
138	07	4	SAT-W	0.0000	4.4624	3,724.6007	2,355.6687	5,575.7374	-6.4259	0.8583	788.5689	737.8451	896.4922	16.4987
138	07	5	Black	0.0665	-0.0098	-6.9981	-6.4679	-6.4259	0.0622	-0.0092	-6.5327	-6.0378	-5.9986	-0.0429
138	07	6	Black*HSGPA	-0.0098	0.0091	0.9440	0.2871	0.8583	-0.0092	0.0090	0.8754	0.2237	0.7953	0.0061
138	07	7	Black*SAT-CR	-6.9808	0.9440	938.0665	812.2303	788.5689	-6.5327	0.8754	889.2143	767.0790	743.7109	4.8256
138	07	8	Black*SAT-M	-6.4520	0.2871	812.2303	1,070.2166	737.8451	-6.0378	0.2237	767.0790	1,028.4857	696.3853	4.1158
138	07	9	Black*SAT-W	-6.4101	0.8583	788.5689	737.8451	896.4922	-5.9986	0.7953	743.7109	696.3853	855.3018	3.1537
138	07	10	FYGPA	3.1895	0.0674	15.7863	11.8006	16.4987	-0.0429	0.0061	4.8256	4.1158	3.1537	0.2929
138	08	1	HSGPA	0.0000	0.1191	6.4156	5.0077	7.2286	-0.0154	0.0132	0.7085	1.4887	1.3681	0.0661
138	08	2	SAT-CR	0.0000	6.4156	5,449.8043	2,091.1937	3,572.5952	-5.2905	0.7085	734.4155	532.3418	764.3228	14.1780
138	08	3	SAT-M	0.0000	5.0077	2,091.1937	4,993.9380	2,081.7296	-6.1069	1.4887	532.3418	831.4026	693.2904	10.7897
138	08	4	SAT-W	0.0000	7.2286	3,572.5952	2,081.7296	5,396.5573	-6.8103	1.3681	764.3228	693.2904	959.0661	14.5252
138	08	5	Black	0.0630	-0.0154	-5.2905	-6.1069	-6.8103	0.0592	-0.0145	-4.9572	-5.7221	-6.3811	-0.0391
138	08	6	Black*HSGPA	-0.0154	0.0132	0.7085	1.4887	1.3681	-0.0145	0.0130	0.6270	1.3946	1.2632	0.0146
138	08	7	Black*SAT-CR	-5.2760	0.7085	734.4155	532.3418	764.3228	-4.9572	0.6270	706.5024	500.1216	728.3917	2.3007
138	08	8	Black*SAT-M	-6.0901	1.4887	532.3418	831.4026	693.2904	-5.7221	1.3946	500.1216	794.2108	651.8149	4.4390
138	08	9	Black*SAT-W	-6.7916	1.3681	764.3228	693.2904	959.0661	-6.3811	1.2632	728.3917	651.8149	912.8136	3.6135
138	08	10	FYGPA	3.2264	0.0661	14.1780	10.7897	14.5252	-0.0391	0.0146	2.3007	4.4390	3.6135	0.2409
140	07	1	HSGPA	0.0000	0.2492	11.3550	10.8474	12.9631	-0.0057	0.0128	0.7881	0.7621	0.6228	0.1645
140	07	2	SAT-CR	0.0000	11.3550	6,394.4466	3,181.0169	4,347.2406	-2.9033	0.7881	485.8574	335.4595	313.7089	12.6564
140	07	3	SAT-M	0.0000	10.8474	3,181.0169	6,176.5020	2,959.2892	-3.2370	0.7621	335.4595	477.5892	259.7243	12.7747
140	07	4	SAT-W	0.0000	12.9631	4,347.2406	2,959.2892	6,012.4559	-2.1628	0.6228	313.7089	259.7243	330.0151	16.2488
140	07	5	Black	0.0469	-0.0057	-2.9033	-3.2370	-2.1628	0.0447	-0.0055	-2.7672	-3.0853	-2.0614	-0.0140
140	07	6	Black*HSGPA	-0.0057	0.0128	0.7881	0.7621	0.6228	-0.0055	0.0128	0.7714	0.7435	0.6104	0.0070
140	07	7	Black*SAT-CR	-2.9009	0.7881	485.8574	335.4595	313.7089	-2.7672	0.7714	477.4353	326.0692	307.4348	1.5088
140	07	8	Black*SAT-M	-3.2343	0.7621	335.4595	477.5892	259.7243	-3.0853	0.7435	326.0692	467.1196	252.7290	1.3933
140	07	9	Black*SAT-W	-2.1610	0.6228	313.7089	259.7243	330.0151	-2.0614	0.6104	307.4348	252.7290	325.3412	1.2884
140	07	10	FYGPA	3.1291	0.1645	12.6564	12.7747	16.2488	-0.0140	0.0070	1.5088	1.3933	1.2884	0.4360

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
141	08	1	HSGPA	0.0000	0.2104	14.8221	16.5940	16.8947	-0.0171	0.0205	1.3626	2.0155	1.3778	0.1508
141	08	2	SAT-CR	0.0000	14.8221	7,007.4078	3,870.4433	5,244.7770	-3.9113	1.3626	574.7935	423.1690	445.4854	18.1499
141	08	3	SAT-M	0.0000	16.5940	3,870.4433	7,069.5420	4,047.6643	-4.2224	2.0155	423.1690	822.4324	501.1948	19.2375
141	08	4	SAT-W	0.0000	16.8947	5,244.7770	4,047.6643	7,442.9421	-3.7938	1.3778	445.4854	501.1948	527.5273	21.5165
141	08	5	Black	0.0484	-0.0171	-3.9113	-4.2224	-3.7938	0.0462	-0.0163	-3.7218	-4.0179	-3.6101	-0.0282
141	08	6	Black*HSGPA	-0.0171	0.0205	1.3626	2.0155	1.3778	-0.0163	0.0202	1.2957	1.9432	1.3129	0.0185
141	08	7	Black*SAT-CR	-3.9052	1.3626	574.7935	423.1690	445.4854	-3.7218	1.2957	559.5194	406.6797	430.6700	2.0306
141	08	8	Black*SAT-M	-4.2158	2.0155	423.1690	822.4324	501.1948	-4.0179	1.9432	406.6797	804.6312	485.2006	3.4476
141	08	9	Black*SAT-W	-3.7879	1.3778	445.4854	501.1948	527.5273	-3.6101	1.3129	430.6700	485.2006	513.1567	2.3595
141	08	10	FYGPA	3.0260	0.1508	18.1499	19.2375	21.5165	-0.0282	0.0185	2.0306	3.4476	2.3595	0.4285
142	07	1	HSGPA	0.0000	0.1966	6.2890	5.3512	1.6644	-0.0216	0.0513	-0.1023	2.0045	-1.2795	0.1179
142	07	2	SAT-CR	0.0000	6.2890	8,427.6149	4,342.7395	6,110.4741	-8.3314	-0.1023	2,534.2313	1,863.6234	1,812.9327	18.8478
142	07	3	SAT-M	0.0000	5.3512	4,342.7395	7,948.1609	4,078.1753	-13.4358	2.0045	1,863.6234	2,949.0649	1,913.0301	14.7701
142	07	4	SAT-W	0.0000	1.6644	6,110.4741	4,078.1753	7,350.3065	-6.0546	-1.2795	1,812.9327	1,913.0301	1,910.7082	15.7686
142	07	5	Black	0.2207	-0.0216	-8.3314	-13.4358	-6.0546	0.1732	-0.0168	-6.4928	-10.4707	-4.7184	-0.0456
142	07	6	Black*HSGPA	-0.0214	0.0513	-0.1023	2.0045	-1.2795	-0.0168	0.0508	-0.2806	1.7169	-1.4091	0.0327
142	07	7	Black*SAT-CR	-8.2740	-0.1023	2,534.2313	1,863.6234	1,812.9327	-6.4928	-0.2806	2,465.2975	1,752.4559	1,762.8372	3.0885
142	07	8	Black*SAT-M	-13.3432	2.0045	1,863.6234	2,949.0649	1,913.0301	-10.4707	1.7169	1,752.4559	2,769.7885	1,832.2426	3.8867
142	07	9	Black*SAT-W	-6.0128	-1.2795	1,812.9327	1,913.0301	1,910.7082	-4.7184	-1.4091	1,762.8372	1,832.2426	1,874.3029	1.5015
142	07	10	FYGPA	2.8362	0.1179	18.8478	14.7701	15.7686	-0.0456	0.0327	3.0885	3.8867	1.5015	0.4204
142	08	1	HSGPA	0.0000	0.1836	-6.8125	-2.4794	-2.1982	0.0076	0.0429	-1.4755	-2.9542	0.2100	0.0772
142	08	2	SAT-CR	0.0000	-6.8125	8,459.2959	6,275.3869	6,139.9517	-15.8126	-1.4755	2,702.4473	2,689.6542	2,097.7116	16.6837
142	08	3	SAT-M	0.0000	-2.4794	6,275.3869	10,632.0416	5,332.9013	-20.7982	-2.9542	2,689.6542	4,118.5299	2,351.1137	24.4478
142	08	4	SAT-W	0.0000	-2.1982	6,139.9517	5,332.9013	6,921.9446	-12.7020	0.2100	2,097.7116	2,351.1137	2,288.2778	20.4649
142	08	5	Black	0.2423	0.0076	-15.8126	-20.7982	-12.7020	0.1844	0.0058	-11.9814	-15.7590	-9.6245	-0.0864
142	08	6	Black*HSGPA	0.0076	0.0429	-1.4755	-2.9542	0.2100	0.0058	0.0428	-1.3557	-2.7966	0.3063	0.0211
142	08	7	Black*SAT-CR	-15.7430	-1.4755	2,702.4473	2,689.6542	2,097.7116	-11.9814	-1.3557	2,453.5093	2,362.2283	1,897.7437	10.5054
142	08	8	Black*SAT-M	-20.7066	-2.9542	2,689.6542	4,118.5299	2,351.1137	-15.7590	-2.7966	2,362.2283	3,687.8698	2,088.0978	13.5982
142	08	9	Black*SAT-W	-12.6461	0.2100	2,097.7116	2,351.1137	2,288.2778	-9.6245	0.3063	1,897.7437	2,088.0978	2,127.6468	12.6592
142	08	10	FYGPA	2.7374	0.0772	16.6837	24.4478	20.4649	-0.0864	0.0211	10.5054	13.5982	12.6592	0.6450
144	06	1	HSGPA	0.0000	0.2758	14.9316	21.8319	18.2807	-0.0186	0.0136	1.9396	2.1913	2.0396	0.1540
144	06	2	SAT-CR	0.0000	14.9316	6,072.2782	3,896.0003	4,818.1154	-3.4330	1.9396	633.4859	462.1944	604.6878	17.6552
144	06	3	SAT-M	0.0000	21.8319	3,896.0003	8,218.1758	4,170.5625	-3.5495	2.1913	462.1944	553.4832	448.5418	18.1507
144	06	4	SAT-W	0.0000	18.2807	4,818.1154	4,170.5625	6,796.9172	-3.4499	2.0396	604.6878	448.5418	699.2701	20.5742
144	06	5	Black	0.0368	-0.0186	-3.4330	-3.5495	-3.4499	0.0355	-0.0179	-3.3067	-3.4189	-3.3230	-0.0207
144	06	6	Black*HSGPA	-0.0186	0.0136	1.9396	2.1913	2.0396	-0.0179	0.0132	1.8757	2.1253	1.9755	0.0100
144	06	7	Black*SAT-CR	-3.4251	1.9396	633.4859	462.1944	604.6878	-3.3067	1.8757	621.7277	450.0371	592.8717	1.8942
144	06	8	Black*SAT-M	-3.5413	2.1913	462.1944	553.4832	448.5418	-3.4189	2.1253	450.0371	540.9132	436.3247	1.6995
144	06	9	Black*SAT-W	-3.4419	2.0396	604.6878	448.5418	699.2701	-3.3230	1.9755	592.8717	436.3247	687.3959	2.4630
144	06	10	FYGPA	2.8303	0.1540	17.6552	18.1507	20.5742	-0.0207	0.0100	1.8942	1.6995	2.4630	0.5180

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
144	07	1	HSGPA	0.0000	0.2691	13.9315	20.4120	16.3801	-0.0181	0.0171	1.8276	1.5167	1.8593	0.1693
144	07	2	SAT-CR	0.0000	13.9315	6,222.0968	4,233.1767	4,593.2128	-3.1238	1.8276	415.2368	335.4437	400.9985	22.7517
144	07	3	SAT-M	0.0000	20.4120	4,233.1767	8,306.5698	4,296.9998	-2.9904	1.5167	335.4437	355.4250	354.8427	23.6124
144	07	4	SAT-W	0.0000	16.3801	4,593.2128	4,296.9998	6,242.4590	-2.9681	1.8593	400.9985	354.8427	420.8468	25.8927
144	07	5	Black	0.0425	-0.0181	-3.1238	-2.9904	-2.9681	0.0407	-0.0174	-2.9912	-2.8635	-2.8421	-0.0355
144	07	6	Black*HSGPA	-0.0181	0.0171	1.8276	1.5167	1.8593	-0.0174	0.0168	1.7711	1.4626	1.8057	0.0227
144	07	7	Black*SAT-CR	-3.1164	1.8276	415.2368	335.4437	400.9985	-2.9912	1.7711	405.5017	326.1242	391.7485	3.1443
144	07	8	Black*SAT-M	-2.9834	1.5167	335.4437	355.4250	354.8427	-2.8635	1.4626	326.1242	346.5034	345.9876	2.2928
144	07	9	Black*SAT-W	-2.9611	1.8593	400.9985	354.8427	420.8468	-2.8421	1.8057	391.7485	345.9876	412.0578	2.8484
144	07	10	FYGPA	2.9660	0.1693	22.7517	23.6124	25.8927	-0.0355	0.0227	3.1443	2.2928	2.8484	0.4526
144	08	1	HSGPA	0.0000	0.2652	12.9049	16.0256	15.3003	-0.0311	0.0337	2.5073	4.0899	2.9247	0.1903
144	08	2	SAT-CR	0.0000	12.9049	6,386.4663	4,314.3855	4,940.4124	-3.4851	2.5073	525.8484	547.4618	492.4379	20.7865
144	08	3	SAT-M	0.0000	16.0256	4,314.3855	7,990.2390	4,487.9682	-6.2860	4.0899	547.4618	971.2913	641.2863	21.1239
144	08	4	SAT-W	0.0000	15.3003	4,940.4124	4,487.9682	6,811.3445	-4.0853	2.9247	492.4379	641.2863	691.4618	23.9563
144	08	5	Black	0.0553	-0.0311	-3.4851	-6.2860	-4.0853	0.0524	-0.0294	-3.2924	-5.9385	-3.8595	-0.0315
144	08	6	Black*HSGPA	-0.0310	0.0337	2.5073	4.0899	2.9247	-0.0294	0.0327	2.3992	3.8950	2.7980	0.0246
144	08	7	Black*SAT-CR	-3.4763	2.5073	525.8484	547.4618	492.4379	-3.2924	2.3992	513.7333	525.6099	478.2362	2.4972
144	08	8	Black*SAT-M	-6.2702	4.0899	547.4618	971.2913	641.2863	-5.9385	3.8950	525.6099	931.8772	615.6709	4.6265
144	08	9	Black*SAT-W	-4.0750	2.9247	492.4379	641.2863	691.4618	-3.8595	2.7980	478.2362	615.6709	674.8142	3.3051
144	08	10	FYGPA	2.9099	0.1903	20.7865	21.1239	23.9563	-0.0315	0.0246	2.4972	4.6265	3.3051	0.4797
145	08	1	HSGPA	0.0000	0.2698	13.6518	15.3291	13.4317	-0.0039	0.0149	0.7740	0.9107	0.7089	0.1850
145	08	2	SAT-CR	0.0000	13.6518	7,422.0583	4,874.2579	5,348.8055	-2.1476	0.7740	496.1873	435.8116	412.7491	22.0064
145	08	3	SAT-M	0.0000	15.3291	4,874.2579	8,007.2233	4,430.8864	-3.3310	0.9107	435.8116	649.4829	424.0703	22.8774
145	08	4	SAT-W	0.0000	13.4317	5,348.8055	4,430.8864	6,933.8746	-2.2281	0.7089	412.7491	424.0703	511.6998	23.8191
145	08	5	Black	0.0466	-0.0039	-2.1476	-3.3310	-2.2281	0.0444	-0.0037	-2.0476	-3.1758	-2.1243	-0.0182
145	08	6	Black*HSGPA	-0.0039	0.0149	0.7740	0.9107	0.7089	-0.0037	0.0149	0.7657	0.8978	0.7003	0.0096
145	08	7	Black*SAT-CR	-2.1470	0.7740	496.1873	435.8116	412.7491	-2.0476	0.7657	491.5765	428.6602	407.9654	1.9897
145	08	8	Black*SAT-M	-3.3300	0.9107	435.8116	649.4829	424.0703	-3.1758	0.8978	428.6602	638.3909	416.6508	2.6077
145	08	9	Black*SAT-W	-2.2275	0.7089	412.7491	424.0703	511.6998	-2.1243	0.7003	407.9654	416.6508	506.7368	2.0746
145	08	10	FYGPA	2.8786	0.1850	22.0064	22.8774	23.8191	-0.0182	0.0096	1.9897	2.6077	2.0746	0.6281
147	08	1	HSGPA	0.0000	0.3013	15.1314	16.5866	16.0318	-0.0352	0.0395	3.5774	3.9045	3.4055	0.1798
147	08	2	SAT-CR	0.0000	15.1314	7,574.9178	4,604.9645	5,562.8991	-6.8330	3.5774	1,009.1027	889.5269	825.7782	19.9135
147	08	3	SAT-M	0.0000	16.5866	4,604.9645	7,401.6494	4,384.8496	-7.3209	3.9045	889.5269	1,167.2991	848.8096	15.1225
147	08	4	SAT-W	0.0000	16.0318	5,562.8991	4,384.8496	6,948.4390	-6.5709	3.4055	825.7782	848.8096	926.4111	19.7708
147	08	5	Black	0.0804	-0.0352	-6.8330	-7.3209	-6.5709	0.0740	-0.0323	-6.2835	-6.7321	-6.0425	-0.0306
147	08	6	Black*HSGPA	-0.0351	0.0395	3.5774	3.9045	3.4055	-0.0323	0.0383	3.3374	3.6474	3.1747	0.0171
147	08	7	Black*SAT-CR	-6.8251	3.5774	1,009.1027	889.5269	825.7782	-6.2835	3.3374	962.4668	839.5614	780.9311	3.8257
147	08	8	Black*SAT-M	-7.3123	3.9045	889.5269	1,167.2991	848.8096	-6.7321	3.6474	839.5614	1,113.7665	800.7607	2.6911
147	08	9	Black*SAT-W	-6.5633	3.4055	825.7782	848.8096	926.4111	-6.0425	3.1747	780.9311	800.7607	883.2842	3.4881
147	08	10	FYGPA	2.9209	0.1798	19.9135	15.1225	19.7708	-0.0306	0.0171	3.8257	2.6911	3.4881	0.5370



## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
148	06	1	HSGPA	0.0000	0.2162	6.3096	2.7809	6.9130	-0.0070	0.0082	1.0495	0.7942	1.1405	0.1230
148	06	2	SAT-CR	0.0000	6.3096	5,674.3772	1,850.3380	3,720.2933	-2.2193	1.0495	386.1314	323.3625	356.1954	14.7044
148	06	3	SAT-M	0.0000	2.7809	1,850.3380	4,923.3153	1,663.2003	-3.2011	0.7942	323.3625	482.4244	353.0943	11.5181
148	06	4	SAT-W	0.0000	6.9130	3,720.2933	1,663.2003	5,523.3325	-2.5451	1.1405	356.1954	353.0943	470.2341	14.1749
148	06	5	Black	0.0340	-0.0070	-2.2193	-3.2011	-2.5451	0.0328	-0.0068	-2.1440	-3.0925	-2.4587	-0.0154
148	06	6	Black*HSGPA	-0.0070	0.0082	1.0495	0.7942	1.1405	-0.0068	0.0082	1.0339	0.7717	1.1226	0.0082
148	06	7	Black*SAT-CR	-2.2159	1.0495	386.1314	323.3625	356.1954	-2.1440	1.0339	381.2137	316.2692	350.5557	2.5145
148	06	8	Black*SAT-M	-3.1962	0.7942	323.3625	482.4244	353.0943	-3.0925	0.7717	316.2692	472.1929	344.9596	2.5477
148	06	9	Black*SAT-W	-2.5412	1.1405	356.1954	353.0943	470.2341	-2.4587	1.1226	350.5557	344.9596	463.7665	2.5721
148	06	10	FYGPA	2.8522	0.1230	14.7044	11.5181	14.1749	-0.0154	0.0082	2.5145	2.5477	2.5721	0.3597
149	08	1	HSGPA	0.0000	0.1764	6.2101	6.3580	7.1914	-0.0035	0.0049	0.2674	0.5209	0.2573	0.0959
149	08	2	SAT-CR	0.0000	6.2101	4,144.4543	1,670.8276	2,863.4351	-1.1921	0.2674	127.8774	100.5139	104.0210	10.2670
149	08	3	SAT-M	0.0000	6.3580	1,670.8276	4,396.9699	1,829.0277	-1.6038	0.5209	100.5139	201.1982	72.5741	7.1034
149	08	4	SAT-W	0.0000	7.1914	2,863.4351	1,829.0277	4,669.8794	-1.0149	0.2573	104.0210	72.5741	146.9692	11.7908
149	08	5	Black	0.0302	-0.0035	-1.1921	-1.6038	-1.0149	0.0293	-0.0034	-1.1561	-1.5553	-0.9843	-0.0044
149	08	6	Black*HSGPA	-0.0035	0.0049	0.2674	0.5209	0.2573	-0.0034	0.0049	0.2632	0.5153	0.2538	0.0016
149	08	7	Black*SAT-CR	-1.1910	0.2674	127.8774	100.5139	104.0210	-1.1561	0.2632	126.4576	98.6037	102.8122	0.2350
149	08	8	Black*SAT-M	-1.6023	0.5209	100.5139	201.1982	72.5741	-1.5553	0.5153	98.6037	198.6284	70.9478	0.4376
149	08	9	Black*SAT-W	-1.0140	0.2573	104.0210	72.5741	146.9692	-0.9843	0.2538	102.8122	70.9478	145.9400	-0.0145
149	08	10	FYGPA	3.1676	0.0959	10.2670	7.1034	11.7908	-0.0044	0.0016	0.2350	0.4376	-0.0145	0.2388
151	06	1	HSGPA	0.0000	0.3486	14.6636	15.4613	18.3611	-0.0077	0.0115	0.5121	0.3480	0.6563	0.2325
151	06	2	SAT-CR	0.0000	14.6636	6,048.1675	3,407.1771	4,254.4425	-0.8380	0.5121	206.0786	105.4788	162.2513	17.3360
151	06	3	SAT-M	0.0000	15.4613	3,407.1771	6,697.9776	3,317.0114	-1.3748	0.3480	105.4788	227.5928	118.8248	14.6448
151	06	4	SAT-W	0.0000	18.3611	4,254.4425	3,317.0114	5,996.2619	-1.0721	0.6563	162.2513	118.8248	220.0694	19.5948
151	06	5	Black	0.0307	-0.0077	-0.8380	-1.3748	-1.0721	0.0298	-0.0074	-0.8122	-1.3325	-1.0392	-0.0082
151	06	6	Black*HSGPA	-0.0076	0.0115	0.5121	0.3480	0.6563	-0.0074	0.0114	0.5057	0.3375	0.6481	0.0047
151	06	7	Black*SAT-CR	-0.8376	0.5121	206.0786	105.4788	162.2513	-0.8122	0.5057	205.3767	104.3272	161.3533	0.5339
151	06	8	Black*SAT-M	-1.3743	0.3480	105.4788	227.5928	118.8248	-1.3325	0.3375	104.3272	225.7034	117.3514	0.4915
151	06	9	Black*SAT-W	-1.0717	0.6563	162.2513	118.8248	220.0694	-1.0392	0.6481	161.3533	117.3514	218.9204	0.6022
151	06	10	FYGPA	2.7726	0.2325	17.3360	14.6448	19.5948	-0.0082	0.0047	0.5339	0.4915	0.6022	0.6819
153	06	1	HSGPA	0.0000	0.1001	8.3587	7.8921	7.4886	-0.0157	0.0226	1.6278	1.5033	1.5002	0.0244
153	06	2	SAT-CR	0.0000	8.3587	5,433.9214	2,648.3427	4,021.4836	-5.0255	1.6278	808.7026	526.7435	680.5279	10.7450
153	06	3	SAT-M	0.0000	7.8921	2,648.3427	4,662.7974	2,628.7332	-5.9956	1.5033	526.7435	773.3350	529.2522	7.1159
153	06	4	SAT-W	0.0000	7.4886	4,021.4836	2,628.7332	5,371.1155	-4.8988	1.5002	680.5279	529.2522	986.4383	11.7164
153	06	5	Black	0.1354	-0.0157	-5.0255	-5.9956	-4.8988	0.1173	-0.0136	-4.3449	-5.1836	-4.2353	-0.0289
153	06	6	Black*HSGPA	-0.0157	0.0226	1.6278	1.5033	1.5002	-0.0136	0.0224	1.5492	1.4095	1.4235	0.0051
153	06	7	Black*SAT-CR	-5.0176	1.6278	808.7026	526.7435	680.5279	-4.3449	1.5492	783.4869	496.6601	655.9480	1.7029
153	06	8	Black*SAT-M	-5.9862	1.5033	526.7435	773.3350	529.2522	-5.1836	1.4095	496.6601	737.4443	499.9275	1.7549
153	06	9	Black*SAT-W	-4.8910	1.5002	680.5279	529.2522	986.4383	-4.2353	1.4235	655.9480	499.9275	962.4783	1.9795
153	06	10	FYGPA	3.4340	0.0244	10.7450	7.1159	11.7164	-0.0289	0.0051	1.7029	1.7549	1.9795	0.1315

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
155	06	1	HSGPA	0.0000	0.2457	11.2891	10.9443	11.5848	-0.0022	0.0059	0.2556	0.3649	0.2589	0.1372
155	06	2	SAT-CR	0.0000	11.2891	6,788.4387	3,451.2801	4,680.7706	-1.2144	0.2556	185.9202	128.9904	132.6614	16.7307
155	06	3	SAT-M	0.0000	10.9443	3,451.2801	6,745.7598	3,009.8536	-1.2084	0.3649	128.9904	205.9417	101.9161	13.5590
155	06	4	SAT-W	0.0000	11.5848	4,680.7706	3,009.8536	6,148.7457	-0.9442	0.2589	132.6614	101.9161	116.9020	17.0336
155	06	5	Black	0.0180	-0.0022	-1.2144	-1.2084	-0.9442	0.0176	-0.0022	-1.1926	-1.1867	-0.9273	-0.0060
155	06	6	Black*HSGPA	-0.0022	0.0059	0.2556	0.3649	0.2589	-0.0022	0.0059	0.2530	0.3623	0.2568	0.0026
155	06	7	Black*SAT-CR	-1.2135	0.2556	185.9202	128.9904	132.6614	-1.1926	0.2530	184.4465	127.5241	131.5156	0.8312
155	06	8	Black*SAT-M	-1.2074	0.3649	128.9904	205.9417	101.9161	-1.1867	0.3623	127.5241	204.4826	100.7760	1.0094
155	06	9	Black*SAT-W	-0.9435	0.2589	132.6614	101.9161	116.9020	-0.9273	0.2568	131.5156	100.7760	116.0111	0.7266
155	06	10	FYGPA	2.9522	0.1372	16.7307	13.5590	17.0336	-0.0060	0.0026	0.8312	1.0094	0.7266	0.4171
155	07	1	HSGPA	0.0000	0.2475	7.1148	10.0973	9.5724	-0.0077	0.0092	0.5704	0.7097	0.6801	0.1558
155	07	2	SAT-CR	0.0000	7.1148	6,488.3686	3,016.5482	4,217.0299	-1.1886	0.5704	227.5678	164.7129	179.0431	13.6429
155	07	3	SAT-M	0.0000	10.0973	3,016.5482	5,923.7227	2,777.2738	-1.5462	0.7097	164.7129	215.6520	155.2584	10.7326
155	07	4	SAT-W	0.0000	9.5724	4,217.0299	2,777.2738	5,562.9712	-1.3118	0.6801	179.0431	155.2584	209.9914	16.7166
155	07	5	Black	0.0264	-0.0077	-1.1886	-1.5462	-1.3118	0.0257	-0.0075	-1.1572	-1.5053	-1.2772	-0.0075
155	07	6	Black*HSGPA	-0.0077	0.0092	0.5704	0.7097	0.6801	-0.0075	0.0091	0.5612	0.6977	0.6699	0.0058
155	07	7	Black*SAT-CR	-1.1880	0.5704	227.5678	164.7129	179.0431	-1.1572	0.5612	226.1558	162.8760	177.4846	0.2960
155	07	8	Black*SAT-M	-1.5454	0.7097	164.7129	215.6520	155.2584	-1.5053	0.6977	162.8760	213.2625	153.2311	0.5647
155	07	9	Black*SAT-W	-1.3112	0.6801	179.0431	155.2584	209.9914	-1.2772	0.6699	177.4846	153.2311	208.2715	0.3497
155	07	10	FYGPA	2.8919	0.1558	13.6429	10.7326	16.7166	-0.0075	0.0058	0.2960	0.5647	0.3497	0.4517
155	08	1	HSGPA	0.0000	0.2064	4.3174	6.7079	5.8831	-0.0075	0.0112	0.6760	0.9649	0.8386	0.1218
155	08	2	SAT-CR	0.0000	4.3174	6,028.4311	2,872.7206	4,121.0338	-1.3533	0.6760	280.1061	192.8802	219.0957	11.6044
155	08	3	SAT-M	0.0000	6.7079	2,872.7206	5,690.5812	2,606.1101	-1.8486	0.9649	192.8802	304.3862	200.8692	9.4442
155	08	4	SAT-W	0.0000	5.8831	4,121.0338	2,606.1101	5,658.3280	-1.3378	0.8386	219.0957	200.8692	258.3701	12.5362
155	08	5	Black	0.0257	-0.0075	-1.3533	-1.8486	-1.3378	0.0250	-0.0073	-1.3185	-1.8011	-1.3035	-0.0034
155	08	6	Black*HSGPA	-0.0075	0.0112	0.6760	0.9649	0.8386	-0.0073	0.0112	0.6659	0.9510	0.8286	0.0032
155	08	7	Black*SAT-CR	-1.3527	0.6760	280.1061	192.8802	219.0957	-1.3185	0.6659	278.2755	190.3797	217.2860	0.6017
155	08	8	Black*SAT-M	-1.8477	0.9649	192.8802	304.3862	200.8692	-1.8011	0.9510	190.3797	300.9705	198.3972	0.4933
155	08	9	Black*SAT-W	-1.3373	0.8386	219.0957	200.8692	258.3701	-1.3035	0.8286	217.2860	198.3972	256.5811	0.5666
155	08	10	FYGPA	2.9454	0.1218	11.6044	9.4442	12.5362	-0.0034	0.0032	0.6017	0.4933	0.5666	0.3745
156	07	1	HSGPA	0.0000	0.3000	16.2221	16.6923	19.0280	-0.0535	0.0546	1.8911	1.6316	2.8499	0.1795
156	07	2	SAT-CR	0.0000	16.2221	5,633.2721	3,203.1486	4,194.4937	-4.2147	1.8911	802.0049	432.3525	610.9491	15.4007
156	07	3	SAT-M	0.0000	16.6923	3,203.1486	6,181.7960	3,282.5536	-6.3278	1.6316	432.3525	918.3843	465.5445	17.0441
156	07	4	SAT-W	0.0000	19.0280	4,194.4937	3,282.5536	6,189.7432	-5.8043	2.8499	610.9491	465.5445	931.1035	19.4749
156	07	5	Black	0.1737	-0.0535	-4.2147	-6.3278	-5.8043	0.1438	-0.0442	-3.4826	-5.2286	-4.7961	-0.0661
156	07	6	Black*HSGPA	-0.0534	0.0546	1.8911	1.6316	2.8499	-0.0442	0.0517	1.6660	1.2938	2.5400	0.0353
156	07	7	Black*SAT-CR	-4.2078	1.8911	802.0049	432.3525	610.9491	-3.4826	1.6660	784.2704	405.7263	586.5255	0.9563
156	07	8	Black*SAT-M	-6.3175	1.6316	432.3525	918.3843	465.5445	-5.2286	1.2938	405.7263	878.4084	428.8755	2.0892
156	07	9	Black*SAT-W	-5.7949	2.8499	610.9491	465.5445	931.1035	-4.7961	2.5400	586.5255	428.8755	897.4680	2.6079
156	07	10	FYGPA	2.8982	0.1795	15.4007	17.0441	19.4749	-0.0661	0.0353	0.9563	2.0892	2.6079	0.4651

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
156	08	1	HSGPA	0.0000	0.3037	18.0698	20.2094	18.2610	-0.0306	0.0452	2.1524	2.9513	3.0206	0.1649
156	08	2	SAT-CR	0.0000	18.0698	5,852.5483	3,433.8280	4,239.2802	-5.9459	2.1524	921.5174	713.6149	857.8993	14.8510
156	08	3	SAT-M	0.0000	20.2094	3,433.8280	6,682.7782	3,657.6533	-9.7919	2.9513	713.6149	1,404.5741	842.9714	15.8697
156	08	4	SAT-W	0.0000	18.2610	4,239.2802	3,657.6533	6,204.5731	-7.4814	3.0206	857.8993	842.9714	1,283.1437	16.5856
156	08	5	Black	0.1536	-0.0306	-5.9459	-9.7919	-7.4814	0.1302	-0.0259	-5.0328	-8.2883	-6.3325	-0.0472
156	08	6	Black*HSGPA	-0.0305	0.0452	2.1524	2.9513	3.0206	-0.0259	0.0443	1.9711	2.6525	2.7923	0.0281
156	08	7	Black*SAT-CR	-5.9347	2.1524	921.5174	713.6149	857.8993	-5.0328	1.9711	886.2305	655.5026	813.4996	2.2016
156	08	8	Black*SAT-M	-9.7736	2.9513	713.6149	1,404.5741	842.9714	-8.2883	2.6525	655.5026	1,308.8717	769.8516	3.8140
156	08	9	Black*SAT-W	-7.4674	3.0206	857.8993	842.9714	1,283.1437	-6.3325	2.7923	813.4996	769.8516	1,227.2778	3.6504
156	08	10	FYGPA	2.9338	0.1649	14.8510	15.8697	16.5856	-0.0472	0.0281	2.2016	3.8140	3.6504	0.4374
157	06	1	HSGPA	0.0000	0.1857	9.2297	11.4229	9.9685	-0.0272	0.0303	2.1482	3.5857	2.3955	0.1273
157	06	2	SAT-CR	0.0000	9.2297	5,653.7771	2,965.6418	3,877.4210	-3.9150	2.1482	574.1162	545.1760	486.1838	16.0512
157	06	3	SAT-M	0.0000	11.4229	2,965.6418	6,085.6509	2,764.5475	-6.7229	3.5857	545.1760	1,079.7373	594.4925	14.1250
157	06	4	SAT-W	0.0000	9.9685	3,877.4210	2,764.5475	5,778.9612	-4.3340	2.3955	486.1838	594.4925	678.8569	17.4818
157	06	5	Black	0.0685	-0.0272	-3.9150	-6.7229	-4.3340	0.0639	-0.0254	-3.6468	-6.2623	-4.0370	-0.0302
157	06	6	Black*HSGPA	-0.0272	0.0303	2.1482	3.5857	2.3955	-0.0254	0.0296	2.0415	3.4025	2.2775	0.0214
157	06	7	Black*SAT-CR	-3.9132	2.1482	574.1162	545.1760	486.1838	-3.6468	2.0415	558.7959	518.8678	469.2241	2.0971
157	06	8	Black*SAT-M	-6.7198	3.5857	545.1760	1,079.7373	594.4925	-6.2623	3.4025	518.8678	1,034.5607	565.3691	3.3867
157	06	9	Black*SAT-W	-4.3319	2.3955	486.1838	594.4925	678.8569	-4.0370	2.2775	469.2241	565.3691	660.0823	1.9424
157	06	10	FYGPA	2.8793	0.1273	16.0512	14.1250	17.4818	-0.0302	0.0214	2.0971	3.3867	1.9424	0.5127
158	06	1	HSGPA	0.0000	0.3423	11.0836	12.0350	12.5558	-0.0277	0.0577	3.4859	3.4313	3.1599	0.2007
158	06	2	SAT-CR	0.0000	11.0836	8,607.2461	5,222.9688	6,332.5339	-6.6827	3.4859	1,743.5336	1,279.7608	1,156.5497	26.1021
158	06	3	SAT-M	0.0000	12.0350	5,222.9688	7,675.9937	4,745.8388	-8.3750	3.4313	1,279.7608	1,390.6672	1,052.9365	20.5118
158	06	4	SAT-W	0.0000	12.5558	6,332.5339	4,745.8388	7,970.4596	-7.4015	3.1599	1,156.5497	1,052.9365	1,237.9355	25.7832
158	06	5	Black	0.1066	-0.0277	-6.6827	-8.3750	-7.4015	0.0955	-0.0247	-5.9706	-7.4826	-6.6128	-0.0400
158	06	6	Black*HSGPA	-0.0276	0.0577	3.4859	3.4313	3.1599	-0.0247	0.0569	3.3015	3.2003	2.9557	0.0266
158	06	7	Black*SAT-CR	-6.6644	3.4859	1,743.5336	1,279.7608	1,156.5497	-5.9706	3.3015	1,698.9973	1,223.9460	1,107.2228	5.2565
158	06	8	Black*SAT-M	-8.3521	3.4313	1,279.7608	1,390.6672	1,052.9365	-7.4826	3.2003	1,223.9460	1,320.7177	991.1179	4.8325
158	06	9	Black*SAT-W	-7.3813	3.1599	1,156.5497	1,052.9365	1,237.9355	-6.6128	2.9557	1,107.2228	991.1179	1,183.3026	5.0546
158	06	10	FYGPA	3.0392	0.2007	26.1021	20.5118	25.7832	-0.0400	0.0266	5.2565	4.8325	5.0546	0.5887
159	07	1	HSGPA	0.0000	0.1807	8.8833	9.2719	11.1718	-0.0175	0.0425	2.1098	2.8752	2.9656	0.1007
159	07	2	SAT-CR	0.0000	8.8833	6,937.6789	3,940.1923	5,116.1903	-8.3750	2.1098	1,387.5628	1,121.8516	1,153.5161	20.1500
159	07	3	SAT-M	0.0000	9.2719	3,940.1923	7,548.7919	3,914.8194	-11.8937	2.8752	1,121.8516	1,945.9442	1,226.1579	17.0973
159	07	4	SAT-W	0.0000	11.1718	5,116.1903	3,914.8194	6,740.1274	-8.6085	2.9656	1,153.5161	1,226.1579	1,536.7448	22.6559
159	07	5	Black	0.1767	-0.0175	-8.3750	-11.8937	-8.6085	0.1456	-0.0144	-6.8948	-9.7915	-7.0869	-0.0412
159	07	6	Black*HSGPA	-0.0175	0.0425	2.1098	2.8752	2.9656	-0.0144	0.0422	1.9635	2.6673	2.8152	0.0225
159	07	7	Black*SAT-CR	-8.3711	2.1098	1,387.5628	1,121.8516	1,153.5161	-6.8948	1.9635	1,317.4548	1,022.2889	1,081.4540	5.1429
159	07	8	Black*SAT-M	-11.8880	2.8752	1,121.8516	1,945.9442	1,226.1579	-9.7915	2.6673	1,022.2889	1,804.5518	1,123.8201	5.2624
159	07	9	Black*SAT-W	-8.6044	2.9656	1,153.5161	1,226.1579	1,536.7448	-7.0869	2.8152	1,081.4540	1,123.8201	1,462.6742	5.2165
159	07	10	FYGPA	2.9274	0.1007	20.1500	17.0973	22.6559	-0.0412	0.0225	5.1429	5.2624	5.2165	0.4731

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
159	08	1	HSGPA	0.0000	0.1875	8.3306	10.2740	10.9091	-0.0268	0.0453	2.4357	3.1667	2.9633	0.1242
159	08	2	SAT-CR	0.0000	8.3306	6,662.8373	3,764.7633	4,869.5239	-8.6832	2.4357	1,374.9590	1,096.6033	1,130.4062	19.1215
159	08	3	SAT-M	0.0000	10.2740	3,764.7633	7,141.9722	3,819.4559	-11.3327	3.1667	1,096.6033	1,787.0598	1,150.7874	17.3008
159	08	4	SAT-W	0.0000	10.9091	4,869.5239	3,819.4559	6,849.1039	-9.2076	2.9633	1,130.4062	1,150.7874	1,496.4020	23.7469
159	08	5	Black	0.1758	-0.0268	-8.6832	-11.3327	-9.2076	0.1449	-0.0221	-7.1568	-9.3406	-7.5890	-0.0560
159	08	6	Black*HSGPA	-0.0268	0.0453	2.4357	3.1667	2.9633	-0.0221	0.0446	2.2030	2.8630	2.7165	0.0316
159	08	7	Black*SAT-CR	-8.6804	2.4357	1,374.9590	1,096.6033	1,130.4062	-7.1568	2.2030	1,299.5851	998.2304	1,050.4803	4.7404
159	08	8	Black*SAT-M	-11.3291	3.1667	1,096.6033	1,787.0598	1,150.7874	-9.3406	2.8630	998.2304	1,658.6702	1,046.4735	5.6279
159	08	9	Black*SAT-W	-9.2047	2.9633	1,130.4062	1,150.7874	1,496.4020	-7.5890	2.7165	1,050.4803	1,046.4735	1,411.6491	5.8238
159	08	10	FYGPA	2.7916	0.1242	19.1215	17.3008	23.7469	-0.0560	0.0316	4.7404	5.6279	5.8238	0.6006
162	06	1	HSGPA	0.0000	0.2218	3.0005	7.0412	7.1645	-0.0002	0.0072	0.3366	0.4011	0.6352	0.1540
162	06	2	SAT-CR	0.0000	3.0005	5,498.5019	2,196.0189	3,439.1465	-0.7866	0.3366	361.5268	155.3825	266.5084	8.0421
162	06	3	SAT-M	0.0000	7.0412	2,196.0189	5,065.2965	2,328.6895	-1.8152	0.4011	155.3825	441.6081	245.3274	7.7652
162	06	4	SAT-W	0.0000	7.1645	3,439.1465	2,328.6895	4,964.1836	-1.8366	0.6352	266.5084	245.3274	341.6155	11.2775
162	06	5	Black	0.0377	-0.0002	-0.7866	-1.8152	-1.8366	0.0363	-0.0002	-0.7569	-1.7468	-1.7674	-0.0074
162	06	6	Black*HSGPA	-0.0002	0.0072	0.3366	0.4011	0.6352	-0.0002	0.0072	0.3365	0.4007	0.6348	0.0031
162	06	7	Black*SAT-CR	-0.7851	0.3366	361.5268	155.3825	266.5084	-0.7569	0.3365	360.9093	153.9574	265.0665	0.2839
162	06	8	Black*SAT-M	-1.8118	0.4011	155.3825	441.6081	245.3274	-1.7468	0.4007	153.9574	438.3193	241.9999	0.5348
162	06	9	Black*SAT-W	-1.8332	0.6352	266.5084	245.3274	341.6155	-1.7674	0.6348	265.0665	241.9999	338.2487	0.6757
162	06	10	FYGPA	2.6567	0.1540	8.0421	7.7652	11.2775	-0.0074	0.0031	0.2839	0.5348	0.6757	0.7056
162	08	1	HSGPA	0.0000	0.2481	2.7391	3.8710	6.8613	-0.0091	0.0115	-0.0032	0.1886	0.1153	0.1868
162	08	2	SAT-CR	0.0000	2.7391	5,009.9010	1,954.9086	3,436.2902	-2.2074	-0.0032	256.3855	106.4003	265.6453	8.6664
162	08	3	SAT-M	0.0000	3.8710	1,954.9086	4,823.0254	2,282.8820	-1.9345	0.1886	106.4003	225.2428	167.7919	7.4200
162	08	4	SAT-W	0.0000	6.8613	3,436.2902	2,282.8820	5,448.2651	-2.8530	0.1153	265.6453	167.7919	475.4660	14.7155
162	08	5	Black	0.0421	-0.0091	-2.2074	-1.9345	-2.8530	0.0404	-0.0087	-2.1144	-1.8530	-2.7328	-0.0218
162	08	6	Black*HSGPA	-0.0090	0.0115	-0.0032	0.1886	0.1153	-0.0087	0.0115	-0.0231	0.1711	0.0895	0.0046
162	08	7	Black*SAT-CR	-2.2025	-0.0032	256.3855	106.4003	265.6453	-2.1144	-0.0231	251.5238	102.1395	259.3617	1.1287
162	08	8	Black*SAT-M	-1.9302	0.1886	106.4003	225.2428	167.7919	-1.8530	0.1711	102.1395	221.5088	162.2850	1.1969
162	08	9	Black*SAT-W	-2.8466	0.1153	265.6453	167.7919	475.4660	-2.7328	0.0895	259.3617	162.2850	467.3447	1.4786
162	08	10	FYGPA	2.5877	0.1868	8.6664	7.4200	14.7155	-0.0218	0.0046	1.1287	1.1969	1.4786	0.7273
164	08	1	HSGPA	0.0000	0.1701	6.3039	7.4089	5.1905	-0.0048	0.0125	0.2448	1.0595	0.0693	0.0675
164	08	2	SAT-CR	0.0000	6.3039	6,159.1704	2,716.8044	4,059.8008	-4.6647	0.2448	572.2771	436.4787	393.3875	13.9091
164	08	3	SAT-M	0.0000	7.4089	2,716.8044	5,099.2523	2,573.7505	-4.0299	1.0595	436.4787	552.9544	352.8640	11.3699
164	08	4	SAT-W	0.0000	5.1905	4,059.8008	2,573.7505	5,800.6721	-3.3022	0.0693	393.3875	352.8640	476.1506	13.4169
164	08	5	Black	0.0797	-0.0048	-4.6647	-4.0299	-3.3022	0.0735	-0.0044	-4.2930	-3.7088	-3.0391	-0.0165
164	08	6	Black*HSGPA	-0.0047	0.0125	0.2448	1.0595	0.0693	-0.0044	0.0125	0.2227	1.0404	0.0536	0.0023
164	08	7	Black*SAT-CR	-4.6518	0.2448	572.2771	436.4787	393.3875	-4.2930	0.2227	550.5779	417.7322	378.0264	2.5610
164	08	8	Black*SAT-M	-4.0188	1.0595	436.4787	552.9544	352.8640	-3.7088	1.0404	417.7322	536.7589	339.5932	2.2034
164	08	9	Black*SAT-W	-3.2931	0.0693	393.3875	352.8640	476.1506	-3.0391	0.0536	378.0264	339.5932	465.2763	1.5655
164	08	10	FYGPA	3.2451	0.0675	13.9091	11.3699	13.4169	-0.0165	0.0023	2.5610	2.2034	1.5655	0.2284

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
165	06	1	HSGPA	0.0000	0.1762	4.7118	4.4978	6.5121	-0.0162	0.0356	1.8733	1.6335	2.2595	0.0968
165	06	2	SAT-CR	0.0000	4.7118	5,721.3289	3,015.2393	3,640.4889	-5.9236	1.8733	1,120.5605	851.6844	881.9593	8.6772
165	06	3	SAT-M	0.0000	4.4978	3,015.2393	6,809.7773	3,074.6868	-11.3371	1.6335	851.6844	1,817.1137	922.5189	10.6966
165	06	4	SAT-W	0.0000	6.5121	3,640.4889	3,074.6868	5,035.3576	-7.2953	2.2595	881.9593	922.5189	1,096.2799	12.3213
165	06	5	Black	0.1415	-0.0162	-5.9236	-11.3371	-7.2953	0.1216	-0.0139	-5.0856	-9.7333	-6.2633	-0.0439
165	06	6	Black*HSGPA	-0.0161	0.0356	1.8733	1.6335	2.2595	-0.0139	0.0353	1.7776	1.4505	2.1417	0.0186
165	06	7	Black*SAT-CR	-5.9139	1.8733	1,120.5605	851.6844	881.9593	-5.0856	1.7776	1,085.5289	784.6375	838.8153	2.3433
165	06	8	Black*SAT-M	-11.3187	1.6335	851.6844	1,817.1137	922.5189	-9.7333	1.4505	784.6375	1,688.7930	839.9459	3.2249
165	06	9	Black*SAT-W	-7.2834	2.2595	881.9593	922.5189	1,096.2799	-6.2633	2.1417	838.8153	839.9459	1,043.1450	3.3875
165	06	10	FYGPA	3.1419	0.0968	8.6772	10.6966	12.3213	-0.0439	0.0186	2.3433	3.2249	3.3875	0.3080
165	07	1	HSGPA	0.0000	0.1715	3.2716	5.2493	4.7516	-0.0211	0.0376	0.9160	1.9314	1.3287	0.0884
165	07	2	SAT-CR	0.0000	3.2716	5,359.6863	2,518.6731	3,722.3754	-7.2295	0.9160	1,088.8656	706.9010	949.4743	7.7162
165	07	3	SAT-M	0.0000	5.2493	2,518.6731	5,818.3319	2,810.5378	-7.3779	1.9314	706.9010	1,214.1385	756.4790	9.5772
165	07	4	SAT-W	0.0000	4.7516	3,722.3754	2,810.5378	5,426.2955	-7.1459	1.3287	949.4743	756.4790	1,109.8144	10.1947
165	07	5	Black	0.1206	-0.0211	-7.2295	-7.3779	-7.1459	0.1063	-0.0185	-6.3574	-6.4879	-6.2839	-0.0324
165	07	6	Black*HSGPA	-0.0211	0.0376	0.9160	1.9314	1.3287	-0.0185	0.0371	0.7638	1.7760	1.1782	0.0200
165	07	7	Black*SAT-CR	-7.2180	0.9160	1,088.8656	706.9010	949.4743	-6.3574	0.7638	1,036.6826	653.6466	897.8946	2.5662
165	07	8	Black*SAT-M	-7.3662	1.9314	706.9010	1,214.1385	756.4790	-6.4879	1.7760	653.6466	1,159.7908	703.8404	3.4070
165	07	9	Black*SAT-W	-7.1346	1.3287	949.4743	756.4790	1,109.8144	-6.2839	1.1782	897.8946	703.8404	1,058.8311	2.7389
165	07	10	FYGPA	3.1798	0.0884	7.7162	9.5772	10.1947	-0.0324	0.0200	2.5662	3.4070	2.7389	0.2598
166	06	1	HSGPA	0.0000	0.1609	3.6735	4.0712	2.7357	-0.0131	0.0259	0.8985	1.2117	0.1695	0.0860
166	06	2	SAT-CR	0.0000	3.6735	6,406.9830	3,435.3813	4,258.3172	-7.4667	0.8985	1,277.1864	1,248.7593	1,109.4364	11.0901
166	06	3	SAT-M	0.0000	4.0712	3,435.3813	6,446.6869	3,195.8307	-10.0953	1.2117	1,248.7593	1,756.0880	1,295.6432	11.4969
166	06	4	SAT-W	0.0000	2.7357	4,258.3172	3,195.8307	5,776.9112	-7.3609	0.1695	1,109.4364	1,295.6432	1,253.2228	11.1211
166	06	5	Black	0.0833	-0.0131	-7.4667	-10.0953	-7.3609	0.0765	-0.0120	-6.8445	-9.2540	-6.7475	-0.0437
166	06	6	Black*HSGPA	-0.0131	0.0259	0.8985	1.2117	0.1695	-0.0120	0.0258	0.8008	1.0796	0.0732	0.0107
166	06	7	Black*SAT-CR	-7.4532	0.8985	1,277.1864	1,248.7593	1,109.4364	-6.8445	0.8008	1,221.5354	1,173.5171	1,054.5744	5.9060
166	06	8	Black*SAT-M	-10.0770	1.2117	1,248.7593	1,756.0880	1,295.6432	-9.2540	1.0796	1,173.5171	1,654.3579	1,221.4679	6.3601
166	06	9	Black*SAT-W	-7.3475	0.1695	1,109.4364	1,295.6432	1,253.2228	-6.7475	0.0732	1,054.5744	1,221.4679	1,199.1387	5.4567
166	06	10	FYGPA	3.2316	0.0860	11.0901	11.4969	11.1211	-0.0437	0.0107	5.9060	6.3601	5.4567	0.3538
166	07	1	HSGPA	0.0000	0.1295	4.7788	4.4293	5.5918	-0.0183	0.0170	0.9429	1.1800	1.0816	0.0733
166	07	2	SAT-CR	0.0000	4.7788	6,760.5771	3,697.3731	4,637.5314	-4.7738	0.9429	747.0963	763.2493	708.6302	10.0099
166	07	3	SAT-M	0.0000	4.4293	3,697.3731	7,008.4726	3,423.6337	-6.6399	1.1800	763.2493	1,089.0700	811.8078	9.2660
166	07	4	SAT-W	0.0000	5.5918	4,637.5314	3,423.6337	6,317.5627	-5.1323	1.0816	708.6302	811.8078	829.3709	13.7934
166	07	5	Black	0.0668	-0.0183	-4.7738	-6.6399	-5.1323	0.0624	-0.0171	-4.4550	-6.1965	-4.7896	-0.0223
166	07	6	Black*HSGPA	-0.0182	0.0170	0.9429	1.1800	1.0816	-0.0171	0.0166	0.8558	1.0589	0.9880	0.0094
166	07	7	Black*SAT-CR	-4.7657	0.9429	747.0963	763.2493	708.6302	-4.4550	0.8558	724.3457	731.6059	684.1712	2.0117
166	07	8	Black*SAT-M	-6.6285	1.1800	763.2493	1,089.0700	811.8078	-6.1965	1.0589	731.6059	1,045.0577	777.7881	2.6262
166	07	9	Black*SAT-W	-5.1236	1.0816	708.6302	811.8078	829.3709	-4.7896	0.9880	684.1712	777.7881	803.0751	2.4716
166	07	10	FYGPA	3.2814	0.0733	10.0099	9.2660	13.7934	-0.0223	0.0094	2.0117	2.6262	2.4716	0.3078

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
166	08	1	HSGPA	0.0000	0.1472	3.6693	5.3582	5.4597	-0.0167	0.0220	-0.0720	0.9359	0.8480	0.0862
166	08	2	SAT-CR	0.0000	3.6693	6,353.2755	3,285.7211	4,651.5470	-6.5854	-0.0720	1,031.2989	965.3101	868.0806	14.4599
166	08	3	SAT-M	0.0000	5.3582	3,285.7211	6,671.8338	3,075.4628	-9.5454	0.9359	965.3101	1,556.8358	938.6538	14.1413
166	08	4	SAT-W	0.0000	5.4597	4,651.5470	3,075.4628	6,498.2116	-6.9376	0.8480	868.0806	938.6538	997.1359	18.9879
166	08	5	Black	0.0870	-0.0167	-6.5854	-9.5454	-6.9376	0.0796	-0.0153	-6.0128	-8.7154	-6.3343	-0.0529
166	08	6	Black*HSGPA	-0.0167	0.0220	-0.0720	0.9359	0.8480	-0.0153	0.0217	-0.1818	0.7767	0.7322	0.0102
166	08	7	Black*SAT-CR	-6.5724	-0.0720	1,031.2989	965.3101	868.0806	-6.0128	-0.1818	988.0165	902.5734	822.4838	4.5755
166	08	8	Black*SAT-M	-9.5266	0.9359	965.3101	1,556.8358	938.6538	-8.7154	0.7767	902.5734	1,465.9009	872.5626	5.9991
166	08	9	Black*SAT-W	-6.9239	0.8480	868.0806	938.6538	997.1359	-6.3343	0.7322	822.4838	872.5626	949.1010	4.9380
166	08	10	FYGPA	3.2153	0.0862	14.4599	14.1413	18.9879	-0.0529	0.0102	4.5755	5.9991	4.9380	0.3783
169	06	1	HSGPA	0.0000	0.2818	7.7983	9.2240	10.3747	-0.0139	0.0732	0.9808	1.7895	2.1855	0.1883
169	06	2	SAT-CR	0.0000	7.7983	4,818.5798	2,475.8270	2,982.3215	-7.0903	0.9808	1,296.0261	663.3504	804.6274	11.2010
169	06	3	SAT-M	0.0000	9.2240	2,475.8270	5,289.3800	2,288.9068	-8.8522	1.7895	663.3504	1,339.4602	624.2792	13.2325
169	06	4	SAT-W	0.0000	10.3747	2,982.3215	2,288.9068	4,437.0415	-6.6697	2.1855	804.6274	624.2792	1,199.9249	15.4461
169	06	5	Black	0.2884	-0.0139	-7.0903	-8.8522	-6.6697	0.2054	-0.0099	-5.0454	-6.2992	-4.7461	-0.0752
169	06	6	Black*HSGPA	-0.0139	0.0732	0.9808	1.7895	2.1855	-0.0099	0.0730	0.8823	1.6665	2.0928	0.0516
169	06	7	Black*SAT-CR	-7.0853	0.9808	1,296.0261	663.3504	804.6274	-5.0454	0.8823	1,245.7890	600.6296	757.3701	4.1334
169	06	8	Black*SAT-M	-8.8460	1.7895	663.3504	1,339.4602	624.2792	-6.2992	1.6665	600.6296	1,261.1536	565.2788	4.1356
169	06	9	Black*SAT-W	-6.6651	2.1855	804.6274	624.2792	1,199.9249	-4.7461	2.0928	757.3701	565.2788	1,155.4708	5.1609
169	06	10	FYGPA	2.6788	0.1883	11.2010	13.2325	15.4461	-0.0752	0.0516	4.1334	4.1356	5.1609	0.7697
169	07	1	HSGPA	0.0000	0.2597	7.9506	8.4264	9.0109	-0.0161	0.0786	1.3165	2.3665	2.1567	0.1584
169	07	2	SAT-CR	0.0000	7.9506	4,309.2668	2,107.3606	2,909.7235	-8.3396	1.3165	1,148.0199	591.5588	787.8032	12.3338
169	07	3	SAT-M	0.0000	8.4264	2,107.3606	4,560.4107	2,124.2387	-9.7959	2.3665	591.5588	1,412.3055	658.9618	11.9267
169	07	4	SAT-W	0.0000	9.0109	2,909.7235	2,124.2387	4,603.3726	-8.9124	2.1567	787.8032	658.9618	1,431.7651	14.3342
169	07	5	Black	0.3231	-0.0161	-8.3396	-9.7959	-8.9124	0.2189	-0.0109	-5.6452	-6.6310	-6.0329	-0.0599
169	07	6	Black*HSGPA	-0.0161	0.0786	1.3165	2.3665	2.1567	-0.0109	0.0783	1.1821	2.2086	2.0130	0.0387
169	07	7	Black*SAT-CR	-8.3339	1.3165	1,148.0199	591.5588	787.8032	-5.6452	1.1821	1,078.5192	509.9209	713.5284	3.1829
169	07	8	Black*SAT-M	-9.7892	2.3665	591.5588	1,412.3055	658.9618	-6.6310	2.2086	509.9209	1,316.4108	571.7160	4.3456
169	07	9	Black*SAT-W	-8.9063	2.1567	787.8032	658.9618	1,431.7651	-6.0329	2.0130	713.5284	571.7160	1,352.3882	3.9531
169	07	10	FYGPA	2.7664	0.1584	12.3338	11.9267	14.3342	-0.0599	0.0387	3.1829	4.3456	3.9531	0.4991
169	08	1	HSGPA	0.0000	0.2619	5.2133	6.3817	6.2871	-0.0195	0.0885	0.7966	1.7933	1.6182	0.1785
169	08	2	SAT-CR	0.0000	5.2133	4,743.1956	2,390.0811	2,931.1101	-9.0114	0.7966	1,728.5324	922.0204	1,035.7129	11.2424
169	08	3	SAT-M	0.0000	6.3817	2,390.0811	4,760.2701	2,193.3932	-9.7902	1.7933	922.0204	1,728.3672	888.5366	11.5412
169	08	4	SAT-W	0.0000	6.2871	2,931.1101	2,193.3932	4,530.2620	-8.8401	1.6182	1,035.7129	888.5366	1,648.5776	14.9356
169	08	5	Black	0.3704	-0.0195	-9.0114	-9.7902	-8.8401	0.2334	-0.0123	-5.6734	-6.1637	-5.5655	-0.0648
169	08	6	Black*HSGPA	-0.0195	0.0885	0.7966	1.7933	1.6182	-0.0123	0.0881	0.6213	1.6029	1.4462	0.0614
169	08	7	Black*SAT-CR	-9.0054	0.7966	1,728.5324	922.0204	1,035.7129	-5.6734	0.6213	1,647.3819	833.8565	956.1049	5.2790
169	08	8	Black*SAT-M	-9.7836	1.7933	922.0204	1,728.3672	888.5366	-6.1637	1.6029	833.8565	1,632.5838	802.0485	5.2014
169	08	9	Black*SAT-W	-8.8342	1.6182	1,035.7129	888.5366	1,648.5776	-5.5655	1.4462	956.1049	802.0485	1,570.4829	4.9622
169	08	10	FYGPA	2.5901	0.1785	11.2424	11.5412	14.9356	-0.0648	0.0614	5.2790	5.2014	4.9622	0.7890

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
171	06	1	HSGPA	0.0000	0.2330	7.2131	8.6474	10.5559	-0.0295	0.0318	2.1015	2.7851	2.5137	0.1575
171	06	2	SAT-CR	0.0000	7.2131	5,324.4822	2,383.9348	3,437.5132	-4.4061	2.1015	679.2882	584.4032	622.8557	13.8895
171	06	3	SAT-M	0.0000	8.6474	2,383.9348	5,821.9866	2,271.6665	-5.6245	2.7851	584.4032	832.9321	638.5636	12.2174
171	06	4	SAT-W	0.0000	10.5559	3,437.5132	2,271.6665	5,327.0237	-4.8983	2.5137	622.8557	638.5636	725.9616	18.9022
171	06	5	Black	0.0661	-0.0295	-4.4061	-5.6245	-4.8983	0.0618	-0.0276	-4.1147	-5.2526	-4.5743	-0.0465
171	06	6	Black*HSGPA	-0.0295	0.0318	2.1015	2.7851	2.5137	-0.0276	0.0309	1.9715	2.6191	2.3692	0.0257
171	06	7	Black*SAT-CR	-4.4017	2.1015	679.2882	584.4032	622.8557	-4.1147	1.9715	659.8937	559.6457	601.2950	4.4267
171	06	8	Black*SAT-M	-5.6189	2.7851	584.4032	832.9321	638.5636	-5.2526	2.6191	559.6457	801.3285	611.0408	4.7552
171	06	9	Black*SAT-W	-4.8934	2.5137	622.8557	638.5636	725.9616	-4.5743	2.3692	601.2950	611.0408	701.9927	5.2648
171	06	10	FYGPA	2.8612	0.1575	13.8895	12.2174	18.9022	-0.0465	0.0257	4.4267	4.7552	5.2648	0.5108
171	07	1	HSGPA	0.0000	0.2632	11.1736	11.7600	15.1944	-0.0441	0.0585	4.8254	6.0160	5.6642	0.1880
171	07	2	SAT-CR	0.0000	11.1736	5,774.6576	2,868.3519	4,126.9674	-7.9209	4.8254	1,135.7969	1,108.9742	1,095.8193	18.0519
171	07	3	SAT-M	0.0000	11.7600	2,868.3519	6,264.4344	3,098.1801	-9.5487	6.0160	1,108.9742	1,651.9358	1,276.9724	16.9628
171	07	4	SAT-W	0.0000	15.1944	4,126.9674	3,098.1801	5,934.8792	-8.4846	5.6642	1,095.8193	1,276.9724	1,371.9821	22.1880
171	07	5	Black	0.0965	-0.0441	-7.9209	-9.5487	-8.4846	0.0873	-0.0398	-7.1567	-8.6274	-7.6659	-0.0680
171	07	6	Black*HSGPA	-0.0440	0.0585	4.8254	6.0160	5.6642	-0.0398	0.0566	4.4765	5.5954	5.2905	0.0466
171	07	7	Black*SAT-CR	-7.9130	4.8254	1,135.7969	1,108.9742	1,095.8193	-7.1567	4.4765	1,073.1189	1,033.4159	1,028.6813	6.7254
171	07	8	Black*SAT-M	-9.5391	6.0160	1,108.9742	1,651.9358	1,276.9724	-8.6274	5.5954	1,033.4159	1,560.8502	1,196.0376	7.7354
171	07	9	Black*SAT-W	-8.4760	5.6642	1,095.8193	1,276.9724	1,371.9821	-7.6659	5.2905	1,028.6813	1,196.0376	1,300.0668	7.5166
171	07	10	FYGPA	2.7808	0.1880	18.0519	16.9628	22.1880	-0.0680	0.0466	6.7254	7.7354	7.5166	0.5778
173	07	1	HSGPA	0.0000	0.1187	0.7960	2.2501	1.4632	-0.0067	0.0080	0.8691	0.7220	1.0611	0.0453
173	07	2	SAT-CR	0.0000	0.7960	5,525.5299	2,713.6027	3,581.3980	-2.8700	0.8691	502.9912	419.7244	438.3939	9.5954
173	07	3	SAT-M	0.0000	2.2501	2,713.6027	6,184.8064	2,783.7364	-4.1864	0.7220	419.7244	764.4070	527.0094	8.6351
173	07	4	SAT-W	0.0000	1.4632	3,581.3980	2,783.7364	5,309.6032	-3.3082	1.0611	438.3939	527.0094	545.0039	9.5160
173	07	5	Black	0.0409	-0.0067	-2.8700	-4.1864	-3.3082	0.0393	-0.0065	-2.7526	-4.0151	-3.1729	-0.0120
173	07	6	Black*HSGPA	-0.0067	0.0080	0.8691	0.7220	1.0611	-0.0065	0.0080	0.8498	0.6938	1.0388	0.0060
173	07	7	Black*SAT-CR	-2.8685	0.8691	502.9912	419.7244	438.3939	-2.7526	0.8498	494.7587	407.7159	428.9043	1.3339
173	07	8	Black*SAT-M	-4.1841	0.7220	419.7244	764.4070	527.0094	-4.0151	0.6938	407.7159	746.8905	513.1674	1.3532
173	07	9	Black*SAT-W	-3.3064	1.0611	438.3939	527.0094	545.0039	-3.1729	1.0388	428.9043	513.1674	534.0654	1.4527
173	07	10	FYGPA	3.1805	0.0453	9.5954	8.6351	9.5160	-0.0120	0.0060	1.3339	1.3532	1.4527	0.2078
173	08	1	HSGPA	0.0000	0.1179	2.1010	3.9597	2.9277	-0.0126	0.0138	0.7187	2.0023	1.2114	0.0413
173	08	2	SAT-CR	0.0000	2.1010	5,989.4508	2,968.0833	4,046.6738	-5.6944	0.7187	1,040.4104	957.7454	905.8251	12.3503
173	08	3	SAT-M	0.0000	3.9597	2,968.0833	6,279.8965	2,887.5901	-7.7749	2.0023	957.7454	1,402.3618	1,002.9502	11.1466
173	08	4	SAT-W	0.0000	2.9277	4,046.6738	2,887.5901	5,904.4609	-6.6224	1.2114	905.8251	1,002.9502	1,104.8819	13.8089
173	08	5	Black	0.0754	-0.0126	-5.6944	-7.7749	-6.6224	0.0698	-0.0116	-5.2649	-7.1884	-6.1228	-0.0235
173	08	6	Black*HSGPA	-0.0126	0.0138	0.7187	2.0023	1.2114	-0.0116	0.0137	0.6471	1.9045	1.1281	0.0066
173	08	7	Black*SAT-CR	-5.6910	0.7187	1,040.4104	957.7454	905.8251	-5.2649	0.6471	1,008.0034	913.4985	868.1373	2.5020
173	08	8	Black*SAT-M	-7.7702	2.0023	957.7454	1,402.3618	1,002.9502	-7.1884	1.9045	913.4985	1,341.9494	951.4931	3.3341
173	08	9	Black*SAT-W	-6.6184	1.2114	905.8251	1,002.9502	1,104.8819	-6.1228	1.1281	868.1373	951.4931	1,061.0527	2.8182
173	08	10	FYGPA	3.2270	0.0413	12.3503	11.1466	13.8089	-0.0235	0.0066	2.5020	3.3341	2.8182	0.2148

## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
174	06	1	HSGPA	0.0000	0.2652	10.9535	18.1403	13.9377	-0.0319	0.0396	1.5011	3.0915	2.2002	0.1641
174	06	2	SAT-CR	0.0000	10.9535	6,573.6109	3,629.7001	4,308.8052	-5.4807	1.5011	536.7554	298.2741	315.3192	18.6709
174	06	3	SAT-M	0.0000	18.1403	3,629.7001	6,594.5663	3,398.6557	-5.6461	3.0915	298.2741	763.0163	345.8191	19.7572
174	06	4	SAT-W	0.0000	13.9377	4,308.8052	3,398.6557	5,679.6089	-4.9510	2.2002	315.3192	345.8191	580.9620	20.3803
174	06	5	Black	0.1195	-0.0319	-5.4807	-5.6461	-4.9510	0.1056	-0.0281	-4.8256	-4.9712	-4.3592	-0.0496
174	06	6	Black*HSGPA	-0.0318	0.0396	1.5011	3.0915	2.2002	-0.0281	0.0386	1.3269	2.9121	2.0429	0.0211
174	06	7	Black*SAT-CR	-5.4647	1.5011	536.7554	298.2741	315.3192	-4.8256	1.3269	506.8048	267.4198	288.2634	2.6350
174	06	8	Black*SAT-M	-5.6296	3.0915	298.2741	763.0163	345.8191	-4.9712	2.9121	267.4198	731.2309	317.9469	3.3764
174	06	9	Black*SAT-W	-4.9365	2.2002	315.3192	345.8191	580.9620	-4.3592	2.0429	288.2634	317.9469	556.5212	2.8310
174	06	10	FYGPA	2.6511	0.1641	18.6709	19.7572	20.3803	-0.0496	0.0211	2.6350	3.3764	2.8310	0.5380
175	06	1	HSGPA	0.0000	0.1764	0.9760	2.7610	3.5710	-0.0078	0.0141	0.4456	0.6324	0.7106	0.0969
175	06	2	SAT-CR	0.0000	0.9760	5,213.9210	2,337.5586	3,181.6615	-3.1324	0.4456	622.0593	415.5606	436.7194	7.9399
175	06	3	SAT-M	0.0000	2.7610	2,337.5586	5,101.3749	2,079.4275	-3.4883	0.6324	415.5606	561.5944	357.7258	9.0242
175	06	4	SAT-W	0.0000	3.5710	3,181.6615	2,079.4275	4,528.7490	-2.7357	0.7106	436.7194	357.7258	484.6238	11.6662
175	06	5	Black	0.0677	-0.0078	-3.1324	-3.4883	-2.7357	0.0632	-0.0072	-2.9204	-3.2521	-2.5505	-0.0129
175	06	6	Black*HSGPA	-0.0078	0.0141	0.4456	0.6324	0.7106	-0.0072	0.0140	0.4213	0.6053	0.6893	0.0075
175	06	7	Black*SAT-CR	-3.1306	0.4456	622.0593	415.5606	436.7194	-2.9204	0.4213	612.2528	404.6401	428.1550	1.5434
175	06	8	Black*SAT-M	-3.4862	0.6324	415.5606	561.5944	357.7258	-3.2521	0.6053	404.6401	549.4336	348.1885	1.6549
175	06	9	Black*SAT-W	-2.7341	0.7106	436.7194	357.7258	484.6238	-2.5505	0.6893	428.1550	348.1885	477.1441	1.5511
175	06	10	FYGPA	2.6433	0.0969	7.9399	9.0242	11.6662	-0.0129	0.0075	1.5434	1.6549	1.5511	0.6896
175	07	1	HSGPA	0.0000	0.1913	0.0873	2.5476	2.6929	-0.0035	0.0155	0.3514	0.3097	0.3871	0.1045
175	07	2	SAT-CR	0.0000	0.0873	5,619.6971	2,415.9899	3,576.0836	-2.8479	0.3514	545.8274	288.0415	403.1700	8.8167
175	07	3	SAT-M	0.0000	2.5476	2,415.9899	5,199.4055	2,275.2047	-3.7106	0.3097	288.0415	578.1448	277.7798	8.2701
175	07	4	SAT-W	0.0000	2.6929	3,576.0836	2,275.2047	4,889.1672	-3.0434	0.3871	403.1700	277.7798	501.5143	11.5951
175	07	5	Black	0.0781	-0.0035	-2.8479	-3.7106	-3.0434	0.0721	-0.0032	-2.6254	-3.4206	-2.8056	-0.0149
175	07	6	Black*HSGPA	-0.0035	0.0155	0.3514	0.3097	0.3871	-0.0032	0.0155	0.3415	0.2968	0.3765	0.0127
175	07	7	Black*SAT-CR	-2.8464	0.3514	545.8274	288.0415	403.1700	-2.6254	0.3415	537.7212	277.4799	394.5073	1.1536
175	07	8	Black*SAT-M	-3.7085	0.3097	288.0415	578.1448	277.7798	-3.4206	0.2968	277.4799	564.3841	266.4932	1.2409
175	07	9	Black*SAT-W	-3.0418	0.3871	403.1700	277.7798	501.5143	-2.8056	0.3765	394.5073	266.4932	492.2569	1.3199
175	07	10	FYGPA	2.7331	0.1045	8.8167	8.2701	11.5951	-0.0149	0.0127	1.1536	1.2409	1.3199	0.6027
175	08	1	HSGPA	0.0000	0.1882	1.3257	3.5583	3.3002	-0.0080	0.0213	0.3094	1.1098	0.6067	0.1126
175	08	2	SAT-CR	0.0000	1.3257	5,809.4448	2,731.7658	3,607.7481	-4.3088	0.3094	668.8501	438.3185	460.0974	7.9663
175	08	3	SAT-M	0.0000	3.5583	2,731.7658	5,219.9144	2,219.8388	-5.0082	1.1098	438.3185	675.2242	355.7963	9.8985
175	08	4	SAT-W	0.0000	3.3002	3,607.7481	2,219.8388	4,992.7092	-3.6027	0.6067	460.0974	355.7963	538.2321	11.9868
175	08	5	Black	0.0884	-0.0080	-4.3088	-5.0082	-3.6027	0.0806	-0.0073	-3.9278	-4.5654	-3.2842	-0.0238
175	08	6	Black*HSGPA	-0.0080	0.0213	0.3094	1.1098	0.6067	-0.0073	0.0212	0.2750	1.0698	0.5779	0.0154
175	08	7	Black*SAT-CR	-4.3065	0.3094	668.8501	438.3185	460.0974	-3.9278	0.2750	650.2943	416.7506	444.5821	0.9035
175	08	8	Black*SAT-M	-5.0056	1.1098	438.3185	675.2242	355.7963	-4.5654	1.0698	416.7506	650.1551	337.7624	1.5922
175	08	9	Black*SAT-W	-3.6009	0.6067	460.0974	355.7963	538.2321	-3.2842	0.5779	444.5821	337.7624	525.2592	1.3659
175	08	10	FYGPA	2.7627	0.1126	7.9663	9.8985	11.9868	-0.0238	0.0154	0.9035	1.5922	1.3659	0.5748



## Appendix D

## White-Black Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
176	06	1	HSGPA	0.0000	0.1794	3.0310	4.2931	3.8600	-0.0114	0.0128	1.1064	1.4115	0.9571	0.0826
176	06	2	SAT-CR	0.0000	3.0310	6,887.6768	3,367.2185	4,854.4531	-1.8130	1.1064	333.4502	251.5678	233.7706	18.4395
176	06	3	SAT-M	0.0000	4.2931	3,367.2185	6,010.8215	2,951.5696	-2.3576	1.4115	251.5678	378.4921	218.6959	14.0533
176	06	4	SAT-W	0.0000	3.8600	4,854.4531	2,951.5696	6,214.6898	-1.6439	0.9571	233.7706	218.6959	236.6354	16.5879
176	06	5	Black	0.0234	-0.0114	-1.8130	-2.3576	-1.6439	0.0228	-0.0111	-1.7707	-2.3025	-1.6055	-0.0098
176	06	6	Black*HSGPA	-0.0114	0.0128	1.1064	1.4115	0.9571	-0.0111	0.0126	1.0857	1.3847	0.9384	0.0051
176	06	7	Black*SAT-CR	-1.8119	1.1064	333.4502	251.5678	233.7706	-1.7707	1.0857	330.1652	247.2961	230.7921	1.2739
176	06	8	Black*SAT-M	-2.3561	1.4115	251.5678	378.4921	218.6959	-2.3025	1.3847	247.2961	372.9373	214.8226	1.4679
176	06	9	Black*SAT-W	-1.6429	0.9571	233.7706	218.6959	236.6354	-1.6055	0.9384	230.7921	214.8226	233.9347	1.1085
176	06	10	FYGPA	2.8856	0.0826	18.4395	14.0533	16.5879	-0.0098	0.0051	1.2739	1.4679	1.1085	0.3827
176	07	1	HSGPA	0.0000	0.1720	6.0312	6.1700	7.8586	-0.0135	0.0145	1.3236	1.3879	1.5574	0.0977
176	07	2	SAT-CR	0.0000	6.0312	7,336.3686	3,693.7454	5,067.7552	-3.0525	1.3236	769.6845	567.7166	604.6499	16.7017
176	07	3	SAT-M	0.0000	6.1700	3,693.7454	6,110.6222	3,174.1380	-3.6464	1.3879	567.7166	621.7632	509.8058	14.5142
176	07	4	SAT-W	0.0000	7.8586	5,067.7552	3,174.1380	6,336.0738	-3.4548	1.5574	604.6499	509.8058	626.2573	18.0826
176	07	5	Black	0.0369	-0.0135	-3.0525	-3.6464	-3.4548	0.0356	-0.0130	-2.9398	-3.5118	-3.3273	-0.0127
176	07	6	Black*HSGPA	-0.0135	0.0145	1.3236	1.3879	1.5574	-0.0130	0.0143	1.2825	1.3389	1.5109	0.0086
176	07	7	Black*SAT-CR	-3.0503	1.3236	769.6845	567.7166	604.6499	-2.9398	1.2825	760.3734	556.5940	594.1118	2.0183
176	07	8	Black*SAT-M	-3.6438	1.3879	567.7166	621.7632	509.8058	-3.5118	1.3389	556.5940	608.4767	497.2175	1.6762
176	07	9	Black*SAT-W	-3.4523	1.5574	604.6499	509.8058	626.2573	-3.3273	1.5109	594.1118	497.2175	614.3304	1.9528
176	07	10	FYGPA	2.8713	0.0977	16.7017	14.5142	18.0826	-0.0127	0.0086	2.0183	1.6762	1.9528	0.3648
176	08	1	HSGPA	0.0000	0.1614	4.0586	4.7299	5.4455	-0.0111	0.0115	0.9668	1.0664	1.2231	0.0879
176	08	2	SAT-CR	0.0000	4.0586	7,014.4995	3,021.4110	4,629.2505	-2.5966	0.9668	486.7256	393.0377	420.0051	15.5417
176	08	3	SAT-M	0.0000	4.7299	3,021.4110	5,582.9060	2,752.1446	-2.7896	1.0664	393.0377	536.7653	403.5303	10.9947
176	08	4	SAT-W	0.0000	5.4455	4,629.2505	2,752.1446	6,080.8279	-2.7968	1.2231	420.0051	403.5303	486.2075	16.4399
176	08	5	Black	0.0340	-0.0111	-2.5966	-2.7896	-2.7968	0.0328	-0.0108	-2.5084	-2.6948	-2.7018	-0.0141
176	08	6	Black*HSGPA	-0.0111	0.0115	0.9668	1.0664	1.2231	-0.0108	0.0114	0.9379	1.0354	1.1920	0.0071
176	08	7	Black*SAT-CR	-2.5951	0.9668	486.7256	393.0377	420.0051	-2.5084	0.9379	479.9871	385.7984	412.7471	1.6667
176	08	8	Black*SAT-M	-2.7880	1.0664	393.0377	536.7653	403.5303	-2.6948	1.0354	385.7984	528.9880	395.7329	1.6180
176	08	9	Black*SAT-W	-2.7952	1.2231	420.0051	403.5303	486.2075	-2.7018	1.1920	412.7471	395.7329	478.3899	1.6264
176	08	10	FYGPA	2.8733	0.0879	15.5417	10.9947	16.4399	-0.0141	0.0071	1.6667	1.6180	1.6264	0.3458

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
1	07	1	HSGPA	0.0000	0.2503	11.9719	12.8646	13.1475	-0.0016	0.0069	0.3277	0.4428	0.3940
1	07	2	SAT-CR	0.0000	11.9719	7,206.6703	3,908.6375	5,450.1952	-0.4594	0.3277	188.2364	126.4884	152.4287
1	07	3	SAT-M	0.0000	12.8646	3,908.6375	6,689.5004	3,980.2108	-0.7104	0.4428	126.4884	204.0006	132.2096
1	07	4	SAT-W	0.0000	13.1475	5,450.1952	3,980.2108	7,252.5264	-0.5542	0.3940	152.4287	132.2096	195.4329
1	07	5	Hispanic	0.0250	-0.0016	-0.4594	-0.7104	-0.5542	0.0244	-0.0016	-0.4479	-0.6926	-0.5403
1	07	6	Hispanic*HSGPA	-0.0016	0.0069	0.3277	0.4428	0.3940	-0.0016	0.0069	0.3270	0.4417	0.3931
1	07	7	Hispanic*SAT-CR	-0.4594	0.3277	188.2364	126.4884	152.4287	-0.4479	0.3270	188.0254	126.1620	152.1741
1	07	8	Hispanic*SAT-M	-0.7103	0.4428	126.4884	204.0006	132.2096	-0.6926	0.4417	126.1620	203.4960	131.8160
1	07	9	Hispanic*SAT-W	-0.5541	0.3940	152.4287	132.2096	195.4329	-0.5403	0.3931	152.1741	131.8160	195.1258
1	08	1	HSGPA	0.0000	0.2313	10.6712	11.5221	11.9497	-0.0037	0.0086	0.4444	0.4314	0.4516
1	08	2	SAT-CR	0.0000	10.6712	7,137.3287	3,877.9632	5,432.7285	-0.6354	0.4444	269.4105	157.7578	215.7575
1	08	3	SAT-M	0.0000	11.5221	3,877.9632	6,703.6295	4,028.4107	-0.7906	0.4314	157.7578	247.0516	163.0829
1	08	4	SAT-W	0.0000	11.9497	5,432.7285	4,028.4107	7,348.5873	-0.7162	0.4516	215.7575	163.0829	278.2950
1	08	5	Hispanic	0.0310	-0.0037	-0.6354	-0.7906	-0.7162	0.0300	-0.0036	-0.6157	-0.7661	-0.6940
1	08	6	Hispanic*HSGPA	-0.0037	0.0086	0.4444	0.4314	0.4516	-0.0036	0.0086	0.4420	0.4285	0.4490
1	08	7	Hispanic*SAT-CR	-0.6353	0.4444	269.4105	157.7578	215.7575	-0.6157	0.4420	269.0069	157.2556	215.3025
1	08	8	Hispanic*SAT-M	-0.7905	0.4314	157.7578	247.0516	163.0829	-0.7661	0.4285	157.2556	246.4267	162.5167
1	08	9	Hispanic*SAT-W	-0.7161	0.4516	215.7575	163.0829	278.2950	-0.6940	0.4490	215.3025	162.5167	277.7821
2	08	1	HSGPA	0.0000	0.2062	10.1540	10.3650	10.6151	-0.0069	0.0138	0.9234	1.0297	1.0140
2	08	2	SAT-CR	0.0000	10.1540	6,808.9142	3,510.9428	5,155.1445	-1.6187	0.9234	434.0758	296.8954	358.0246
2	08	3	SAT-M	0.0000	10.3650	3,510.9428	6,215.7280	3,773.5418	-1.7824	1.0297	296.8954	420.7634	314.4019
2	08	4	SAT-W	0.0000	10.6151	5,155.1445	3,773.5418	7,156.9225	-1.8179	1.0140	358.0246	314.4019	456.3955
2	08	5	Hispanic	0.0435	-0.0069	-1.6187	-1.7824	-1.8179	0.0416	-0.0066	-1.5482	-1.7048	-1.7388
2	08	6	Hispanic*HSGPA	-0.0069	0.0138	0.9234	1.0297	1.0140	-0.0066	0.0138	0.9123	1.0174	1.0015
2	08	7	Hispanic*SAT-CR	-1.6185	0.9234	434.0758	296.8954	358.0246	-1.5482	0.9123	431.4560	294.0107	355.0823
2	08	8	Hispanic*SAT-M	-1.7822	1.0297	296.8954	420.7634	314.4019	-1.7048	1.0174	294.0107	417.5869	311.1621
2	08	9	Hispanic*SAT-W	-1.8177	1.0140	358.0246	314.4019	456.3955	-1.7388	1.0015	355.0823	311.1621	453.0910
3	08	1	HSGPA	0.0000	0.2466	13.4286	14.5945	14.5760	-0.0018	0.0105	0.5988	0.7342	0.6407
3	08	2	SAT-CR	0.0000	13.4286	7,173.3368	4,121.3975	5,477.5818	-0.7367	0.5988	307.1011	196.1161	244.5963
3	08	3	SAT-M	0.0000	14.5945	4,121.3975	7,112.9584	4,236.6644	-1.0895	0.7342	196.1161	300.2282	204.7786
3	08	4	SAT-W	0.0000	14.5760	5,477.5818	4,236.6644	7,444.2896	-0.8795	0.6407	244.5963	204.7786	328.6622
3	08	5	Hispanic	0.0364	-0.0018	-0.7367	-1.0895	-0.8795	0.0351	-0.0017	-0.7099	-1.0498	-0.8475
3	08	6	Hispanic*HSGPA	-0.0018	0.0105	0.5988	0.7342	0.6407	-0.0017	0.0105	0.5975	0.7322	0.6391
3	08	7	Hispanic*SAT-CR	-0.7366	0.5988	307.1011	196.1161	244.5963	-0.7099	0.5975	306.5584	195.3135	243.9484
3	08	8	Hispanic*SAT-M	-1.0894	0.7342	196.1161	300.2282	204.7786	-1.0498	0.7322	195.3135	299.0414	203.8205
3	08	9	Hispanic*SAT-W	-0.8795	0.6407	244.5963	204.7786	328.6622	-0.8475	0.6391	243.9484	203.8205	327.8888
6	06	1	HSGPA	0.0000	0.2410	12.7804	12.6699	12.9574	-0.0081	0.0140	0.9057	1.1610	0.8299
6	06	2	SAT-CR	0.0000	12.7804	8,201.6153	4,761.2288	6,123.2580	-2.4935	0.9057	652.0997	443.5392	497.9582
6	06	3	SAT-M	0.0000	12.6699	4,761.2288	7,698.9260	4,566.5633	-2.6119	1.1610	443.5392	554.4944	378.6224
6	06	4	SAT-W	0.0000	12.9574	6,123.2580	4,566.5633	7,731.8822	-2.1281	0.8299	497.9582	378.6224	519.2236
6	06	5	Hispanic	0.0478	-0.0081	-2.4935	-2.6119	-2.1281	0.0455	-0.0077	-2.3744	-2.4872	-2.0264
6	06	6	Hispanic*HSGPA	-0.0081	0.0140	0.9057	1.1610	0.8299	-0.0077	0.0140	0.8856	1.1400	0.8128
6	06	7	Hispanic*SAT-CR	-2.4928	0.9057	652.0997	443.5392	497.9582	-2.3744	0.8856	645.8839	437.0282	492.6535
6	06	8	Hispanic*SAT-M	-2.6111	1.1610	443.5392	554.4944	378.6224	-2.4872	1.1400	437.0282	547.6743	373.0658
6	06	9	Hispanic*SAT-W	-2.1274	0.8299	497.9582	378.6224	519.2236	-2.0264	0.8128	492.6535	373.0658	514.6964

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
6	07	1	HSGPA	0.0000	0.2405	12.7641	12.2282	13.4653	-0.0047	0.0152	1.6345	1.3821	1.5794
6	07	2	SAT-CR	0.0000	12.7641	8,361.8684	4,702.2314	6,122.9789	-2.5966	1.6345	718.9732	519.8913	612.2444
6	07	3	SAT-M	0.0000	12.2282	4,702.2314	7,525.0743	4,555.9412	-2.3781	1.3821	519.8913	661.0144	527.9880
6	07	4	SAT-W	0.0000	13.4653	6,122.9789	4,555.9412	7,675.1197	-2.4151	1.5794	612.2444	527.9880	681.6467
6	07	5	Hispanic	0.0570	-0.0047	-2.5966	-2.3781	-2.4151	0.0537	-0.0045	-2.4487	-2.2426	-2.2775
6	07	6	Hispanic*HSGPA	-0.0047	0.0152	1.6345	1.3821	1.5794	-0.0045	0.0152	1.6222	1.3708	1.5680
6	07	7	Hispanic*SAT-CR	-2.5958	1.6345	718.9732	519.8913	612.2444	-2.4487	1.6222	712.2328	513.7182	605.9752
6	07	8	Hispanic*SAT-M	-2.3774	1.3821	519.8913	661.0144	527.9880	-2.2426	1.3708	513.7182	655.3609	522.2464
6	07	9	Hispanic*SAT-W	-2.4144	1.5794	612.2444	527.9880	681.6467	-2.2775	1.5680	605.9752	522.2464	675.8158
6	08	1	HSGPA	0.0000	0.2310	10.4067	12.6197	11.8223	-0.0077	0.0184	1.3339	1.4389	1.5042
6	08	2	SAT-CR	0.0000	10.4067	7,819.1305	4,167.4892	5,771.3049	-3.3006	1.3339	747.4736	575.2780	632.9096
6	08	3	SAT-M	0.0000	12.6197	4,167.4892	6,890.1388	4,221.4900	-3.2185	1.4389	575.2780	810.8502	561.9343
6	08	4	SAT-W	0.0000	11.8223	5,771.3049	4,221.4900	7,696.5381	-3.2626	1.5042	632.9096	561.9343	744.3436
6	08	5	Hispanic	0.0631	-0.0077	-3.3006	-3.2185	-3.2626	0.0591	-0.0072	-3.0924	-3.0154	-3.0567
6	08	6	Hispanic*HSGPA	-0.0077	0.0184	1.3339	1.4389	1.5042	-0.0072	0.0184	1.3084	1.4140	1.4790
6	08	7	Hispanic*SAT-CR	-3.2996	1.3339	747.4736	575.2780	632.9096	-3.0924	1.3084	736.5829	564.6584	622.1444
6	08	8	Hispanic*SAT-M	-3.2175	1.4389	575.2780	810.8502	561.9343	-3.0154	1.4140	564.6584	800.4949	551.4371
6	08	9	Hispanic*SAT-W	-3.2615	1.5042	632.9096	561.9343	744.3436	-3.0567	1.4790	622.1444	551.4371	733.7025
7	07	1	HSGPA	0.0000	0.2846	11.1584	12.8701	13.4727	-0.0065	0.0363	0.9541	1.3097	1.6367
7	07	2	SAT-CR	0.0000	11.1584	6,906.1215	4,096.9435	4,937.4758	-3.8027	0.9541	1,002.6317	716.4789	768.0615
7	07	3	SAT-M	0.0000	12.8701	4,096.9435	7,303.9334	3,868.9118	-4.7240	1.3097	716.4789	1,089.9446	689.6672
7	07	4	SAT-W	0.0000	13.4727	4,937.4758	3,868.9118	6,441.9934	-4.1456	1.6367	768.0615	689.6672	963.1935
7	07	5	Hispanic	0.1100	-0.0065	-3.8027	-4.7240	-4.1456	0.0979	-0.0058	-3.3843	-4.2043	-3.6895
7	07	6	Hispanic*HSGPA	-0.0065	0.0363	0.9541	1.3097	1.6367	-0.0058	0.0363	0.9295	1.2792	1.6100
7	07	7	Hispanic*SAT-CR	-3.8017	0.9541	1,002.6317	716.4789	768.0615	-3.3843	0.9295	988.1752	698.5197	752.3015
7	07	8	Hispanic*SAT-M	-4.7228	1.3097	716.4789	1,089.9446	689.6672	-4.2043	1.2792	698.5197	1,067.6342	670.0886
7	07	9	Hispanic*SAT-W	-4.1445	1.6367	768.0615	689.6672	963.1935	-3.6895	1.6100	752.3015	670.0886	946.0123
8	06	1	HSGPA	0.0000	0.1659	9.5849	9.9381	11.0333	-0.0147	0.0399	4.1745	4.2406	4.3781
8	06	2	SAT-CR	0.0000	9.5849	7,932.1855	4,533.5423	5,782.1166	-10.8061	4.1745	2,553.5420	2,073.8005	2,211.7151
8	06	3	SAT-M	0.0000	9.9381	4,533.5423	7,252.4655	4,361.8979	-11.2296	4.2406	2,073.8005	2,470.1391	1,966.6004
8	06	4	SAT-W	0.0000	11.0333	5,782.1166	4,361.8979	7,273.3926	-10.2495	4.3781	2,211.7151	1,966.6004	2,411.3742
8	06	5	Hispanic	0.1648	-0.0147	-10.8061	-11.2296	-10.2495	0.1377	-0.0123	-9.0254	-9.3790	-8.5605
8	06	6	Hispanic*HSGPA	-0.0147	0.0399	4.1745	4.2406	4.3781	-0.0123	0.0397	4.0154	4.0753	4.2272
8	06	7	Hispanic*SAT-CR	-10.8021	4.1745	2,553.5420	2,073.8005	2,211.7151	-9.0254	4.0154	2,436.8129	1,952.4971	2,100.9987
8	06	8	Hispanic*SAT-M	-11.2254	4.2406	2,073.8005	2,470.1391	1,966.6004	-9.3790	4.0753	1,952.4971	2,344.0821	1,851.5453
8	06	9	Hispanic*SAT-W	-10.2457	4.3781	2,211.7151	1,966.6004	2,411.3742	-8.5605	4.2272	2,100.9987	1,851.5453	2,306.3607
8	07	1	HSGPA	0.0000	0.1808	11.8005	11.7239	12.7522	-0.0236	0.0509	6.1352	6.1206	6.4323
8	07	2	SAT-CR	0.0000	11.8005	8,571.1668	5,200.5132	6,415.0318	-13.8358	6.1352	3,168.3644	2,485.7981	2,792.7338
8	07	3	SAT-M	0.0000	11.7239	5,200.5132	7,779.4221	5,186.8212	-13.8276	6.1206	2,485.7981	2,915.2149	2,491.2721
8	07	4	SAT-W	0.0000	12.7522	6,415.0318	5,186.8212	8,121.4774	-13.5483	6.4323	2,792.7338	2,491.2721	3,041.4412
8	07	5	Hispanic	0.1782	-0.0236	-13.8358	-13.8276	-13.5483	0.1465	-0.0194	-11.3699	-11.3632	-11.1337
8	07	6	Hispanic*HSGPA	-0.0236	0.0509	6.1352	6.1206	6.4323	-0.0194	0.0503	5.8081	5.7938	6.1121
8	07	7	Hispanic*SAT-CR	-13.8311	6.1352	3,168.3644	2,485.7981	2,792.7338	-11.3699	5.8081	2,977.0004	2,294.5474	2,605.3463
8	07	8	Hispanic*SAT-M	-13.8229	6.1206	2,485.7981	2,915.2149	2,491.2721	-11.3632	5.7938	2,294.5474	2,724.0774	2,303.9955
8	07	9	Hispanic*SAT-W	-13.5437	6.4323	2,792.7338	2,491.2721	3,041.4412	-11.1337	6.1121	2,605.3463	2,303.9955	2,857.9477

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
8	08	1	HSGPA	0.0000	0.1783	12.9869	12.7738	12.9126	-0.0288	0.0622	7.1860	7.5154	6.7673
8	08	2	SAT-CR	0.0000	12.9869	9,278.8819	6,037.0469	7,051.5373	-17.5772	7.1860	3,812.4175	3,167.6195	3,300.1410
8	08	3	SAT-M	0.0000	12.7738	6,037.0469	8,632.9244	5,863.0789	-17.3120	7.5154	3,167.6195	3,863.5628	3,084.9630
8	08	4	SAT-W	0.0000	12.9126	7,051.5373	5,863.0789	8,808.4701	-16.9383	6.7673	3,300.1410	3,084.9630	3,503.3112
8	08	5	Hispanic	0.2059	-0.0288	-17.5772	-17.3120	-16.9383	0.1636	-0.0228	-13.9584	-13.7477	-13.4510
8	08	6	Hispanic*HSGPA	-0.0288	0.0622	7.1860	7.5154	6.7673	-0.0228	0.0614	6.6806	7.0176	6.2802
8	08	7	Hispanic*SAT-CR	-17.5696	7.1860	3,812.4175	3,167.6195	3,300.1410	-13.9584	6.6806	3,503.5936	2,863.4555	3,002.5421
8	08	8	Hispanic*SAT-M	-17.3045	7.5154	3,167.6195	3,863.5628	3,084.9630	-13.7477	7.0176	2,863.4555	3,563.9884	2,791.8546
8	08	9	Hispanic*SAT-W	-16.9310	6.7673	3,300.1410	3,084.9630	3,503.3112	-13.4510	6.2802	3,002.5421	2,791.8546	3,216.5293
9	07	1	HSGPA	0.0000	0.2191	12.8419	14.3089	14.1444	-0.0048	0.0126	0.7576	1.0224	0.8693
9	07	2	SAT-CR	0.0000	12.8419	6,927.4207	4,110.2390	5,181.3937	-1.2626	0.7576	415.7821	291.7544	337.5696
9	07	3	SAT-M	0.0000	14.3089	4,110.2390	7,288.5154	4,147.9695	-1.8894	1.0224	291.7544	471.3515	304.4813
9	07	4	SAT-W	0.0000	14.1444	5,181.3937	4,147.9695	6,897.4446	-1.4449	0.8693	337.5696	304.4813	416.6210
9	07	5	Hispanic	0.0474	-0.0048	-1.2626	-1.8894	-1.4449	0.0451	-0.0046	-1.2027	-1.7999	-1.3765
9	07	6	Hispanic*HSGPA	-0.0048	0.0126	0.7576	1.0224	0.8693	-0.0046	0.0126	0.7516	1.0133	0.8623
9	07	7	Hispanic*SAT-CR	-1.2625	0.7576	415.7821	291.7544	337.5696	-1.2027	0.7516	414.1882	289.3690	335.7454
9	07	8	Hispanic*SAT-M	-1.8893	1.0224	291.7544	471.3515	304.4813	-1.7999	1.0133	289.3690	467.7818	301.7514
9	07	9	Hispanic*SAT-W	-1.4448	0.8693	337.5696	304.4813	416.6210	-1.3765	0.8623	335.7454	301.7514	414.5333
9	08	1	HSGPA	0.0000	0.2022	12.2136	13.5886	13.7480	-0.0051	0.0123	0.8290	1.0273	0.9242
9	08	2	SAT-CR	0.0000	12.2136	6,699.5187	3,987.0952	5,070.4341	-1.1186	0.8290	442.9980	313.8589	359.3524
9	08	3	SAT-M	0.0000	13.5886	3,987.0952	7,054.8240	4,052.6541	-1.8349	1.0273	313.8589	498.4819	327.1056
9	08	4	SAT-W	0.0000	13.7480	5,070.4341	4,052.6541	6,990.8662	-1.3158	0.9242	359.3524	327.1056	452.1412
9	08	5	Hispanic	0.0493	-0.0051	-1.1186	-1.8349	-1.3158	0.0469	-0.0048	-1.0634	-1.7444	-1.2509
9	08	6	Hispanic*HSGPA	-0.0051	0.0123	0.8290	1.0273	0.9242	-0.0048	0.0122	0.8233	1.0180	0.9176
9	08	7	Hispanic*SAT-CR	-1.1186	0.8290	442.9980	313.8589	359.3524	-1.0634	0.8233	441.7468	311.8065	357.8806
9	08	8	Hispanic*SAT-M	-1.8348	1.0273	313.8589	498.4819	327.1056	-1.7444	1.0180	311.8065	495.1153	324.6913
9	08	9	Hispanic*SAT-W	-1.3158	0.9242	359.3524	327.1056	452.1412	-1.2509	0.9176	357.8806	324.6913	450.4098
10	06	1	HSGPA	0.0000	0.1385	9.0796	7.6461	9.4937	-0.0081	0.0173	1.5301	1.4401	1.6185
10	06	2	SAT-CR	0.0000	9.0796	6,948.0908	3,308.9674	4,974.4609	-4.1376	1.5301	975.3054	684.2590	843.2736
10	06	3	SAT-M	0.0000	7.6461	3,308.9674	6,000.2293	3,390.1052	-4.3164	1.4401	684.2590	925.0207	710.3023
10	06	4	SAT-W	0.0000	9.4937	4,974.4609	3,390.1052	6,647.0443	-4.3130	1.6185	843.2736	710.3023	1,008.9007
10	06	5	Hispanic	0.0820	-0.0081	-4.1376	-4.3164	-4.3130	0.0753	-0.0074	-3.7983	-3.9625	-3.9594
10	06	6	Hispanic*HSGPA	-0.0081	0.0173	1.5301	1.4401	1.6185	-0.0074	0.0173	1.4966	1.4051	1.5835
10	06	7	Hispanic*SAT-CR	-4.1372	1.5301	975.3054	684.2590	843.2736	-3.7983	1.4966	958.1874	666.4011	825.4298
10	06	8	Hispanic*SAT-M	-4.3160	1.4401	684.2590	925.0207	710.3023	-3.9625	1.4051	666.4011	906.3910	691.6873
10	06	9	Hispanic*SAT-W	-4.3126	1.6185	843.2736	710.3023	1,008.9007	-3.9594	1.5835	825.4298	691.6873	990.3004
10	07	1	HSGPA	0.0000	0.1450	9.2976	8.6016	9.5371	-0.0110	0.0217	2.0595	2.2344	2.2388
10	07	2	SAT-CR	0.0000	9.2976	6,993.6196	3,523.8739	4,973.2551	-5.4464	2.0595	1,215.9432	877.4349	999.1897
10	07	3	SAT-M	0.0000	8.6016	3,523.8739	6,369.2040	3,583.8059	-5.6552	2.2344	877.4349	1,182.4273	874.7475
10	07	4	SAT-W	0.0000	9.5371	4,973.2551	3,583.8059	6,631.2167	-5.3344	2.2388	999.1897	874.7475	1,141.9410
10	07	5	Hispanic	0.0976	-0.0110	-5.4464	-5.6552	-5.3344	0.0881	-0.0099	-4.9146	-5.1030	-4.8135
10	07	6	Hispanic*HSGPA	-0.0110	0.0217	2.0595	2.2344	2.2388	-0.0099	0.0216	1.9998	2.1723	2.1803
10	07	7	Hispanic*SAT-CR	-5.4459	2.0595	1,215.9432	877.4349	999.1897	-4.9146	1.9998	1,186.2831	846.6377	970.1394
10	07	8	Hispanic*SAT-M	-5.6547	2.2344	877.4349	1,182.4273	874.7475	-5.1030	2.1723	846.6377	1,150.4494	844.5834
10	07	9	Hispanic*SAT-W	-5.3339	2.2388	999.1897	874.7475	1,141.9410	-4.8135	2.1803	970.1394	844.5834	1,113.4880

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
10	08	1	HSGPA	0.0000	0.1490	9.5723	9.4807	10.3604	-0.0118	0.0267	2.2512	2.3758	2.5159
10	08	2	SAT-CR	0.0000	9.5723	7,468.2525	3,871.2804	5,495.5261	-5.6601	2.2512	1,385.5325	995.4267	1,201.3833
10	08	3	SAT-M	0.0000	9.4807	3,871.2804	6,760.3218	3,972.8526	-6.3980	2.3758	995.4267	1,402.3515	1,060.9395
10	08	4	SAT-W	0.0000	10.3604	5,495.5261	3,972.8526	7,342.8905	-6.2851	2.5159	1,201.3833	1,060.9395	1,463.9048
10	08	5	Hispanic	0.1102	-0.0118	-5.6601	-6.3980	-6.2851	0.0981	-0.0105	-5.0362	-5.6928	-5.5924
10	08	6	Hispanic*HSGPA	-0.0118	0.0267	2.2512	2.3758	2.5159	-0.0105	0.0265	2.1845	2.3003	2.4418
10	08	7	Hispanic*SAT-CR	-5.6594	2.2512	1,385.5325	995.4267	1,201.3833	-5.0362	2.1845	1,353.4998	959.2177	1,165.8132
10	08	8	Hispanic*SAT-M	-6.3973	2.3758	995.4267	1,402.3515	1,060.9395	-5.6928	2.3003	959.2177	1,361.4217	1,020.7318
10	08	9	Hispanic*SAT-W	-6.2844	2.5159	1,201.3833	1,060.9395	1,463.9048	-5.5924	2.4418	1,165.8132	1,020.7318	1,424.4064
11	06	1	HSGPA	0.0000	0.3287	17.8717	19.3085	17.4909	-0.0266	0.0632	3.8072	4.2632	3.4474
11	06	2	SAT-CR	0.0000	17.8717	8,927.2279	5,502.3888	6,515.8130	-7.5523	3.8072	1,894.1065	1,396.8135	1,385.9237
11	06	3	SAT-M	0.0000	19.3085	5,502.3888	8,600.6131	5,057.7488	-7.7838	4.2632	1,396.8135	1,998.8473	1,185.4975
11	06	4	SAT-W	0.0000	17.4909	6,515.8130	5,057.7488	7,815.7620	-6.1806	3.4474	1,385.9237	1,185.4975	1,502.9987
11	06	5	Hispanic	0.1648	-0.0266	-7.5523	-7.7838	-6.1806	0.1377	-0.0223	-6.3077	-6.5010	-5.1620
11	06	6	Hispanic*HSGPA	-0.0266	0.0632	3.8072	4.2632	3.4474	-0.0223	0.0625	3.6060	4.0559	3.2828
11	06	7	Hispanic*SAT-CR	-7.5498	3.8072	1,894.1065	1,396.8135	1,385.9237	-6.3077	3.6060	1,837.0879	1,338.0475	1,339.2618
11	06	8	Hispanic*SAT-M	-7.7812	4.2632	1,396.8135	1,998.8473	1,185.4975	-6.5010	4.0559	1,338.0475	1,938.2804	1,137.4056
11	06	9	Hispanic*SAT-W	-6.1785	3.4474	1,385.9237	1,185.4975	1,502.9987	-5.1620	3.2828	1,339.2618	1,137.4056	1,464.8123
11	07	1	HSGPA	0.0000	0.3190	17.6844	18.1925	18.7362	-0.0212	0.0638	3.1758	3.5945	3.5610
11	07	2	SAT-CR	0.0000	17.6844	8,214.2279	5,034.1770	6,159.6246	-5.9050	3.1758	1,474.3736	1,026.0917	1,213.2620
11	07	3	SAT-M	0.0000	18.1925	5,034.1770	8,352.2513	4,889.9988	-7.0088	3.5945	1,026.0917	1,643.0432	1,037.9206
11	07	4	SAT-W	0.0000	18.7362	6,159.6246	4,889.9988	7,753.4181	-5.8518	3.5610	1,213.2620	1,037.9206	1,532.3389
11	07	5	Hispanic	0.1641	-0.0212	-5.9050	-7.0088	-5.8518	0.1373	-0.0177	-4.9357	-5.8583	-4.8912
11	07	6	Hispanic*HSGPA	-0.0212	0.0638	3.1758	3.5945	3.5610	-0.0177	0.0634	3.0505	3.4458	3.4368
11	07	7	Hispanic*SAT-CR	-5.9030	3.1758	1,474.3736	1,026.0917	1,213.2620	-4.9357	3.0505	1,439.5161	984.7185	1,178.7187
11	07	8	Hispanic*SAT-M	-7.0064	3.5945	1,026.0917	1,643.0432	1,037.9206	-5.8583	3.4458	984.7185	1,593.9363	996.9204
11	07	9	Hispanic*SAT-W	-5.8498	3.5610	1,213.2620	1,037.9206	1,532.3389	-4.8912	3.4368	1,178.7187	996.9204	1,498.1070
11	08	1	HSGPA	0.0000	0.3195	16.5188	18.3869	18.5217	-0.0214	0.0641	3.6088	3.7724	3.6410
11	08	2	SAT-CR	0.0000	16.5188	8,243.9359	5,361.2079	6,116.0657	-8.8556	3.6088	1,833.1419	1,411.1916	1,396.2621
11	08	3	SAT-M	0.0000	18.3869	5,361.2079	8,644.4452	5,270.5242	-9.0439	3.7724	1,411.1916	2,079.4986	1,304.1287
11	08	4	SAT-W	0.0000	18.5217	6,116.0657	5,270.5242	7,725.0574	-7.8683	3.6410	1,396.2621	1,304.1287	1,645.3530
11	08	5	Hispanic	0.1854	-0.0214	-8.8556	-9.0439	-7.8683	0.1511	-0.0174	-7.2137	-7.3672	-6.4095
11	08	6	Hispanic*HSGPA	-0.0214	0.0641	3.6088	3.7724	3.6410	-0.0174	0.0637	3.4194	3.5790	3.4727
11	08	7	Hispanic*SAT-CR	-8.8527	3.6088	1,833.1419	1,411.1916	1,396.2621	-7.2137	3.4194	1,754.7462	1,331.1286	1,326.6061
11	08	8	Hispanic*SAT-M	-9.0410	3.7724	1,411.1916	2,079.4986	1,304.1287	-7.3672	3.5790	1,331.1286	1,997.7328	1,232.9913
11	08	9	Hispanic*SAT-W	-7.8658	3.6410	1,396.2621	1,304.1287	1,645.3530	-6.4095	3.4727	1,326.6061	1,232.9913	1,583.4625
12	07	1	HSGPA	0.0000	0.4199	23.0380	23.4477	23.5494	-0.0089	0.0246	1.8400	1.3825	1.6386
12	07	2	SAT-CR	0.0000	23.0380	8,303.0306	4,895.0872	5,969.0430	-3.7424	1.8400	660.2185	346.5876	501.5653
12	07	3	SAT-M	0.0000	23.4477	4,895.0872	8,001.3681	4,387.7439	-3.2435	1.3825	346.5876	505.5532	290.4389
12	07	4	SAT-W	0.0000	23.5494	5,969.0430	4,387.7439	7,169.2919	-2.9791	1.6386	501.5653	290.4389	587.1027
12	07	5	Hispanic	0.0630	-0.0089	-3.7424	-3.2435	-2.9791	0.0591	-0.0084	-3.5066	-3.0391	-2.7914
12	07	6	Hispanic*HSGPA	-0.0089	0.0246	1.8400	1.3825	1.6386	-0.0084	0.0245	1.8067	1.3536	1.6120
12	07	7	Hispanic*SAT-CR	-3.7381	1.8400	660.2185	346.5876	501.5653	-3.5066	1.8067	646.2289	334.4631	490.4292
12	07	8	Hispanic*SAT-M	-3.2397	1.3825	346.5876	505.5532	290.4389	-3.0391	1.3536	334.4631	495.0450	280.7874
12	07	9	Hispanic*SAT-W	-2.9756	1.6386	501.5653	290.4389	587.1027	-2.7914	1.6120	490.4292	280.7874	578.2381

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
12	08	1	HSGPA	0.0000	0.4042	19.3386	22.2927	23.2291	-0.0092	0.0451	1.5291	2.4066	2.3669
12	08	2	SAT-CR	0.0000	19.3386	7,509.8332	4,319.1152	5,411.9098	-3.2567	1.5291	587.3812	335.7671	468.9774
12	08	3	SAT-M	0.0000	22.2927	4,319.1152	7,318.2781	4,226.5676	-2.8003	2.4066	335.7671	611.1089	378.4807
12	08	4	SAT-W	0.0000	23.2291	5,411.9098	4,226.5676	7,190.1335	-2.6153	2.3669	468.9774	378.4807	658.2327
12	08	5	Hispanic	0.0870	-0.0092	-3.2567	-2.8003	-2.6153	0.0796	-0.0084	-2.9732	-2.5565	-2.3877
12	08	6	Hispanic*HSGPA	-0.0092	0.0451	1.5291	2.4066	2.3669	-0.0084	0.0450	1.4993	2.3810	2.3430
12	08	7	Hispanic*SAT-CR	-3.2533	1.5291	587.3812	335.7671	468.9774	-2.9732	1.4993	576.7860	326.6568	460.4689
12	08	8	Hispanic*SAT-M	-2.7974	2.4066	335.7671	611.1089	378.4807	-2.5565	2.3810	326.6568	603.2754	371.1646
12	08	9	Hispanic*SAT-W	-2.6126	2.3669	468.9774	378.4807	658.2327	-2.3877	2.3430	460.4689	371.1646	651.3999
13	06	1	HSGPA	0.0000	0.2874	14.0223	16.3223	15.9954	-0.0076	0.0145	0.8510	0.8586	0.9060
13	06	2	SAT-CR	0.0000	14.0223	6,649.5919	3,966.9822	4,784.3107	-1.2694	0.8510	331.0424	236.0664	280.3093
13	06	3	SAT-M	0.0000	16.3223	3,966.9822	7,303.7656	3,932.6935	-1.4626	0.8586	236.0664	344.1520	252.1904
13	06	4	SAT-W	0.0000	15.9954	4,784.3107	3,932.6935	6,586.0142	-1.6876	0.9060	280.3093	252.1904	377.8333
13	06	5	Hispanic	0.0351	-0.0076	-1.2694	-1.4626	-1.6876	0.0339	-0.0073	-1.2248	-1.4112	-1.6284
13	06	6	Hispanic*HSGPA	-0.0076	0.0145	0.8510	0.8586	0.9060	-0.0073	0.0144	0.8413	0.8475	0.8932
13	06	7	Hispanic*SAT-CR	-1.2692	0.8510	331.0424	236.0664	280.3093	-1.2248	0.8413	329.4313	234.2101	278.1674
13	06	8	Hispanic*SAT-M	-1.4624	0.8586	236.0664	344.1520	252.1904	-1.4112	0.8475	234.2101	342.0132	249.7224
13	06	9	Hispanic*SAT-W	-1.6874	0.9060	280.3093	252.1904	377.8333	-1.6284	0.8932	278.1674	249.7224	374.9855
14	06	1	HSGPA	0.0000	0.2525	18.2830	19.2688	18.9870	-0.0383	0.0732	7.4548	7.5949	7.7495
14	06	2	SAT-CR	0.0000	18.2830	8,365.8611	5,139.0050	6,484.1357	-11.0560	7.4548	2,607.8624	2,019.4422	2,288.5960
14	06	3	SAT-M	0.0000	19.2688	5,139.0050	8,119.3618	5,204.1835	-11.8787	7.5949	2,019.4422	2,627.8345	2,066.1933
14	06	4	SAT-W	0.0000	18.9870	6,484.1357	5,204.1835	8,369.5097	-11.9500	7.7495	2,288.5960	2,066.1933	2,669.4818
14	06	5	Hispanic	0.1944	-0.0383	-11.0560	-11.8787	-11.9500	0.1567	-0.0308	-8.9062	-9.5690	-9.6264
14	06	6	Hispanic*HSGPA	-0.0383	0.0732	7.4548	7.5949	7.7495	-0.0308	0.0718	7.0319	7.1405	7.2923
14	06	7	Hispanic*SAT-CR	-11.0550	7.4548	2,607.8624	2,019.4422	2,288.5960	-8.9062	7.0319	2,485.6387	1,888.1234	2,156.4891
14	06	8	Hispanic*SAT-M	-11.8776	7.5949	2,019.4422	2,627.8345	2,066.1933	-9.5690	7.1405	1,888.1234	2,486.7437	1,924.2558
14	06	9	Hispanic*SAT-W	-11.9489	7.7495	2,288.5960	2,066.1933	2,669.4818	-9.6264	7.2923	2,156.4891	1,924.2558	2,526.6925
14	07	1	HSGPA	0.0000	0.2375	16.1718	16.7251	17.7238	-0.0337	0.0659	6.1577	6.0656	6.6797
14	07	2	SAT-CR	0.0000	16.1718	8,084.3792	4,783.2405	6,239.0525	-10.2508	6.1577	2,367.7222	1,735.3332	2,078.6487
14	07	3	SAT-M	0.0000	16.7251	4,783.2405	7,678.5950	4,824.6504	-10.5971	6.0656	1,735.3332	2,261.4163	1,799.5625
14	07	4	SAT-W	0.0000	17.7238	6,239.0525	4,824.6504	7,994.0609	-11.2506	6.6797	2,078.6487	1,799.5625	2,455.1151
14	07	5	Hispanic	0.1915	-0.0337	-10.2508	-10.5971	-11.2506	0.1548	-0.0272	-8.2876	-8.5676	-9.0959
14	07	6	Hispanic*HSGPA	-0.0337	0.0659	6.1577	6.0656	6.6797	-0.0272	0.0647	5.8128	5.7089	6.3011
14	07	7	Hispanic*SAT-CR	-10.2500	6.1577	2,367.7222	1,735.3332	2,078.6487	-8.2876	5.8128	2,262.6520	1,626.7130	1,963.3304
14	07	8	Hispanic*SAT-M	-10.5963	6.0656	1,735.3332	2,261.4163	1,799.5625	-8.5676	5.7089	1,626.7130	2,149.1261	1,680.3479
14	07	9	Hispanic*SAT-W	-11.2497	6.6797	2,078.6487	1,799.5625	2,455.1151	-9.0959	6.3011	1,963.3304	1,680.3479	2,328.5492
14	08	1	HSGPA	0.0000	0.2441	17.1013	17.8765	19.4844	-0.0393	0.0854	7.7256	8.2338	8.7205
14	08	2	SAT-CR	0.0000	17.1013	8,537.7922	5,226.6206	6,798.9295	-13.1826	7.7256	2,982.4987	2,290.5891	2,641.0495
14	08	3	SAT-M	0.0000	17.8765	5,226.6206	8,253.6595	5,463.3484	-14.2991	8.2338	2,290.5891	3,105.0445	2,422.4097
14	08	4	SAT-W	0.0000	19.4844	6,798.9295	5,463.3484	8,832.9142	-14.7821	8.7205	2,641.0495	2,422.4097	3,193.8876
14	08	5	Hispanic	0.2400	-0.0393	-13.1826	-14.2991	-14.7821	0.1824	-0.0298	-10.0184	-10.8670	-11.2340
14	08	6	Hispanic*HSGPA	-0.0393	0.0854	7.7256	8.2338	8.7205	-0.0298	0.0838	7.2079	7.6723	8.1401
14	08	7	Hispanic*SAT-CR	-13.1816	7.7256	2,982.4987	2,290.5891	2,641.0495	-10.0184	7.2079	2,808.7317	2,102.1043	2,446.1991
14	08	8	Hispanic*SAT-M	-14.2980	8.2338	2,290.5891	3,105.0445	2,422.4097	-10.8670	7.6723	2,102.1043	2,900.5954	2,211.0557
14	08	9	Hispanic*SAT-W	-14.7809	8.7205	2,641.0495	2,422.4097	3,193.8876	-11.2340	8.1401	2,446.1991	2,211.0557	2,975.3957

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
15	06	1	HSGPA	0.0000	0.2707	18.3668	18.6225	19.2903	-0.0183	0.0476	3.8514	4.2905	3.8629
15	06	2	SAT-CR	0.0000	18.3668	9,966.0290	6,183.0617	7,742.0983	-9.6427	3.8514	2,123.2347	1,597.4096	1,794.9738
15	06	3	SAT-M	0.0000	18.6225	6,183.0617	8,732.9025	5,817.7804	-8.8207	4.2905	1,597.4096	1,922.7705	1,490.5409
15	06	4	SAT-W	0.0000	19.2903	7,742.0983	5,817.7804	9,445.0071	-9.0828	3.8629	1,794.9738	1,490.5409	1,978.9962
15	06	5	Hispanic	0.1333	-0.0183	-9.6427	-8.8207	-9.0828	0.1156	-0.0159	-8.3570	-7.6446	-7.8718
15	06	6	Hispanic*HSGPA	-0.0183	0.0476	3.8514	4.2905	3.8629	-0.0159	0.0472	3.6746	4.1288	3.6964
15	06	7	Hispanic*SAT-CR	-9.6388	3.8514	2,123.2347	1,597.4096	1,794.9738	-8.3570	3.6746	2,030.2914	1,512.3895	1,707.4267
15	06	8	Hispanic*SAT-M	-8.8171	4.2905	1,597.4096	1,922.7705	1,490.5409	-7.6446	4.1288	1,512.3895	1,844.9981	1,410.4569
15	06	9	Hispanic*SAT-W	-9.0791	3.8629	1,794.9738	1,490.5409	1,978.9962	-7.8718	3.6964	1,707.4267	1,410.4569	1,896.5320
15	07	1	HSGPA	0.0000	0.2661	15.6231	16.7074	16.7380	-0.0169	0.0444	3.1491	3.3050	3.0026
15	07	2	SAT-CR	0.0000	15.6231	9,826.0138	6,031.9744	7,514.6768	-10.3554	3.1491	2,157.5988	1,532.0362	1,774.2962
15	07	3	SAT-M	0.0000	16.7074	6,031.9744	8,782.7675	5,743.1789	-8.6351	3.3050	1,532.0362	1,835.6912	1,416.1875
15	07	4	SAT-W	0.0000	16.7380	7,514.6768	5,743.1789	9,019.4119	-10.2357	3.0026	1,774.2962	1,416.1875	1,933.1642
15	07	5	Hispanic	0.1520	-0.0169	-10.3554	-8.6351	-10.2357	0.1289	-0.0143	-8.7817	-7.3228	-8.6802
15	07	6	Hispanic*HSGPA	-0.0169	0.0444	3.1491	3.3050	3.0026	-0.0143	0.0441	2.9743	3.1593	2.8298
15	07	7	Hispanic*SAT-CR	-10.3511	3.1491	2,157.5988	1,532.0362	1,774.2962	-8.7817	2.9743	2,050.4097	1,442.6537	1,668.3461
15	07	8	Hispanic*SAT-M	-8.6315	3.3050	1,532.0362	1,835.6912	1,416.1875	-7.3228	3.1593	1,442.6537	1,761.1572	1,327.8382
15	07	9	Hispanic*SAT-W	-10.2314	3.0026	1,774.2962	1,416.1875	1,933.1642	-8.6802	2.8298	1,668.3461	1,327.8382	1,828.4388
15	08	1	HSGPA	0.0000	0.2728	16.3427	17.6169	18.7363	-0.0117	0.0601	4.0472	3.6712	4.6531
15	08	2	SAT-CR	0.0000	16.3427	10,235.0762	6,528.0036	8,190.0952	-11.4257	4.0472	2,759.8780	2,027.3110	2,350.6598
15	08	3	SAT-M	0.0000	17.6169	6,528.0036	9,140.7240	6,406.9021	-11.6963	3.6712	2,027.3110	2,362.1765	1,937.3921
15	08	4	SAT-W	0.0000	18.7363	8,190.0952	6,406.9021	9,995.0604	-11.4635	4.6531	2,350.6598	1,937.3921	2,605.1709
15	08	5	Hispanic	0.1765	-0.0117	-11.4257	-11.6963	-11.4635	0.1454	-0.0096	-9.4086	-9.6314	-9.4396
15	08	6	Hispanic*HSGPA	-0.0117	0.0601	4.0472	3.6712	4.6531	-0.0096	0.0600	3.9135	3.5343	4.5190
15	08	7	Hispanic*SAT-CR	-11.4208	4.0472	2,759.8780	2,027.3110	2,350.6598	-9.4086	3.9135	2,629.3869	1,893.7296	2,219.7381
15	08	8	Hispanic*SAT-M	-11.6913	3.6712	2,027.3110	2,362.1765	1,937.3921	-9.6314	3.5343	1,893.7296	2,225.4316	1,803.3699
15	08	9	Hispanic*SAT-W	-11.4585	4.6531	2,350.6598	1,937.3921	2,605.1709	-9.4396	4.5190	2,219.7381	1,803.3699	2,473.8170
16	07	1	HSGPA	0.0000	0.4018	22.2484	28.1572	26.9280	-0.0787	0.1445	8.7719	10.4801	9.4180
16	07	2	SAT-CR	0.0000	22.2484	8,679.0530	6,102.0408	6,886.0290	-13.5873	8.7719	3,220.0330	2,479.4078	2,564.9697
16	07	3	SAT-M	0.0000	28.1572	6,102.0408	9,762.0980	6,256.5881	-17.9309	10.4801	2,479.4078	3,618.4583	2,317.5970
16	07	4	SAT-W	0.0000	26.9280	6,886.0290	6,256.5881	8,808.8968	-15.0327	9.4180	2,564.9697	2,317.5970	3,012.0207
16	07	5	Hispanic	0.3313	-0.0787	-13.5873	-17.9309	-15.0327	0.2218	-0.0526	-9.0856	-11.9901	-10.0521
16	07	6	Hispanic*HSGPA	-0.0786	0.1445	8.7719	10.4801	9.4180	-0.0526	0.1383	7.7032	9.0699	8.2357
16	07	7	Hispanic*SAT-CR	-13.5736	8.7719	3,220.0330	2,479.4078	2,564.9697	-9.0856	7.7032	3,035.6040	2,236.0204	2,360.9215
16	07	8	Hispanic*SAT-M	-17.9129	10.4801	2,479.4078	3,618.4583	2,317.5970	-11.9901	9.0699	2,236.0204	3,297.2646	2,048.3185
16	07	9	Hispanic*SAT-W	-15.0176	9.4180	2,564.9697	2,317.5970	3,012.0207	-10.0521	8.2357	2,360.9215	2,048.3185	2,786.2663
16	08	1	HSGPA	0.0000	0.4121	24.5507	29.4693	30.8770	-0.0902	0.1789	9.7911	10.8446	11.8401
16	08	2	SAT-CR	0.0000	24.5507	8,016.5999	5,754.8876	6,887.4609	-12.6344	9.7911	2,900.6540	2,212.0101	2,494.1178
16	08	3	SAT-M	0.0000	29.4693	5,754.8876	9,433.2724	6,529.7160	-17.3193	10.8446	2,212.0101	3,538.0523	2,497.6965
16	08	4	SAT-W	0.0000	30.8770	6,887.4609	6,529.7160	9,331.5380	-16.4196	11.8401	2,494.1178	2,497.6965	3,422.6179
16	08	5	Hispanic	0.3809	-0.0902	-12.6344	-17.3193	-16.4196	0.2361	-0.0558	-7.8219	-10.7224	-10.1654
16	08	6	Hispanic*HSGPA	-0.0901	0.1789	9.7911	10.8446	11.8401	-0.0558	0.1707	8.6530	9.2845	10.3610
16	08	7	Hispanic*SAT-CR	-12.6211	9.7911	2,900.6540	2,212.0101	2,494.1178	-7.8219	8.6530	2,741.1947	1,993.4212	2,286.8839
16	08	8	Hispanic*SAT-M	-17.3012	10.8446	2,212.0101	3,538.0523	2,497.6965	-10.7224	9.2845	1,993.4212	3,238.4077	2,213.6176
16	08	9	Hispanic*SAT-W	-16.4024	11.8401	2,494.1178	2,497.6965	3,422.6179	-10.1654	10.3610	2,286.8839	2,213.6176	3,153.2961

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
18	07	1	HSGPA	0.0000	0.3431	16.2445	17.1978	16.0791	-0.0156	0.0341	1.7189	1.4680	2.7693
18	07	2	SAT-CR	0.0000	16.2445	6,894.6898	4,327.0964	5,070.9898	-4.1849	1.7189	840.6569	624.8020	707.1028
18	07	3	SAT-M	0.0000	17.1978	4,327.0964	6,935.0231	4,224.4370	-4.3733	1.4680	624.8020	931.4248	720.1419
18	07	4	SAT-W	0.0000	16.0791	5,070.9898	4,224.4370	6,804.8091	-5.3764	2.7693	707.1028	720.1419	1,008.4295
18	07	5	Hispanic	0.1003	-0.0156	-4.1849	-4.3733	-5.3764	0.0904	-0.0141	-3.7650	-3.9345	-4.8370
18	07	6	Hispanic*HSGPA	-0.0156	0.0341	1.7189	1.4680	2.7693	-0.0141	0.0339	1.6535	1.3997	2.6852
18	07	7	Hispanic*SAT-CR	-4.1802	1.7189	840.6569	624.8020	707.1028	-3.7650	1.6535	823.1632	606.5208	684.6283
18	07	8	Hispanic*SAT-M	-4.3684	1.4680	624.8020	931.4248	720.1419	-3.9345	1.3997	606.5208	912.3207	696.6557
18	07	9	Hispanic*SAT-W	-5.3704	2.7693	707.1028	720.1419	1,008.4295	-4.8370	2.6852	684.6283	696.6557	979.5561
18	08	1	HSGPA	0.0000	0.3109	11.9077	12.3027	13.5311	-0.0047	0.0301	1.3665	0.2796	0.7359
18	08	2	SAT-CR	0.0000	11.9077	6,333.8455	4,039.5520	4,575.1650	-2.6479	1.3665	771.5579	556.3928	575.8486
18	08	3	SAT-M	0.0000	12.3027	4,039.5520	7,724.3599	4,069.8481	-3.1040	0.2796	556.3928	837.4388	470.8099
18	08	4	SAT-W	0.0000	13.5311	4,575.1650	4,069.8481	6,261.3374	-2.3508	0.7359	575.8486	470.8099	670.4204
18	08	5	Hispanic	0.0901	-0.0047	-2.6479	-3.1040	-2.3508	0.0820	-0.0043	-2.4094	-2.8244	-2.1391
18	08	6	Hispanic*HSGPA	-0.0047	0.0301	1.3665	0.2796	0.7359	-0.0043	0.0301	1.3540	0.2651	0.7249
18	08	7	Hispanic*SAT-CR	-2.6452	1.3665	771.5579	556.3928	575.8486	-2.4094	1.3540	764.5537	548.1821	569.6302
18	08	8	Hispanic*SAT-M	-3.1008	0.2796	556.3928	837.4388	470.8099	-2.8244	0.2651	548.1821	827.8137	463.5203
18	08	9	Hispanic*SAT-W	-2.3484	0.7359	575.8486	470.8099	670.4204	-2.1391	0.7249	569.6302	463.5203	664.8996
19	06	1	HSGPA	0.0000	0.3211	15.6725	19.2360	16.9765	-0.0051	0.0379	2.1340	1.7760	2.2602
19	06	2	SAT-CR	0.0000	15.6725	6,891.3776	4,590.4210	4,999.5088	-3.9661	2.1340	1,007.6337	857.8410	848.1171
19	06	3	SAT-M	0.0000	19.2360	4,590.4210	8,941.7479	4,505.3630	-7.0478	1.7760	857.8410	1,391.2849	891.9058
19	06	4	SAT-W	0.0000	16.9765	4,999.5088	4,505.3630	6,703.6818	-4.5856	2.2602	848.1171	891.9058	1,048.3581
19	06	5	Hispanic	0.1080	-0.0051	-3.9661	-7.0478	-4.5856	0.0964	-0.0045	-3.5377	-6.2866	-4.0903
19	06	6	Hispanic*HSGPA	-0.0051	0.0379	2.1340	1.7760	2.2602	-0.0045	0.0378	2.1138	1.7401	2.2368
19	06	7	Hispanic*SAT-CR	-3.9640	2.1340	1,007.6337	857.8410	848.1171	-3.5377	2.1138	991.9124	829.9036	829.9400
19	06	8	Hispanic*SAT-M	-7.0441	1.7760	857.8410	1,391.2849	891.9058	-6.2866	1.7401	829.9036	1,341.6393	859.6043
19	06	9	Hispanic*SAT-W	-4.5832	2.2602	848.1171	891.9058	1,048.3581	-4.0903	2.2368	829.9400	859.6043	1,027.3414
19	07	1	HSGPA	0.0000	0.3240	17.8710	20.7180	17.8770	-0.0094	0.0442	2.5018	2.6984	2.9142
19	07	2	SAT-CR	0.0000	17.8710	7,316.9025	4,957.3685	5,438.3005	-6.1615	2.5018	1,303.1123	1,124.1273	1,117.8444
19	07	3	SAT-M	0.0000	20.7180	4,957.3685	8,751.3816	4,794.4424	-8.4402	2.6984	1,124.1273	1,657.4774	1,091.4682
19	07	4	SAT-W	0.0000	17.8770	5,438.3005	4,794.4424	7,014.8372	-6.5385	2.9142	1,117.8444	1,091.4682	1,399.6023
19	07	5	Hispanic	0.1358	-0.0094	-6.1615	-8.4402	-6.5385	0.1174	-0.0081	-5.3250	-7.2943	-5.6507
19	07	6	Hispanic*HSGPA	-0.0094	0.0442	2.5018	2.6984	2.9142	-0.0081	0.0441	2.4440	2.6192	2.8529
19	07	7	Hispanic*SAT-CR	-6.1586	2.5018	1,303.1123	1,124.1273	1,117.8444	-5.3250	2.4440	1,265.1661	1,072.1478	1,077.5768
19	07	8	Hispanic*SAT-M	-8.4361	2.6984	1,124.1273	1,657.4774	1,091.4682	-7.2943	2.6192	1,072.1478	1,586.2747	1,036.3088
19	07	9	Hispanic*SAT-W	-6.5353	2.9142	1,117.8444	1,091.4682	1,399.6023	-5.6507	2.8529	1,077.5768	1,036.3088	1,356.8714
19	08	1	HSGPA	0.0000	0.3248	15.9772	20.1695	17.9862	-0.0151	0.0634	2.3933	3.5364	2.5543
19	08	2	SAT-CR	0.0000	15.9772	7,339.5602	5,013.1173	5,347.3016	-8.4195	2.3933	1,628.7539	1,283.9428	1,175.4525
19	08	3	SAT-M	0.0000	20.1695	5,013.1173	8,732.5827	4,760.9183	-9.6792	3.5364	1,283.9428	1,986.9810	1,175.9242
19	08	4	SAT-W	0.0000	17.9862	5,347.3016	4,760.9183	6,926.6298	-7.9631	2.5543	1,175.4525	1,175.9242	1,366.4904
19	08	5	Hispanic	0.1659	-0.0151	-8.4195	-9.6792	-7.9631	0.1384	-0.0126	-7.0229	-8.0736	-6.6421
19	08	6	Hispanic*HSGPA	-0.0151	0.0634	2.3933	3.5364	2.5543	-0.0126	0.0632	2.2663	3.3904	2.4342
19	08	7	Hispanic*SAT-CR	-8.4169	2.3933	1,628.7539	1,283.9428	1,175.4525	-7.0229	2.2663	1,557.8880	1,202.4747	1,108.4286
19	08	8	Hispanic*SAT-M	-9.6761	3.5364	1,283.9428	1,986.9810	1,175.9242	-8.0736	3.3904	1,202.4747	1,893.3244	1,098.8729
19	08	9	Hispanic*SAT-W	-7.9605	2.5543	1,175.4525	1,175.9242	1,366.4904	-6.6421	2.4342	1,108.4286	1,098.8729	1,303.1002



## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
20	08	1	HSGPA	0.0000	0.1864	13.6618	14.0141	14.4485	-0.0202	0.0304	3.5586	3.7892	3.6974
20	08	2	SAT-CR	0.0000	13.6618	8,877.5791	5,490.5207	7,086.1412	-6.5969	3.5586	1,596.1823	1,347.2617	1,417.6647
20	08	3	SAT-M	0.0000	14.0141	5,490.5207	8,401.3319	5,570.7188	-7.5935	3.7892	1,347.2617	1,778.1358	1,345.9581
20	08	4	SAT-W	0.0000	14.4485	7,086.1412	5,570.7188	9,259.0029	-6.6451	3.6974	1,417.6647	1,345.9581	1,593.4722
20	08	5	Hispanic	0.0933	-0.0202	-6.5969	-7.5935	-6.6451	0.0846	-0.0183	-5.9815	-6.8851	-6.0252
20	08	6	Hispanic*HSGPA	-0.0202	0.0304	3.5586	3.7892	3.6974	-0.0183	0.0300	3.4253	3.6358	3.5631
20	08	7	Hispanic*SAT-CR	-6.5955	3.5586	1,596.1823	1,347.2617	1,417.6647	-5.9815	3.4253	1,552.6723	1,297.1788	1,373.8370
20	08	8	Hispanic*SAT-M	-7.5919	3.7892	1,347.2617	1,778.1358	1,345.9581	-6.8851	3.6358	1,297.1788	1,720.4871	1,295.5095
20	08	9	Hispanic*SAT-W	-6.6436	3.6974	1,417.6647	1,345.9581	1,593.4722	-6.0252	3.5631	1,373.8370	1,295.5095	1,549.3247
21	07	1	HSGPA	0.0000	0.3514	20.1267	22.2818	20.0820	0.0020	0.3252	18.6432	20.9956	18.6733
21	07	2	SAT-CR	0.0000	20.1267	8,768.1033	5,784.5554	6,508.5503	-3.7689	18.6432	7,926.9993	5,171.1344	5,868.4637
21	07	3	SAT-M	0.0000	22.2818	5,784.5554	8,462.0038	5,269.0651	-3.5121	20.9956	5,171.1344	7,724.1278	4,730.2204
21	07	4	SAT-W	0.0000	20.0820	6,508.5503	5,269.0651	7,593.1929	-3.4032	18.6733	5,868.4637	4,730.2204	6,925.6888
21	07	5	Hispanic	0.9279	0.0020	-3.7689	-3.5121	-3.4032	0.0669	0.0001	-0.2717	-0.2532	-0.2453
21	07	6	Hispanic*HSGPA	0.0020	0.3252	18.6432	20.9956	18.6733	0.0001	0.3252	18.6508	21.0026	18.6801
21	07	7	Hispanic*SAT-CR	-3.7670	18.6432	7,926.9993	5,171.1344	5,868.4637	-0.2717	18.6508	7,912.8018	5,157.9042	5,855.6437
21	07	8	Hispanic*SAT-M	-3.5104	20.9956	5,171.1344	7,724.1278	4,730.2204	-0.2532	21.0026	5,157.9042	7,711.7991	4,718.2738
21	07	9	Hispanic*SAT-W	-3.4016	18.6733	5,868.4637	4,730.2204	6,925.6888	-0.2453	18.6801	5,855.6437	4,718.2738	6,914.1125
22	06	1	HSGPA	0.0000	0.1791	13.9233	14.1599	15.1525	-0.0117	0.0308	2.7205	2.8420	2.7931
22	06	2	SAT-CR	0.0000	13.9233	8,186.9089	4,861.3315	6,419.5806	-5.5846	2.7205	1,371.6198	999.3722	1,119.0743
22	06	3	SAT-M	0.0000	14.1599	4,861.3315	7,708.8900	4,830.5028	-6.2188	2.8420	999.3722	1,395.9927	948.5908
22	06	4	SAT-W	0.0000	15.1525	6,419.5806	4,830.5028	8,330.4229	-5.0301	2.7931	1,119.0743	948.5908	1,313.0715
22	06	5	Hispanic	0.1212	-0.0117	-5.5846	-6.2188	-5.0301	0.1065	-0.0103	-4.9079	-5.4652	-4.4205
22	06	6	Hispanic*HSGPA	-0.0117	0.0308	2.7205	2.8420	2.7931	-0.0103	0.0307	2.6549	2.7689	2.7340
22	06	7	Hispanic*SAT-CR	-5.5842	2.7205	1,371.6198	999.3722	1,119.0743	-4.9079	2.6549	1,340.4342	964.6454	1,090.9855
22	06	8	Hispanic*SAT-M	-6.2183	2.8420	999.3722	1,395.9927	948.5908	-5.4652	2.7689	964.6454	1,357.3225	917.3124
22	06	9	Hispanic*SAT-W	-5.0296	2.7931	1,119.0743	948.5908	1,313.0715	-4.4205	2.7340	1,090.9855	917.3124	1,287.7720
23	06	1	HSGPA	0.0000	0.2560	15.3135	17.4625	16.2363	-0.0049	0.0187	1.2028	1.2691	1.1154
23	06	2	SAT-CR	0.0000	15.3135	6,284.3521	3,634.9952	4,596.0218	-1.2016	1.2028	479.9433	364.6947	357.9636
23	06	3	SAT-M	0.0000	17.4625	3,634.9952	6,903.9647	3,748.9519	-2.3820	1.2691	364.6947	539.0714	326.9991
23	06	4	SAT-W	0.0000	16.2363	4,596.0218	3,748.9519	6,430.3445	-1.5596	1.1154	357.9636	326.9991	423.8775
23	06	5	Hispanic	0.0552	-0.0049	-1.2016	-2.3820	-1.5596	0.0522	-0.0046	-1.1353	-2.2505	-1.4735
23	06	6	Hispanic*HSGPA	-0.0049	0.0187	1.2028	1.2691	1.1154	-0.0046	0.0186	1.1970	1.2575	1.1078
23	06	7	Hispanic*SAT-CR	-1.2011	1.2028	479.9433	364.6947	357.9636	-1.1353	1.1970	478.5001	361.8338	356.0904
23	06	8	Hispanic*SAT-M	-2.3810	1.2691	364.6947	539.0714	326.9991	-2.2505	1.2575	361.8338	533.4000	323.2857
23	06	9	Hispanic*SAT-W	-1.5590	1.1154	357.9636	326.9991	423.8775	-1.4735	1.1078	356.0904	323.2857	421.4462
23	08	1	HSGPA	0.0000	0.2348	14.2736	16.1636	16.2025	-0.0135	0.0262	1.9445	2.3315	2.2825
23	08	2	SAT-CR	0.0000	14.2736	6,276.0786	3,685.7197	4,690.4307	-2.6092	1.9445	683.0887	496.6740	554.7741
23	08	3	SAT-M	0.0000	16.1636	3,685.7197	6,840.6649	3,717.7000	-3.9731	2.3315	496.6740	820.2206	512.6719
23	08	4	SAT-W	0.0000	16.2025	4,690.4307	3,717.7000	6,589.2422	-3.2366	2.2825	554.7741	512.6719	676.3330
23	08	5	Hispanic	0.0779	-0.0135	-2.6092	-3.9731	-3.2366	0.0719	-0.0124	-2.4059	-3.6635	-2.9844
23	08	6	Hispanic*HSGPA	-0.0135	0.0262	1.9445	2.3315	2.2825	-0.0124	0.0260	1.9093	2.2779	2.2388
23	08	7	Hispanic*SAT-CR	-2.6084	1.9445	683.0887	496.6740	554.7741	-2.4059	1.9093	676.2828	486.3106	546.3318
23	08	8	Hispanic*SAT-M	-3.9718	2.3315	496.6740	820.2206	512.6719	-3.6635	2.2779	486.3106	804.4403	499.8168
23	08	9	Hispanic*SAT-W	-3.2356	2.2825	554.7741	512.6719	676.3330	-2.9844	2.2388	546.3318	499.8168	665.8609

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
26	06	1	HSGPA	0.0000	0.2428	17.5346	19.9291	18.6006	-0.0328	0.0900	7.6014	8.5698	7.7912
26	06	2	SAT-CR	0.0000	17.5346	10,505.3340	7,427.3893	8,222.4906	-18.3157	7.6014	4,197.5862	3,247.4456	3,394.1030
26	06	3	SAT-M	0.0000	19.9291	7,427.3893	10,486.5643	7,012.9827	-18.2483	8.5698	3,247.4456	4,193.9555	3,023.6637
26	06	4	SAT-W	0.0000	18.6006	8,222.4906	7,012.9827	9,598.1293	-17.2121	7.7912	3,394.1030	3,023.6637	3,728.8336
26	06	5	Hispanic	0.3194	-0.0328	-18.3157	-18.2483	-17.2121	0.2174	-0.0223	-12.4649	-12.4190	-11.7138
26	06	6	Hispanic*HSGPA	-0.0328	0.0900	7.6014	8.5698	7.7912	-0.0223	0.0889	7.0009	7.9715	7.2268
26	06	7	Hispanic*SAT-CR	-18.3152	7.6014	4,197.5862	3,247.4456	3,394.1030	-12.4649	7.0009	3,862.1313	2,913.2259	3,078.8607
26	06	8	Hispanic*SAT-M	-18.2477	8.5698	3,247.4456	4,193.9555	3,023.6637	-12.4190	7.9715	2,913.2259	3,860.9664	2,709.5821
26	06	9	Hispanic*SAT-W	-17.2116	7.7912	3,394.1030	3,023.6637	3,728.8336	-11.7138	7.2268	3,078.8607	2,709.5821	3,432.5860
26	07	1	HSGPA	0.0000	0.2480	18.2344	19.9945	19.1429	-0.0315	0.0933	7.7331	8.2587	7.8951
26	07	2	SAT-CR	0.0000	18.2344	10,408.4234	7,128.0426	8,328.7533	-16.7748	7.7331	4,063.2919	3,029.3828	3,347.5135
26	07	3	SAT-M	0.0000	19.9945	7,128.0426	10,013.6290	6,908.6273	-16.8010	8.2587	3,029.3828	3,932.3611	2,882.1406
26	07	4	SAT-W	0.0000	19.1429	8,328.7533	6,908.6273	9,793.9222	-16.2388	7.8951	3,347.5135	2,882.1406	3,690.3327
26	07	5	Hispanic	0.3219	-0.0315	-16.7748	-16.8010	-16.2388	0.2183	-0.0213	-11.3743	-11.3920	-11.0108
26	07	6	Hispanic*HSGPA	-0.0315	0.0933	7.7331	8.2587	7.8951	-0.0213	0.0923	7.2053	7.7300	7.3841
26	07	7	Hispanic*SAT-CR	-16.7743	7.7331	4,063.2919	3,029.3828	3,347.5135	-11.3743	7.2053	3,781.9055	2,747.5567	3,075.1190
26	07	8	Hispanic*SAT-M	-16.8006	8.2587	3,029.3828	3,932.3611	2,882.1406	-11.3920	7.7300	2,747.5567	3,650.0946	2,609.3205
26	07	9	Hispanic*SAT-W	-16.2383	7.8951	3,347.5135	2,882.1406	3,690.3327	-11.0108	7.3841	3,075.1190	2,609.3205	3,426.6428
26	08	1	HSGPA	0.0000	0.2372	18.1728	20.1854	19.2359	-0.0376	0.1004	8.9039	9.6038	8.9635
26	08	2	SAT-CR	0.0000	18.1728	10,759.1837	7,536.7021	8,634.7898	-20.2899	8.9039	4,705.2543	3,596.1382	3,841.7595
26	08	3	SAT-M	0.0000	20.1854	7,536.7021	10,426.6145	7,268.5736	-20.0287	9.6038	3,596.1382	4,591.8622	3,372.2030
26	08	4	SAT-W	0.0000	19.2359	8,634.7898	7,268.5736	10,189.7992	-19.5628	8.9635	3,841.7595	3,372.2030	4,241.9874
26	08	5	Hispanic	0.3595	-0.0376	-20.2899	-20.0287	-19.5628	0.2303	-0.0241	-12.9948	-12.8275	-12.5291
26	08	6	Hispanic*HSGPA	-0.0376	0.1004	8.9039	9.6038	8.9635	-0.0241	0.0990	8.1410	8.8507	8.2279
26	08	7	Hispanic*SAT-CR	-20.2893	8.9039	4,705.2543	3,596.1382	3,841.7595	-12.9948	8.1410	4,293.5852	3,189.7698	3,444.8430
26	08	8	Hispanic*SAT-M	-20.0281	9.6038	3,596.1382	4,591.8622	3,372.2030	-12.8275	8.8507	3,189.7698	4,190.7263	2,980.3973
26	08	9	Hispanic*SAT-W	-19.5622	8.9635	3,841.7595	3,372.2030	4,241.9874	-12.5291	8.2279	3,444.8430	2,980.3973	3,859.2950
27	06	1	HSGPA	0.0000	0.2146	13.4291	15.0601	15.0037	-0.0084	0.0202	1.4251	1.7302	1.4966
27	06	2	SAT-CR	0.0000	13.4291	7,884.1206	4,591.8352	5,788.1987	-3.4502	1.4251	832.1337	619.3632	679.2399
27	06	3	SAT-M	0.0000	15.0601	4,591.8352	7,927.5040	4,463.4675	-3.9672	1.7302	619.3632	921.1937	608.6245
27	06	4	SAT-W	0.0000	15.0037	5,788.1987	4,463.4675	7,527.8014	-3.5729	1.4966	679.2399	608.6245	800.6810
27	06	5	Hispanic	0.0761	-0.0084	-3.4502	-3.9672	-3.5729	0.0703	-0.0078	-3.1876	-3.6653	-3.3010
27	06	6	Hispanic*HSGPA	-0.0084	0.0202	1.4251	1.7302	1.4966	-0.0078	0.0202	1.3961	1.6968	1.4665
27	06	7	Hispanic*SAT-CR	-3.4494	1.4251	832.1337	619.3632	679.2399	-3.1876	1.3961	820.2327	605.6788	666.9155
27	06	8	Hispanic*SAT-M	-3.9663	1.7302	619.3632	921.1937	608.6245	-3.6653	1.6968	605.6788	905.4588	594.4534
27	06	9	Hispanic*SAT-W	-3.5721	1.4966	679.2399	608.6245	800.6810	-3.3010	1.4665	666.9155	594.4534	787.9181
27	07	1	HSGPA	0.0000	0.2335	16.4910	17.9842	18.0187	-0.0106	0.0263	2.0131	2.4033	2.2111
27	07	2	SAT-CR	0.0000	16.4910	8,473.8617	5,123.2552	6,422.5707	-3.6106	2.0131	1,004.8991	712.5083	823.6734
27	07	3	SAT-M	0.0000	17.9842	5,123.2552	8,541.8823	4,917.9649	-3.8426	2.4033	712.5083	1,138.5294	717.9456
27	07	4	SAT-W	0.0000	18.0187	6,422.5707	4,917.9649	7,983.1797	-3.8472	2.2111	823.6734	717.9456	934.9736
27	07	5	Hispanic	0.0872	-0.0106	-3.6106	-3.8426	-3.8472	0.0796	-0.0096	-3.2958	-3.5076	-3.5119
27	07	6	Hispanic*HSGPA	-0.0106	0.0263	2.0131	2.4033	2.2111	-0.0096	0.0262	1.9750	2.3627	2.1704
27	07	7	Hispanic*SAT-CR	-3.6097	2.0131	1,004.8991	712.5083	823.6734	-3.2958	1.9750	991.8660	698.6377	809.7860
27	07	8	Hispanic*SAT-M	-3.8417	2.4033	712.5083	1,138.5294	717.9456	-3.5076	2.3627	698.6377	1,123.7674	703.1658
27	07	9	Hispanic*SAT-W	-3.8463	2.2111	823.6734	717.9456	934.9736	-3.5119	2.1704	809.7860	703.1658	920.1759

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
27	08	1	HSGPA	0.0000	0.2134	14.8341	17.4935	16.6633	-0.0156	0.0310	2.2119	2.9972	2.5474
27	08	2	SAT-CR	0.0000	14.8341	8,463.1051	5,355.4321	6,441.7961	-4.5172	2.2119	1,116.6794	862.3432	966.9532
27	08	3	SAT-M	0.0000	17.4935	5,355.4321	8,744.4683	5,163.2839	-5.0320	2.9972	862.3432	1,294.5982	863.8257
27	08	4	SAT-W	0.0000	16.6633	6,441.7961	5,163.2839	8,390.8790	-5.1133	2.5474	966.9532	863.8257	1,183.4092
27	08	5	Hispanic	0.0977	-0.0156	-4.5172	-5.0320	-5.1133	0.0882	-0.0141	-4.0760	-4.5405	-4.6139
27	08	6	Hispanic*HSGPA	-0.0156	0.0310	2.2119	2.9972	2.5474	-0.0141	0.0307	2.1412	2.9185	2.4674
27	08	7	Hispanic*SAT-CR	-4.5160	2.2119	1,116.6794	862.3432	966.9532	-4.0760	2.1412	1,096.2797	839.6188	943.8614
27	08	8	Hispanic*SAT-M	-5.0306	2.9972	862.3432	1,294.5982	863.8257	-4.5405	2.9185	839.6188	1,269.2842	838.1025
27	08	9	Hispanic*SAT-W	-5.1120	2.5474	966.9532	863.8257	1,183.4092	-4.6139	2.4674	943.8614	838.1025	1,157.2700
28	07	1	HSGPA	0.0000	0.4483	21.9270	23.1794	24.3754	-0.0125	0.0935	4.3801	4.4948	4.7763
28	07	2	SAT-CR	0.0000	21.9270	7,363.6961	4,845.5764	5,280.8441	-3.2925	4.3801	1,288.3301	770.9116	967.7728
28	07	3	SAT-M	0.0000	23.1794	4,845.5764	7,496.4356	4,456.3771	-2.7513	4.4948	770.9116	1,004.3160	684.9124
28	07	4	SAT-W	0.0000	24.3754	5,280.8441	4,456.3771	6,740.6551	-2.5017	4.7763	967.7728	684.9124	1,215.0739
28	07	5	Hispanic	0.1758	-0.0125	-3.2925	-2.7513	-2.5017	0.1452	-0.0103	-2.7138	-2.2678	-2.0620
28	07	6	Hispanic*HSGPA	-0.0125	0.0935	4.3801	4.4948	4.7763	-0.0103	0.0933	4.3391	4.4606	4.7452
28	07	7	Hispanic*SAT-CR	-3.2858	4.3801	1,288.3301	770.9116	967.7728	-2.7138	4.3391	1,277.5116	761.8713	959.5528
28	07	8	Hispanic*SAT-M	-2.7458	4.4948	770.9116	1,004.3160	684.9124	-2.2678	4.4606	761.8713	996.7615	678.0434
28	07	9	Hispanic*SAT-W	-2.4966	4.7763	967.7728	684.9124	1,215.0739	-2.0620	4.7452	959.5528	678.0434	1,208.8283
28	08	1	HSGPA	0.0000	0.4444	19.3884	21.3272	20.8070	-0.0314	0.1182	5.4871	5.3898	5.3591
28	08	2	SAT-CR	0.0000	19.3884	6,364.7055	4,072.5151	4,777.5042	-6.4968	5.4871	1,869.7184	1,175.4730	1,303.4048
28	08	3	SAT-M	0.0000	21.3272	4,072.5151	7,302.3378	4,071.4168	-7.7935	5.3898	1,175.4730	1,553.6529	1,024.9584
28	08	4	SAT-W	0.0000	20.8070	4,777.5042	4,071.4168	6,615.1587	-6.3724	5.3591	1,303.4048	1,024.9584	1,545.3919
28	08	5	Hispanic	0.2154	-0.0314	-6.4968	-7.7935	-6.3724	0.1693	-0.0246	-5.0976	-6.1151	-5.0001
28	08	6	Hispanic*HSGPA	-0.0313	0.1182	5.4871	5.3898	5.3591	-0.0246	0.1172	5.2837	5.1458	5.1596
28	08	7	Hispanic*SAT-CR	-6.4846	5.4871	1,869.7184	1,175.4730	1,303.4048	-5.0976	5.2837	1,827.5895	1,124.9354	1,262.0823
28	08	8	Hispanic*SAT-M	-7.7789	5.3898	1,175.4730	1,553.6529	1,024.9584	-6.1151	5.1458	1,124.9354	1,493.0281	975.3880
28	08	9	Hispanic*SAT-W	-6.3605	5.3591	1,303.4048	1,024.9584	1,545.3919	-5.0001	5.1596	1,262.0823	975.3880	1,504.8603
29	06	1	HSGPA	0.0000	0.3504	17.0563	18.1969	17.9909	-0.0146	0.0596	2.8604	2.9400	2.8621
29	06	2	SAT-CR	0.0000	17.0563	8,047.7375	4,929.3336	5,860.3186	-5.9856	2.8604	1,432.4445	997.2178	1,053.1991
29	06	3	SAT-M	0.0000	18.1969	4,929.3336	8,153.8511	4,578.6298	-7.0130	2.9400	997.2178	1,563.5398	911.9333
29	06	4	SAT-W	0.0000	17.9909	5,860.3186	4,578.6298	7,307.3319	-5.5457	2.8621	1,053.1991	911.9333	1,213.5864
29	06	5	Hispanic	0.1557	-0.0146	-5.9856	-7.0130	-5.5457	0.1315	-0.0123	-5.0535	-5.9209	-4.6821
29	06	6	Hispanic*HSGPA	-0.0146	0.0596	2.8604	2.9400	2.8621	-0.0123	0.0594	2.7729	2.8375	2.7811
29	06	7	Hispanic*SAT-CR	-5.9846	2.8604	1,432.4445	997.2178	1,053.1991	-5.0535	2.7729	1,396.6234	955.2480	1,020.0106
29	06	8	Hispanic*SAT-M	-7.0119	2.9400	997.2178	1,563.5398	911.9333	-5.9209	2.8375	955.2480	1,514.3657	873.0479
29	06	9	Hispanic*SAT-W	-5.5448	2.8621	1,053.1991	911.9333	1,213.5864	-4.6821	2.7811	1,020.0106	873.0479	1,182.8370
29	07	1	HSGPA	0.0000	0.3501	16.6281	18.2961	18.0944	-0.0105	0.0619	2.5656	2.9700	2.7197
29	07	2	SAT-CR	0.0000	16.6281	8,102.9444	4,957.9213	5,989.0162	-6.1130	2.5656	1,603.0348	1,012.5638	1,232.7426
29	07	3	SAT-M	0.0000	18.2961	4,957.9213	8,091.7341	4,585.3850	-6.6027	2.9700	1,012.5638	1,555.7773	943.1478
29	07	4	SAT-W	0.0000	18.0944	5,989.0162	4,585.3850	7,367.3044	-5.6694	2.7197	1,232.7426	943.1478	1,425.9868
29	07	5	Hispanic	0.1723	-0.0105	-6.1130	-6.6027	-5.6694	0.1427	-0.0087	-5.0594	-5.4648	-4.6923
29	07	6	Hispanic*HSGPA	-0.0105	0.0619	2.5656	2.9700	2.7197	-0.0087	0.0618	2.5013	2.9006	2.6600
29	07	7	Hispanic*SAT-CR	-6.1121	2.5656	1,603.0348	1,012.5638	1,232.7426	-5.0594	2.5013	1,565.6714	972.2069	1,198.0904
29	07	8	Hispanic*SAT-M	-6.6018	2.9700	1,012.5638	1,555.7773	943.1478	-5.4648	2.9006	972.2069	1,512.1871	905.7193
29	07	9	Hispanic*SAT-W	-5.6686	2.7197	1,232.7426	943.1478	1,425.9868	-4.6923	2.6600	1,198.0904	905.7193	1,393.8490

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
29	08	1	HSGPA	0.0000	0.3415	14.7861	17.5430	17.3459	-0.0124	0.0723	3.1209	3.8124	3.3468
29	08	2	SAT-CR	0.0000	14.7861	7,944.8576	4,954.9490	5,857.6973	-7.7979	3.1209	1,783.4408	1,230.8631	1,352.7826
29	08	3	SAT-M	0.0000	17.5430	4,954.9490	8,197.2051	4,680.2331	-8.2612	3.8124	1,230.8631	1,883.5686	1,143.7595
29	08	4	SAT-W	0.0000	17.3459	5,857.6973	4,680.2331	7,382.2895	-7.1714	3.3468	1,352.7826	1,143.7595	1,628.9874
29	08	5	Hispanic	0.2007	-0.0124	-7.7979	-8.2612	-7.1714	0.1604	-0.0099	-6.2327	-6.6031	-5.7320
29	08	6	Hispanic*HSGPA	-0.0124	0.0723	3.1209	3.8124	3.3468	-0.0099	0.0721	3.0240	3.7097	3.2577
29	08	7	Hispanic*SAT-CR	-7.7969	3.1209	1,783.4408	1,230.8631	1,352.7826	-6.2327	3.0240	1,722.6417	1,166.4510	1,296.8681
29	08	8	Hispanic*SAT-M	-8.2602	3.8124	1,230.8631	1,883.5686	1,143.7595	-6.6031	3.7097	1,166.4510	1,815.3289	1,084.5224
29	08	9	Hispanic*SAT-W	-7.1705	3.3468	1,352.7826	1,143.7595	1,628.9874	-5.7320	3.2577	1,296.8681	1,084.5224	1,577.5651
31	07	1	HSGPA	0.0000	0.2742	13.6560	14.8012	15.2357	-0.0184	0.0445	2.2089	2.2332	2.4909
31	07	2	SAT-CR	0.0000	13.6560	7,356.4148	4,158.4142	5,361.6078	-5.9628	2.2089	1,389.2164	859.7366	1,073.1857
31	07	3	SAT-M	0.0000	14.8012	4,158.4142	6,798.1143	4,095.3895	-5.4516	2.2332	859.7366	1,243.6675	840.1318
31	07	4	SAT-W	0.0000	15.2357	5,361.6078	4,095.3895	6,844.5073	-5.6597	2.4909	1,073.1857	840.1318	1,294.0539
31	07	5	Hispanic	0.1659	-0.0184	-5.9628	-5.4516	-5.6597	0.1384	-0.0153	-4.9735	-4.5471	-4.7206
31	07	6	Hispanic*HSGPA	-0.0184	0.0445	2.2089	2.2332	2.4909	-0.0153	0.0442	2.0994	2.1331	2.3869
31	07	7	Hispanic*SAT-CR	-5.9619	2.2089	1,389.2164	859.7366	1,073.1857	-4.9735	2.0994	1,353.6668	827.2349	1,039.4435
31	07	8	Hispanic*SAT-M	-5.4507	2.2332	859.7366	1,243.6675	840.1318	-4.5471	2.1331	827.2349	1,213.9523	809.2825
31	07	9	Hispanic*SAT-W	-5.6587	2.4909	1,073.1857	840.1318	1,294.0539	-4.7206	2.3869	1,039.4435	809.2825	1,262.0273
31	08	1	HSGPA	0.0000	0.2747	12.8677	15.2624	14.3805	-0.0131	0.0543	2.5680	3.0763	2.8291
31	08	2	SAT-CR	0.0000	12.8677	7,341.5990	4,412.6382	5,362.6876	-7.6368	2.5680	1,634.5056	1,043.1360	1,207.2045
31	08	3	SAT-M	0.0000	15.2624	4,412.6382	7,152.4345	4,190.7612	-7.2329	3.0763	1,043.1360	1,534.9528	928.0887
31	08	4	SAT-W	0.0000	14.3805	5,362.6876	4,190.7612	6,880.5995	-6.7374	2.8291	1,207.2045	928.0887	1,412.7359
31	08	5	Hispanic	0.1982	-0.0131	-7.6368	-7.2329	-6.7374	0.1589	-0.0105	-6.1235	-5.7996	-5.4023
31	08	6	Hispanic*HSGPA	-0.0131	0.0543	2.5680	3.0763	2.8291	-0.0105	0.0542	2.4683	2.9819	2.7412
31	08	7	Hispanic*SAT-CR	-7.6355	2.5680	1,634.5056	1,043.1360	1,207.2045	-6.1235	2.4683	1,576.1944	987.9086	1,155.7608
31	08	8	Hispanic*SAT-M	-7.2317	3.0763	1,043.1360	1,534.9528	928.0887	-5.7996	2.9819	987.9086	1,482.6460	879.3656
31	08	9	Hispanic*SAT-W	-6.7363	2.8291	1,207.2045	928.0887	1,412.7359	-5.4023	2.7412	1,155.7608	879.3656	1,367.3509
32	08	1	HSGPA	0.0000	0.2463	13.7664	14.4307	16.4018	-0.0089	0.0163	0.6922	1.0725	0.9747
32	08	2	SAT-CR	0.0000	13.7664	6,434.8701	3,799.2235	4,880.4810	-1.2664	0.6922	389.5072	276.9140	315.5986
32	08	3	SAT-M	0.0000	14.4307	3,799.2235	6,879.8194	3,924.1016	-1.9611	1.0725	276.9140	471.1016	296.7550
32	08	4	SAT-W	0.0000	16.4018	4,880.4810	3,924.1016	6,744.6224	-1.4816	0.9747	315.5986	296.7550	413.7065
32	08	5	Hispanic	0.0530	-0.0089	-1.2664	-1.9611	-1.4816	0.0502	-0.0084	-1.1993	-1.8571	-1.4031
32	08	6	Hispanic*HSGPA	-0.0089	0.0163	0.6922	1.0725	0.9747	-0.0084	0.0163	0.6810	1.0551	0.9615
32	08	7	Hispanic*SAT-CR	-1.2662	0.6922	389.5072	276.9140	315.5986	-1.1993	0.6810	387.9036	274.4309	313.7226
32	08	8	Hispanic*SAT-M	-1.9607	1.0725	276.9140	471.1016	296.7550	-1.8571	1.0551	274.4309	467.2566	293.8500
32	08	9	Hispanic*SAT-W	-1.4814	0.9747	315.5986	296.7550	413.7065	-1.4031	0.9615	313.7226	293.8500	411.5117
33	06	1	HSGPA	0.0000	0.2344	15.8889	17.1602	17.5001	-0.0147	0.0263	2.5214	2.8946	2.7057
33	06	2	SAT-CR	0.0000	15.8889	8,108.5538	5,121.4381	6,322.7614	-3.2792	2.5214	892.1332	754.3725	776.6700
33	06	3	SAT-M	0.0000	17.1602	5,121.4381	8,377.4250	5,173.4762	-4.2240	2.8946	754.3725	1,067.2143	771.7069
33	06	4	SAT-W	0.0000	17.5001	6,322.7614	5,173.4762	8,212.1668	-3.5142	2.7057	776.6700	771.7069	906.4617
33	06	5	Hispanic	0.0703	-0.0147	-3.2792	-4.2240	-3.5142	0.0654	-0.0136	-3.0487	-3.9270	-3.2671
33	06	6	Hispanic*HSGPA	-0.0147	0.0263	2.5214	2.8946	2.7057	-0.0136	0.0261	2.4733	2.8327	2.6541
33	06	7	Hispanic*SAT-CR	-3.2790	2.5214	892.1332	754.3725	776.6700	-3.0487	2.4733	881.3807	740.5221	765.1470
33	06	8	Hispanic*SAT-M	-4.2237	2.8946	754.3725	1,067.2143	771.7069	-3.9270	2.8327	740.5221	1,049.3735	756.8641
33	06	9	Hispanic*SAT-W	-3.5140	2.7057	776.6700	771.7069	906.4617	-3.2671	2.6541	765.1470	756.8641	894.1130

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
34	06	1	HSGPA	0.0000	0.2546	14.5050	17.2930	16.9075	-0.0094	0.0298	2.3577	2.4933	2.6233
34	06	2	SAT-CR	0.0000	14.5050	7,959.3236	4,747.8780	6,050.7588	-3.6247	2.3577	908.1924	692.3532	728.3610
34	06	3	SAT-M	0.0000	17.2930	4,747.8780	7,991.5508	4,704.8394	-4.0567	2.4933	692.3532	1,047.8156	652.6117
34	06	4	SAT-W	0.0000	16.9075	6,050.7588	4,704.8394	7,963.4449	-3.0907	2.6233	728.3610	652.6117	876.6355
34	06	5	Hispanic	0.0752	-0.0094	-3.6247	-4.0567	-3.0907	0.0696	-0.0087	-3.3521	-3.7516	-2.8582
34	06	6	Hispanic*HSGPA	-0.0094	0.0298	2.3577	2.4933	2.6233	-0.0087	0.0297	2.3236	2.4552	2.5943
34	06	7	Hispanic*SAT-CR	-3.6240	2.3577	908.1924	692.3532	728.3610	-3.3521	2.3236	895.0563	677.6515	717.1604
34	06	8	Hispanic*SAT-M	-4.0560	2.4933	692.3532	1,047.8156	652.6117	-3.7516	2.4552	677.6515	1,031.3618	640.0761
34	06	9	Hispanic*SAT-W	-3.0901	2.6233	728.3610	652.6117	876.6355	-2.8582	2.5943	717.1604	640.0761	867.0851
34	07	1	HSGPA	0.0000	0.2638	14.6264	16.7232	16.5080	-0.0126	0.0284	2.0186	2.4446	2.0248
34	07	2	SAT-CR	0.0000	14.6264	7,885.5795	4,711.1876	5,936.6453	-3.2829	2.0186	900.6600	674.0482	734.2460
34	07	3	SAT-M	0.0000	16.7232	4,711.1876	7,968.3894	4,683.6277	-4.0992	2.4446	674.0482	1,012.7196	684.7418
34	07	4	SAT-W	0.0000	16.5080	5,936.6453	4,683.6277	7,899.3526	-3.3182	2.0248	734.2460	684.7418	855.8793
34	07	5	Hispanic	0.0797	-0.0126	-3.2829	-4.0992	-3.3182	0.0733	-0.0116	-3.0213	-3.7726	-3.0538
34	07	6	Hispanic*HSGPA	-0.0126	0.0284	2.0186	2.4446	2.0248	-0.0116	0.0283	1.9771	2.3928	1.9828
34	07	7	Hispanic*SAT-CR	-3.2823	2.0186	900.6600	674.0482	734.2460	-3.0213	1.9771	889.8847	660.5935	723.3546
34	07	8	Hispanic*SAT-M	-4.0985	2.4446	674.0482	1,012.7196	684.7418	-3.7726	2.3928	660.5935	995.9192	671.1421
34	07	9	Hispanic*SAT-W	-3.3177	2.0248	734.2460	684.7418	855.8793	-3.0538	1.9828	723.3546	671.1421	844.8705
34	08	1	HSGPA	0.0000	0.2521	15.7134	17.5693	16.9510	-0.0157	0.0314	2.6050	2.9404	2.5496
34	08	2	SAT-CR	0.0000	15.7134	8,303.9078	5,072.4174	6,291.9959	-4.6940	2.6050	1,109.9872	868.0522	887.2201
34	08	3	SAT-M	0.0000	17.5693	5,072.4174	8,284.2700	4,915.1836	-5.2972	2.9404	868.0522	1,272.2929	817.6435
34	08	4	SAT-W	0.0000	16.9510	6,291.9959	4,915.1836	8,171.7019	-4.2206	2.5496	887.2201	817.6435	998.1992
34	08	5	Hispanic	0.0899	-0.0157	-4.6940	-5.2972	-4.2206	0.0818	-0.0143	-4.2721	-4.8211	-3.8412
34	08	6	Hispanic*HSGPA	-0.0157	0.0314	2.6050	2.9404	2.5496	-0.0143	0.0311	2.5311	2.8570	2.4832
34	08	7	Hispanic*SAT-CR	-4.6932	2.6050	1,109.9872	868.0522	887.2201	-4.2721	2.5311	1,087.9577	843.1916	867.4123
34	08	8	Hispanic*SAT-M	-5.2963	2.9404	868.0522	1,272.2929	817.6435	-4.8211	2.8570	843.1916	1,244.2374	795.2901
34	08	9	Hispanic*SAT-W	-4.2199	2.5496	887.2201	817.6435	998.1992	-3.8412	2.4832	867.4123	795.2901	980.3891
35	06	1	HSGPA	0.0000	0.1763	10.4421	11.0647	11.4309	-0.0058	0.0130	1.0141	1.0653	1.1411
35	06	2	SAT-CR	0.0000	10.4421	6,948.6743	4,109.2160	5,312.8488	-2.3347	1.0141	644.9364	516.8006	550.5023
35	06	3	SAT-M	0.0000	11.0647	4,109.2160	7,322.9739	4,247.3043	-2.8300	1.0653	516.8006	748.0525	503.6304
35	06	4	SAT-W	0.0000	11.4309	5,312.8488	4,247.3043	7,449.1511	-2.3021	1.1411	550.5023	503.6304	648.9926
35	06	5	Hispanic	0.0542	-0.0058	-2.3347	-2.8300	-2.3021	0.0513	-0.0054	-2.2082	-2.6767	-2.1774
35	06	6	Hispanic*HSGPA	-0.0058	0.0130	1.0141	1.0653	1.1411	-0.0054	0.0130	1.0007	1.0490	1.1278
35	06	7	Hispanic*SAT-CR	-2.3344	1.0141	644.9364	516.8006	550.5023	-2.2082	1.0007	639.4862	510.1941	545.1282
35	06	8	Hispanic*SAT-M	-2.8297	1.0653	516.8006	748.0525	503.6304	-2.6767	1.0490	510.1941	740.0443	497.1162
35	06	9	Hispanic*SAT-W	-2.3018	1.1411	550.5023	503.6304	648.9926	-2.1774	1.1278	545.1282	497.1162	643.6936
35	07	1	HSGPA	0.0000	0.1840	10.6402	11.7973	12.0814	-0.0081	0.0165	1.3742	1.5224	1.5077
35	07	2	SAT-CR	0.0000	10.6402	7,098.2658	4,141.3532	5,421.9689	-2.3137	1.3742	692.4247	517.0586	582.5496
35	07	3	SAT-M	0.0000	11.7973	4,141.3532	7,413.2214	4,314.3279	-3.1330	1.5224	517.0586	790.1015	541.2794
35	07	4	SAT-W	0.0000	12.0814	5,421.9689	4,314.3279	7,545.8880	-2.6496	1.5077	582.5496	541.2794	697.8271
35	07	5	Hispanic	0.0626	-0.0081	-2.3137	-3.1330	-2.6496	0.0586	-0.0076	-2.1689	-2.9371	-2.4838
35	07	6	Hispanic*HSGPA	-0.0081	0.0165	1.3742	1.5224	1.5077	-0.0076	0.0165	1.3555	1.4970	1.4862
35	07	7	Hispanic*SAT-CR	-2.3134	1.3742	692.4247	517.0586	582.5496	-2.1689	1.3555	687.0722	509.8105	576.4200
35	07	8	Hispanic*SAT-M	-3.1327	1.5224	517.0586	790.1015	541.2794	-2.9371	1.4970	509.8105	780.2864	532.9790
35	07	9	Hispanic*SAT-W	-2.6493	1.5077	582.5496	541.2794	697.8271	-2.4838	1.4862	576.4200	532.9790	690.8076

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
35	08	1	HSGPA	0.0000	0.1792	10.4294	11.1483	11.8580	-0.0107	0.0203	1.8989	2.1310	2.0089
35	08	2	SAT-CR	0.0000	10.4294	6,997.5703	3,932.6680	5,362.8167	-2.9275	1.8989	848.1805	658.8089	734.2241
35	08	3	SAT-M	0.0000	11.1483	3,932.6680	6,968.8385	4,092.7464	-4.0237	2.1310	658.8089	1,005.6613	686.5729
35	08	4	SAT-W	0.0000	11.8580	5,362.8167	4,092.7464	7,661.2306	-3.3128	2.0089	734.2241	686.5729	924.3264
35	08	5	Hispanic	0.0762	-0.0107	-2.9275	-4.0237	-3.3128	0.0704	-0.0099	-2.7045	-3.7171	-3.0604
35	08	6	Hispanic*HSGPA	-0.0107	0.0203	1.8989	2.1310	2.0089	-0.0099	0.0202	1.8676	2.0880	1.9736
35	08	7	Hispanic*SAT-CR	-2.9272	1.8989	848.1805	658.8089	734.2241	-2.7045	1.8676	839.6110	647.0307	724.5268
35	08	8	Hispanic*SAT-M	-4.0232	2.1310	658.8089	1,005.6613	686.5729	-3.7171	2.0880	647.0307	989.4730	673.2447
35	08	9	Hispanic*SAT-W	-3.3124	2.0089	734.2241	686.5729	924.3264	-3.0604	1.9736	724.5268	673.2447	913.3528
36	07	1	HSGPA	0.0000	0.2791	16.9638	16.2972	16.3132	-0.0080	0.0237	1.9598	2.2710	2.0544
36	07	2	SAT-CR	0.0000	16.9638	9,371.5610	5,309.2710	6,861.8182	-3.0959	1.9598	775.2437	566.5277	615.2452
36	07	3	SAT-M	0.0000	16.2972	5,309.2710	7,968.2380	4,732.7859	-3.0282	2.2710	566.5277	718.3679	508.3078
36	07	4	SAT-W	0.0000	16.3132	6,861.8182	4,732.7859	8,003.3377	-2.7147	2.0544	615.2452	508.3078	673.3204
36	07	5	Hispanic	0.0580	-0.0080	-3.0959	-3.0282	-2.7147	0.0547	-0.0076	-2.9164	-2.8527	-2.5573
36	07	6	Hispanic*HSGPA	-0.0080	0.0237	1.9598	2.2710	2.0544	-0.0076	0.0237	1.9349	2.2467	2.0326
36	07	7	Hispanic*SAT-CR	-3.0939	1.9598	775.2437	566.5277	615.2452	-2.9164	1.9349	765.6653	557.1586	606.8463
36	07	8	Hispanic*SAT-M	-3.0263	2.2710	566.5277	718.3679	508.3078	-2.8527	2.2467	557.1586	709.2034	500.0923
36	07	9	Hispanic*SAT-W	-2.7130	2.0544	615.2452	508.3078	673.3204	-2.5573	2.0326	606.8463	500.0923	665.9557
36	08	1	HSGPA	0.0000	0.2872	15.7754	16.1693	16.8590	-0.0146	0.0183	1.5822	1.7761	1.6206
36	08	2	SAT-CR	0.0000	15.7754	8,494.5233	4,688.0346	6,358.1023	-3.4003	1.5822	667.5361	467.3753	582.3884
36	08	3	SAT-M	0.0000	16.1693	4,688.0346	7,220.1407	4,553.2646	-3.8349	1.7761	467.3753	713.3284	482.7554
36	08	4	SAT-W	0.0000	16.8590	6,358.1023	4,553.2646	7,946.7598	-3.4396	1.6206	582.3884	482.7554	696.3747
36	08	5	Hispanic	0.0599	-0.0146	-3.4003	-3.8349	-3.4396	0.0563	-0.0137	-3.1967	-3.6054	-3.2337
36	08	6	Hispanic*HSGPA	-0.0146	0.0183	1.5822	1.7761	1.6206	-0.0137	0.0181	1.5326	1.7202	1.5705
36	08	7	Hispanic*SAT-CR	-3.3979	1.5822	667.5361	467.3753	582.3884	-3.1967	1.5326	655.9822	454.3444	570.7007
36	08	8	Hispanic*SAT-M	-3.8323	1.7761	467.3753	713.3284	482.7554	-3.6054	1.7202	454.3444	698.6317	469.5736
36	08	9	Hispanic*SAT-W	-3.4373	1.6206	582.3884	482.7554	696.3747	-3.2337	1.5705	570.7007	469.5736	684.5517
39	07	1	HSGPA	0.0000	0.2168	9.6136	9.4766	11.0310	-0.0039	0.0464	1.1472	1.6311	1.5494
39	07	2	SAT-CR	0.0000	9.6136	6,587.0184	3,503.4778	4,619.8521	-4.3203	1.1472	1,277.5222	838.1535	976.4378
39	07	3	SAT-M	0.0000	9.4766	3,503.4778	6,458.4803	3,514.3014	-5.7409	1.6311	838.1535	1,473.6841	879.6093
39	07	4	SAT-W	0.0000	11.0310	4,619.8521	3,514.3014	6,486.2615	-4.9871	1.5494	976.4378	879.6093	1,288.2785
39	07	5	Hispanic	0.1687	-0.0039	-4.3203	-5.7409	-4.9871	0.1403	-0.0032	-3.5915	-4.7725	-4.1459
39	07	6	Hispanic*HSGPA	-0.0039	0.0464	1.1472	1.6311	1.5494	-0.0032	0.0464	1.1304	1.6088	1.5301
39	07	7	Hispanic*SAT-CR	-4.3184	1.1472	1,277.5222	838.1535	976.4378	-3.5915	1.1304	1,258.8655	813.3621	954.9016
39	07	8	Hispanic*SAT-M	-5.7384	1.6311	838.1535	1,473.6841	879.6093	-4.7725	1.6088	813.3621	1,440.7408	850.9915
39	07	9	Hispanic*SAT-W	-4.9849	1.5494	976.4378	879.6093	1,288.2785	-4.1459	1.5301	954.9016	850.9915	1,263.4182
40	06	1	HSGPA	0.0000	0.2395	15.4511	16.4172	16.6529	-0.0216	0.0433	4.0146	4.4702	4.3915
40	06	2	SAT-CR	0.0000	15.4511	7,778.6529	4,901.2031	6,141.5714	-6.2403	4.0146	1,445.7060	1,212.4020	1,309.7562
40	06	3	SAT-M	0.0000	16.4172	4,901.2031	8,067.9188	5,044.3404	-7.6709	4.4702	1,212.4020	1,671.2541	1,274.5122
40	06	4	SAT-W	0.0000	16.6529	6,141.5714	5,044.3404	8,254.8002	-6.7114	4.3915	1,309.7562	1,274.5122	1,579.1131
40	06	5	Hispanic	0.1063	-0.0216	-6.2403	-7.6709	-6.7114	0.0950	-0.0193	-5.5772	-6.8558	-5.9982
40	06	6	Hispanic*HSGPA	-0.0216	0.0433	4.0146	4.4702	4.3915	-0.0193	0.0429	3.8798	4.3045	4.2465
40	06	7	Hispanic*SAT-CR	-6.2399	4.0146	1,445.7060	1,212.4020	1,309.7562	-5.5772	3.8798	1,406.7671	1,164.5366	1,267.8779
40	06	8	Hispanic*SAT-M	-7.6704	4.4702	1,212.4020	1,671.2541	1,274.5122	-6.8558	4.3045	1,164.5366	1,612.4157	1,223.0336
40	06	9	Hispanic*SAT-W	-6.7109	4.3915	1,309.7562	1,274.5122	1,579.1131	-5.9982	4.2465	1,267.8779	1,223.0336	1,534.0735

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
40	07	1	HSGPA	0.0000	0.2313	14.1635	15.0841	15.1194	-0.0219	0.0424	3.7274	4.1076	4.0669
40	07	2	SAT-CR	0.0000	14.1635	7,467.2774	4,370.2059	5,867.2611	-5.7567	3.7274	1,289.7823	993.6260	1,152.2744
40	07	3	SAT-M	0.0000	15.0841	4,370.2059	7,611.0546	4,561.6315	-6.8009	4.1076	993.6260	1,438.7820	1,067.1442
40	07	4	SAT-W	0.0000	15.1194	5,867.2611	4,561.6315	7,839.6748	-6.2854	4.0669	1,152.2744	1,067.1442	1,396.5794
40	07	5	Hispanic	0.1099	-0.0219	-5.7567	-6.8009	-6.2854	0.0978	-0.0195	-5.1241	-6.0535	-5.5947
40	07	6	Hispanic*HSGPA	-0.0219	0.0424	3.7274	4.1076	4.0669	-0.0195	0.0419	3.6011	3.9584	3.9290
40	07	7	Hispanic*SAT-CR	-5.7564	3.7274	1,289.7823	993.6260	1,152.2744	-5.1241	3.6011	1,256.6444	954.4776	1,116.0934
40	07	8	Hispanic*SAT-M	-6.8005	4.1076	993.6260	1,438.7820	1,067.1442	-6.0535	3.9584	954.4776	1,392.5330	1,024.4007
40	07	9	Hispanic*SAT-W	-6.2850	4.0669	1,152.2744	1,067.1442	1,396.5794	-5.5947	3.9290	1,116.0934	1,024.4007	1,357.0758
40	08	1	HSGPA	0.0000	0.2257	13.4661	14.5673	15.0456	-0.0246	0.0475	3.8935	4.4417	4.3378
40	08	2	SAT-CR	0.0000	13.4661	7,527.8223	4,449.2703	6,030.0038	-7.3471	3.8935	1,620.0373	1,295.2999	1,428.9871
40	08	3	SAT-M	0.0000	14.5673	4,449.2703	7,689.9443	4,740.7562	-8.4894	4.4417	1,295.2999	1,833.3363	1,355.0091
40	08	4	SAT-W	0.0000	15.0456	6,030.0038	4,740.7562	8,317.1118	-8.0507	4.3378	1,428.9871	1,355.0091	1,738.1086
40	08	5	Hispanic	0.1284	-0.0246	-7.3471	-8.4894	-8.0507	0.1119	-0.0214	-6.4039	-7.3996	-7.0172
40	08	6	Hispanic*HSGPA	-0.0246	0.0475	3.8935	4.4417	4.3378	-0.0214	0.0469	3.7130	4.2331	4.1400
40	08	7	Hispanic*SAT-CR	-7.3466	3.8935	1,620.0373	1,295.2999	1,428.9871	-6.4039	3.7130	1,566.0617	1,232.9321	1,369.8422
40	08	8	Hispanic*SAT-M	-8.4888	4.4417	1,295.2999	1,833.3363	1,355.0091	-7.3996	4.2331	1,232.9321	1,761.2714	1,286.6682
40	08	9	Hispanic*SAT-W	-8.0502	4.3378	1,428.9871	1,355.0091	1,738.1086	-7.0172	4.1400	1,369.8422	1,286.6682	1,673.2991
41	07	1	HSGPA	0.0000	0.2935	15.6276	17.2218	16.9714	-0.0193	0.0738	4.0993	4.4897	4.4443
41	07	2	SAT-CR	0.0000	15.6276	7,880.8229	4,900.2281	5,990.0272	-6.0896	4.0993	1,984.7281	1,369.4766	1,556.3976
41	07	3	SAT-M	0.0000	17.2218	4,900.2281	8,128.8965	4,728.8104	-7.2973	4.4897	1,369.4766	2,099.2387	1,303.7680
41	07	4	SAT-W	0.0000	16.9714	5,990.0272	4,728.8104	7,685.3130	-6.0605	4.4443	1,556.3976	1,303.7680	1,886.8735
41	07	5	Hispanic	0.2221	-0.0193	-6.0896	-7.2973	-6.0605	0.1728	-0.0150	-4.7369	-5.6763	-4.7143
41	07	6	Hispanic*HSGPA	-0.0193	0.0738	4.0993	4.4897	4.4443	-0.0150	0.0735	3.9820	4.3491	4.3276
41	07	7	Hispanic*SAT-CR	-6.0894	4.0993	1,984.7281	1,369.4766	1,556.3976	-4.7369	3.9820	1,947.6457	1,325.0404	1,519.4927
41	07	8	Hispanic*SAT-M	-7.2970	4.4897	1,369.4766	2,099.2387	1,303.7680	-5.6763	4.3491	1,325.0404	2,045.9902	1,259.5445
41	07	9	Hispanic*SAT-W	-6.0603	4.4443	1,556.3976	1,303.7680	1,886.8735	-4.7143	4.3276	1,519.4927	1,259.5445	1,850.1454
41	08	1	HSGPA	0.0000	0.2718	14.6813	16.4439	15.7727	-0.0169	0.0728	4.0565	4.7781	4.4444
41	08	2	SAT-CR	0.0000	14.6813	7,836.7851	4,930.4938	5,904.8385	-6.7707	4.0565	2,191.4059	1,543.9970	1,670.9661
41	08	3	SAT-M	0.0000	16.4439	4,930.4938	8,052.8809	4,758.4912	-8.3410	4.7781	1,543.9970	2,302.2820	1,456.1549
41	08	4	SAT-W	0.0000	15.7727	5,904.8385	4,758.4912	7,727.7941	-6.7601	4.4444	1,670.9661	1,456.1549	2,057.5572
41	08	5	Hispanic	0.2419	-0.0169	-6.7707	-8.3410	-6.7601	0.1834	-0.0128	-5.1331	-6.3236	-5.1251
41	08	6	Hispanic*HSGPA	-0.0169	0.0728	4.0565	4.7781	4.4444	-0.0128	0.0725	3.9420	4.6370	4.3301
41	08	7	Hispanic*SAT-CR	-6.7705	4.0565	2,191.4059	1,543.9970	1,670.9661	-5.1331	3.9420	2,145.5647	1,487.5247	1,625.1967
41	08	8	Hispanic*SAT-M	-8.3406	4.7781	1,543.9970	2,302.2820	1,456.1549	-6.3236	4.6370	1,487.5247	2,232.7131	1,399.7709
41	08	9	Hispanic*SAT-W	-6.7599	4.4444	1,670.9661	1,456.1549	2,057.5572	-5.1251	4.3301	1,625.1967	1,399.7709	2,011.8593
42	07	1	HSGPA	0.0000	0.1638	10.4366	10.3675	10.8728	-0.0098	0.0231	2.1203	1.9095	2.2228
42	07	2	SAT-CR	0.0000	10.4366	7,680.7107	4,557.8244	5,733.0487	-4.2211	2.1203	1,063.9797	718.4059	898.9132
42	07	3	SAT-M	0.0000	10.3675	4,557.8244	7,600.0382	4,812.1024	-4.6603	1.9095	718.4059	1,055.7678	774.6846
42	07	4	SAT-W	0.0000	10.8728	5,733.0487	4,812.1024	7,804.2147	-4.6309	2.2228	898.9132	774.6846	1,119.1589
42	07	5	Hispanic	0.0955	-0.0098	-4.2211	-4.6603	-4.6309	0.0864	-0.0088	-3.8180	-4.2153	-4.1887
42	07	6	Hispanic*HSGPA	-0.0098	0.0231	2.1203	1.9095	2.2228	-0.0088	0.0230	2.0791	1.8640	2.1776
42	07	7	Hispanic*SAT-CR	-4.2206	2.1203	1,063.9797	718.4059	898.9132	-3.8180	2.0791	1,046.1644	698.7366	879.3682
42	07	8	Hispanic*SAT-M	-4.6598	1.9095	718.4059	1,055.7678	774.6846	-4.2153	1.8640	698.7366	1,034.0514	753.1055
42	07	9	Hispanic*SAT-W	-4.6304	2.2228	898.9132	774.6846	1,119.1589	-4.1887	2.1776	879.3682	753.1055	1,097.7162

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
42	08	1	HSGPA	0.0000	0.1528	9.4839	9.3863	9.9823	-0.0127	0.0284	2.7716	2.7491	2.7933
42	08	2	SAT-CR	0.0000	9.4839	7,293.8464	4,331.3910	5,654.3449	-6.1946	2.7716	1,493.4121	1,121.5170	1,321.9947
42	08	3	SAT-M	0.0000	9.3863	4,331.3910	7,347.2798	4,782.3760	-6.6302	2.7491	1,121.5170	1,546.9093	1,217.6276
42	08	4	SAT-W	0.0000	9.9823	5,654.3449	4,782.3760	7,995.3972	-7.1905	2.7933	1,321.9947	1,217.6276	1,619.8516
42	08	5	Hispanic	0.1305	-0.0127	-6.1946	-6.6302	-7.1905	0.1135	-0.0111	-5.3861	-5.7649	-6.2521
42	08	6	Hispanic*HSGPA	-0.0127	0.0284	2.7716	2.7491	2.7933	-0.0111	0.0282	2.6927	2.6647	2.7018
42	08	7	Hispanic*SAT-CR	-6.1937	2.7716	1,493.4121	1,121.5170	1,321.9947	-5.3861	2.6927	1,455.0446	1,080.4512	1,277.4583
42	08	8	Hispanic*SAT-M	-6.6293	2.7491	1,121.5170	1,546.9093	1,217.6276	-5.7649	2.6647	1,080.4512	1,502.9554	1,169.9591
42	08	9	Hispanic*SAT-W	-7.1896	2.7933	1,321.9947	1,217.6276	1,619.8516	-6.2521	2.7018	1,277.4583	1,169.9591	1,568.1544
43	06	1	HSGPA	0.0000	0.1227	7.1421	7.0194	7.6025	-0.0022	0.0107	0.7310	0.6786	0.8166
43	06	2	SAT-CR	0.0000	7.1421	6,302.4701	2,945.9342	4,267.9477	-2.9310	0.7310	672.5551	491.1461	591.6605
43	06	3	SAT-M	0.0000	7.0194	2,945.9342	5,798.9403	2,959.6904	-3.6602	0.6786	491.1461	769.3136	513.7627
43	06	4	SAT-W	0.0000	7.6025	4,267.9477	2,959.6904	5,812.2356	-3.1612	0.8166	591.6605	513.7627	713.5489
43	06	5	Hispanic	0.0666	-0.0022	-2.9310	-3.6602	-3.1612	0.0622	-0.0020	-2.7358	-3.4165	-2.9507
43	06	6	Hispanic*HSGPA	-0.0022	0.0107	0.7310	0.6786	0.8166	-0.0020	0.0107	0.7246	0.6706	0.8097
43	06	7	Hispanic*SAT-CR	-2.9303	0.7310	672.5551	491.1461	591.6605	-2.7358	0.7246	663.9665	480.4206	582.3974
43	06	8	Hispanic*SAT-M	-3.6593	0.6786	491.1461	769.3136	513.7627	-3.4165	0.6706	480.4206	755.9195	502.1949
43	06	9	Hispanic*SAT-W	-3.1604	0.8166	591.6605	513.7627	713.5489	-2.9507	0.8097	582.3974	502.1949	703.5585
43	07	1	HSGPA	0.0000	0.1204	7.2425	7.1602	6.9509	-0.0068	0.0140	1.4286	1.3668	1.4917
43	07	2	SAT-CR	0.0000	7.2425	6,355.0627	3,181.3578	4,304.5299	-3.9955	1.4286	929.0374	626.1332	739.6129
43	07	3	SAT-M	0.0000	7.1602	3,181.3578	6,008.3233	3,272.5778	-3.9859	1.3668	626.1332	863.5945	631.8192
43	07	4	SAT-W	0.0000	6.9509	4,304.5299	3,272.5778	5,977.6154	-3.9227	1.4917	739.6129	631.8192	860.3473
43	07	5	Hispanic	0.0750	-0.0068	-3.9955	-3.9859	-3.9227	0.0694	-0.0063	-3.6958	-3.6869	-3.6284
43	07	6	Hispanic*HSGPA	-0.0068	0.0140	1.4286	1.3668	1.4917	-0.0063	0.0140	1.4013	1.3396	1.4650
43	07	7	Hispanic*SAT-CR	-3.9946	1.4286	929.0374	626.1332	739.6129	-3.6958	1.4013	913.0772	610.2112	723.9435
43	07	8	Hispanic*SAT-M	-3.9850	1.3668	626.1332	863.5945	631.8192	-3.6869	1.3396	610.2112	847.7105	616.1873
43	07	9	Hispanic*SAT-W	-3.9218	1.4917	739.6129	631.8192	860.3473	-3.6284	1.4650	723.9435	616.1873	844.9634
43	08	1	HSGPA	0.0000	0.1270	8.2245	8.2497	8.9727	-0.0121	0.0212	1.6660	1.9939	1.9303
43	08	2	SAT-CR	0.0000	8.2245	6,604.4616	3,330.2109	4,677.8480	-5.2742	1.6660	1,102.0543	805.0444	964.8946
43	08	3	SAT-M	0.0000	8.2497	3,330.2109	6,093.8976	3,487.1382	-5.7497	1.9939	805.0444	1,146.4121	874.1287
43	08	4	SAT-W	0.0000	8.9727	4,677.8480	3,487.1382	6,580.5464	-5.9584	1.9303	964.8946	874.1287	1,201.0597
43	08	5	Hispanic	0.0948	-0.0121	-5.2742	-5.7497	-5.9584	0.0859	-0.0109	-4.7741	-5.2045	-5.3934
43	08	6	Hispanic*HSGPA	-0.0121	0.0212	1.6660	1.9939	1.9303	-0.0109	0.0211	1.6023	1.9245	1.8583
43	08	7	Hispanic*SAT-CR	-5.2728	1.6660	1,102.0543	805.0444	964.8946	-4.7741	1.6023	1,074.2447	774.7275	933.4775
43	08	8	Hispanic*SAT-M	-5.7482	1.9939	805.0444	1,146.4121	874.1287	-5.2045	1.9245	774.7275	1,113.3618	839.8790
43	08	9	Hispanic*SAT-W	-5.9567	1.9303	964.8946	874.1287	1,201.0597	-5.3934	1.8583	933.4775	839.8790	1,165.5673
45	06	1	HSGPA	0.0000	0.3295	13.5041	17.6089	14.8112	-0.0035	0.0107	0.5406	0.6821	0.5655
45	06	2	SAT-CR	0.0000	13.5041	6,105.1535	3,463.6107	4,260.9075	-0.3561	0.5406	208.3972	137.1142	156.4882
45	06	3	SAT-M	0.0000	17.6089	3,463.6107	6,749.7653	3,344.7101	-0.8679	0.6821	137.1142	223.1431	119.1346
45	06	4	SAT-W	0.0000	14.8112	4,260.9075	3,344.7101	5,952.5652	-0.5088	0.5655	156.4882	119.1346	197.9483
45	06	5	Hispanic	0.0269	-0.0035	-0.3561	-0.8679	-0.5088	0.0262	-0.0034	-0.3465	-0.8445	-0.4951
45	06	6	Hispanic*HSGPA	-0.0035	0.0107	0.5406	0.6821	0.5655	-0.0034	0.0106	0.5394	0.6791	0.5637
45	06	7	Hispanic*SAT-CR	-0.3560	0.5406	208.3972	137.1142	156.4882	-0.3465	0.5394	208.2704	136.8052	156.3071
45	06	8	Hispanic*SAT-M	-0.8677	0.6821	137.1142	223.1431	119.1346	-0.8445	0.6791	136.8052	222.3900	118.6931
45	06	9	Hispanic*SAT-W	-0.5087	0.5655	156.4882	119.1346	197.9483	-0.4951	0.5637	156.3071	118.6931	197.6895



## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
45	07	1	HSGPA	0.0000	0.3103	13.0219	15.7631	13.8763	-0.0009	0.0068	0.2277	0.3221	0.3056
45	07	2	SAT-CR	0.0000	13.0219	6,257.3152	3,380.7988	4,413.9684	-0.2406	0.2277	144.9118	88.7954	103.2500
45	07	3	SAT-M	0.0000	15.7631	3,380.7988	6,416.9979	3,287.1512	-0.4139	0.3221	88.7954	138.3885	74.9037
45	07	4	SAT-W	0.0000	13.8763	4,413.9684	3,287.1512	5,987.2983	-0.4088	0.3056	103.2500	74.9037	153.3774
45	07	5	Hispanic	0.0248	-0.0009	-0.2406	-0.4139	-0.4088	0.0242	-0.0008	-0.2346	-0.4036	-0.3986
45	07	6	Hispanic*HSGPA	-0.0008	0.0068	0.2277	0.3221	0.3056	-0.0008	0.0068	0.2275	0.3217	0.3053
45	07	7	Hispanic*SAT-CR	-0.2406	0.2277	144.9118	88.7954	103.2500	-0.2346	0.2275	144.8539	88.6959	103.1517
45	07	8	Hispanic*SAT-M	-0.4138	0.3221	88.7954	138.3885	74.9037	-0.4036	0.3217	88.6959	138.2172	74.7345
45	07	9	Hispanic*SAT-W	-0.4087	0.3056	103.2500	74.9037	153.3774	-0.3986	0.3053	103.1517	74.7345	153.2103
45	08	1	HSGPA	0.0000	0.3122	12.6238	14.6520	13.7289	-0.0052	0.0132	0.3652	0.6184	0.3966
45	08	2	SAT-CR	0.0000	12.6238	6,177.9031	3,408.8157	4,454.6249	-0.5267	0.3652	200.1935	109.1155	154.0449
45	08	3	SAT-M	0.0000	14.6520	3,408.8157	6,344.5313	3,341.2540	-0.9107	0.6184	109.1155	195.6722	130.2601
45	08	4	SAT-W	0.0000	13.7289	4,454.6249	3,341.2540	6,197.1545	-0.7005	0.3966	154.0449	130.2601	222.1194
45	08	5	Hispanic	0.0323	-0.0052	-0.5267	-0.9107	-0.7005	0.0313	-0.0051	-0.5097	-0.8812	-0.6779
45	08	6	Hispanic*HSGPA	-0.0052	0.0132	0.3652	0.6184	0.3966	-0.0051	0.0132	0.3624	0.6136	0.3929
45	08	7	Hispanic*SAT-CR	-0.5267	0.3652	200.1935	109.1155	154.0449	-0.5097	0.3624	199.9161	108.6359	153.6760
45	08	8	Hispanic*SAT-M	-0.9105	0.6184	109.1155	195.6722	130.2601	-0.8812	0.6136	108.6359	194.8430	129.6223
45	08	9	Hispanic*SAT-W	-0.7004	0.3966	154.0449	130.2601	222.1194	-0.6779	0.3929	153.6760	129.6223	221.6287
46	08	1	HSGPA	0.0000	0.2659	19.2181	19.8961	20.0253	-0.0345	0.0670	5.3900	5.2904	5.4035
46	08	2	SAT-CR	0.0000	19.2181	7,953.3762	5,181.2771	6,008.4408	-10.8700	5.3900	2,202.4383	1,645.5934	1,733.2083
46	08	3	SAT-M	0.0000	19.8961	5,181.2771	8,242.5275	5,032.7767	-10.9499	5.2904	1,645.5934	2,119.6230	1,513.1614
46	08	4	SAT-W	0.0000	20.0253	6,008.4408	5,032.7767	7,577.8385	-10.3811	5.4035	1,733.2083	1,513.1614	1,997.3501
46	08	5	Hispanic	0.2053	-0.0345	-10.8700	-10.9499	-10.3811	0.1633	-0.0274	-8.6378	-8.7013	-8.2494
46	08	6	Hispanic*HSGPA	-0.0345	0.0670	5.3900	5.2904	5.4035	-0.0274	0.0658	5.0150	4.9126	5.0454
46	08	7	Hispanic*SAT-CR	-10.8653	5.3900	2,202.4383	1,645.5934	1,733.2083	-8.6378	5.0150	2,084.3333	1,526.6201	1,620.4144
46	08	8	Hispanic*SAT-M	-10.9451	5.2904	1,645.5934	2,119.6230	1,513.1614	-8.7013	4.9126	1,526.6201	1,999.7752	1,399.5384
46	08	9	Hispanic*SAT-W	-10.3767	5.4035	1,733.2083	1,513.1614	1,997.3501	-8.2494	5.0454	1,620.4144	1,399.5384	1,889.6286
47	08	1	HSGPA	0.0000	0.3440	15.4635	17.5622	17.8591	-0.0117	0.0201	0.7874	1.1217	0.8547
47	08	2	SAT-CR	0.0000	15.4635	6,298.3830	3,679.9879	4,505.4804	-1.6070	0.7874	311.5874	211.5104	257.2945
47	08	3	SAT-M	0.0000	17.5622	3,679.9879	6,770.0511	3,597.4584	-2.0315	1.1217	211.5104	324.0615	217.2183
47	08	4	SAT-W	0.0000	17.8591	4,505.4804	3,597.4584	6,130.5531	-1.5975	0.8547	257.2945	217.2183	334.1501
47	08	5	Hispanic	0.0412	-0.0117	-1.6070	-2.0315	-1.5975	0.0395	-0.0112	-1.5407	-1.9478	-1.5317
47	08	6	Hispanic*HSGPA	-0.0117	0.0201	0.7874	1.1217	0.8547	-0.0112	0.0200	0.7686	1.0979	0.8361
47	08	7	Hispanic*SAT-CR	-1.6065	0.7874	311.5874	211.5104	257.2945	-1.5407	0.7686	309.0058	208.2467	254.7281
47	08	8	Hispanic*SAT-M	-2.0309	1.1217	211.5104	324.0615	217.2183	-1.9478	1.0979	208.2467	319.9356	213.9739
47	08	9	Hispanic*SAT-W	-1.5970	0.8547	257.2945	217.2183	334.1501	-1.5317	0.8361	254.7281	213.9739	331.5989
48	06	1	HSGPA	0.0000	0.2767	16.5991	17.4104	17.3989	-0.0217	0.0632	5.0106	5.3008	5.0320
48	06	2	SAT-CR	0.0000	16.5991	8,640.7879	5,425.6039	6,505.0742	-11.4813	5.0106	2,462.9171	1,838.7710	2,037.4130
48	06	3	SAT-M	0.0000	17.4104	5,425.6039	8,631.3283	5,193.0520	-11.6783	5.3008	1,838.7710	2,452.1701	1,779.7061
48	06	4	SAT-W	0.0000	17.3989	6,505.0742	5,193.0520	7,957.2597	-11.1276	5.0320	2,037.4130	1,779.7061	2,301.6133
48	06	5	Hispanic	0.2021	-0.0217	-11.4813	-11.6783	-11.1276	0.1613	-0.0174	-9.1610	-9.3182	-8.8788
48	06	6	Hispanic*HSGPA	-0.0217	0.0632	5.0106	5.3008	5.0320	-0.0174	0.0627	4.7610	5.0469	4.7901
48	06	7	Hispanic*SAT-CR	-11.4784	5.0106	2,462.9171	1,838.7710	2,037.4130	-9.1610	4.7610	2,331.1297	1,704.7220	1,909.6855
48	06	8	Hispanic*SAT-M	-11.6754	5.3008	1,838.7710	2,452.1701	1,779.7061	-9.3182	5.0469	1,704.7220	2,315.8206	1,649.7866
48	06	9	Hispanic*SAT-W	-11.1248	5.0320	2,037.4130	1,779.7061	2,301.6133	-8.8788	4.7901	1,909.6855	1,649.7866	2,177.8207

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
48	07	1	HSGPA	0.0000	0.2741	15.8420	17.2745	17.5397	-0.0251	0.0695	5.4326	5.2600	5.8586
48	07	2	SAT-CR	0.0000	15.8420	8,390.5629	5,346.3695	6,407.4959	-10.2667	5.4326	2,475.1076	1,816.4135	2,086.4096
48	07	3	SAT-M	0.0000	17.2745	5,346.3695	8,544.5326	5,257.5930	-10.7936	5.2600	1,816.4135	2,488.7269	1,796.3493
48	07	4	SAT-W	0.0000	17.5397	6,407.4959	5,257.5930	7,988.8083	-10.3641	5.8586	2,086.4096	1,796.3493	2,416.0679
48	07	5	Hispanic	0.2202	-0.0251	-10.2667	-10.7936	-10.3641	0.1718	-0.0196	-8.0059	-8.4168	-8.0819
48	07	6	Hispanic*HSGPA	-0.0251	0.0695	5.4326	5.2600	5.8586	-0.0196	0.0688	5.1752	4.9894	5.5988
48	07	7	Hispanic*SAT-CR	-10.2644	5.4326	2,475.1076	1,816.4135	2,086.4096	-8.0059	5.1752	2,369.7268	1,705.6237	1,980.0287
48	07	8	Hispanic*SAT-M	-10.7912	5.2600	1,816.4135	2,488.7269	1,796.3493	-8.4168	4.9894	1,705.6237	2,372.2506	1,684.5081
48	07	9	Hispanic*SAT-W	-10.3618	5.8586	2,086.4096	1,796.3493	2,416.0679	-8.0819	5.5988	1,980.0287	1,684.5081	2,308.6774
48	08	1	HSGPA	0.0000	0.2629	15.3113	15.9692	16.4955	-0.0286	0.0734	5.5398	5.7828	5.6524
48	08	2	SAT-CR	0.0000	15.3113	8,250.0511	5,139.5531	6,388.2936	-11.4928	5.5398	2,801.5489	1,996.4009	2,372.3025
48	08	3	SAT-M	0.0000	15.9692	5,139.5531	8,219.0996	5,218.3016	-11.4781	5.7828	1,996.4009	2,581.3816	2,021.6598
48	08	4	SAT-W	0.0000	16.4955	6,388.2936	5,218.3016	8,160.4355	-11.9832	5.6524	2,372.3025	2,021.6598	2,767.5293
48	08	5	Hispanic	0.2314	-0.0286	-11.4928	-11.4781	-11.9832	0.1779	-0.0220	-8.8328	-8.8215	-9.2097
48	08	6	Hispanic*HSGPA	-0.0286	0.0734	5.5398	5.7828	5.6524	-0.0220	0.0726	5.2110	5.4544	5.3096
48	08	7	Hispanic*SAT-CR	-11.4900	5.5398	2,801.5489	1,996.4009	2,372.3025	-8.8328	5.2110	2,669.4975	1,864.5180	2,234.6165
48	08	8	Hispanic*SAT-M	-11.4753	5.7828	1,996.4009	2,581.3816	2,021.6598	-8.8215	5.4544	1,864.5180	2,449.6669	1,884.1494
48	08	9	Hispanic*SAT-W	-11.9802	5.6524	2,372.3025	2,021.6598	2,767.5293	-9.2097	5.3096	2,234.6165	1,884.1494	2,623.9682
49	06	1	HSGPA	0.0000	0.2600	14.0870	15.9010	15.6422	-0.0072	0.0173	1.2259	1.5797	1.4463
49	06	2	SAT-CR	0.0000	14.0870	6,860.1207	4,289.1762	4,979.5713	-2.8617	1.2259	695.4021	600.4043	607.2833
49	06	3	SAT-M	0.0000	15.9010	4,289.1762	7,528.2508	4,182.4275	-3.5750	1.5797	600.4043	808.6049	631.7865
49	06	4	SAT-W	0.0000	15.6422	4,979.5713	4,182.4275	6,694.6715	-3.1769	1.4463	607.2833	631.7865	714.9638
49	06	5	Hispanic	0.0499	-0.0072	-2.8617	-3.5750	-3.1769	0.0475	-0.0069	-2.7188	-3.3965	-3.0182
49	06	6	Hispanic*HSGPA	-0.0072	0.0173	1.2259	1.5797	1.4463	-0.0069	0.0172	1.2052	1.5539	1.4234
49	06	7	Hispanic*SAT-CR	-2.8615	1.2259	695.4021	600.4043	607.2833	-2.7188	1.2052	687.2133	590.1744	598.1927
49	06	8	Hispanic*SAT-M	-3.5747	1.5797	600.4043	808.6049	631.7865	-3.3965	1.5539	590.1744	795.8252	620.4301
49	06	9	Hispanic*SAT-W	-3.1766	1.4463	607.2833	631.7865	714.9638	-3.0182	1.4234	598.1927	620.4301	704.8723
49	07	1	HSGPA	0.0000	0.2590	14.5735	16.7612	16.2184	-0.0112	0.0252	1.5954	2.0326	1.9524
49	07	2	SAT-CR	0.0000	14.5735	6,677.9898	4,203.5589	5,083.9334	-3.1883	1.5954	684.0327	580.1703	626.1464
49	07	3	SAT-M	0.0000	16.7612	4,203.5589	7,584.3451	4,265.9378	-3.9357	2.0326	580.1703	808.1172	626.1846
49	07	4	SAT-W	0.0000	16.2184	5,083.9334	4,265.9378	6,775.3175	-3.6499	1.9524	626.1464	626.1846	748.8395
49	07	5	Hispanic	0.0549	-0.0112	-3.1883	-3.9357	-3.6499	0.0519	-0.0106	-3.0131	-3.7194	-3.4493
49	07	6	Hispanic*HSGPA	-0.0112	0.0252	1.5954	2.0326	1.9524	-0.0106	0.0251	1.5598	1.9886	1.9116
49	07	7	Hispanic*SAT-CR	-3.1880	1.5954	684.0327	580.1703	626.1464	-3.0131	1.5598	673.8684	567.6234	614.5106
49	07	8	Hispanic*SAT-M	-3.9354	2.0326	580.1703	808.1172	626.1846	-3.7194	1.9886	567.6234	792.6289	611.8212
49	07	9	Hispanic*SAT-W	-3.6496	1.9524	626.1464	626.1846	748.8395	-3.4493	1.9116	614.5106	611.8212	735.5191
49	08	1	HSGPA	0.0000	0.2502	14.3360	15.9698	16.2890	-0.0122	0.0253	2.0089	2.4384	2.2997
49	08	2	SAT-CR	0.0000	14.3360	6,797.9314	4,325.0249	5,167.3903	-3.7605	2.0089	901.7471	803.4533	800.5970
49	08	3	SAT-M	0.0000	15.9698	4,325.0249	7,648.2184	4,365.2933	-5.0231	2.4384	803.4533	1,142.9307	844.2347
49	08	4	SAT-W	0.0000	16.2890	5,167.3903	4,365.2933	6,976.7602	-4.3916	2.2997	800.5970	844.2347	966.1622
49	08	5	Hispanic	0.0636	-0.0122	-3.7605	-5.0231	-4.3916	0.0595	-0.0114	-3.5215	-4.7039	-4.1125
49	08	6	Hispanic*HSGPA	-0.0121	0.0253	2.0089	2.4384	2.2997	-0.0114	0.0251	1.9632	2.3773	2.2464
49	08	7	Hispanic*SAT-CR	-3.7602	2.0089	901.7471	803.4533	800.5970	-3.5215	1.9632	887.6068	784.5652	784.0836
49	08	8	Hispanic*SAT-M	-5.0228	2.4384	803.4533	1,142.9307	844.2347	-4.7039	2.3773	784.5652	1,117.7006	822.1767
49	08	9	Hispanic*SAT-W	-4.3913	2.2997	800.5970	844.2347	966.1622	-4.1125	2.2464	784.0836	822.1767	946.8774

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
51	08	1	HSGPA	0.0000	0.2016	16.3722	18.7044	16.9155	-0.0279	0.0814	7.0923	8.6564	7.5161
51	08	2	SAT-CR	0.0000	16.3722	10,815.8987	7,464.3003	8,742.4185	-24.1732	7.0923	4,978.0174	3,791.9221	4,527.7008
51	08	3	SAT-M	0.0000	18.7044	7,464.3003	9,627.5564	7,321.6962	-21.1930	8.6564	3,791.9221	4,212.8344	3,868.7207
51	08	4	SAT-W	0.0000	16.9155	8,742.4185	7,321.6962	10,433.8033	-24.0967	7.5161	4,527.7008	3,868.7207	4,937.3088
51	08	5	Hispanic	0.2561	-0.0279	-24.1732	-21.1930	-24.0967	0.1907	-0.0208	-17.9817	-15.7648	-17.9247
51	08	6	Hispanic*HSGPA	-0.0279	0.0814	7.0923	8.6564	7.5161	-0.0208	0.0806	6.4173	8.0646	6.8432
51	08	7	Hispanic*SAT-CR	-24.1495	7.0923	4,978.0174	3,791.9221	4,527.7008	-17.9817	6.4173	4,394.2461	3,280.1208	3,945.7777
51	08	8	Hispanic*SAT-M	-21.1722	8.6564	3,791.9221	4,212.8344	3,868.7207	-15.7648	8.0646	3,280.1208	3,764.1302	3,358.5397
51	08	9	Hispanic*SAT-W	-24.0730	7.5161	4,527.7008	3,868.7207	4,937.3088	-17.9247	6.8432	3,945.7777	3,358.5397	4,357.2281
52	08	1	HSGPA	0.0000	0.2829	14.7154	17.5017	15.4145	0.0005	0.0157	0.6646	1.0477	0.6713
52	08	2	SAT-CR	0.0000	14.7154	7,195.8883	4,095.8214	5,448.0757	-2.1750	0.6646	501.6837	356.9172	469.3774
52	08	3	SAT-M	0.0000	17.5017	4,095.8214	6,585.5072	4,076.8725	-2.3049	1.0477	356.9172	504.3240	384.6101
52	08	4	SAT-W	0.0000	15.4145	5,448.0757	4,076.8725	6,852.1645	-2.2889	0.6713	469.3774	384.6101	562.7044
52	08	5	Hispanic	0.0553	0.0005	-2.1750	-2.3049	-2.2889	0.0523	0.0005	-2.0546	-2.1774	-2.1623
52	08	6	Hispanic*HSGPA	0.0005	0.0157	0.6646	1.0477	0.6713	0.0005	0.0157	0.6658	1.0489	0.6725
52	08	7	Hispanic*SAT-CR	-2.1731	0.6646	501.6837	356.9172	469.3774	-2.0546	0.6658	496.9573	351.9085	464.4035
52	08	8	Hispanic*SAT-M	-2.3029	1.0477	356.9172	504.3240	384.6101	-2.1774	1.0489	351.9085	499.0162	379.3391
52	08	9	Hispanic*SAT-W	-2.2869	0.6713	469.3774	384.6101	562.7044	-2.1623	0.6725	464.4035	379.3391	557.4699
53	06	1	HSGPA	0.0000	0.2350	14.1995	15.6045	15.4618	-0.0030	0.0073	0.4967	0.5315	0.5405
53	06	2	SAT-CR	0.0000	14.1995	8,127.8680	5,132.0662	6,360.6460	-0.3889	0.4967	234.1694	166.1316	209.1717
53	06	3	SAT-M	0.0000	15.6045	5,132.0662	8,362.7460	5,113.2849	-0.6137	0.5315	166.1316	254.7938	195.6044
53	06	4	SAT-W	0.0000	15.4618	6,360.6460	5,113.2849	8,191.1728	-0.5428	0.5405	209.1717	195.6044	265.3704
53	06	5	Hispanic	0.0228	-0.0030	-0.3889	-0.6137	-0.5428	0.0222	-0.0029	-0.3800	-0.5998	-0.5304
53	06	6	Hispanic*HSGPA	-0.0030	0.0073	0.4967	0.5315	0.5405	-0.0029	0.0073	0.4955	0.5297	0.5388
53	06	7	Hispanic*SAT-CR	-0.3888	0.4967	234.1694	166.1316	209.1717	-0.3800	0.4955	234.0182	165.8929	208.9607
53	06	8	Hispanic*SAT-M	-0.6137	0.5315	166.1316	254.7938	195.6044	-0.5998	0.5297	165.8929	254.4171	195.2713
53	06	9	Hispanic*SAT-W	-0.5427	0.5405	209.1717	195.6044	265.3704	-0.5304	0.5388	208.9607	195.2713	265.0758
53	07	1	HSGPA	0.0000	0.2321	14.0699	15.6316	15.5493	-0.0051	0.0087	0.6562	0.8235	0.7065
53	07	2	SAT-CR	0.0000	14.0699	8,156.6228	5,014.6987	6,436.4801	-0.5608	0.6562	267.3225	194.2037	233.6166
53	07	3	SAT-M	0.0000	15.6316	5,014.6987	8,229.6944	5,043.1188	-0.8936	0.8235	194.2037	287.3657	207.2176
53	07	4	SAT-W	0.0000	15.5493	6,436.4801	5,043.1188	8,286.1360	-0.6688	0.7065	233.6166	207.2176	294.3675
53	07	5	Hispanic	0.0265	-0.0051	-0.5608	-0.8936	-0.6688	0.0258	-0.0050	-0.5460	-0.8699	-0.6510
53	07	6	Hispanic*HSGPA	-0.0051	0.0087	0.6562	0.8235	0.7065	-0.0050	0.0087	0.6533	0.8189	0.7031
53	07	7	Hispanic*SAT-CR	-0.5608	0.6562	267.3225	194.2037	233.6166	-0.5460	0.6533	267.0080	193.7026	233.2415
53	07	8	Hispanic*SAT-M	-0.8935	0.8235	194.2037	287.3657	207.2176	-0.8699	0.8189	193.7026	286.5673	206.6200
53	07	9	Hispanic*SAT-W	-0.6687	0.7065	233.6166	207.2176	294.3675	-0.6510	0.7031	233.2415	206.6200	293.9203
53	08	1	HSGPA	0.0000	0.2193	12.6835	14.4100	14.2898	-0.0056	0.0104	0.6544	0.7075	0.7120
53	08	2	SAT-CR	0.0000	12.6835	7,930.2158	4,855.5595	6,237.3290	-0.5583	0.6544	318.4538	230.7473	269.7754
53	08	3	SAT-M	0.0000	14.4100	4,855.5595	7,949.8432	4,962.0159	-1.0618	0.7075	230.7473	348.6177	239.1244
53	08	4	SAT-W	0.0000	14.2898	6,237.3290	4,962.0159	8,209.8323	-0.7079	0.7120	269.7754	239.1244	333.5513
53	08	5	Hispanic	0.0319	-0.0056	-0.5583	-1.0618	-0.7079	0.0309	-0.0054	-0.5404	-1.0279	-0.6853
53	08	6	Hispanic*HSGPA	-0.0056	0.0104	0.6544	0.7075	0.7120	-0.0054	0.0104	0.6513	0.7016	0.7080
53	08	7	Hispanic*SAT-CR	-0.5582	0.6544	318.4538	230.7473	269.7754	-0.5404	0.6513	318.1422	230.1546	269.3803
53	08	8	Hispanic*SAT-M	-1.0617	0.7075	230.7473	348.6177	239.1244	-1.0279	0.7016	230.1546	347.4904	238.3728
53	08	9	Hispanic*SAT-W	-0.7078	0.7120	269.7754	239.1244	333.5513	-0.6853	0.7080	269.3803	238.3728	333.0502

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
54	06	1	HSGPA	0.0000	0.2934	18.9144	21.3085	22.2987	-0.0409	0.0599	3.5880	3.3303	4.3616
54	06	2	SAT-CR	0.0000	18.9144	8,962.8990	5,316.8930	6,522.9416	-9.0644	3.5880	1,693.2430	1,056.3340	1,288.0410
54	06	3	SAT-M	0.0000	21.3085	5,316.8930	8,764.8698	5,071.4546	-8.3856	3.3303	1,056.3340	1,667.0604	914.4965
54	06	4	SAT-W	0.0000	22.2987	6,522.9416	5,071.4546	7,699.3485	-9.5404	4.3616	1,288.0410	914.4965	1,470.6576
54	06	5	Hispanic	0.1798	-0.0409	-9.0644	-8.3856	-9.5404	0.1477	-0.0336	-7.4342	-6.8775	-7.8246
54	06	6	Hispanic*HSGPA	-0.0409	0.0599	3.5880	3.3303	4.3616	-0.0336	0.0582	3.2174	2.9874	3.9715
54	06	7	Hispanic*SAT-CR	-9.0503	3.5880	1,693.2430	1,056.3340	1,288.0410	-7.4342	3.2174	1,611.2080	980.4416	1,201.6971
54	06	8	Hispanic*SAT-M	-8.3726	3.3303	1,056.3340	1,667.0604	914.4965	-6.8775	2.9874	980.4416	1,596.8508	834.6180
54	06	9	Hispanic*SAT-W	-9.5257	4.3616	1,288.0410	914.4965	1,470.6576	-7.8246	3.9715	1,201.6971	834.6180	1,379.7787
58	06	1	HSGPA	0.0000	0.2642	14.1212	16.9748	15.0774	-0.0200	0.0577	3.9260	4.5439	3.9379
58	06	2	SAT-CR	0.0000	14.1212	8,727.4206	5,598.7149	6,388.5304	-10.4098	3.9260	2,382.8467	1,702.4467	1,789.8636
58	06	3	SAT-M	0.0000	16.9748	5,598.7149	8,511.3255	5,108.1767	-9.8747	4.5439	1,702.4467	2,279.8021	1,518.1932
58	06	4	SAT-W	0.0000	15.0774	6,388.5304	5,108.1767	7,619.1761	-9.2225	3.9379	1,789.8636	1,518.1932	1,981.5089
58	06	5	Hispanic	0.2137	-0.0200	-10.4098	-9.8747	-9.2225	0.1681	-0.0158	-8.1852	-7.7644	-7.2516
58	06	6	Hispanic*HSGPA	-0.0200	0.0577	3.9260	4.5439	3.9379	-0.0158	0.0573	3.7173	4.3459	3.7530
58	06	7	Hispanic*SAT-CR	-10.4088	3.9260	2,382.8467	1,702.4467	1,789.8636	-8.1852	3.7173	2,274.4924	1,599.6628	1,693.8683
58	06	8	Hispanic*SAT-M	-9.8737	4.5439	1,702.4467	2,279.8021	1,518.1932	-7.7644	4.3459	1,599.6628	2,182.3021	1,427.1330
58	06	9	Hispanic*SAT-W	-9.2216	3.9379	1,789.8636	1,518.1932	1,981.5089	-7.2516	3.7530	1,693.8683	1,427.1330	1,896.4630
58	07	1	HSGPA	0.0000	0.2716	14.8381	16.9426	15.9700	-0.0221	0.0631	3.8424	4.3012	3.9791
58	07	2	SAT-CR	0.0000	14.8381	8,620.7272	5,192.9982	6,457.1994	-9.6872	3.8424	2,304.9887	1,562.0114	1,807.4284
58	07	3	SAT-M	0.0000	16.9426	5,192.9982	7,822.5684	4,886.8122	-8.4207	4.3012	1,562.0114	2,105.5153	1,461.0303
58	07	4	SAT-W	0.0000	15.9700	6,457.1994	4,886.8122	7,751.3815	-8.9598	3.9791	1,807.4284	1,461.0303	2,026.3240
58	07	5	Hispanic	0.2254	-0.0221	-9.6872	-8.4207	-8.9598	0.1746	-0.0171	-7.5040	-6.5230	-6.9405
58	07	6	Hispanic*HSGPA	-0.0221	0.0631	3.8424	4.3012	3.9791	-0.0171	0.0626	3.6285	4.1153	3.7812
58	07	7	Hispanic*SAT-CR	-9.6864	3.8424	2,304.9887	1,562.0114	1,807.4284	-7.5040	3.6285	2,211.1548	1,480.4454	1,720.6409
58	07	8	Hispanic*SAT-M	-8.4200	4.3012	1,562.0114	2,105.5153	1,461.0303	-6.5230	4.1153	1,480.4454	2,034.6134	1,385.5895
58	07	9	Hispanic*SAT-W	-8.9590	3.9791	1,807.4284	1,461.0303	2,026.3240	-6.9405	3.7812	1,720.6409	1,385.5895	1,946.0536
58	08	1	HSGPA	0.0000	0.2653	15.2234	17.0879	15.7272	-0.0223	0.0691	4.5758	5.0165	4.5295
58	08	2	SAT-CR	0.0000	15.2234	8,803.0553	5,409.0045	6,411.7517	-11.6001	4.5758	2,684.8149	1,825.7758	1,988.2352
58	08	3	SAT-M	0.0000	17.0879	5,409.0045	8,186.7272	4,955.0106	-11.0292	5.0165	1,825.7758	2,494.3106	1,610.0426
58	08	4	SAT-W	0.0000	15.7272	6,411.7517	4,955.0106	7,696.7478	-10.5292	4.5295	1,988.2352	1,610.0426	2,208.1525
58	08	5	Hispanic	0.2554	-0.0223	-11.6001	-11.0292	-10.5292	0.1902	-0.0166	-8.6379	-8.2127	-7.8404
58	08	6	Hispanic*HSGPA	-0.0223	0.0691	4.5758	5.0165	4.5295	-0.0166	0.0686	4.3177	4.7711	4.2952
58	08	7	Hispanic*SAT-CR	-11.5992	4.5758	2,684.8149	1,825.7758	1,988.2352	-8.6379	4.3177	2,550.2632	1,697.8466	1,866.1058
58	08	8	Hispanic*SAT-M	-11.0283	5.0165	1,825.7758	2,494.3106	1,610.0426	-8.2127	4.7711	1,697.8466	2,372.6780	1,493.9243
58	08	9	Hispanic*SAT-W	-10.5283	4.5295	1,988.2352	1,610.0426	2,208.1525	-7.8404	4.2952	1,866.1058	1,493.9243	2,097.2986
59	06	1	HSGPA	0.0000	0.3072	19.2274	21.1728	21.1332	-0.0025	0.0182	1.0482	1.0975	1.1160
59	06	2	SAT-CR	0.0000	19.2274	8,121.6436	5,279.9461	6,244.4131	-1.1928	1.0482	505.0067	362.0649	391.4896
59	06	3	SAT-M	0.0000	21.1728	5,279.9461	8,589.9419	5,207.9840	-1.8297	1.0975	362.0649	566.2297	345.2929
59	06	4	SAT-W	0.0000	21.1332	6,244.4131	5,207.9840	7,990.6558	-1.2048	1.1160	391.4896	345.2929	466.3715
59	06	5	Hispanic	0.0514	-0.0025	-1.1928	-1.8297	-1.2048	0.0488	-0.0024	-1.1315	-1.7357	-1.1428
59	06	6	Hispanic*HSGPA	-0.0025	0.0182	1.0482	1.0975	1.1160	-0.0024	0.0182	1.0452	1.0929	1.1130
59	06	7	Hispanic*SAT-CR	-1.1927	1.0482	505.0067	362.0649	391.4896	-1.1315	1.0452	503.5840	359.8825	390.0526
59	06	8	Hispanic*SAT-M	-1.8296	1.0975	362.0649	566.2297	345.2929	-1.7357	1.0929	359.8825	562.8820	343.0887
59	06	9	Hispanic*SAT-W	-1.2047	1.1160	391.4896	345.2929	466.3715	-1.1428	1.1130	390.0526	343.0887	464.9202

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
59	07	1	HSGPA	0.0000	0.2972	19.1284	20.9916	21.0843	-0.0052	0.0219	1.4218	1.5688	1.5236
59	07	2	SAT-CR	0.0000	19.1284	8,189.5555	5,194.1167	6,317.7812	-1.2719	1.4218	635.4775	478.7490	513.7168
59	07	3	SAT-M	0.0000	20.9916	5,194.1167	8,625.3617	5,134.2188	-2.0202	1.5688	478.7490	699.2314	463.9485
59	07	4	SAT-W	0.0000	21.0843	6,317.7812	5,134.2188	8,050.5579	-1.3336	1.5236	513.7168	463.9485	605.0042
59	07	5	Hispanic	0.0604	-0.0052	-1.2719	-2.0202	-1.3336	0.0568	-0.0048	-1.1951	-1.8981	-1.2531
59	07	6	Hispanic*HSGPA	-0.0052	0.0219	1.4218	1.5688	1.5236	-0.0048	0.0218	1.4153	1.5584	1.5167
59	07	7	Hispanic*SAT-CR	-1.2718	1.4218	635.4775	478.7490	513.7168	-1.1951	1.4153	633.8598	476.1797	512.0206
59	07	8	Hispanic*SAT-M	-2.0200	1.5688	478.7490	699.2314	463.9485	-1.8981	1.5584	476.1797	695.1506	461.2545
59	07	9	Hispanic*SAT-W	-1.3336	1.5236	513.7168	463.9485	605.0042	-1.2531	1.5167	512.0206	461.2545	603.2257
59	08	1	HSGPA	0.0000	0.2728	17.7450	19.9623	19.5568	-0.0058	0.0247	1.5861	1.8810	1.7415
59	08	2	SAT-CR	0.0000	17.7450	8,128.4906	5,155.8971	6,211.5318	-1.6543	1.5861	683.0241	509.5012	564.3316
59	08	3	SAT-M	0.0000	19.9623	5,155.8971	8,549.4782	5,083.4003	-2.2436	1.8810	509.5012	788.8406	517.3857
59	08	4	SAT-W	0.0000	19.5568	6,211.5318	5,083.4003	7,993.2005	-1.7584	1.7415	564.3316	517.3857	691.5161
59	08	5	Hispanic	0.0675	-0.0058	-1.6543	-2.2436	-1.7584	0.0630	-0.0054	-1.5426	-2.0921	-1.6397
59	08	6	Hispanic*HSGPA	-0.0058	0.0247	1.5861	1.8810	1.7415	-0.0054	0.0247	1.5765	1.8679	1.7313
59	08	7	Hispanic*SAT-CR	-1.6542	1.5861	683.0241	509.5012	564.3316	-1.5426	1.5765	680.2875	505.7899	561.4228
59	08	8	Hispanic*SAT-M	-2.2434	1.8810	509.5012	788.8406	517.3857	-2.0921	1.8679	505.7899	783.8074	513.4409
59	08	9	Hispanic*SAT-W	-1.7583	1.7415	564.3316	517.3857	691.5161	-1.6397	1.7313	561.4228	513.4409	688.4243
60	06	1	HSGPA	0.0000	0.3054	13.7011	15.8161	15.4184	-0.0018	0.0187	0.8931	1.1900	0.9366
60	06	2	SAT-CR	0.0000	13.7011	7,228.2453	4,433.1395	5,183.6227	-1.9690	0.8931	538.8601	424.9555	473.0947
60	06	3	SAT-M	0.0000	15.8161	4,433.1395	7,900.5475	4,173.9043	-2.3254	1.1900	424.9555	602.5350	424.9365
60	06	4	SAT-W	0.0000	15.4184	5,183.6227	4,173.9043	6,836.2113	-2.2642	0.9366	473.0947	424.9365	542.0600
60	06	5	Hispanic	0.0459	-0.0018	-1.9690	-2.3254	-2.2642	0.0438	-0.0017	-1.8787	-2.2187	-2.1603
60	06	6	Hispanic*HSGPA	-0.0018	0.0187	0.8931	1.1900	0.9366	-0.0017	0.0187	0.8895	1.1857	0.9325
60	06	7	Hispanic*SAT-CR	-1.9686	0.8931	538.8601	424.9555	473.0947	-1.8787	0.8895	534.9838	420.3775	468.6373
60	06	8	Hispanic*SAT-M	-2.3250	1.1900	424.9555	602.5350	424.9365	-2.2187	1.1857	420.3775	597.1284	419.6723
60	06	9	Hispanic*SAT-W	-2.2637	0.9366	473.0947	424.9365	542.0600	-2.1603	0.9325	468.6373	419.6723	536.9345
60	07	1	HSGPA	0.0000	0.2980	13.8428	14.8451	15.2431	-0.0004	0.0178	0.6296	0.4953	0.7114
60	07	2	SAT-CR	0.0000	13.8428	7,199.4454	4,259.0713	5,305.0152	-1.9540	0.6296	606.0517	437.4244	529.6046
60	07	3	SAT-M	0.0000	14.8451	4,259.0713	7,621.1036	4,154.9450	-2.2087	0.4953	437.4244	626.8346	464.7044
60	07	4	SAT-W	0.0000	15.2431	5,305.0152	4,154.9450	6,880.6626	-2.1972	0.7114	529.6046	464.7044	614.4742
60	07	5	Hispanic	0.0522	-0.0004	-1.9540	-2.2087	-2.1972	0.0495	-0.0003	-1.8519	-2.0933	-2.0825
60	07	6	Hispanic*HSGPA	-0.0004	0.0178	0.6296	0.4953	0.7114	-0.0003	0.0178	0.6289	0.4945	0.7106
60	07	7	Hispanic*SAT-CR	-1.9536	0.6296	606.0517	437.4244	529.6046	-1.8519	0.6289	602.2345	433.1095	525.3121
60	07	8	Hispanic*SAT-M	-2.2083	0.4953	437.4244	626.8346	464.7044	-2.0933	0.4945	433.1095	621.9573	459.8523
60	07	9	Hispanic*SAT-W	-2.1968	0.7114	529.6046	464.7044	614.4742	-2.0825	0.7106	525.3121	459.8523	609.6473
60	08	1	HSGPA	0.0000	0.2922	12.3979	14.2171	14.3387	-0.0027	0.0238	1.0376	1.1936	1.1263
60	08	2	SAT-CR	0.0000	12.3979	7,075.0569	4,270.5138	5,150.1476	-2.7276	1.0376	700.7400	488.2119	571.5312
60	08	3	SAT-M	0.0000	14.2171	4,270.5138	7,737.7167	4,191.2728	-2.9858	1.1936	488.2119	680.0381	491.5048
60	08	4	SAT-W	0.0000	14.3387	5,150.1476	4,191.2728	6,746.9768	-2.9919	1.1263	571.5312	491.5048	665.5318
60	08	5	Hispanic	0.0601	-0.0027	-2.7276	-2.9858	-2.9919	0.0565	-0.0025	-2.5637	-2.8063	-2.8121
60	08	6	Hispanic*HSGPA	-0.0027	0.0238	1.0376	1.1936	1.1263	-0.0025	0.0238	1.0302	1.1855	1.1182
60	08	7	Hispanic*SAT-CR	-2.7271	1.0376	700.7400	488.2119	571.5312	-2.5637	1.0302	693.3015	480.0693	563.3718
60	08	8	Hispanic*SAT-M	-2.9853	1.1936	488.2119	680.0381	491.5048	-2.8063	1.1855	480.0693	671.1248	482.5730
60	08	9	Hispanic*SAT-W	-2.9914	1.1263	571.5312	491.5048	665.5318	-2.8121	1.1182	563.3718	482.5730	656.5816

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
61	06	1	HSGPA	0.0000	0.2676	10.0924	12.8096	11.2288	-0.0063	0.0183	0.9522	1.2318	1.0444
61	06	2	SAT-CR	0.0000	10.0924	6,592.2779	3,822.8503	4,427.1634	-3.3792	0.9522	663.0418	514.0067	539.6869
61	06	3	SAT-M	0.0000	12.8096	3,822.8503	7,528.5973	3,479.1196	-4.4459	1.2318	514.0067	886.7009	564.0558
61	06	4	SAT-W	0.0000	11.2288	4,427.1634	3,479.1196	5,961.8069	-3.6367	1.0444	539.6869	564.0558	679.4906
61	06	5	Hispanic	0.0661	-0.0063	-3.3792	-4.4459	-3.6367	0.0618	-0.0058	-3.1558	-4.1519	-3.3962
61	06	6	Hispanic*HSGPA	-0.0063	0.0183	0.9522	1.2318	1.0444	-0.0058	0.0183	0.9311	1.2040	1.0216
61	06	7	Hispanic*SAT-CR	-3.3779	0.9522	663.0418	514.0067	539.6869	-3.1558	0.9311	651.6272	498.9890	527.4024
61	06	8	Hispanic*SAT-M	-4.4441	1.2318	514.0067	886.7009	564.0558	-4.1519	1.2040	498.9890	866.9429	547.8937
61	06	9	Hispanic*SAT-W	-3.6353	1.0444	539.6869	564.0558	679.4906	-3.3962	1.0216	527.4024	547.8937	666.2700
61	07	1	HSGPA	0.0000	0.2838	11.5720	13.9345	14.0951	-0.0092	0.0274	1.3654	1.5160	1.4917
61	07	2	SAT-CR	0.0000	11.5720	6,659.9297	3,936.8953	4,709.9641	-3.5935	1.3654	805.9744	653.6809	648.0639
61	07	3	SAT-M	0.0000	13.9345	3,936.8953	7,338.4160	3,677.3345	-4.6098	1.5160	653.6809	1,026.2143	664.0829
61	07	4	SAT-W	0.0000	14.0951	4,709.9641	3,677.3345	6,217.8730	-3.8507	1.4917	648.0639	664.0829	813.3734
61	07	5	Hispanic	0.0790	-0.0092	-3.5935	-4.6098	-3.8507	0.0728	-0.0085	-3.3097	-4.2458	-3.5466
61	07	6	Hispanic*HSGPA	-0.0092	0.0274	1.3654	1.5160	1.4917	-0.0085	0.0273	1.3322	1.4734	1.4562
61	07	7	Hispanic*SAT-CR	-3.5922	1.3654	805.9744	653.6809	648.0639	-3.3097	1.3322	793.0658	637.1214	634.2314
61	07	8	Hispanic*SAT-M	-4.6082	1.5160	653.6809	1,026.2143	664.0829	-4.2458	1.4734	637.1214	1,004.9716	646.3383
61	07	9	Hispanic*SAT-W	-3.8493	1.4917	648.0639	664.0829	813.3734	-3.5466	1.4562	634.2314	646.3383	798.5509
61	08	1	HSGPA	0.0000	0.2667	12.6047	14.9906	14.3708	-0.0077	0.0293	1.3074	1.8544	1.3568
61	08	2	SAT-CR	0.0000	12.6047	6,550.8169	4,070.4565	4,852.4808	-4.5256	1.3074	960.0699	684.7559	754.2495
61	08	3	SAT-M	0.0000	14.9906	4,070.4565	7,383.3233	3,979.5633	-5.4801	1.8544	684.7559	1,027.1531	653.5638
61	08	4	SAT-W	0.0000	14.3708	4,852.4808	3,979.5633	6,497.8870	-4.3518	1.3568	754.2495	653.5638	873.7506
61	08	5	Hispanic	0.0878	-0.0077	-4.5256	-5.4801	-4.3518	0.0801	-0.0070	-4.1282	-4.9989	-3.9697
61	08	6	Hispanic*HSGPA	-0.0077	0.0293	1.3074	1.8544	1.3568	-0.0070	0.0292	1.2725	1.8121	1.3232
61	08	7	Hispanic*SAT-CR	-4.5241	1.3074	960.0699	684.7559	754.2495	-4.1282	1.2725	939.5960	659.9637	734.5617
61	08	8	Hispanic*SAT-M	-5.4782	1.8544	684.7559	1,027.1531	653.5638	-4.9989	1.8121	659.9637	997.1318	629.7236
61	08	9	Hispanic*SAT-W	-4.3503	1.3568	754.2495	653.5638	873.7506	-3.9697	1.3232	734.5617	629.7236	854.8188
62	06	1	HSGPA	0.0000	0.2659	17.0087	18.0850	18.7582	-0.0053	0.0193	1.1583	1.4114	1.3716
62	06	2	SAT-CR	0.0000	17.0087	8,240.2951	4,948.9219	6,262.8315	-2.4015	1.1583	626.1105	466.1489	554.2156
62	06	3	SAT-M	0.0000	18.0850	4,948.9219	8,146.5361	4,889.7426	-2.8636	1.4114	466.1489	666.1701	496.9326
62	06	4	SAT-W	0.0000	18.7582	6,262.8315	4,889.7426	7,987.1775	-2.6739	1.3716	554.2156	496.9326	667.9416
62	06	5	Hispanic	0.0532	-0.0053	-2.4015	-2.8636	-2.6739	0.0503	-0.0050	-2.2738	-2.7113	-2.5317
62	06	6	Hispanic*HSGPA	-0.0053	0.0193	1.1583	1.4114	1.3716	-0.0050	0.0193	1.1457	1.3963	1.3575
62	06	7	Hispanic*SAT-CR	-2.4013	1.1583	626.1105	466.1489	554.2156	-2.2738	1.1457	620.3438	459.2725	547.7948
62	06	8	Hispanic*SAT-M	-2.8634	1.4114	466.1489	666.1701	496.9326	-2.7113	1.3963	459.2725	657.9707	489.2763
62	06	9	Hispanic*SAT-W	-2.6737	1.3716	554.2156	496.9326	667.9416	-2.5317	1.3575	547.7948	489.2763	660.7924
63	06	1	HSGPA	0.0000	0.1796	11.8399	12.4328	12.4856	-0.0193	0.0359	3.4228	3.4964	3.3147
63	06	2	SAT-CR	0.0000	11.8399	9,171.0625	4,757.3171	6,482.2317	-9.8492	3.4228	2,151.2016	1,655.3320	1,811.5588
63	06	3	SAT-M	0.0000	12.4328	4,757.3171	7,621.2690	4,877.1880	-9.5722	3.4964	1,655.3320	1,990.0319	1,603.6087
63	06	4	SAT-W	0.0000	12.4856	6,482.2317	4,877.1880	8,118.4388	-9.6691	3.3147	1,811.5588	1,603.6087	2,001.0478
63	06	5	Hispanic	0.1280	-0.0193	-9.8492	-9.5722	-9.6691	0.1117	-0.0168	-8.5882	-8.3467	-8.4312
63	06	6	Hispanic*HSGPA	-0.0192	0.0359	3.4228	3.4964	3.3147	-0.0168	0.0355	3.2332	3.3122	3.1286
63	06	7	Hispanic*SAT-CR	-9.8424	3.4228	2,151.2016	1,655.3320	1,811.5588	-8.5882	3.2332	2,054.2624	1,561.1187	1,716.3923
63	06	8	Hispanic*SAT-M	-9.5656	3.4964	1,655.3320	1,990.0319	1,603.6087	-8.3467	3.3122	1,561.1187	1,898.4680	1,511.1183
63	06	9	Hispanic*SAT-W	-9.6624	3.3147	1,811.5588	1,603.6087	2,001.0478	-8.4312	3.1286	1,716.3923	1,511.1183	1,907.6214

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
63	07	1	HSGPA	0.0000	0.2019	14.5082	14.8270	14.5136	-0.0265	0.0619	5.7797	5.4496	5.8783
63	07	2	SAT-CR	0.0000	14.5082	9,815.8394	5,360.4623	7,436.7598	-13.7178	5.7797	3,471.0944	2,339.6349	2,867.5257
63	07	3	SAT-M	0.0000	14.8270	5,360.4623	8,796.2075	5,268.6809	-10.8946	5.4496	2,339.6349	2,578.5671	2,128.9587
63	07	4	SAT-W	0.0000	14.5136	7,436.7598	5,268.6809	8,747.3629	-12.9316	5.8783	2,867.5257	2,128.9587	2,862.8021
63	07	5	Hispanic	0.1677	-0.0265	-13.7178	-10.8946	-12.9316	0.1397	-0.0221	-11.4175	-9.0677	-10.7631
63	07	6	Hispanic*HSGPA	-0.0265	0.0619	5.7797	5.4496	5.8783	-0.0221	0.0612	5.4158	5.1606	5.5353
63	07	7	Hispanic*SAT-CR	-13.7084	5.7797	3,471.0944	2,339.6349	2,867.5257	-11.4175	5.4158	3,283.0452	2,190.2868	2,690.2536
63	07	8	Hispanic*SAT-M	-10.8872	5.4496	2,339.6349	2,578.5671	2,128.9587	-9.0677	5.1606	2,190.2868	2,459.9553	1,988.1697
63	07	9	Hispanic*SAT-W	-12.9228	5.8783	2,867.5257	2,128.9587	2,862.8021	-10.7631	5.5353	2,690.2536	1,988.1697	2,695.6894
63	08	1	HSGPA	0.0000	0.1835	11.9136	14.0727	12.9861	-0.0151	0.0426	2.6425	3.1669	3.0820
63	08	2	SAT-CR	0.0000	11.9136	9,489.7189	5,410.1608	7,193.2557	-11.4043	2.6425	2,592.6359	1,858.5725	2,257.3451
63	08	3	SAT-M	0.0000	14.0727	5,410.1608	8,656.8155	5,490.9080	-9.8976	3.1669	1,858.5725	2,334.8041	1,888.1199
63	08	4	SAT-W	0.0000	12.9861	7,193.2557	5,490.9080	8,634.4990	-11.5934	3.0820	2,257.3451	1,888.1199	2,441.1033
63	08	5	Hispanic	0.1445	-0.0151	-11.4043	-9.8976	-11.5934	0.1237	-0.0129	-9.7563	-8.4674	-9.9181
63	08	6	Hispanic*HSGPA	-0.0151	0.0426	2.6425	3.1669	3.0820	-0.0129	0.0424	2.4702	3.0174	2.9068
63	08	7	Hispanic*SAT-CR	-11.3961	2.6425	2,592.6359	1,858.5725	2,257.3451	-9.7563	2.4702	2,462.6723	1,745.7789	2,125.2262
63	08	8	Hispanic*SAT-M	-9.8905	3.1669	1,858.5725	2,334.8041	1,888.1199	-8.4674	3.0174	1,745.7789	2,236.9121	1,773.4558
63	08	9	Hispanic*SAT-W	-11.5850	3.0820	2,257.3451	1,888.1199	2,441.1033	-9.9181	2.9068	2,125.2262	1,773.4558	2,306.7934
64	06	1	HSGPA	0.0000	0.2959	14.5291	17.5693	15.5951	-0.0139	0.1754	8.5406	10.4179	9.0167
64	06	2	SAT-CR	0.0000	14.5291	8,671.0343	5,764.5418	6,239.2333	-16.5455	8.5406	5,044.6853	3,306.3528	3,610.1666
64	06	3	SAT-M	0.0000	17.5693	5,764.5418	8,763.6200	5,154.7002	-16.3215	10.4179	3,306.3528	4,950.4593	2,932.6234
64	06	4	SAT-W	0.0000	15.5951	6,239.2333	5,154.7002	7,348.5796	-14.1636	9.0167	3,610.1666	2,932.6234	4,226.3209
64	06	5	Hispanic	0.5846	-0.0139	-16.5455	-16.3215	-14.1636	0.2429	-0.0058	-6.8722	-6.7792	-5.8829
64	06	6	Hispanic*HSGPA	-0.0139	0.1754	8.5406	10.4179	9.0167	-0.0058	0.1752	8.3108	10.1912	8.8199
64	06	7	Hispanic*SAT-CR	-16.5440	8.5406	5,044.6853	3,306.3528	3,610.1666	-6.8722	8.3108	4,770.9560	3,036.3294	3,375.8433
64	06	8	Hispanic*SAT-M	-16.3200	10.4179	3,306.3528	4,950.4593	2,932.6234	-6.7792	10.1912	3,036.3294	4,684.0917	2,701.4726
64	06	9	Hispanic*SAT-W	-14.1623	9.0167	3,610.1666	2,932.6234	4,226.3209	-5.8829	8.8199	3,375.8433	2,701.4726	4,025.7309
66	06	1	HSGPA	0.0000	0.2681	15.6357	18.7630	16.0914	-0.0177	0.0632	4.2193	4.8689	4.4150
66	06	2	SAT-CR	0.0000	15.6357	8,099.7019	5,439.5624	5,886.4268	-9.0290	4.2193	2,157.1237	1,619.4898	1,660.5986
66	06	3	SAT-M	0.0000	18.7630	5,439.5624	8,697.8121	4,945.7065	-9.4902	4.8689	1,619.4898	2,292.2656	1,492.2802
66	06	4	SAT-W	0.0000	16.0914	5,886.4268	4,945.7065	7,236.1384	-8.4533	4.4150	1,660.5986	1,492.2802	1,914.0805
66	06	5	Hispanic	0.2154	-0.0177	-9.0290	-9.4902	-8.4533	0.1690	-0.0139	-7.0838	-7.4456	-6.6322
66	06	6	Hispanic*HSGPA	-0.0177	0.0632	4.2193	4.8689	4.4150	-0.0139	0.0629	4.0594	4.7008	4.2653
66	06	7	Hispanic*SAT-CR	-9.0284	4.2193	2,157.1237	1,619.4898	1,660.5986	-7.0838	4.0594	2,075.6060	1,533.8085	1,584.2784
66	06	8	Hispanic*SAT-M	-9.4896	4.8689	1,619.4898	2,292.2656	1,492.2802	-7.4456	4.7008	1,533.8085	2,202.2079	1,412.0618
66	06	9	Hispanic*SAT-W	-8.4528	4.4150	1,660.5986	1,492.2802	1,914.0805	-6.6322	4.2653	1,584.2784	1,412.0618	1,842.6264
66	07	1	HSGPA	0.0000	0.2667	15.3866	18.2203	16.5525	-0.0171	0.0629	3.8335	4.6575	4.2755
66	07	2	SAT-CR	0.0000	15.3866	8,090.0180	5,221.1559	6,078.0692	-8.8275	3.8335	2,120.2961	1,520.0088	1,675.3820
66	07	3	SAT-M	0.0000	18.2203	5,221.1559	8,336.0820	5,002.2741	-8.8744	4.6575	1,520.0088	2,236.9578	1,468.5730
66	07	4	SAT-W	0.0000	16.5525	6,078.0692	5,002.2741	7,455.6037	-8.3325	4.2755	1,675.3820	1,468.5730	1,948.1902
66	07	5	Hispanic	0.2197	-0.0171	-8.8275	-8.8744	-8.3325	0.1715	-0.0133	-6.8879	-6.9245	-6.5017
66	07	6	Hispanic*HSGPA	-0.0171	0.0629	3.8335	4.6575	4.2755	-0.0133	0.0626	3.6829	4.5062	4.1334
66	07	7	Hispanic*SAT-CR	-8.8270	3.8335	2,120.2961	1,520.0088	1,675.3820	-6.8879	3.6829	2,042.3760	1,441.6751	1,601.8316
66	07	8	Hispanic*SAT-M	-8.8738	4.6575	1,520.0088	2,236.9578	1,468.5730	-6.9245	4.5062	1,441.6751	2,158.2081	1,394.6321
66	07	9	Hispanic*SAT-W	-8.3320	4.2755	1,675.3820	1,468.5730	1,948.1902	-6.5017	4.1334	1,601.8316	1,394.6321	1,878.7644

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
67	08	1	HSGPA	0.0000	0.2716	20.4282	21.2396	22.8903	-0.0514	0.0737	5.9667	6.8005	6.0275
67	08	2	SAT-CR	0.0000	20.4282	8,584.3512	5,733.9927	6,785.4618	-11.1669	5.9667	1,928.9091	1,522.2320	1,521.4114
67	08	3	SAT-M	0.0000	21.2396	5,733.9927	9,041.2202	5,550.5334	-13.0423	6.8005	1,522.2320	2,237.8792	1,341.1780
67	08	4	SAT-W	0.0000	22.8903	6,785.4618	5,550.5334	8,595.4388	-10.3333	6.0275	1,521.4114	1,341.1780	1,715.0517
67	08	5	Hispanic	0.1981	-0.0514	-11.1669	-13.0423	-10.3333	0.1591	-0.0412	-8.9552	-10.4592	-8.2867
67	08	6	Hispanic*HSGPA	-0.0513	0.0737	5.9667	6.8005	6.0275	-0.0412	0.0711	5.3938	6.1313	5.4973
67	08	7	Hispanic*SAT-CR	-11.1452	5.9667	1,928.9091	1,522.2320	1,521.4114	-8.9552	5.3938	1,804.4516	1,376.8726	1,406.2440
67	08	8	Hispanic*SAT-M	-13.0170	6.8005	1,522.2320	2,237.8792	1,341.1780	-10.4592	6.1313	1,376.8726	2,068.1076	1,206.6690
67	08	9	Hispanic*SAT-W	-10.3133	6.0275	1,521.4114	1,341.1780	1,715.0517	-8.2867	5.4973	1,406.2440	1,206.6690	1,608.4810
69	07	1	HSGPA	0.0000	0.3894	22.1308	26.2676	24.8111	-0.0030	0.0219	1.0414	1.2970	1.1648
69	07	2	SAT-CR	0.0000	22.1308	7,492.9926	4,576.5954	5,537.6744	-1.1299	1.0414	332.3107	229.0212	266.3363
69	07	3	SAT-M	0.0000	26.2676	4,576.5954	7,891.0010	4,404.8006	-1.3002	1.2970	229.0212	383.7472	224.6199
69	07	4	SAT-W	0.0000	24.8111	5,537.6744	4,404.8006	7,010.7695	-0.9399	1.1648	266.3363	224.6199	322.8132
69	07	5	Hispanic	0.0449	-0.0030	-1.1299	-1.3002	-0.9399	0.0429	-0.0029	-1.0792	-1.2418	-0.8978
69	07	6	Hispanic*HSGPA	-0.0030	0.0219	1.0414	1.2970	1.1648	-0.0029	0.0219	1.0380	1.2931	1.1620
69	07	7	Hispanic*SAT-CR	-1.1296	1.0414	332.3107	229.0212	266.3363	-1.0792	1.0380	331.0344	227.5525	265.2745
69	07	8	Hispanic*SAT-M	-1.2999	1.2970	229.0212	383.7472	224.6199	-1.2418	1.2931	227.5525	382.0571	223.3980
69	07	9	Hispanic*SAT-W	-0.9398	1.1648	266.3363	224.6199	322.8132	-0.8978	1.1620	265.2745	223.3980	321.9299
69	08	1	HSGPA	0.0000	0.3935	20.5724	24.1992	24.0022	-0.0006	0.0200	0.8890	1.0901	0.9216
69	08	2	SAT-CR	0.0000	20.5724	7,429.4116	4,332.4201	5,422.0031	-1.4672	0.8890	432.0025	277.1373	333.6767
69	08	3	SAT-M	0.0000	24.1992	4,332.4201	7,430.3767	4,260.2301	-1.6205	1.0901	277.1373	422.5738	258.2509
69	08	4	SAT-W	0.0000	24.0022	5,422.0031	4,260.2301	6,983.8265	-1.2752	0.9216	333.6767	258.2509	408.8734
69	08	5	Hispanic	0.0532	-0.0006	-1.4672	-1.6205	-1.2752	0.0504	-0.0006	-1.3891	-1.5342	-1.2073
69	08	6	Hispanic*HSGPA	-0.0006	0.0200	0.8890	1.0901	0.9216	-0.0006	0.0200	0.8881	1.0891	0.9208
69	08	7	Hispanic*SAT-CR	-1.4669	0.8890	432.0025	277.1373	333.6767	-1.3891	0.8881	429.8503	274.7602	331.8061
69	08	8	Hispanic*SAT-M	-1.6202	1.0901	277.1373	422.5738	258.2509	-1.5342	1.0891	274.7602	419.9483	256.1848
69	08	9	Hispanic*SAT-W	-1.2750	0.9216	333.6767	258.2509	408.8734	-1.2073	0.9208	331.8061	256.1848	407.2476
70	08	1	HSGPA	0.0000	0.2289	16.4986	18.4769	18.8728	-0.0434	0.0653	6.1647	7.3787	6.8361
70	08	2	SAT-CR	0.0000	16.4986	8,040.6626	4,979.2692	6,480.8546	-9.4577	6.1647	2,055.3928	1,761.3471	1,819.8122
70	08	3	SAT-M	0.0000	18.4769	4,979.2692	8,147.4699	5,198.5445	-11.7690	7.3787	1,761.3471	2,510.6761	1,805.2327
70	08	4	SAT-W	0.0000	18.8728	6,480.8546	5,198.5445	8,707.7604	-9.8487	6.8361	1,819.8122	1,805.2327	2,166.0373
70	08	5	Hispanic	0.1564	-0.0434	-9.4577	-11.7690	-9.8487	0.1320	-0.0366	-7.9782	-9.9279	-8.3081
70	08	6	Hispanic*HSGPA	-0.0434	0.0653	6.1647	7.3787	6.8361	-0.0366	0.0634	5.7546	6.8683	6.4090
70	08	7	Hispanic*SAT-CR	-9.4569	6.1647	2,055.3928	1,761.3471	1,819.8122	-7.9782	5.7546	1,965.9523	1,650.0494	1,726.6739
70	08	8	Hispanic*SAT-M	-11.7679	7.3787	1,761.3471	2,510.6761	1,805.2327	-9.9279	6.8683	1,650.0494	2,372.1799	1,689.3337
70	08	9	Hispanic*SAT-W	-9.8478	6.8361	1,819.8122	1,805.2327	2,166.0373	-8.3081	6.4090	1,726.6739	1,689.3337	2,069.0484
72	06	1	HSGPA	0.0000	0.2758	16.4436	19.5658	18.0823	-0.0296	0.0534	3.4351	4.2990	3.9185
72	06	2	SAT-CR	0.0000	16.4436	7,337.6622	4,485.9786	5,504.6022	-5.5132	3.4351	1,218.2171	956.6365	1,011.6843
72	06	3	SAT-M	0.0000	19.5658	4,485.9786	7,835.7722	4,504.2834	-7.0581	4.2990	956.6365	1,433.1361	972.4561
72	06	4	SAT-W	0.0000	18.0823	5,504.6022	4,504.2834	7,361.8083	-5.8666	3.9185	1,011.6843	972.4561	1,249.6099
72	06	5	Hispanic	0.1235	-0.0296	-5.5132	-7.0581	-5.8666	0.1083	-0.0259	-4.8324	-6.1865	-5.1422
72	06	6	Hispanic*HSGPA	-0.0296	0.0534	3.4351	4.2990	3.9185	-0.0259	0.0525	3.2720	4.0902	3.7450
72	06	7	Hispanic*SAT-CR	-5.5124	3.4351	1,218.2171	956.6365	1,011.6843	-4.8324	3.2720	1,187.8259	917.7294	979.3448
72	06	8	Hispanic*SAT-M	-7.0571	4.2990	956.6365	1,433.1361	972.4561	-6.1865	4.0902	917.7294	1,383.3266	931.0546
72	06	9	Hispanic*SAT-W	-5.8658	3.9185	1,011.6843	972.4561	1,249.6099	-5.1422	3.7450	979.3448	931.0546	1,215.1971



## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
73	06	1	HSGPA	0.0000	0.3229	14.7932	16.5519	16.6048	-0.0106	0.0214	1.1030	1.0528	1.2083
73	06	2	SAT-CR	0.0000	14.7932	6,714.7845	3,876.8957	4,691.0195	-1.8548	1.1030	520.8069	325.8670	406.9264
73	06	3	SAT-M	0.0000	16.5519	3,876.8957	7,010.9301	3,674.0935	-2.4642	1.0528	325.8670	468.4228	342.7703
73	06	4	SAT-W	0.0000	16.6048	4,691.0195	3,674.0935	6,282.9672	-2.4611	1.2083	406.9264	342.7703	488.9435
73	06	5	Hispanic	0.0478	-0.0106	-1.8548	-2.4642	-2.4611	0.0455	-0.0101	-1.7662	-2.3465	-2.3435
73	06	6	Hispanic*HSGPA	-0.0106	0.0214	1.1030	1.0528	1.2083	-0.0101	0.0212	1.0833	1.0266	1.1822
73	06	7	Hispanic*SAT-CR	-1.8544	1.1030	520.8069	325.8670	406.9264	-1.7662	1.0833	517.3673	321.2974	402.3626
73	06	8	Hispanic*SAT-M	-2.4637	1.0528	325.8670	468.4228	342.7703	-2.3465	1.0266	321.2974	462.3519	336.7071
73	06	9	Hispanic*SAT-W	-2.4606	1.2083	406.9264	342.7703	488.9435	-2.3435	1.1822	402.3626	336.7071	482.8879
73	07	1	HSGPA	0.0000	0.3147	14.4814	15.7834	15.9695	-0.0119	0.0246	1.2654	1.5717	1.2146
73	07	2	SAT-CR	0.0000	14.4814	6,745.1474	3,884.8390	4,881.0442	-2.6212	1.2654	551.7268	411.9844	462.6891
73	07	3	SAT-M	0.0000	15.7834	3,884.8390	7,229.4774	3,850.6883	-2.9910	1.5717	411.9844	576.9608	417.8399
73	07	4	SAT-W	0.0000	15.9695	4,881.0442	3,850.6883	6,407.8357	-2.7331	1.2146	462.6891	417.8399	554.8728
73	07	5	Hispanic	0.0559	-0.0119	-2.6212	-2.9910	-2.7331	0.0528	-0.0113	-2.4746	-2.8237	-2.5803
73	07	6	Hispanic*HSGPA	-0.0119	0.0246	1.2654	1.5717	1.2146	-0.0113	0.0245	1.2341	1.5359	1.1820
73	07	7	Hispanic*SAT-CR	-2.6207	1.2654	551.7268	411.9844	462.6891	-2.4746	1.2341	544.8575	404.1460	455.5264
73	07	8	Hispanic*SAT-M	-2.9904	1.5717	411.9844	576.9608	417.8399	-2.8237	1.5359	404.1460	568.0166	409.6667
73	07	9	Hispanic*SAT-W	-2.7327	1.2146	462.6891	417.8399	554.8728	-2.5803	1.1820	455.5264	409.6667	547.4041
73	08	1	HSGPA	0.0000	0.3103	14.6204	16.3637	16.3148	-0.0090	0.0247	1.3191	1.3256	1.4618
73	08	2	SAT-CR	0.0000	14.6204	6,595.8014	3,835.4520	4,829.6086	-3.4424	1.3191	696.3334	502.2703	550.6419
73	08	3	SAT-M	0.0000	16.3637	3,835.4520	7,093.0139	3,760.9228	-3.7186	1.3256	502.2703	712.9943	497.7115
73	08	4	SAT-W	0.0000	16.3148	4,829.6086	3,760.9228	6,468.4656	-3.6650	1.4618	550.6419	497.7115	643.6711
73	08	5	Hispanic	0.0627	-0.0090	-3.4424	-3.7186	-3.6650	0.0588	-0.0085	-3.2264	-3.4852	-3.4350
73	08	6	Hispanic*HSGPA	-0.0090	0.0247	1.3191	1.3256	1.4618	-0.0085	0.0246	1.2880	1.2920	1.4287
73	08	7	Hispanic*SAT-CR	-3.4418	1.3191	696.3334	502.2703	550.6419	-3.2264	1.2880	684.4855	489.4718	538.0277
73	08	8	Hispanic*SAT-M	-3.7180	1.3256	502.2703	712.9943	497.7115	-3.4852	1.2920	489.4718	699.1689	484.0852
73	08	9	Hispanic*SAT-W	-3.6644	1.4618	550.6419	497.7115	643.6711	-3.4350	1.4287	538.0277	484.0852	630.2411
74	07	1	HSGPA	0.0000	0.2944	16.1139	18.1581	17.2644	-0.0293	0.1376	7.7956	8.4422	7.9966
74	07	2	SAT-CR	0.0000	16.1139	9,130.1734	5,918.3531	7,080.2905	-15.2843	7.7956	4,180.0642	2,836.2159	3,325.3784
74	07	3	SAT-M	0.0000	18.1581	5,918.3531	8,807.5470	5,716.4486	-14.8718	8.4422	2,836.2159	4,079.0769	2,715.6712
74	07	4	SAT-W	0.0000	17.2644	7,080.2905	5,716.4486	8,464.2282	-14.5673	7.9966	3,325.3784	2,715.6712	3,918.7246
74	07	5	Hispanic	0.4662	-0.0293	-15.2843	-14.8718	-14.5673	0.2489	-0.0156	-8.1583	-7.9381	-7.7756
74	07	6	Hispanic*HSGPA	-0.0293	0.1376	7.7956	8.4422	7.9966	-0.0156	0.1367	7.3483	8.0071	7.5703
74	07	7	Hispanic*SAT-CR	-15.2823	7.7956	4,180.0642	2,836.2159	3,325.3784	-8.1583	7.3483	3,946.4849	2,608.9399	3,102.7556
74	07	8	Hispanic*SAT-M	-14.8699	8.4422	2,836.2159	4,079.0769	2,715.6712	-7.9381	8.0071	2,608.9399	3,857.9342	2,499.0561
74	07	9	Hispanic*SAT-W	-14.5655	7.9966	3,325.3784	2,715.6712	3,918.7246	-7.7756	7.5703	3,102.7556	2,499.0561	3,706.5443
74	08	1	HSGPA	0.0000	0.2730	14.2018	17.1359	15.8245	-0.0260	0.1369	6.9338	8.5657	7.5966
74	08	2	SAT-CR	0.0000	14.2018	9,113.4544	6,095.3038	6,850.2492	-17.0206	6.9338	4,521.8587	3,141.6052	3,412.9050
74	08	3	SAT-M	0.0000	17.1359	6,095.3038	9,128.3481	5,661.6347	-16.4900	8.5657	3,141.6052	4,654.0005	2,888.9108
74	08	4	SAT-W	0.0000	15.8245	6,850.2492	5,661.6347	8,181.6876	-15.1646	7.5966	3,412.9050	2,888.9108	4,016.1242
74	08	5	Hispanic	0.5146	-0.0260	-17.0206	-16.4900	-15.1646	0.2498	-0.0126	-8.2612	-8.0037	-7.3604
74	08	6	Hispanic*HSGPA	-0.0260	0.1369	6.9338	8.5657	7.5966	-0.0126	0.1363	6.4914	8.1371	7.2025
74	08	7	Hispanic*SAT-CR	-17.0186	6.9338	4,521.8587	3,141.6052	3,412.9050	-8.2612	6.4914	4,232.1919	2,860.9675	3,154.8240
74	08	8	Hispanic*SAT-M	-16.4881	8.5657	3,141.6052	4,654.0005	2,888.9108	-8.0037	8.1371	2,860.9675	4,382.1106	2,638.8743
74	08	9	Hispanic*SAT-W	-15.1629	7.5966	3,412.9050	2,888.9108	4,016.1242	-7.3604	7.2025	3,154.8240	2,638.8743	3,786.1848

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
75	06	1	HSGPA	0.0000	0.3355	25.3053	29.3393	27.5396	-0.0053	0.0213	1.5647	1.7714	1.7136
75	06	2	SAT-CR	0.0000	25.3053	8,695.3889	6,209.0025	6,804.6818	-1.5994	1.5647	509.9900	399.8655	412.4665
75	06	3	SAT-M	0.0000	29.3393	6,209.0025	9,824.0312	6,047.1979	-1.7716	1.7714	399.8655	632.0204	401.9740
75	06	4	SAT-W	0.0000	27.5396	6,804.6818	6,047.1979	8,446.7651	-1.6859	1.7136	412.4665	401.9740	509.6615
75	06	5	Hispanic	0.0534	-0.0053	-1.5994	-1.7716	-1.6859	0.0505	-0.0050	-1.5141	-1.6770	-1.5959
75	06	6	Hispanic*HSGPA	-0.0053	0.0213	1.5647	1.7714	1.7136	-0.0050	0.0213	1.5563	1.7620	1.7047
75	06	7	Hispanic*SAT-CR	-1.5993	1.5647	509.9900	399.8655	412.4665	-1.5141	1.5563	507.4320	397.0322	409.7702
75	06	8	Hispanic*SAT-M	-1.7715	1.7714	399.8655	632.0204	401.9740	-1.6770	1.7620	397.0322	628.8821	398.9875
75	06	9	Hispanic*SAT-W	-1.6858	1.7136	412.4665	401.9740	509.6615	-1.5959	1.7047	409.7702	398.9875	506.8193
75	08	1	HSGPA	0.0000	0.3214	24.2060	27.1290	26.5460	-0.0051	0.0239	1.5242	1.6914	1.4988
75	08	2	SAT-CR	0.0000	24.2060	8,734.3444	6,045.0822	6,826.6399	-1.9636	1.5242	614.7123	450.3428	474.3207
75	08	3	SAT-M	0.0000	27.1290	6,045.0822	9,458.0888	5,965.4580	-2.0386	1.6914	450.3428	682.5914	418.5112
75	08	4	SAT-W	0.0000	26.5460	6,826.6399	5,965.4580	8,642.0229	-1.6927	1.4988	474.3207	418.5112	577.8339
75	08	5	Hispanic	0.0665	-0.0051	-1.9636	-2.0386	-1.6927	0.0621	-0.0048	-1.8329	-1.9030	-1.5801
75	08	6	Hispanic*HSGPA	-0.0051	0.0239	1.5242	1.6914	1.4988	-0.0048	0.0239	1.5141	1.6810	1.4902
75	08	7	Hispanic*SAT-CR	-1.9635	1.5242	614.7123	450.3428	474.3207	-1.8329	1.5141	610.8568	446.3400	470.9971
75	08	8	Hispanic*SAT-M	-2.0385	1.6914	450.3428	682.5914	418.5112	-1.9030	1.6810	446.3400	678.4356	415.0606
75	08	9	Hispanic*SAT-W	-1.6926	1.4988	474.3207	418.5112	577.8339	-1.5801	1.4902	470.9971	415.0606	574.9689
77	06	1	HSGPA	0.0000	0.3570	22.8448	26.2238	24.2506	-0.0021	0.0116	0.5467	0.9533	0.7349
77	06	2	SAT-CR	0.0000	22.8448	8,478.8649	5,594.7473	6,559.1353	-0.6603	0.5467	247.7082	193.3781	193.8577
77	06	3	SAT-M	0.0000	26.2238	5,594.7473	9,173.1735	5,436.3768	-0.6982	0.9533	193.3781	315.8454	186.7310
77	06	4	SAT-W	0.0000	24.2506	6,559.1353	5,436.3768	8,178.5458	-0.4319	0.7349	193.8577	186.7310	236.0885
77	06	5	Hispanic	0.0252	-0.0021	-0.6603	-0.6982	-0.4319	0.0246	-0.0020	-0.6437	-0.6806	-0.4210
77	06	6	Hispanic*HSGPA	-0.0021	0.0116	0.5467	0.9533	0.7349	-0.0020	0.0116	0.5453	0.9519	0.7340
77	06	7	Hispanic*SAT-CR	-0.6602	0.5467	247.7082	193.3781	193.8577	-0.6437	0.5453	247.2722	192.9172	193.5725
77	06	8	Hispanic*SAT-M	-0.6981	0.9533	193.3781	315.8454	186.7310	-0.6806	0.9519	192.9172	315.3580	186.4295
77	06	9	Hispanic*SAT-W	-0.4318	0.7349	193.8577	186.7310	236.0885	-0.4210	0.7340	193.5725	186.4295	235.9020
77	07	1	HSGPA	0.0000	0.3348	21.9382	25.8621	24.1480	-0.0026	0.0117	1.1430	1.0858	0.8561
77	07	2	SAT-CR	0.0000	21.9382	8,404.5384	5,412.5532	6,485.2662	-0.1066	1.1430	374.9854	262.5322	279.3962
77	07	3	SAT-M	0.0000	25.8621	5,412.5532	9,287.8112	5,409.2373	-0.8140	1.0858	262.5322	355.5516	224.2732
77	07	4	SAT-W	0.0000	24.1480	6,485.2662	5,409.2373	8,090.7094	-0.1811	0.8561	279.3962	224.2732	300.8674
77	07	5	Hispanic	0.0309	-0.0026	-0.1066	-0.8140	-0.1811	0.0300	-0.0025	-0.1033	-0.7888	-0.1755
77	07	6	Hispanic*HSGPA	-0.0026	0.0117	1.1430	1.0858	0.8561	-0.0025	0.0117	1.1427	1.0837	0.8556
77	07	7	Hispanic*SAT-CR	-0.1066	1.1430	374.9854	262.5322	279.3962	-0.1033	1.1427	374.9741	262.4455	279.3769
77	07	8	Hispanic*SAT-M	-0.8138	1.0858	262.5322	355.5516	224.2732	-0.7888	1.0837	262.4455	354.8892	224.1258
77	07	9	Hispanic*SAT-W	-0.1811	0.8561	279.3962	224.2732	300.8674	-0.1755	0.8556	279.3769	224.1258	300.8346
77	08	1	HSGPA	0.0000	0.3220	21.6774	25.0621	24.2691	0.0005	0.0100	0.5691	0.7413	0.5862
77	08	2	SAT-CR	0.0000	21.6774	8,402.4628	5,391.8996	6,541.4679	-0.6603	0.5691	294.9078	221.8280	222.6804
77	08	3	SAT-M	0.0000	25.0621	5,391.8996	8,791.2033	5,215.0371	-0.9438	0.7413	221.8280	331.5305	197.2729
77	08	4	SAT-W	0.0000	24.2691	6,541.4679	5,215.0371	8,352.6416	-0.6066	0.5862	222.6804	197.2729	278.8451
77	08	5	Hispanic	0.0312	0.0005	-0.6603	-0.9438	-0.6066	0.0302	0.0005	-0.6397	-0.9144	-0.5877
77	08	6	Hispanic*HSGPA	0.0005	0.0100	0.5691	0.7413	0.5862	0.0005	0.0100	0.5694	0.7418	0.5865
77	08	7	Hispanic*SAT-CR	-0.6602	0.5691	294.9078	221.8280	222.6804	-0.6397	0.5694	294.4718	221.2049	222.2799
77	08	8	Hispanic*SAT-M	-0.9437	0.7413	221.8280	331.5305	197.2729	-0.9144	0.7418	221.2049	330.6399	196.7005
77	08	9	Hispanic*SAT-W	-0.6065	0.5862	222.6804	197.2729	278.8451	-0.5877	0.5865	222.2799	196.7005	278.4772

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
78	06	1	HSGPA	0.0000	0.2153	14.3796	14.9958	15.3300	-0.0098	0.0383	2.8932	3.0672	3.0787
78	06	2	SAT-CR	0.0000	14.3796	8,507.0963	5,002.7488	6,553.2100	-7.1554	2.8932	1,752.5247	1,272.1998	1,496.3876
78	06	3	SAT-M	0.0000	14.9958	5,002.7488	8,169.2050	5,076.2185	-7.6073	3.0672	1,272.1998	1,775.8066	1,287.7499
78	06	4	SAT-W	0.0000	15.3300	6,553.2100	5,076.2185	8,348.6801	-7.5317	3.0787	1,496.3876	1,287.7499	1,746.0054
78	06	5	Hispanic	0.1394	-0.0098	-7.1554	-7.6073	-7.5317	0.1199	-0.0084	-6.1582	-6.5471	-6.4821
78	06	6	Hispanic*HSGPA	-0.0098	0.0383	2.8932	3.0672	3.0787	-0.0084	0.0382	2.8229	2.9925	3.0048
78	06	7	Hispanic*SAT-CR	-7.1552	2.8932	1,752.5247	1,272.1998	1,496.3876	-6.1582	2.8229	1,701.3263	1,217.7685	1,442.4968
78	06	8	Hispanic*SAT-M	-7.6070	3.0672	1,272.1998	1,775.8066	1,287.7499	-6.5471	2.9925	1,217.7685	1,717.9383	1,230.4563
78	06	9	Hispanic*SAT-W	-7.5314	3.0787	1,496.3876	1,287.7499	1,746.0054	-6.4821	3.0048	1,442.4968	1,230.4563	1,689.2808
78	07	1	HSGPA	0.0000	0.2147	14.2385	14.7056	15.1667	-0.0121	0.0403	3.1165	3.0983	3.3338
78	07	2	SAT-CR	0.0000	14.2385	8,267.1969	4,846.3936	6,306.8904	-7.0663	3.1165	1,674.2122	1,207.2999	1,441.2292
78	07	3	SAT-M	0.0000	14.7056	4,846.3936	8,026.7666	4,915.2360	-7.4946	3.0983	1,207.2999	1,671.7546	1,252.1602
78	07	4	SAT-W	0.0000	15.1667	6,306.8904	4,915.2360	8,081.7501	-7.5947	3.3338	1,441.2292	1,252.1602	1,712.5884
78	07	5	Hispanic	0.1404	-0.0121	-7.0663	-7.4946	-7.5947	0.1207	-0.0104	-6.0744	-6.4426	-6.5286
78	07	6	Hispanic*HSGPA	-0.0121	0.0403	3.1165	3.0983	3.3338	-0.0104	0.0402	3.0313	3.0079	3.2422
78	07	7	Hispanic*SAT-CR	-7.0661	3.1165	1,674.2122	1,207.2999	1,441.2292	-6.0744	3.0313	1,624.2808	1,154.3421	1,387.5645
78	07	8	Hispanic*SAT-M	-7.4944	3.0983	1,207.2999	1,671.7546	1,252.1602	-6.4426	3.0079	1,154.3421	1,615.5870	1,195.2428
78	07	9	Hispanic*SAT-W	-7.5944	3.3338	1,441.2292	1,252.1602	1,712.5884	-6.5286	3.2422	1,387.5645	1,195.2428	1,654.9111
78	08	1	HSGPA	0.0000	0.2106	13.4230	14.1747	14.4265	-0.0143	0.0427	3.1884	3.3533	3.5427
78	08	2	SAT-CR	0.0000	13.4230	7,992.9894	4,666.7451	6,184.5394	-7.1298	3.1884	1,760.5943	1,291.4140	1,564.2875
78	08	3	SAT-M	0.0000	14.1747	4,666.7451	7,857.3609	4,841.3508	-7.8255	3.3533	1,291.4140	1,835.4262	1,400.0460
78	08	4	SAT-W	0.0000	14.4265	6,184.5394	4,841.3508	8,173.7688	-8.2940	3.5427	1,564.2875	1,400.0460	1,915.9911
78	08	5	Hispanic	0.1505	-0.0143	-7.1298	-7.8255	-8.2940	0.1278	-0.0122	-6.0570	-6.6481	-7.0461
78	08	6	Hispanic*HSGPA	-0.0143	0.0427	3.1884	3.3533	3.5427	-0.0122	0.0425	3.0864	3.2414	3.4241
78	08	7	Hispanic*SAT-CR	-7.1295	3.1884	1,760.5943	1,291.4140	1,564.2875	-6.0570	3.0864	1,709.7625	1,235.6220	1,505.1550
78	08	8	Hispanic*SAT-M	-7.8252	3.3533	1,291.4140	1,835.4262	1,400.0460	-6.6481	3.2414	1,235.6220	1,774.1902	1,335.1435
78	08	9	Hispanic*SAT-W	-8.2937	3.5427	1,564.2875	1,400.0460	1,915.9911	-7.0461	3.4241	1,505.1550	1,335.1435	1,847.2026
80	07	1	HSGPA	0.0000	0.2252	13.0197	13.3291	13.8838	-0.0030	0.0082	0.5152	0.5868	0.5324
80	07	2	SAT-CR	0.0000	13.0197	7,503.5690	4,046.1635	5,569.5797	-0.6607	0.5152	290.2411	177.8323	241.2695
80	07	3	SAT-M	0.0000	13.3291	4,046.1635	7,125.0754	4,083.2691	-1.0657	0.5868	177.8323	291.3686	186.7019
80	07	4	SAT-W	0.0000	13.8838	5,569.5797	4,083.2691	7,287.3185	-0.9312	0.5324	241.2695	186.7019	298.5134
80	07	5	Hispanic	0.0296	-0.0030	-0.6607	-1.0657	-0.9312	0.0287	-0.0029	-0.6411	-1.0342	-0.9037
80	07	6	Hispanic*HSGPA	-0.0030	0.0082	0.5152	0.5868	0.5324	-0.0029	0.0082	0.5133	0.5836	0.5297
80	07	7	Hispanic*SAT-CR	-0.6606	0.5152	290.2411	177.8323	241.2695	-0.6411	0.5133	289.8046	177.1282	240.6543
80	07	8	Hispanic*SAT-M	-1.0657	0.5868	177.8323	291.3686	186.7019	-1.0342	0.5836	177.1282	290.2329	185.7096
80	07	9	Hispanic*SAT-W	-0.9311	0.5324	241.2695	186.7019	298.5134	-0.9037	0.5297	240.6543	185.7096	297.6464
82	06	1	HSGPA	0.0000	0.3079	16.8280	17.3399	17.9522	-0.0163	0.0830	4.1289	4.2822	4.2433
82	06	2	SAT-CR	0.0000	16.8280	8,232.1739	5,189.7556	6,148.0042	-10.4545	4.1289	2,333.0468	1,663.5935	1,854.8557
82	06	3	SAT-M	0.0000	17.3399	5,189.7556	8,308.5935	4,929.0169	-11.6485	4.2822	1,663.5935	2,431.5122	1,620.5845
82	06	4	SAT-W	0.0000	17.9522	6,148.0042	4,929.0169	7,725.5345	-10.7322	4.2433	1,854.8557	1,620.5845	2,262.3125
82	06	5	Hispanic	0.2413	-0.0163	-10.4545	-11.6485	-10.7322	0.1831	-0.0123	-7.9316	-8.8375	-8.1423
82	06	6	Hispanic*HSGPA	-0.0163	0.0830	4.1289	4.2822	4.2433	-0.0123	0.0828	3.9590	4.0929	4.0689
82	06	7	Hispanic*SAT-CR	-10.4530	4.1289	2,333.0468	1,663.5935	1,854.8557	-7.9316	3.9590	2,223.7658	1,541.8312	1,742.6713
82	06	8	Hispanic*SAT-M	-11.6469	4.2822	1,663.5935	2,431.5122	1,620.5845	-8.8375	4.0929	1,541.8312	2,295.8431	1,495.5873
82	06	9	Hispanic*SAT-W	-10.7307	4.2433	1,854.8557	1,620.5845	2,262.3125	-8.1423	4.0689	1,742.6713	1,495.5873	2,147.1477

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
84	06	1	HSGPA	0.0000	0.3083	20.5943	21.7983	21.6926	-0.0267	0.0725	4.9842	5.1719	4.9842
84	06	2	SAT-CR	0.0000	20.5943	8,323.8215	5,416.3848	6,305.6881	-9.6564	4.9842	2,048.8123	1,445.3391	1,592.2360
84	06	3	SAT-M	0.0000	21.7983	5,416.3848	8,730.2014	5,175.4517	-11.5857	5.1719	1,445.3391	2,266.0653	1,427.3044
84	06	4	SAT-W	0.0000	21.6926	6,305.6881	5,175.4517	7,909.8992	-9.9649	4.9842	1,592.2360	1,427.3044	1,939.2105
84	06	5	Hispanic	0.2273	-0.0267	-9.6564	-11.5857	-9.9649	0.1757	-0.0206	-7.4619	-8.9527	-7.7003
84	06	6	Hispanic*HSGPA	-0.0267	0.0725	4.9842	5.1719	4.9842	-0.0206	0.0718	4.7264	4.8626	4.7182
84	06	7	Hispanic*SAT-CR	-9.6540	4.9842	2,048.8123	1,445.3391	1,592.2360	-7.4619	4.7264	1,955.5894	1,333.4907	1,496.0350
84	06	8	Hispanic*SAT-M	-11.5828	5.1719	1,445.3391	2,266.0653	1,427.3044	-8.9527	4.8626	1,333.4907	2,131.8701	1,311.8829
84	06	9	Hispanic*SAT-W	-9.9624	4.9842	1,592.2360	1,427.3044	1,939.2105	-7.7003	4.7182	1,496.0350	1,311.8829	1,839.9363
85	06	1	HSGPA	0.0000	0.2389	16.5007	18.2510	17.4019	-0.0249	0.0660	5.5482	6.1551	5.5466
85	06	2	SAT-CR	0.0000	16.5007	9,189.9113	6,255.0568	6,928.3727	-11.4454	5.5482	2,840.8924	2,167.2184	2,258.3191
85	06	3	SAT-M	0.0000	18.2510	6,255.0568	9,310.0642	5,816.7075	-11.5590	6.1551	2,167.2184	2,889.9266	1,991.3875
85	06	4	SAT-W	0.0000	17.4019	6,928.3727	5,816.7075	8,341.7464	-10.5526	5.5466	2,258.3191	1,991.3875	2,527.8115
85	06	5	Hispanic	0.2383	-0.0249	-11.4454	-11.5590	-10.5526	0.1815	-0.0190	-8.7185	-8.8050	-8.0383
85	06	6	Hispanic*HSGPA	-0.0249	0.0660	5.5482	6.1551	5.5466	-0.0190	0.0654	5.2628	5.8668	5.2834
85	06	7	Hispanic*SAT-CR	-11.4450	5.5482	2,840.8924	2,167.2184	2,258.3191	-8.7185	5.2628	2,709.8996	2,034.9260	2,137.5451
85	06	8	Hispanic*SAT-M	-11.5585	6.1551	2,167.2184	2,889.9266	1,991.3875	-8.8050	5.8668	2,034.9260	2,756.3215	1,869.4152
85	06	9	Hispanic*SAT-W	-10.5521	5.5466	2,258.3191	1,991.3875	2,527.8115	-8.0383	5.2834	2,137.5451	1,869.4152	2,416.4591
85	07	1	HSGPA	0.0000	0.2377	15.9902	17.7892	17.4458	-0.0227	0.0671	5.1675	5.7348	5.4279
85	07	2	SAT-CR	0.0000	15.9902	9,031.7727	5,975.3989	6,966.2080	-10.8889	5.1675	2,689.4855	1,973.5520	2,151.9909
85	07	3	SAT-M	0.0000	17.7892	5,975.3989	8,974.2366	5,735.6871	-11.0575	5.7348	1,973.5520	2,735.6527	1,848.0022
85	07	4	SAT-W	0.0000	17.4458	6,966.2080	5,735.6871	8,450.0779	-10.4535	5.4279	2,151.9909	1,848.0022	2,408.9186
85	07	5	Hispanic	0.2434	-0.0227	-10.8889	-11.0575	-10.4535	0.1841	-0.0172	-8.2389	-8.3665	-7.9095
85	07	6	Hispanic*HSGPA	-0.0227	0.0671	5.1675	5.7348	5.4279	-0.0172	0.0666	4.9207	5.4841	5.1910
85	07	7	Hispanic*SAT-CR	-10.8885	5.1675	2,689.4855	1,973.5520	2,151.9909	-8.2389	4.9207	2,570.9212	1,853.1524	2,038.1675
85	07	8	Hispanic*SAT-M	-11.0571	5.7348	1,973.5520	2,735.6527	1,848.0022	-8.3665	5.4841	1,853.1524	2,613.3893	1,732.4168
85	07	9	Hispanic*SAT-W	-10.4531	5.4279	2,151.9909	1,848.0022	2,408.9186	-7.9095	5.1910	2,038.1675	1,732.4168	2,299.6465
85	08	1	HSGPA	0.0000	0.2297	15.5480	17.5416	16.6855	-0.0268	0.0748	5.9484	6.6143	5.8967
85	08	2	SAT-CR	0.0000	15.5480	9,195.4283	6,215.5238	7,100.2570	-12.9541	5.9484	3,130.8473	2,365.4829	2,466.2968
85	08	3	SAT-M	0.0000	17.5416	6,215.5238	9,125.9379	5,901.2057	-13.0378	6.6143	2,365.4829	3,156.5450	2,177.3005
85	08	4	SAT-W	0.0000	16.6855	7,100.2570	5,901.2057	8,637.3087	-12.2177	5.8967	2,466.2968	2,177.3005	2,746.2031
85	08	5	Hispanic	0.2731	-0.0268	-12.9541	-13.0378	-12.2177	0.1985	-0.0195	-9.4169	-9.4777	-8.8815
85	08	6	Hispanic*HSGPA	-0.0268	0.0748	5.9484	6.6143	5.8967	-0.0195	0.0741	5.6007	6.2644	5.5688
85	08	7	Hispanic*SAT-CR	-12.9537	5.9484	3,130.8473	2,365.4829	2,466.2968	-9.4169	5.6007	2,963.0437	2,196.5956	2,308.0333
85	08	8	Hispanic*SAT-M	-13.0373	6.6143	2,365.4829	3,156.5450	2,177.3005	-9.4777	6.2644	2,196.5956	2,986.5670	2,018.0149
85	08	9	Hispanic*SAT-W	-12.2172	5.8967	2,466.2968	2,177.3005	2,746.2031	-8.8815	5.5688	2,308.0333	2,018.0149	2,596.9372
88	06	1	HSGPA	0.0000	0.2712	13.8635	15.0503	15.3806	-0.0100	0.0221	1.5599	1.7550	1.8542
88	06	2	SAT-CR	0.0000	13.8635	8,443.6822	5,027.3932	6,552.3699	-2.7209	1.5599	770.8776	552.7122	648.3203
88	06	3	SAT-M	0.0000	15.0503	5,027.3932	7,941.2290	4,973.3538	-2.9243	1.7550	552.7122	735.3613	560.1479
88	06	4	SAT-W	0.0000	15.3806	6,552.3699	4,973.3538	8,361.5906	-2.8387	1.8542	648.3203	560.1479	759.2213
88	06	5	Hispanic	0.0634	-0.0100	-2.7209	-2.9243	-2.8387	0.0594	-0.0093	-2.5482	-2.7387	-2.6586
88	06	6	Hispanic*HSGPA	-0.0100	0.0221	1.5599	1.7550	1.8542	-0.0093	0.0220	1.5328	1.7259	1.8260
88	06	7	Hispanic*SAT-CR	-2.7206	1.5599	770.8776	552.7122	648.3203	-2.5482	1.5328	763.4752	544.7565	640.5973
88	06	8	Hispanic*SAT-M	-2.9240	1.7550	552.7122	735.3613	560.1479	-2.7387	1.7259	544.7565	726.8108	551.8476
88	06	9	Hispanic*SAT-W	-2.8384	1.8542	648.3203	560.1479	759.2213	-2.6586	1.8260	640.5973	551.8476	751.1638

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
88	07	1	HSGPA	0.0000	0.2705	14.0375	14.9903	15.2906	-0.0093	0.0230	1.5777	1.6944	1.6444
88	07	2	SAT-CR	0.0000	14.0375	8,487.4150	4,900.3806	6,494.2259	-2.9499	1.5777	806.3799	545.1830	660.4966
88	07	3	SAT-M	0.0000	14.9903	4,900.3806	7,839.5754	4,878.2128	-2.9381	1.6944	545.1830	754.4898	544.1517
88	07	4	SAT-W	0.0000	15.2906	6,494.2259	4,878.2128	8,221.1961	-2.7889	1.6444	660.4966	544.1517	742.8065
88	07	5	Hispanic	0.0664	-0.0093	-2.9499	-2.9381	-2.7889	0.0620	-0.0086	-2.7539	-2.7429	-2.6036
88	07	6	Hispanic*HSGPA	-0.0092	0.0230	1.5777	1.6944	1.6444	-0.0086	0.0229	1.5504	1.6673	1.6186
88	07	7	Hispanic*SAT-CR	-2.9496	1.5777	806.3799	545.1830	660.4966	-2.7539	1.5504	797.6788	536.5167	652.2705
88	07	8	Hispanic*SAT-M	-2.9378	1.6944	545.1830	754.4898	544.1517	-2.7429	1.6673	536.5167	745.8583	535.9584
88	07	9	Hispanic*SAT-W	-2.7886	1.6444	660.4966	544.1517	742.8065	-2.6036	1.6186	652.2705	535.9584	735.0294
88	08	1	HSGPA	0.0000	0.2621	13.6566	15.3859	14.8629	-0.0082	0.0243	1.5747	1.5660	1.6484
88	08	2	SAT-CR	0.0000	13.6566	8,094.7475	4,741.9886	6,247.4342	-3.4481	1.5747	921.1766	612.5004	758.1080
88	08	3	SAT-M	0.0000	15.3859	4,741.9886	7,814.8458	4,824.9519	-3.4053	1.5660	612.5004	846.0299	633.7577
88	08	4	SAT-W	0.0000	14.8629	6,247.4342	4,824.9519	8,157.4553	-3.5916	1.6484	758.1080	633.7577	901.5882
88	08	5	Hispanic	0.0809	-0.0082	-3.4481	-3.4053	-3.5916	0.0743	-0.0076	-3.1692	-3.1299	-3.3011
88	08	6	Hispanic*HSGPA	-0.0082	0.0243	1.5747	1.5660	1.6484	-0.0076	0.0242	1.5463	1.5379	1.6188
88	08	7	Hispanic*SAT-CR	-3.4478	1.5747	921.1766	612.5004	758.1080	-3.1692	1.5463	909.2883	600.7595	745.7250
88	08	8	Hispanic*SAT-M	-3.4050	1.5660	612.5004	846.0299	633.7577	-3.1299	1.5379	600.7595	834.4345	621.5283
88	08	9	Hispanic*SAT-W	-3.5913	1.6484	758.1080	633.7577	901.5882	-3.3011	1.6188	745.7250	621.5283	888.6900
89	06	1	HSGPA	0.0000	0.4108	24.5203	26.6130	26.4944	-0.0054	0.0093	0.5601	0.5786	0.6165
89	06	2	SAT-CR	0.0000	24.5203	7,582.2507	4,570.2640	5,388.0519	-0.3209	0.5601	131.6744	87.3225	97.2695
89	06	3	SAT-M	0.0000	26.6130	4,570.2640	7,480.8941	4,235.0309	-0.8595	0.5786	87.3225	166.6075	81.3229
89	06	4	SAT-W	0.0000	26.4944	5,388.0519	4,235.0309	6,775.4214	-0.4962	0.6165	97.2695	81.3229	124.6339
89	06	5	Hispanic	0.0205	-0.0054	-0.3209	-0.8595	-0.4962	0.0201	-0.0053	-0.3143	-0.8418	-0.4860
89	06	6	Hispanic*HSGPA	-0.0054	0.0093	0.5601	0.5786	0.6165	-0.0053	0.0093	0.5584	0.5739	0.6138
89	06	7	Hispanic*SAT-CR	-0.3208	0.5601	131.6744	87.3225	97.2695	-0.3143	0.5584	131.5715	87.0468	97.1104
89	06	8	Hispanic*SAT-M	-0.8591	0.5786	87.3225	166.6075	81.3229	-0.8418	0.5739	87.0468	165.8692	80.8966
89	06	9	Hispanic*SAT-W	-0.4960	0.6165	97.2695	81.3229	124.6339	-0.4860	0.6138	97.1104	80.8966	124.3878
89	08	1	HSGPA	0.0000	0.4015	20.6282	26.2321	23.7996	-0.0021	0.0095	0.5433	0.6993	0.5697
89	08	2	SAT-CR	0.0000	20.6282	7,160.0746	4,136.8497	5,071.9821	-0.1345	0.5433	163.3981	99.7852	121.6228
89	08	3	SAT-M	0.0000	26.2321	4,136.8497	7,269.7738	4,061.0140	-0.8146	0.6993	99.7852	170.3689	107.6833
89	08	4	SAT-W	0.0000	23.7996	5,071.9821	4,061.0140	6,660.9317	-0.2079	0.5697	121.6228	107.6833	149.4397
89	08	5	Hispanic	0.0240	-0.0021	-0.1345	-0.8146	-0.2079	0.0234	-0.0021	-0.1313	-0.7950	-0.2029
89	08	6	Hispanic*HSGPA	-0.0021	0.0095	0.5433	0.6993	0.5697	-0.0021	0.0095	0.5430	0.6976	0.5693
89	08	7	Hispanic*SAT-CR	-0.1345	0.5433	163.3981	99.7852	121.6228	-0.1313	0.5430	163.3800	99.6756	121.5948
89	08	8	Hispanic*SAT-M	-0.8143	0.6993	99.7852	170.3689	107.6833	-0.7950	0.6976	99.6756	169.7056	107.5140
89	08	9	Hispanic*SAT-W	-0.2078	0.5697	121.6228	107.6833	149.4397	-0.2029	0.5693	121.5948	107.5140	149.3965
90	08	1	HSGPA	0.0000	0.2262	16.7340	18.3505	17.4457	-0.0320	0.0853	6.7625	7.6731	6.9970
90	08	2	SAT-CR	0.0000	16.7340	9,134.5578	6,114.7660	7,170.2376	-16.0284	6.7625	3,510.0744	2,599.7315	2,813.8746
90	08	3	SAT-M	0.0000	18.3505	6,114.7660	8,970.3525	5,984.5659	-15.7318	7.6731	2,599.7315	3,533.0113	2,461.4713
90	08	4	SAT-W	0.0000	17.4457	7,170.2376	5,984.5659	8,812.4026	-15.8092	6.9970	2,813.8746	2,461.4713	3,234.0489
90	08	5	Hispanic	0.3257	-0.0320	-16.0284	-15.7318	-15.8092	0.2196	-0.0216	-10.8083	-10.6083	-10.6605
90	08	6	Hispanic*HSGPA	-0.0320	0.0853	6.7625	7.6731	6.9970	-0.0216	0.0842	6.2502	7.1703	6.4918
90	08	7	Hispanic*SAT-CR	-16.0274	6.7625	3,510.0744	2,599.7315	2,813.8746	-10.8083	6.2502	3,253.1810	2,347.5920	2,560.4943
90	08	8	Hispanic*SAT-M	-15.7308	7.6731	2,599.7315	3,533.0113	2,461.4713	-10.6083	7.1703	2,347.5920	3,285.5376	2,212.7798
90	08	9	Hispanic*SAT-W	-15.8082	6.9970	2,813.8746	2,461.4713	3,234.0489	-10.6605	6.4918	2,560.4943	2,212.7798	2,984.1338

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
91	06	1	HSGPA	0.0000	0.2273	14.9781	15.2742	16.1292	-0.0060	0.0123	1.0730	1.0679	1.1355
91	06	2	SAT-CR	0.0000	14.9781	8,061.5462	5,029.7877	6,167.3008	-1.5560	1.0730	457.6171	331.1883	378.6104
91	06	3	SAT-M	0.0000	15.2742	5,029.7877	8,031.3900	5,031.6841	-1.9454	1.0679	331.1883	468.0755	334.6208
91	06	4	SAT-W	0.0000	16.1292	6,167.3008	5,031.6841	7,847.8279	-1.7237	1.1355	378.6104	334.6208	463.1588
91	06	5	Hispanic	0.0450	-0.0060	-1.5560	-1.9454	-1.7237	0.0430	-0.0057	-1.4859	-1.8578	-1.6461
91	06	6	Hispanic*HSGPA	-0.0060	0.0123	1.0730	1.0679	1.1355	-0.0057	0.0123	1.0637	1.0562	1.1251
91	06	7	Hispanic*SAT-CR	-1.5559	1.0730	457.6171	331.1883	378.6104	-1.4859	1.0637	455.1962	328.1615	375.9285
91	06	8	Hispanic*SAT-M	-1.9453	1.0679	331.1883	468.0755	334.6208	-1.8578	1.0562	328.1615	464.2911	331.2678
91	06	9	Hispanic*SAT-W	-1.7236	1.1355	378.6104	334.6208	463.1588	-1.6461	1.1251	375.9285	331.2678	460.1878
91	07	1	HSGPA	0.0000	0.2260	14.0984	14.6179	15.2493	-0.0078	0.0154	1.1429	1.1723	1.2893
91	07	2	SAT-CR	0.0000	14.0984	7,961.8287	4,874.3743	6,162.4575	-1.9154	1.1429	527.6092	358.2731	451.4033
91	07	3	SAT-M	0.0000	14.6179	4,874.3743	7,859.5547	4,937.6976	-2.1026	1.1723	358.2731	521.9104	375.4917
91	07	4	SAT-W	0.0000	15.2493	6,162.4575	4,937.6976	7,932.8834	-1.9878	1.2893	451.4033	375.4917	555.1895
91	07	5	Hispanic	0.0509	-0.0078	-1.9154	-2.1026	-1.9878	0.0483	-0.0074	-1.8179	-1.9956	-1.8866
91	07	6	Hispanic*HSGPA	-0.0078	0.0154	1.1429	1.1723	1.2893	-0.0074	0.0153	1.1281	1.1560	1.2739
91	07	7	Hispanic*SAT-CR	-1.9153	1.1429	527.6092	358.2731	451.4033	-1.8179	1.1281	523.9405	354.2459	447.5961
91	07	8	Hispanic*SAT-M	-2.1025	1.1723	358.2731	521.9104	375.4917	-1.9956	1.1560	354.2459	517.4896	371.3123
91	07	9	Hispanic*SAT-W	-1.9877	1.2893	451.4033	375.4917	555.1895	-1.8866	1.2739	447.5961	371.3123	551.2384
92	06	1	HSGPA	0.0000	0.3054	14.9873	13.8310	14.9355	-0.0028	0.0261	1.3785	1.1538	1.4192
92	06	2	SAT-CR	0.0000	14.9873	7,380.9476	4,468.5954	5,484.6887	-3.7793	1.3785	1,011.7303	779.5969	870.5401
92	06	3	SAT-M	0.0000	13.8310	4,468.5954	7,741.4863	4,456.1711	-4.4291	1.1538	779.5969	1,032.3796	780.4508
92	06	4	SAT-W	0.0000	14.9355	5,484.6887	4,456.1711	7,215.3852	-4.0452	1.4192	870.5401	780.4508	1,028.6879
92	06	5	Hispanic	0.0807	-0.0028	-3.7793	-4.4291	-4.0452	0.0742	-0.0026	-3.4742	-4.0715	-3.7186
92	06	6	Hispanic*HSGPA	-0.0028	0.0261	1.3785	1.1538	1.4192	-0.0026	0.0261	1.3680	1.1414	1.4080
92	06	7	Hispanic*SAT-CR	-3.7782	1.3785	1,011.7303	779.5969	870.5401	-3.4742	1.3680	997.4515	762.8631	855.2567
92	06	8	Hispanic*SAT-M	-4.4278	1.1538	779.5969	1,032.3796	780.4508	-4.0715	1.1414	762.8631	1,012.7684	762.5396
92	06	9	Hispanic*SAT-W	-4.0440	1.4192	870.5401	780.4508	1,028.6879	-3.7186	1.4080	855.2567	762.5396	1,012.3292
92	07	1	HSGPA	0.0000	0.3016	15.6009	15.2080	15.6369	-0.0060	0.0276	1.6376	1.7730	1.4897
92	07	2	SAT-CR	0.0000	15.6009	7,697.1403	4,451.0984	5,685.7752	-3.0508	1.6376	930.8104	731.0113	785.3282
92	07	3	SAT-M	0.0000	15.2080	4,451.0984	7,469.6050	4,393.3089	-4.0512	1.7730	731.0113	1,049.2968	743.0735
92	07	4	SAT-W	0.0000	15.6369	5,685.7752	4,393.3089	7,381.2878	-3.3233	1.4897	785.3282	743.0735	945.9353
92	07	5	Hispanic	0.0825	-0.0060	-3.0508	-4.0512	-3.3233	0.0757	-0.0055	-2.7991	-3.7169	-3.0491
92	07	6	Hispanic*HSGPA	-0.0060	0.0276	1.6376	1.7730	1.4897	-0.0055	0.0275	1.6194	1.7488	1.4698
92	07	7	Hispanic*SAT-CR	-3.0500	1.6376	930.8104	731.0113	785.3282	-2.7991	1.6194	921.5054	718.6551	775.1922
92	07	8	Hispanic*SAT-M	-4.0501	1.7730	731.0113	1,049.2968	743.0735	-3.7169	1.7488	718.6551	1,032.8890	729.6138
92	07	9	Hispanic*SAT-W	-3.3224	1.4897	785.3282	743.0735	945.9353	-3.0491	1.4698	775.1922	729.6138	934.8941
92	08	1	HSGPA	0.0000	0.2726	14.4680	14.7398	14.8696	-0.0029	0.0293	2.0627	2.0075	1.8319
92	08	2	SAT-CR	0.0000	14.4680	7,517.6730	4,444.6092	5,540.9652	-4.6524	2.0627	1,322.1470	989.5104	1,087.6596
92	08	3	SAT-M	0.0000	14.7398	4,444.6092	7,524.1854	4,402.9911	-5.5781	2.0075	989.5104	1,333.5014	967.1211
92	08	4	SAT-W	0.0000	14.8696	5,540.9652	4,402.9911	7,304.8334	-5.6044	1.8319	1,087.6596	967.1211	1,223.1031
92	08	5	Hispanic	0.0948	-0.0029	-4.6524	-5.5781	-5.6044	0.0858	-0.0026	-4.2113	-5.0492	-5.0731
92	08	6	Hispanic*HSGPA	-0.0029	0.0293	2.0627	2.0075	1.8319	-0.0026	0.0293	2.0495	1.9916	1.8159
92	08	7	Hispanic*SAT-CR	-4.6513	2.0627	1,322.1470	989.5104	1,087.6596	-4.2113	2.0495	1,300.5074	963.5653	1,061.5920
92	08	8	Hispanic*SAT-M	-5.5767	2.0075	989.5104	1,333.5014	967.1211	-5.0492	1.9916	963.5653	1,302.3943	935.8671
92	08	9	Hispanic*SAT-W	-5.6030	1.8319	1,087.6596	967.1211	1,223.1031	-5.0731	1.8159	1,061.5920	935.8671	1,191.7013

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
94	07	1	HSGPA	0.0000	0.2949	13.4026	13.3575	15.5642	-0.0049	0.0355	1.5576	1.2168	1.8412
94	07	2	SAT-CR	0.0000	13.4026	7,255.1173	4,063.2607	5,381.5403	-3.8469	1.5576	1,011.8127	653.4904	801.5776
94	07	3	SAT-M	0.0000	13.3575	4,063.2607	6,986.4963	4,050.4604	-3.7134	1.2168	653.4904	984.3274	692.6851
94	07	4	SAT-W	0.0000	15.5642	5,381.5403	4,050.4604	6,963.8491	-4.3365	1.8412	801.5776	692.6851	1,025.0909
94	07	5	Hispanic	0.1142	-0.0049	-3.8469	-3.7134	-4.3365	0.1012	-0.0043	-3.4074	-3.2893	-3.8411
94	07	6	Hispanic*HSGPA	-0.0049	0.0355	1.5576	1.2168	1.8412	-0.0043	0.0355	1.5388	1.1986	1.8200
94	07	7	Hispanic*SAT-CR	-3.8460	1.5576	1,011.8127	653.4904	801.5776	-3.4074	1.5388	997.0176	639.2085	784.8996
94	07	8	Hispanic*SAT-M	-3.7126	1.2168	653.4904	984.3274	692.6851	-3.2893	1.1986	639.2085	970.5409	676.5856
94	07	9	Hispanic*SAT-W	-4.3355	1.8412	801.5776	692.6851	1,025.0909	-3.8411	1.8200	784.8996	676.5856	1,006.2903
97	06	1	HSGPA	0.0000	0.1605	11.3436	9.8713	11.6995	-0.0117	0.0218	1.5320	1.7893	1.8115
97	06	2	SAT-CR	0.0000	11.3436	7,292.8476	3,612.0139	5,291.4873	-4.9770	1.5320	1,124.6195	803.1399	980.6485
97	06	3	SAT-M	0.0000	9.8713	3,612.0139	6,591.5191	3,703.4881	-5.2853	1.7893	803.1399	1,168.7607	823.3146
97	06	4	SAT-W	0.0000	11.6995	5,291.4873	3,703.4881	6,990.5754	-5.0793	1.8115	980.6485	823.3146	1,198.5704
97	06	5	Hispanic	0.0925	-0.0117	-4.9770	-5.2853	-5.0793	0.0839	-0.0106	-4.5169	-4.7966	-4.6097
97	06	6	Hispanic*HSGPA	-0.0117	0.0218	1.5320	1.7893	1.8115	-0.0106	0.0216	1.4737	1.7274	1.7521
97	06	7	Hispanic*SAT-CR	-4.9758	1.5320	1,124.6195	803.1399	980.6485	-4.5169	1.4737	1,099.8548	776.8413	955.3749
97	06	8	Hispanic*SAT-M	-5.2840	1.7893	803.1399	1,168.7607	823.3146	-4.7966	1.7274	776.8413	1,140.8331	796.4755
97	06	9	Hispanic*SAT-W	-5.0781	1.8115	980.6485	823.3146	1,198.5704	-4.6097	1.7521	955.3749	796.4755	1,172.7774
98	06	1	HSGPA	0.0000	0.2366	13.0043	14.1213	14.0826	-0.0032	0.0066	0.3315	0.4505	0.3816
98	06	2	SAT-CR	0.0000	13.0043	6,971.4634	4,011.8980	5,189.4777	-0.5076	0.3315	177.3645	117.9714	139.5821
98	06	3	SAT-M	0.0000	14.1213	4,011.8980	7,165.3068	4,025.1956	-0.6336	0.4505	117.9714	182.1240	112.1457
98	06	4	SAT-W	0.0000	14.0826	5,189.4777	4,025.1956	7,111.8611	-0.5374	0.3816	139.5821	112.1457	186.2372
98	06	5	Hispanic	0.0215	-0.0032	-0.5076	-0.6336	-0.5374	0.0210	-0.0032	-0.4967	-0.6200	-0.5259
98	06	6	Hispanic*HSGPA	-0.0032	0.0066	0.3315	0.4505	0.3816	-0.0032	0.0066	0.3298	0.4484	0.3799
98	06	7	Hispanic*SAT-CR	-0.5076	0.3315	177.3645	117.9714	139.5821	-0.4967	0.3298	177.1068	117.6498	139.3093
98	06	8	Hispanic*SAT-M	-0.6335	0.4505	117.9714	182.1240	112.1457	-0.6200	0.4484	117.6498	181.7226	111.8052
98	06	9	Hispanic*SAT-W	-0.5374	0.3816	139.5821	112.1457	186.2372	-0.5259	0.3799	139.3093	111.8052	185.9484
100	06	1	HSGPA	0.0000	0.2093	15.3673	14.9129	16.6680	-0.0081	0.0258	2.5188	2.4750	2.6820
100	06	2	SAT-CR	0.0000	15.3673	8,188.4855	5,101.9453	6,301.7325	-4.5235	2.5188	1,139.7029	892.4041	986.0620
100	06	3	SAT-M	0.0000	14.9129	5,101.9453	8,090.8339	5,080.7952	-4.0911	2.4750	892.4041	1,249.5985	896.6129
100	06	4	SAT-W	0.0000	16.6680	6,301.7325	5,080.7952	8,169.0516	-4.4172	2.6820	986.0620	896.6129	1,186.2615
100	06	5	Hispanic	0.0977	-0.0081	-4.5235	-4.0911	-4.4172	0.0882	-0.0073	-4.0815	-3.6913	-3.9856
100	06	6	Hispanic*HSGPA	-0.0081	0.0258	2.5188	2.4750	2.6820	-0.0073	0.0257	2.4820	2.4417	2.6460
100	06	7	Hispanic*SAT-CR	-4.5230	2.5188	1,139.7029	892.4041	986.0620	-4.0815	2.4820	1,119.2431	873.9002	966.0829
100	06	8	Hispanic*SAT-M	-4.0906	2.4750	892.4041	1,249.5985	896.6129	-3.6913	2.4417	873.9002	1,232.8635	878.5437
100	06	9	Hispanic*SAT-W	-4.4167	2.6820	986.0620	896.6129	1,186.2615	-3.9856	2.6460	966.0829	878.5437	1,166.7518
100	07	1	HSGPA	0.0000	0.2163	14.9367	14.9254	16.6609	-0.0128	0.0296	2.3037	2.3444	2.5132
100	07	2	SAT-CR	0.0000	14.9367	8,178.1462	4,779.1471	6,254.8533	-4.0929	2.3037	1,102.6510	766.8844	932.4731
100	07	3	SAT-M	0.0000	14.9254	4,779.1471	7,721.1032	4,791.2393	-3.4459	2.3444	766.8844	1,142.4626	774.7361
100	07	4	SAT-W	0.0000	16.6609	6,254.8533	4,791.2393	8,193.4491	-3.9526	2.5132	932.4731	774.7361	1,115.8309
100	07	5	Hispanic	0.1022	-0.0128	-4.0929	-3.4459	-3.9526	0.0918	-0.0115	-3.6745	-3.0937	-3.5485
100	07	6	Hispanic*HSGPA	-0.0128	0.0296	2.3037	2.3444	2.5132	-0.0115	0.0295	2.2512	2.3003	2.4626
100	07	7	Hispanic*SAT-CR	-4.0925	2.3037	1,102.6510	766.8844	932.4731	-3.6745	2.2512	1,085.9004	752.7817	916.2970
100	07	8	Hispanic*SAT-M	-3.4456	2.3444	766.8844	1,142.4626	774.7361	-3.0937	2.3003	752.7817	1,130.5893	761.1171
100	07	9	Hispanic*SAT-W	-3.9522	2.5132	932.4731	774.7361	1,115.8309	-3.5485	2.4626	916.2970	761.1171	1,100.2096

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
100	08	1	HSGPA	0.0000	0.2070	12.7494	14.0814	15.1243	-0.0104	0.0303	2.2529	2.4592	2.4589
100	08	2	SAT-CR	0.0000	12.7494	8,015.8235	4,858.5648	6,148.3973	-4.4305	2.2529	1,238.3617	893.2767	1,000.7135
100	08	3	SAT-M	0.0000	14.0814	4,858.5648	7,821.7632	4,959.8153	-4.0630	2.4592	893.2767	1,258.6797	871.8008
100	08	4	SAT-W	0.0000	15.1243	6,148.3973	4,959.8153	8,269.4814	-4.1612	2.4589	1,000.7135	871.8008	1,189.2432
100	08	5	Hispanic	0.1098	-0.0104	-4.4305	-4.0630	-4.1612	0.0977	-0.0093	-3.9441	-3.6170	-3.7044
100	08	6	Hispanic*HSGPA	-0.0104	0.0303	2.2529	2.4592	2.4589	-0.0093	0.0302	2.2068	2.4169	2.4155
100	08	7	Hispanic*SAT-CR	-4.4300	2.2529	1,238.3617	893.2767	1,000.7135	-3.9441	2.2068	1,218.7346	875.2775	982.2795
100	08	8	Hispanic*SAT-M	-4.0626	2.4592	893.2767	1,258.6797	871.8008	-3.6170	2.4169	875.2775	1,242.1733	854.8957
100	08	9	Hispanic*SAT-W	-4.1607	2.4589	1,000.7135	871.8008	1,189.2432	-3.7044	2.4155	982.2795	854.8957	1,171.9297
101	07	1	HSGPA	0.0000	0.1764	11.7449	12.8521	12.8573	-0.0081	0.0186	1.6688	1.8172	1.7271
101	07	2	SAT-CR	0.0000	11.7449	8,101.4351	4,735.6330	6,323.8403	-3.7046	1.6688	968.2894	722.3634	850.0485
101	07	3	SAT-M	0.0000	12.8521	4,735.6330	7,779.0247	4,941.4665	-3.8539	1.8172	722.3634	1,040.5465	753.0335
101	07	4	SAT-W	0.0000	12.8573	6,323.8403	4,941.4665	8,385.3957	-3.7575	1.7271	850.0485	753.0335	1,004.7574
101	07	5	Hispanic	0.0779	-0.0081	-3.7046	-3.8539	-3.7575	0.0719	-0.0075	-3.4159	-3.5535	-3.4647
101	07	6	Hispanic*HSGPA	-0.0081	0.0186	1.6688	1.8172	1.7271	-0.0075	0.0186	1.6388	1.7860	1.6967
101	07	7	Hispanic*SAT-CR	-3.7044	1.6688	968.2894	722.3634	850.0485	-3.4159	1.6388	954.5661	708.0872	836.1294
101	07	8	Hispanic*SAT-M	-3.8536	1.8172	722.3634	1,040.5465	753.0335	-3.5535	1.7860	708.0872	1,025.6952	738.5536
101	07	9	Hispanic*SAT-W	-3.7572	1.7271	850.0485	753.0335	1,004.7574	-3.4647	1.6967	836.1294	738.5536	990.6396
101	08	1	HSGPA	0.0000	0.1707	12.0219	12.9168	13.1752	-0.0117	0.0219	1.9828	2.0520	2.3367
101	08	2	SAT-CR	0.0000	12.0219	8,033.9053	4,669.0742	6,350.4915	-4.4848	1.9828	1,033.0043	754.7922	939.2073
101	08	3	SAT-M	0.0000	12.9168	4,669.0742	7,687.9239	4,963.7251	-4.5561	2.0520	754.7922	1,036.5486	813.4965
101	08	4	SAT-W	0.0000	13.1752	6,350.4915	4,963.7251	8,668.7050	-5.2005	2.3367	939.2073	813.4965	1,169.7421
101	08	5	Hispanic	0.0865	-0.0117	-4.4848	-4.5561	-5.2005	0.0790	-0.0107	-4.0970	-4.1621	-4.7508
101	08	6	Hispanic*HSGPA	-0.0117	0.0219	1.9828	2.0520	2.3367	-0.0107	0.0218	1.9303	1.9987	2.2758
101	08	7	Hispanic*SAT-CR	-4.4844	1.9828	1,033.0043	754.7922	939.2073	-4.0970	1.9303	1,012.8927	734.3608	915.8863
101	08	8	Hispanic*SAT-M	-4.5557	2.0520	754.7922	1,036.5486	813.4965	-4.1621	1.9987	734.3608	1,015.7923	789.8046
101	08	9	Hispanic*SAT-W	-5.2000	2.3367	939.2073	813.4965	1,169.7421	-4.7508	2.2758	915.8863	789.8046	1,142.6994
102	06	1	HSGPA	0.0000	0.2410	14.0060	16.4970	15.7270	-0.0129	0.0278	2.3144	2.6885	2.3911
102	06	2	SAT-CR	0.0000	14.0060	9,070.2743	5,650.4726	7,108.2613	-4.7198	2.3144	1,140.8389	925.1096	977.5511
102	06	3	SAT-M	0.0000	16.4970	5,650.4726	8,746.3364	5,525.7518	-5.0663	2.6885	925.1096	1,198.7831	887.5089
102	06	4	SAT-W	0.0000	15.7270	7,108.2613	5,525.7518	8,847.8272	-4.6887	2.3911	977.5511	887.5089	1,093.2027
102	06	5	Hispanic	0.0772	-0.0129	-4.7198	-5.0663	-4.6887	0.0712	-0.0119	-4.3556	-4.6753	-4.3268
102	06	6	Hispanic*HSGPA	-0.0129	0.0278	2.3144	2.6885	2.3911	-0.0119	0.0277	2.2537	2.6233	2.3307
102	06	7	Hispanic*SAT-CR	-4.7195	2.3144	1,140.8389	925.1096	977.5511	-4.3556	2.2537	1,118.5635	901.1990	955.4228
102	06	8	Hispanic*SAT-M	-5.0660	2.6885	925.1096	1,198.7831	887.5089	-4.6753	2.6233	901.1990	1,173.1174	863.7562
102	06	9	Hispanic*SAT-W	-4.6884	2.3911	977.5511	887.5089	1,093.2027	-4.3268	2.3307	955.4228	863.7562	1,071.2205
102	08	1	HSGPA	0.0000	0.2293	13.3722	15.7240	14.8325	-0.0148	0.0278	2.5917	2.7611	2.6430
102	08	2	SAT-CR	0.0000	13.3722	8,695.6118	5,311.3656	6,596.2089	-5.1164	2.5917	1,276.0111	963.4638	1,077.7942
102	08	3	SAT-M	0.0000	15.7240	5,311.3656	8,330.1585	5,184.7638	-5.4360	2.7611	963.4638	1,237.5344	951.7965
102	08	4	SAT-W	0.0000	14.8325	6,596.2089	5,184.7638	8,316.7261	-4.9206	2.6430	1,077.7942	951.7965	1,197.6823
102	08	5	Hispanic	0.0901	-0.0148	-5.1164	-5.4360	-4.9206	0.0820	-0.0135	-4.6554	-4.9462	-4.4772
102	08	6	Hispanic*HSGPA	-0.0148	0.0278	2.5917	2.7611	2.6430	-0.0135	0.0276	2.5160	2.6807	2.5703
102	08	7	Hispanic*SAT-CR	-5.1161	2.5917	1,276.0111	963.4638	1,077.7942	-4.6554	2.5160	1,249.8350	935.6528	1,052.6198
102	08	8	Hispanic*SAT-M	-5.4356	2.7611	963.4638	1,237.5344	951.7965	-4.9462	2.6807	935.6528	1,207.9864	925.0499
102	08	9	Hispanic*SAT-W	-4.9203	2.6430	1,077.7942	951.7965	1,197.6823	-4.4772	2.5703	1,052.6198	925.0499	1,173.4714



## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
103	06	1	HSGPA	0.0000	0.2901	16.7963	20.1195	15.0547	-0.0247	0.0776	4.5515	5.9230	4.3170
103	06	2	SAT-CR	0.0000	16.7963	8,829.9805	5,555.6415	6,138.6801	-9.5479	4.5515	2,502.0416	1,878.8708	1,971.3616
103	06	3	SAT-M	0.0000	20.1195	5,555.6415	8,196.8231	4,666.2964	-9.7174	5.9230	1,878.8708	2,576.7313	1,618.2721
103	06	4	SAT-W	0.0000	15.0547	6,138.6801	4,666.2964	7,133.4245	-9.5132	4.3170	1,971.3616	1,618.2721	2,176.5689
103	06	5	Hispanic	0.2413	-0.0247	-9.5479	-9.7174	-9.5132	0.1832	-0.0187	-7.2442	-7.3729	-7.2179
103	06	6	Hispanic*HSGPA	-0.0246	0.0776	4.5515	5.9230	4.3170	-0.0187	0.0770	4.3163	5.6837	4.0826
103	06	7	Hispanic*SAT-CR	-9.5384	4.5515	2,502.0416	1,878.8708	1,971.3616	-7.2442	4.3163	2,410.9696	1,786.1819	1,880.6204
103	06	8	Hispanic*SAT-M	-9.7078	5.9230	1,878.8708	2,576.7313	1,618.2721	-7.3729	5.6837	1,786.1819	2,482.3967	1,525.9198
103	06	9	Hispanic*SAT-W	-9.5038	4.3170	1,971.3616	1,618.2721	2,176.5689	-7.2179	4.0826	1,880.6204	1,525.9198	2,086.1573
103	07	1	HSGPA	0.0000	0.2661	13.3230	15.5107	16.2030	-0.0263	0.0612	3.9705	4.5088	4.2259
103	07	2	SAT-CR	0.0000	13.3230	8,073.7746	4,819.4445	5,623.5466	-10.4449	3.9705	2,097.4492	1,532.5394	1,608.5873
103	07	3	SAT-M	0.0000	15.5107	4,819.4445	7,470.5318	4,365.1189	-9.4886	4.5088	1,532.5394	2,154.5070	1,415.8996
103	07	4	SAT-W	0.0000	16.2030	5,623.5466	4,365.1189	6,873.9334	-8.4624	4.2259	1,608.5873	1,415.8996	1,836.4467
103	07	5	Hispanic	0.2279	-0.0263	-10.4449	-9.4886	-8.4624	0.1761	-0.0203	-8.0645	-7.3262	-6.5339
103	07	6	Hispanic*HSGPA	-0.0263	0.0612	3.9705	4.5088	4.2259	-0.0203	0.0605	3.6960	4.2595	4.0035
103	07	7	Hispanic*SAT-CR	-10.4346	3.9705	2,097.4492	1,532.5394	1,608.5873	-8.0645	3.6960	1,988.4610	1,433.5295	1,520.2852
103	07	8	Hispanic*SAT-M	-9.4793	4.5088	1,532.5394	2,154.5070	1,415.8996	-7.3262	4.2595	1,433.5295	2,064.5620	1,335.6820
103	07	9	Hispanic*SAT-W	-8.4541	4.2259	1,608.5873	1,415.8996	1,836.4467	-6.5339	4.0035	1,520.2852	1,335.6820	1,764.9044
103	08	1	HSGPA	0.0000	0.2812	17.0802	19.1988	16.6793	-0.0351	0.0821	6.0403	6.0774	5.4437
103	08	2	SAT-CR	0.0000	17.0802	9,038.9855	5,524.9070	6,411.5561	-14.8845	6.0403	2,795.8066	1,771.3001	1,916.3872
103	08	3	SAT-M	0.0000	19.1988	5,524.9070	8,168.6618	5,097.2767	-12.4238	6.0774	1,771.3001	2,365.2883	1,464.1569
103	08	4	SAT-W	0.0000	16.6793	6,411.5561	5,097.2767	7,543.9001	-13.2532	5.4437	1,916.3872	1,464.1569	2,057.1013
103	08	5	Hispanic	0.2861	-0.0351	-14.8845	-12.4238	-13.2532	0.2044	-0.0251	-10.6262	-8.8695	-9.4616
103	08	6	Hispanic*HSGPA	-0.0351	0.0821	6.0403	6.0774	5.4437	-0.0251	0.0809	5.5182	5.6416	4.9788
103	08	7	Hispanic*SAT-CR	-14.8715	6.0403	2,795.8066	1,771.3001	1,916.3872	-10.6262	5.5182	2,574.4525	1,586.5406	1,719.2922
103	08	8	Hispanic*SAT-M	-12.4129	6.0774	1,771.3001	2,365.2883	1,464.1569	-8.8695	5.6416	1,586.5406	2,211.0737	1,299.6460
103	08	9	Hispanic*SAT-W	-13.2416	5.4437	1,916.3872	1,464.1569	2,057.1013	-9.4616	4.9788	1,719.2922	1,299.6460	1,881.6067
106	06	1	HSGPA	0.0000	0.2403	14.0192	14.8702	14.3579	-0.0022	0.0068	0.4528	0.5316	0.4633
106	06	2	SAT-CR	0.0000	14.0192	7,222.4132	4,271.6557	5,313.5694	-0.5682	0.4528	239.6868	155.5444	194.5042
106	06	3	SAT-M	0.0000	14.8702	4,271.6557	7,479.2065	4,173.4026	-0.8694	0.5316	155.5444	253.1781	160.3427
106	06	4	SAT-W	0.0000	14.3579	5,313.5694	4,173.4026	7,105.6309	-0.7065	0.4633	194.5042	160.3427	251.1565
106	06	5	Hispanic	0.0268	-0.0022	-0.5682	-0.8694	-0.7065	0.0260	-0.0022	-0.5530	-0.8461	-0.6876
106	06	6	Hispanic*HSGPA	-0.0022	0.0068	0.4528	0.5316	0.4633	-0.0022	0.0068	0.4515	0.5297	0.4618
106	06	7	Hispanic*SAT-CR	-0.5682	0.4528	239.6868	155.5444	194.5042	-0.5530	0.4515	239.3640	155.0504	194.1028
106	06	8	Hispanic*SAT-M	-0.8693	0.5316	155.5444	253.1781	160.3427	-0.8461	0.5297	155.0504	252.4223	159.7285
106	06	9	Hispanic*SAT-W	-0.7065	0.4633	194.5042	160.3427	251.1565	-0.6876	0.4618	194.1028	159.7285	250.6574
106	07	1	HSGPA	0.0000	0.2380	13.9467	15.1204	14.8421	-0.0038	0.0104	0.6479	0.7492	0.7425
106	07	2	SAT-CR	0.0000	13.9467	7,447.6770	4,381.9035	5,643.6172	-0.9133	0.6479	319.1216	225.6337	261.4190
106	07	3	SAT-M	0.0000	15.1204	4,381.9035	7,402.9895	4,336.6595	-0.9482	0.7492	225.6337	342.2727	225.5894
106	07	4	SAT-W	0.0000	14.8421	5,643.6172	4,336.6595	7,420.6324	-1.0444	0.7425	261.4190	225.5894	328.6447
106	07	5	Hispanic	0.0329	-0.0038	-0.9133	-0.9482	-1.0444	0.0318	-0.0037	-0.8832	-0.9169	-1.0100
106	07	6	Hispanic*HSGPA	-0.0038	0.0104	0.6479	0.7492	0.7425	-0.0037	0.0104	0.6445	0.7456	0.7385
106	07	7	Hispanic*SAT-CR	-0.9133	0.6479	319.1216	225.6337	261.4190	-0.8832	0.6445	318.2875	224.7678	260.4652
106	07	8	Hispanic*SAT-M	-0.9481	0.7492	225.6337	342.2727	225.5894	-0.9169	0.7456	224.7678	341.3737	224.5993
106	07	9	Hispanic*SAT-W	-1.0443	0.7425	261.4190	225.5894	328.6447	-1.0100	0.7385	260.4652	224.5993	327.5541

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
106	08	1	HSGPA	0.0000	0.2216	12.4307	13.5585	13.5927	-0.0033	0.0102	0.6667	0.8119	0.7055
106	08	2	SAT-CR	0.0000	12.4307	7,239.2813	4,295.8991	5,535.2332	-0.9614	0.6667	331.9407	237.5049	270.5572
106	08	3	SAT-M	0.0000	13.5585	4,295.8991	7,408.5375	4,366.1657	-1.1926	0.8119	237.5049	371.4991	249.3011
106	08	4	SAT-W	0.0000	13.5927	5,535.2332	4,366.1657	7,548.7315	-0.9949	0.7055	270.5572	249.3011	361.9586
106	08	5	Hispanic	0.0371	-0.0033	-0.9614	-1.1926	-0.9949	0.0357	-0.0032	-0.9257	-1.1483	-0.9580
106	08	6	Hispanic*HSGPA	-0.0033	0.0102	0.6667	0.8119	0.7055	-0.0032	0.0102	0.6635	0.8080	0.7022
106	08	7	Hispanic*SAT-CR	-0.9613	0.6667	331.9407	237.5049	270.5572	-0.9257	0.6635	331.0166	236.3585	269.6009
106	08	8	Hispanic*SAT-M	-1.1925	0.8119	237.5049	371.4991	249.3011	-1.1483	0.8080	236.3585	370.0769	248.1147
106	08	9	Hispanic*SAT-W	-0.9948	0.7055	270.5572	249.3011	361.9586	-0.9580	0.7022	269.6009	248.1147	360.9689
108	06	1	HSGPA	0.0000	0.3015	19.3308	19.8037	17.4717	-0.0202	0.0815	6.1576	5.8019	5.3187
108	06	2	SAT-CR	0.0000	19.3308	8,378.5613	5,249.1678	6,254.8916	-9.4177	6.1576	2,566.1449	1,736.8960	1,976.5064
108	06	3	SAT-M	0.0000	19.8037	5,249.1678	8,770.0025	5,135.1778	-10.7268	5.8019	1,736.8960	2,416.0200	1,612.1439
108	06	4	SAT-W	0.0000	17.4717	6,254.8916	5,135.1778	7,720.3368	-8.6624	5.3187	1,976.5064	1,612.1439	2,189.6397
108	06	5	Hispanic	0.2332	-0.0202	-9.4177	-10.7268	-8.6624	0.1790	-0.0155	-7.2216	-8.2254	-6.6424
108	06	6	Hispanic*HSGPA	-0.0202	0.0815	6.1576	5.8019	5.3187	-0.0155	0.0811	5.9677	5.5856	5.1440
108	06	7	Hispanic*SAT-CR	-9.4097	6.1576	2,566.1449	1,736.8960	1,976.5064	-7.2216	5.9677	2,477.5265	1,635.9599	1,894.9957
108	06	8	Hispanic*SAT-M	-10.7176	5.8019	1,736.8960	2,416.0200	1,612.1439	-8.2254	5.5856	1,635.9599	2,301.0542	1,519.3035
108	06	9	Hispanic*SAT-W	-8.6550	5.3187	1,976.5064	1,612.1439	2,189.6397	-6.6424	5.1440	1,894.9957	1,519.3035	2,114.6666
108	07	1	HSGPA	0.0000	0.3043	17.3084	16.9660	18.8068	-0.0276	0.0906	4.7247	4.9236	5.0850
108	07	2	SAT-CR	0.0000	17.3084	8,198.5338	5,465.0242	6,191.3262	-11.3614	4.7247	2,812.6690	2,010.9219	2,131.3876
108	07	3	SAT-M	0.0000	16.9660	5,465.0242	8,578.7553	5,267.0286	-12.0326	4.9236	2,010.9219	2,792.2475	1,751.5621
108	07	4	SAT-W	0.0000	18.8068	6,191.3262	5,267.0286	7,846.8842	-9.9819	5.0850	2,131.3876	1,751.5621	2,406.1623
108	07	5	Hispanic	0.2628	-0.0276	-11.3614	-12.0326	-9.9819	0.1939	-0.0203	-8.3760	-8.8708	-7.3590
108	07	6	Hispanic*HSGPA	-0.0275	0.0906	4.7247	4.9236	5.0850	-0.0203	0.0899	4.4117	4.5921	4.8101
108	07	7	Hispanic*SAT-CR	-11.3530	4.7247	2,812.6690	2,010.9219	2,131.3876	-8.3760	4.4117	2,683.6835	1,874.3166	2,018.0636
108	07	8	Hispanic*SAT-M	-12.0237	4.9236	2,010.9219	2,792.2475	1,751.5621	-8.8708	4.5921	1,874.3166	2,647.5722	1,631.5436
108	07	9	Hispanic*SAT-W	-9.9745	5.0850	2,131.3876	1,751.5621	2,406.1623	-7.3590	4.8101	2,018.0636	1,631.5436	2,306.5983
109	06	1	HSGPA	0.0000	0.2613	22.3498	24.1143	23.0641	-0.0510	0.1134	10.9646	11.8403	11.2702
109	06	2	SAT-CR	0.0000	22.3498	11,428.1160	8,459.4615	9,405.9764	-22.5850	10.9646	4,971.5755	4,109.0878	4,306.4431
109	06	3	SAT-M	0.0000	24.1143	8,459.4615	11,855.6252	8,305.7340	-23.6083	11.8403	4,109.0878	5,302.4739	4,011.4315
109	06	4	SAT-W	0.0000	23.0641	9,405.9764	8,305.7340	11,034.5427	-22.4534	11.2702	4,306.4431	4,011.4315	4,775.8072
109	06	5	Hispanic	0.3240	-0.0510	-22.5850	-23.6083	-22.4534	0.2190	-0.0345	-15.2673	-15.9591	-15.1783
109	06	6	Hispanic*HSGPA	-0.0510	0.1134	10.9646	11.8403	11.2702	-0.0345	0.1108	9.8118	10.6353	10.1242
109	06	7	Hispanic*SAT-CR	-22.5840	10.9646	4,971.5755	4,109.0878	4,306.4431	-15.2673	9.8118	4,461.5174	3,575.9184	3,799.3568
109	06	8	Hispanic*SAT-M	-23.6073	11.8403	4,109.0878	5,302.4739	4,011.4315	-15.9591	10.6353	3,575.9184	4,745.1461	3,481.3686
109	06	9	Hispanic*SAT-W	-22.4524	11.2702	4,306.4431	4,011.4315	4,775.8072	-15.1783	10.1242	3,799.3568	3,481.3686	4,271.6754
109	07	1	HSGPA	0.0000	0.2640	22.7240	24.0425	23.5903	-0.0534	0.1151	11.5080	11.8066	11.7669
109	07	2	SAT-CR	0.0000	22.7240	11,335.1626	8,251.5241	9,377.8306	-22.2081	11.5080	4,967.0976	4,009.4836	4,321.2716
109	07	3	SAT-M	0.0000	24.0425	8,251.5241	11,551.6875	8,197.5270	-22.5352	11.8066	4,009.4836	5,118.7721	3,949.7461
109	07	4	SAT-W	0.0000	23.5903	9,377.8306	8,197.5270	11,054.2498	-22.0219	11.7669	4,321.2716	3,949.7461	4,758.9687
109	07	5	Hispanic	0.3232	-0.0534	-22.2081	-22.5352	-22.0219	0.2188	-0.0361	-15.0299	-15.2512	-14.9038
109	07	6	Hispanic*HSGPA	-0.0534	0.1151	11.5080	11.8066	11.7669	-0.0361	0.1123	10.3220	10.6032	10.5909
109	07	7	Hispanic*SAT-CR	-22.2072	11.5080	4,967.0976	4,009.4836	4,321.2716	-15.0299	10.3220	4,473.9164	3,509.0402	3,832.2265
109	07	8	Hispanic*SAT-M	-22.5342	11.8066	4,009.4836	5,118.7721	3,949.7461	-15.2512	10.6032	3,509.0402	4,610.9597	3,453.4998
109	07	9	Hispanic*SAT-W	-22.0210	11.7669	4,321.2716	3,949.7461	4,758.9687	-14.9038	10.5909	3,832.2265	3,453.4998	4,274.0251

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
109	08	1	HSGPA	0.0000	0.2576	22.2457	24.3924	23.3678	-0.0561	0.1284	11.9282	13.0444	12.4093
109	08	2	SAT-CR	0.0000	22.2457	11,573.0348	8,812.7670	9,757.9372	-24.8566	11.9282	5,515.8504	4,648.4358	4,796.9625
109	08	3	SAT-M	0.0000	24.3924	8,812.7670	12,414.4879	8,956.3445	-26.4368	13.0444	4,648.4358	6,207.0547	4,667.4854
109	08	4	SAT-W	0.0000	23.3678	9,757.9372	8,956.3445	11,718.1012	-25.3938	12.4093	4,796.9625	4,667.4854	5,421.0980
109	08	5	Hispanic	0.3723	-0.0561	-24.8566	-26.4368	-25.3938	0.2337	-0.0352	-15.6022	-16.5941	-15.9394
109	08	6	Hispanic*HSGPA	-0.0561	0.1284	11.9282	13.0444	12.4093	-0.0352	0.1252	10.5350	11.5627	10.9860
109	08	7	Hispanic*SAT-CR	-24.8554	11.9282	5,515.8504	4,648.4358	4,796.9625	-15.6022	10.5350	4,898.0301	3,991.3388	4,165.7900
109	08	8	Hispanic*SAT-M	-26.4355	13.0444	4,648.4358	6,207.0547	4,667.4854	-16.5941	11.5627	3,991.3388	5,508.1841	3,996.1874
109	08	9	Hispanic*SAT-W	-25.3926	12.4093	4,796.9625	4,667.4854	5,421.0980	-15.9394	10.9860	4,165.7900	3,996.1874	4,776.2848
110	08	1	HSGPA	0.0000	0.1907	12.0703	11.9217	13.0094	-0.0028	0.0071	0.5840	0.5888	0.5339
110	08	2	SAT-CR	0.0000	12.0703	7,711.8367	4,358.5380	5,995.7175	-1.3319	0.5840	351.5857	241.5125	296.5476
110	08	3	SAT-M	0.0000	11.9217	4,358.5380	7,166.0312	4,413.5228	-1.4473	0.5888	241.5125	354.8039	264.8702
110	08	4	SAT-W	0.0000	13.0094	5,995.7175	4,413.5228	8,088.8569	-1.2677	0.5339	296.5476	264.8702	366.2460
110	08	5	Hispanic	0.0320	-0.0028	-1.3319	-1.4473	-1.2677	0.0310	-0.0028	-1.2893	-1.4010	-1.2271
110	08	6	Hispanic*HSGPA	-0.0028	0.0071	0.5840	0.5888	0.5339	-0.0028	0.0071	0.5802	0.5847	0.5303
110	08	7	Hispanic*SAT-CR	-1.3316	0.5840	351.5857	241.5125	296.5476	-1.2893	0.5802	349.8121	239.5852	294.8597
110	08	8	Hispanic*SAT-M	-1.4470	0.5888	241.5125	354.8039	264.8702	-1.4010	0.5847	239.5852	352.7096	263.0359
110	08	9	Hispanic*SAT-W	-1.2673	0.5339	296.5476	264.8702	366.2460	-1.2271	0.5303	294.8597	263.0359	364.6395
112	07	1	HSGPA	0.0000	0.2520	15.1244	16.6867	15.7224	-0.0199	0.0511	4.0105	4.2582	4.2187
112	07	2	SAT-CR	0.0000	15.1244	8,177.3902	5,055.9249	6,285.3549	-8.2495	4.0105	2,072.1261	1,447.1943	1,701.6350
112	07	3	SAT-M	0.0000	16.6867	5,055.9249	7,937.4874	5,041.4774	-8.8307	4.2582	1,447.1943	1,990.6598	1,431.9942
112	07	4	SAT-W	0.0000	15.7224	6,285.3549	5,041.4774	7,891.5851	-8.5714	4.2187	1,701.6350	1,431.9942	1,964.5908
112	07	5	Hispanic	0.1919	-0.0199	-8.2495	-8.8307	-8.5714	0.1551	-0.0161	-6.6667	-7.1364	-6.9269
112	07	6	Hispanic*HSGPA	-0.0199	0.0511	4.0105	4.2582	4.2187	-0.0161	0.0507	3.8465	4.0826	4.0482
112	07	7	Hispanic*SAT-CR	-8.2486	4.0105	2,072.1261	1,447.1943	1,701.6350	-6.6667	3.8465	2,004.0796	1,374.3531	1,630.9325
112	07	8	Hispanic*SAT-M	-8.8298	4.2582	1,447.1943	1,990.6598	1,431.9942	-7.1364	4.0826	1,374.3531	1,912.6861	1,356.3099
112	07	9	Hispanic*SAT-W	-8.5705	4.2187	1,701.6350	1,431.9942	1,964.5908	-6.9269	4.0482	1,630.9325	1,356.3099	1,891.1289
112	08	1	HSGPA	0.0000	0.2391	14.4739	16.0475	15.1850	-0.0211	0.0614	4.9810	5.2361	5.0677
112	08	2	SAT-CR	0.0000	14.4739	8,063.9746	5,059.1665	6,313.1827	-10.8321	4.9810	2,342.6046	1,764.5028	1,936.9329
112	08	3	SAT-M	0.0000	16.0475	5,059.1665	7,986.5051	5,093.0707	-10.8219	5.2361	1,764.5028	2,353.3948	1,691.5705
112	08	4	SAT-W	0.0000	15.1850	6,313.1827	5,093.0707	8,105.9733	-10.7168	5.0677	1,936.9329	1,691.5705	2,234.2088
112	08	5	Hispanic	0.2128	-0.0211	-10.8321	-10.8219	-10.7168	0.1675	-0.0166	-8.5268	-8.5187	-8.4360
112	08	6	Hispanic*HSGPA	-0.0211	0.0614	4.9810	5.2361	5.0677	-0.0166	0.0609	4.7526	5.0080	4.8418
112	08	7	Hispanic*SAT-CR	-10.8309	4.9810	2,342.6046	1,764.5028	1,936.9329	-8.5268	4.7526	2,225.2827	1,647.2918	1,820.8601
112	08	8	Hispanic*SAT-M	-10.8207	5.2361	1,764.5028	2,353.3948	1,691.5705	-8.5187	5.0080	1,647.2918	2,236.2946	1,575.6074
112	08	9	Hispanic*SAT-W	-10.7156	5.0677	1,936.9329	1,691.5705	2,234.2088	-8.4360	4.8418	1,820.8601	1,575.6074	2,119.3717
113	06	1	HSGPA	0.0000	0.2603	13.8410	16.9357	15.5369	-0.0160	0.0417	3.2457	3.7060	3.6437
113	06	2	SAT-CR	0.0000	13.8410	8,678.2227	5,023.7598	6,515.9247	-6.6873	3.2457	1,501.7567	1,089.7745	1,311.1054
113	06	3	SAT-M	0.0000	16.9357	5,023.7598	8,045.7294	4,862.2521	-6.5528	3.7060	1,089.7745	1,481.9388	1,147.7599
113	06	4	SAT-W	0.0000	15.5369	6,515.9247	4,862.2521	7,984.2360	-6.5588	3.6437	1,311.1054	1,147.7599	1,550.2856
113	06	5	Hispanic	0.1213	-0.0160	-6.6873	-6.5528	-6.5588	0.1067	-0.0141	-5.8758	-5.7577	-5.7629
113	06	6	Hispanic*HSGPA	-0.0160	0.0417	3.2457	3.7060	3.6437	-0.0141	0.0414	3.1384	3.6009	3.5385
113	06	7	Hispanic*SAT-CR	-6.6851	3.2457	1,501.7567	1,089.7745	1,311.1054	-5.8758	3.1384	1,457.0516	1,045.9681	1,267.2592
113	06	8	Hispanic*SAT-M	-6.5507	3.7060	1,089.7745	1,481.9388	1,147.7599	-5.7577	3.6009	1,045.9681	1,439.0131	1,104.7951
113	06	9	Hispanic*SAT-W	-6.5567	3.6437	1,311.1054	1,147.7599	1,550.2856	-5.7629	3.5385	1,267.2592	1,104.7951	1,507.2818

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
113	07	1	HSGPA	0.0000	0.2559	13.8299	15.4916	14.8461	-0.0207	0.0406	3.0342	3.1521	3.3184
113	07	2	SAT-CR	0.0000	13.8299	8,340.4312	4,651.7563	6,103.4795	-5.8339	3.0342	1,451.6100	1,008.7058	1,187.4727
113	07	3	SAT-M	0.0000	15.4916	4,651.7563	7,869.9678	4,536.1878	-6.0393	3.1521	1,008.7058	1,375.9410	1,025.2956
113	07	4	SAT-W	0.0000	14.8461	6,103.4795	4,536.1878	7,520.1000	-5.7295	3.3184	1,187.4727	1,025.2956	1,412.8560
113	07	5	Hispanic	0.1365	-0.0207	-5.8339	-6.0393	-5.7295	0.1179	-0.0179	-5.0375	-5.2148	-4.9473
113	07	6	Hispanic*HSGPA	-0.0207	0.0406	3.0342	3.1521	3.3184	-0.0179	0.0402	2.9132	3.0268	3.1996
113	07	7	Hispanic*SAT-CR	-5.8323	3.0342	1,451.6100	1,008.7058	1,187.4727	-5.0375	2.9132	1,417.5848	973.4827	1,154.0568
113	07	8	Hispanic*SAT-M	-6.0376	3.1521	1,008.7058	1,375.9410	1,025.2956	-5.2148	3.0268	973.4827	1,339.4779	990.7033
113	07	9	Hispanic*SAT-W	-5.7278	3.3184	1,187.4727	1,025.2956	1,412.8560	-4.9473	3.1996	1,154.0568	990.7033	1,380.0386
113	08	1	HSGPA	0.0000	0.2690	13.7173	17.6763	15.5823	-0.0186	0.0473	3.8780	4.2443	3.8046
113	08	2	SAT-CR	0.0000	13.7173	8,624.6824	4,949.6215	6,352.1154	-8.7552	3.8780	2,100.3958	1,495.3644	1,666.8608
113	08	3	SAT-M	0.0000	17.6763	4,949.6215	8,009.6284	4,800.5363	-8.6005	4.2443	1,495.3644	1,813.6175	1,386.2339
113	08	4	SAT-W	0.0000	15.5823	6,352.1154	4,800.5363	7,849.9636	-7.8191	3.8046	1,666.8608	1,386.2339	1,776.4619
113	08	5	Hispanic	0.1461	-0.0186	-8.7552	-8.6005	-7.8191	0.1248	-0.0159	-7.4761	-7.3439	-6.6767
113	08	6	Hispanic*HSGPA	-0.0186	0.0473	3.8780	4.2443	3.8046	-0.0159	0.0469	3.7149	4.0840	3.6589
113	08	7	Hispanic*SAT-CR	-8.7525	3.8780	2,100.3958	1,495.3644	1,666.8608	-7.4761	3.7149	2,023.7656	1,420.0886	1,598.4238
113	08	8	Hispanic*SAT-M	-8.5978	4.2443	1,495.3644	1,813.6175	1,386.2339	-7.3439	4.0840	1,420.0886	1,739.6721	1,319.0064
113	08	9	Hispanic*SAT-W	-7.8167	3.8046	1,666.8608	1,386.2339	1,776.4619	-6.6767	3.6589	1,598.4238	1,319.0064	1,715.3420
114	06	1	HSGPA	0.0000	0.2948	16.1997	18.7394	17.9192	-0.0141	0.0376	2.6219	2.8276	2.7672
114	06	2	SAT-CR	0.0000	16.1997	8,633.8377	5,582.0993	6,552.6601	-4.5971	2.6219	1,261.5540	962.1680	1,028.1836
114	06	3	SAT-M	0.0000	18.7394	5,582.0993	9,028.1236	5,392.2857	-5.0216	2.8276	962.1680	1,244.3984	926.3074
114	06	4	SAT-W	0.0000	17.9192	6,552.6601	5,392.2857	8,168.1784	-4.5678	2.7672	1,028.1836	926.3074	1,165.6123
114	06	5	Hispanic	0.0947	-0.0141	-4.5971	-5.0216	-4.5678	0.0858	-0.0128	-4.1616	-4.5458	-4.1350
114	06	6	Hispanic*HSGPA	-0.0141	0.0376	2.6219	2.8276	2.7672	-0.0128	0.0374	2.5571	2.7568	2.7028
114	06	7	Hispanic*SAT-CR	-4.5967	2.6219	1,261.5540	962.1680	1,028.1836	-4.1616	2.5571	1,240.4224	939.0850	1,007.1866
114	06	8	Hispanic*SAT-M	-5.0212	2.8276	962.1680	1,244.3984	926.3074	-4.5458	2.7568	939.0850	1,219.1839	903.3716
114	06	9	Hispanic*SAT-W	-4.5674	2.7672	1,028.1836	926.3074	1,165.6123	-4.1350	2.7028	1,007.1866	903.3716	1,144.7492
114	07	1	HSGPA	0.0000	0.2954	15.7924	18.2717	17.6610	-0.0187	0.0396	2.4026	2.6502	2.5734
114	07	2	SAT-CR	0.0000	15.7924	8,174.6681	5,148.5740	6,374.3853	-4.4580	2.4026	1,085.4763	801.0481	935.0455
114	07	3	SAT-M	0.0000	18.2717	5,148.5740	8,719.3604	5,229.3658	-4.7657	2.6502	801.0481	1,132.5520	840.2188
114	07	4	SAT-W	0.0000	17.6610	6,374.3853	5,229.3658	8,057.9574	-4.9860	2.5734	935.0455	840.2188	1,099.2192
114	07	5	Hispanic	0.0951	-0.0187	-4.4580	-4.7657	-4.9860	0.0861	-0.0169	-4.0340	-4.3124	-4.5117
114	07	6	Hispanic*HSGPA	-0.0187	0.0396	2.4026	2.6502	2.5734	-0.0169	0.0392	2.3194	2.5612	2.4803
114	07	7	Hispanic*SAT-CR	-4.4577	2.4026	1,085.4763	801.0481	935.0455	-4.0340	2.3194	1,065.6037	779.8040	912.8195
114	07	8	Hispanic*SAT-M	-4.7653	2.6502	801.0481	1,132.5520	840.2188	-4.3124	2.5612	779.8040	1,109.8417	816.4589
114	07	9	Hispanic*SAT-W	-4.9856	2.5734	935.0455	840.2188	1,099.2192	-4.5117	2.4803	912.8195	816.4589	1,074.3611
114	08	1	HSGPA	0.0000	0.2902	15.2258	17.3908	17.4807	-0.0214	0.0449	3.1428	3.2185	3.3021
114	08	2	SAT-CR	0.0000	15.2258	8,211.8069	5,215.1571	6,461.5110	-6.2299	3.1428	1,397.9882	1,075.4697	1,181.6477
114	08	3	SAT-M	0.0000	17.3908	5,215.1571	8,574.5062	5,144.9391	-6.6252	3.2185	1,075.4697	1,435.8694	1,053.0934
114	08	4	SAT-W	0.0000	17.4807	6,461.5110	5,144.9391	8,248.0645	-6.4502	3.3021	1,181.6477	1,053.0934	1,359.4201
114	08	5	Hispanic	0.1128	-0.0214	-6.2299	-6.6252	-6.4502	0.1001	-0.0189	-5.5272	-5.8779	-5.7226
114	08	6	Hispanic*HSGPA	-0.0214	0.0449	3.1428	3.2185	3.3021	-0.0189	0.0444	3.0098	3.0770	3.1644
114	08	7	Hispanic*SAT-CR	-6.2294	3.1428	1,397.9882	1,075.4697	1,181.6477	-5.5272	3.0098	1,359.1796	1,034.1985	1,141.4669
114	08	8	Hispanic*SAT-M	-6.6247	3.2185	1,075.4697	1,435.8694	1,053.0934	-5.8779	3.0770	1,034.1985	1,391.9794	1,010.3630
114	08	9	Hispanic*SAT-W	-6.4497	3.3021	1,181.6477	1,053.0934	1,359.4201	-5.7226	3.1644	1,141.4669	1,010.3630	1,317.8186

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
115	06	1	HSGPA	0.0000	0.1374	7.5001	8.3664	8.3010	-0.0080	0.0153	1.1393	1.3232	1.2111
115	06	2	SAT-CR	0.0000	7.5001	6,559.0395	3,339.9661	4,709.2259	-3.7689	1.1393	838.1043	614.2564	712.5525
115	06	3	SAT-M	0.0000	8.3664	3,339.9661	6,487.5874	3,423.5534	-4.0201	1.3232	614.2564	922.5135	608.5131
115	06	4	SAT-W	0.0000	8.3010	4,709.2259	3,423.5534	6,556.5667	-3.6755	1.2111	712.5525	608.5131	864.7982
115	06	5	Hispanic	0.0838	-0.0080	-3.7689	-4.0201	-3.6755	0.0768	-0.0073	-3.4530	-3.6831	-3.3674
115	06	6	Hispanic*HSGPA	-0.0080	0.0153	1.1393	1.3232	1.2111	-0.0073	0.0153	1.1091	1.2910	1.1816
115	06	7	Hispanic*SAT-CR	-3.7686	1.1393	838.1043	614.2564	712.5525	-3.4530	1.1091	823.9007	599.1063	698.7011
115	06	8	Hispanic*SAT-M	-4.0197	1.3232	614.2564	922.5135	608.5131	-3.6831	1.2910	599.1063	906.3539	593.7387
115	06	9	Hispanic*SAT-W	-3.6752	1.2111	712.5525	608.5131	864.7982	-3.3674	1.1816	698.7011	593.7387	851.2902
115	07	1	HSGPA	0.0000	0.1380	7.6492	8.8630	8.4058	-0.0088	0.0163	1.3838	1.6039	1.5690
115	07	2	SAT-CR	0.0000	7.6492	6,481.7822	3,306.3562	4,524.6040	-3.4359	1.3838	841.2424	592.2155	686.2561
115	07	3	SAT-M	0.0000	8.8630	3,306.3562	6,639.6875	3,420.8889	-3.9719	1.6039	592.2155	918.4353	612.6392
115	07	4	SAT-W	0.0000	8.4058	4,524.6040	3,420.8889	6,373.4845	-3.5791	1.5690	686.2561	612.6392	829.8600
115	07	5	Hispanic	0.0825	-0.0088	-3.4359	-3.9719	-3.5791	0.0757	-0.0081	-3.1524	-3.6442	-3.2838
115	07	6	Hispanic*HSGPA	-0.0088	0.0163	1.3838	1.6039	1.5690	-0.0081	0.0162	1.3536	1.5689	1.5375
115	07	7	Hispanic*SAT-CR	-3.4356	1.3838	841.2424	592.2155	686.2561	-3.1524	1.3536	829.4380	578.5693	673.9597
115	07	8	Hispanic*SAT-M	-3.9717	1.6039	592.2155	918.4353	612.6392	-3.6442	1.5689	578.5693	902.6602	598.4243
115	07	9	Hispanic*SAT-W	-3.5788	1.5690	686.2561	612.6392	829.8600	-3.2838	1.5375	673.9597	598.4243	817.0510
115	08	1	HSGPA	0.0000	0.1433	7.7727	8.3348	8.2583	-0.0115	0.0206	1.7918	1.9906	2.1403
115	08	2	SAT-CR	0.0000	7.7727	6,556.7599	3,452.3472	4,779.7922	-5.1276	1.7918	1,111.4605	841.0875	984.0892
115	08	3	SAT-M	0.0000	8.3348	3,452.3472	6,735.6725	3,675.1325	-5.4742	1.9906	841.0875	1,224.7941	898.8459
115	08	4	SAT-W	0.0000	8.2583	4,779.7922	3,675.1325	6,914.8244	-5.6670	2.1403	984.0892	898.8459	1,239.1553
115	08	5	Hispanic	0.0999	-0.0115	-5.1276	-5.4742	-5.6670	0.0899	-0.0103	-4.6154	-4.9275	-5.1010
115	08	6	Hispanic*HSGPA	-0.0115	0.0206	1.7918	1.9906	2.1403	-0.0103	0.0205	1.7330	1.9279	2.0753
115	08	7	Hispanic*SAT-CR	-5.1271	1.7918	1,111.4605	841.0875	984.0892	-4.6154	1.7330	1,085.1706	813.0203	955.0337
115	08	8	Hispanic*SAT-M	-5.4738	1.9906	841.0875	1,224.7941	898.8459	-4.9275	1.9279	813.0203	1,194.8293	867.8260
115	08	9	Hispanic*SAT-W	-5.6665	2.1403	984.0892	898.8459	1,239.1553	-5.1010	2.0753	955.0337	867.8260	1,207.0432
117	06	1	HSGPA	0.0000	0.1611	7.8673	6.9800	7.8540	-0.0042	0.0113	0.6487	0.6053	0.7256
117	06	2	SAT-CR	0.0000	7.8673	6,377.5214	3,232.9954	4,361.5335	-1.2150	0.6487	418.9804	267.4923	329.6914
117	06	3	SAT-M	0.0000	6.9800	3,232.9954	6,161.2417	3,240.5339	-1.5020	0.6053	267.4923	407.1404	265.9023
117	06	4	SAT-W	0.0000	7.8540	4,361.5335	3,240.5339	6,213.2028	-1.3004	0.7256	329.6914	265.9023	431.8387
117	06	5	Hispanic	0.0493	-0.0042	-1.2150	-1.5020	-1.3004	0.0469	-0.0040	-1.1551	-1.4280	-1.2363
117	06	6	Hispanic*HSGPA	-0.0042	0.0113	0.6487	0.6053	0.7256	-0.0040	0.0113	0.6436	0.5990	0.7202
117	06	7	Hispanic*SAT-CR	-1.2149	0.6487	418.9804	267.4923	329.6914	-1.1551	0.6436	417.5043	265.6675	328.1115
117	06	8	Hispanic*SAT-M	-1.5019	0.6053	267.4923	407.1404	265.9023	-1.4280	0.5990	265.6675	404.8846	263.9492
117	06	9	Hispanic*SAT-W	-1.3003	0.7256	329.6914	265.9023	431.8387	-1.2363	0.7202	328.1115	263.9492	430.1478
117	07	1	HSGPA	0.0000	0.1510	7.9336	8.0003	7.9686	-0.0042	0.0101	0.7202	0.7442	0.7533
117	07	2	SAT-CR	0.0000	7.9336	6,329.0012	3,345.9439	4,480.1948	-1.0695	0.7202	436.1690	272.7221	326.7171
117	07	3	SAT-M	0.0000	8.0003	3,345.9439	6,343.3718	3,459.4211	-1.6994	0.7442	272.7221	491.8541	305.7275
117	07	4	SAT-W	0.0000	7.9686	4,480.1948	3,459.4211	6,399.8764	-1.2857	0.7533	326.7171	305.7275	439.4107
117	07	5	Hispanic	0.0556	-0.0042	-1.0695	-1.6994	-1.2857	0.0525	-0.0040	-1.0100	-1.6048	-1.2142
117	07	6	Hispanic*HSGPA	-0.0042	0.0101	0.7202	0.7442	0.7533	-0.0040	0.0101	0.7157	0.7371	0.7479
117	07	7	Hispanic*SAT-CR	-1.0694	0.7202	436.1690	272.7221	326.7171	-1.0100	0.7157	435.0252	270.9047	325.3421
117	07	8	Hispanic*SAT-M	-1.6992	0.7442	272.7221	491.8541	305.7275	-1.6048	0.7371	270.9047	488.9666	303.5429
117	07	9	Hispanic*SAT-W	-1.2856	0.7533	326.7171	305.7275	439.4107	-1.2142	0.7479	325.3421	303.5429	437.7578

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
117	08	1	HSGPA	0.0000	0.1501	7.8699	7.9380	7.9482	-0.0077	0.0163	1.1896	1.2842	1.4165
117	08	2	SAT-CR	0.0000	7.8699	6,486.0944	3,518.0530	4,730.5709	-2.6672	1.1896	706.5205	515.5851	622.6515
117	08	3	SAT-M	0.0000	7.9380	3,518.0530	6,494.9852	3,742.2277	-2.9270	1.2842	515.5851	776.5883	567.9510
117	08	4	SAT-W	0.0000	7.9482	4,730.5709	3,742.2277	6,989.8178	-3.0661	1.4165	622.6515	567.9510	824.9248
117	08	5	Hispanic	0.0707	-0.0077	-2.6672	-2.9270	-3.0661	0.0657	-0.0071	-2.4786	-2.7200	-2.8493
117	08	6	Hispanic*HSGPA	-0.0077	0.0163	1.1896	1.2842	1.4165	-0.0071	0.0162	1.1691	1.2617	1.3930
117	08	7	Hispanic*SAT-CR	-2.6669	1.1896	706.5205	515.5851	622.6515	-2.4786	1.1691	699.4074	507.7791	614.4745
117	08	8	Hispanic*SAT-M	-2.9267	1.2842	515.5851	776.5883	567.9510	-2.7200	1.2617	507.7791	768.0219	558.9774
117	08	9	Hispanic*SAT-W	-3.0658	1.4165	622.6515	567.9510	824.9248	-2.8493	1.3930	614.4745	558.9774	815.5248
118	06	1	HSGPA	0.0000	0.3393	20.6949	24.4548	22.9169	-0.0508	0.1305	5.9424	6.7546	6.9596
118	06	2	SAT-CR	0.0000	20.6949	9,814.4159	6,808.4026	7,478.9473	-16.0932	5.9424	3,961.4793	2,599.3534	3,109.6161
118	06	3	SAT-M	0.0000	24.4548	6,808.4026	9,939.3809	6,747.1194	-18.5038	6.7546	2,599.3534	3,786.5314	2,650.0850
118	06	4	SAT-W	0.0000	22.9169	7,478.9473	6,747.1194	9,489.4247	-18.4363	6.9596	3,109.6161	2,650.0850	4,050.5245
118	06	5	Hispanic	0.4229	-0.0508	-16.0932	-18.5038	-18.4363	0.2443	-0.0293	-9.2871	-10.6782	-10.6393
118	06	6	Hispanic*HSGPA	-0.0507	0.1305	5.9424	6.7546	6.9596	-0.0293	0.1279	5.1257	5.8156	6.0240
118	06	7	Hispanic*SAT-CR	-16.0765	5.9424	3,961.4793	2,599.3534	3,109.6161	-9.2871	5.1257	3,702.7574	2,301.8782	2,813.2257
118	06	8	Hispanic*SAT-M	-18.4845	6.7546	2,599.3534	3,786.5314	2,650.0850	-10.6782	5.8156	2,301.8782	3,444.4982	2,309.2990
118	06	9	Hispanic*SAT-W	-18.4171	6.9596	3,109.6161	2,650.0850	4,050.5245	-10.6393	6.0240	2,813.2257	2,309.2990	3,710.9813
119	07	1	HSGPA	0.0000	0.3203	22.0579	24.0419	24.2618	-0.0062	0.0154	0.9885	1.2182	1.0607
119	07	2	SAT-CR	0.0000	22.0579	8,507.6199	5,453.6062	6,822.2885	-1.1042	0.9885	383.4171	280.2873	327.6815
119	07	3	SAT-M	0.0000	24.0419	5,453.6062	8,583.2999	5,587.1517	-1.3632	1.2182	280.2873	424.4653	279.9785
119	07	4	SAT-W	0.0000	24.2618	6,822.2885	5,587.1517	8,643.8007	-1.0726	1.0607	327.6815	279.9785	391.1303
119	07	5	Hispanic	0.0387	-0.0062	-1.1042	-1.3632	-1.0726	0.0372	-0.0060	-1.0615	-1.3105	-1.0311
119	07	6	Hispanic*HSGPA	-0.0062	0.0154	0.9885	1.2182	1.0607	-0.0060	0.0154	0.9817	1.2097	1.0541
119	07	7	Hispanic*SAT-CR	-1.1042	0.9885	383.4171	280.2873	327.6815	-1.0615	0.9817	382.1978	278.7820	326.4971
119	07	8	Hispanic*SAT-M	-1.3631	1.2182	280.2873	424.4653	279.9785	-1.3105	1.2097	278.7820	422.6071	278.5163
119	07	9	Hispanic*SAT-W	-1.0726	1.0607	327.6815	279.9785	391.1303	-1.0311	1.0541	326.4971	278.5163	389.9798
119	08	1	HSGPA	0.0000	0.3081	20.6185	22.8361	23.4503	-0.0052	0.0160	1.1310	1.2612	1.2189
119	08	2	SAT-CR	0.0000	20.6185	8,221.3386	5,241.2879	6,590.1286	-1.3364	1.1310	413.4972	304.2344	341.8225
119	08	3	SAT-M	0.0000	22.8361	5,241.2879	8,243.9255	5,436.7370	-1.5059	1.2612	304.2344	448.7772	307.8072
119	08	4	SAT-W	0.0000	23.4503	6,590.1286	5,436.7370	8,670.7900	-1.2781	1.2189	341.8225	307.8072	429.4183
119	08	5	Hispanic	0.0430	-0.0052	-1.3364	-1.5059	-1.2781	0.0412	-0.0049	-1.2789	-1.4411	-1.2231
119	08	6	Hispanic*HSGPA	-0.0052	0.0160	1.1310	1.2612	1.2189	-0.0049	0.0160	1.1241	1.2534	1.2123
119	08	7	Hispanic*SAT-CR	-1.3363	1.1310	413.4972	304.2344	341.8225	-1.2789	1.1241	411.7114	302.2221	340.1146
119	08	8	Hispanic*SAT-M	-1.5058	1.2612	304.2344	448.7772	307.8072	-1.4411	1.2534	302.2221	446.5096	305.8826
119	08	9	Hispanic*SAT-W	-1.2780	1.2189	341.8225	307.8072	429.4183	-1.2231	1.2123	340.1146	305.8826	427.7849
120	08	1	HSGPA	0.0000	0.2816	15.7643	15.5204	16.2385	-0.0098	0.0192	1.0511	1.4648	1.3091
120	08	2	SAT-CR	0.0000	15.7643	7,478.5086	4,227.7235	5,709.3334	-1.1914	1.0511	573.5408	428.3711	472.2412
120	08	3	SAT-M	0.0000	15.5204	4,227.7235	7,066.8463	4,235.6391	-3.1314	1.4648	428.3711	653.2129	460.1874
120	08	4	SAT-W	0.0000	16.2385	5,709.3334	4,235.6391	7,471.4235	-1.6321	1.3091	472.2412	460.1874	626.5385
120	08	5	Hispanic	0.0658	-0.0098	-1.1914	-3.1314	-1.6321	0.0615	-0.0092	-1.1130	-2.9253	-1.5247
120	08	6	Hispanic*HSGPA	-0.0098	0.0192	1.0511	1.4648	1.3091	-0.0092	0.0191	1.0395	1.4342	1.2932
120	08	7	Hispanic*SAT-CR	-1.1905	1.0511	573.5408	428.3711	472.2412	-1.1130	1.0395	572.1224	424.6431	470.2982
120	08	8	Hispanic*SAT-M	-3.1291	1.4648	428.3711	653.2129	460.1874	-2.9253	1.4342	424.6431	643.4144	455.0804
120	08	9	Hispanic*SAT-W	-1.6309	1.3091	472.2412	460.1874	626.5385	-1.5247	1.2932	470.2982	455.0804	623.8767

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
121	06	1	HSGPA	0.0000	0.1683	11.5030	11.2117	12.6977	-0.0099	0.0209	2.2231	2.3117	2.3971
121	06	2	SAT-CR	0.0000	11.5030	7,565.2043	3,933.2153	5,413.3546	-4.7798	2.2231	1,189.5692	838.4953	1,059.5325
121	06	3	SAT-M	0.0000	11.2117	3,933.2153	7,024.9786	4,044.4063	-4.9445	2.3117	838.4953	1,112.4043	868.9531
121	06	4	SAT-W	0.0000	12.6977	5,413.3546	4,044.4063	7,212.8500	-5.2686	2.3971	1,059.5325	868.9531	1,245.0586
121	06	5	Hispanic	0.0801	-0.0099	-4.7798	-4.9445	-5.2686	0.0737	-0.0091	-4.3969	-4.5484	-4.8466
121	06	6	Hispanic*HSGPA	-0.0099	0.0209	2.2231	2.3117	2.3971	-0.0091	0.0208	2.1761	2.2630	2.3452
121	06	7	Hispanic*SAT-CR	-4.7787	2.2231	1,189.5692	838.4953	1,059.5325	-4.3969	2.1761	1,166.7280	814.8673	1,034.3554
121	06	8	Hispanic*SAT-M	-4.9433	2.3117	838.4953	1,112.4043	868.9531	-4.5484	2.2630	814.8673	1,087.9623	842.9088
121	06	9	Hispanic*SAT-W	-5.2674	2.3971	1,059.5325	868.9531	1,245.0586	-4.8466	2.3452	1,034.3554	842.9088	1,217.3068
121	07	1	HSGPA	0.0000	0.1760	11.4909	12.0656	12.1644	-0.0108	0.0284	2.4302	2.6153	2.7716
121	07	2	SAT-CR	0.0000	11.4909	7,754.2985	4,255.7469	5,526.7146	-5.3342	2.4302	1,263.0035	955.0882	1,113.4061
121	07	3	SAT-M	0.0000	12.0656	4,255.7469	7,540.0349	4,222.6943	-5.7465	2.6153	955.0882	1,280.3375	991.2463
121	07	4	SAT-W	0.0000	12.1644	5,526.7146	4,222.6943	7,190.0397	-5.2307	2.7716	1,113.4061	991.2463	1,278.6972
121	07	5	Hispanic	0.0914	-0.0108	-5.3342	-5.7465	-5.2307	0.0831	-0.0098	-4.8466	-5.2211	-4.7526
121	07	6	Hispanic*HSGPA	-0.0108	0.0284	2.4302	2.6153	2.7716	-0.0098	0.0283	2.3728	2.5534	2.7152
121	07	7	Hispanic*SAT-CR	-5.3330	2.4302	1,263.0035	955.0882	1,113.4061	-4.8466	2.3728	1,234.5564	924.4426	1,085.5108
121	07	8	Hispanic*SAT-M	-5.7451	2.6153	955.0882	1,280.3375	991.2463	-5.2211	2.5534	924.4426	1,247.3235	961.1951
121	07	9	Hispanic*SAT-W	-5.2295	2.7716	1,113.4061	991.2463	1,278.6972	-4.7526	2.7152	1,085.5108	961.1951	1,251.3430
121	08	1	HSGPA	0.0000	0.1811	10.7961	11.1258	12.3177	-0.0140	0.0317	2.5987	2.5606	2.9791
121	08	2	SAT-CR	0.0000	10.7961	7,431.5483	3,821.2978	5,468.1747	-6.1474	2.5987	1,319.3441	959.9244	1,209.0763
121	08	3	SAT-M	0.0000	11.1258	3,821.2978	6,865.1933	3,946.8611	-5.6174	2.5606	959.9244	1,195.0213	1,034.6144
121	08	4	SAT-W	0.0000	12.3177	5,468.1747	3,946.8611	7,406.5899	-6.6686	2.9791	1,209.0763	1,034.6144	1,443.9719
121	08	5	Hispanic	0.0920	-0.0140	-6.1474	-5.6174	-6.6686	0.0835	-0.0127	-5.5820	-5.1007	-6.0552
121	08	6	Hispanic*HSGPA	-0.0140	0.0317	2.5987	2.5606	2.9791	-0.0127	0.0315	2.5126	2.4819	2.8857
121	08	7	Hispanic*SAT-CR	-6.1457	2.5987	1,319.3441	959.9244	1,209.0763	-5.5820	2.5126	1,281.5638	925.4016	1,168.0932
121	08	8	Hispanic*SAT-M	-5.6158	2.5606	959.9244	1,195.0213	1,034.6144	-5.1007	2.4819	925.4016	1,163.4752	997.1649
121	08	9	Hispanic*SAT-W	-6.6667	2.9791	1,209.0763	1,034.6144	1,443.9719	-6.0552	2.8857	1,168.0932	997.1649	1,399.5145
122	06	1	HSGPA	0.0000	0.2976	14.1033	15.1799	14.6588	-0.0162	0.0706	3.7551	4.0433	3.9800
122	06	2	SAT-CR	0.0000	14.1033	8,862.4852	5,861.7116	6,671.9411	-12.2560	3.7551	2,457.3225	1,854.9435	2,006.0380
122	06	3	SAT-M	0.0000	15.1799	5,861.7116	9,375.6611	5,662.9858	-12.9208	4.0433	1,854.9435	2,730.2079	1,860.8969
122	06	4	SAT-W	0.0000	14.6588	6,671.9411	5,662.9858	8,223.5438	-12.3208	3.9800	2,006.0380	1,860.8969	2,318.6606
122	06	5	Hispanic	0.2238	-0.0162	-12.2560	-12.9208	-12.3208	0.1738	-0.0125	-9.5130	-10.0290	-9.5633
122	06	6	Hispanic*HSGPA	-0.0161	0.0706	3.7551	4.0433	3.9800	-0.0125	0.0704	3.5572	3.8346	3.7811
122	06	7	Hispanic*SAT-CR	-12.2516	3.7551	2,457.3225	1,854.9435	2,006.0380	-9.5130	3.5572	2,307.1661	1,696.6424	1,855.0881
122	06	8	Hispanic*SAT-M	-12.9162	4.0433	1,854.9435	2,730.2079	1,860.8969	-10.0290	3.8346	1,696.6424	2,563.3203	1,701.7592
122	06	9	Hispanic*SAT-W	-12.3164	3.9800	2,006.0380	1,860.8969	2,318.6606	-9.5633	3.7811	1,855.0881	1,701.7592	2,166.9130
122	07	1	HSGPA	0.0000	0.2838	16.2177	16.9901	16.8078	-0.0192	0.0724	5.3166	5.4274	5.2066
122	07	2	SAT-CR	0.0000	16.2177	8,946.5509	5,729.9385	6,831.2925	-12.4318	5.3166	2,684.9518	2,008.7239	2,193.1513
122	07	3	SAT-M	0.0000	16.9901	5,729.9385	9,008.2329	5,598.3435	-12.4672	5.4274	2,008.7239	2,788.8477	1,963.0053
122	07	4	SAT-W	0.0000	16.8078	6,831.2925	5,598.3435	8,148.3477	-11.5516	5.2066	2,193.1513	1,963.0053	2,391.7487
122	07	5	Hispanic	0.2287	-0.0192	-12.4318	-12.4672	-11.5516	0.1764	-0.0148	-9.5888	-9.6161	-8.9099
122	07	6	Hispanic*HSGPA	-0.0192	0.0724	5.3166	5.4274	5.2066	-0.0148	0.0720	5.0784	5.1886	4.9853
122	07	7	Hispanic*SAT-CR	-12.4276	5.3166	2,684.9518	2,008.7239	2,193.1513	-9.5888	5.0784	2,530.4543	1,853.7858	2,049.5928
122	07	8	Hispanic*SAT-M	-12.4631	5.4274	2,008.7239	2,788.8477	1,963.0053	-9.6161	5.1886	1,853.7858	2,633.4678	1,819.0375
122	07	9	Hispanic*SAT-W	-11.5477	5.2066	2,193.1513	1,963.0053	2,391.7487	-8.9099	4.9853	2,049.5928	1,819.0375	2,258.3548

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
122	08	1	HSGPA	0.0000	0.2822	15.5144	17.1212	15.4927	-0.0226	0.0822	4.9287	5.8453	5.1993
122	08	2	SAT-CR	0.0000	15.5144	8,716.7771	5,868.2203	6,784.0977	-15.2498	4.9287	3,074.2207	2,493.7791	2,501.1370
122	08	3	SAT-M	0.0000	17.1212	5,868.2203	9,315.0902	5,789.2199	-16.0913	5.8453	2,493.7791	3,463.1847	2,456.4530
122	08	4	SAT-W	0.0000	15.4927	6,784.0977	5,789.2199	8,455.1212	-15.3566	5.1993	2,501.1370	2,456.4530	2,874.3704
122	08	5	Hispanic	0.2718	-0.0226	-15.2498	-16.0913	-15.3566	0.1980	-0.0165	-11.1046	-11.7174	-11.1823
122	08	6	Hispanic*HSGPA	-0.0226	0.0822	4.9287	5.8453	5.1993	-0.0165	0.0817	4.5842	5.4818	4.8524
122	08	7	Hispanic*SAT-CR	-15.2438	4.9287	3,074.2207	2,493.7791	2,501.1370	-11.1046	4.5842	2,841.7561	2,248.4870	2,267.0453
122	08	8	Hispanic*SAT-M	-16.0849	5.8453	2,493.7791	3,463.1847	2,456.4530	-11.7174	5.4818	2,248.4870	3,204.3573	2,209.4440
122	08	9	Hispanic*SAT-W	-15.3504	5.1993	2,501.1370	2,456.4530	2,874.3704	-11.1823	4.8524	2,267.0453	2,209.4440	2,638.6402
123	06	1	HSGPA	0.0000	0.3746	22.6587	22.3969	25.1613	-0.0937	0.2620	11.1042	9.7695	12.3144
123	06	2	SAT-CR	0.0000	22.6587	10,377.0976	7,731.4645	8,233.5391	-17.6868	11.1042	6,187.2014	4,161.2891	4,400.1057
123	06	3	SAT-M	0.0000	22.3969	7,731.4645	11,067.6802	7,773.5707	-21.7048	9.7695	4,161.2891	6,448.9290	3,782.8556
123	06	4	SAT-W	0.0000	25.1613	8,233.5391	7,773.5707	10,370.9758	-20.1124	12.3144	4,400.1057	3,782.8556	5,855.9796
123	06	5	Hispanic	0.6955	-0.0937	-17.6868	-21.7048	-20.1124	0.2127	-0.0285	-5.3861	-6.6097	-6.1248
123	06	6	Hispanic*HSGPA	-0.0933	0.2620	11.1042	9.7695	12.3144	-0.0285	0.2533	9.4535	7.7440	10.4375
123	06	7	Hispanic*SAT-CR	-17.6140	11.1042	6,187.2014	4,161.2891	4,400.1057	-5.3861	9.4535	5,875.6658	3,778.9811	4,045.8456
123	06	8	Hispanic*SAT-M	-21.6154	9.7695	4,161.2891	6,448.9290	3,782.8556	-6.6097	7.7440	3,778.9811	5,979.7711	3,348.1172
123	06	9	Hispanic*SAT-W	-20.0296	12.3144	4,400.1057	3,782.8556	5,855.9796	-6.1248	10.4375	4,045.8456	3,348.1172	5,453.1354
124	08	1	HSGPA	0.0000	0.3023	18.3174	21.0100	22.4416	-0.0152	0.0289	1.7429	2.4156	2.3100
124	08	2	SAT-CR	0.0000	18.3174	7,937.4116	4,864.0135	6,315.1993	-4.1794	1.7429	729.3323	741.8229	771.2063
124	08	3	SAT-M	0.0000	21.0100	4,864.0135	8,212.1011	4,975.6553	-5.2952	2.4156	741.8229	1,146.9482	852.8474
124	08	4	SAT-W	0.0000	22.4416	6,315.1993	4,975.6553	8,278.9497	-4.0310	2.3100	771.2063	852.8474	972.6928
124	08	5	Hispanic	0.0645	-0.0152	-4.1794	-5.2952	-4.0310	0.0604	-0.0142	-3.9097	-4.9536	-3.7709
124	08	6	Hispanic*HSGPA	-0.0152	0.0289	1.7429	2.4156	2.3100	-0.0142	0.0286	1.6793	2.3351	2.2487
124	08	7	Hispanic*SAT-CR	-4.1756	1.7429	729.3323	741.8229	771.2063	-3.9097	1.6793	711.8808	719.7119	754.3746
124	08	8	Hispanic*SAT-M	-5.2905	2.4156	741.8229	1,146.9482	852.8474	-4.9536	2.3351	719.7119	1,118.9337	831.5217
124	08	9	Hispanic*SAT-W	-4.0273	2.3100	771.2063	852.8474	972.6928	-3.7709	2.2487	754.3746	831.5217	956.4587
125	06	1	HSGPA	0.0000	0.3116	14.4280	15.6769	15.8448	-0.0035	0.0353	1.7326	1.7740	1.7334
125	06	2	SAT-CR	0.0000	14.4280	7,451.7603	4,360.1140	5,434.8652	-3.7704	1.7326	884.8228	673.1493	737.8468
125	06	3	SAT-M	0.0000	15.6769	4,360.1140	7,713.2890	4,202.7647	-4.3916	1.7740	673.1493	1,035.2049	721.3229
125	06	4	SAT-W	0.0000	15.8448	5,434.8652	4,202.7647	7,136.3052	-4.4054	1.7334	737.8468	721.3229	956.7279
125	06	5	Hispanic	0.0990	-0.0035	-3.7704	-4.3916	-4.4054	0.0892	-0.0032	-3.3973	-3.9570	-3.9694
125	06	6	Hispanic*HSGPA	-0.0035	0.0353	1.7326	1.7740	1.7334	-0.0032	0.0353	1.7193	1.7585	1.7179
125	06	7	Hispanic*SAT-CR	-3.7697	1.7326	884.8228	673.1493	737.8468	-3.3973	1.7193	870.6094	656.5945	721.2399
125	06	8	Hispanic*SAT-M	-4.3907	1.7740	673.1493	1,035.2049	721.3229	-3.9570	1.7585	656.5945	1,015.9229	701.9802
125	06	9	Hispanic*SAT-W	-4.4045	1.7334	737.8468	721.3229	956.7279	-3.9694	1.7179	721.2399	701.9802	937.3243
127	06	1	HSGPA	0.0000	0.3079	13.7433	15.9488	15.5770	-0.0109	0.0391	1.4839	2.3597	1.9452
127	06	2	SAT-CR	0.0000	13.7433	7,903.1730	5,068.5827	5,696.1289	-6.6157	1.4839	1,353.7127	1,109.0676	1,111.6120
127	06	3	SAT-M	0.0000	15.9488	5,068.5827	8,284.1011	4,625.5990	-7.7821	2.3597	1,109.0676	1,478.2113	1,085.5843
127	06	4	SAT-W	0.0000	15.5770	5,696.1289	4,625.5990	7,217.8272	-6.8894	1.9452	1,111.6120	1,085.5843	1,236.6655
127	06	5	Hispanic	0.0956	-0.0109	-6.6157	-7.7821	-6.8894	0.0865	-0.0099	-5.9834	-7.0384	-6.2309
127	06	6	Hispanic*HSGPA	-0.0109	0.0391	1.4839	2.3597	1.9452	-0.0099	0.0390	1.4118	2.2749	1.8702
127	06	7	Hispanic*SAT-CR	-6.6131	1.4839	1,353.7127	1,109.0676	1,111.6120	-5.9834	1.4118	1,309.9626	1,057.6037	1,066.0520
127	06	8	Hispanic*SAT-M	-7.7791	2.3597	1,109.0676	1,478.2113	1,085.5843	-7.0384	2.2749	1,057.6037	1,417.6735	1,031.9914
127	06	9	Hispanic*SAT-W	-6.8867	1.9452	1,111.6120	1,085.5843	1,236.6655	-6.2309	1.8702	1,066.0520	1,031.9914	1,189.2208



## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
128	07	1	HSGPA	0.0000	0.2374	14.1583	15.3023	15.2013	-0.0112	0.0294	2.0178	2.5398	2.2231
128	07	2	SAT-CR	0.0000	14.1583	7,863.1827	4,683.5764	5,920.7159	-3.9345	2.0178	1,103.2847	822.3625	921.2540
128	07	3	SAT-M	0.0000	15.3023	4,683.5764	7,841.3146	4,557.0825	-4.6256	2.5398	822.3625	1,143.6293	835.8075
128	07	4	SAT-W	0.0000	15.2013	5,920.7159	4,557.0825	7,548.6983	-4.1230	2.2231	921.2540	835.8075	1,093.5761
128	07	5	Hispanic	0.1017	-0.0112	-3.9345	-4.6256	-4.1230	0.0913	-0.0101	-3.5346	-4.1554	-3.7039
128	07	6	Hispanic*HSGPA	-0.0112	0.0294	2.0178	2.5398	2.2231	-0.0101	0.0293	1.9735	2.4878	2.1767
128	07	7	Hispanic*SAT-CR	-3.9338	2.0178	1,103.2847	822.3625	921.2540	-3.5346	1.9735	1,087.8069	804.1664	905.0350
128	07	8	Hispanic*SAT-M	-4.6247	2.5398	822.3625	1,143.6293	835.8075	-4.1554	2.4878	804.1664	1,122.2374	816.7400
128	07	9	Hispanic*SAT-W	-4.1222	2.2231	921.2540	835.8075	1,093.5761	-3.7039	2.1767	905.0350	816.7400	1,076.5805
128	08	1	HSGPA	0.0000	0.2392	14.0112	16.2879	14.6432	-0.0152	0.0303	2.5427	2.6546	2.6208
128	08	2	SAT-CR	0.0000	14.0112	7,988.0526	4,559.5877	5,800.0251	-5.6453	2.5427	1,330.4176	916.6850	1,077.6272
128	08	3	SAT-M	0.0000	16.2879	4,559.5877	7,588.7564	4,349.0858	-5.5167	2.6546	916.6850	1,176.7934	865.8983
128	08	4	SAT-W	0.0000	14.6432	5,800.0251	4,349.0858	7,238.9955	-5.1913	2.6208	1,077.6272	865.8983	1,200.3244
128	08	5	Hispanic	0.1021	-0.0152	-5.6453	-5.5167	-5.1913	0.0917	-0.0136	-5.0687	-4.9532	-4.6610
128	08	6	Hispanic*HSGPA	-0.0152	0.0303	2.5427	2.6546	2.6208	-0.0136	0.0300	2.4571	2.5708	2.5420
128	08	7	Hispanic*SAT-CR	-5.6441	2.5427	1,330.4176	916.6850	1,077.6272	-5.0687	2.4571	1,298.5551	885.5481	1,048.3271
128	08	8	Hispanic*SAT-M	-5.5156	2.6546	916.6850	1,176.7934	865.8983	-4.9532	2.5708	885.5481	1,146.3657	837.2655
128	08	9	Hispanic*SAT-W	-5.1902	2.6208	1,077.6272	865.8983	1,200.3244	-4.6610	2.5420	1,048.3271	837.2655	1,173.3807
129	07	1	HSGPA	0.0000	0.2173	10.2304	10.7593	11.8518	-0.0056	0.0332	1.0479	1.8017	1.3629
129	07	2	SAT-CR	0.0000	10.2304	6,052.7314	3,355.7025	4,343.9318	-3.3250	1.0479	807.7934	602.8142	634.0531
129	07	3	SAT-M	0.0000	10.7593	3,355.7025	6,594.0424	3,412.1210	-4.4031	1.8017	602.8142	1,040.5074	614.9886
129	07	4	SAT-W	0.0000	11.8518	4,343.9318	3,412.1210	6,176.7452	-3.5245	1.3629	634.0531	614.9886	809.3941
129	07	5	Hispanic	0.1034	-0.0056	-3.3250	-4.4031	-3.5245	0.0927	-0.0050	-2.9811	-3.9477	-3.1600
129	07	6	Hispanic*HSGPA	-0.0056	0.0332	1.0479	1.8017	1.3629	-0.0050	0.0331	1.0293	1.7770	1.3432
129	07	7	Hispanic*SAT-CR	-3.3242	1.0479	807.7934	602.8142	634.0531	-2.9811	1.0293	796.7405	588.1774	622.3369
129	07	8	Hispanic*SAT-M	-4.4021	1.8017	602.8142	1,040.5074	614.9886	-3.9477	1.7770	588.1774	1,021.1244	599.4733
129	07	9	Hispanic*SAT-W	-3.5237	1.3629	634.0531	614.9886	809.3941	-3.1600	1.3432	622.3369	599.4733	796.9747
131	08	1	HSGPA	0.0000	0.3110	14.9205	15.5303	16.5579	-0.0225	0.1555	8.2078	8.3098	9.1165
131	08	2	SAT-CR	0.0000	14.9205	9,465.1716	5,998.7427	7,234.7840	-19.3674	8.2078	4,865.5607	3,262.5195	3,814.3272
131	08	3	SAT-M	0.0000	15.5303	5,998.7427	9,352.9710	5,883.5235	-19.5462	8.3098	3,262.5195	4,782.3273	3,184.4127
131	08	4	SAT-W	0.0000	16.5579	7,234.7840	5,883.5235	8,631.8251	-18.2371	9.1165	3,814.3272	3,184.4127	4,402.4076
131	08	5	Hispanic	0.4633	-0.0225	-19.3674	-19.5462	-18.2371	0.2488	-0.0121	-10.3950	-10.4910	-9.7883
131	08	6	Hispanic*HSGPA	-0.0225	0.1555	8.2078	8.3098	9.1165	-0.0121	0.1550	7.7730	7.8710	8.7071
131	08	7	Hispanic*SAT-CR	-19.3534	8.2078	4,865.5607	3,262.5195	3,814.3272	-10.3950	7.7730	4,490.7358	2,884.2359	3,461.3782
131	08	8	Hispanic*SAT-M	-19.5319	8.3098	3,262.5195	4,782.3273	3,184.4127	-10.4910	7.8710	2,884.2359	4,400.5531	2,828.2068
131	08	9	Hispanic*SAT-W	-18.2238	9.1165	3,814.3272	3,184.4127	4,402.4076	-9.7883	8.7071	3,461.3782	2,828.2068	4,070.0577
132	08	1	HSGPA	0.0000	0.2962	19.2667	21.0402	20.5013	-0.0109	0.0317	2.4199	3.0818	2.4280
132	08	2	SAT-CR	0.0000	19.2667	8,698.1540	5,735.9840	6,760.7870	-4.9714	2.4199	1,033.1749	834.8298	886.0258
132	08	3	SAT-M	0.0000	21.0402	5,735.9840	9,115.1287	5,552.2698	-4.6550	3.0818	834.8298	1,101.6292	779.4007
132	08	4	SAT-W	0.0000	20.5013	6,760.7870	5,552.2698	8,388.3402	-4.7584	2.4280	886.0258	779.4007	1,043.5150
132	08	5	Hispanic	0.0881	-0.0109	-4.9714	-4.6550	-4.7584	0.0804	-0.0099	-4.5333	-4.2447	-4.3390
132	08	6	Hispanic*HSGPA	-0.0109	0.0317	2.4199	3.0818	2.4280	-0.0099	0.0316	2.3657	3.0311	2.3761
132	08	7	Hispanic*SAT-CR	-4.9688	2.4199	1,033.1749	834.8298	886.0258	-4.5333	2.3657	1,008.4730	811.7002	862.3823
132	08	8	Hispanic*SAT-M	-4.6525	3.0818	834.8298	1,101.6292	779.4007	-4.2447	3.0311	811.7002	1,079.9718	757.2621
132	08	9	Hispanic*SAT-W	-4.7559	2.4280	886.0258	779.4007	1,043.5150	-4.3390	2.3761	862.3823	757.2621	1,020.8846

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
134	06	1	HSGPA	0.0000	0.1972	15.2806	15.1590	16.1806	-0.0149	0.0319	3.2545	3.2951	3.4356
134	06	2	SAT-CR	0.0000	15.2806	7,968.0480	4,792.7106	6,093.5045	-5.6628	3.2545	1,515.7483	1,161.5779	1,322.3305
134	06	3	SAT-M	0.0000	15.1590	4,792.7106	7,701.7257	4,829.3385	-6.2351	3.2951	1,161.5779	1,522.5726	1,176.0786
134	06	4	SAT-W	0.0000	16.1806	6,093.5045	4,829.3385	7,936.0183	-6.0242	3.4356	1,322.3305	1,176.0786	1,533.5789
134	06	5	Hispanic	0.1097	-0.0149	-5.6628	-6.2351	-6.0242	0.0977	-0.0132	-5.0415	-5.5511	-5.3633
134	06	6	Hispanic*HSGPA	-0.0149	0.0319	3.2545	3.2951	3.4356	-0.0132	0.0317	3.1703	3.2024	3.3460
134	06	7	Hispanic*SAT-CR	-5.6625	3.2545	1,515.7483	1,161.5779	1,322.3305	-5.0415	3.1703	1,483.6827	1,126.2716	1,288.2184
134	06	8	Hispanic*SAT-M	-6.2348	3.2951	1,161.5779	1,522.5726	1,176.0786	-5.5511	3.2024	1,126.2716	1,483.6981	1,138.5190
134	06	9	Hispanic*SAT-W	-6.0239	3.4356	1,322.3305	1,176.0786	1,533.5789	-5.3633	3.3460	1,288.2184	1,138.5190	1,497.2898
134	07	1	HSGPA	0.0000	0.1912	15.2701	14.5747	16.0899	-0.0158	0.0349	3.4068	3.3590	3.6776
134	07	2	SAT-CR	0.0000	15.2701	8,064.4747	4,737.1866	6,148.4086	-5.6318	3.4068	1,485.8674	1,129.1050	1,290.2945
134	07	3	SAT-M	0.0000	14.5747	4,737.1866	7,471.7227	4,806.2391	-6.1516	3.3590	1,129.1050	1,475.9746	1,154.3338
134	07	4	SAT-W	0.0000	16.0899	6,148.4086	4,806.2391	7,954.4058	-6.1408	3.6776	1,290.2945	1,154.3338	1,510.4358
134	07	5	Hispanic	0.1153	-0.0158	-5.6318	-6.1516	-6.1408	0.1020	-0.0140	-4.9825	-5.4424	-5.4329
134	07	6	Hispanic*HSGPA	-0.0158	0.0349	3.4068	3.3590	3.6776	-0.0140	0.0346	3.3176	3.2615	3.5803
134	07	7	Hispanic*SAT-CR	-5.6316	3.4068	1,485.8674	1,129.1050	1,290.2945	-4.9825	3.3176	1,454.1515	1,094.4619	1,255.7120
134	07	8	Hispanic*SAT-M	-6.1513	3.3590	1,129.1050	1,475.9746	1,154.3338	-5.4424	3.2615	1,094.4619	1,438.1342	1,116.5596
134	07	9	Hispanic*SAT-W	-6.1405	3.6776	1,290.2945	1,154.3338	1,510.4358	-5.4329	3.5803	1,255.7120	1,116.5596	1,472.7277
134	08	1	HSGPA	0.0000	0.1878	14.6447	14.9363	16.1032	-0.0162	0.0361	3.2856	3.4475	3.6597
134	08	2	SAT-CR	0.0000	14.6447	7,934.3190	4,787.3822	6,217.5868	-5.7291	3.2856	1,522.9259	1,150.1326	1,375.1698
134	08	3	SAT-M	0.0000	14.9363	4,787.3822	7,600.1102	5,030.9041	-6.5440	3.4475	1,150.1326	1,585.6262	1,263.4800
134	08	4	SAT-W	0.0000	16.1032	6,217.5868	5,030.9041	8,328.7161	-6.6410	3.6597	1,375.1698	1,263.4800	1,705.7877
134	08	5	Hispanic	0.1251	-0.0162	-5.7291	-6.5440	-6.6410	0.1095	-0.0142	-5.0123	-5.7252	-5.8101
134	08	6	Hispanic*HSGPA	-0.0162	0.0361	3.2856	3.4475	3.6597	-0.0142	0.0358	3.1929	3.3416	3.5523
134	08	7	Hispanic*SAT-CR	-5.7288	3.2856	1,522.9259	1,150.1326	1,375.1698	-5.0123	3.1929	1,490.1054	1,112.6438	1,337.1250
134	08	8	Hispanic*SAT-M	-6.5436	3.4475	1,150.1326	1,585.6262	1,263.4800	-5.7252	3.3416	1,112.6438	1,542.8052	1,220.0239
134	08	9	Hispanic*SAT-W	-6.6407	3.6597	1,375.1698	1,263.4800	1,705.7877	-5.8101	3.5523	1,337.1250	1,220.0239	1,661.6872
135	06	1	HSGPA	0.0000	0.1860	11.7254	12.1696	13.0232	-0.0093	0.0187	1.4751	1.6025	1.7209
135	06	2	SAT-CR	0.0000	11.7254	7,115.0027	4,183.8685	5,329.6984	-2.6330	1.4751	735.9043	566.4237	618.1175
135	06	3	SAT-M	0.0000	12.1696	4,183.8685	7,316.6618	4,233.7228	-3.1715	1.6025	566.4237	824.3515	587.8635
135	06	4	SAT-W	0.0000	13.0232	5,329.6984	4,233.7228	7,266.8677	-2.7966	1.7209	618.1175	587.8635	748.2871
135	06	5	Hispanic	0.0665	-0.0093	-2.6330	-3.1715	-2.7966	0.0621	-0.0087	-2.4580	-2.9607	-2.6107
135	06	6	Hispanic*HSGPA	-0.0093	0.0187	1.4751	1.6025	1.7209	-0.0087	0.0186	1.4506	1.5731	1.6949
135	06	7	Hispanic*SAT-CR	-2.6328	1.4751	735.9043	566.4237	618.1175	-2.4580	1.4506	728.9720	558.0736	610.7546
135	06	8	Hispanic*SAT-M	-3.1713	1.6025	566.4237	824.3515	587.8635	-2.9607	1.5731	558.0736	814.2937	578.9949
135	06	9	Hispanic*SAT-W	-2.7963	1.7209	618.1175	587.8635	748.2871	-2.6107	1.6949	610.7546	578.9949	740.4670
136	07	1	HSGPA	0.0000	0.2685	18.8003	21.1642	20.6620	-0.0103	0.0230	1.5359	1.8735	1.7121
136	07	2	SAT-CR	0.0000	18.8003	8,525.8662	5,918.6552	6,882.8303	-2.3038	1.5359	695.7010	535.3080	591.8664
136	07	3	SAT-M	0.0000	21.1642	5,918.6552	9,646.6228	6,066.4887	-3.0861	1.8735	535.3080	839.3245	565.4512
136	07	4	SAT-W	0.0000	20.6620	6,882.8303	6,066.4887	8,803.9617	-2.5428	1.7121	591.8664	565.4512	724.2613
136	07	5	Hispanic	0.0680	-0.0103	-2.3038	-3.0861	-2.5428	0.0634	-0.0096	-2.1472	-2.8763	-2.3700
136	07	6	Hispanic*HSGPA	-0.0103	0.0230	1.5359	1.8735	1.7121	-0.0096	0.0229	1.5121	1.8416	1.6859
136	07	7	Hispanic*SAT-CR	-2.3037	1.5359	695.7010	535.3080	591.8664	-2.1472	1.5121	690.3936	528.1986	586.0084
136	07	8	Hispanic*SAT-M	-3.0860	1.8735	535.3080	839.3245	565.4512	-2.8763	1.8416	528.1986	829.8010	557.6041
136	07	9	Hispanic*SAT-W	-2.5428	1.7121	591.8664	565.4512	724.2613	-2.3700	1.6859	586.0084	557.6041	717.7955

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
136	08	1	HSGPA	0.0000	0.2652	18.5731	21.4007	20.6315	-0.0124	0.0272	1.9945	2.3860	2.1491
136	08	2	SAT-CR	0.0000	18.5731	8,409.8500	5,860.6583	6,816.6593	-2.9655	1.9945	813.9808	649.1118	699.5871
136	08	3	SAT-M	0.0000	21.4007	5,860.6583	9,445.7538	6,014.4005	-3.6770	2.3860	649.1118	973.6762	674.1541
136	08	4	SAT-W	0.0000	20.6315	6,816.6593	6,014.4005	8,903.9620	-3.1478	2.1491	699.5871	674.1541	856.3568
136	08	5	Hispanic	0.0753	-0.0124	-2.9655	-3.6770	-3.1478	0.0696	-0.0115	-2.7422	-3.4002	-2.9108
136	08	6	Hispanic*HSGPA	-0.0124	0.0272	1.9945	2.3860	2.1491	-0.0115	0.0270	1.9578	2.3404	2.1101
136	08	7	Hispanic*SAT-CR	-2.9654	1.9945	813.9808	649.1118	699.5871	-2.7422	1.9578	805.1868	638.2079	690.2526
136	08	8	Hispanic*SAT-M	-3.6769	2.3860	649.1118	973.6762	674.1541	-3.4002	2.3404	638.2079	960.1560	662.5800
136	08	9	Hispanic*SAT-W	-3.1477	2.1491	699.5871	674.1541	856.3568	-2.9108	2.1101	690.2526	662.5800	846.4487
137	06	1	HSGPA	0.0000	0.3151	20.7989	23.5806	21.7276	-0.0235	0.0602	4.3002	4.5502	4.2788
137	06	2	SAT-CR	0.0000	20.7989	7,611.1259	4,983.9267	5,591.0557	-7.0060	4.3002	1,775.9658	1,259.4093	1,377.0579
137	06	3	SAT-M	0.0000	23.5806	4,983.9267	8,675.3076	4,873.8011	-9.4762	4.5502	1,259.4093	2,020.9051	1,240.9109
137	06	4	SAT-W	0.0000	21.7276	5,591.0557	4,873.8011	7,405.6757	-7.3664	4.2788	1,377.0579	1,240.9109	1,628.4806
137	06	5	Hispanic	0.1777	-0.0235	-7.0060	-9.4762	-7.3664	0.1462	-0.0193	-5.7609	-7.7921	-6.0572
137	06	6	Hispanic*HSGPA	-0.0235	0.0602	4.3002	4.5502	4.2788	-0.0193	0.0596	4.1354	4.3274	4.1055
137	06	7	Hispanic*SAT-CR	-7.0031	4.3002	1,775.9658	1,259.4093	1,377.0579	-5.7609	4.1354	1,726.9018	1,193.0459	1,325.4703
137	06	8	Hispanic*SAT-M	-9.4724	4.5502	1,259.4093	2,020.9051	1,240.9109	-7.7921	4.3274	1,193.0459	1,931.1426	1,171.1340
137	06	9	Hispanic*SAT-W	-7.3633	4.2788	1,377.0579	1,240.9109	1,628.4806	-6.0572	4.1055	1,325.4703	1,171.1340	1,574.2395
137	07	1	HSGPA	0.0000	0.3231	20.4539	22.6932	22.6278	-0.0258	0.0681	5.0245	5.2356	5.1382
137	07	2	SAT-CR	0.0000	20.4539	7,224.4279	4,635.2069	5,669.3082	-4.9081	5.0245	1,439.4851	1,057.3757	1,223.6551
137	07	3	SAT-M	0.0000	22.6932	4,635.2069	8,019.9508	4,738.8275	-6.9141	5.2356	1,057.3757	1,627.8153	1,071.4318
137	07	4	SAT-W	0.0000	22.6278	5,669.3082	4,738.8275	7,419.8348	-6.0564	5.1382	1,223.6551	1,071.4318	1,553.1729
137	07	5	Hispanic	0.1667	-0.0258	-4.9081	-6.9141	-6.0564	0.1389	-0.0215	-4.0901	-5.7617	-5.0470
137	07	6	Hispanic*HSGPA	-0.0258	0.0681	5.0245	5.2356	5.1382	-0.0215	0.0674	4.8979	5.0574	4.9821
137	07	7	Hispanic*SAT-CR	-4.9065	5.0245	1,439.4851	1,057.3757	1,223.6551	-4.0901	4.8979	1,415.4035	1,023.4517	1,193.9391
137	07	8	Hispanic*SAT-M	-6.9119	5.2356	1,057.3757	1,627.8153	1,071.4318	-5.7617	5.0574	1,023.4517	1,580.0262	1,029.5706
137	07	9	Hispanic*SAT-W	-6.0545	5.1382	1,223.6551	1,071.4318	1,553.1729	-5.0470	4.9821	1,193.9391	1,029.5706	1,516.5043
137	08	1	HSGPA	0.0000	0.3016	18.4134	21.1288	21.4847	-0.0366	0.0724	4.9225	5.7237	5.5465
137	08	2	SAT-CR	0.0000	18.4134	7,393.6142	4,752.0147	5,617.9382	-7.6873	4.9225	1,792.0351	1,338.1896	1,424.0326
137	08	3	SAT-M	0.0000	21.1288	4,752.0147	8,106.6845	4,631.0792	-10.3958	5.7237	1,338.1896	2,166.0667	1,365.0201
137	08	4	SAT-W	0.0000	21.4847	5,617.9382	4,631.0792	7,237.3849	-8.2453	5.5465	1,424.0326	1,365.0201	1,714.6836
137	08	5	Hispanic	0.1980	-0.0366	-7.6873	-10.3958	-8.2453	0.1589	-0.0294	-6.1651	-8.3373	-6.6126
137	08	6	Hispanic*HSGPA	-0.0366	0.0724	4.9225	5.7237	5.5465	-0.0294	0.0711	4.6411	5.3431	5.2446
137	08	7	Hispanic*SAT-CR	-7.6848	4.9225	1,792.0351	1,338.1896	1,424.0326	-6.1651	4.6411	1,732.9594	1,258.2996	1,360.6688
137	08	8	Hispanic*SAT-M	-10.3924	5.7237	1,338.1896	2,166.0667	1,365.0201	-8.3373	5.3431	1,258.2996	2,058.0288	1,279.3311
137	08	9	Hispanic*SAT-W	-8.2426	5.5465	1,424.0326	1,365.0201	1,714.6836	-6.6126	5.2446	1,360.6688	1,279.3311	1,646.7203
138	06	1	HSGPA	0.0000	0.1891	10.7098	10.9100	11.5412	-0.0070	0.0139	1.1719	1.4450	1.4104
138	06	2	SAT-CR	0.0000	10.7098	7,094.7267	3,713.8693	5,212.1955	-1.9100	1.1719	605.7307	450.5990	529.8259
138	06	3	SAT-M	0.0000	10.9100	3,713.8693	6,907.5151	3,758.9571	-2.5796	1.4450	450.5990	608.8812	469.8627
138	06	4	SAT-W	0.0000	11.5412	5,212.1955	3,758.9571	7,191.0682	-2.5193	1.4104	529.8259	469.8627	673.2154
138	06	5	Hispanic	0.0541	-0.0070	-1.9100	-2.5796	-2.5193	0.0512	-0.0066	-1.8067	-2.4400	-2.3830
138	06	6	Hispanic*HSGPA	-0.0070	0.0139	1.1719	1.4450	1.4104	-0.0066	0.0139	1.1586	1.4269	1.3928
138	06	7	Hispanic*SAT-CR	-1.9096	1.1719	605.7307	450.5990	529.8259	-1.8067	1.1586	602.0833	445.6730	525.0150
138	06	8	Hispanic*SAT-M	-2.5790	1.4450	450.5990	608.8812	469.8627	-2.4400	1.4269	445.6730	602.2283	463.3653
138	06	9	Hispanic*SAT-W	-2.5188	1.4104	529.8259	469.8627	673.2154	-2.3830	1.3928	525.0150	463.3653	666.8698

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
138	07	1	HSGPA	0.0000	0.1869	10.7477	10.7593	11.2797	-0.0052	0.0149	1.3648	1.3789	1.3645
138	07	2	SAT-CR	0.0000	10.7477	7,195.5194	3,737.0643	5,247.0253	-2.2335	1.3648	666.8047	515.5538	566.5407
138	07	3	SAT-M	0.0000	10.7593	3,737.0643	6,723.5474	3,779.0289	-2.7702	1.3789	515.5538	750.8559	536.5444
138	07	4	SAT-W	0.0000	11.2797	5,247.0253	3,779.0289	7,090.6527	-2.6527	1.3645	566.5407	536.5444	709.6502
138	07	5	Hispanic	0.0615	-0.0052	-2.2335	-2.7702	-2.6527	0.0578	-0.0049	-2.0961	-2.5998	-2.4895
138	07	6	Hispanic*HSGPA	-0.0052	0.0149	1.3648	1.3789	1.3645	-0.0049	0.0148	1.3531	1.3645	1.3507
138	07	7	Hispanic*SAT-CR	-2.2331	1.3648	666.8047	515.5538	566.5407	-2.0961	1.3531	661.8170	509.3676	560.6169
138	07	8	Hispanic*SAT-M	-2.7697	1.3789	515.5538	750.8559	536.5444	-2.5998	1.3645	509.3676	743.1831	529.1972
138	07	9	Hispanic*SAT-W	-2.6522	1.3645	566.5407	536.5444	709.6502	-2.4895	1.3507	560.6169	529.1972	702.6145
138	08	1	HSGPA	0.0000	0.1745	8.7701	9.5372	10.4003	-0.0065	0.0149	0.9942	1.2689	1.1214
138	08	2	SAT-CR	0.0000	8.7701	6,853.2336	3,513.3639	5,187.3888	-2.6732	0.9942	663.8009	475.3016	583.0495
138	08	3	SAT-M	0.0000	9.5372	3,513.3639	6,393.7430	3,610.4473	-3.2045	1.2689	475.3016	759.4085	517.7617
138	08	4	SAT-W	0.0000	10.4003	5,187.3888	3,610.4473	7,417.6133	-2.8951	1.1214	583.0495	517.7617	722.4686
138	08	5	Hispanic	0.0636	-0.0065	-2.6732	-3.2045	-2.8951	0.0595	-0.0061	-2.5033	-3.0008	-2.7111
138	08	6	Hispanic*HSGPA	-0.0065	0.0149	0.9942	1.2689	1.1214	-0.0061	0.0148	0.9768	1.2481	1.1025
138	08	7	Hispanic*SAT-CR	-2.6726	0.9942	663.8009	475.3016	583.0495	-2.5033	0.9768	656.6567	466.7375	575.3122
138	08	8	Hispanic*SAT-M	-3.2037	1.2689	475.3016	759.4085	517.7617	-3.0008	1.2481	466.7375	749.1424	508.4867
138	08	9	Hispanic*SAT-W	-2.8944	1.1214	583.0495	517.7617	722.4686	-2.7111	1.1025	575.3122	508.4867	714.0890
140	07	1	HSGPA	0.0000	0.3008	16.1406	18.5552	18.1702	-0.0036	0.0108	0.5191	0.7417	0.7157
140	07	2	SAT-CR	0.0000	16.1406	7,608.2633	4,684.9586	5,844.8054	-0.8674	0.5191	286.9364	205.2870	244.3296
140	07	3	SAT-M	0.0000	18.5552	4,684.9586	7,857.1617	4,609.7358	-1.1734	0.7417	205.2870	340.2582	230.5047
140	07	4	SAT-W	0.0000	18.1702	5,844.8054	4,609.7358	7,497.1251	-1.0359	0.7157	244.3296	230.5047	317.0968
140	07	5	Hispanic	0.0312	-0.0036	-0.8674	-1.1734	-1.0359	0.0303	-0.0035	-0.8403	-1.1367	-1.0035
140	07	6	Hispanic*HSGPA	-0.0036	0.0108	0.5191	0.7417	0.7157	-0.0035	0.0108	0.5160	0.7375	0.7120
140	07	7	Hispanic*SAT-CR	-0.8672	0.5191	286.9364	205.2870	244.3296	-0.8403	0.5160	286.1842	204.2695	243.4313
140	07	8	Hispanic*SAT-M	-1.1731	0.7417	205.2870	340.2582	230.5047	-1.1367	0.7375	204.2695	338.8817	229.2895
140	07	9	Hispanic*SAT-W	-1.0357	0.7157	244.3296	230.5047	317.0968	-1.0035	0.7120	243.4313	229.2895	316.0240
141	08	1	HSGPA	0.0000	0.2795	21.9163	24.1621	23.5778	-0.0199	0.0260	2.0092	3.2877	2.5247
141	08	2	SAT-CR	0.0000	21.9163	8,425.4811	5,670.1774	6,754.5131	-3.3590	2.0092	755.2824	731.5725	692.0321
141	08	3	SAT-M	0.0000	24.1621	5,670.1774	8,698.3509	5,666.9636	-5.1177	3.2877	731.5725	1,107.1152	796.9305
141	08	4	SAT-W	0.0000	23.5778	6,754.5131	5,666.9636	8,723.0625	-3.8321	2.5247	692.0321	796.9305	827.8417
141	08	5	Hispanic	0.0646	-0.0199	-3.3590	-5.1177	-3.8321	0.0605	-0.0186	-3.1419	-4.7870	-3.5844
141	08	6	Hispanic*HSGPA	-0.0199	0.0260	2.0092	3.2877	2.5247	-0.0186	0.0256	1.9423	3.1859	2.4485
141	08	7	Hispanic*SAT-CR	-3.3574	2.0092	755.2824	731.5725	692.0321	-3.1419	1.9423	744.0051	714.3904	679.1663
141	08	8	Hispanic*SAT-M	-5.1153	3.2877	731.5725	1,107.1152	796.9305	-4.7870	3.1859	714.3904	1,080.9365	777.3282
141	08	9	Hispanic*SAT-W	-3.8303	2.5247	692.0321	796.9305	827.8417	-3.5844	2.4485	679.1663	777.3282	813.1638
142	07	1	HSGPA	0.0000	0.2845	14.1268	16.2128	15.1166	-0.0467	0.1605	7.3567	9.1181	7.9345
142	07	2	SAT-CR	0.0000	14.1268	10,735.8058	7,532.9541	8,330.1297	-25.5901	7.3567	5,663.8469	4,068.2471	4,398.6788
142	07	3	SAT-M	0.0000	16.2128	7,532.9541	11,130.8293	7,088.8397	-25.9903	9.1181	4,068.2471	5,951.1576	3,852.1476
142	07	4	SAT-W	0.0000	15.1166	8,330.1297	7,088.8397	9,486.5305	-24.2313	7.9345	4,398.6788	3,852.1476	4,935.4829
142	07	5	Hispanic	0.5325	-0.0467	-25.5901	-25.9903	-24.2313	0.2490	-0.0219	-11.9625	-12.1495	-11.3272
142	07	6	Hispanic*HSGPA	-0.0467	0.1605	7.3567	9.1181	7.9345	-0.0219	0.1583	6.1608	7.9036	6.8022
142	07	7	Hispanic*SAT-CR	-25.5840	7.3567	5,663.8469	4,068.2471	4,398.6788	-11.9625	6.1608	5,009.1499	3,403.3115	3,778.7465
142	07	8	Hispanic*SAT-M	-25.9841	9.1181	4,068.2471	5,951.1576	3,852.1476	-12.1495	7.9036	3,403.3115	5,275.8234	3,222.5204
142	07	9	Hispanic*SAT-W	-24.2255	7.9345	4,398.6788	3,852.1476	4,935.4829	-11.3272	6.8022	3,778.7465	3,222.5204	4,348.4692

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
142	08	1	HSGPA	0.0000	0.2802	14.9544	16.8931	15.3508	-0.0426	0.1858	9.0512	10.2308	9.1856
142	08	2	SAT-CR	0.0000	14.9544	10,413.8895	7,578.2395	8,044.7907	-25.5564	9.0512	5,746.5964	4,147.9288	4,347.5078
142	08	3	SAT-M	0.0000	16.8931	7,578.2395	11,202.4043	7,084.1453	-26.6007	10.2308	4,147.9288	6,340.0816	3,862.4194
142	08	4	SAT-W	0.0000	15.3508	8,044.7907	7,084.1453	9,247.5771	-23.4401	9.1856	4,347.5078	3,862.4194	5,051.4111
142	08	5	Hispanic	0.6108	-0.0426	-25.5564	-26.6007	-23.4401	0.2378	-0.0166	-9.9461	-10.3526	-9.1225
142	08	6	Hispanic*HSGPA	-0.0426	0.1858	9.0512	10.2308	9.1856	-0.0166	0.1840	7.9631	9.0983	8.1877
142	08	7	Hispanic*SAT-CR	-25.5510	9.0512	5,746.5964	4,147.9288	4,347.5078	-9.9461	7.9631	5,093.6034	3,468.2528	3,748.5900
142	08	8	Hispanic*SAT-M	-26.5951	10.2308	4,147.9288	6,340.0816	3,862.4194	-10.3526	9.0983	3,468.2528	5,632.6323	3,239.0282
142	08	9	Hispanic*SAT-W	-23.4351	9.1856	4,347.5078	3,862.4194	5,051.4111	-9.1225	8.1877	3,748.5900	3,239.0282	4,502.0904
145	08	1	HSGPA	0.0000	0.3063	15.9728	18.2139	16.8599	-0.0057	0.0648	3.6583	4.0732	3.5577
145	08	2	SAT-CR	0.0000	15.9728	8,296.9793	5,614.0120	6,375.6297	-8.2173	3.6583	2,093.8721	1,587.5242	1,697.7607
145	08	3	SAT-M	0.0000	18.2139	5,614.0120	8,955.9218	5,491.0739	-8.7756	4.0732	1,587.5242	2,187.2286	1,540.4360
145	08	4	SAT-W	0.0000	16.8599	6,375.6297	5,491.0739	8,153.7426	-8.4727	3.5577	1,697.7607	1,540.4360	1,978.6146
145	08	5	Hispanic	0.1906	-0.0057	-8.2173	-8.7756	-8.4727	0.1543	-0.0046	-6.6509	-7.1028	-6.8577
145	08	6	Hispanic*HSGPA	-0.0057	0.0648	3.6583	4.0732	3.5577	-0.0046	0.0648	3.6115	4.0232	3.5095
145	08	7	Hispanic*SAT-CR	-8.2167	3.6583	2,093.8721	1,587.5242	1,697.7607	-6.6509	3.6115	2,026.3530	1,515.4177	1,628.1428
145	08	8	Hispanic*SAT-M	-8.7750	4.0732	1,587.5242	2,187.2286	1,540.4360	-7.1028	4.0232	1,515.4177	2,110.2233	1,466.0883
145	08	9	Hispanic*SAT-W	-8.4721	3.5577	1,697.7607	1,540.4360	1,978.6146	-6.8577	3.5095	1,628.1428	1,466.0883	1,906.8329
146	06	1	HSGPA	0.0000	0.2614	14.3663	16.1475	15.7413	-0.0167	0.0313	2.3693	2.5171	2.5501
146	06	2	SAT-CR	0.0000	14.3663	8,245.4780	4,993.5888	6,379.2732	-4.1635	2.3693	1,057.0903	809.4264	926.0091
146	06	3	SAT-M	0.0000	16.1475	4,993.5888	7,881.2622	4,866.3678	-4.5035	2.5171	809.4264	1,079.0787	829.6649
146	06	4	SAT-W	0.0000	15.7413	6,379.2732	4,866.3678	8,118.3509	-4.2429	2.5501	926.0091	829.6649	1,116.8569
146	06	5	Hispanic	0.0901	-0.0167	-4.1635	-4.5035	-4.2429	0.0820	-0.0152	-3.7883	-4.0977	-3.8605
146	06	6	Hispanic*HSGPA	-0.0167	0.0313	2.3693	2.5171	2.5501	-0.0152	0.0310	2.2996	2.4417	2.4791
146	06	7	Hispanic*SAT-CR	-4.1624	2.3693	1,057.0903	809.4264	926.0091	-3.7883	2.2996	1,039.7602	790.6811	908.3488
146	06	8	Hispanic*SAT-M	-4.5023	2.5171	809.4264	1,079.0787	829.6649	-4.0977	2.4417	790.6811	1,058.8027	810.5625
146	06	9	Hispanic*SAT-W	-4.2417	2.5501	926.0091	829.6649	1,116.8569	-3.8605	2.4791	908.3488	810.5625	1,098.8602
146	07	1	HSGPA	0.0000	0.2519	13.7245	15.9081	15.2432	-0.0119	0.0309	1.9779	2.2726	2.0524
146	07	2	SAT-CR	0.0000	13.7245	8,080.7427	4,563.2670	5,916.1060	-4.3360	1.9779	1,122.7716	760.9493	902.8524
146	07	3	SAT-M	0.0000	15.9081	4,563.2670	7,545.0391	4,396.5389	-4.2454	2.2726	760.9493	1,071.6339	732.4224
146	07	4	SAT-W	0.0000	15.2432	5,916.1060	4,396.5389	7,414.6907	-3.7269	2.0524	902.8524	732.4224	1,036.9677
146	07	5	Hispanic	0.1094	-0.0119	-4.3360	-4.2454	-3.7269	0.0975	-0.0106	-3.8616	-3.7809	-3.3191
146	07	6	Hispanic*HSGPA	-0.0119	0.0309	1.9779	2.2726	2.0524	-0.0106	0.0308	1.9264	2.2222	2.0081
146	07	7	Hispanic*SAT-CR	-4.3349	1.9779	1,122.7716	760.9493	902.8524	-3.8616	1.9264	1,103.9752	742.5459	886.6967
146	07	8	Hispanic*SAT-M	-4.2443	2.2726	760.9493	1,071.6339	732.4224	-3.7809	2.2222	742.5459	1,053.6153	716.6045
146	07	9	Hispanic*SAT-W	-3.7259	2.0524	902.8524	732.4224	1,036.9677	-3.3191	2.0081	886.6967	716.6045	1,023.0817
146	08	1	HSGPA	0.0000	0.2492	13.2253	16.1950	14.4366	-0.0189	0.0410	3.1192	3.1406	3.1307
146	08	2	SAT-CR	0.0000	13.2253	7,979.7208	4,643.5661	5,963.8640	-5.8329	3.1192	1,442.1301	987.0019	1,169.6050
146	08	3	SAT-M	0.0000	16.1950	4,643.5661	7,749.9679	4,527.7606	-5.6597	3.1406	987.0019	1,342.1308	961.3394
146	08	4	SAT-W	0.0000	14.4366	5,963.8640	4,527.7606	7,626.6256	-5.1688	3.1307	1,169.6050	961.3394	1,368.8361
146	08	5	Hispanic	0.1251	-0.0189	-5.8329	-5.6597	-5.1688	0.1095	-0.0165	-5.1033	-4.9518	-4.5222
146	08	6	Hispanic*HSGPA	-0.0189	0.0410	3.1192	3.1406	3.1307	-0.0165	0.0406	3.0091	3.0338	3.0331
146	08	7	Hispanic*SAT-CR	-5.8316	3.1192	1,442.1301	987.0019	1,169.6050	-5.1033	3.0091	1,408.1151	953.9968	1,139.4629
146	08	8	Hispanic*SAT-M	-5.6584	3.1406	987.0019	1,342.1308	961.3394	-4.9518	3.0338	953.9968	1,310.1055	932.0922
146	08	9	Hispanic*SAT-W	-5.1676	3.1307	1,169.6050	961.3394	1,368.8361	-4.5222	3.0331	1,139.4629	932.0922	1,342.1260

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
147	08	1	HSGPA	0.0000	0.3379	15.3442	16.4388	17.4176	-0.0225	0.0471	2.9864	3.0741	3.0607
147	08	2	SAT-CR	0.0000	15.3442	8,096.9102	4,580.8894	5,852.3042	-7.0356	2.9864	1,367.8273	928.9470	1,025.9169
147	08	3	SAT-M	0.0000	16.4388	4,580.8894	7,319.9840	4,232.0952	-7.0560	3.0741	928.9470	1,286.8190	829.8072
147	08	4	SAT-W	0.0000	17.4176	5,852.3042	4,232.0952	7,245.8875	-6.4891	3.0607	1,025.9169	829.8072	1,167.9631
147	08	5	Hispanic	0.1225	-0.0225	-7.0356	-7.0560	-6.4891	0.1075	-0.0198	-6.1740	-6.1919	-5.6944
147	08	6	Hispanic*HSGPA	-0.0225	0.0471	2.9864	3.0741	3.0607	-0.0198	0.0466	2.8279	2.9151	2.9144
147	08	7	Hispanic*SAT-CR	-7.0338	2.9864	1,367.8273	928.9470	1,025.9169	-6.1740	2.8279	1,318.3407	879.3166	980.2742
147	08	8	Hispanic*SAT-M	-7.0542	3.0741	928.9470	1,286.8190	829.8072	-6.1919	2.9151	879.3166	1,237.0444	784.0319
147	08	9	Hispanic*SAT-W	-6.4874	3.0607	1,025.9169	829.8072	1,167.9631	-5.6944	2.9144	980.2742	784.0319	1,125.8657
148	06	1	HSGPA	0.0000	0.2401	13.5612	13.3533	14.7325	-0.0083	0.0151	0.9463	0.9632	1.0748
148	06	2	SAT-CR	0.0000	13.5612	7,758.2938	4,172.5097	5,739.5104	-2.0557	0.9463	488.2924	336.8482	420.2292
148	06	3	SAT-M	0.0000	13.3533	4,172.5097	6,748.3002	3,932.0046	-1.9978	0.9632	336.8482	440.0508	323.7670
148	06	4	SAT-W	0.0000	14.7325	5,739.5104	3,932.0046	7,342.6364	-1.8068	1.0748	420.2292	323.7670	485.8467
148	06	5	Hispanic	0.0449	-0.0083	-2.0557	-1.9978	-1.8068	0.0429	-0.0079	-1.9634	-1.9081	-1.7256
148	06	6	Hispanic*HSGPA	-0.0083	0.0151	0.9463	0.9632	1.0748	-0.0079	0.0151	0.9293	0.9467	1.0599
148	06	7	Hispanic*SAT-CR	-2.0553	0.9463	488.2924	336.8482	420.2292	-1.9634	0.9293	484.0673	332.7421	416.5157
148	06	8	Hispanic*SAT-M	-1.9974	0.9632	336.8482	440.0508	323.7670	-1.9081	0.9467	332.7421	436.0604	320.1581
148	06	9	Hispanic*SAT-W	-1.8064	1.0748	420.2292	323.7670	485.8467	-1.7256	1.0599	416.5157	320.1581	482.5830
148	08	1	HSGPA	0.0000	0.2417	13.7000	13.7428	15.3671	-0.0090	0.0166	1.3032	1.3782	1.1889
148	08	2	SAT-CR	0.0000	13.7000	7,950.1344	4,206.1107	5,976.5796	-2.4035	1.3032	571.9419	418.0587	500.6482
148	08	3	SAT-M	0.0000	13.7428	4,206.1107	6,689.5746	4,311.7069	-2.6664	1.3782	418.0587	592.1921	429.5275
148	08	4	SAT-W	0.0000	15.3671	5,976.5796	4,311.7069	7,778.6861	-2.4645	1.1889	500.6482	429.5275	616.6190
148	08	5	Hispanic	0.0584	-0.0090	-2.4035	-2.6664	-2.4645	0.0550	-0.0084	-2.2632	-2.5107	-2.3206
148	08	6	Hispanic*HSGPA	-0.0090	0.0166	1.3032	1.3782	1.1889	-0.0084	0.0165	1.2817	1.3543	1.1668
148	08	7	Hispanic*SAT-CR	-2.4029	1.3032	571.9419	418.0587	500.6482	-2.2632	1.2817	566.1664	411.6515	494.7262
148	08	8	Hispanic*SAT-M	-2.6658	1.3782	418.0587	592.1921	429.5275	-2.5107	1.3543	411.6515	585.0840	422.9576
148	08	9	Hispanic*SAT-W	-2.4639	1.1889	500.6482	429.5275	616.6190	-2.3206	1.1668	494.7262	422.9576	610.5467
149	08	1	HSGPA	0.0000	0.2133	9.9719	11.7974	12.3600	-0.0038	0.0168	1.0688	1.1332	1.1934
149	08	2	SAT-CR	0.0000	9.9719	5,703.5336	3,221.7484	4,199.1913	-2.0163	1.0688	500.9042	377.9600	412.7635
149	08	3	SAT-M	0.0000	11.7974	3,221.7484	6,286.7619	3,360.6157	-2.9082	1.1332	377.9600	634.0988	410.9733
149	08	4	SAT-W	0.0000	12.3600	4,199.1913	3,360.6157	6,130.0035	-2.4530	1.1934	412.7635	410.9733	551.4942
149	08	5	Hispanic	0.0602	-0.0038	-2.0163	-2.9082	-2.4530	0.0566	-0.0036	-1.8948	-2.7331	-2.3053
149	08	6	Hispanic*HSGPA	-0.0038	0.0168	1.0688	1.1332	1.1934	-0.0036	0.0168	1.0610	1.1220	1.1840
149	08	7	Hispanic*SAT-CR	-2.0161	1.0688	500.9042	377.9600	412.7635	-1.8948	1.0610	496.8392	372.0967	407.8180
149	08	8	Hispanic*SAT-M	-2.9080	1.1332	377.9600	634.0988	410.9733	-2.7331	1.1220	372.0967	625.6416	403.8400
149	08	9	Hispanic*SAT-W	-2.4528	1.1934	412.7635	410.9733	551.4942	-2.3053	1.1840	407.8180	403.8400	545.4776
151	06	1	HSGPA	0.0000	0.3870	17.4803	20.1878	20.0299	-0.0084	0.0145	0.6528	0.8337	0.6975
151	06	2	SAT-CR	0.0000	17.4803	6,945.2569	4,417.7988	4,992.3709	-0.6937	0.6528	246.8926	163.1968	189.5373
151	06	3	SAT-M	0.0000	20.1878	4,417.7988	8,078.9127	4,169.6182	-1.0542	0.8337	163.1968	267.0174	156.6497
151	06	4	SAT-W	0.0000	20.0299	4,992.3709	4,169.6182	6,641.0469	-0.8870	0.6975	189.5373	156.6497	218.5480
151	06	5	Hispanic	0.0294	-0.0084	-0.6937	-1.0542	-0.8870	0.0285	-0.0082	-0.6733	-1.0232	-0.8610
151	06	6	Hispanic*HSGPA	-0.0084	0.0145	0.6528	0.8337	0.6975	-0.0082	0.0144	0.6469	0.8248	0.6900
151	06	7	Hispanic*SAT-CR	-0.6936	0.6528	246.8926	163.1968	189.5373	-0.6733	0.6469	246.4114	162.4655	188.9220
151	06	8	Hispanic*SAT-M	-1.0541	0.8337	163.1968	267.0174	156.6497	-1.0232	0.8248	162.4655	265.9061	155.7147
151	06	9	Hispanic*SAT-W	-0.8869	0.6975	189.5373	156.6497	218.5480	-0.8610	0.6900	188.9220	155.7147	217.7612

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
153	06	1	HSGPA	0.0000	0.1286	10.3466	10.5943	11.1160	-0.0133	0.0306	3.4597	3.6331	3.6931
153	06	2	SAT-CR	0.0000	10.3466	9,256.3475	5,550.1721	7,452.4599	-11.1712	3.4597	2,660.8354	2,071.2054	2,375.5640
153	06	3	SAT-M	0.0000	10.5943	5,550.1721	8,216.1914	5,683.9384	-11.2890	3.6331	2,071.2054	2,605.8690	2,099.9204
153	06	4	SAT-W	0.0000	11.1160	7,452.4599	5,683.9384	9,161.4545	-11.2426	3.6931	2,375.5640	2,099.9204	2,710.6386
153	06	5	Hispanic	0.1686	-0.0133	-11.1712	-11.2890	-11.2426	0.1402	-0.0110	-9.2878	-9.3858	-9.3472
153	06	6	Hispanic*HSGPA	-0.0133	0.0306	3.4597	3.6331	3.6931	-0.0110	0.0304	3.3114	3.4833	3.5439
153	06	7	Hispanic*SAT-CR	-11.1704	3.4597	2,660.8354	2,071.2054	2,375.5640	-9.2878	3.3114	2,536.0491	1,945.1032	2,249.9794
153	06	8	Hispanic*SAT-M	-11.2882	3.6331	2,071.2054	2,605.8690	2,099.9204	-9.3858	3.4833	1,945.1032	2,478.4370	1,973.0114
153	06	9	Hispanic*SAT-W	-11.2419	3.6931	2,375.5640	2,099.9204	2,710.6386	-9.3472	3.5439	2,249.9794	1,973.0114	2,584.2506
155	06	1	HSGPA	0.0000	0.3020	15.6304	19.0900	17.0715	-0.0123	0.0299	1.7959	2.2889	1.7648
155	06	2	SAT-CR	0.0000	15.6304	8,076.4194	5,105.3966	5,993.7249	-3.9700	1.7959	859.4367	667.8252	682.1158
155	06	3	SAT-M	0.0000	19.0900	5,105.3966	8,403.7067	4,705.2486	-4.5428	2.2889	667.8252	949.4120	615.3691
155	06	4	SAT-W	0.0000	17.0715	5,993.7249	4,705.2486	7,492.7962	-3.6070	1.7648	682.1158	615.3691	765.5968
155	06	5	Hispanic	0.0762	-0.0123	-3.9700	-4.5428	-3.6070	0.0704	-0.0114	-3.6675	-4.1967	-3.3322
155	06	6	Hispanic*HSGPA	-0.0123	0.0299	1.7959	2.2889	1.7648	-0.0114	0.0297	1.7471	2.2331	1.7205
155	06	7	Hispanic*SAT-CR	-3.9696	1.7959	859.4367	667.8252	682.1158	-3.6675	1.7471	843.6776	649.7922	667.7977
155	06	8	Hispanic*SAT-M	-4.5424	2.2889	667.8252	949.4120	615.3691	-4.1967	2.2331	649.7922	928.7769	598.9850
155	06	9	Hispanic*SAT-W	-3.6066	1.7648	682.1158	615.3691	765.5968	-3.3322	1.7205	667.7977	598.9850	752.5879
155	07	1	HSGPA	0.0000	0.3048	16.3122	18.5768	18.0357	-0.0127	0.0312	2.1618	2.3207	2.1460
155	07	2	SAT-CR	0.0000	16.3122	8,372.3542	5,060.8399	6,189.2449	-4.0934	2.1618	951.2388	680.9743	741.8929
155	07	3	SAT-M	0.0000	18.5768	5,060.8399	8,307.1459	4,788.6266	-4.0061	2.3207	680.9743	919.6167	623.8489
155	07	4	SAT-W	0.0000	18.0357	6,189.2449	4,788.6266	7,556.4680	-3.4748	2.1460	741.8929	623.8489	817.4720
155	07	5	Hispanic	0.0806	-0.0127	-4.0934	-4.0061	-3.4748	0.0741	-0.0117	-3.7635	-3.6832	-3.1947
155	07	6	Hispanic*HSGPA	-0.0127	0.0312	2.1618	2.3207	2.1460	-0.0117	0.0310	2.1099	2.2699	2.1020
155	07	7	Hispanic*SAT-CR	-4.0931	2.1618	951.2388	680.9743	741.8929	-3.7635	2.1099	934.4841	664.5771	727.6706
155	07	8	Hispanic*SAT-M	-4.0057	2.3207	680.9743	919.6167	623.8489	-3.6832	2.2699	664.5771	903.5695	609.9300
155	07	9	Hispanic*SAT-W	-3.4744	2.1460	741.8929	623.8489	817.4720	-3.1947	2.1020	727.6706	609.9300	805.3993
155	08	1	HSGPA	0.0000	0.2923	15.2058	17.6178	16.5136	-0.0132	0.0300	2.0763	2.2446	2.1241
155	08	2	SAT-CR	0.0000	15.2058	8,157.5571	4,983.7041	5,984.7089	-4.8882	2.0763	1,082.6894	806.8891	878.0786
155	08	3	SAT-M	0.0000	17.6178	4,983.7041	8,008.2573	4,634.5183	-4.8392	2.2446	806.8891	1,071.0036	763.8088
155	08	4	SAT-W	0.0000	16.5136	5,984.7089	4,634.5183	7,410.4464	-4.4307	2.1241	878.0786	763.8088	993.7815
155	08	5	Hispanic	0.0915	-0.0132	-4.8882	-4.8392	-4.4307	0.0831	-0.0120	-4.4410	-4.3965	-4.0253
155	08	6	Hispanic*HSGPA	-0.0132	0.0300	2.0763	2.2446	2.1241	-0.0120	0.0298	2.0118	2.1807	2.0655
155	08	7	Hispanic*SAT-CR	-4.8878	2.0763	1,082.6894	806.8891	878.0786	-4.4410	2.0118	1,058.7970	783.2360	856.4225
155	08	8	Hispanic*SAT-M	-4.8388	2.2446	806.8891	1,071.0036	763.8088	-4.3965	2.1807	783.2360	1,047.5876	742.3696
155	08	9	Hispanic*SAT-W	-4.4303	2.1241	878.0786	763.8088	993.7815	-4.0253	2.0655	856.4225	742.3696	974.1524
156	07	1	HSGPA	0.0000	0.3263	20.1783	22.2786	22.0084	-0.0389	0.0699	3.9753	5.1280	4.8770
156	07	2	SAT-CR	0.0000	20.1783	7,355.5901	4,364.1576	5,566.9909	-5.0967	3.9753	1,360.1327	934.2408	1,135.7137
156	07	3	SAT-M	0.0000	22.2786	4,364.1576	7,461.3659	4,487.1880	-7.3908	5.1280	934.2408	1,579.7069	1,064.9712
156	07	4	SAT-W	0.0000	22.0084	5,566.9909	4,487.1880	7,376.4838	-7.0316	4.8770	1,135.7137	1,064.9712	1,485.1143
156	07	5	Hispanic	0.1738	-0.0389	-5.0967	-7.3908	-7.0316	0.1436	-0.0322	-4.2111	-6.1065	-5.8097
156	07	6	Hispanic*HSGPA	-0.0389	0.0699	3.9753	5.1280	4.8770	-0.0322	0.0684	3.7770	4.8404	4.6034
156	07	7	Hispanic*SAT-CR	-5.0950	3.9753	1,360.1327	934.2408	1,135.7137	-4.2111	3.7770	1,334.1648	896.5844	1,099.8877
156	07	8	Hispanic*SAT-M	-7.3883	5.1280	934.2408	1,579.7069	1,064.9712	-6.1065	4.8404	896.5844	1,525.1009	1,013.0194
156	07	9	Hispanic*SAT-W	-7.0292	4.8770	1,135.7137	1,064.9712	1,485.1143	-5.8097	4.6034	1,099.8877	1,013.0194	1,435.6878

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
156	08	1	HSGPA	0.0000	0.3244	20.4799	23.8307	22.8652	-0.0381	0.0803	5.1873	6.1139	5.6363
156	08	2	SAT-CR	0.0000	20.4799	6,852.4455	4,308.4521	5,214.1522	-5.3487	5.1873	1,442.2990	1,098.8381	1,157.9787
156	08	3	SAT-M	0.0000	23.8307	4,308.4521	7,709.8402	4,339.0718	-8.3466	6.1139	1,098.8381	1,857.4877	1,108.3625
156	08	4	SAT-W	0.0000	22.8652	5,214.1522	4,339.0718	7,107.9652	-6.4880	5.6363	1,157.9787	1,108.3625	1,415.2316
156	08	5	Hispanic	0.1820	-0.0381	-5.3487	-8.3466	-6.4880	0.1489	-0.0312	-4.3753	-6.8275	-5.3071
156	08	6	Hispanic*HSGPA	-0.0381	0.0803	5.1873	6.1139	5.6363	-0.0312	0.0789	4.9835	5.7960	5.3891
156	08	7	Hispanic*SAT-CR	-5.3469	5.1873	1,442.2990	1,098.8381	1,157.9787	-4.3753	4.9835	1,413.6996	1,054.2092	1,123.2880
156	08	8	Hispanic*SAT-M	-8.3438	6.1139	1,098.8381	1,857.4877	1,108.3625	-6.8275	5.7960	1,054.2092	1,787.8451	1,054.2281
156	08	9	Hispanic*SAT-W	-6.4858	5.6363	1,157.9787	1,108.3625	1,415.2316	-5.3071	5.3891	1,123.2880	1,054.2281	1,373.1521
157	06	1	HSGPA	0.0000	0.2826	19.2600	22.9072	20.9410	-0.0294	0.0461	3.4321	4.5052	3.8508
157	06	2	SAT-CR	0.0000	19.2600	7,916.8171	5,233.7111	6,148.7942	-4.9913	3.4321	1,052.8532	930.3697	896.2696
157	06	3	SAT-M	0.0000	22.9072	5,233.7111	8,455.5983	5,141.9453	-6.1652	4.5052	930.3697	1,371.7853	937.8157
157	06	4	SAT-W	0.0000	20.9410	6,148.7942	5,141.9453	8,055.3029	-5.1364	3.8508	896.2696	937.8157	1,080.8510
157	06	5	Hispanic	0.0916	-0.0294	-4.9913	-6.1652	-5.1364	0.0832	-0.0267	-4.5343	-5.6006	-4.6660
157	06	6	Hispanic*HSGPA	-0.0294	0.0461	3.4321	4.5052	3.8508	-0.0267	0.0453	3.2856	4.3243	3.7001
157	06	7	Hispanic*SAT-CR	-4.9907	3.4321	1,052.8532	930.3697	896.2696	-4.5343	3.2856	1,027.9430	899.6014	870.6355
157	06	8	Hispanic*SAT-M	-6.1643	4.5052	930.3697	1,371.7853	937.8157	-5.6006	4.3243	899.6014	1,333.7810	906.1532
157	06	9	Hispanic*SAT-W	-5.1357	3.8508	896.2696	937.8157	1,080.8510	-4.6660	3.7001	870.6355	906.1532	1,054.4719
158	06	1	HSGPA	0.0000	0.3625	21.7825	22.7162	22.8481	-0.0239	0.1439	10.5328	10.0352	10.3546
158	06	2	SAT-CR	0.0000	21.7825	11,444.1656	7,912.9567	9,227.6735	-18.4978	10.5328	4,789.4406	3,521.2635	3,935.5647
158	06	3	SAT-M	0.0000	22.7162	7,912.9567	11,043.6818	7,392.8704	-17.4164	10.0352	3,521.2635	4,586.6491	3,343.2774
158	06	4	SAT-W	0.0000	22.8481	9,227.6735	7,392.8704	10,603.3373	-16.5667	10.3546	3,935.5647	3,343.2774	4,327.8525
158	06	5	Hispanic	0.3682	-0.0239	-18.4978	-17.4164	-16.5667	0.2328	-0.0151	-11.6872	-11.0040	-10.4672
158	06	6	Hispanic*HSGPA	-0.0239	0.1439	10.5328	10.0352	10.3546	-0.0151	0.1433	10.0915	9.6197	9.9594
158	06	7	Hispanic*SAT-CR	-18.4873	10.5328	4,789.4406	3,521.2635	3,935.5647	-11.6872	10.0915	4,447.4663	3,199.2813	3,629.2909
158	06	8	Hispanic*SAT-M	-17.4065	10.0352	3,521.2635	4,586.6491	3,343.2774	-11.0040	9.6197	3,199.2813	4,283.4903	3,054.9087
158	06	9	Hispanic*SAT-W	-16.5573	10.3546	3,935.5647	3,343.2774	4,327.8525	-10.4672	9.9594	3,629.2909	3,054.9087	4,053.5521
159	07	1	HSGPA	0.0000	0.2864	22.4014	23.6218	23.9796	-0.0303	0.0660	5.5615	6.0693	5.8493
159	07	2	SAT-CR	0.0000	22.4014	9,749.1176	6,897.0951	7,876.0983	-10.5219	5.5615	2,313.2793	1,886.3752	2,001.5871
159	07	3	SAT-M	0.0000	23.6218	6,897.0951	10,389.5123	6,808.2031	-11.6442	6.0693	1,886.3752	2,605.2686	1,911.3698
159	07	4	SAT-W	0.0000	23.9796	7,876.0983	6,808.2031	9,440.5958	-10.7187	5.8493	2,001.5871	1,911.3698	2,297.2029
159	07	5	Hispanic	0.1808	-0.0303	-10.5219	-11.6442	-10.7187	0.1481	-0.0248	-8.6191	-9.5384	-8.7803
159	07	6	Hispanic*HSGPA	-0.0303	0.0660	5.5615	6.0693	5.8493	-0.0248	0.0650	5.2426	5.7164	5.5245
159	07	7	Hispanic*SAT-CR	-10.5215	5.5615	2,313.2793	1,886.3752	2,001.5871	-8.6191	5.2426	2,202.5730	1,763.8611	1,888.8111
159	07	8	Hispanic*SAT-M	-11.6437	6.0693	1,886.3752	2,605.2686	1,911.3698	-9.5384	5.7164	1,763.8611	2,469.6873	1,786.5653
159	07	9	Hispanic*SAT-W	-10.7182	5.8493	2,001.5871	1,911.3698	2,297.2029	-8.7803	5.5245	1,888.8111	1,786.5653	2,182.3185
159	08	1	HSGPA	0.0000	0.2772	21.0085	23.0362	23.1167	-0.0300	0.0680	5.8434	6.2920	6.1528
159	08	2	SAT-CR	0.0000	21.0085	9,496.3933	6,597.0053	7,642.8256	-10.9003	5.8434	2,499.7199	1,998.2438	2,111.6065
159	08	3	SAT-M	0.0000	23.0362	6,597.0053	10,056.8770	6,577.7659	-12.4406	6.2920	1,998.2438	2,707.3058	1,974.6184
159	08	4	SAT-W	0.0000	23.1167	7,642.8256	6,577.7659	9,426.8331	-11.2683	6.1528	2,111.6065	1,974.6184	2,400.0830
159	08	5	Hispanic	0.1908	-0.0300	-10.9003	-12.4406	-11.2683	0.1544	-0.0243	-8.8203	-10.0666	-9.1181
159	08	6	Hispanic*HSGPA	-0.0300	0.0680	5.8434	6.2920	6.1528	-0.0243	0.0671	5.5160	5.9184	5.8144
159	08	7	Hispanic*SAT-CR	-10.8999	5.8434	2,499.7199	1,998.2438	2,111.6065	-8.8203	5.5160	2,380.9076	1,862.6435	1,988.7837
159	08	8	Hispanic*SAT-M	-12.4400	6.2920	1,998.2438	2,707.3058	1,974.6184	-10.0666	5.9184	1,862.6435	2,552.5452	1,834.4409
159	08	9	Hispanic*SAT-W	-11.2678	6.1528	2,111.6065	1,974.6184	2,400.0830	-9.1181	5.8144	1,988.7837	1,834.4409	2,273.1144



## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
161	06	1	HSGPA	0.0000	0.2841	20.7257	24.5514	21.8375	-0.0478	0.0772	8.3918	10.0800	8.4401
161	06	2	SAT-CR	0.0000	20.7257	12,235.8676	8,301.1737	9,450.5654	-17.3042	8.3918	4,454.6962	3,676.8958	3,658.0393
161	06	3	SAT-M	0.0000	24.5514	8,301.1737	11,189.0263	7,860.4359	-17.4415	10.0800	3,676.8958	4,361.3020	3,411.3168
161	06	4	SAT-W	0.0000	21.8375	9,450.5654	7,860.4359	10,753.8227	-14.8365	8.4401	3,658.0393	3,411.3168	3,708.9359
161	06	5	Hispanic	0.2104	-0.0478	-17.3042	-17.4415	-14.8365	0.1662	-0.0378	-13.6637	-13.7721	-11.7152
161	06	6	Hispanic*HSGPA	-0.0478	0.0772	8.3918	10.0800	8.4401	-0.0378	0.0749	7.5646	9.2462	7.7308
161	06	7	Hispanic*SAT-CR	-17.2922	8.3918	4,454.6962	3,676.8958	3,658.0393	-13.6637	7.5646	4,155.4694	3,375.2942	3,401.4841
161	06	8	Hispanic*SAT-M	-17.4294	10.0800	3,676.8958	4,361.3020	3,411.3168	-13.7721	9.2462	3,375.2942	4,057.3068	3,152.7255
161	06	9	Hispanic*SAT-W	-14.8262	8.4401	3,658.0393	3,411.3168	3,708.9359	-11.7152	7.7308	3,401.4841	3,152.7255	3,488.9670
161	07	1	HSGPA	0.0000	0.3010	26.3975	26.8162	27.0230	-0.0467	0.0815	10.4261	10.0435	10.2507
161	07	2	SAT-CR	0.0000	26.3975	12,105.5804	8,322.7303	9,995.1915	-16.4307	10.4261	4,071.4688	3,330.0361	3,572.4860
161	07	3	SAT-M	0.0000	26.8162	8,322.7303	10,952.9729	8,163.4706	-15.2465	10.0435	3,330.0361	3,765.1475	3,214.3957
161	07	4	SAT-W	0.0000	27.0230	9,995.1915	8,163.4706	11,525.2409	-14.5569	10.2507	3,572.4860	3,214.3957	3,722.8582
161	07	5	Hispanic	0.2044	-0.0467	-16.4307	-15.2465	-14.5569	0.1627	-0.0372	-13.0727	-12.1305	-11.5819
161	07	6	Hispanic*HSGPA	-0.0467	0.0815	10.4261	10.0435	10.2507	-0.0372	0.0793	9.6591	9.3318	9.5712
161	07	7	Hispanic*SAT-CR	-16.4195	10.4261	4,071.4688	3,330.0361	3,572.4860	-13.0727	9.6591	3,801.6841	3,079.6964	3,333.4681
161	07	8	Hispanic*SAT-M	-15.2361	10.0435	3,330.0361	3,765.1475	3,214.3957	-12.1305	9.3318	3,079.6964	3,532.8513	2,992.6052
161	07	9	Hispanic*SAT-W	-14.5470	10.2507	3,572.4860	3,214.3957	3,722.8582	-11.5819	9.5712	3,333.4681	2,992.6052	3,511.0984
161	08	1	HSGPA	0.0000	0.2785	23.9051	24.1390	24.6901	-0.0555	0.0893	10.7516	10.6508	10.0267
161	08	2	SAT-CR	0.0000	23.9051	12,452.0177	8,481.0539	9,924.6544	-21.2498	10.7516	4,897.6273	3,829.5898	3,984.1774
161	08	3	SAT-M	0.0000	24.1390	8,481.0539	11,091.9757	8,203.9860	-18.7323	10.6508	3,829.5898	4,363.6511	3,488.1984
161	08	4	SAT-W	0.0000	24.6901	9,924.6544	8,203.9860	11,381.4876	-19.2033	10.0267	3,984.1774	3,488.1984	4,004.8855
161	08	5	Hispanic	0.2461	-0.0555	-21.2498	-18.7323	-19.2033	0.1857	-0.0419	-16.0207	-14.1227	-14.4778
161	08	6	Hispanic*HSGPA	-0.0555	0.0893	10.7516	10.6508	10.0267	-0.0419	0.0862	9.5724	9.6113	8.9611
161	08	7	Hispanic*SAT-CR	-21.2346	10.7516	4,897.6273	3,829.5898	3,984.1774	-16.0207	9.5724	4,446.3952	3,431.8151	3,576.4012
161	08	8	Hispanic*SAT-M	-18.7190	10.6508	3,829.5898	4,363.6511	3,488.1984	-14.1227	9.6113	3,431.8151	4,013.0007	3,128.7314
161	08	9	Hispanic*SAT-W	-19.1896	10.0267	3,984.1774	3,488.1984	4,004.8855	-14.4778	8.9611	3,576.4012	3,128.7314	3,636.3802
162	06	1	HSGPA	0.0000	0.3021	12.8092	14.2886	14.2794	-0.0043	0.0171	0.3437	0.6438	0.4110
162	06	2	SAT-CR	0.0000	12.8092	6,571.6017	3,805.5693	4,610.5136	-1.9854	0.3437	462.5436	301.7162	386.2204
162	06	3	SAT-M	0.0000	14.2886	3,805.5693	6,913.0976	3,649.6915	-1.7465	0.6438	301.7162	488.8458	345.8659
162	06	4	SAT-W	0.0000	14.2794	4,610.5136	3,649.6915	6,314.1733	-2.5498	0.4110	386.2204	345.8659	494.0895
162	06	5	Hispanic	0.0484	-0.0043	-1.9854	-1.7465	-2.5498	0.0460	-0.0041	-1.8894	-1.6621	-2.4265
162	06	6	Hispanic*HSGPA	-0.0043	0.0171	0.3437	0.6438	0.4110	-0.0041	0.0171	0.3352	0.6363	0.4001
162	06	7	Hispanic*SAT-CR	-1.9846	0.3437	462.5436	301.7162	386.2204	-1.8894	0.3352	458.6034	298.2500	381.1600
162	06	8	Hispanic*SAT-M	-1.7459	0.6438	301.7162	488.8458	345.8659	-1.6621	0.6363	298.2500	485.7966	341.4143
162	06	9	Hispanic*SAT-W	-2.5488	0.4110	386.2204	345.8659	494.0895	-2.4265	0.4001	381.1600	341.4143	487.5905
162	08	1	HSGPA	0.0000	0.3028	11.1139	12.7266	13.2611	-0.0063	0.0223	0.3979	0.4455	0.7155
162	08	2	SAT-CR	0.0000	11.1139	6,556.0273	3,804.3813	4,774.1289	-2.6589	0.3979	650.8313	453.7401	546.1334
162	08	3	SAT-M	0.0000	12.7266	3,804.3813	6,846.3352	3,849.3659	-2.9435	0.4455	453.7401	625.9476	464.1391
162	08	4	SAT-W	0.0000	13.2611	4,774.1289	3,849.3659	6,432.2898	-3.8023	0.7155	546.1334	464.1391	689.1453
162	08	5	Hispanic	0.0676	-0.0063	-2.6589	-2.9435	-3.8023	0.0631	-0.0058	-2.4792	-2.7445	-3.5452
162	08	6	Hispanic*HSGPA	-0.0063	0.0223	0.3979	0.4455	0.7155	-0.0058	0.0222	0.3812	0.4270	0.6917
162	08	7	Hispanic*SAT-CR	-2.6581	0.3979	650.8313	453.7401	546.1334	-2.4792	0.3812	643.7638	445.9161	536.0268
162	08	8	Hispanic*SAT-M	-2.9425	0.4455	453.7401	625.9476	464.1391	-2.7445	0.4270	445.9161	617.2864	452.9508
162	08	9	Hispanic*SAT-W	-3.8010	0.7155	546.1334	464.1391	689.1453	-3.5452	0.6917	536.0268	452.9508	674.6927

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
164	08	1	HSGPA	0.0000	0.2618	15.0685	16.7577	16.6288	-0.0267	0.0998	6.7458	7.2228	7.0314
164	08	2	SAT-CR	0.0000	15.0685	9,086.6987	5,772.1140	7,219.9555	-16.6653	6.7458	4,032.7112	2,958.8035	3,383.8780
164	08	3	SAT-M	0.0000	16.7577	5,772.1140	8,828.5944	5,920.5943	-16.8702	7.2228	2,958.8035	4,018.4882	3,006.8437
164	08	4	SAT-W	0.0000	16.6288	7,219.9555	5,920.5943	8,996.3903	-18.1770	7.0314	3,383.8780	3,006.8437	3,944.4066
164	08	5	Hispanic	0.3397	-0.0267	-16.6653	-16.8702	-18.1770	0.2243	-0.0176	-11.0040	-11.1394	-12.0023
164	08	6	Hispanic*HSGPA	-0.0267	0.0998	6.7458	7.2228	7.0314	-0.0176	0.0991	6.3011	6.7726	6.5463
164	08	7	Hispanic*SAT-CR	-16.6619	6.7458	4,032.7112	2,958.8035	3,383.8780	-11.0040	6.3011	3,755.0357	2,677.7134	3,081.0137
164	08	8	Hispanic*SAT-M	-16.8668	7.2228	2,958.8035	4,018.4882	3,006.8437	-11.1394	6.7726	2,677.7134	3,733.9416	2,700.2552
164	08	9	Hispanic*SAT-W	-18.1734	7.0314	3,383.8780	3,006.8437	3,944.4066	-12.0023	6.5463	3,081.0137	2,700.2552	3,614.0686
165	06	1	HSGPA	0.0000	0.2444	14.8939	16.5799	15.9529	-0.0255	0.0885	6.4733	7.4298	6.7102
165	06	2	SAT-CR	0.0000	14.8939	8,567.4895	5,856.5608	6,550.1230	-15.2404	6.4733	3,554.2551	2,807.0058	2,985.3999
165	06	3	SAT-M	0.0000	16.5799	5,856.5608	9,375.1915	5,735.6802	-17.6112	7.4298	2,807.0058	3,919.0376	2,782.7870
165	06	4	SAT-W	0.0000	15.9529	6,550.1230	5,735.6802	8,143.5945	-15.7678	6.7102	2,985.3999	2,782.7870	3,401.1540
165	06	5	Hispanic	0.2921	-0.0255	-15.2404	-17.6112	-15.7678	0.2068	-0.0180	-10.7883	-12.4665	-11.1616
165	06	6	Hispanic*HSGPA	-0.0255	0.0885	6.4733	7.4298	6.7102	-0.0180	0.0878	6.0848	6.9809	6.3082
165	06	7	Hispanic*SAT-CR	-15.2382	6.4733	3,554.2551	2,807.0058	2,985.3999	-10.7883	6.0848	3,322.0189	2,538.6432	2,745.1278
165	06	8	Hispanic*SAT-M	-17.6086	7.4298	2,807.0058	3,919.0376	2,782.7870	-12.4665	6.9809	2,538.6432	3,608.9288	2,505.1384
165	06	9	Hispanic*SAT-W	-15.7655	6.7102	2,985.3999	2,782.7870	3,401.1540	-11.1616	6.3082	2,745.1278	2,505.1384	3,152.5679
165	07	1	HSGPA	0.0000	0.2505	15.2341	16.8491	16.6735	-0.0255	0.0912	7.0417	7.6461	7.3748
165	07	2	SAT-CR	0.0000	15.2341	8,249.0009	5,663.6164	6,438.2928	-14.4319	7.0417	3,485.6482	2,700.7405	2,967.3094
165	07	3	SAT-M	0.0000	16.8491	5,663.6164	9,037.7874	5,657.9196	-16.2370	7.6461	2,700.7405	3,748.7065	2,739.6827
165	07	4	SAT-W	0.0000	16.6735	6,438.2928	5,657.9196	8,037.0217	-14.6424	7.3748	2,967.3094	2,739.6827	3,395.9571
165	07	5	Hispanic	0.2982	-0.0255	-14.4319	-16.2370	-14.6424	0.2093	-0.0179	-10.1289	-11.3958	-10.2766
165	07	6	Hispanic*HSGPA	-0.0255	0.0912	7.0417	7.6461	7.3748	-0.0179	0.0906	6.6731	7.2314	7.0008
165	07	7	Hispanic*SAT-CR	-14.4300	7.0417	3,485.6482	2,700.7405	2,967.3094	-10.1289	6.6731	3,277.3954	2,466.4402	2,756.0198
165	07	8	Hispanic*SAT-M	-16.2348	7.6461	2,700.7405	3,748.7065	2,739.6827	-11.3958	7.2314	2,466.4402	3,485.1009	2,501.9658
165	07	9	Hispanic*SAT-W	-14.6404	7.3748	2,967.3094	2,739.6827	3,395.9571	-10.2766	7.0008	2,756.0198	2,501.9658	3,181.5864
166	06	1	HSGPA	0.0000	0.1885	8.3710	8.7231	10.4999	-0.0044	0.0107	0.7404	0.7731	0.7369
166	06	2	SAT-CR	0.0000	8.3710	7,288.0904	4,201.0710	5,548.7781	-1.5728	0.7404	456.8292	334.6972	394.3535
166	06	3	SAT-M	0.0000	8.7231	4,201.0710	7,459.4794	4,437.5576	-1.7308	0.7731	334.6972	495.4729	353.5473
166	06	4	SAT-W	0.0000	10.4999	5,548.7781	4,437.5576	7,676.2013	-1.3444	0.7369	394.3535	353.5473	479.2079
166	06	5	Hispanic	0.0436	-0.0044	-1.5728	-1.7308	-1.3444	0.0417	-0.0042	-1.5042	-1.6553	-1.2858
166	06	6	Hispanic*HSGPA	-0.0044	0.0107	0.7404	0.7731	0.7369	-0.0042	0.0106	0.7335	0.7655	0.7309
166	06	7	Hispanic*SAT-CR	-1.5724	0.7404	456.8292	334.6972	394.3535	-1.5042	0.7335	454.3562	331.9758	392.2395
166	06	8	Hispanic*SAT-M	-1.7303	0.7731	334.6972	495.4729	353.5473	-1.6553	0.7655	331.9758	492.4780	351.2210
166	06	9	Hispanic*SAT-W	-1.3441	0.7369	394.3535	353.5473	479.2079	-1.2858	0.7309	392.2395	351.2210	477.4009
166	07	1	HSGPA	0.0000	0.1873	10.5146	11.2509	12.0895	-0.0061	0.0133	1.3691	1.4522	1.3425
166	07	2	SAT-CR	0.0000	10.5146	8,021.5586	4,630.4461	5,884.6869	-1.7840	1.3691	567.7902	450.5830	446.3802
166	07	3	SAT-M	0.0000	11.2509	4,630.4461	7,920.8644	4,531.8557	-1.8791	1.4522	450.5830	636.7057	432.1651
166	07	4	SAT-W	0.0000	12.0895	5,884.6869	4,531.8557	7,560.5071	-1.8433	1.3425	446.3802	432.1651	521.4237
166	07	5	Hispanic	0.0450	-0.0061	-1.7840	-1.8791	-1.8433	0.0430	-0.0058	-1.7037	-1.7946	-1.7604
166	07	6	Hispanic*HSGPA	-0.0061	0.0133	1.3691	1.4522	1.3425	-0.0058	0.0132	1.3582	1.4407	1.3312
166	07	7	Hispanic*SAT-CR	-1.7835	1.3691	567.7902	450.5830	446.3802	-1.7037	1.3582	564.6085	447.2316	443.0927
166	07	8	Hispanic*SAT-M	-1.8786	1.4522	450.5830	636.7057	432.1651	-1.7946	1.4407	447.2316	633.1757	428.7023
166	07	9	Hispanic*SAT-W	-1.8428	1.3425	446.3802	432.1651	521.4237	-1.7604	1.3312	443.0927	428.7023	518.0268

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
166	08	1	HSGPA	0.0000	0.1799	8.2216	9.7653	10.1311	-0.0040	0.0094	0.6210	0.6875	0.6079
166	08	2	SAT-CR	0.0000	8.2216	7,548.4814	4,458.4388	5,520.2861	-1.7391	0.6210	559.4913	499.3326	485.7025
166	08	3	SAT-M	0.0000	9.7653	4,458.4388	7,557.6833	4,435.7142	-2.5051	0.6875	499.3326	762.2030	510.1843
166	08	4	SAT-W	0.0000	10.1311	5,520.2861	4,435.7142	7,648.5048	-1.9671	0.6079	485.7025	510.1843	557.8713
166	08	5	Hispanic	0.0438	-0.0040	-1.7391	-2.5051	-1.9671	0.0419	-0.0038	-1.6630	-2.3954	-1.8809
166	08	6	Hispanic*HSGPA	-0.0040	0.0094	0.6210	0.6875	0.6079	-0.0038	0.0094	0.6141	0.6775	0.6001
166	08	7	Hispanic*SAT-CR	-1.7386	0.6210	559.4913	499.3326	485.7025	-1.6630	0.6141	556.4676	494.9772	482.2825
166	08	8	Hispanic*SAT-M	-2.5044	0.6875	499.3326	762.2030	510.1843	-2.3954	0.6775	494.9772	755.9293	505.2581
166	08	9	Hispanic*SAT-W	-1.9665	0.6079	485.7025	510.1843	557.8713	-1.8809	0.6001	482.2825	505.2581	554.0031
167	06	1	HSGPA	0.0000	0.3168	15.2365	17.6334	18.8048	0.0058	0.0902	4.0920	6.0583	5.0050
167	06	2	SAT-CR	0.0000	15.2365	8,922.6018	5,661.1975	6,397.1156	-6.8356	4.0920	2,830.0915	2,156.0814	1,983.1961
167	06	3	SAT-M	0.0000	17.6334	5,661.1975	8,775.0159	4,952.2336	-8.2485	6.0583	2,156.0814	3,250.6609	1,813.0897
167	06	4	SAT-W	0.0000	18.8048	6,397.1156	4,952.2336	7,807.5266	-4.3426	5.0050	1,983.1961	1,813.0897	2,220.9934
167	06	5	Hispanic	0.2984	0.0058	-6.8356	-8.2485	-4.3426	0.2098	0.0041	-4.7956	-5.7868	-3.0466
167	06	6	Hispanic*HSGPA	0.0058	0.0902	4.0920	6.0583	5.0050	0.0041	0.0902	4.1314	6.1058	5.0300
167	06	7	Hispanic*SAT-CR	-6.8204	4.0920	2,830.0915	2,156.0814	1,983.1961	-4.7956	4.1314	2,783.4698	2,099.8231	1,953.5775
167	06	8	Hispanic*SAT-M	-8.2302	6.0583	2,156.0814	3,250.6609	1,813.0897	-5.7868	6.1058	2,099.8231	3,182.7741	1,777.3490
167	06	9	Hispanic*SAT-W	-4.3330	5.0050	1,983.1961	1,813.0897	2,220.9934	-3.0466	5.0300	1,953.5775	1,777.3490	2,202.1769
167	07	1	HSGPA	0.0000	0.3057	18.8347	21.0006	19.5086	-0.0282	0.0990	6.1846	6.8643	6.5563
167	07	2	SAT-CR	0.0000	18.8347	8,516.9773	5,396.5389	6,456.0433	-10.8883	6.1846	2,955.9866	2,038.2538	2,408.5010
167	07	3	SAT-M	0.0000	21.0006	5,396.5389	8,250.3337	4,919.4884	-9.7802	6.8643	2,038.2538	2,805.6360	1,832.3805
167	07	4	SAT-W	0.0000	19.5086	6,456.0433	4,919.4884	7,713.2245	-9.9266	6.5563	2,408.5010	1,832.3805	3,032.7235
167	07	5	Hispanic	0.3372	-0.0282	-10.8883	-9.7802	-9.9266	0.2238	-0.0187	-7.2170	-6.4826	-6.5796
167	07	6	Hispanic*HSGPA	-0.0281	0.0990	6.1846	6.8643	6.5563	-0.0187	0.0982	5.8785	6.5894	6.2772
167	07	7	Hispanic*SAT-CR	-10.8726	6.1846	2,955.9866	2,038.2538	2,408.5010	-7.2170	5.8785	2,837.6033	1,931.9177	2,300.5734
167	07	8	Hispanic*SAT-M	-9.7661	6.8643	2,038.2538	2,805.6360	1,832.3805	-6.4826	6.5894	1,931.9177	2,710.1211	1,735.4360
167	07	9	Hispanic*SAT-W	-9.9123	6.5563	2,408.5010	1,832.3805	3,032.7235	-6.5796	6.2772	2,300.5734	1,735.4360	2,934.3280
167	08	1	HSGPA	0.0000	0.2844	15.9815	17.1995	18.1657	-0.0191	0.1010	6.4352	5.9820	6.3848
167	08	2	SAT-CR	0.0000	15.9815	8,615.2803	5,025.2424	6,188.7601	-11.0508	6.4352	3,514.0357	2,190.1329	2,386.4534
167	08	3	SAT-M	0.0000	17.1995	5,025.2424	7,991.0491	4,731.9155	-13.0857	5.9820	2,190.1329	3,233.6211	1,940.5192
167	08	4	SAT-W	0.0000	18.1657	6,188.7601	4,731.9155	7,334.5464	-8.5496	6.3848	2,386.4534	1,940.5192	2,673.1520
167	08	5	Hispanic	0.3728	-0.0191	-11.0508	-13.0857	-8.5496	0.2341	-0.0120	-6.9313	-8.2077	-5.3626
167	08	6	Hispanic*HSGPA	-0.0191	0.1010	6.4352	5.9820	6.3848	-0.0120	0.1006	6.2239	5.7319	6.2214
167	08	7	Hispanic*SAT-CR	-11.0367	6.4352	3,514.0357	2,190.1329	2,386.4534	-6.9313	6.2239	3,392.0717	2,045.7101	2,292.0937
167	08	8	Hispanic*SAT-M	-13.0690	5.9820	2,190.1329	3,233.6211	1,940.5192	-8.2077	5.7319	2,045.7101	3,062.6037	1,828.7837
167	08	9	Hispanic*SAT-W	-8.5388	6.3848	2,386.4534	1,940.5192	2,673.1520	-5.3626	6.2214	2,292.0937	1,828.7837	2,600.1488
169	06	1	HSGPA	0.0000	0.3010	14.1623	15.1320	15.9771	-0.0059	0.0154	0.7179	0.9741	0.8174
169	06	2	SAT-CR	0.0000	14.1623	6,465.7498	3,654.0269	4,621.9558	-0.7107	0.7179	266.8853	160.3407	201.7698
169	06	3	SAT-M	0.0000	15.1320	3,654.0269	6,511.9398	3,449.2625	-1.0636	0.9741	160.3407	281.1765	140.0644
169	06	4	SAT-W	0.0000	15.9771	4,621.9558	3,449.2625	6,232.6156	-0.7641	0.8174	201.7698	140.0644	278.9998
169	06	5	Hispanic	0.0381	-0.0059	-0.7107	-1.0636	-0.7641	0.0366	-0.0057	-0.6836	-1.0231	-0.7350
169	06	6	Hispanic*HSGPA	-0.0059	0.0154	0.7179	0.9741	0.8174	-0.0057	0.0154	0.7137	0.9678	0.8129
169	06	7	Hispanic*SAT-CR	-0.7105	0.7179	266.8853	160.3407	201.7698	-0.6836	0.7137	266.3804	159.5851	201.2269
169	06	8	Hispanic*SAT-M	-1.0634	0.9741	160.3407	281.1765	140.0644	-1.0231	0.9678	159.5851	280.0455	139.2519
169	06	9	Hispanic*SAT-W	-0.7639	0.8174	201.7698	140.0644	278.9998	-0.7350	0.8129	201.2269	139.2519	278.4161

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
169	07	1	HSGPA	0.0000	0.3067	13.4630	13.8384	14.2347	-0.0051	0.0137	0.5173	0.6552	0.5542
169	07	2	SAT-CR	0.0000	13.4630	6,176.1229	3,445.7595	4,336.9248	-1.1356	0.5173	351.1339	199.5113	242.7016
169	07	3	SAT-M	0.0000	13.8384	3,445.7595	6,152.4324	3,283.3345	-0.9885	0.6552	199.5113	312.3232	168.3346
169	07	4	SAT-W	0.0000	14.2347	4,336.9248	3,283.3345	5,834.8951	-1.0025	0.5542	242.7016	168.3346	303.9854
169	07	5	Hispanic	0.0457	-0.0051	-1.1356	-0.9885	-1.0025	0.0436	-0.0049	-1.0836	-0.9433	-0.9567
169	07	6	Hispanic*HSGPA	-0.0051	0.0137	0.5173	0.6552	0.5542	-0.0049	0.0137	0.5115	0.6502	0.5491
169	07	7	Hispanic*SAT-CR	-1.1353	0.5173	351.1339	199.5113	242.7016	-1.0836	0.5115	349.8447	198.3891	241.5634
169	07	8	Hispanic*SAT-M	-0.9883	0.6552	199.5113	312.3232	168.3346	-0.9433	0.6502	198.3891	311.3463	167.3439
169	07	9	Hispanic*SAT-W	-1.0023	0.5542	242.7016	168.3346	303.9854	-0.9567	0.5491	241.5634	167.3439	302.9806
169	08	1	HSGPA	0.0000	0.3003	12.6658	13.3061	14.2224	-0.0041	0.0150	0.7830	0.8952	0.9223
169	08	2	SAT-CR	0.0000	12.6658	6,468.0020	3,561.5926	4,433.6774	-1.4232	0.7830	436.5208	253.0644	320.1657
169	08	3	SAT-M	0.0000	13.3061	3,561.5926	6,184.0974	3,313.9592	-1.6094	0.8952	253.0644	406.5777	236.7361
169	08	4	SAT-W	0.0000	14.2224	4,433.6774	3,313.9592	5,939.7403	-1.3984	0.9223	320.1657	236.7361	430.7238
169	08	5	Hispanic	0.0605	-0.0041	-1.4232	-1.6094	-1.3984	0.0569	-0.0038	-1.3370	-1.5119	-1.3137
169	08	6	Hispanic*HSGPA	-0.0040	0.0150	0.7830	0.8952	0.9223	-0.0038	0.0150	0.7773	0.8887	0.9167
169	08	7	Hispanic*SAT-CR	-1.4228	0.7830	436.5208	253.0644	320.1657	-1.3370	0.7773	434.4958	250.7746	318.1760
169	08	8	Hispanic*SAT-M	-1.6090	0.8952	253.0644	406.5777	236.7361	-1.5119	0.8887	250.7746	403.9882	234.4861
169	08	9	Hispanic*SAT-W	-1.3981	0.9223	320.1657	236.7361	430.7238	-1.3137	0.9167	318.1760	234.4861	428.7687
170	06	1	HSGPA	0.0000	0.2706	21.3727	21.1631	20.8527	-0.0344	0.0552	5.5186	5.4879	5.6082
170	06	2	SAT-CR	0.0000	21.3727	8,873.2632	5,492.8683	6,611.9483	-8.0747	5.5186	1,854.1099	1,449.6378	1,570.9610
170	06	3	SAT-M	0.0000	21.1631	5,492.8683	8,828.8309	5,287.2490	-9.5553	5.4879	1,449.6378	1,997.7729	1,402.4682
170	06	4	SAT-W	0.0000	20.8527	6,611.9483	5,287.2490	7,952.8095	-8.3042	5.6082	1,570.9610	1,402.4682	1,746.2922
170	06	5	Hispanic	0.1527	-0.0344	-8.0747	-9.5553	-8.3042	0.1294	-0.0291	-6.8419	-8.0964	-7.0363
170	06	6	Hispanic*HSGPA	-0.0344	0.0552	5.5186	5.4879	5.6082	-0.0291	0.0540	5.2411	5.1594	5.3228
170	06	7	Hispanic*SAT-CR	-8.0706	5.5186	1,854.1099	1,449.6378	1,570.9610	-6.8419	5.2411	1,788.9419	1,372.5207	1,503.9409
170	06	8	Hispanic*SAT-M	-9.5505	5.4879	1,449.6378	1,997.7729	1,402.4682	-8.0964	5.1594	1,372.5207	1,906.5155	1,323.1594
170	06	9	Hispanic*SAT-W	-8.3000	5.6082	1,570.9610	1,402.4682	1,746.2922	-7.0363	5.3228	1,503.9409	1,323.1594	1,677.3674
171	06	1	HSGPA	0.0000	0.3033	15.7142	18.4460	17.9440	-0.0096	0.0201	1.1534	1.1716	1.2491
171	06	2	SAT-CR	0.0000	15.7142	7,016.2903	4,190.3387	5,030.9052	-2.1648	1.1534	519.3234	391.0503	456.7208
171	06	3	SAT-M	0.0000	18.4460	4,190.3387	7,416.5261	4,005.9288	-2.6545	1.1716	391.0503	536.4178	443.8646
171	06	4	SAT-W	0.0000	17.9440	5,030.9052	4,005.9288	6,710.9969	-2.6433	1.2491	456.7208	443.8646	555.7923
171	06	5	Hispanic	0.0383	-0.0096	-2.1648	-2.6545	-2.6433	0.0369	-0.0093	-2.0818	-2.5528	-2.5420
171	06	6	Hispanic*HSGPA	-0.0096	0.0201	1.1534	1.1716	1.2491	-0.0093	0.0201	1.1326	1.1460	1.2236
171	06	7	Hispanic*SAT-CR	-2.1643	1.1534	519.3234	391.0503	456.7208	-2.0818	1.1326	514.6381	385.3050	450.9999
171	06	8	Hispanic*SAT-M	-2.6540	1.1716	391.0503	536.4178	443.8646	-2.5528	1.1460	385.3050	529.3728	436.8493
171	06	9	Hispanic*SAT-W	-2.6427	1.2491	456.7208	443.8646	555.7923	-2.5420	1.2236	450.9999	436.8493	548.8067
171	07	1	HSGPA	0.0000	0.3046	16.2881	17.9744	18.7571	-0.0097	0.0199	1.0965	1.4898	1.2239
171	07	2	SAT-CR	0.0000	16.2881	7,298.7971	4,322.4485	5,466.3466	-2.6422	1.0965	589.2561	463.7815	545.6553
171	07	3	SAT-M	0.0000	17.9744	4,322.4485	7,899.8163	4,261.8250	-2.9133	1.4898	463.7815	635.3078	510.7230
171	07	4	SAT-W	0.0000	18.7571	5,466.3466	4,261.8250	7,071.0231	-3.1080	1.2239	545.6553	510.7230	668.7736
171	07	5	Hispanic	0.0441	-0.0097	-2.6422	-2.9133	-3.1080	0.0422	-0.0093	-2.5256	-2.7847	-2.9708
171	07	6	Hispanic*HSGPA	-0.0097	0.0199	1.0965	1.4898	1.2239	-0.0093	0.0198	1.0708	1.4615	1.1938
171	07	7	Hispanic*SAT-CR	-2.6417	1.0965	589.2561	463.7815	545.6553	-2.5256	1.0708	582.2760	456.0853	537.4448
171	07	8	Hispanic*SAT-M	-2.9128	1.4898	463.7815	635.3078	510.7230	-2.7847	1.4615	456.0853	626.8219	501.6702
171	07	9	Hispanic*SAT-W	-3.1074	1.2239	545.6553	510.7230	668.7736	-2.9708	1.1938	537.4448	501.6702	659.1158

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
173	07	1	HSGPA	0.0000	0.2328	17.4494	18.8998	18.4139	-0.0467	0.0905	8.1953	8.7100	8.3848
173	07	2	SAT-CR	0.0000	17.4494	9,764.4752	6,745.6038	7,813.5895	-18.4718	8.1953	3,918.8878	3,125.6746	3,359.0872
173	07	3	SAT-M	0.0000	18.8998	6,745.6038	10,073.1582	6,741.9990	-19.6674	8.7100	3,125.6746	4,144.3449	3,097.7147
173	07	4	SAT-W	0.0000	18.4139	7,813.5895	6,741.9990	9,364.5830	-18.4161	8.3848	3,359.0872	3,097.7147	3,736.5039
173	07	5	Hispanic	0.2867	-0.0467	-18.4718	-19.6674	-18.4161	0.2045	-0.0333	-13.1767	-14.0296	-13.1370
173	07	6	Hispanic*HSGPA	-0.0467	0.0905	8.1953	8.7100	8.3848	-0.0333	0.0883	7.3323	7.7910	7.5243
173	07	7	Hispanic*SAT-CR	-18.4711	8.1953	3,918.8878	3,125.6746	3,359.0872	-13.1767	7.3323	3,577.6938	2,762.3965	3,018.9208
173	07	8	Hispanic*SAT-M	-19.6667	8.7100	3,125.6746	4,144.3449	3,097.7147	-14.0296	7.7910	2,762.3965	3,757.5533	2,735.5307
173	07	9	Hispanic*SAT-W	-18.4155	8.3848	3,359.0872	3,097.7147	3,736.5039	-13.1370	7.5243	3,018.9208	2,735.5307	3,397.3620
173	08	1	HSGPA	0.0000	0.2321	16.4368	18.7017	17.9035	-0.0465	0.1066	8.5026	9.7975	9.1664
173	08	2	SAT-CR	0.0000	16.4368	9,892.6762	7,102.1780	8,073.4966	-21.6353	8.5026	4,549.6687	3,701.3928	3,897.5059
173	08	3	SAT-M	0.0000	18.7017	7,102.1780	10,558.6784	7,157.8386	-23.2510	9.7975	3,701.3928	5,036.8289	3,703.1843
173	08	4	SAT-W	0.0000	17.9035	8,073.4966	7,157.8386	9,873.8743	-22.2466	9.1664	3,897.5059	3,703.1843	4,449.4105
173	08	5	Hispanic	0.3533	-0.0465	-21.6353	-23.2510	-22.2466	0.2285	-0.0301	-13.9916	-15.0365	-14.3870
173	08	6	Hispanic*HSGPA	-0.0465	0.1066	8.5026	9.7975	9.1664	-0.0301	0.1044	7.4955	8.7153	8.1309
173	08	7	Hispanic*SAT-CR	-21.6345	8.5026	4,549.6687	3,701.3928	3,897.5059	-13.9916	7.4955	4,081.6013	3,198.3699	3,416.2134
173	08	8	Hispanic*SAT-M	-23.2501	9.7975	3,701.3928	5,036.8289	3,703.1843	-15.0365	8.7153	3,198.3699	4,496.2401	3,185.9486
173	08	9	Hispanic*SAT-W	-22.2457	9.1664	3,897.5059	3,703.1843	4,449.4105	-14.3870	8.1309	3,416.2134	3,185.9486	3,954.5192
174	06	1	HSGPA	0.0000	0.2878	13.4430	19.7587	15.3653	-0.0257	0.0540	2.7555	4.1215	3.5053
174	06	2	SAT-CR	0.0000	13.4430	7,137.4091	4,525.9044	5,194.9049	-5.4559	2.7555	1,444.5994	1,042.7514	1,059.4947
174	06	3	SAT-M	0.0000	19.7587	4,525.9044	7,569.4251	4,262.6407	-6.8567	4.1215	1,042.7514	1,675.3300	958.4640
174	06	4	SAT-W	0.0000	15.3653	5,194.9049	4,262.6407	6,595.5377	-5.2465	3.5053	1,059.4947	958.4640	1,245.6077
174	06	5	Hispanic	0.1803	-0.0257	-5.4559	-6.8567	-5.2465	0.1479	-0.0211	-4.4721	-5.6204	-4.3005
174	06	6	Hispanic*HSGPA	-0.0257	0.0540	2.7555	4.1215	3.5053	-0.0211	0.0533	2.6153	3.9453	3.3704
174	06	7	Hispanic*SAT-CR	-5.4514	2.7555	1,444.5994	1,042.7514	1,059.4947	-4.4721	2.6153	1,414.8572	1,005.3727	1,030.8938
174	06	8	Hispanic*SAT-M	-6.8511	4.1215	1,042.7514	1,675.3300	958.4640	-5.6204	3.9453	1,005.3727	1,628.3541	922.5196
174	06	9	Hispanic*SAT-W	-5.2422	3.5053	1,059.4947	958.4640	1,245.6077	-4.3005	3.3704	1,030.8938	922.5196	1,218.1043
175	06	1	HSGPA	0.0000	0.2720	11.8252	14.8573	12.8926	-0.0141	0.0826	4.2930	5.1626	4.3750
175	06	2	SAT-CR	0.0000	11.8252	7,521.5540	4,755.5996	5,248.0707	-10.7933	4.2930	2,530.3699	1,759.2751	1,814.1045
175	06	3	SAT-M	0.0000	14.8573	4,755.5996	7,606.1878	4,239.7901	-10.9752	5.1626	1,759.2751	2,559.0227	1,538.9042
175	06	4	SAT-W	0.0000	12.8926	5,248.0707	4,239.7901	6,484.4923	-9.4311	4.3750	1,814.1045	1,538.9042	2,088.8486
175	06	5	Hispanic	0.2834	-0.0141	-10.7933	-10.9752	-9.4311	0.2031	-0.0101	-7.7350	-7.8653	-6.7588
175	06	6	Hispanic*HSGPA	-0.0141	0.0826	4.2930	5.1626	4.3750	-0.0101	0.0824	4.1408	5.0078	4.2420
175	06	7	Hispanic*SAT-CR	-10.7926	4.2930	2,530.3699	1,759.2751	1,814.1045	-7.7350	4.1408	2,413.8820	1,640.8242	1,712.3185
175	06	8	Hispanic*SAT-M	-10.9745	5.1626	1,759.2751	2,559.0227	1,538.9042	-7.8653	5.0078	1,640.8242	2,438.5756	1,435.4029
175	06	9	Hispanic*SAT-W	-9.4304	4.3750	1,814.1045	1,538.9042	2,088.8486	-6.7588	4.2420	1,712.3185	1,435.4029	1,999.9090
175	07	1	HSGPA	0.0000	0.2729	12.3783	14.9352	13.8981	-0.0141	0.0903	4.5470	5.0307	4.8886
175	07	2	SAT-CR	0.0000	12.3783	7,760.9304	4,661.2148	5,731.8058	-10.7373	4.5470	2,820.3985	1,813.1247	2,168.3322
175	07	3	SAT-M	0.0000	14.9352	4,661.2148	7,414.3565	4,447.5853	-10.8406	5.0307	1,813.1247	2,634.7102	1,729.0210
175	07	4	SAT-W	0.0000	13.8981	5,731.8058	4,447.5853	7,012.7422	-10.1805	4.8886	2,168.3322	1,729.0210	2,520.5164
175	07	5	Hispanic	0.3117	-0.0141	-10.7373	-10.8406	-10.1805	0.2146	-0.0097	-7.3900	-7.4611	-7.0068
175	07	6	Hispanic*HSGPA	-0.0141	0.0903	4.5470	5.0307	4.8886	-0.0097	0.0901	4.3955	4.8777	4.7450
175	07	7	Hispanic*SAT-CR	-10.7366	4.5470	2,820.3985	1,813.1247	2,168.3322	-7.3900	4.3955	2,705.1158	1,696.7328	2,059.0278
175	07	8	Hispanic*SAT-M	-10.8399	5.0307	1,813.1247	2,634.7102	1,729.0210	-7.4611	4.8777	1,696.7328	2,517.1984	1,618.6650
175	07	9	Hispanic*SAT-W	-10.1799	4.8886	2,168.3322	1,729.0210	2,520.5164	-7.0068	4.7450	2,059.0278	1,618.6650	2,416.8803

## Appendix E

## White-Hispanic Raw Population Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9
175	08	1	HSGPA	0.0000	0.2649	12.7474	15.6503	14.0241	-0.0179	0.0911	5.0074	5.9869	5.1308
175	08	2	SAT-CR	0.0000	12.7474	7,774.5962	4,844.5878	5,615.9867	-12.5784	5.0074	2,977.9939	2,056.4346	2,191.6444
175	08	3	SAT-M	0.0000	15.6503	4,844.5878	7,693.1388	4,498.4563	-13.0384	5.9869	2,056.4346	2,964.6470	1,850.5898
175	08	4	SAT-W	0.0000	14.0241	5,615.9867	4,498.4563	6,989.1865	-11.6239	5.1308	2,191.6444	1,850.5898	2,585.3016
175	08	5	Hispanic	0.3379	-0.0179	-12.5784	-13.0384	-11.6239	0.2237	-0.0119	-8.3280	-8.6325	-7.6960
175	08	6	Hispanic*HSGPA	-0.0179	0.0911	5.0074	5.9869	5.1308	-0.0119	0.0908	4.7819	5.7531	4.9223
175	08	7	Hispanic*SAT-CR	-12.5776	5.0074	2,977.9939	2,056.4346	2,191.6444	-8.3280	4.7819	2,819.7875	1,892.4421	2,045.4429
175	08	8	Hispanic*SAT-M	-13.0376	5.9869	2,056.4346	2,964.6470	1,850.5898	-8.6325	5.7531	1,892.4421	2,794.6570	1,699.0413
175	08	9	Hispanic*SAT-W	-11.6232	5.1308	2,191.6444	1,850.5898	2,585.3016	-7.6960	4.9223	2,045.4429	1,699.0413	2,450.1939
176	06	1	HSGPA	0.0000	0.2707	13.4926	15.5630	15.2242	-0.0070	0.0163	1.1401	1.2180	1.3954
176	06	2	SAT-CR	0.0000	13.4926	8,242.5114	4,837.8179	6,116.7777	-2.2692	1.1401	571.0662	425.6913	453.5778
176	06	3	SAT-M	0.0000	15.5630	4,837.8179	7,848.7221	4,447.5572	-2.3981	1.2180	425.6913	564.7917	402.3174
176	06	4	SAT-W	0.0000	15.2242	6,116.7777	4,447.5572	7,586.4865	-2.2064	1.3954	453.5778	402.3174	540.9785
176	06	5	Hispanic	0.0485	-0.0070	-2.2692	-2.3981	-2.2064	0.0461	-0.0066	-2.1592	-2.2819	-2.0995
176	06	6	Hispanic*HSGPA	-0.0070	0.0163	1.1401	1.2180	1.3954	-0.0066	0.0163	1.1243	1.2013	1.3800
176	06	7	Hispanic*SAT-CR	-2.2689	1.1401	571.0662	425.6913	453.5778	-2.1592	1.1243	565.9176	420.2502	448.5716
176	06	8	Hispanic*SAT-M	-2.3978	1.2180	425.6913	564.7917	402.3174	-2.2819	1.2013	420.2502	559.0414	397.0268
176	06	9	Hispanic*SAT-W	-2.2062	1.3954	453.5778	402.3174	540.9785	-2.0995	1.3800	448.5716	397.0268	536.1107
176	07	1	HSGPA	0.0000	0.2822	13.8711	15.7278	15.8170	-0.0093	0.0193	1.3256	1.6249	1.2367
176	07	2	SAT-CR	0.0000	13.8711	8,423.9423	4,762.3304	6,123.7095	-2.6795	1.3256	638.1102	481.9250	490.7802
176	07	3	SAT-M	0.0000	15.7278	4,762.3304	7,676.2812	4,411.7024	-2.8502	1.6249	481.9250	657.9924	431.4106
176	07	4	SAT-W	0.0000	15.8170	6,123.7095	4,411.7024	7,443.8987	-2.5773	1.2367	490.7802	431.4106	546.6223
176	07	5	Hispanic	0.0559	-0.0093	-2.6795	-2.8502	-2.5773	0.0527	-0.0088	-2.5299	-2.6910	-2.4334
176	07	6	Hispanic*HSGPA	-0.0093	0.0193	1.3256	1.6249	1.2367	-0.0088	0.0192	1.3007	1.5984	1.2127
176	07	7	Hispanic*SAT-CR	-2.6792	1.3256	638.1102	481.9250	490.7802	-2.5299	1.3007	630.9312	474.2888	483.8750
176	07	8	Hispanic*SAT-M	-2.8498	1.6249	481.9250	657.9924	431.4106	-2.6910	1.5984	474.2888	649.8699	424.0656
176	07	9	Hispanic*SAT-W	-2.5770	1.2367	490.7802	431.4106	546.6223	-2.4334	1.2127	483.8750	424.0656	539.9804
176	08	1	HSGPA	0.0000	0.2708	12.9952	14.6065	14.6521	-0.0110	0.0202	1.6975	1.8126	1.7203
176	08	2	SAT-CR	0.0000	12.9952	8,139.4124	4,472.5325	5,866.5852	-3.3966	1.6975	794.3644	564.6660	660.0947
176	08	3	SAT-M	0.0000	14.6065	4,472.5325	7,214.3646	4,180.4799	-3.3407	1.8126	564.6660	721.8665	542.2428
176	08	4	SAT-W	0.0000	14.6521	5,866.5852	4,180.4799	7,295.2602	-3.2162	1.7203	660.0947	542.2428	747.9447
176	08	5	Hispanic	0.0629	-0.0110	-3.3966	-3.3407	-3.2162	0.0589	-0.0103	-3.1830	-3.1306	-3.0139
176	08	6	Hispanic*HSGPA	-0.0110	0.0202	1.6975	1.8126	1.7203	-0.0103	0.0201	1.6602	1.7759	1.6850
176	08	7	Hispanic*SAT-CR	-3.3962	1.6975	794.3644	564.6660	660.0947	-3.1830	1.6602	782.8290	553.3204	649.1720
176	08	8	Hispanic*SAT-M	-3.3403	1.8126	564.6660	721.8665	542.2428	-3.1306	1.7759	553.3204	710.7074	531.4998
176	08	9	Hispanic*SAT-W	-3.2158	1.7203	660.0947	542.2428	747.9447	-3.0139	1.6850	649.1720	531.4998	737.6021

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
1	07	1	HSGPA	0.0000	0.1855	4.4812	4.3607	5.0965	-0.0023	0.0052	0.2322	0.2462	0.0801	0.0850
1	07	2	SAT-CR	0.0000	4.4812	5,865.2968	2,418.9233	3,788.5341	-0.9192	0.2322	135.5797	81.0567	118.6936	13.8467
1	07	3	SAT-M	0.0000	4.3607	2,418.9233	4,886.0510	2,292.4179	-0.9079	0.2462	81.0567	121.3709	83.6083	10.6745
1	07	4	SAT-W	0.0000	5.0965	3,788.5341	2,292.4179	5,560.8835	-0.9376	0.0801	118.6936	83.6083	172.9409	15.5101
1	07	5	Hispanic	0.0251	-0.0023	-0.9192	-0.9079	-0.9376	0.0245	-0.0022	-0.8961	-0.8851	-0.9140	-0.0047
1	07	6	Hispanic*HSGPA	-0.0023	0.0052	0.2322	0.2462	0.0801	-0.0022	0.0052	0.2301	0.2441	0.0780	0.0035
1	07	7	Hispanic*SAT-CR	-0.9186	0.2322	135.5797	81.0567	118.6936	-0.8961	0.2301	134.7353	80.2227	117.8324	0.4652
1	07	8	Hispanic*SAT-M	-0.9073	0.2462	81.0567	121.3709	83.6083	-0.8851	0.2441	80.2227	120.5471	82.7576	0.5884
1	07	9	Hispanic*SAT-W	-0.9370	0.0801	118.6936	83.6083	172.9409	-0.9140	0.0780	117.8324	82.7576	172.0624	0.3964
1	07	10	FYGPA	2.9629	0.0850	13.8467	10.6745	15.5101	-0.0047	0.0035	0.4652	0.5884	0.3964	0.4420
1	08	1	HSGPA	0.0000	0.1654	5.0006	3.2051	5.6092	-0.0031	0.0074	0.1077	0.0784	0.2468	0.0862
1	08	2	SAT-CR	0.0000	5.0006	5,833.5415	2,530.4003	3,712.6386	-0.6606	0.1077	114.9888	56.9107	68.8834	13.1082
1	08	3	SAT-M	0.0000	3.2051	2,530.4003	5,243.1096	2,464.1539	-0.7757	0.0784	56.9107	120.3255	53.1484	11.7297
1	08	4	SAT-W	0.0000	5.6092	3,712.6386	2,464.1539	5,372.3335	-0.4293	0.2468	68.8834	53.1484	97.6863	16.4365
1	08	5	Hispanic	0.0224	-0.0031	-0.6606	-0.7757	-0.4293	0.0219	-0.0030	-0.6458	-0.7583	-0.4196	-0.0066
1	08	6	Hispanic*HSGPA	-0.0031	0.0074	0.1077	0.0784	0.2468	-0.0030	0.0074	0.1057	0.0761	0.2455	0.0035
1	08	7	Hispanic*SAT-CR	-0.6602	0.1077	114.9888	56.9107	68.8834	-0.6458	0.1057	114.5527	56.3987	68.6000	0.1390
1	08	8	Hispanic*SAT-M	-0.7751	0.0784	56.9107	120.3255	53.1484	-0.7583	0.0761	56.3987	119.7243	52.8156	0.4928
1	08	9	Hispanic*SAT-W	-0.4290	0.2468	68.8834	53.1484	97.6863	-0.4196	0.2455	68.6000	52.8156	97.5021	0.2801
1	08	10	FYGPA	3.0139	0.0862	13.1082	11.7297	16.4365	-0.0066	0.0035	0.1390	0.4928	0.2801	0.3669
2	08	1	HSGPA	0.0000	0.1722	7.9145	6.7015	8.2888	-0.0070	0.0098	0.5984	0.5894	0.6962	0.0825
2	08	2	SAT-CR	0.0000	7.9145	5,196.9346	2,116.5889	3,079.2839	-0.7035	0.5984	267.1631	108.0311	156.2399	9.4035
2	08	3	SAT-M	0.0000	6.7015	2,116.5889	4,619.7800	1,944.7444	-0.9786	0.5894	108.0311	222.2765	127.7274	7.3830
2	08	4	SAT-W	0.0000	8.2888	3,079.2839	1,944.7444	4,970.9041	-1.6784	0.6962	156.2399	127.7274	253.7202	11.6220
2	08	5	Hispanic	0.0441	-0.0070	-0.7035	-0.9786	-1.6784	0.0422	-0.0067	-0.6725	-0.9355	-1.6044	-0.0092
2	08	6	Hispanic*HSGPA	-0.0070	0.0098	0.5984	0.5894	0.6962	-0.0067	0.0098	0.5934	0.5825	0.6845	0.0047
2	08	7	Hispanic*SAT-CR	-0.7028	0.5984	267.1631	108.0311	156.2399	-0.6725	0.5934	266.6687	107.3434	155.0604	0.3908
2	08	8	Hispanic*SAT-M	-0.9775	0.5894	108.0311	222.2765	127.7274	-0.9355	0.5825	107.3434	221.3200	126.0868	0.7071
2	08	9	Hispanic*SAT-W	-1.6765	0.6962	156.2399	127.7274	253.7202	-1.6044	0.6845	155.0604	126.0868	250.9064	0.4960
2	08	10	FYGPA	3.2671	0.0825	9.4035	7.3830	11.6220	-0.0092	0.0047	0.3908	0.7071	0.4960	0.1952
3	08	1	HSGPA	0.0000	0.1813	5.6209	6.7157	6.9606	0.0003	0.0039	0.1190	0.0144	0.0854	0.0972
3	08	2	SAT-CR	0.0000	5.6209	5,609.4139	2,187.7644	3,889.5146	-0.4089	0.1190	120.6206	40.1413	113.8451	10.6687
3	08	3	SAT-M	0.0000	6.7157	2,187.7644	5,233.1580	2,448.9942	-0.1395	0.0144	40.1413	103.8834	54.5666	10.6437
3	08	4	SAT-W	0.0000	6.9606	3,889.5146	2,448.9942	5,980.0024	-0.7290	0.0854	113.8451	54.5666	172.2713	16.0714
3	08	5	Hispanic	0.0240	0.0003	-0.4089	-0.1395	-0.7290	0.0234	0.0003	-0.3991	-0.1362	-0.7116	-0.0053
3	08	6	Hispanic*HSGPA	0.0003	0.0039	0.1190	0.0144	0.0854	0.0003	0.0039	0.1192	0.0145	0.0857	0.0021
3	08	7	Hispanic*SAT-CR	-0.4088	0.1190	120.6206	40.1413	113.8451	-0.3991	0.1192	120.4534	40.0843	113.5471	0.1928
3	08	8	Hispanic*SAT-M	-0.1394	0.0144	40.1413	103.8834	54.5666	-0.1362	0.0145	40.0843	103.8640	54.4650	0.2227
3	08	9	Hispanic*SAT-W	-0.7287	0.0854	113.8451	54.5666	172.2713	-0.7116	0.0857	113.5471	54.4650	171.7400	0.2530
3	08	10	FYGPA	3.2979	0.0972	10.6687	10.6437	16.0714	-0.0053	0.0021	0.1928	0.2227	0.2530	0.4165

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
6	06	1	HSGPA	0.0000	0.1855	6.3868	2.5089	5.2074	-0.0024	0.0054	-0.1446	-0.1275	-0.4490	0.1067
6	06	2	SAT-CR	0.0000	6.3868	6,434.3312	2,428.6874	4,122.3821	-2.0166	-0.1446	454.4667	270.8267	382.5614	14.5806
6	06	3	SAT-M	0.0000	2.5089	2,428.6874	4,727.8162	2,072.7566	-2.4010	-0.1275	270.8267	359.2983	273.5586	7.5246
6	06	4	SAT-W	0.0000	5.2074	4,122.3821	2,072.7566	5,767.7799	-1.8368	-0.4490	382.5614	273.5586	433.3254	14.5055
6	06	5	Hispanic	0.0381	-0.0024	-2.0166	-2.4010	-1.8368	0.0367	-0.0023	-1.9398	-2.3095	-1.7668	-0.0193
6	06	6	Hispanic*HSGPA	-0.0024	0.0054	-0.1446	-0.1275	-0.4490	-0.0023	0.0054	-0.1495	-0.1333	-0.4534	0.0020
6	06	7	Hispanic*SAT-CR	-2.0118	-0.1446	454.4667	270.8267	382.5614	-1.9398	-0.1495	450.4097	265.9965	378.8661	1.7361
6	06	8	Hispanic*SAT-M	-2.3952	-0.1275	270.8267	359.2983	273.5586	-2.3095	-0.1333	265.9965	353.5475	269.1590	1.3162
6	06	9	Hispanic*SAT-W	-1.8324	-0.4490	382.5614	273.5586	433.3254	-1.7668	-0.4534	378.8661	269.1590	429.9596	1.6102
6	06	10	FYGPA	3.1506	0.1067	14.5806	7.5246	14.5055	-0.0193	0.0020	1.7361	1.3162	1.6102	0.2758
6	07	1	HSGPA	0.0000	0.1910	5.4583	4.5527	6.8316	-0.0008	0.0103	0.9583	0.3294	0.7476	0.1082
6	07	2	SAT-CR	0.0000	5.4583	6,219.1767	2,472.1754	3,957.4908	-1.0785	0.9583	379.5491	161.8278	288.7108	13.1475
6	07	3	SAT-M	0.0000	4.5527	2,472.1754	5,556.1346	2,529.9415	-1.3491	0.3294	161.8278	300.9294	131.2964	10.1680
6	07	4	SAT-W	0.0000	6.8316	3,957.4908	2,529.9415	5,540.2525	-0.6283	0.7476	288.7108	131.2964	366.4845	16.4089
6	07	5	Hispanic	0.0442	-0.0008	-1.0785	-1.3491	-0.6283	0.0424	-0.0007	-1.0308	-1.2894	-0.6005	-0.0095
6	07	6	Hispanic*HSGPA	-0.0008	0.0103	0.9583	0.3294	0.7476	-0.0007	0.0103	0.9575	0.3284	0.7471	0.0070
6	07	7	Hispanic*SAT-CR	-1.0759	0.9583	379.5491	161.8278	288.7108	-1.0308	0.9575	378.3887	160.3763	288.0349	1.4252
6	07	8	Hispanic*SAT-M	-1.3457	0.3294	161.8278	300.9294	131.2964	-1.2894	0.3284	160.3763	299.1139	130.4509	1.5200
6	07	9	Hispanic*SAT-W	-0.6267	0.7476	288.7108	131.2964	366.4845	-0.6005	0.7471	288.0349	130.4509	366.0907	0.8472
6	07	10	FYGPA	3.1128	0.1082	13.1475	10.1680	16.4089	-0.0095	0.0070	1.4252	1.5200	0.8472	0.3090
6	08	1	HSGPA	0.0000	0.1851	4.0007	6.5165	5.9803	-0.0037	0.0084	0.6265	0.5638	0.6856	0.1113
6	08	2	SAT-CR	0.0000	4.0007	5,747.7469	2,314.4524	3,493.1617	-0.7274	0.6265	367.3592	174.4261	272.4219	13.2424
6	08	3	SAT-M	0.0000	6.5165	2,314.4524	4,993.8841	2,525.7325	-2.8205	0.5638	174.4261	371.6072	198.1810	11.3040
6	08	4	SAT-W	0.0000	5.9803	3,493.1617	2,525.7325	5,895.6134	-1.4890	0.6856	272.4219	198.1810	297.9089	14.2034
6	08	5	Hispanic	0.0375	-0.0037	-0.7274	-2.8205	-1.4890	0.0362	-0.0035	-0.7002	-2.7147	-1.4332	-0.0104
6	08	6	Hispanic*HSGPA	-0.0036	0.0084	0.6265	0.5638	0.6856	-0.0035	0.0084	0.6239	0.5535	0.6802	0.0045
6	08	7	Hispanic*SAT-CR	-0.7256	0.6265	367.3592	174.4261	272.4219	-0.7002	0.6239	366.8314	172.3795	271.3414	1.0588
6	08	8	Hispanic*SAT-M	-2.8134	0.5638	174.4261	371.6072	198.1810	-2.7147	0.5535	172.3795	363.6719	193.9917	1.5602
6	08	9	Hispanic*SAT-W	-1.4853	0.6856	272.4219	198.1810	297.9089	-1.4332	0.6802	271.3414	193.9917	295.6972	0.8577
6	08	10	FYGPA	3.1202	0.1113	13.2424	11.3040	14.2034	-0.0104	0.0045	1.0588	1.5602	0.8577	0.2899
7	07	1	HSGPA	0.0000	0.2192	4.9340	5.6712	6.9277	-0.0089	0.0288	0.1701	0.4468	0.6000	0.1144
7	07	2	SAT-CR	0.0000	4.9340	5,358.1256	2,711.1519	3,579.2890	-3.6704	0.1701	636.4226	409.7351	512.5308	11.1000
7	07	3	SAT-M	0.0000	5.6712	2,711.1519	6,009.5227	2,610.1950	-4.1182	0.4468	409.7351	657.8138	491.7449	9.5715
7	07	4	SAT-W	0.0000	6.9277	3,579.2890	2,610.1950	4,939.9868	-4.2747	0.6000	512.5308	491.7449	698.4280	12.2894
7	07	5	Hispanic	0.0994	-0.0089	-3.6704	-4.1182	-4.2747	0.0897	-0.0080	-3.3054	-3.7086	-3.8496	-0.0225
7	07	6	Hispanic*HSGPA	-0.0089	0.0288	0.1701	0.4468	0.6000	-0.0080	0.0288	0.1375	0.4102	0.5620	0.0070
7	07	7	Hispanic*SAT-CR	-3.6663	0.1701	636.4226	409.7351	512.5308	-3.3054	0.1375	622.9657	394.6367	496.8585	1.6302
7	07	8	Hispanic*SAT-M	-4.1136	0.4468	409.7351	657.8138	491.7449	-3.7086	0.4102	394.6367	640.8735	474.1606	1.4847
7	07	9	Hispanic*SAT-W	-4.2699	0.6000	512.5308	491.7449	698.4280	-3.8496	0.5620	496.8585	474.1606	680.1753	1.8518
7	07	10	FYGPA	2.5839	0.1144	11.1000	9.5715	12.2894	-0.0225	0.0070	1.6302	1.4847	1.8518	0.6058



## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
8	06	1	HSGPA	0.0000	0.1486	4.0224	2.1035	6.7331	-0.0002	0.0436	0.8524	0.2547	2.1102	0.0596
8	06	2	SAT-CR	0.0000	4.0224	6,371.3142	3,363.6536	4,672.9187	-11.1916	0.8524	2,039.7829	1,214.6745	1,625.0747	15.3566
8	06	3	SAT-M	0.0000	2.1035	3,363.6536	5,072.4636	3,201.4152	-10.1644	0.2547	1,214.6745	1,379.1342	1,143.9902	9.4796
8	06	4	SAT-W	0.0000	6.7331	4,672.9187	3,201.4152	6,037.2600	-10.5229	2.1102	1,625.0747	1,143.9902	2,003.8216	16.4151
8	06	5	Hispanic	0.2701	-0.0002	-11.1916	-10.1644	-10.5229	0.1983	-0.0001	-8.1686	-7.4189	-7.6805	-0.0364
8	06	6	Hispanic*HSGPA	-0.0002	0.0436	0.8524	0.2547	2.1102	-0.0001	0.0436	0.8506	0.2530	2.1084	0.0156
8	06	7	Hispanic*SAT-CR	-11.1273	0.8524	2,039.7829	1,214.6745	1,625.0747	-8.1686	0.8506	1,915.2505	1,101.5718	1,507.9834	4.3973
8	06	8	Hispanic*SAT-M	-10.1060	0.2547	1,214.6745	1,379.1342	1,143.9902	-7.4189	0.2530	1,101.5718	1,276.4121	1,037.6456	3.4602
8	06	9	Hispanic*SAT-W	-10.4624	2.1102	1,625.0747	1,143.9902	2,003.8216	-7.6805	2.1084	1,507.9834	1,037.6456	1,893.7268	5.4196
8	06	10	FYGPA	3.2815	0.0596	15.3566	9.4796	16.4151	-0.0364	0.0156	4.3973	3.4602	5.4196	0.2165
8	07	1	HSGPA	0.0000	0.1140	6.4777	1.3593	6.7509	-0.0029	0.0349	2.4113	-0.8781	0.6519	0.0339
8	07	2	SAT-CR	0.0000	6.4777	4,969.1734	2,513.2513	3,489.5723	-7.5701	2.4113	980.1006	733.4465	672.1801	10.7621
8	07	3	SAT-M	0.0000	1.3593	2,513.2513	4,791.3056	2,326.3349	-7.8278	-0.8781	733.4465	1,303.6503	785.2830	10.7437
8	07	4	SAT-W	0.0000	6.7509	3,489.5723	2,326.3349	5,446.2958	-6.1840	0.6519	672.1801	785.2830	1,035.0174	13.0139
8	07	5	Hispanic	0.1905	-0.0029	-7.5701	-7.8278	-6.1840	0.1553	-0.0023	-6.1282	-6.3368	-5.0061	-0.0574
8	07	6	Hispanic*HSGPA	-0.0029	0.0349	2.4113	-0.8781	0.6519	-0.0023	0.0349	2.3896	-0.9005	0.6342	0.0049
8	07	7	Hispanic*SAT-CR	-7.5186	2.4113	980.1006	733.4465	672.1801	-6.1282	2.3896	923.1837	674.5923	625.6852	4.8524
8	07	8	Hispanic*SAT-M	-7.7745	-0.8781	733.4465	1,303.6503	785.2830	-6.3368	-0.9005	674.5923	1,242.7929	737.2056	4.7518
8	07	9	Hispanic*SAT-W	-6.1419	0.6519	672.1801	785.2830	1,035.0174	-5.0061	0.6342	625.6852	737.2056	997.0362	4.2995
8	07	10	FYGPA	3.3324	0.0339	10.7621	10.7437	13.0139	-0.0574	0.0049	4.8524	4.7518	4.2995	0.1544
8	08	1	HSGPA	0.0000	0.1364	5.1013	1.8676	3.5044	0.0008	0.0271	0.0748	-0.0097	0.1066	0.0460
8	08	2	SAT-CR	0.0000	5.1013	5,590.0461	2,360.7876	3,094.0553	-6.3284	0.0748	1,098.4327	481.0360	637.3260	6.6768
8	08	3	SAT-M	0.0000	1.8676	2,360.7876	4,300.5446	2,264.2438	-6.8035	-0.0097	481.0360	730.3472	451.9126	6.8705
8	08	4	SAT-W	0.0000	3.5044	3,094.0553	2,264.2438	4,702.3209	-4.8383	0.1066	637.3260	451.9126	866.4148	8.3720
8	08	5	Hispanic	0.1548	0.0008	-6.3284	-6.8035	-4.8383	0.1317	0.0007	-5.3486	-5.7501	-4.0891	-0.0150
8	08	6	Hispanic*HSGPA	0.0008	0.0271	0.0748	-0.0097	0.1066	0.0007	0.0271	0.0797	-0.0044	0.1103	-0.0044
8	08	7	Hispanic*SAT-CR	-6.2876	0.0748	1,098.4327	481.0360	637.3260	-5.3486	0.0797	1,058.6419	438.2581	606.9047	1.4550
8	08	8	Hispanic*SAT-M	-6.7596	-0.0097	481.0360	730.3472	451.9126	-5.7501	-0.0044	438.2581	684.3579	419.2076	1.6737
8	08	9	Hispanic*SAT-W	-4.8071	0.1066	637.3260	451.9126	866.4148	-4.0891	0.1103	606.9047	419.2076	843.1568	1.1150
8	08	10	FYGPA	3.3426	0.0460	6.6768	6.8705	8.3720	-0.0150	-0.0044	1.4550	1.6737	1.1150	0.1517
9	07	1	HSGPA	0.0000	0.1734	7.9769	9.2083	8.8727	-0.0098	0.0149	0.9976	0.8059	1.0735	0.0987
9	07	2	SAT-CR	0.0000	7.9769	5,734.1772	3,067.8988	4,225.5742	-1.7766	0.9976	481.1292	276.6195	399.2103	17.4134
9	07	3	SAT-M	0.0000	9.2083	3,067.8988	6,502.4713	3,333.8572	-1.9627	0.8059	276.6195	536.9939	324.0454	17.6601
9	07	4	SAT-W	0.0000	8.8727	4,225.5742	3,333.8572	6,021.5022	-2.3058	1.0735	399.2103	324.0454	525.8852	20.6264
9	07	5	Hispanic	0.0733	-0.0098	-1.7766	-1.9627	-2.3058	0.0680	-0.0091	-1.6463	-1.8188	-2.1367	-0.0178
9	07	6	Hispanic*HSGPA	-0.0098	0.0149	0.9976	0.8059	1.0735	-0.0091	0.0148	0.9802	0.7866	1.0509	0.0111
9	07	7	Hispanic*SAT-CR	-1.7760	0.9976	481.1292	276.6195	399.2103	-1.6463	0.9802	477.9739	273.1337	395.1152	1.8036
9	07	8	Hispanic*SAT-M	-1.9620	0.8059	276.6195	536.9939	324.0454	-1.8188	0.7866	273.1337	533.1431	319.5213	1.7572
9	07	9	Hispanic*SAT-W	-2.3050	1.0735	399.2103	324.0454	525.8852	-2.1367	1.0509	395.1152	319.5213	520.5703	2.0631
9	07	10	FYGPA	2.9485	0.0987	17.4134	17.6601	20.6264	-0.0178	0.0111	1.8036	1.7572	2.0631	0.3710

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
9	08	1	HSGPA	0.0000	0.1662	7.2446	8.0165	8.4244	-0.0047	0.0101	0.1961	0.5452	0.3619	0.0969
9	08	2	SAT-CR	0.0000	7.2446	5,537.5696	2,752.3769	4,076.7831	-1.0220	0.1961	334.8075	174.3546	240.1894	16.7719
9	08	3	SAT-M	0.0000	8.0165	2,752.3769	5,920.6733	2,985.2657	-1.7180	0.5452	174.3546	390.5966	192.0922	15.0518
9	08	4	SAT-W	0.0000	8.4244	4,076.7831	2,985.2657	6,143.1291	-1.2218	0.3619	240.1894	192.0922	348.3675	19.6257
9	08	5	Hispanic	0.0602	-0.0047	-1.0220	-1.7180	-1.2218	0.0566	-0.0044	-0.9605	-1.6145	-1.1482	-0.0079
9	08	6	Hispanic*HSGPA	-0.0047	0.0101	0.1961	0.5452	0.3619	-0.0044	0.0101	0.1913	0.5371	0.3562	0.0081
9	08	7	Hispanic*SAT-CR	-1.0216	0.1961	334.8075	174.3546	240.1894	-0.9605	0.1913	333.7635	172.5995	238.9413	1.0020
9	08	8	Hispanic*SAT-M	-1.7173	0.5452	174.3546	390.5966	192.0922	-1.6145	0.5371	172.5995	387.6462	189.9940	1.1262
9	08	9	Hispanic*SAT-W	-1.2213	0.3619	240.1894	192.0922	348.3675	-1.1482	0.3562	238.9413	189.9940	346.8753	1.0269
9	08	10	FYGPA	2.9826	0.0969	16.7719	15.0518	19.6257	-0.0079	0.0081	1.0020	1.1262	1.0269	0.3622
10	06	1	HSGPA	0.0000	0.0981	3.7004	2.9739	4.5298	-0.0081	0.0117	0.6281	0.7551	0.9012	0.0354
10	06	2	SAT-CR	0.0000	3.7004	4,311.6823	886.1674	2,178.3990	-3.6014	0.6281	530.1798	298.2683	335.5497	6.2372
10	06	3	SAT-M	0.0000	2.9739	886.1674	3,737.8333	794.3664	-3.6088	0.7551	298.2683	596.2100	292.6134	2.4481
10	06	4	SAT-W	0.0000	4.5298	2,178.3990	794.3664	3,752.2269	-3.3850	0.9012	335.5497	292.6134	491.0065	5.9535
10	06	5	Hispanic	0.0746	-0.0081	-3.6014	-3.6088	-3.3850	0.0691	-0.0075	-3.3328	-3.3396	-3.1325	-0.0159
10	06	6	Hispanic*HSGPA	-0.0081	0.0117	0.6281	0.7551	0.9012	-0.0075	0.0116	0.5989	0.7259	0.8738	0.0055
10	06	7	Hispanic*SAT-CR	-3.5965	0.6281	530.1798	298.2683	335.5497	-3.3328	0.5989	517.2274	285.2895	323.3758	1.5283
10	06	8	Hispanic*SAT-M	-3.6038	0.7551	298.2683	596.2100	292.6134	-3.3396	0.7259	285.2895	583.2047	280.4147	1.2044
10	06	9	Hispanic*SAT-W	-3.3803	0.9012	335.5497	292.6134	491.0065	-3.1325	0.8738	323.3758	280.4147	479.5645	1.5721
10	06	10	FYGPA	3.3842	0.0354	6.2372	2.4481	5.9535	-0.0159	0.0055	1.5283	1.2044	1.5721	0.1319
10	07	1	HSGPA	0.0000	0.1071	2.1421	2.7558	1.8077	-0.0179	0.0168	0.3158	1.2781	0.3190	0.0355
10	07	2	SAT-CR	0.0000	2.1421	3,872.2540	849.5091	1,840.1652	-3.4035	0.3158	437.8923	325.9281	319.1879	4.5528
10	07	3	SAT-M	0.0000	2.7558	849.5091	3,578.0592	923.0222	-4.1553	1.2781	325.9281	546.5320	283.6706	4.7801
10	07	4	SAT-W	0.0000	1.8077	1,840.1652	923.0222	3,724.7766	-2.7371	0.3190	319.1879	283.6706	419.0028	5.1786
10	07	5	Hispanic	0.0711	-0.0179	-3.4035	-4.1553	-2.7371	0.0661	-0.0166	-3.1616	-3.8600	-2.5426	-0.0186
10	07	6	Hispanic*HSGPA	-0.0179	0.0168	0.3158	1.2781	0.3190	-0.0166	0.0165	0.2550	1.2039	0.2701	0.0075
10	07	7	Hispanic*SAT-CR	-3.3991	0.3158	437.8923	325.9281	319.1879	-3.1616	0.2550	426.3235	311.8039	309.8843	1.0544
10	07	8	Hispanic*SAT-M	-4.1499	1.2781	325.9281	546.5320	283.6706	-3.8600	1.2039	311.8039	529.2879	272.3119	1.6384
10	07	9	Hispanic*SAT-W	-2.7336	0.3190	319.1879	283.6706	419.0028	-2.5426	0.2701	309.8843	272.3119	411.5208	0.9662
10	07	10	FYGPA	3.4058	0.0355	4.5528	4.7801	5.1786	-0.0186	0.0075	1.0544	1.6384	0.9662	0.1239
10	08	1	HSGPA	0.0000	0.0951	1.5134	2.0501	2.7366	-0.0119	0.0145	0.3425	0.7485	0.8880	0.0355
10	08	2	SAT-CR	0.0000	1.5134	4,463.7344	1,133.6700	2,662.8692	-4.7454	0.3425	1,019.3607	636.8728	891.0282	6.7092
10	08	3	SAT-M	0.0000	2.0501	1,133.6700	3,782.6656	1,553.8730	-6.0910	0.7485	636.8728	890.9798	799.7502	3.6505
10	08	4	SAT-W	0.0000	2.7366	2,662.8692	1,553.8730	4,727.0255	-6.5854	0.8880	891.0282	799.7502	1,195.0721	7.7038
10	08	5	Hispanic	0.0922	-0.0119	-4.7454	-6.0910	-6.5854	0.0838	-0.0108	-4.3081	-5.5297	-5.9786	-0.0170
10	08	6	Hispanic*HSGPA	-0.0119	0.0145	0.3425	0.7485	0.8880	-0.0108	0.0144	0.2860	0.6760	0.8097	0.0056
10	08	7	Hispanic*SAT-CR	-4.7373	0.3425	1,019.3607	636.8728	891.0282	-4.3081	0.2860	996.8806	608.0183	859.8313	1.3903
10	08	8	Hispanic*SAT-M	-6.0806	0.7485	636.8728	890.9798	799.7502	-5.5297	0.6760	608.0183	853.9434	759.7073	1.4733
10	08	9	Hispanic*SAT-W	-6.5742	0.8880	891.0282	799.7502	1,195.0721	-5.9786	0.8097	859.8313	759.7073	1,151.7786	1.8606
10	08	10	FYGPA	3.3764	0.0355	6.7092	3.6505	7.7038	-0.0170	0.0056	1.3903	1.4733	1.8606	0.1495

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
11	06	1	HSGPA	0.0000	0.2539	5.9140	8.1785	7.5511	-0.0459	0.0471	1.1948	1.9571	1.7807	0.1421
11	06	2	SAT-CR	0.0000	5.9140	5,211.8430	2,111.8422	3,286.8325	-2.9893	1.1948	692.6984	312.6943	441.2787	10.3524
11	06	3	SAT-M	0.0000	8.1785	2,111.8422	5,640.4423	2,121.2281	-3.3573	1.9571	312.6943	645.7957	309.6396	13.2458
11	06	4	SAT-W	0.0000	7.5511	3,286.8325	2,121.2281	4,969.3859	-2.1764	1.7807	441.2787	309.6396	531.2303	9.7050
11	06	5	Hispanic	0.1243	-0.0459	-2.9893	-3.3573	-2.1764	0.1091	-0.0402	-2.6178	-2.9401	-1.9059	-0.0525
11	06	6	Hispanic*HSGPA	-0.0458	0.0471	1.1948	1.9571	1.7807	-0.0402	0.0450	1.0580	1.8035	1.6812	0.0226
11	06	7	Hispanic*SAT-CR	-2.9806	1.1948	692.6984	312.6943	441.2787	-2.6178	1.0580	683.7885	302.6875	434.7916	2.3570
11	06	8	Hispanic*SAT-M	-3.3476	1.9571	312.6943	645.7957	309.6396	-2.9401	1.8035	302.6875	634.5569	302.3538	2.3793
11	06	9	Hispanic*SAT-W	-2.1701	1.7807	441.2787	309.6396	531.2303	-1.9059	1.6812	434.7916	302.3538	526.5071	1.3691
11	06	10	FYGPA	2.7695	0.1421	10.3524	13.2458	9.7050	-0.0525	0.0226	2.3570	2.3793	1.3691	0.5297
11	07	1	HSGPA	0.0000	0.2143	6.5604	5.2956	8.0508	-0.0083	0.0269	0.7985	1.5070	0.8702	0.1147
11	07	2	SAT-CR	0.0000	6.5604	6,069.8865	2,458.5325	4,591.8599	-1.5633	0.7985	655.9690	171.6861	503.6104	14.6027
11	07	3	SAT-M	0.0000	5.2956	2,458.5325	5,987.1964	2,741.8304	-3.8336	1.5070	171.6861	903.4957	317.2605	10.2491
11	07	4	SAT-W	0.0000	8.0508	4,591.8599	2,741.8304	6,202.3630	-1.8942	0.8702	503.6104	317.2605	672.9702	16.2777
11	07	5	Hispanic	0.1224	-0.0083	-1.5633	-3.8336	-1.8942	0.1077	-0.0073	-1.3720	-3.3644	-1.6624	-0.0157
11	07	6	Hispanic*HSGPA	-0.0083	0.0269	0.7985	1.5070	0.8702	-0.0073	0.0268	0.7854	1.4751	0.8544	0.0082
11	07	7	Hispanic*SAT-CR	-1.5587	0.7985	655.9690	171.6861	503.6104	-1.3720	0.7854	653.5323	165.7108	500.6581	2.7548
11	07	8	Hispanic*SAT-M	-3.8221	1.5070	171.6861	903.4957	317.2605	-3.3644	1.4751	165.7108	888.8432	310.0206	2.0882
11	07	9	Hispanic*SAT-W	-1.8885	0.8702	503.6104	317.2605	672.9702	-1.6624	0.8544	500.6581	310.0206	669.3930	2.8281
11	07	10	FYGPA	2.6957	0.1147	14.6027	10.2491	16.2777	-0.0157	0.0082	2.7548	2.0882	2.8281	0.6971
11	08	1	HSGPA	0.0000	0.2353	6.6607	5.0101	6.2241	0.0057	0.0327	-0.2219	0.0009	0.3748	0.1107
11	08	2	SAT-CR	0.0000	6.6607	6,187.5160	2,279.6162	3,815.6279	-2.7329	-0.2219	507.6382	275.4915	215.1159	15.7957
11	08	3	SAT-M	0.0000	5.0101	2,279.6162	5,314.3040	2,307.8135	-1.7584	0.0009	275.4915	703.3849	175.2098	5.6901
11	08	4	SAT-W	0.0000	6.2241	3,815.6279	2,307.8135	4,885.5994	-1.3676	0.3748	215.1159	175.2098	282.0876	15.0460
11	08	5	Hispanic	0.1232	0.0057	-2.7329	-1.7584	-1.3676	0.1083	0.0050	-2.3963	-1.5418	-1.1992	0.0003
11	08	6	Hispanic*HSGPA	0.0056	0.0327	-0.2219	0.0009	0.3748	0.0050	0.0327	-0.2065	0.0108	0.3825	0.0163
11	08	7	Hispanic*SAT-CR	-2.7249	-0.2219	507.6382	275.4915	215.1159	-2.3963	-0.2065	500.1915	270.7000	211.3893	1.3236
11	08	8	Hispanic*SAT-M	-1.7533	0.0009	275.4915	703.3849	175.2098	-1.5418	0.0108	270.7000	700.3019	172.8120	-0.0979
11	08	9	Hispanic*SAT-W	-1.3636	0.3748	215.1159	175.2098	282.0876	-1.1992	0.3825	211.3893	172.8120	280.2228	1.4600
11	08	10	FYGPA	2.7450	0.1107	15.7957	5.6901	15.0460	0.0003	0.0163	1.3236	-0.0979	1.4600	0.6044
12	07	1	HSGPA	0.0000	0.3639	11.9597	14.5469	16.5678	0.0021	0.0230	0.5056	1.1161	0.4696	0.2803
12	07	2	SAT-CR	0.0000	11.9597	6,667.4409	3,475.7099	4,417.6227	-0.7605	0.5056	587.9846	251.8581	415.9652	10.7014
12	07	3	SAT-M	0.0000	14.5469	3,475.7099	6,358.2599	3,143.9308	-0.9490	1.1161	251.8581	392.8538	243.1916	12.8908
12	07	4	SAT-W	0.0000	16.5678	4,417.6227	3,143.9308	5,915.9788	-0.8688	0.4696	415.9652	243.1916	439.4891	16.8736
12	07	5	Hispanic	0.0588	0.0021	-0.7605	-0.9490	-0.8688	0.0555	0.0020	-0.7157	-0.8932	-0.8177	-0.0046
12	07	6	Hispanic*HSGPA	0.0021	0.0230	0.5056	1.1161	0.4696	0.0020	0.0230	0.5072	1.1181	0.4715	0.0209
12	07	7	Hispanic*SAT-CR	-0.7591	0.5056	587.9846	251.8581	415.9652	-0.7157	0.5072	587.4073	251.1377	415.3057	-0.8968
12	07	8	Hispanic*SAT-M	-0.9472	1.1161	251.8581	392.8538	243.1916	-0.8932	1.1181	251.1377	391.9549	242.3687	0.5756
12	07	9	Hispanic*SAT-W	-0.8672	0.4696	415.9652	243.1916	439.4891	-0.8177	0.4715	415.3057	242.3687	438.7356	-0.5857
12	07	10	FYGPA	2.2272	0.2803	10.7014	12.8908	16.8736	-0.0046	0.0209	-0.8968	0.5756	-0.5857	1.1453

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
12	08	1	HSGPA	0.0000	0.3252	10.9627	14.3290	14.5672	0.0092	0.0335	0.1233	0.9979	0.8302	0.2482
12	08	2	SAT-CR	0.0000	10.9627	6,610.6584	3,395.3384	4,341.3674	-1.8347	0.1233	344.5485	130.8407	263.0045	11.7761
12	08	3	SAT-M	0.0000	14.3290	3,395.3384	6,190.8322	3,259.5879	-0.3234	0.9979	130.8407	428.1692	123.3048	10.6557
12	08	4	SAT-W	0.0000	14.5672	4,341.3674	3,259.5879	5,702.3819	-0.5188	0.8302	263.0045	123.3048	376.5121	16.4733
12	08	5	Hispanic	0.0699	0.0092	-1.8347	-0.3234	-0.5188	0.0651	0.0085	-1.7066	-0.3008	-0.4825	0.0102
12	08	6	Hispanic*HSGPA	0.0092	0.0335	0.1233	0.9979	0.8302	0.0085	0.0334	0.1401	1.0009	0.8349	0.0272
12	08	7	Hispanic*SAT-CR	-1.8313	0.1233	344.5485	130.8407	263.0045	-1.7066	0.1401	341.1885	130.2484	262.0545	1.1059
12	08	8	Hispanic*SAT-M	-0.3228	0.9979	130.8407	428.1692	123.3048	-0.3008	1.0009	130.2484	428.0648	123.1374	1.2796
12	08	9	Hispanic*SAT-W	-0.5178	0.8302	263.0045	123.3048	376.5121	-0.4825	0.8349	262.0545	123.1374	376.2434	2.1284
12	08	10	FYGPA	2.3073	0.2482	11.7761	10.6557	16.4733	0.0102	0.0272	1.1059	1.2796	2.1284	1.1224
13	06	1	HSGPA	0.0000	0.2061	5.7816	5.7778	7.1531	-0.0076	0.0105	0.5653	0.4177	0.5733	0.1137
13	06	2	SAT-CR	0.0000	5.7816	4,797.3982	2,050.7966	3,066.0713	-1.0789	0.5653	186.4242	120.0856	138.3914	8.1337
13	06	3	SAT-M	0.0000	5.7778	2,050.7966	4,537.4463	2,005.0980	-1.2477	0.4177	120.0856	213.1863	148.8968	5.9759
13	06	4	SAT-W	0.0000	7.1531	3,066.0713	2,005.0980	4,849.3220	-1.2923	0.5733	138.3914	148.8968	252.8519	10.6857
13	06	5	Hispanic	0.0345	-0.0076	-1.0789	-1.2477	-1.2923	0.0333	-0.0073	-1.0417	-1.2047	-1.2477	-0.0106
13	06	6	Hispanic*HSGPA	-0.0076	0.0105	0.5653	0.4177	0.5733	-0.0073	0.0105	0.5571	0.4082	0.5635	0.0071
13	06	7	Hispanic*SAT-CR	-1.0781	0.5653	186.4242	120.0856	138.3914	-1.0417	0.5571	185.2611	118.7405	136.9982	1.0254
13	06	8	Hispanic*SAT-M	-1.2468	0.4177	120.0856	213.1863	148.8968	-1.2047	0.4082	118.7405	211.6307	147.2856	0.8838
13	06	9	Hispanic*SAT-W	-1.2914	0.5733	138.3914	148.8968	252.8519	-1.2477	0.5635	136.9982	147.2856	251.1831	1.2184
13	06	10	FYGPA	2.9771	0.1137	8.1337	5.9759	10.6857	-0.0106	0.0071	1.0254	0.8838	1.2184	0.3572
14	06	1	HSGPA	0.0000	0.1855	7.8443	8.1743	10.3971	-0.0247	0.0432	3.2091	2.7288	4.1727	0.1006
14	06	2	SAT-CR	0.0000	7.8443	6,241.5795	2,738.1672	4,310.9090	-9.0424	3.2091	1,545.9893	993.0708	1,284.7569	13.0054
14	06	3	SAT-M	0.0000	8.1743	2,738.1672	5,178.0963	2,683.9489	-7.8424	2.7288	993.0708	1,263.7343	1,006.7965	9.7791
14	06	4	SAT-W	0.0000	10.3971	4,310.9090	2,683.9489	6,110.8072	-8.8547	4.1727	1,284.7569	1,006.7965	1,584.0834	15.7663
14	06	5	Hispanic	0.1603	-0.0247	-9.0424	-7.8424	-8.8547	0.1347	-0.0208	-7.5927	-6.5851	-7.4351	-0.0445
14	06	6	Hispanic*HSGPA	-0.0247	0.0432	3.2091	2.7288	4.1727	-0.0208	0.0426	2.9857	2.5351	3.9539	0.0275
14	06	7	Hispanic*SAT-CR	-9.0342	3.2091	1,545.9893	993.0708	1,284.7569	-7.5927	2.9857	1,464.2982	922.2208	1,204.7616	5.4229
14	06	8	Hispanic*SAT-M	-7.8353	2.7288	993.0708	1,263.7343	1,006.7965	-6.5851	2.5351	922.2208	1,202.2869	937.4173	3.9723
14	06	9	Hispanic*SAT-W	-8.8467	4.1727	1,284.7569	1,006.7965	1,584.0834	-7.4351	3.9539	1,204.7616	937.4173	1,505.7487	6.2784
14	06	10	FYGPA	3.0598	0.1006	13.0054	9.7791	15.7663	-0.0445	0.0275	5.4229	3.9723	6.2784	0.2930
14	07	1	HSGPA	0.0000	0.1625	6.1861	5.7491	7.5706	-0.0089	0.0286	2.5691	1.7971	2.5061	0.0928
14	07	2	SAT-CR	0.0000	6.1861	5,790.4483	2,232.7318	3,635.7914	-6.9130	2.5691	1,456.6245	828.4767	1,112.6733	11.8270
14	07	3	SAT-M	0.0000	5.7491	2,232.7318	5,369.6814	2,246.1106	-8.2381	1.7971	828.4767	1,256.3165	847.6671	8.6568
14	07	4	SAT-W	0.0000	7.5706	3,635.7914	2,246.1106	5,447.5400	-7.6152	2.5061	1,112.6733	847.6671	1,349.9560	13.4950
14	07	5	Hispanic	0.1462	-0.0089	-6.9130	-8.2381	-7.6152	0.1249	-0.0076	-5.9024	-7.0337	-6.5019	-0.0256
14	07	6	Hispanic*HSGPA	-0.0089	0.0286	2.5691	1.7971	2.5061	-0.0076	0.0285	2.5076	1.7237	2.4383	0.0144
14	07	7	Hispanic*SAT-CR	-6.9070	2.5691	1,456.6245	828.4767	1,112.6733	-5.9024	2.5076	1,408.8762	771.5761	1,060.0751	3.5766
14	07	8	Hispanic*SAT-M	-8.2310	1.7971	828.4767	1,256.3165	847.6671	-7.0337	1.7237	771.5761	1,188.5092	784.9869	2.5026
14	07	9	Hispanic*SAT-W	-7.6086	2.5061	1,112.6733	847.6671	1,349.9560	-6.5019	2.4383	1,060.0751	784.9869	1,292.0151	3.5839
14	07	10	FYGPA	3.0733	0.0928	11.8270	8.6568	13.4950	-0.0256	0.0144	3.5766	2.5026	3.5839	0.2947

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
14	08	1	HSGPA	0.0000	0.1590	5.4817	6.7449	8.6619	-0.0209	0.0343	2.2957	2.6117	3.2458	0.0780
14	08	2	SAT-CR	0.0000	5.4817	5,744.7037	1,974.7498	3,831.7272	-6.6444	2.2957	1,295.1569	730.3809	1,029.6942	10.9707
14	08	3	SAT-M	0.0000	6.7449	1,974.7498	4,772.3314	2,322.5126	-8.8973	2.6117	730.3809	1,503.3219	951.4586	8.5273
14	08	4	SAT-W	0.0000	8.6619	3,831.7272	2,322.5126	5,978.2235	-8.1978	3.2458	1,029.6942	951.4586	1,553.3803	13.4360
14	08	5	Hispanic	0.1923	-0.0209	-6.6444	-8.8973	-8.1978	0.1554	-0.0169	-5.3669	-7.1866	-6.6216	-0.0351
14	08	6	Hispanic*HSGPA	-0.0209	0.0343	2.2957	2.6117	3.2458	-0.0169	0.0339	2.1567	2.4256	3.0743	0.0212
14	08	7	Hispanic*SAT-CR	-6.6385	2.2957	1,295.1569	730.3809	1,029.6942	-5.3669	2.1567	1,251.0482	671.3169	975.2737	3.6068
14	08	8	Hispanic*SAT-M	-8.8893	2.6117	730.3809	1,503.3219	951.4586	-7.1866	2.4256	671.3169	1,424.2317	878.5864	3.4517
14	08	9	Hispanic*SAT-W	-8.1904	3.2458	1,029.6942	951.4586	1,553.3803	-6.6216	3.0743	975.2737	878.5864	1,486.2373	4.6022
14	08	10	FYGPA	3.1116	0.0780	10.9707	8.5273	13.4360	-0.0351	0.0212	3.6068	3.4517	4.6022	0.2249
15	06	1	HSGPA	0.0000	0.2183	8.0822	5.8532	6.7960	-0.0045	0.0127	0.6865	0.0531	0.2414	0.1113
15	06	2	SAT-CR	0.0000	8.0822	8,054.9599	3,588.7625	5,886.9465	-6.3793	0.6865	951.0755	611.0482	745.1178	15.1880
15	06	3	SAT-M	0.0000	5.8532	3,588.7625	5,872.4638	3,254.4928	-5.2464	0.0531	611.0482	898.0260	669.5635	6.1900
15	06	4	SAT-W	0.0000	6.7960	5,886.9465	3,254.4928	7,718.1929	-6.2874	0.2414	745.1178	669.5635	869.4663	14.4995
15	06	5	Hispanic	0.0733	-0.0045	-6.3793	-5.2464	-6.2874	0.0682	-0.0042	-5.9115	-4.8616	-5.8263	-0.0177
15	06	6	Hispanic*HSGPA	-0.0045	0.0127	0.6865	0.0531	0.2414	-0.0042	0.0127	0.6579	0.0297	0.2133	0.0074
15	06	7	Hispanic*SAT-CR	-6.3580	0.6865	951.0755	611.0482	745.1178	-5.9115	0.6579	910.5162	577.6917	705.1425	2.3881
15	06	8	Hispanic*SAT-M	-5.2289	0.0531	611.0482	898.0260	669.5635	-4.8616	0.0297	577.6917	870.5933	636.6874	-0.3361
15	06	9	Hispanic*SAT-W	-6.2664	0.2414	745.1178	669.5635	869.4663	-5.8263	0.2133	705.1425	636.6874	830.0666	0.7417
15	06	10	FYGPA	3.1234	0.1113	15.1880	6.1900	14.4995	-0.0177	0.0074	2.3881	-0.3361	0.7417	0.3281
15	07	1	HSGPA	0.0000	0.1939	9.4640	8.6163	8.3127	-0.0063	0.0209	1.6681	1.5111	0.8508	0.1140
15	07	2	SAT-CR	0.0000	9.4640	9,619.9788	4,695.1812	6,444.1062	-6.2338	1.6681	1,045.8925	589.6662	837.2356	19.0709
15	07	3	SAT-M	0.0000	8.6163	4,695.1812	7,475.3603	3,867.9482	-4.2126	1.5111	589.6662	795.3641	461.0620	12.0166
15	07	4	SAT-W	0.0000	8.3127	6,444.1062	3,867.9482	7,613.6881	-6.2060	0.8508	837.2356	461.0620	916.4212	19.1977
15	07	5	Hispanic	0.0982	-0.0063	-6.2338	-4.2126	-6.2060	0.0889	-0.0057	-5.6218	-3.7990	-5.5967	-0.0119
15	07	6	Hispanic*HSGPA	-0.0063	0.0209	1.6681	1.5111	0.8508	-0.0057	0.0209	1.6287	1.4845	0.8116	0.0096
15	07	7	Hispanic*SAT-CR	-6.2112	1.6681	1,045.8925	589.6662	837.2356	-5.6218	1.6287	1,007.1730	563.5010	798.6892	1.3735
15	07	8	Hispanic*SAT-M	-4.1973	1.5111	589.6662	795.3641	461.0620	-3.7990	1.4845	563.5010	777.6826	435.0137	1.0843
15	07	9	Hispanic*SAT-W	-6.1834	0.8508	837.2356	461.0620	916.4212	-5.5967	0.8116	798.6892	435.0137	878.0471	0.4811
15	07	10	FYGPA	3.1140	0.1140	19.0709	12.0166	19.1977	-0.0119	0.0096	1.3735	1.0843	0.4811	0.3661
15	08	1	HSGPA	0.0000	0.2425	1.6013	3.7205	4.1176	0.0195	0.0196	-1.1716	-1.7756	-0.7926	0.1156
15	08	2	SAT-CR	0.0000	1.6013	7,974.1917	4,382.3858	5,687.2974	-3.6002	-1.1716	528.3135	344.9682	501.6948	12.6157
15	08	3	SAT-M	0.0000	3.7205	4,382.3858	7,479.0045	4,055.9646	-3.1913	-1.7756	344.9682	376.2925	335.0387	9.0915
15	08	4	SAT-W	0.0000	4.1176	5,687.2974	4,055.9646	7,246.4253	-5.0004	-0.7926	501.6948	335.0387	638.3331	9.5814
15	08	5	Hispanic	0.0814	0.0195	-3.6002	-3.1913	-5.0004	0.0752	0.0179	-3.3069	-2.9314	-4.5931	-0.0002
15	08	6	Hispanic*HSGPA	0.0194	0.0196	-1.1716	-1.7756	-0.7926	0.0179	0.0192	-1.1017	-1.7137	-0.6955	0.0014
15	08	7	Hispanic*SAT-CR	-3.5839	-1.1716	528.3135	344.9682	501.6948	-3.3069	-1.1017	515.4109	333.5310	483.7740	0.3835
15	08	8	Hispanic*SAT-M	-3.1768	-1.7756	344.9682	376.2925	335.0387	-2.9314	-1.7137	333.5310	366.1543	319.1532	-0.0739
15	08	9	Hispanic*SAT-W	-4.9778	-0.7926	501.6948	335.0387	638.3331	-4.5931	-0.6955	483.7740	319.1532	613.4421	0.0546
15	08	10	FYGPA	3.0547	0.1156	12.6157	9.0915	9.5814	-0.0002	0.0014	0.3835	-0.0739	0.0546	0.3902

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
16	07	1	HSGPA	0.0000	0.4052	29.5499	27.6663	31.0792	-0.1009	0.2048	17.3634	12.9347	17.6171	0.2174
16	07	2	SAT-CR	0.0000	29.5499	8,561.8903	6,495.3679	6,525.5470	-17.5569	17.3634	4,831.4310	3,755.7269	3,904.4935	30.2517
16	07	3	SAT-M	0.0000	27.6663	6,495.3679	9,579.3552	5,987.8644	-22.6815	12.9347	3,755.7269	4,625.9077	3,387.0841	37.3513
16	07	4	SAT-W	0.0000	31.0792	6,525.5470	5,987.8644	7,784.5577	-20.6823	17.6171	3,904.4935	3,387.0841	4,398.7230	32.6379
16	07	5	Hispanic	0.4398	-0.1009	-17.5569	-22.6815	-20.6823	0.2477	-0.0565	-9.8355	-12.7064	-11.5864	-0.1645
16	07	6	Hispanic*HSGPA	-0.1003	0.2048	17.3634	12.9347	17.6171	-0.0565	0.1947	15.6017	10.6588	15.5418	0.1190
16	07	7	Hispanic*SAT-CR	-17.4650	17.3634	4,831.4310	3,755.7269	3,904.4935	-9.8355	15.6017	4,524.8000	3,359.5957	3,543.2779	18.9883
16	07	8	Hispanic*SAT-M	-22.5627	12.9347	3,755.7269	4,625.9077	3,387.0841	-12.7064	10.6588	3,359.5957	4,114.1528	2,920.4360	23.8582
16	07	9	Hispanic*SAT-W	-20.5740	17.6171	3,904.4935	3,387.0841	4,398.7230	-11.5864	15.5418	3,543.2779	2,920.4360	3,973.2058	19.8031
16	07	10	FYGPA	2.8587	0.2174	30.2517	37.3513	32.6379	-0.1645	0.1190	18.9883	23.8582	19.8031	0.8345
16	08	1	HSGPA	0.0000	0.3541	19.6763	29.2902	28.8247	-0.1010	0.1529	8.3823	10.8538	11.2863	0.2688
16	08	2	SAT-CR	0.0000	19.6763	7,118.7947	5,567.9638	5,911.1621	-14.8928	8.3823	2,459.7145	2,205.8390	1,993.3281	28.6932
16	08	3	SAT-M	0.0000	29.2902	5,567.9638	8,945.6602	5,887.1370	-21.4622	10.8538	2,205.8390	3,182.1846	2,244.8519	34.1719
16	08	4	SAT-W	0.0000	28.8247	5,911.1621	5,887.1370	8,386.2896	-18.6323	11.2863	1,993.3281	2,244.8519	2,838.9481	36.5907
16	08	5	Hispanic	0.3484	-0.1010	-14.8928	-21.4622	-18.6323	0.2281	-0.0658	-9.7039	-13.9844	-12.1405	-0.1148
16	08	6	Hispanic*HSGPA	-0.1005	0.1529	8.3823	10.8538	11.2863	-0.0658	0.1428	6.8851	8.6961	9.4131	0.1102
16	08	7	Hispanic*SAT-CR	-14.8255	8.3823	2,459.7145	2,205.8390	1,993.3281	-9.7039	6.8851	2,238.9213	1,887.6528	1,717.0966	13.5055
16	08	8	Hispanic*SAT-M	-21.3650	10.8538	2,205.8390	3,182.1846	2,244.8519	-13.9844	8.6961	1,887.6528	2,723.6448	1,846.7731	14.4498
16	08	9	Hispanic*SAT-W	-18.5479	11.2863	1,993.3281	2,244.8519	2,838.9481	-12.1405	9.4131	1,717.0966	1,846.7731	2,493.3582	16.6506
16	08	10	FYGPA	2.9657	0.2688	28.6932	34.1719	36.5907	-0.1148	0.1102	13.5055	14.4498	16.6506	0.5872
18	07	1	HSGPA	0.0000	0.2883	10.9511	9.7468	9.6154	-0.0033	0.0339	0.7055	-0.1794	0.6427	0.1291
18	07	2	SAT-CR	0.0000	10.9511	5,726.8474	3,107.7282	4,498.8443	-5.1235	0.7055	575.3083	142.9035	489.4757	3.6411
18	07	3	SAT-M	0.0000	9.7468	3,107.7282	5,531.8163	3,289.1888	-2.3776	-0.1794	142.9035	256.6320	210.6619	7.3575
18	07	4	SAT-W	0.0000	9.6154	4,498.8443	3,289.1888	5,983.4481	-6.1572	0.6427	489.4757	210.6619	665.2301	8.1167
18	07	5	Hispanic	0.1082	-0.0033	-5.1235	-2.3776	-6.1572	0.0969	-0.0029	-4.5690	-2.1203	-5.4908	0.0024
18	07	6	Hispanic*HSGPA	-0.0033	0.0339	0.7055	-0.1794	0.6427	-0.0029	0.0339	0.6888	-0.1872	0.6226	0.0184
18	07	7	Hispanic*SAT-CR	-5.1013	0.7055	575.3083	142.9035	489.4757	-4.5690	0.6888	549.1719	130.7748	458.0662	0.0773
18	07	8	Hispanic*SAT-M	-2.3673	-0.1794	142.9035	256.6320	210.6619	-2.1203	-0.1872	130.7748	251.0036	196.0862	-0.1065
18	07	9	Hispanic*SAT-W	-6.1305	0.6427	489.4757	210.6619	665.2301	-5.4908	0.6226	458.0662	196.0862	627.4835	-0.1691
18	07	10	FYGPA	2.5145	0.1291	3.6411	7.3575	8.1167	0.0024	0.0184	0.0773	-0.1065	-0.1691	0.7792
18	08	1	HSGPA	0.0000	0.2730	8.3998	5.6639	9.3558	0.0047	0.0292	0.9636	1.5322	0.5077	0.1718
18	08	2	SAT-CR	0.0000	8.3998	5,302.0790	2,931.5789	3,762.7019	-3.2483	0.9636	472.3122	249.1839	413.4516	8.0756
18	08	3	SAT-M	0.0000	5.6639	2,931.5789	6,499.8435	2,565.8590	-0.9616	1.5322	249.1839	476.9562	216.9227	11.7759
18	08	4	SAT-W	0.0000	9.3558	3,762.7019	2,565.8590	4,930.2496	-2.1366	0.5077	413.4516	216.9227	546.8062	9.1220
18	08	5	Hispanic	0.0921	0.0047	-3.2483	-0.9616	-2.1366	0.0840	0.0042	-2.9491	-0.8731	-1.9398	-0.0337
18	08	6	Hispanic*HSGPA	0.0046	0.0292	0.9636	1.5322	0.5077	0.0042	0.0292	0.9786	1.5366	0.5176	0.0116
18	08	7	Hispanic*SAT-CR	-3.2341	0.9636	472.3122	249.1839	413.4516	-2.9491	0.9786	461.8069	246.0740	406.5418	2.5846
18	08	8	Hispanic*SAT-M	-0.9574	1.5322	249.1839	476.9562	216.9227	-0.8731	1.5366	246.0740	476.0355	214.8771	3.8534
18	08	9	Hispanic*SAT-W	-2.1272	0.5077	413.4516	216.9227	546.8062	-1.9398	0.5176	406.5418	214.8771	542.2613	1.0012
18	08	10	FYGPA	2.7129	0.1718	8.0756	11.7759	9.1220	-0.0337	0.0116	2.5846	3.8534	1.0012	0.6660

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
19	06	1	HSGPA	0.0000	0.2694	13.2709	15.3460	16.1358	-0.0084	0.0254	0.6459	1.0131	0.5898	0.1446
19	06	2	SAT-CR	0.0000	13.2709	6,148.6711	4,147.5149	4,721.6895	-2.8235	0.6459	486.6553	429.6793	350.9849	18.0265
19	06	3	SAT-M	0.0000	15.3460	4,147.5149	7,858.7540	4,330.6783	-4.1159	1.0131	429.6793	877.8801	422.9390	21.1702
19	06	4	SAT-W	0.0000	16.1358	4,721.6895	4,330.6783	6,709.9558	-3.0443	0.5898	350.9849	422.9390	392.9577	20.5032
19	06	5	Hispanic	0.0814	-0.0084	-2.8235	-4.1159	-3.0443	0.0749	-0.0078	-2.5938	-3.7810	-2.7966	-0.0177
19	06	6	Hispanic*HSGPA	-0.0084	0.0254	0.6459	1.0131	0.5898	-0.0078	0.0253	0.6221	0.9784	0.5642	0.0136
19	06	7	Hispanic*SAT-CR	-2.8161	0.6459	486.6553	429.6793	350.9849	-2.5938	0.6221	478.7039	418.0885	342.4119	1.0506
19	06	8	Hispanic*SAT-M	-4.1051	1.0131	429.6793	877.8801	422.9390	-3.7810	0.9784	418.0885	860.9839	410.4420	1.7041
19	06	9	Hispanic*SAT-W	-3.0363	0.5898	350.9849	422.9390	392.9577	-2.7966	0.5642	342.4119	410.4420	383.7145	0.8506
19	06	10	FYGPA	3.0360	0.1446	18.0265	21.1702	20.5032	-0.0177	0.0136	1.0506	1.7041	0.8506	0.2839
19	07	1	HSGPA	0.0000	0.2746	13.3846	16.2839	12.3841	0.0038	0.0179	-0.1919	-0.2652	0.2905	0.1304
19	07	2	SAT-CR	0.0000	13.3846	5,971.3820	3,470.7371	4,290.7102	-3.8690	-0.1919	622.0313	312.3036	442.4993	17.3882
19	07	3	SAT-M	0.0000	16.2839	3,470.7371	6,517.0283	3,205.2962	-3.0627	-0.2652	312.3036	373.0861	182.8638	16.5440
19	07	4	SAT-W	0.0000	12.3841	4,290.7102	3,205.2962	5,773.4903	-2.6580	0.2905	442.4993	182.8638	579.2527	17.2296
19	07	5	Hispanic	0.0942	0.0038	-3.8690	-3.0627	-2.6580	0.0855	0.0034	-3.5046	-2.7743	-2.4077	-0.0170
19	07	6	Hispanic*HSGPA	0.0038	0.0179	-0.1919	-0.2652	0.2905	0.0034	0.0179	-0.1773	-0.2536	0.3006	0.0058
19	07	7	Hispanic*SAT-CR	-3.8582	-0.1919	622.0313	312.3036	442.4993	-3.5046	-0.1773	607.1039	300.4869	432.2439	0.9659
19	07	8	Hispanic*SAT-M	-3.0542	-0.2652	312.3036	373.0861	182.8638	-2.7743	-0.2536	300.4869	363.7319	174.7455	0.9243
19	07	9	Hispanic*SAT-W	-2.6507	0.2905	442.4993	182.8638	579.2527	-2.4077	0.3006	432.2439	174.7455	572.2070	0.9706
19	07	10	FYGPA	2.9952	0.1304	17.3882	16.5440	17.2296	-0.0170	0.0058	0.9659	0.9243	0.9706	0.3158
19	08	1	HSGPA	0.0000	0.2725	12.3219	14.3137	13.7123	-0.0006	0.0351	0.2923	1.0562	1.0884	0.1704
19	08	2	SAT-CR	0.0000	12.3219	6,264.3715	3,525.6251	4,283.0487	-4.0771	0.2923	740.4831	379.4720	490.1212	16.6010
19	08	3	SAT-M	0.0000	14.3137	3,525.6251	6,656.3988	3,396.5573	-4.8416	1.0562	379.4720	769.6197	499.0934	19.7334
19	08	4	SAT-W	0.0000	13.7123	4,283.0487	3,396.5573	5,994.8095	-4.6484	1.0884	490.1212	499.0934	731.1544	19.7698
19	08	5	Hispanic	0.1245	-0.0006	-4.0771	-4.8416	-4.6484	0.1091	-0.0006	-3.5695	-4.2388	-4.0696	-0.0344
19	08	6	Hispanic*HSGPA	-0.0006	0.0351	0.2923	1.0562	1.0884	-0.0006	0.0351	0.2898	1.0531	1.0855	0.0211
19	08	7	Hispanic*SAT-CR	-4.0718	0.2923	740.4831	379.4720	490.1212	-3.5695	0.2898	723.8821	359.7579	471.1940	1.8939
19	08	8	Hispanic*SAT-M	-4.8353	1.0562	379.4720	769.6197	499.0934	-4.2388	1.0531	359.7579	746.2089	476.6171	3.5182
19	08	9	Hispanic*SAT-W	-4.6423	1.0884	490.1212	499.0934	731.1544	-4.0696	1.0855	471.1940	476.6171	709.5752	3.0130
19	08	10	FYGPA	2.9045	0.1704	16.6010	19.7334	19.7698	-0.0344	0.0211	1.8939	3.5182	3.0130	0.5484
20	08	1	HSGPA	0.0000	0.1284	3.0080	3.7715	1.9876	-0.0175	0.0146	1.3350	1.6779	1.8519	0.0601
20	08	2	SAT-CR	0.0000	3.0080	5,612.2124	2,419.1361	3,879.4524	-4.1511	1.3350	607.7261	496.2747	582.2354	11.8613
20	08	3	SAT-M	0.0000	3.7715	2,419.1361	5,083.8216	2,452.5017	-5.7460	1.6779	496.2747	770.4831	586.3276	10.4339
20	08	4	SAT-W	0.0000	1.9876	3,879.4524	2,452.5017	5,919.7245	-5.2285	1.8519	582.2354	586.3276	781.3713	16.6053
20	08	5	Hispanic	0.0743	-0.0175	-4.1511	-5.7460	-5.2285	0.0689	-0.0162	-3.8425	-5.3188	-4.8399	-0.0321
20	08	6	Hispanic*HSGPA	-0.0175	0.0146	1.3350	1.6779	1.8519	-0.0162	0.0143	1.2624	1.5774	1.7605	0.0130
20	08	7	Hispanic*SAT-CR	-4.1438	1.3350	607.7261	496.2747	582.2354	-3.8425	1.2624	590.5250	472.4648	560.5697	2.5124
20	08	8	Hispanic*SAT-M	-5.7358	1.6779	496.2747	770.4831	586.3276	-5.3188	1.5774	472.4648	737.5254	556.3378	3.5468
20	08	9	Hispanic*SAT-W	-5.2193	1.8519	582.2354	586.3276	781.3713	-4.8399	1.7605	560.5697	556.3378	754.0822	3.4913
20	08	10	FYGPA	3.2795	0.0601	11.8613	10.4339	16.6053	-0.0321	0.0130	2.5124	3.5468	3.4913	0.2662

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
21	07	1	HSGPA	0.0000	0.3273	10.3150	12.9290	11.7884	0.0040	0.3039	9.6094	12.4440	10.3214	0.2109
21	07	2	SAT-CR	0.0000	10.3150	6,721.3296	3,802.3055	4,860.4474	-2.1777	9.6094	6,263.2118	3,450.7075	4,487.5207	16.4391
21	07	3	SAT-M	0.0000	12.9290	3,802.3055	6,806.9850	3,528.4097	-0.8770	12.4440	3,450.7075	6,260.2270	3,198.4804	17.4648
21	07	4	SAT-W	0.0000	11.7884	4,860.4474	3,528.4097	6,232.4065	-1.8445	10.3214	4,487.5207	3,198.4804	5,753.7468	21.2849
21	07	5	Hispanic	0.9356	0.0040	-2.1777	-0.8770	-1.8445	0.0603	0.0003	-0.1402	-0.0565	-0.1188	-0.0107
21	07	6	Hispanic*HSGPA	0.0040	0.3039	9.6094	12.4440	10.3214	0.0003	0.3039	9.6181	12.4475	10.3288	0.1955
21	07	7	Hispanic*SAT-CR	-2.1751	9.6094	6,263.2118	3,450.7075	4,487.5207	-0.1402	9.6181	6,258.4751	3,448.8000	4,483.5087	15.1359
21	07	8	Hispanic*SAT-M	-0.8759	12.4440	3,450.7075	6,260.2270	3,198.4804	-0.0565	12.4475	3,448.8000	6,259.4588	3,196.8648	15.9066
21	07	9	Hispanic*SAT-W	-1.8423	10.3214	4,487.5207	3,198.4804	5,753.7468	-0.1188	10.3288	4,483.5087	3,196.8648	5,750.3486	19.2364
21	07	10	FYGPA	2.7096	0.2109	16.4391	17.4648	21.2849	-0.0107	0.1955	15.1359	15.9066	19.2364	0.7654
22	06	1	HSGPA	0.0000	0.0822	4.4691	4.0130	3.9188	-0.0020	0.0130	0.0569	0.1316	-0.0352	0.0410
22	06	2	SAT-CR	0.0000	4.4691	5,320.4157	2,086.2336	3,231.6322	-5.4075	0.0569	931.2070	530.5143	664.0110	10.6427
22	06	3	SAT-M	0.0000	4.0130	2,086.2336	4,356.4139	1,779.7870	-6.2815	0.1316	530.5143	911.4579	465.2270	7.6237
22	06	4	SAT-W	0.0000	3.9188	3,231.6322	1,779.7870	4,787.4159	-4.2762	-0.0352	664.0110	465.2270	827.0771	10.3450
22	06	5	Hispanic	0.1316	-0.0020	-5.4075	-6.2815	-4.2762	0.1144	-0.0017	-4.6960	-5.4550	-3.7135	-0.0346
22	06	6	Hispanic*HSGPA	-0.0020	0.0130	0.0569	0.1316	-0.0352	-0.0017	0.0130	0.0460	0.1190	-0.0438	0.0036
22	06	7	Hispanic*SAT-CR	-5.4033	0.0569	931.2070	530.5143	664.0110	-4.6960	0.0460	901.9888	496.5732	640.9056	2.7746
22	06	8	Hispanic*SAT-M	-6.2767	0.1316	530.5143	911.4579	465.2270	-5.4550	0.1190	496.5732	872.0306	438.3869	2.2051
22	06	9	Hispanic*SAT-W	-4.2729	-0.0352	664.0110	465.2270	827.0771	-3.7135	-0.0438	640.9056	438.3869	808.8057	2.4457
22	06	10	FYGPA	3.3607	0.0410	10.6427	7.6237	10.3450	-0.0346	0.0036	2.7746	2.2051	2.4457	0.1777
23	06	1	HSGPA	0.0000	0.1597	9.5497	7.6020	8.3364	-0.0051	0.0081	0.7196	0.2891	0.4942	0.1020
23	06	2	SAT-CR	0.0000	9.5497	5,392.2180	2,703.1793	3,441.4518	-0.8268	0.7196	345.1641	212.6583	265.6572	13.0143
23	06	3	SAT-M	0.0000	7.6020	2,703.1793	5,370.1458	2,502.5869	-1.3865	0.2891	212.6583	292.8507	144.0311	8.7923
23	06	4	SAT-W	0.0000	8.3364	3,441.4518	2,502.5869	5,071.4098	-0.8508	0.4942	265.6572	144.0311	292.7805	13.5883
23	06	5	Hispanic	0.0498	-0.0051	-0.8268	-1.3865	-0.8508	0.0474	-0.0048	-0.7856	-1.3175	-0.8084	-0.0023
23	06	6	Hispanic*HSGPA	-0.0051	0.0081	0.7196	0.2891	0.4942	-0.0048	0.0080	0.7154	0.2821	0.4899	0.0024
23	06	7	Hispanic*SAT-CR	-0.8251	0.7196	345.1641	212.6583	265.6572	-0.7856	0.7154	344.4819	211.5142	264.9552	0.5422
23	06	8	Hispanic*SAT-M	-1.3838	0.2891	212.6583	292.8507	144.0311	-1.3175	0.2821	211.5142	290.9320	142.8538	0.3149
23	06	9	Hispanic*SAT-W	-0.8491	0.4942	265.6572	144.0311	292.7805	-0.8084	0.4899	264.9552	142.8538	292.0582	0.6502
23	06	10	FYGPA	2.9924	0.1020	13.0143	8.7923	13.5883	-0.0023	0.0024	0.5422	0.3149	0.6502	0.3294
23	08	1	HSGPA	0.0000	0.1663	9.9545	10.3530	10.3640	-0.0098	0.0151	0.8827	0.8185	0.9529	0.0984
23	08	2	SAT-CR	0.0000	9.9545	4,596.4778	1,878.3070	2,956.8344	-1.0749	0.8827	233.7498	160.3298	159.4965	13.6128
23	08	3	SAT-M	0.0000	10.3530	1,878.3070	4,773.9982	1,979.1269	-1.4041	0.8185	160.3298	339.5361	191.2192	13.3878
23	08	4	SAT-W	0.0000	10.3640	2,956.8344	1,979.1269	4,941.5025	-1.3766	0.9529	159.4965	191.2192	232.9683	15.4024
23	08	5	Hispanic	0.0472	-0.0098	-1.0749	-1.4041	-1.3766	0.0451	-0.0093	-1.0242	-1.3379	-1.3116	-0.0001
23	08	6	Hispanic*HSGPA	-0.0098	0.0151	0.8827	0.8185	0.9529	-0.0093	0.0150	0.8722	0.8048	0.9395	0.0032
23	08	7	Hispanic*SAT-CR	-1.0730	0.8827	233.7498	160.3298	159.4965	-1.0242	0.8722	232.5964	158.8231	158.0194	0.0745
23	08	8	Hispanic*SAT-M	-1.4017	0.8185	160.3298	339.5361	191.2192	-1.3379	0.8048	158.8231	337.5679	189.2897	0.5755
23	08	9	Hispanic*SAT-W	-1.3742	0.9529	159.4965	191.2192	232.9683	-1.3116	0.9395	158.0194	189.2897	231.0766	0.3994
23	08	10	FYGPA	3.0455	0.0984	13.6128	13.3878	15.4024	-0.0001	0.0032	0.0745	0.5755	0.3994	0.3044



## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
26	06	1	HSGPA	0.0000	0.1102	2.5627	3.0328	3.8393	-0.0047	0.0277	0.9325	1.4150	1.3536	0.0490
26	06	2	SAT-CR	0.0000	2.5627	7,888.9486	4,576.4292	5,747.7369	-14.7491	0.9325	2,874.9804	2,047.0408	2,185.8380	22.4788
26	06	3	SAT-M	0.0000	3.0328	4,576.4292	7,496.0874	4,346.3592	-14.6538	1.4150	2,047.0408	2,894.1422	1,871.8626	20.9876
26	06	4	SAT-W	0.0000	3.8393	5,747.7369	4,346.3592	7,173.0164	-13.9848	1.3536	2,185.8380	1,871.8626	2,444.4960	23.6421
26	06	5	Hispanic	0.2629	-0.0047	-14.7491	-14.6538	-13.9848	0.1938	-0.0034	-10.8709	-10.8007	-10.3076	-0.0707
26	06	6	Hispanic*HSGPA	-0.0047	0.0277	0.9325	1.4150	1.3536	-0.0034	0.0277	0.8637	1.3465	1.2883	0.0136
26	06	7	Hispanic*SAT-CR	-14.7457	0.9325	2,874.9804	2,047.0408	2,185.8380	-10.8709	0.8637	2,657.4948	1,830.9599	1,979.6217	8.8982
26	06	8	Hispanic*SAT-M	-14.6505	1.4150	2,047.0408	2,894.1422	1,871.8626	-10.8007	1.3465	1,830.9599	2,679.4569	1,666.9781	8.8302
26	06	9	Hispanic*SAT-W	-13.9817	1.3536	2,185.8380	1,871.8626	2,444.4960	-10.3076	1.2883	1,979.6217	1,666.9781	2,248.9650	9.2796
26	06	10	FYGPA	3.1381	0.0490	22.4788	20.9876	23.6421	-0.0707	0.0136	8.8982	8.8302	9.2796	0.4434
26	07	1	HSGPA	0.0000	0.1126	3.4689	3.7883	3.5246	-0.0074	0.0351	1.9068	1.6114	1.6663	0.0627
26	07	2	SAT-CR	0.0000	3.4689	8,097.6591	4,584.1014	5,939.9131	-14.4663	1.9068	3,134.5704	2,046.3633	2,481.2999	25.7804
26	07	3	SAT-M	0.0000	3.7883	4,584.1014	7,286.9649	4,371.1480	-13.3325	1.6114	2,046.3633	2,660.0205	1,872.1247	21.1405
26	07	4	SAT-W	0.0000	3.5246	5,939.9131	4,371.1480	7,446.4699	-13.9399	1.6663	2,481.2999	1,872.1247	2,706.0750	26.8842
26	07	5	Hispanic	0.2754	-0.0074	-14.4663	-13.3325	-13.9399	0.1996	-0.0054	-10.4826	-9.6610	-10.1012	-0.0861
26	07	6	Hispanic*HSGPA	-0.0074	0.0351	1.9068	1.6114	1.6663	-0.0054	0.0351	1.7996	1.5126	1.5630	0.0254
26	07	7	Hispanic*SAT-CR	-14.4630	1.9068	3,134.5704	2,046.3633	2,481.2999	-10.4826	1.7996	2,925.3441	1,853.5354	2,279.6877	12.4886
26	07	8	Hispanic*SAT-M	-13.3294	1.6114	2,046.3633	2,660.0205	1,872.1247	-9.6610	1.5126	1,853.5354	2,482.3059	1,686.3142	10.2206
26	07	9	Hispanic*SAT-W	-13.9367	1.6663	2,481.2999	1,872.1247	2,706.0750	-10.1012	1.5630	2,279.6877	1,686.3142	2,511.7998	11.7963
26	07	10	FYGPA	3.0658	0.0627	25.7804	21.1405	26.8842	-0.0861	0.0254	12.4886	10.2206	11.7963	0.5237
26	08	1	HSGPA	0.0000	0.1002	3.2783	3.8648	3.7785	-0.0085	0.0307	2.0776	1.8424	2.2196	0.0471
26	08	2	SAT-CR	0.0000	3.2783	7,672.4321	4,538.9857	5,762.7539	-14.3655	2.0776	2,935.0247	2,023.0757	2,453.4707	20.6755
26	08	3	SAT-M	0.0000	3.8648	4,538.9857	7,167.4612	4,427.4278	-14.7221	1.8424	2,023.0757	2,754.0557	1,980.1565	19.5833
26	08	4	SAT-W	0.0000	3.7785	5,762.7539	4,427.4278	7,555.5472	-15.2630	2.2196	2,453.4707	1,980.1565	2,925.9806	22.9437
26	08	5	Hispanic	0.2819	-0.0085	-14.3655	-14.7221	-15.2630	0.2025	-0.0061	-10.3160	-10.5721	-10.9605	-0.0808
26	08	6	Hispanic*HSGPA	-0.0085	0.0307	2.0776	1.8424	2.2196	-0.0061	0.0307	1.9551	1.7168	2.0894	0.0185
26	08	7	Hispanic*SAT-CR	-14.3619	2.0776	2,935.0247	2,023.0757	2,453.4707	-10.3160	1.9551	2,728.7094	1,811.6389	2,234.2656	9.8133
26	08	8	Hispanic*SAT-M	-14.7184	1.8424	2,023.0757	2,754.0557	1,980.1565	-10.5721	1.7168	1,811.6389	2,537.3701	1,755.5099	9.1212
26	08	9	Hispanic*SAT-W	-15.2591	2.2196	2,453.4707	1,980.1565	2,925.9806	-10.9605	2.0894	2,234.2656	1,755.5099	2,693.0804	10.1169
26	08	10	FYGPA	3.1273	0.0471	20.6755	19.5833	22.9437	-0.0808	0.0185	9.8133	9.1212	10.1169	0.4304
27	06	1	HSGPA	0.0000	0.1879	11.8556	13.2107	12.0489	-0.0139	0.0234	2.3737	2.9438	2.1374	0.0685
27	06	2	SAT-CR	0.0000	11.8556	7,352.3626	4,337.0913	5,245.6912	-5.3349	2.3737	1,064.8227	896.2421	863.7835	10.5702
27	06	3	SAT-M	0.0000	13.2107	4,337.0913	8,060.0497	4,121.3231	-6.4983	2.9438	896.2421	1,362.0959	850.6855	8.3635
27	06	4	SAT-W	0.0000	12.0489	5,245.6912	4,121.3231	6,794.5257	-4.8223	2.1374	863.7835	850.6855	916.7700	11.5269
27	06	5	Hispanic	0.0864	-0.0139	-5.3349	-6.4983	-4.8223	0.0790	-0.0127	-4.8741	-5.9370	-4.4058	-0.0290
27	06	6	Hispanic*HSGPA	-0.0139	0.0234	2.3737	2.9438	2.1374	-0.0127	0.0232	2.2997	2.8537	2.0706	0.0094
27	06	7	Hispanic*SAT-CR	-5.3309	2.3737	1,064.8227	896.2421	863.7835	-4.8741	2.2997	1,036.3829	861.6002	838.0760	2.3156
27	06	8	Hispanic*SAT-M	-6.4935	2.9438	896.2421	1,362.0959	850.6855	-5.9370	2.8537	861.6002	1,319.8991	819.3717	2.6811
27	06	9	Hispanic*SAT-W	-4.8188	2.1374	863.7835	850.6855	916.7700	-4.4058	2.0706	838.0760	819.3717	893.5323	2.0253
27	06	10	FYGPA	3.2480	0.0685	10.5702	8.3635	11.5269	-0.0290	0.0094	2.3156	2.6811	2.0253	0.3457

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
27	07	1	HSGPA	0.0000	0.1533	5.2611	7.9419	6.4367	-0.0160	0.0184	1.0282	2.2082	1.3686	0.0738
27	07	2	SAT-CR	0.0000	5.2611	6,289.2072	2,982.0667	4,011.6401	-2.9948	1.0282	469.5256	425.3159	339.3653	11.4581
27	07	3	SAT-M	0.0000	7.9419	2,982.0667	6,479.0636	2,595.4073	-4.8710	2.2082	425.3159	821.5056	408.1492	6.9092
27	07	4	SAT-W	0.0000	6.4367	4,011.6401	2,595.4073	5,108.7483	-3.4822	1.3686	339.3653	408.1492	454.6481	12.7888
27	07	5	Hispanic	0.0712	-0.0160	-2.9948	-4.8710	-3.4822	0.0662	-0.0149	-2.7815	-4.5241	-3.2342	-0.0133
27	07	6	Hispanic*HSGPA	-0.0160	0.0184	1.0282	2.2082	1.3686	-0.0149	0.0181	0.9802	2.1302	1.3128	0.0084
27	07	7	Hispanic*SAT-CR	-2.9918	1.0282	469.5256	425.3159	339.3653	-2.7815	0.9802	460.5656	410.7428	328.9472	1.1697
27	07	8	Hispanic*SAT-M	-4.8661	2.2082	425.3159	821.5056	408.1492	-4.5241	2.1302	410.7428	797.8028	391.2044	1.7536
27	07	9	Hispanic*SAT-W	-3.4787	1.3686	339.3653	408.1492	454.6481	-3.2342	1.3128	328.9472	391.2044	442.5345	1.4562
27	07	10	FYGPA	3.2717	0.0738	11.4581	6.9092	12.7888	-0.0133	0.0084	1.1697	1.7536	1.4562	0.3447
27	08	1	HSGPA	0.0000	0.1451	6.9581	9.1330	6.8895	-0.0179	0.0192	1.0081	1.6394	1.3991	0.0627
27	08	2	SAT-CR	0.0000	6.9581	6,604.5485	3,722.9852	4,388.1466	-4.0972	1.0081	843.7823	705.5983	681.4833	9.3898
27	08	3	SAT-M	0.0000	9.1330	3,722.9852	6,872.3802	3,291.6404	-5.1965	1.6394	705.5983	1,034.2773	636.9657	8.4529
27	08	4	SAT-W	0.0000	6.8895	4,388.1466	3,291.6404	5,864.8823	-4.6649	1.3991	681.4833	636.9657	909.6808	11.8993
27	08	5	Hispanic	0.0798	-0.0179	-4.0972	-5.1965	-4.6649	0.0735	-0.0165	-3.7700	-4.7816	-4.2924	-0.0252
27	08	6	Hispanic*HSGPA	-0.0179	0.0192	1.0081	1.6394	1.3991	-0.0165	0.0189	0.9348	1.5464	1.3157	0.0121
27	08	7	Hispanic*SAT-CR	-4.0932	1.0081	843.7823	705.5983	681.4833	-3.7700	0.9348	827.0118	684.3281	662.3892	1.9851
27	08	8	Hispanic*SAT-M	-5.1914	1.6394	705.5983	1,034.2773	636.9657	-4.7816	1.5464	684.3281	1,007.3002	612.7484	2.1268
27	08	9	Hispanic*SAT-W	-4.6603	1.3991	681.4833	636.9657	909.6808	-4.2924	1.3157	662.3892	612.7484	887.9410	2.5763
27	08	10	FYGPA	3.2766	0.0627	9.3898	8.4529	11.8993	-0.0252	0.0121	1.9851	2.1268	2.5763	0.3076
28	07	1	HSGPA	0.0000	0.4258	19.6357	25.8354	22.9366	0.0013	0.0793	2.0520	5.2973	2.7777	0.2532
28	07	2	SAT-CR	0.0000	19.6357	6,963.1820	3,930.5987	4,578.2669	-1.1743	2.0520	969.6262	629.2899	732.4818	17.2062
28	07	3	SAT-M	0.0000	25.8354	3,930.5987	7,674.3139	3,937.2598	-2.9166	5.2973	629.2899	1,144.3770	642.5741	24.2107
28	07	4	SAT-W	0.0000	22.9366	4,578.2669	3,937.2598	6,140.1094	-2.0091	2.7777	732.4818	642.5741	1,043.3836	18.6617
28	07	5	Hispanic	0.1638	0.0013	-1.1743	-2.9166	-2.0091	0.1375	0.0011	-0.9819	-2.4388	-1.6800	0.0322
28	07	6	Hispanic*HSGPA	0.0013	0.0793	2.0520	5.2973	2.7777	0.0011	0.0793	2.0535	5.3011	2.7803	0.0220
28	07	7	Hispanic*SAT-CR	-1.1703	2.0520	969.6262	629.2899	732.4818	-0.9819	2.0535	968.2519	625.8766	730.1305	1.9707
28	07	8	Hispanic*SAT-M	-2.9066	5.2973	629.2899	1,144.3770	642.5741	-2.4388	5.3011	625.8766	1,135.8996	636.7344	0.7977
28	07	9	Hispanic*SAT-W	-2.0022	2.7777	732.4818	642.5741	1,043.3836	-1.6800	2.7803	730.1305	636.7344	1,039.3609	3.0256
28	07	10	FYGPA	2.4077	0.2532	17.2062	24.2107	18.6617	0.0322	0.0220	1.9707	0.7977	3.0256	1.0481
28	08	1	HSGPA	0.0000	0.4554	23.6261	26.2684	25.2087	-0.0200	0.1070	5.7255	6.5145	7.0540	0.2471
28	08	2	SAT-CR	0.0000	23.6261	5,953.6368	4,010.2588	4,294.4693	-5.8739	5.7255	1,500.8655	1,169.2695	1,063.7923	14.4162
28	08	3	SAT-M	0.0000	26.2684	4,010.2588	7,291.6485	3,531.5866	-7.2740	6.5145	1,169.2695	1,844.5268	983.2790	17.2184
28	08	4	SAT-W	0.0000	25.2087	4,294.4693	3,531.5866	5,877.0200	-4.1006	7.0540	1,063.7923	983.2790	1,517.4260	15.7629
28	08	5	Hispanic	0.2284	-0.0200	-5.8739	-7.2740	-4.1006	0.1768	-0.0155	-4.5324	-5.6127	-3.1641	0.0105
28	08	6	Hispanic*HSGPA	-0.0200	0.1070	5.7255	6.5145	7.0540	-0.0155	0.1066	5.6081	6.3692	6.9720	0.0542
28	08	7	Hispanic*SAT-CR	-5.8558	5.7255	1,500.8655	1,169.2695	1,063.7923	-4.5324	5.6081	1,466.4687	1,126.6743	1,039.7798	1.5001
28	08	8	Hispanic*SAT-M	-7.2516	6.5145	1,169.2695	1,844.5268	983.2790	-5.6127	6.3692	1,126.6743	1,791.7788	953.5430	2.3621
28	08	9	Hispanic*SAT-W	-4.0880	7.0540	1,063.7923	983.2790	1,517.4260	-3.1641	6.9720	1,039.7798	953.5430	1,500.6627	2.2423
28	08	10	FYGPA	2.4500	0.2471	14.4162	17.2184	15.7629	0.0105	0.0542	1.5001	2.3621	2.2423	0.9926

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
29	06	1	HSGPA	0.0000	0.3045	12.7707	11.9275	13.8738	-0.0131	0.0355	1.8558	1.8295	1.8419	0.2090
29	06	2	SAT-CR	0.0000	12.7707	7,209.8581	3,847.1821	5,057.4079	-3.8722	1.8558	970.5248	568.5391	721.0451	20.5157
29	06	3	SAT-M	0.0000	11.9275	3,847.1821	7,018.8629	3,635.7264	-5.4444	1.8295	568.5391	1,050.5321	534.3417	18.7449
29	06	4	SAT-W	0.0000	13.8738	5,057.4079	3,635.7264	6,654.8607	-4.1278	1.8419	721.0451	534.3417	816.6819	23.3057
29	06	5	Hispanic	0.1079	-0.0131	-3.8722	-5.4444	-4.1278	0.0963	-0.0117	-3.4543	-4.8569	-3.6823	-0.0352
29	06	6	Hispanic*HSGPA	-0.0131	0.0355	1.8558	1.8295	1.8419	-0.0117	0.0354	1.8051	1.7582	1.7879	0.0227
29	06	7	Hispanic*SAT-CR	-3.8696	1.8558	970.5248	568.5391	721.0451	-3.4543	1.8051	955.5410	547.4715	705.0725	3.3768
29	06	8	Hispanic*SAT-M	-5.4407	1.8295	568.5391	1,050.5321	534.3417	-4.8569	1.7582	547.4715	1,020.9104	511.8837	3.3993
29	06	9	Hispanic*SAT-W	-4.1249	1.8419	721.0451	534.3417	816.6819	-3.6823	1.7879	705.0725	511.8837	799.6552	3.5731
29	06	10	FYGPA	2.8013	0.2090	20.5157	18.7449	23.3057	-0.0352	0.0227	3.3768	3.3993	3.5731	0.7322
29	07	1	HSGPA	0.0000	0.2934	12.0820	11.2948	11.4630	-0.0099	0.0347	1.5372	1.4817	1.3056	0.2103
29	07	2	SAT-CR	0.0000	12.0820	7,031.9227	3,888.6905	4,870.4565	-3.3843	1.5372	785.9522	544.5579	604.1826	18.3241
29	07	3	SAT-M	0.0000	11.2948	3,888.6905	6,915.8869	3,401.1057	-3.9876	1.4817	544.5579	865.2406	478.6334	16.8547
29	07	4	SAT-W	0.0000	11.4630	4,870.4565	3,401.1057	6,133.8675	-2.5442	1.3056	604.1826	478.6334	755.4116	19.7491
29	07	5	Hispanic	0.1145	-0.0099	-3.3843	-3.9876	-2.5442	0.1015	-0.0088	-2.9967	-3.5310	-2.2528	-0.0319
29	07	6	Hispanic*HSGPA	-0.0099	0.0347	1.5372	1.4817	1.3056	-0.0088	0.0346	1.5037	1.4422	1.2804	0.0268
29	07	7	Hispanic*SAT-CR	-3.3823	1.5372	785.9522	544.5579	604.1826	-2.9967	1.5037	774.5054	531.0706	595.5774	3.2243
29	07	8	Hispanic*SAT-M	-3.9852	1.4817	544.5579	865.2406	478.6334	-3.5310	1.4422	531.0706	849.3489	468.4942	3.5166
29	07	9	Hispanic*SAT-W	-2.5427	1.3056	604.1826	478.6334	755.4116	-2.2528	1.2804	595.5774	468.4942	748.9426	3.1933
29	07	10	FYGPA	2.8630	0.2103	18.3241	16.8547	19.7491	-0.0319	0.0268	3.2243	3.5166	3.1933	0.7168
29	08	1	HSGPA	0.0000	0.2812	10.6221	10.8502	11.9591	-0.0127	0.0412	1.4744	1.7443	1.8215	0.1792
29	08	2	SAT-CR	0.0000	10.6221	6,735.3340	3,649.8402	4,818.7045	-5.2239	1.4744	998.7979	569.7864	710.8976	17.4192
29	08	3	SAT-M	0.0000	10.8502	3,649.8402	6,804.4736	3,399.0715	-5.2877	1.7443	569.7864	1,077.5147	598.7263	13.1679
29	08	4	SAT-W	0.0000	11.9591	4,818.7045	3,399.0715	6,240.2549	-5.4110	1.8215	710.8976	598.7263	946.7293	20.8436
29	08	5	Hispanic	0.1367	-0.0127	-5.2239	-5.2877	-5.4110	0.1180	-0.0110	-4.5100	-4.5651	-4.6716	-0.0311
29	08	6	Hispanic*HSGPA	-0.0127	0.0412	1.4744	1.7443	1.8215	-0.0110	0.0411	1.4080	1.6771	1.7527	0.0237
29	08	7	Hispanic*SAT-CR	-5.2211	1.4744	998.7979	569.7864	710.8976	-4.5100	1.4080	971.5233	542.1789	682.6460	3.0079
29	08	8	Hispanic*SAT-M	-5.2848	1.7443	569.7864	1,077.5147	598.7263	-4.5651	1.6771	542.1789	1,049.5704	570.1299	2.5433
29	08	9	Hispanic*SAT-W	-5.4081	1.8215	710.8976	598.7263	946.7293	-4.6716	1.7527	682.6460	570.1299	917.4657	3.2196
29	08	10	FYGPA	2.9142	0.1792	17.4192	13.1679	20.8436	-0.0311	0.0237	3.0079	2.5433	3.2196	0.5867
31	07	1	HSGPA	0.0000	0.2485	7.1548	9.3719	7.6950	-0.0115	0.0341	0.3668	0.7436	0.6498	0.1775
31	07	2	SAT-CR	0.0000	7.1548	6,873.5628	3,161.3328	4,439.5011	-4.0112	0.3668	879.5840	408.9874	648.8447	21.1460
31	07	3	SAT-M	0.0000	9.3719	3,161.3328	5,861.4676	2,895.8051	-3.4194	0.7436	408.9874	734.4441	385.8840	20.2504
31	07	4	SAT-W	0.0000	7.6950	4,439.5011	2,895.8051	5,480.5259	-4.1555	0.6498	648.8447	385.8840	783.6447	18.6226
31	07	5	Hispanic	0.1337	-0.0115	-4.0112	-3.4194	-4.1555	0.1159	-0.0099	-3.4750	-2.9623	-3.6000	-0.0223
31	07	6	Hispanic*HSGPA	-0.0115	0.0341	0.3668	0.7436	0.6498	-0.0099	0.0340	0.3208	0.7044	0.6021	0.0223
31	07	7	Hispanic*SAT-CR	-4.0077	0.3668	879.5840	408.9874	648.8447	-3.4750	0.3208	863.5084	395.2837	632.1910	2.0011
31	07	8	Hispanic*SAT-M	-3.4164	0.7436	408.9874	734.4441	385.8840	-2.9623	0.7044	395.2837	722.7623	371.6874	1.4428
31	07	9	Hispanic*SAT-W	-4.1519	0.6498	648.8447	385.8840	783.6447	-3.6000	0.6021	632.1910	371.6874	766.3918	2.1859
31	07	10	FYGPA	2.3917	0.1775	21.1460	20.2504	18.6226	-0.0223	0.0223	2.0011	1.4428	2.1859	0.9223

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
31	08	1	HSGPA	0.0000	0.2495	8.8782	12.4413	10.6512	-0.0167	0.0414	1.3271	1.9871	1.2095	0.1996
31	08	2	SAT-CR	0.0000	8.8782	6,658.7307	3,720.9385	4,922.9068	-4.8627	1.3271	1,100.7738	546.2218	701.2996	21.9145
31	08	3	SAT-M	0.0000	12.4413	3,720.9385	6,398.7430	3,625.7219	-3.9547	1.9871	546.2218	1,051.4776	511.3025	23.3870
31	08	4	SAT-W	0.0000	10.6512	4,922.9068	3,625.7219	6,388.1731	-4.6182	1.2095	701.2996	511.3025	830.1930	24.5039
31	08	5	Hispanic	0.1614	-0.0167	-4.8627	-3.9547	-4.6182	0.1354	-0.0140	-4.0780	-3.3165	-3.8729	-0.0302
31	08	6	Hispanic*HSGPA	-0.0167	0.0414	1.3271	1.9871	1.2095	-0.0140	0.0411	1.2461	1.9212	1.1326	0.0312
31	08	7	Hispanic*SAT-CR	-4.8585	1.3271	1,100.7738	546.2218	701.2996	-4.0780	1.2461	1,077.1481	527.0077	678.8621	3.6365
31	08	8	Hispanic*SAT-M	-3.9513	1.9871	546.2218	1,051.4776	511.3025	-3.3165	1.9212	527.0077	1,035.8513	493.0546	4.5800
31	08	9	Hispanic*SAT-W	-4.6142	1.2095	701.2996	511.3025	830.1930	-3.8729	1.1326	678.8621	493.0546	808.8839	3.5809
31	08	10	FYGPA	2.4952	0.1996	21.9145	23.3870	24.5039	-0.0302	0.0312	3.6365	4.5800	3.5809	0.8865
32	08	1	HSGPA	0.0000	0.2160	10.7327	10.2460	11.8546	-0.0085	0.0116	0.4770	0.9554	0.5381	0.0977
32	08	2	SAT-CR	0.0000	10.7327	5,206.7511	2,301.5049	3,527.6925	-0.3934	0.4770	224.0828	74.1110	122.5246	9.8518
32	08	3	SAT-M	0.0000	10.2460	2,301.5049	5,138.8869	2,292.8140	-1.3946	0.9554	74.1110	236.3610	100.7648	7.7191
32	08	4	SAT-W	0.0000	11.8546	3,527.6925	2,292.8140	5,415.9618	-0.9199	0.5381	122.5246	100.7648	184.0386	11.6039
32	08	5	Hispanic	0.0405	-0.0085	-0.3934	-1.3946	-0.9199	0.0389	-0.0081	-0.3775	-1.3381	-0.8827	-0.0050
32	08	6	Hispanic*HSGPA	-0.0084	0.0116	0.4770	0.9554	0.5381	-0.0081	0.0116	0.4737	0.9437	0.5304	0.0048
32	08	7	Hispanic*SAT-CR	-0.3928	0.4770	224.0828	74.1110	122.5246	-0.3775	0.4737	223.9282	73.5632	122.1632	0.4504
32	08	8	Hispanic*SAT-M	-1.3925	0.9554	74.1110	236.3610	100.7648	-1.3381	0.9437	73.5632	234.4190	99.4837	0.4797
32	08	9	Hispanic*SAT-W	-0.9186	0.5381	122.5246	100.7648	184.0386	-0.8827	0.5304	122.1632	99.4837	183.1935	0.3829
32	08	10	FYGPA	3.1676	0.0977	9.8518	7.7191	11.6039	-0.0050	0.0048	0.4504	0.4797	0.3829	0.2161
33	06	1	HSGPA	0.0000	0.1586	8.0208	8.7175	9.0950	-0.0239	0.0267	2.5597	2.8715	2.6842	0.1032
33	06	2	SAT-CR	0.0000	8.0208	6,385.7468	3,144.1407	4,471.8324	-7.8500	2.5597	1,303.3905	1,021.4117	1,095.2351	15.6828
33	06	3	SAT-M	0.0000	8.7175	3,144.1407	6,127.4779	3,083.8100	-8.1249	2.8715	1,021.4117	1,605.5973	1,021.8536	11.4527
33	06	4	SAT-W	0.0000	9.0950	4,471.8324	3,083.8100	6,091.5907	-6.8253	2.6842	1,095.2351	1,021.8536	1,226.1985	18.1229
33	06	5	Hispanic	0.1179	-0.0239	-7.8500	-8.1249	-6.8253	0.1041	-0.0211	-6.9242	-7.1667	-6.0204	-0.0404
33	06	6	Hispanic*HSGPA	-0.0239	0.0267	2.5597	2.8715	2.6842	-0.0211	0.0262	2.3718	2.6770	2.5209	0.0208
33	06	7	Hispanic*SAT-CR	-7.8462	2.5597	1,303.3905	1,021.4117	1,095.2351	-6.9242	2.3718	1,241.7984	957.6623	1,041.6828	4.2354
33	06	8	Hispanic*SAT-M	-8.1210	2.8715	1,021.4117	1,605.5973	1,021.8536	-7.1667	2.6770	957.6623	1,539.6150	966.4255	4.1234
33	06	9	Hispanic*SAT-W	-6.8220	2.6842	1,095.2351	1,021.8536	1,226.1985	-6.0204	2.5209	1,041.6828	966.4255	1,179.6365	4.3111
33	06	10	FYGPA	3.1768	0.1032	15.6828	11.4527	18.1229	-0.0404	0.0208	4.2354	4.1234	4.3111	0.3628
34	06	1	HSGPA	0.0000	0.2200	7.7318	9.6438	10.5005	-0.0064	0.0123	0.5003	1.0332	0.9252	0.1502
34	06	2	SAT-CR	0.0000	7.7318	6,120.3837	2,689.2122	4,173.5063	-1.4987	0.5003	353.5927	213.1551	249.3769	9.5951
34	06	3	SAT-M	0.0000	9.6438	2,689.2122	5,587.4370	2,553.4205	-2.6564	1.0332	213.1551	510.4252	278.8036	12.1908
34	06	4	SAT-W	0.0000	10.5005	4,173.5063	2,553.4205	6,107.1928	-1.9410	0.9252	249.3769	278.8036	417.2175	15.0613
34	06	5	Hispanic	0.0502	-0.0064	-1.4987	-2.6564	-1.9410	0.0477	-0.0061	-1.4234	-2.5231	-1.8435	-0.0134
34	06	6	Hispanic*HSGPA	-0.0064	0.0123	0.5003	1.0332	0.9252	-0.0061	0.0123	0.4907	1.0162	0.9128	0.0051
34	06	7	Hispanic*SAT-CR	-1.4976	0.5003	353.5927	213.1551	249.3769	-1.4234	0.4907	351.3482	209.1767	246.4700	0.4055
34	06	8	Hispanic*SAT-M	-2.6546	1.0332	213.1551	510.4252	278.8036	-2.5231	1.0162	209.1767	503.3735	273.6512	0.9347
34	06	9	Hispanic*SAT-W	-1.9396	0.9252	249.3769	278.8036	417.2175	-1.8435	0.9128	246.4700	273.6512	413.4529	1.3775
34	06	10	FYGPA	2.9857	0.1502	9.5951	12.1908	15.0613	-0.0134	0.0051	0.4055	0.9347	1.3775	0.4642

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
34	07	1	HSGPA	0.0000	0.2176	7.6341	6.8596	8.5483	-0.0083	0.0125	0.6605	0.2020	0.7568	0.1428
34	07	2	SAT-CR	0.0000	7.6341	6,465.4026	3,059.7961	4,353.9565	-0.7870	0.6605	407.2056	127.8906	291.3858	11.5936
34	07	3	SAT-M	0.0000	6.8596	3,059.7961	5,749.9393	2,539.3531	-1.0635	0.2020	127.8906	290.9883	109.8761	11.6778
34	07	4	SAT-W	0.0000	8.5483	4,353.9565	2,539.3531	6,171.5294	-1.0914	0.7568	291.3858	109.8761	367.5161	15.6191
34	07	5	Hispanic	0.0559	-0.0083	-0.7870	-1.0635	-1.0914	0.0528	-0.0078	-0.7430	-1.0040	-1.0304	-0.0122
34	07	6	Hispanic*HSGPA	-0.0083	0.0125	0.6605	0.2020	0.7568	-0.0078	0.0125	0.6540	0.1932	0.7478	0.0075
34	07	7	Hispanic*SAT-CR	-0.7864	0.6605	407.2056	127.8906	291.3858	-0.7430	0.6540	406.5867	127.0542	290.5274	1.1139
34	07	8	Hispanic*SAT-M	-1.0627	0.2020	127.8906	290.9883	109.8761	-1.0040	0.1932	127.0542	289.8581	108.7162	0.2276
34	07	9	Hispanic*SAT-W	-1.0907	0.7568	291.3858	109.8761	367.5161	-1.0304	0.7478	290.5274	108.7162	366.3257	0.7718
34	07	10	FYGPA	3.0284	0.1428	11.5936	11.6778	15.6191	-0.0122	0.0075	1.1139	0.2276	0.7718	0.4136
34	08	1	HSGPA	0.0000	0.2118	7.2899	8.3122	9.1128	-0.0088	0.0140	0.7391	0.8045	0.8527	0.1487
34	08	2	SAT-CR	0.0000	7.2899	6,858.3018	3,289.1630	4,895.5477	-2.7715	0.7391	460.3888	271.2562	368.1236	15.4005
34	08	3	SAT-M	0.0000	8.3122	3,289.1630	6,138.6505	3,252.9372	-2.4011	0.8045	271.2562	400.3818	280.9566	14.0755
34	08	4	SAT-W	0.0000	9.1128	4,895.5477	3,252.9372	6,809.1927	-2.4307	0.8527	368.1236	280.9566	458.9503	19.0786
34	08	5	Hispanic	0.0503	-0.0088	-2.7715	-2.4011	-2.4307	0.0478	-0.0084	-2.6320	-2.2803	-2.3083	-0.0154
34	08	6	Hispanic*HSGPA	-0.0088	0.0140	0.7391	0.8045	0.8527	-0.0084	0.0139	0.7147	0.7833	0.8313	0.0112
34	08	7	Hispanic*SAT-CR	-2.7697	0.7391	460.3888	271.2562	368.1236	-2.6320	0.7147	452.7125	264.6058	361.3914	1.8162
34	08	8	Hispanic*SAT-M	-2.3995	0.8045	271.2562	400.3818	280.9566	-2.2803	0.7833	264.6058	394.6202	275.1242	1.5476
34	08	9	Hispanic*SAT-W	-2.4290	0.8527	368.1236	280.9566	458.9503	-2.3083	0.8313	361.3914	275.1242	453.0461	2.0458
34	08	10	FYGPA	3.0116	0.1487	15.4005	14.0755	19.0786	-0.0154	0.0112	1.8162	1.5476	2.0458	0.4679
35	06	1	HSGPA	0.0000	0.1282	3.3712	4.3244	3.9623	-0.0127	0.0181	0.8577	0.6355	0.9104	0.0595
35	06	2	SAT-CR	0.0000	3.3712	4,148.7801	1,413.9824	2,715.3842	-3.9422	0.8577	579.8028	343.7219	385.2606	9.1619
35	06	3	SAT-M	0.0000	4.3244	1,413.9824	4,126.4052	1,484.9038	-4.0212	0.6355	343.7219	560.0563	265.2661	9.3814
35	06	4	SAT-W	0.0000	3.9623	2,715.3842	1,484.9038	4,886.7884	-3.9313	0.9104	385.2606	265.2661	522.7858	11.6063
35	06	5	Hispanic	0.0861	-0.0127	-3.9422	-4.0212	-3.9313	0.0788	-0.0116	-3.6029	-3.6751	-3.5929	-0.0305
35	06	6	Hispanic*HSGPA	-0.0127	0.0181	0.8577	0.6355	0.9104	-0.0116	0.0180	0.8077	0.5846	0.8606	0.0092
35	06	7	Hispanic*SAT-CR	-3.9373	0.8577	579.8028	343.7219	385.2606	-3.6029	0.8077	564.2811	327.8894	369.7820	2.1694
35	06	8	Hispanic*SAT-M	-4.0161	0.6355	343.7219	560.0563	265.2661	-3.6751	0.5846	327.8894	543.9067	249.4774	1.9190
35	06	9	Hispanic*SAT-W	-3.9264	0.9104	385.2606	265.2661	522.7858	-3.5929	0.8606	369.7820	249.4774	507.3500	2.8235
35	06	10	FYGPA	3.1925	0.0595	9.1619	9.3814	11.6063	-0.0305	0.0092	2.1694	1.9190	2.8235	0.2497
35	07	1	HSGPA	0.0000	0.1436	3.2364	3.3714	4.6485	-0.0045	0.0116	0.5952	1.0040	0.7982	0.0678
35	07	2	SAT-CR	0.0000	3.2364	4,477.0779	1,594.8571	2,805.1616	-3.0755	0.5952	403.9597	281.5351	306.1799	7.9280
35	07	3	SAT-M	0.0000	3.3714	1,594.8571	4,211.0146	1,457.4701	-3.7895	1.0040	281.5351	607.5132	287.9469	9.2923
35	07	4	SAT-W	0.0000	4.6485	2,805.1616	1,457.4701	5,088.3849	-3.1095	0.7982	306.1799	287.9469	424.4969	10.4915
35	07	5	Hispanic	0.0711	-0.0045	-3.0755	-3.7895	-3.1095	0.0661	-0.0042	-2.8570	-3.5202	-2.8886	-0.0179
35	07	6	Hispanic*HSGPA	-0.0045	0.0116	0.5952	1.0040	0.7982	-0.0042	0.0116	0.5812	0.9868	0.7842	0.0072
35	07	7	Hispanic*SAT-CR	-3.0716	0.5952	403.9597	281.5351	306.1799	-2.8570	0.5812	394.5127	269.8951	296.6285	1.7506
35	07	8	Hispanic*SAT-M	-3.7847	1.0040	281.5351	607.5132	287.9469	-3.5202	0.9868	269.8951	593.1711	276.1782	2.0573
35	07	9	Hispanic*SAT-W	-3.1056	0.7982	306.1799	287.9469	424.4969	-2.8886	0.7842	296.6285	276.1782	414.8399	1.6689
35	07	10	FYGPA	3.1262	0.0678	7.9280	9.2923	10.4915	-0.0179	0.0072	1.7506	2.0573	1.6689	0.2335

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
35	08	1	HSGPA	0.0000	0.1399	4.4766	4.9850	4.7143	-0.0195	0.0206	0.4146	1.3102	1.2723	0.0819
35	08	2	SAT-CR	0.0000	4.4766	4,508.4947	1,803.1937	2,614.4910	-2.9996	0.4146	555.3719	258.1072	402.5989	8.0720
35	08	3	SAT-M	0.0000	4.9850	1,803.1937	4,884.4581	1,611.9672	-5.8218	1.3102	258.1072	829.2077	359.8451	9.8078
35	08	4	SAT-W	0.0000	4.7143	2,614.4910	1,611.9672	4,913.9775	-4.3846	1.2723	402.5989	359.8451	677.1938	10.1298
35	08	5	Hispanic	0.1038	-0.0195	-2.9996	-5.8218	-4.3846	0.0932	-0.0174	-2.6881	-5.2173	-3.9293	-0.0345
35	08	6	Hispanic*HSGPA	-0.0194	0.0206	0.4146	1.3102	1.2723	-0.0174	0.0202	0.3563	1.1970	1.1871	0.0165
35	08	7	Hispanic*SAT-CR	-2.9953	0.4146	555.3719	258.1072	402.5989	-2.6881	0.3563	546.3873	240.6690	389.4658	0.8667
35	08	8	Hispanic*SAT-M	-5.8136	1.3102	258.1072	829.2077	359.8451	-5.2173	1.1970	240.6690	795.3621	334.3552	2.4473
35	08	9	Hispanic*SAT-W	-4.3783	1.2723	402.5989	359.8451	677.1938	-3.9293	1.1871	389.4658	334.3552	657.9967	1.8675
35	08	10	FYGPA	3.1736	0.0819	8.0720	9.8078	10.1298	-0.0345	0.0165	0.8667	2.4473	1.8675	0.2652
36	07	1	HSGPA	0.0000	0.2268	8.9864	9.3782	11.1359	-0.0062	0.0167	1.0921	1.3921	1.2914	0.1226
36	07	2	SAT-CR	0.0000	8.9864	7,423.1516	3,854.3695	5,452.1537	-3.2232	1.0921	814.4226	378.5055	561.3581	22.2277
36	07	3	SAT-M	0.0000	9.3782	3,854.3695	6,114.9301	3,270.4269	-3.3414	1.3921	378.5055	501.4650	324.3571	15.9791
36	07	4	SAT-W	0.0000	11.1359	5,452.1537	3,270.4269	6,640.6262	-2.2732	1.2914	561.3581	324.3571	624.5498	21.9852
36	07	5	Hispanic	0.0674	-0.0062	-3.2232	-3.3414	-2.2732	0.0631	-0.0058	-3.0058	-3.1160	-2.1199	-0.0051
36	07	6	Hispanic*HSGPA	-0.0062	0.0167	1.0921	1.3921	1.2914	-0.0058	0.0166	1.0723	1.3715	1.2774	0.0124
36	07	7	Hispanic*SAT-CR	-3.2138	1.0921	814.4226	378.5055	561.3581	-3.0058	1.0723	804.0639	367.7671	554.0524	2.2080
36	07	8	Hispanic*SAT-M	-3.3316	1.3921	378.5055	501.4650	324.3571	-3.1160	1.3715	367.7671	490.3328	316.7836	2.0426
36	07	9	Hispanic*SAT-W	-2.2666	1.2914	561.3581	324.3571	624.5498	-2.1199	1.2774	554.0524	316.7836	619.3973	2.2751
36	07	10	FYGPA	3.0727	0.1226	22.2277	15.9791	21.9852	-0.0051	0.0124	2.2080	2.0426	2.2751	0.3716
36	08	1	HSGPA	0.0000	0.2053	6.7034	8.7269	10.0252	-0.0112	0.0088	0.1592	0.4741	0.0911	0.1278
36	08	2	SAT-CR	0.0000	6.7034	6,250.1639	2,864.9183	4,855.4619	-1.8035	0.1592	415.3452	157.8501	445.0803	17.6592
36	08	3	SAT-M	0.0000	8.7269	2,864.9183	6,014.0723	3,218.1514	-2.6787	0.4741	157.8501	402.2383	169.0254	16.0900
36	08	4	SAT-W	0.0000	10.0252	4,855.4619	3,218.1514	7,159.4563	-1.3974	0.0911	445.0803	169.0254	666.7395	23.0738
36	08	5	Hispanic	0.0497	-0.0112	-1.8035	-2.6787	-1.3974	0.0474	-0.0106	-1.7139	-2.5457	-1.3280	-0.0168
36	08	6	Hispanic*HSGPA	-0.0111	0.0088	0.1592	0.4741	0.0911	-0.0106	0.0087	0.1392	0.4443	0.0755	0.0051
36	08	7	Hispanic*SAT-CR	-1.7975	0.1592	415.3452	157.8501	445.0803	-1.7139	0.1392	412.1034	153.0351	442.5684	2.0004
36	08	8	Hispanic*SAT-M	-2.6698	0.4741	157.8501	402.2383	169.0254	-2.5457	0.4443	153.0351	395.0866	165.2945	1.8246
36	08	9	Hispanic*SAT-W	-1.3928	0.0911	445.0803	169.0254	666.7395	-1.3280	0.0755	442.5684	165.2945	664.7931	2.9655
36	08	10	FYGPA	3.1249	0.1278	17.6592	16.0900	23.0738	-0.0168	0.0051	2.0004	1.8246	2.9655	0.3097
39	07	1	HSGPA	0.0000	0.1600	3.5121	3.5327	1.8734	0.0008	0.0212	0.8669	0.5940	-0.1035	0.0743
39	07	2	SAT-CR	0.0000	3.5121	4,555.5526	1,920.7143	2,386.2928	-3.6352	0.8669	428.2762	67.7276	241.9716	11.0406
39	07	3	SAT-M	0.0000	3.5327	1,920.7143	4,401.7046	1,629.7310	-3.0337	0.5940	67.7276	526.2128	57.5509	12.9692
39	07	4	SAT-W	0.0000	1.8734	2,386.2928	1,629.7310	3,877.1445	-2.5607	-0.1035	241.9716	57.5509	390.5908	8.0804
39	07	5	Hispanic	0.1308	0.0008	-3.6352	-3.0337	-2.5607	0.1143	0.0007	-3.1596	-2.6367	-2.2256	-0.0126
39	07	6	Hispanic*HSGPA	0.0008	0.0212	0.8669	0.5940	-0.1035	0.0007	0.0212	0.8700	0.5965	-0.1013	0.0075
39	07	7	Hispanic*SAT-CR	-3.6182	0.8669	428.2762	67.7276	241.9716	-3.1596	0.8700	415.1232	56.7512	232.7066	1.0666
39	07	8	Hispanic*SAT-M	-3.0195	0.5940	67.7276	526.2128	57.5509	-2.6367	0.5965	56.7512	517.0528	49.8190	2.0562
39	07	9	Hispanic*SAT-W	-2.5487	-0.1035	241.9716	57.5509	390.5908	-2.2256	-0.1013	232.7066	49.8190	384.0645	-0.2501
39	07	10	FYGPA	2.9145	0.0743	11.0406	12.9692	8.0804	-0.0126	0.0075	1.0666	2.0562	-0.2501	0.2309

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
40	06	1	HSGPA	0.0000	0.1871	8.8067	7.9285	8.8049	-0.0047	0.0170	0.9480	1.2895	0.9509	0.0949
40	06	2	SAT-CR	0.0000	8.8067	5,720.8595	2,910.5073	4,096.7128	-5.2179	0.9480	871.8208	640.7691	780.9388	14.5668
40	06	3	SAT-M	0.0000	7.9285	2,910.5073	5,892.2388	2,945.4731	-6.1191	1.2895	640.7691	1,080.3431	686.6462	11.5873
40	06	4	SAT-W	0.0000	8.8049	4,096.7128	2,945.4731	6,225.2299	-5.2469	0.9509	780.9388	686.6462	1,003.5060	16.5418
40	06	5	Hispanic	0.0909	-0.0047	-5.2179	-6.1191	-5.2469	0.0826	-0.0042	-4.7438	-5.5631	-4.7702	-0.0230
40	06	6	Hispanic*HSGPA	-0.0047	0.0170	0.9480	1.2895	0.9509	-0.0042	0.0170	0.9236	1.2609	0.9264	0.0066
40	06	7	Hispanic*SAT-CR	-5.2150	0.9480	871.8208	640.7691	780.9388	-4.7438	0.9236	844.6094	608.8578	753.5758	2.3792
40	06	8	Hispanic*SAT-M	-6.1158	1.2895	640.7691	1,080.3431	686.6462	-5.5631	1.2609	608.8578	1,042.9200	654.5570	2.6430
40	06	9	Hispanic*SAT-W	-5.2441	0.9509	780.9388	686.6462	1,003.5060	-4.7702	0.9264	753.5758	654.5570	975.9906	2.5572
40	06	10	FYGPA	3.1794	0.0949	14.5668	11.5873	16.5418	-0.0230	0.0066	2.3792	2.6430	2.5572	0.2967
40	07	1	HSGPA	0.0000	0.1837	10.0885	10.1531	10.0892	-0.0124	0.0245	1.6906	1.5282	1.9081	0.0945
40	07	2	SAT-CR	0.0000	10.0885	6,060.0865	3,260.4790	4,606.0786	-6.1278	1.6906	971.1037	767.7774	884.3938	14.5717
40	07	3	SAT-M	0.0000	10.1531	3,260.4790	6,425.7124	3,334.5432	-6.9552	1.5282	767.7774	1,069.4086	817.7211	13.1483
40	07	4	SAT-W	0.0000	10.0892	4,606.0786	3,334.5432	6,791.6247	-6.7029	1.9081	884.3938	817.7211	1,097.3350	16.1750
40	07	5	Hispanic	0.0973	-0.0124	-6.1278	-6.9552	-6.7029	0.0879	-0.0112	-5.5314	-6.2782	-6.0505	-0.0377
40	07	6	Hispanic*HSGPA	-0.0124	0.0245	1.6906	1.5282	1.9081	-0.0112	0.0243	1.6149	1.4422	1.8253	0.0138
40	07	7	Hispanic*SAT-CR	-6.1245	1.6906	971.1037	767.7774	884.3938	-5.5314	1.6149	933.5743	725.1807	843.3422	3.4391
40	07	8	Hispanic*SAT-M	-6.9514	1.5282	767.7774	1,069.4086	817.7211	-6.2782	1.4422	725.1807	1,021.0603	771.1265	3.5866
40	07	9	Hispanic*SAT-W	-6.6993	1.9081	884.3938	817.7211	1,097.3350	-6.0505	1.8253	843.3422	771.1265	1,052.4305	3.8096
40	07	10	FYGPA	3.2122	0.0945	14.5717	13.1483	16.1750	-0.0377	0.0138	3.4391	3.5866	3.8096	0.2832
40	08	1	HSGPA	0.0000	0.1699	5.9634	6.6892	5.5419	-0.0100	0.0227	0.5416	0.8638	0.7199	0.0838
40	08	2	SAT-CR	0.0000	5.9634	5,743.8264	2,811.7950	4,160.3745	-5.1512	0.5416	907.2195	653.7135	796.2237	12.8824
40	08	3	SAT-M	0.0000	6.6892	2,811.7950	5,888.2708	2,844.1800	-6.3343	0.8638	653.7135	1,129.9812	779.3017	9.6599
40	08	4	SAT-W	0.0000	5.5419	4,160.3745	2,844.1800	6,210.4065	-6.3479	0.7199	796.2237	779.3017	1,123.2412	13.4036
40	08	5	Hispanic	0.1056	-0.0100	-5.1512	-6.3343	-6.3479	0.0945	-0.0090	-4.6074	-5.6657	-5.6778	-0.0315
40	08	6	Hispanic*HSGPA	-0.0100	0.0227	0.5416	0.8638	0.7199	-0.0090	0.0226	0.4901	0.8004	0.6564	0.0115
40	08	7	Hispanic*SAT-CR	-5.1483	0.5416	907.2195	653.7135	796.2237	-4.6074	0.4901	880.6997	621.1025	763.5429	2.7963
40	08	8	Hispanic*SAT-M	-6.3308	0.8638	653.7135	1,129.9812	779.3017	-5.6657	0.8004	621.1025	1,089.8801	739.1147	2.3913
40	08	9	Hispanic*SAT-W	-6.3443	0.7199	796.2237	779.3017	1,123.2412	-5.6778	0.6564	763.5429	739.1147	1,082.9680	3.0686
40	08	10	FYGPA	3.1658	0.0838	12.8824	9.6599	13.4036	-0.0315	0.0115	2.7963	2.3913	3.0686	0.2917
41	07	1	HSGPA	0.0000	0.1826	3.6378	4.9073	5.3545	-0.0086	0.0291	0.4234	0.7576	0.6839	0.0733
41	07	2	SAT-CR	0.0000	3.6378	4,767.7786	1,856.7072	2,990.3406	-1.3142	0.4234	625.3355	251.3081	362.7704	8.3623
41	07	3	SAT-M	0.0000	4.9073	1,856.7072	4,509.7048	1,638.5887	-2.0854	0.7576	251.3081	655.7013	210.6670	6.4831
41	07	4	SAT-W	0.0000	5.3545	2,990.3406	1,638.5887	4,953.7328	-1.0329	0.6839	362.7704	210.6670	611.9871	10.8539
41	07	5	Hispanic	0.1452	-0.0086	-1.3142	-2.0854	-1.0329	0.1241	-0.0074	-1.1234	-1.7826	-0.8829	-0.0059
41	07	6	Hispanic*HSGPA	-0.0086	0.0291	0.4234	0.7576	0.6839	-0.0074	0.0290	0.4121	0.7396	0.6750	0.0103
41	07	7	Hispanic*SAT-CR	-1.3139	0.4234	625.3355	251.3081	362.7704	-1.1234	0.4121	623.6088	248.5681	361.4133	0.8703
41	07	8	Hispanic*SAT-M	-2.0849	0.7576	251.3081	655.7013	210.6670	-1.7826	0.7396	248.5681	651.3534	208.5135	0.8753
41	07	9	Hispanic*SAT-W	-1.0327	0.6839	362.7704	210.6670	611.9871	-0.8829	0.6750	361.4133	208.5135	610.9205	1.1811
41	07	10	FYGPA	3.1494	0.0733	8.3623	6.4831	10.8539	-0.0059	0.0103	0.8703	0.8753	1.1811	0.3235

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
41	08	1	HSGPA	0.0000	0.1593	2.8009	3.2206	3.4743	-0.0054	0.0250	0.0932	0.2718	0.3466	0.0594
41	08	2	SAT-CR	0.0000	2.8009	4,703.5154	1,879.1564	3,049.2569	-1.1897	0.0932	704.8891	327.7426	431.7136	7.3829
41	08	3	SAT-M	0.0000	3.2206	1,879.1564	4,444.9481	1,798.7569	-2.4997	0.2718	327.7426	744.1246	294.8415	5.8606
41	08	4	SAT-W	0.0000	3.4743	3,049.2569	1,798.7569	4,986.2896	-1.5679	0.3466	431.7136	294.8415	713.0949	9.6247
41	08	5	Hispanic	0.1535	-0.0054	-1.1897	-2.4997	-1.5679	0.1300	-0.0046	-1.0071	-2.1160	-1.3273	-0.0034
41	08	6	Hispanic*HSGPA	-0.0054	0.0250	0.0932	0.2718	0.3466	-0.0046	0.0250	0.0867	0.2582	0.3380	0.0085
41	08	7	Hispanic*SAT-CR	-1.1894	0.0932	704.8891	327.7426	431.7136	-1.0071	0.0867	703.4740	324.7695	429.8487	0.6475
41	08	8	Hispanic*SAT-M	-2.4990	0.2718	327.7426	744.1246	294.8415	-2.1160	0.2582	324.7695	737.8779	290.9232	0.8083
41	08	9	Hispanic*SAT-W	-1.5675	0.3466	431.7136	294.8415	713.0949	-1.3273	0.3380	429.8487	290.9232	710.6371	1.2186
41	08	10	FYGPA	3.2177	0.0594	7.3829	5.8606	9.6247	-0.0034	0.0085	0.6475	0.8083	1.2186	0.2877
42	07	1	HSGPA	0.0000	0.0985	2.5127	0.3667	0.9679	-0.0020	0.0071	0.2387	-0.1474	-0.0281	0.0238
42	07	2	SAT-CR	0.0000	2.5127	4,315.6715	869.0451	2,153.6497	-2.5837	0.2387	355.4408	108.2440	266.8638	4.8884
42	07	3	SAT-M	0.0000	0.3667	869.0451	3,453.0492	918.0167	-2.4408	-0.1474	108.2440	388.7842	203.6401	2.7123
42	07	4	SAT-W	0.0000	0.9679	2,153.6497	918.0167	4,124.7125	-2.0913	-0.0281	266.8638	203.6401	404.6055	3.6155
42	07	5	Hispanic	0.0563	-0.0020	-2.5837	-2.4408	-2.0913	0.0533	-0.0019	-2.4381	-2.3033	-1.9735	-0.0086
42	07	6	Hispanic*HSGPA	-0.0020	0.0071	0.2387	-0.1474	-0.0281	-0.0019	0.0071	0.2334	-0.1523	-0.0323	0.0016
42	07	7	Hispanic*SAT-CR	-2.5791	0.2387	355.4408	108.2440	266.8638	-2.4381	0.2334	348.7773	101.9489	261.4701	0.7209
42	07	8	Hispanic*SAT-M	-2.4365	-0.1474	108.2440	388.7842	203.6401	-2.3033	-0.1523	101.9489	382.8371	198.5445	0.9732
42	07	9	Hispanic*SAT-W	-2.0876	-0.0281	266.8638	203.6401	404.6055	-1.9735	-0.0323	261.4701	198.5445	400.2396	0.8587
42	07	10	FYGPA	3.4928	0.0238	4.8884	2.7123	3.6155	-0.0086	0.0016	0.7209	0.9732	0.8587	0.1237
42	08	1	HSGPA	0.0000	0.0743	1.9911	0.7359	0.9293	0.0082	0.0036	-0.0103	-0.4185	-0.3577	0.0206
42	08	2	SAT-CR	0.0000	1.9911	4,098.6169	786.0304	2,002.2822	-1.6736	-0.0103	253.9880	92.0611	213.8111	3.7684
42	08	3	SAT-M	0.0000	0.7359	786.0304	3,524.9925	1,385.5674	-3.1947	-0.4185	92.0611	352.4283	288.7503	3.7721
42	08	4	SAT-W	0.0000	0.9293	2,002.2822	1,385.5674	4,290.7374	-4.1974	-0.3577	213.8111	288.7503	590.4245	6.9191
42	08	5	Hispanic	0.0663	0.0082	-1.6736	-3.1947	-4.1974	0.0620	0.0077	-1.5627	-2.9831	-3.9194	-0.0124
42	08	6	Hispanic*HSGPA	0.0082	0.0036	-0.0103	-0.4185	-0.3577	0.0077	0.0035	0.0034	-0.3923	-0.3233	-0.0001
42	08	7	Hispanic*SAT-CR	-1.6701	-0.0103	253.9880	92.0611	213.8111	-1.5627	0.0034	251.1929	86.7255	206.8008	0.8969
42	08	8	Hispanic*SAT-M	-3.1881	-0.4185	92.0611	352.4283	288.7503	-2.9831	-0.3923	86.7255	342.2432	275.3684	0.9310
42	08	9	Hispanic*SAT-W	-4.1888	-0.3577	213.8111	288.7503	590.4245	-3.9194	-0.3233	206.8008	275.3684	572.8425	1.6754
42	08	10	FYGPA	3.5440	0.0206	3.7684	3.7721	6.9191	-0.0124	-0.0001	0.8969	0.9310	1.6754	0.1231
43	06	1	HSGPA	0.0000	0.1237	7.7251	5.9648	6.9810	0.0078	0.0115	-0.1865	-0.9467	-0.2518	0.0410
43	06	2	SAT-CR	0.0000	7.7251	5,138.5569	2,421.8776	3,176.6145	-3.2354	-0.1865	451.0514	239.5404	437.7892	12.6148
43	06	3	SAT-M	0.0000	5.9648	2,421.8776	4,906.4755	2,414.1468	-4.4925	-0.9467	239.5404	653.1723	425.0563	10.8067
43	06	4	SAT-W	0.0000	6.9810	3,176.6145	2,414.1468	5,094.0586	-5.2249	-0.2518	437.7892	425.0563	795.8432	10.4172
43	06	5	Hispanic	0.0989	0.0078	-3.2354	-4.4925	-5.2249	0.0894	0.0070	-2.9156	-4.0484	-4.7084	-0.0130
43	06	6	Hispanic*HSGPA	0.0078	0.0115	-0.1865	-0.9467	-0.2518	0.0070	0.0114	-0.1614	-0.9119	-0.2112	-0.0010
43	06	7	Hispanic*SAT-CR	-3.2231	-0.1865	451.0514	239.5404	437.7892	-2.9156	-0.1614	440.6233	225.0605	420.9486	0.7096
43	06	8	Hispanic*SAT-M	-4.4754	-0.9467	239.5404	653.1723	425.0563	-4.0484	-0.9119	225.0605	633.0665	401.6725	1.9333
43	06	9	Hispanic*SAT-W	-5.2051	-0.2518	437.7892	425.0563	795.8432	-4.7084	-0.2112	420.9486	401.6725	768.6470	1.4977
43	06	10	FYGPA	3.3322	0.0410	12.6148	10.8067	10.4172	-0.0130	-0.0010	0.7096	1.9333	1.4977	0.1526



## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
43	07	1	HSGPA	0.0000	0.1214	7.0462	4.5549	5.5904	-0.0077	0.0153	1.1102	0.6752	0.9157	0.0598
43	07	2	SAT-CR	0.0000	7.0462	4,914.6387	1,957.3736	3,196.2871	-7.1804	1.1102	1,209.3950	777.4463	958.0538	13.3385
43	07	3	SAT-M	0.0000	4.5549	1,957.3736	4,592.3224	2,118.1518	-5.7929	0.6752	777.4463	892.1519	711.0062	13.8528
43	07	4	SAT-W	0.0000	5.5904	3,196.2871	2,118.1518	4,843.3168	-5.3053	0.9157	958.0538	711.0062	1,029.7958	13.5023
43	07	5	Hispanic	0.1118	-0.0077	-7.1804	-5.7929	-5.3053	0.0997	-0.0069	-6.3773	-5.1451	-4.7119	-0.0274
43	07	6	Hispanic*HSGPA	-0.0077	0.0153	1.1102	0.6752	0.9157	-0.0069	0.0152	1.0549	0.6305	0.8748	0.0073
43	07	7	Hispanic*SAT-CR	-7.1568	1.1102	1,209.3950	777.4463	958.0538	-6.3773	1.0549	1,158.0066	735.9875	920.0851	4.1442
43	07	8	Hispanic*SAT-M	-5.7739	0.6752	777.4463	892.1519	711.0062	-5.1451	0.6305	735.9875	858.7040	680.3740	3.8805
43	07	9	Hispanic*SAT-W	-5.2878	0.9157	958.0538	711.0062	1,029.7958	-4.7119	0.8748	920.0851	680.3740	1,001.7424	3.6882
43	07	10	FYGPA	3.3113	0.0598	13.3385	13.8528	13.5023	-0.0274	0.0073	4.1442	3.8805	3.6882	0.1676
43	08	1	HSGPA	0.0000	0.1188	6.2844	3.9643	4.1866	0.0059	0.0177	0.3073	-0.0876	0.3873	0.0398
43	08	2	SAT-CR	0.0000	6.2844	4,989.3302	1,999.1721	3,024.8571	-10.0409	0.3073	1,222.9992	660.3588	1,149.4706	10.4592
43	08	3	SAT-M	0.0000	3.9643	1,999.1721	4,573.7087	2,244.1857	-8.7607	-0.0876	660.3588	1,426.9243	943.6285	9.9395
43	08	4	SAT-W	0.0000	4.1866	3,024.8571	2,244.1857	5,036.5392	-11.3196	0.3873	1,149.4706	943.6285	1,555.9876	12.1523
43	08	5	Hispanic	0.1598	0.0059	-10.0409	-8.7607	-11.3196	0.1350	0.0049	-8.4364	-7.3608	-9.5108	-0.0448
43	08	6	Hispanic*HSGPA	0.0058	0.0177	0.3073	-0.0876	0.3873	0.0049	0.0177	0.3659	-0.0366	0.4534	0.0032
43	08	7	Hispanic*SAT-CR	-9.9891	0.3073	1,222.9992	660.3588	1,149.4706	-8.4364	0.3659	1,122.7000	572.8467	1,036.3975	3.7641
43	08	8	Hispanic*SAT-M	-8.7156	-0.0876	660.3588	1,426.9243	943.6285	-7.3608	-0.0366	572.8467	1,350.5692	844.9711	3.5839
43	08	9	Hispanic*SAT-W	-11.2613	0.3873	1,149.4706	943.6285	1,555.9876	-9.5108	0.4534	1,036.3975	844.9711	1,428.5138	4.1943
43	08	10	FYGPA	3.3485	0.0398	10.4592	9.9395	12.1523	-0.0448	0.0032	3.7641	3.5839	4.1943	0.1268
45	06	1	HSGPA	0.0000	0.2675	5.7023	8.2867	8.1165	-0.0039	0.0045	-0.0161	0.0779	0.0634	0.1160
45	06	2	SAT-CR	0.0000	5.7023	4,548.7486	1,759.8312	2,908.8891	0.0508	-0.0161	83.6862	5.3091	44.6443	9.1313
45	06	3	SAT-M	0.0000	8.2867	1,759.8312	4,995.8152	1,693.6370	-0.1084	0.0779	5.3091	153.0919	74.3843	9.7802
45	06	4	SAT-W	0.0000	8.1165	2,908.8891	1,693.6370	4,589.1928	-0.3145	0.0634	44.6443	74.3843	137.2548	13.3610
45	06	5	Hispanic	0.0222	-0.0039	0.0508	-0.1084	-0.3145	0.0217	-0.0038	0.0497	-0.1060	-0.3075	-0.0017
45	06	6	Hispanic*HSGPA	-0.0039	0.0045	-0.0161	0.0779	0.0634	-0.0038	0.0045	-0.0159	0.0775	0.0622	0.0014
45	06	7	Hispanic*SAT-CR	0.0507	-0.0161	83.6862	5.3091	44.6443	0.0497	-0.0159	83.6836	5.3146	44.6602	0.0521
45	06	8	Hispanic*SAT-M	-0.1083	0.0779	5.3091	153.0919	74.3843	-0.1060	0.0775	5.3146	153.0802	74.3503	0.9702
45	06	9	Hispanic*SAT-W	-0.3141	0.0634	44.6443	74.3843	137.2548	-0.3075	0.0622	44.6602	74.3503	137.1560	0.7016
45	06	10	FYGPA	2.9735	0.1160	9.1313	9.7802	13.3610	-0.0017	0.0014	0.0521	0.9702	0.7016	0.5577
45	07	1	HSGPA	0.0000	0.2619	5.5068	10.0516	6.5827	0.0005	0.0072	0.0678	0.0257	0.1364	0.1538
45	07	2	SAT-CR	0.0000	5.5068	4,379.5409	1,621.7140	2,715.4266	-0.2806	0.0678	109.5741	41.4184	55.3614	10.5629
45	07	3	SAT-M	0.0000	10.0516	1,621.7140	4,614.1590	1,642.0457	-0.4075	0.0257	41.4184	126.0521	52.6352	9.1876
45	07	4	SAT-W	0.0000	6.5827	2,715.4266	1,642.0457	4,413.0621	-0.1185	0.1364	55.3614	52.6352	92.4245	12.2568
45	07	5	Hispanic	0.0294	0.0005	-0.2806	-0.4075	-0.1185	0.0286	0.0005	-0.2723	-0.3955	-0.1150	0.0008
45	07	6	Hispanic*HSGPA	0.0005	0.0072	0.0678	0.0257	0.1364	0.0005	0.0072	0.0679	0.0259	0.1364	0.0036
45	07	7	Hispanic*SAT-CR	-0.2803	0.0678	109.5741	41.4184	55.3614	-0.2723	0.0679	109.4954	41.3042	55.3282	0.0482
45	07	8	Hispanic*SAT-M	-0.4071	0.0257	41.4184	126.0521	52.6352	-0.3955	0.0259	41.3042	125.8862	52.5869	0.2833
45	07	9	Hispanic*SAT-W	-0.1184	0.1364	55.3614	52.6352	92.4245	-0.1150	0.1364	55.3282	52.5869	92.4105	-0.0710
45	07	10	FYGPA	2.9398	0.1538	10.5629	9.1876	12.2568	0.0008	0.0036	0.0482	0.2833	-0.0710	0.5739

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
45	08	1	HSGPA	0.0000	0.2792	5.6920	7.1643	7.4540	-0.0055	0.0179	0.1147	0.5524	0.3821	0.1574
45	08	2	SAT-CR	0.0000	5.6920	4,885.3207	1,933.3417	3,153.0650	-0.6522	0.1147	161.2320	23.8072	105.3022	9.6264
45	08	3	SAT-M	0.0000	7.1643	1,933.3417	4,919.0421	1,930.6943	-0.7552	0.5524	23.8072	137.2302	49.6740	9.6882
45	08	4	SAT-W	0.0000	7.4540	3,153.0650	1,930.6943	4,722.1114	-0.2536	0.3821	105.3022	49.6740	172.1949	11.4864
45	08	5	Hispanic	0.0283	-0.0055	-0.6522	-0.7552	-0.2536	0.0275	-0.0054	-0.6337	-0.7338	-0.2465	-0.0024
45	08	6	Hispanic*HSGPA	-0.0055	0.0179	0.1147	0.5524	0.3821	-0.0054	0.0179	0.1110	0.5482	0.3807	0.0043
45	08	7	Hispanic*SAT-CR	-0.6515	0.1147	161.2320	23.8072	105.3022	-0.6337	0.1110	160.8071	23.3151	105.1369	0.4350
45	08	8	Hispanic*SAT-M	-0.7544	0.5524	23.8072	137.2302	49.6740	-0.7338	0.5482	23.3151	136.6604	49.4827	0.2825
45	08	9	Hispanic*SAT-W	-0.2534	0.3821	105.3022	49.6740	172.1949	-0.2465	0.3807	105.1369	49.4827	172.1306	0.4694
45	08	10	FYGPA	2.8625	0.1574	9.6264	9.6882	11.4864	-0.0024	0.0043	0.4350	0.2825	0.4694	0.6382
46	08	1	HSGPA	0.0000	0.2090	12.8015	13.7723	14.1149	-0.0267	0.0470	2.6792	3.5262	2.1278	0.1313
46	08	2	SAT-CR	0.0000	12.8015	6,359.8831	3,432.2520	4,667.0403	-6.6330	2.6792	757.1489	594.7157	595.5886	18.8444
46	08	3	SAT-M	0.0000	13.7723	3,432.2520	6,126.4432	3,398.9521	-5.8906	3.5262	594.7157	1,105.9985	589.4188	18.8264
46	08	4	SAT-W	0.0000	14.1149	4,667.0403	3,398.9521	6,241.6008	-6.0931	2.1278	595.5886	589.4188	718.8167	20.6560
46	08	5	Hispanic	0.1240	-0.0267	-6.6330	-5.8906	-6.0931	0.1089	-0.0234	-5.8108	-5.1604	-5.3378	-0.0164
46	08	6	Hispanic*HSGPA	-0.0266	0.0470	2.6792	3.5262	2.1278	-0.0234	0.0463	2.5028	3.3696	1.9658	0.0181
46	08	7	Hispanic*SAT-CR	-6.6148	2.6792	757.1489	594.7157	595.5886	-5.8108	2.5028	713.2730	555.7509	555.2842	2.0882
46	08	8	Hispanic*SAT-M	-5.8744	3.5262	594.7157	1,105.9985	589.4188	-5.1604	3.3696	555.7509	1,071.3949	553.6257	1.9885
46	08	9	Hispanic*SAT-W	-6.0763	2.1278	595.5886	589.4188	718.8167	-5.3378	1.9658	555.2842	553.6257	681.7931	1.7088
46	08	10	FYGPA	3.1317	0.1313	18.8444	18.8264	20.6560	-0.0164	0.0181	2.0882	1.9885	1.7088	0.3043
47	08	1	HSGPA	0.0000	0.2874	9.2350	11.0234	10.9543	-0.0118	0.0212	0.2856	0.5851	0.3010	0.1931
47	08	2	SAT-CR	0.0000	9.2350	5,302.3985	2,570.0638	3,798.5070	-1.8722	0.2856	198.0767	157.7035	180.5933	18.0906
47	08	3	SAT-M	0.0000	11.0234	2,570.0638	5,305.1956	2,378.1613	-1.7844	0.5851	157.7035	295.4229	190.4214	14.4770
47	08	4	SAT-W	0.0000	10.9543	3,798.5070	2,378.1613	5,376.0620	-2.0491	0.3010	180.5933	190.4214	266.4511	20.3491
47	08	5	Hispanic	0.0389	-0.0118	-1.8722	-1.7844	-2.0491	0.0374	-0.0113	-1.7994	-1.7151	-1.9694	-0.0166
47	08	6	Hispanic*HSGPA	-0.0118	0.0212	0.2856	0.5851	0.3010	-0.0113	0.0211	0.2635	0.5641	0.2769	0.0077
47	08	7	Hispanic*SAT-CR	-1.8700	0.2856	198.0767	157.7035	180.5933	-1.7994	0.2635	194.5756	154.3666	176.7614	1.1590
47	08	8	Hispanic*SAT-M	-1.7823	0.5851	157.7035	295.4229	190.4214	-1.7151	0.5641	154.3666	292.2425	186.7692	1.6190
47	08	9	Hispanic*SAT-W	-2.0467	0.3010	180.5933	190.4214	266.4511	-1.9694	0.2769	176.7614	186.7692	262.2572	1.2164
47	08	10	FYGPA	2.4275	0.1931	18.0906	14.4770	20.3491	-0.0166	0.0077	1.1590	1.6190	1.2164	0.7528
48	06	1	HSGPA	0.0000	0.2146	8.3209	7.2363	9.0617	-0.0066	0.0260	1.1235	1.0302	0.6910	0.0946
48	06	2	SAT-CR	0.0000	8.3209	6,487.6348	2,965.4996	4,154.6329	-3.4675	1.1235	970.8270	512.1174	553.8100	10.7149
48	06	3	SAT-M	0.0000	7.2363	2,965.4996	5,905.8973	2,679.8204	-4.9508	1.0302	512.1174	839.4263	293.3599	9.1562
48	06	4	SAT-W	0.0000	9.0617	4,154.6329	2,679.8204	5,723.7854	-2.3198	0.6910	553.8100	293.3599	590.6701	10.8394
48	06	5	Hispanic	0.1222	-0.0066	-3.4675	-4.9508	-2.3198	0.1074	-0.0058	-3.0438	-4.3459	-2.0363	-0.0190
48	06	6	Hispanic*HSGPA	-0.0066	0.0260	1.1235	1.0302	0.6910	-0.0058	0.0259	1.1007	0.9977	0.6758	0.0022
48	06	7	Hispanic*SAT-CR	-3.4619	1.1235	970.8270	512.1174	553.8100	-3.0438	1.1007	958.8229	494.9780	545.7791	2.3143
48	06	8	Hispanic*SAT-M	-4.9429	1.0302	512.1174	839.4263	293.3599	-4.3459	0.9977	494.9780	814.9549	281.8936	2.4611
48	06	9	Hispanic*SAT-W	-2.3160	0.6910	553.8100	293.3599	590.6701	-2.0363	0.6758	545.7791	281.8936	585.2974	1.4086
48	06	10	FYGPA	3.3055	0.0946	10.7149	9.1562	10.8394	-0.0190	0.0022	2.3143	2.4611	1.4086	0.2431

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
48	07	1	HSGPA	0.0000	0.1976	4.0348	6.1338	6.6093	-0.0063	0.0216	0.5293	0.2634	0.7163	0.0803
48	07	2	SAT-CR	0.0000	4.0348	5,433.5890	2,986.8934	3,663.8080	-3.2384	0.5293	689.8937	503.4099	446.6444	7.6158
48	07	3	SAT-M	0.0000	6.1338	2,986.8934	5,848.5740	2,705.8514	-4.5811	0.2634	503.4099	872.5245	406.3682	6.3168
48	07	4	SAT-W	0.0000	6.6093	3,663.8080	2,705.8514	5,311.5760	-3.2139	0.7163	446.6444	406.3682	635.4396	7.6502
48	07	5	Hispanic	0.1183	-0.0063	-3.2384	-4.5811	-3.2139	0.1045	-0.0055	-2.8552	-4.0390	-2.8336	-0.0151
48	07	6	Hispanic*HSGPA	-0.0063	0.0216	0.5293	0.2634	0.7163	-0.0055	0.0216	0.5090	0.2347	0.6961	0.0067
48	07	7	Hispanic*SAT-CR	-3.2330	0.5293	689.8937	503.4099	446.6444	-2.8552	0.5090	679.4238	488.5990	436.2539	1.4646
48	07	8	Hispanic*SAT-M	-4.5735	0.2634	503.4099	872.5245	406.3682	-4.0390	0.2347	488.5990	851.5729	391.6698	1.7262
48	07	9	Hispanic*SAT-W	-3.2085	0.7163	446.6444	406.3682	635.4396	-2.8336	0.6961	436.2539	391.6698	625.1279	1.7118
48	07	10	FYGPA	3.3103	0.0803	7.6158	6.3168	7.6502	-0.0151	0.0067	1.4646	1.7262	1.7118	0.2470
48	08	1	HSGPA	0.0000	0.1729	7.3640	4.9629	6.4186	-0.0077	0.0281	0.6500	0.7294	0.4712	0.0891
48	08	2	SAT-CR	0.0000	7.3640	6,015.9660	2,693.1351	4,153.7343	-4.1525	0.6500	880.7553	573.6577	761.3298	12.8752
48	08	3	SAT-M	0.0000	4.9629	2,693.1351	5,533.6107	2,914.8304	-3.2365	0.7294	573.6577	846.7313	695.2559	8.0176
48	08	4	SAT-W	0.0000	6.4186	4,153.7343	2,914.8304	5,939.9741	-4.1683	0.4712	761.3298	695.2559	1,093.4741	13.3101
48	08	5	Hispanic	0.1482	-0.0077	-4.1525	-3.2365	-4.1683	0.1265	-0.0065	-3.5370	-2.7568	-3.5505	-0.0092
48	08	6	Hispanic*HSGPA	-0.0076	0.0281	0.6500	0.7294	0.4712	-0.0065	0.0280	0.6183	0.7047	0.4393	0.0105
48	08	7	Hispanic*SAT-CR	-4.1451	0.6500	880.7553	573.6577	761.3298	-3.5370	0.6183	863.5428	560.2422	744.0518	2.0093
48	08	8	Hispanic*SAT-M	-3.2307	0.7294	573.6577	846.7313	695.2559	-2.7568	0.7047	560.2422	836.2751	681.7893	1.5356
48	08	9	Hispanic*SAT-W	-4.1609	0.4712	761.3298	695.2559	1,093.4741	-3.5505	0.4393	744.0518	681.7893	1,076.1302	2.6092
48	08	10	FYGPA	3.2786	0.0891	12.8752	8.0176	13.3101	-0.0092	0.0105	2.0093	1.5356	2.6092	0.2396
49	06	1	HSGPA	0.0000	0.2038	9.2891	9.9084	10.1915	-0.0051	0.0125	0.8904	1.0955	0.9557	0.1217
49	06	2	SAT-CR	0.0000	9.2891	5,797.9051	3,026.1598	3,928.7268	-3.5804	0.8904	869.7973	696.5780	678.2931	17.0319
49	06	3	SAT-M	0.0000	9.9084	3,026.1598	5,938.2583	2,866.1535	-4.0836	1.0955	696.5780	829.8599	625.9055	13.5191
49	06	4	SAT-W	0.0000	10.1915	3,928.7268	2,866.1535	5,520.5365	-3.3043	0.9557	678.2931	625.9055	677.9543	18.3658
49	06	5	Hispanic	0.0555	-0.0051	-3.5804	-4.0836	-3.3043	0.0524	-0.0048	-3.3818	-3.8571	-3.1210	-0.0195
49	06	6	Hispanic*HSGPA	-0.0051	0.0125	0.8904	1.0955	0.9557	-0.0048	0.0125	0.8721	1.0747	0.9388	0.0073
49	06	7	Hispanic*SAT-CR	-3.5786	0.8904	869.7973	696.5780	678.2931	-3.3818	0.8721	856.9844	681.9642	666.4684	3.1780
49	06	8	Hispanic*SAT-M	-4.0816	1.0955	696.5780	829.8599	625.9055	-3.8571	1.0747	681.9642	813.1920	612.4188	3.2454
49	06	9	Hispanic*SAT-W	-3.3026	0.9557	678.2931	625.9055	677.9543	-3.1210	0.9388	666.4684	612.4188	667.0415	2.9379
49	06	10	FYGPA	2.8052	0.1217	17.0319	13.5191	18.3658	-0.0195	0.0073	3.1780	3.2454	2.9379	0.4613
49	07	1	HSGPA	0.0000	0.2046	9.9633	11.1874	10.1831	-0.0132	0.0227	1.4604	1.7243	1.7642	0.1239
49	07	2	SAT-CR	0.0000	9.9633	6,007.0054	3,315.8181	4,121.4920	-3.1430	1.4604	635.5469	520.2265	549.4096	18.9494
49	07	3	SAT-M	0.0000	11.1874	3,315.8181	6,433.6285	2,954.0475	-4.4424	1.7243	520.2265	731.3013	562.7762	17.4589
49	07	4	SAT-W	0.0000	10.1831	4,121.4920	2,954.0475	5,575.3767	-3.7975	1.7642	549.4096	562.7762	640.3946	18.6777
49	07	5	Hispanic	0.0520	-0.0132	-3.1430	-4.4424	-3.7975	0.0493	-0.0125	-2.9795	-4.2113	-3.6000	-0.0200
49	07	6	Hispanic*HSGPA	-0.0132	0.0227	1.4604	1.7243	1.7642	-0.0125	0.0225	1.4188	1.6655	1.7139	0.0137
49	07	7	Hispanic*SAT-CR	-3.1416	1.4604	635.5469	520.2265	549.4096	-2.9795	1.4188	625.6727	506.2703	537.4793	2.7980
49	07	8	Hispanic*SAT-M	-4.4404	1.7243	520.2265	731.3013	562.7762	-4.2113	1.6655	506.2703	711.5756	545.9138	2.6450
49	07	9	Hispanic*SAT-W	-3.7958	1.7642	549.4096	562.7762	640.3946	-3.6000	1.7139	537.4793	545.9138	625.9799	2.6192
49	07	10	FYGPA	2.8047	0.1239	18.9494	17.4589	18.6777	-0.0200	0.0137	2.7980	2.6450	2.6192	0.4630

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
49	08	1	HSGPA	0.0000	0.2101	9.3850	9.0081	9.9551	-0.0135	0.0258	2.0378	2.5739	2.1589	0.1334
49	08	2	SAT-CR	0.0000	9.3850	6,282.4251	3,432.5336	4,438.6155	-5.4774	2.0378	1,005.7123	841.6243	879.3275	18.1731
49	08	3	SAT-M	0.0000	9.0081	3,432.5336	6,420.2999	3,103.1097	-6.1204	2.5739	841.6243	1,187.5049	858.5602	12.9897
49	08	4	SAT-W	0.0000	9.9551	4,438.6155	3,103.1097	5,783.7430	-5.6946	2.1589	879.3275	858.5602	961.5203	19.6289
49	08	5	Hispanic	0.0712	-0.0135	-5.4774	-6.1204	-5.6946	0.0661	-0.0125	-5.0876	-5.6848	-5.2894	-0.0290
49	08	6	Hispanic*HSGPA	-0.0135	0.0258	2.0378	2.5739	2.1589	-0.0125	0.0256	1.9641	2.4915	2.0822	0.0168
49	08	7	Hispanic*SAT-CR	-5.4748	2.0378	1,005.7123	841.6243	879.3275	-5.0876	1.9641	975.7245	808.1164	848.1507	3.7794
49	08	8	Hispanic*SAT-M	-6.1175	2.5739	841.6243	1,187.5049	858.5602	-5.6848	2.4915	808.1164	1,150.0636	823.7237	3.7915
49	08	9	Hispanic*SAT-W	-5.6919	2.1589	879.3275	858.5602	961.5203	-5.2894	2.0822	848.1507	823.7237	929.1075	4.1343
49	08	10	FYGPA	2.7511	0.1334	18.1731	12.9897	19.6289	-0.0290	0.0168	3.7794	3.7915	4.1343	0.4988
51	08	1	HSGPA	0.0000	0.1235	5.6348	3.2923	3.7791	0.0063	0.0150	-1.5163	-1.7438	-2.4128	0.0433
51	08	2	SAT-CR	0.0000	5.6348	4,828.7185	2,787.1790	3,159.8292	-7.5957	-1.5163	936.3605	733.9424	759.6941	10.8817
51	08	3	SAT-M	0.0000	3.2923	2,787.1790	5,741.1095	2,842.4600	-8.6616	-1.7438	733.9424	1,260.9259	893.0197	8.6846
51	08	4	SAT-W	0.0000	3.7791	3,159.8292	2,842.4600	5,386.6279	-8.3975	-2.4128	759.6941	893.0197	1,131.1401	13.3704
51	08	5	Hispanic	0.1240	0.0063	-7.5957	-8.6616	-8.3975	0.1095	0.0055	-6.6536	-7.5873	-7.3560	-0.0204
51	08	6	Hispanic*HSGPA	0.0063	0.0150	-1.5163	-1.7438	-2.4128	0.0055	0.0149	-1.4686	-1.6893	-2.3600	-0.0028
51	08	7	Hispanic*SAT-CR	-7.5368	-1.5163	936.3605	733.9424	759.6941	-6.6536	-1.4686	879.1133	668.6618	696.4036	1.4556
51	08	8	Hispanic*SAT-M	-8.5944	-1.7438	733.9424	1,260.9259	893.0197	-7.5873	-1.6893	668.6618	1,186.4845	820.8477	0.0014
51	08	9	Hispanic*SAT-W	-8.3324	-2.4128	759.6941	893.0197	1,131.1401	-7.3560	-2.3600	696.4036	820.8477	1,061.1683	1.9650
51	08	10	FYGPA	3.4563	0.0433	10.8817	8.6846	13.3704	-0.0204	-0.0028	1.4556	0.0014	1.9650	0.1471
52	08	1	HSGPA	0.0000	0.2423	7.5065	12.1385	9.9171	0.0075	0.0119	-0.5922	0.0742	-0.5416	0.2098
52	08	2	SAT-CR	0.0000	7.5065	6,198.6825	3,041.2300	4,268.2069	-1.6807	-0.5922	464.1979	141.9788	374.3173	18.9545
52	08	3	SAT-M	0.0000	12.1385	3,041.2300	5,466.2621	3,020.2556	-2.6056	0.0742	141.9788	255.0331	92.2918	25.1808
52	08	4	SAT-W	0.0000	9.9171	4,268.2069	3,020.2556	5,323.8513	-1.7029	-0.5416	374.3173	92.2918	371.0324	25.5824
52	08	5	Hispanic	0.0701	0.0075	-1.6807	-2.6056	-1.7029	0.0654	0.0070	-1.5629	-2.4229	-1.5835	-0.0012
52	08	6	Hispanic*HSGPA	0.0075	0.0119	-0.5922	0.0742	-0.5416	0.0070	0.0118	-0.5796	0.0937	-0.5288	-0.0034
52	08	7	Hispanic*SAT-CR	-1.6745	-0.5922	464.1979	141.9788	374.3173	-1.5629	-0.5796	461.3834	137.6157	371.4658	0.4784
52	08	8	Hispanic*SAT-M	-2.5960	0.0742	141.9788	255.0331	92.2918	-2.4229	0.0937	137.6157	248.2692	87.8712	-0.2602
52	08	9	Hispanic*SAT-W	-1.6966	-0.5416	374.3173	92.2918	371.0324	-1.5835	-0.5288	371.4658	87.8712	368.1433	0.6246
52	08	10	FYGPA	2.6644	0.2098	18.9545	25.1808	25.5824	-0.0012	-0.0034	0.4784	-0.2602	0.6246	0.8542
53	06	1	HSGPA	0.0000	0.1435	4.7913	4.4248	5.0682	-0.0005	0.0016	-0.0071	0.0085	-0.0246	0.0811
53	06	2	SAT-CR	0.0000	4.7913	5,718.0065	2,247.5020	4,007.6225	-0.1047	-0.0071	104.7030	44.1342	80.5093	12.4813
53	06	3	SAT-M	0.0000	4.4248	2,247.5020	5,089.8192	2,264.9234	-0.5623	0.0085	44.1342	84.4689	55.5186	6.9575
53	06	4	SAT-W	0.0000	5.0682	4,007.6225	2,264.9234	5,755.9882	-0.2656	-0.0246	80.5093	55.5186	104.1721	13.9998
53	06	5	Hispanic	0.0143	-0.0005	-0.1047	-0.5623	-0.2656	0.0141	-0.0005	-0.1032	-0.5543	-0.2618	-0.0045
53	06	6	Hispanic*HSGPA	-0.0005	0.0016	-0.0071	0.0085	-0.0246	-0.0005	0.0016	-0.0071	0.0082	-0.0247	0.0008
53	06	7	Hispanic*SAT-CR	-0.1046	-0.0071	104.7030	44.1342	80.5093	-0.1032	-0.0071	104.6920	44.0753	80.4815	0.3266
53	06	8	Hispanic*SAT-M	-0.5621	0.0085	44.1342	84.4689	55.5186	-0.5543	0.0082	44.0753	84.1528	55.3693	0.2744
53	06	9	Hispanic*SAT-W	-0.2655	-0.0246	80.5093	55.5186	104.1721	-0.2618	-0.0247	80.4815	55.3693	104.1016	0.3647
53	06	10	FYGPA	3.1363	0.0811	12.4813	6.9575	13.9998	-0.0045	0.0008	0.3266	0.2744	0.3647	0.3428

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
53	07	1	HSGPA	0.0000	0.1686	8.0839	8.7854	9.6507	-0.0027	0.0044	0.3102	0.2596	0.2696	0.0979
53	07	2	SAT-CR	0.0000	8.0839	6,481.7919	3,010.0969	4,618.2921	-0.1296	0.3102	69.3859	50.4189	52.1874	15.4573
53	07	3	SAT-M	0.0000	8.7854	3,010.0969	5,735.5466	2,977.4290	-0.2575	0.2596	50.4189	98.4879	52.5097	11.1036
53	07	4	SAT-W	0.0000	9.6507	4,618.2921	2,977.4290	6,497.5266	-0.1744	0.2696	52.1874	52.5097	66.8575	16.5367
53	07	5	Hispanic	0.0136	-0.0027	-0.1296	-0.2575	-0.1744	0.0134	-0.0027	-0.1278	-0.2540	-0.1721	-0.0031
53	07	6	Hispanic*HSGPA	-0.0027	0.0044	0.3102	0.2596	0.2696	-0.0027	0.0044	0.3098	0.2589	0.2691	0.0030
53	07	7	Hispanic*SAT-CR	-0.1295	0.3102	69.3859	50.4189	52.1874	-0.1278	0.3098	69.3691	50.3855	52.1648	0.2212
53	07	8	Hispanic*SAT-M	-0.2574	0.2596	50.4189	98.4879	52.5097	-0.2540	0.2589	50.3855	98.4216	52.4648	0.1455
53	07	9	Hispanic*SAT-W	-0.1744	0.2696	52.1874	52.5097	66.8575	-0.1721	0.2691	52.1648	52.4648	66.8271	0.2642
53	07	10	FYGPA	3.1548	0.0979	15.4573	11.1036	16.5367	-0.0031	0.0030	0.2212	0.1455	0.2642	0.3047
53	08	1	HSGPA	0.0000	0.1382	3.8108	4.4877	5.2698	-0.0015	0.0030	0.1768	0.3045	0.1938	0.0727
53	08	2	SAT-CR	0.0000	3.8108	5,478.8304	1,784.6511	3,495.9161	0.3240	0.1768	109.8544	65.8493	84.3385	11.1821
53	08	3	SAT-M	0.0000	4.4877	1,784.6511	4,694.8178	1,832.3861	-0.3726	0.3045	65.8493	155.9634	76.2789	8.5696
53	08	4	SAT-W	0.0000	5.2698	3,495.9161	1,832.3861	5,312.4409	0.2462	0.1938	84.3385	76.2789	116.4450	13.0030
53	08	5	Hispanic	0.0160	-0.0015	0.3240	-0.3726	0.2462	0.0158	-0.0015	0.3188	-0.3667	0.2422	-0.0018
53	08	6	Hispanic*HSGPA	-0.0015	0.0030	0.1768	0.3045	0.1938	-0.0015	0.0030	0.1773	0.3039	0.1942	0.0020
53	08	7	Hispanic*SAT-CR	0.3238	0.1768	109.8544	65.8493	84.3385	0.3188	0.1773	109.7495	65.9700	84.2588	0.1089
53	08	8	Hispanic*SAT-M	-0.3725	0.3045	65.8493	155.9634	76.2789	-0.3667	0.3039	65.9700	155.8246	76.3706	0.2299
53	08	9	Hispanic*SAT-W	0.2461	0.1938	84.3385	76.2789	116.4450	0.2422	0.1942	84.2588	76.3706	116.3844	0.1660
53	08	10	FYGPA	3.1541	0.0727	11.1821	8.5696	13.0030	-0.0018	0.0020	0.1089	0.2299	0.1660	0.2842
54	06	1	HSGPA	0.0000	0.2797	15.4803	18.7572	17.3489	-0.0115	0.0173	1.9005	1.8993	2.0161	0.2614
54	06	2	SAT-CR	0.0000	15.4803	8,132.4357	4,020.9710	5,906.5007	-4.1534	1.9005	1,223.6474	583.7979	906.3606	26.3182
54	06	3	SAT-M	0.0000	18.7572	4,020.9710	7,648.9426	4,485.3597	-4.3768	1.8993	583.7979	1,089.7962	606.2242	27.1978
54	06	4	SAT-W	0.0000	17.3489	5,906.5007	4,485.3597	6,832.3269	-5.0150	2.0161	906.3606	606.2242	850.9714	35.3339
54	06	5	Hispanic	0.1105	-0.0115	-4.1534	-4.3768	-5.0150	0.0988	-0.0103	-3.6946	-3.8933	-4.4610	-0.0169
54	06	6	Hispanic*HSGPA	-0.0115	0.0173	1.9005	1.8993	2.0161	-0.0103	0.0172	1.8529	1.8491	1.9586	0.0170
54	06	7	Hispanic*SAT-CR	-4.1293	1.9005	1,223.6474	583.7979	906.3606	-3.6946	1.8529	1,206.4969	565.7251	885.6526	1.5350
54	06	8	Hispanic*SAT-M	-4.3513	1.8993	583.7979	1,089.7962	606.2242	-3.8933	1.8491	565.7251	1,070.7513	584.4024	4.7968
54	06	9	Hispanic*SAT-W	-4.9858	2.0161	906.3606	606.2242	850.9714	-4.4610	1.9586	885.6526	584.4024	825.9678	2.4933
54	06	10	FYGPA	2.7562	0.2614	26.3182	27.1978	35.3339	-0.0169	0.0170	1.5350	4.7968	2.4933	0.8575
58	06	1	HSGPA	0.0000	0.2106	4.3645	7.1291	5.9628	-0.0085	0.0374	1.1431	1.8161	1.3527	0.1405
58	06	2	SAT-CR	0.0000	4.3645	6,962.7089	3,372.2650	4,751.6239	-4.9516	1.1431	1,277.6485	748.3172	930.2753	13.3881
58	06	3	SAT-M	0.0000	7.1291	3,372.2650	6,012.1304	3,051.3800	-5.3733	1.8161	748.3172	1,193.8499	652.0807	12.1997
58	06	4	SAT-W	0.0000	5.9628	4,751.6239	3,051.3800	5,974.3354	-4.7437	1.3527	930.2753	652.0807	1,104.6733	14.9373
58	06	5	Hispanic	0.1598	-0.0085	-4.9516	-5.3733	-4.7437	0.1343	-0.0071	-4.1604	-4.5147	-3.9857	-0.0252
58	06	6	Hispanic*HSGPA	-0.0085	0.0374	1.1431	1.8161	1.3527	-0.0071	0.0373	1.1012	1.7707	1.3126	0.0192
58	06	7	Hispanic*SAT-CR	-4.9492	1.1431	1,277.6485	748.3172	930.2753	-4.1604	1.1012	1,253.1424	721.7237	906.7982	2.9447
58	06	8	Hispanic*SAT-M	-5.3707	1.8161	748.3172	1,193.8499	652.0807	-4.5147	1.7707	721.7237	1,164.9913	626.6039	3.5659
58	06	9	Hispanic*SAT-W	-4.7414	1.3527	930.2753	652.0807	1,104.6733	-3.9857	1.3126	906.7982	626.6039	1,082.1819	3.3748
58	06	10	FYGPA	2.6170	0.1405	13.3881	12.1997	14.9373	-0.0252	0.0192	2.9447	3.5659	3.3748	0.9753

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
58	07	1	HSGPA	0.0000	0.2147	4.3851	7.5713	7.4581	-0.0165	0.0334	0.4524	1.5672	0.7207	0.1560
58	07	2	SAT-CR	0.0000	4.3851	6,215.9772	2,863.6012	4,173.1838	-4.5199	0.4524	1,089.4816	562.6304	723.6827	15.5785
58	07	3	SAT-M	0.0000	7.5713	2,863.6012	5,602.8664	2,570.9539	-3.8108	1.5672	562.6304	946.6493	435.7242	16.0013
58	07	4	SAT-W	0.0000	7.4581	4,173.1838	2,570.9539	5,768.8528	-4.7505	0.7207	723.6827	435.7242	887.7153	19.7240
58	07	5	Hispanic	0.1586	-0.0165	-4.5199	-3.8108	-4.7505	0.1335	-0.0139	-3.8029	-3.2063	-3.9969	-0.0378
58	07	6	Hispanic*HSGPA	-0.0165	0.0334	0.4524	1.5672	0.7207	-0.0139	0.0332	0.3777	1.5042	0.6422	0.0253
58	07	7	Hispanic*SAT-CR	-4.5176	0.4524	1,089.4816	562.6304	723.6827	-3.8029	0.3777	1,069.0627	545.4149	702.2222	3.9532
58	07	8	Hispanic*SAT-M	-3.8088	1.5672	562.6304	946.6493	435.7242	-3.2063	1.5042	545.4149	932.1344	417.6304	3.8639
58	07	9	Hispanic*SAT-W	-4.7480	0.7207	723.6827	435.7242	887.7153	-3.9969	0.6422	702.2222	417.6304	865.1600	3.3519
58	07	10	FYGPA	2.6172	0.1560	15.5785	16.0013	19.7240	-0.0378	0.0253	3.9532	3.8639	3.3519	0.8901
58	08	1	HSGPA	0.0000	0.2074	4.8196	7.9135	6.2162	-0.0109	0.0369	1.0543	1.2794	0.8796	0.1666
58	08	2	SAT-CR	0.0000	4.8196	6,298.0017	3,025.8569	4,358.4055	-5.5629	1.0543	1,093.1702	603.3524	759.9918	14.0428
58	08	3	SAT-M	0.0000	7.9135	3,025.8569	6,031.1053	2,935.8572	-4.9444	1.2794	603.3524	1,058.2943	525.8348	14.6073
58	08	4	SAT-W	0.0000	6.2162	4,358.4055	2,935.8572	5,960.3624	-5.0899	0.8796	759.9918	525.8348	986.9196	17.4878
58	08	5	Hispanic	0.1811	-0.0109	-5.5629	-4.9444	-5.0899	0.1484	-0.0090	-4.5553	-4.0488	-4.1679	-0.0383
58	08	6	Hispanic*HSGPA	-0.0109	0.0369	1.0543	1.2794	0.8796	-0.0090	0.0368	0.9935	1.2253	0.8239	0.0341
58	08	7	Hispanic*SAT-CR	-5.5601	1.0543	1,093.1702	603.3524	759.9918	-4.5553	0.9935	1,062.2398	575.8608	731.6916	3.1818
58	08	8	Hispanic*SAT-M	-4.9419	1.2794	603.3524	1,058.2943	525.8348	-4.0488	1.2253	575.8608	1,033.8592	500.6810	2.7485
58	08	9	Hispanic*SAT-W	-5.0873	0.8796	759.9918	525.8348	986.9196	-4.1679	0.8239	731.6916	500.6810	961.0260	2.6867
58	08	10	FYGPA	2.6864	0.1666	14.0428	14.6073	17.4878	-0.0383	0.0341	3.1818	2.7485	2.6867	0.9228
59	06	1	HSGPA	0.0000	0.1852	6.9580	8.5627	8.9816	0.0004	0.0067	0.1734	0.1014	0.0948	0.0976
59	06	2	SAT-CR	0.0000	6.9580	6,031.9627	2,973.9460	4,336.9011	-0.5040	0.1734	256.9757	152.6252	196.6125	8.8409
59	06	3	SAT-M	0.0000	8.5627	2,973.9460	5,989.6867	3,009.7056	-1.1632	0.1014	152.6252	316.8598	153.1068	8.5151
59	06	4	SAT-W	0.0000	8.9816	4,336.9011	3,009.7056	6,195.0529	-0.7288	0.0948	196.6125	153.1068	285.3790	12.2586
59	06	5	Hispanic	0.0403	0.0004	-0.5040	-1.1632	-0.7288	0.0387	0.0004	-0.4837	-1.1163	-0.6994	-0.0030
59	06	6	Hispanic*HSGPA	0.0004	0.0067	0.1734	0.1014	0.0948	0.0004	0.0067	0.1736	0.1018	0.0951	0.0043
59	06	7	Hispanic*SAT-CR	-0.5038	0.1734	256.9757	152.6252	196.6125	-0.4837	0.1736	256.7218	152.0392	196.2453	0.2550
59	06	8	Hispanic*SAT-M	-1.1628	0.1014	152.6252	316.8598	153.1068	-1.1163	0.1018	152.0392	315.5071	152.2594	0.3961
59	06	9	Hispanic*SAT-W	-0.7285	0.0948	196.6125	153.1068	285.3790	-0.6994	0.0951	196.2453	152.2594	284.8481	0.3264
59	06	10	FYGPA	3.1846	0.0976	8.8409	8.5151	12.2586	-0.0030	0.0043	0.2550	0.3961	0.3264	0.2977
59	07	1	HSGPA	0.0000	0.1262	4.0537	4.3618	5.0885	-0.0015	0.0041	0.2316	0.2911	0.3162	0.0592
59	07	2	SAT-CR	0.0000	4.0537	5,609.9753	2,410.2648	3,663.4636	-0.3855	0.2316	197.1531	123.9777	136.7177	8.2104
59	07	3	SAT-M	0.0000	4.3618	2,410.2648	5,385.3637	2,298.6887	-0.5165	0.2911	123.9777	193.6787	116.2822	5.8045
59	07	4	SAT-W	0.0000	5.0885	3,663.4636	2,298.6887	5,412.8360	-0.2941	0.3162	136.7177	116.2822	195.9238	9.2591
59	07	5	Hispanic	0.0309	-0.0015	-0.3855	-0.5165	-0.2941	0.0300	-0.0014	-0.3736	-0.5006	-0.2850	-0.0042
59	07	6	Hispanic*HSGPA	-0.0015	0.0041	0.2316	0.2911	0.3162	-0.0014	0.0041	0.2310	0.2903	0.3158	0.0025
59	07	7	Hispanic*SAT-CR	-0.3853	0.2316	197.1531	123.9777	136.7177	-0.3736	0.2310	197.0046	123.7787	136.6044	0.3749
59	07	8	Hispanic*SAT-M	-0.5163	0.2911	123.9777	193.6787	116.2822	-0.5006	0.2903	123.7787	193.4120	116.1303	0.4400
59	07	9	Hispanic*SAT-W	-0.2940	0.3162	136.7177	116.2822	195.9238	-0.2850	0.3158	136.6044	116.1303	195.8373	0.2766
59	07	10	FYGPA	3.2801	0.0592	8.2104	5.8045	9.2591	-0.0042	0.0025	0.3749	0.4400	0.2766	0.2501

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
59	08	1	HSGPA	0.0000	0.1288	3.5225	5.0501	4.9488	0.0000	0.0046	0.0967	-0.0014	0.1204	0.0547
59	08	2	SAT-CR	0.0000	3.5225	5,681.3993	2,346.5512	3,612.8642	-0.4168	0.0967	208.3444	129.6067	170.5113	7.0738
59	08	3	SAT-M	0.0000	5.0501	2,346.5512	5,415.4770	2,148.1732	-0.8538	-0.0014	129.6067	251.4008	138.1549	6.7765
59	08	4	SAT-W	0.0000	4.9488	3,612.8642	2,148.1732	5,412.7014	-0.3837	0.1204	170.5113	138.1549	288.3412	10.0160
59	08	5	Hispanic	0.0338	0.0000	-0.4168	-0.8538	-0.3837	0.0326	0.0000	-0.4028	-0.8250	-0.3708	-0.0011
59	08	6	Hispanic*HSGPA	0.0000	0.0046	0.0967	-0.0014	0.1204	0.0000	0.0046	0.0967	-0.0014	0.1204	0.0016
59	08	7	Hispanic*SAT-CR	-0.4167	0.0967	208.3444	129.6067	170.5113	-0.4028	0.0967	208.1707	129.2509	170.3514	0.3258
59	08	8	Hispanic*SAT-M	-0.8535	-0.0014	129.6067	251.4008	138.1549	-0.8250	-0.0014	129.2509	250.6721	137.8274	0.2888
59	08	9	Hispanic*SAT-W	-0.3836	0.1204	170.5113	138.1549	288.3412	-0.3708	0.1204	170.3514	137.8274	288.1939	0.4986
59	08	10	FYGPA	3.2897	0.0547	7.0738	6.7765	10.0160	-0.0011	0.0016	0.3258	0.2888	0.4986	0.2295
60	06	1	HSGPA	0.0000	0.2364	4.3808	6.3191	6.3772	-0.0059	0.0112	0.6903	1.0749	0.7109	0.0858
60	06	2	SAT-CR	0.0000	4.3808	5,462.0553	2,459.9940	3,506.4374	-1.0032	0.6903	155.0126	108.3664	134.1558	5.5281
60	06	3	SAT-M	0.0000	6.3191	2,459.9940	5,770.8082	2,240.8474	-1.4194	1.0749	108.3664	245.4485	127.0480	1.6605
60	06	4	SAT-W	0.0000	6.3772	3,506.4374	2,240.8474	5,039.2066	-1.1477	0.7109	134.1558	127.0480	201.5210	8.2895
60	06	5	Hispanic	0.0294	-0.0059	-1.0032	-1.4194	-1.1477	0.0285	-0.0057	-0.9737	-1.3777	-1.1140	-0.0031
60	06	6	Hispanic*HSGPA	-0.0059	0.0112	0.6903	1.0749	0.7109	-0.0057	0.0112	0.6844	1.0665	0.7042	0.0070
60	06	7	Hispanic*SAT-CR	-1.0023	0.6903	155.0126	108.3664	134.1558	-0.9737	0.6844	154.0072	106.9438	133.0055	0.7132
60	06	8	Hispanic*SAT-M	-1.4182	1.0749	108.3664	245.4485	127.0480	-1.3777	1.0665	106.9438	243.4355	125.4204	0.6346
60	06	9	Hispanic*SAT-W	-1.1467	0.7109	134.1558	127.0480	201.5210	-1.1140	0.7042	133.0055	125.4204	200.2049	0.6985
60	06	10	FYGPA	2.8033	0.0858	5.5281	1.6605	8.2895	-0.0031	0.0070	0.7132	0.6346	0.6985	0.4246
60	07	1	HSGPA	0.0000	0.2348	2.5776	1.4604	4.4655	-0.0038	0.0078	0.0068	0.0175	0.0741	0.1285
60	07	2	SAT-CR	0.0000	2.5776	5,085.1462	1,980.2036	3,215.1094	-0.2811	0.0068	182.7456	111.5306	155.0519	4.1880
60	07	3	SAT-M	0.0000	1.4604	1,980.2036	5,367.5588	1,983.3731	-0.7245	0.0175	111.5306	188.6234	138.5539	3.5074
60	07	4	SAT-W	0.0000	4.4655	3,215.1094	1,983.3731	4,848.3580	-0.7524	0.0741	155.0519	138.5539	193.6900	7.9974
60	07	5	Hispanic	0.0247	-0.0038	-0.2811	-0.7245	-0.7524	0.0241	-0.0037	-0.2742	-0.7066	-0.7338	-0.0012
60	07	6	Hispanic*HSGPA	-0.0038	0.0078	0.0068	0.0175	0.0741	-0.0037	0.0078	0.0057	0.0148	0.0713	-0.0018
60	07	7	Hispanic*SAT-CR	-0.2809	0.0068	182.7456	111.5306	155.0519	-0.2742	0.0057	182.6666	111.3271	154.8405	-0.3284
60	07	8	Hispanic*SAT-M	-0.7239	0.0175	111.5306	188.6234	138.5539	-0.7066	0.0148	111.3271	188.0988	138.0092	-0.2601
60	07	9	Hispanic*SAT-W	-0.7517	0.0741	155.0519	138.5539	193.6900	-0.7338	0.0713	154.8405	138.0092	193.1244	-0.2656
60	07	10	FYGPA	2.6670	0.1285	4.1880	3.5074	7.9974	-0.0012	-0.0018	-0.3284	-0.2601	-0.2656	0.7477
60	08	1	HSGPA	0.0000	0.2515	5.3392	6.2493	8.2052	-0.0033	0.0133	0.3341	0.2383	0.2099	0.1324
60	08	2	SAT-CR	0.0000	5.3392	5,464.9417	2,406.1083	3,700.6648	-1.2762	0.3341	278.7430	171.2925	199.7235	3.4964
60	08	3	SAT-M	0.0000	6.2493	2,406.1083	5,227.8216	2,218.3478	-1.2214	0.2383	171.2925	235.2671	130.8421	-0.1997
60	08	4	SAT-W	0.0000	8.2052	3,700.6648	2,218.3478	5,488.1896	-1.1347	0.2099	199.7235	130.8421	201.3226	10.1147
60	08	5	Hispanic	0.0396	-0.0033	-1.2762	-1.2214	-1.1347	0.0380	-0.0032	-1.2257	-1.1731	-1.0898	-0.0007
60	08	6	Hispanic*HSGPA	-0.0033	0.0133	0.3341	0.2383	0.2099	-0.0032	0.0133	0.3299	0.2343	0.2062	0.0083
60	08	7	Hispanic*SAT-CR	-1.2751	0.3341	278.7430	171.2925	199.7235	-1.2257	0.3299	277.1156	169.7350	198.2767	-0.6456
60	08	8	Hispanic*SAT-M	-1.2204	0.2383	171.2925	235.2671	130.8421	-1.1731	0.2343	169.7350	233.7765	129.4574	-0.4614
60	08	9	Hispanic*SAT-W	-1.1337	0.2099	199.7235	130.8421	201.3226	-1.0898	0.2062	198.2767	129.4574	200.0362	-0.2292
60	08	10	FYGPA	2.6987	0.1324	3.4964	-0.1997	10.1147	-0.0007	0.0083	-0.6456	-0.4614	-0.2292	0.6777

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
61	06	1	HSGPA	0.0000	0.2172	3.8961	3.2496	5.1261	-0.0058	0.0086	0.6185	0.8526	0.5219	0.1268
61	06	2	SAT-CR	0.0000	3.8961	4,565.9618	1,612.2438	2,942.4065	-1.2355	0.6185	200.5344	133.5257	105.0547	7.0117
61	06	3	SAT-M	0.0000	3.2496	1,612.2438	5,091.4905	1,586.2606	-2.3056	0.8526	133.5257	411.6582	184.6957	5.1208
61	06	4	SAT-W	0.0000	5.1261	2,942.4065	1,586.2606	4,549.1748	-1.0181	0.5219	105.0547	184.6957	215.2947	8.9461
61	06	5	Hispanic	0.0465	-0.0058	-1.2355	-2.3056	-1.0181	0.0444	-0.0056	-1.1781	-2.1985	-0.9708	-0.0003
61	06	6	Hispanic*HSGPA	-0.0058	0.0086	0.6185	0.8526	0.5219	-0.0056	0.0086	0.6113	0.8392	0.5160	0.0034
61	06	7	Hispanic*SAT-CR	-1.2335	0.6185	200.5344	133.5257	105.0547	-1.1781	0.6113	199.0105	130.6817	103.7989	0.4466
61	06	8	Hispanic*SAT-M	-2.3019	0.8526	133.5257	411.6582	184.6957	-2.1985	0.8392	130.6817	406.3509	182.3521	0.3711
61	06	9	Hispanic*SAT-W	-1.0165	0.5219	105.0547	184.6957	215.2947	-0.9708	0.5160	103.7989	182.3521	214.2598	0.0778
61	06	10	FYGPA	2.7585	0.1268	7.0117	5.1208	8.9461	-0.0003	0.0034	0.4466	0.3711	0.0778	0.5619
61	07	1	HSGPA	0.0000	0.2280	2.5163	5.0436	6.2886	-0.0078	0.0184	0.5582	0.8530	0.8836	0.1693
61	07	2	SAT-CR	0.0000	2.5163	5,180.9605	2,025.9745	3,624.9777	-3.3619	0.5582	618.9197	434.5755	574.4706	9.4426
61	07	3	SAT-M	0.0000	5.0436	2,025.9745	4,983.0427	2,191.7922	-3.2236	0.8530	434.5755	552.9563	465.6946	7.6905
61	07	4	SAT-W	0.0000	6.2886	3,624.9777	2,191.7922	5,154.0786	-3.0870	0.8836	574.4706	465.6946	702.3106	11.8297
61	07	5	Hispanic	0.0639	-0.0078	-3.3619	-3.2236	-3.0870	0.0600	-0.0073	-3.1469	-3.0175	-2.8897	-0.0288
61	07	6	Hispanic*HSGPA	-0.0078	0.0184	0.5582	0.8530	0.8836	-0.0073	0.0183	0.5319	0.8278	0.8594	0.0184
61	07	7	Hispanic*SAT-CR	-3.3559	0.5582	618.9197	434.5755	574.4706	-3.1469	0.5319	607.6377	423.7573	564.1109	2.0171
61	07	8	Hispanic*SAT-M	-3.2179	0.8530	434.5755	552.9563	465.6946	-3.0175	0.8278	423.7573	542.5829	455.7607	1.2895
61	07	9	Hispanic*SAT-W	-3.0816	0.8836	574.4706	465.6946	702.3106	-2.8897	0.8594	564.1109	455.7607	692.7977	1.9465
61	07	10	FYGPA	2.7333	0.1693	9.4426	7.6905	11.8297	-0.0288	0.0184	2.0171	1.2895	1.9465	0.7690
61	08	1	HSGPA	0.0000	0.2135	6.0361	6.2957	8.3613	-0.0096	0.0130	0.6968	1.5272	0.8806	0.1487
61	08	2	SAT-CR	0.0000	6.0361	5,027.4210	1,996.2276	3,315.3005	-1.9723	0.6968	393.3541	365.1820	275.2080	12.3317
61	08	3	SAT-M	0.0000	6.2957	1,996.2276	5,185.0314	1,992.3462	-3.3096	1.5272	365.1820	662.1794	270.3653	9.9344
61	08	4	SAT-W	0.0000	8.3613	3,315.3005	1,992.3462	4,970.6659	-1.8507	0.8806	275.2080	270.3653	382.4219	12.7487
61	08	5	Hispanic	0.0544	-0.0096	-1.9723	-3.3096	-1.8507	0.0516	-0.0091	-1.8650	-3.1294	-1.7500	-0.0282
61	08	6	Hispanic*HSGPA	-0.0096	0.0130	0.6968	1.5272	0.8806	-0.0091	0.0129	0.6778	1.4953	0.8628	0.0162
61	08	7	Hispanic*SAT-CR	-1.9695	0.6968	393.3541	365.1820	275.2080	-1.8650	0.6778	389.4695	358.6636	271.5629	1.9257
61	08	8	Hispanic*SAT-M	-3.3049	1.5272	365.1820	662.1794	270.3653	-3.1294	1.4953	358.6636	651.2417	264.2488	4.0408
61	08	9	Hispanic*SAT-W	-1.8481	0.8806	275.2080	270.3653	382.4219	-1.7500	0.8628	271.5629	264.2488	379.0015	1.7348
61	08	10	FYGPA	2.8425	0.1487	12.3317	9.9344	12.7487	-0.0282	0.0162	1.9257	4.0408	1.7348	0.6210
62	06	1	HSGPA	0.0000	0.1671	5.7028	6.3452	6.7978	-0.0024	0.0082	0.1121	0.4332	0.2216	0.0858
62	06	2	SAT-CR	0.0000	5.7028	6,806.7590	3,338.6510	4,696.6472	-2.9540	0.1121	529.6872	363.5589	450.5548	13.2794
62	06	3	SAT-M	0.0000	6.3452	3,338.6510	6,494.9232	3,004.8077	-3.0759	0.4332	363.5589	502.1206	371.6305	11.1662
62	06	4	SAT-W	0.0000	6.7978	4,696.6472	3,004.8077	6,161.9112	-2.8070	0.2216	450.5548	371.6305	527.5298	14.0132
62	06	5	Hispanic	0.0499	-0.0024	-2.9540	-3.0759	-2.8070	0.0475	-0.0023	-2.8065	-2.9223	-2.6668	-0.0160
62	06	6	Hispanic*HSGPA	-0.0024	0.0082	0.1121	0.4332	0.2216	-0.0023	0.0082	0.1049	0.4257	0.2148	0.0063
62	06	7	Hispanic*SAT-CR	-2.9529	0.1121	529.6872	363.5589	450.5548	-2.8065	0.1049	520.9641	354.4759	442.2659	1.4711
62	06	8	Hispanic*SAT-M	-3.0748	0.4332	363.5589	502.1206	371.6305	-2.9223	0.4257	354.4759	492.6629	362.9997	1.6379
62	06	9	Hispanic*SAT-W	-2.8059	0.2216	450.5548	371.6305	527.5298	-2.6668	0.2148	442.2659	362.9997	519.6536	1.6427
62	06	10	FYGPA	3.0364	0.0858	13.2794	11.1662	14.0132	-0.0160	0.0063	1.4711	1.6379	1.6427	0.4239



## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
63	06	1	HSGPA	0.0000	0.1289	6.5227	3.3818	7.0522	-0.0237	0.0292	3.5211	2.6196	3.0214	0.0468
63	06	2	SAT-CR	0.0000	6.5227	7,595.1359	3,619.5877	5,291.4718	-11.7552	3.5211	2,332.9515	1,469.9542	1,970.7277	9.9926
63	06	3	SAT-M	0.0000	3.3818	3,619.5877	5,348.5931	3,232.5828	-8.7370	2.6196	1,469.9542	1,323.6535	1,333.4744	8.6984
63	06	4	SAT-W	0.0000	7.0522	5,291.4718	3,232.5828	6,735.8013	-10.1654	3.0214	1,970.7277	1,333.4744	1,991.6903	9.7295
63	06	5	Hispanic	0.1159	-0.0237	-11.7552	-8.7370	-10.1654	0.1027	-0.0209	-10.3934	-7.7248	-8.9877	-0.0483
63	06	6	Hispanic*HSGPA	-0.0236	0.0292	3.5211	2.6196	3.0214	-0.0209	0.0286	3.2437	2.4134	2.7815	0.0082
63	06	7	Hispanic*SAT-CR	-11.7194	3.5211	2,332.9515	1,469.9542	1,970.7277	-10.3934	3.2437	2,195.1871	1,367.5613	1,851.5953	4.4755
63	06	8	Hispanic*SAT-M	-8.7104	2.6196	1,469.9542	1,323.6535	1,333.4744	-7.7248	2.4134	1,367.5613	1,247.5504	1,244.9296	3.2474
63	06	9	Hispanic*SAT-W	-10.1344	3.0214	1,970.7277	1,333.4744	1,991.6903	-8.9877	2.7815	1,851.5953	1,244.9296	1,888.6700	4.0225
63	06	10	FYGPA	3.3634	0.0468	9.9926	8.6984	9.7295	-0.0483	0.0082	4.4755	3.2474	4.0225	0.1619
63	07	1	HSGPA	0.0000	0.1160	4.0118	2.2178	3.7744	-0.0089	0.0143	0.1413	-0.0143	0.4734	0.0328
63	07	2	SAT-CR	0.0000	4.0118	6,657.9692	2,847.6197	4,427.8602	-7.2402	0.1413	1,046.1730	519.8075	889.2063	13.7780
63	07	3	SAT-M	0.0000	2.2178	2,847.6197	5,785.0818	2,669.5473	-4.7687	-0.0143	519.8075	712.0334	523.2005	8.2744
63	07	4	SAT-W	0.0000	3.7744	4,427.8602	2,669.5473	6,124.6748	-7.1927	0.4734	889.2063	523.2005	983.7832	14.2990
63	07	5	Hispanic	0.0872	-0.0089	-7.2402	-4.7687	-7.1927	0.0799	-0.0081	-6.6086	-4.3527	-6.5653	-0.0254
63	07	6	Hispanic*HSGPA	-0.0088	0.0143	0.1413	-0.0143	0.4734	-0.0081	0.0143	0.0774	-0.0564	0.4099	0.0007
63	07	7	Hispanic*SAT-CR	-7.2176	0.1413	1,046.1730	519.8075	889.2063	-6.6086	0.0774	993.9163	485.3889	837.2925	3.0545
63	07	8	Hispanic*SAT-M	-4.7538	-0.0143	519.8075	712.0334	523.2005	-4.3527	-0.0564	485.3889	689.3638	489.0078	1.5653
63	07	9	Hispanic*SAT-W	-7.1703	0.4734	889.2063	523.2005	983.7832	-6.5653	0.4099	837.2925	489.0078	932.2100	2.7821
63	07	10	FYGPA	3.3262	0.0328	13.7780	8.2744	14.2990	-0.0254	0.0007	3.0545	1.5653	2.7821	0.1710
63	08	1	HSGPA	0.0000	0.1125	0.4211	1.5428	2.9595	-0.0019	0.0228	-1.0532	-1.6087	-0.0254	0.0380
63	08	2	SAT-CR	0.0000	0.4211	6,606.1504	3,126.7206	4,594.1373	-8.2723	-1.0532	1,492.7148	987.5518	1,202.6761	9.3019
63	08	3	SAT-M	0.0000	1.5428	3,126.7206	6,019.6258	3,082.6558	-6.3998	-1.6087	987.5518	998.4715	839.7877	6.4328
63	08	4	SAT-W	0.0000	2.9595	4,594.1373	3,082.6558	6,002.7469	-9.1256	-0.0254	1,202.6761	839.7877	1,318.8157	10.0719
63	08	5	Hispanic	0.1006	-0.0019	-8.2723	-6.3998	-9.1256	0.0908	-0.0017	-7.4399	-5.7558	-8.2073	-0.0299
63	08	6	Hispanic*HSGPA	-0.0019	0.0228	-1.0532	-1.6087	-0.0254	-0.0017	0.0228	-1.0686	-1.6206	-0.0424	0.0011
63	08	7	Hispanic*SAT-CR	-8.2463	-1.0532	1,492.7148	987.5518	1,202.6761	-7.4399	-1.0686	1,424.4987	934.7769	1,127.4232	3.3448
63	08	8	Hispanic*SAT-M	-6.3797	-1.6087	987.5518	998.4715	839.7877	-5.7558	-1.6206	934.7769	957.6426	781.5689	2.9710
63	08	9	Hispanic*SAT-W	-9.0970	-0.0254	1,202.6761	839.7877	1,318.8157	-8.2073	-0.0424	1,127.4232	781.5689	1,235.8001	3.4036
63	08	10	FYGPA	3.3577	0.0380	9.3019	6.4328	10.0719	-0.0299	0.0011	3.3448	2.9710	3.4036	0.1684
64	06	1	HSGPA	0.0000	0.2634	8.1014	11.2771	9.6390	-0.0027	0.1115	1.9430	3.7233	2.9952	0.1650
64	06	2	SAT-CR	0.0000	8.1014	6,749.5200	3,951.0618	4,641.6188	-10.8484	1.9430	2,815.8144	1,605.4866	1,861.8785	21.7258
64	06	3	SAT-M	0.0000	11.2771	3,951.0618	7,129.6500	3,579.8769	-11.9096	3.7233	1,605.4866	2,893.0577	1,479.2777	24.1406
64	06	4	SAT-W	0.0000	9.6390	4,641.6188	3,579.8769	5,956.5385	-9.3763	2.9952	1,861.8785	1,479.2777	2,443.2179	22.6553
64	06	5	Hispanic	0.4353	-0.0027	-10.8484	-11.9096	-9.3763	0.2459	-0.0015	-6.1257	-6.7250	-5.2945	-0.0836
64	06	6	Hispanic*HSGPA	-0.0027	0.1115	1.9430	3.7233	2.9952	-0.0015	0.1115	1.9132	3.6907	2.9695	0.0573
64	06	7	Hispanic*SAT-CR	-10.8445	1.9430	2,815.8144	1,605.4866	1,861.8785	-6.1257	1.9132	2,698.1688	1,476.3327	1,760.1975	8.7176
64	06	8	Hispanic*SAT-M	-11.9053	3.7233	1,605.4866	2,893.0577	1,479.2777	-6.7250	3.6907	1,476.3327	2,751.2696	1,367.6500	9.1730
64	06	9	Hispanic*SAT-W	-9.3729	2.9952	1,861.8785	1,479.2777	2,443.2179	-5.2945	2.9695	1,760.1975	1,367.6500	2,355.3350	8.7417
64	06	10	FYGPA	2.4794	0.1650	21.7258	24.1406	22.6553	-0.0836	0.0573	8.7176	9.1730	8.7417	0.9176

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
66	06	1	HSGPA	0.0000	0.1914	5.7590	6.3814	6.5492	-0.0001	0.0206	0.5264	0.6644	0.6648	0.1354
66	06	2	SAT-CR	0.0000	5.7590	5,621.3174	2,772.1840	3,648.6474	-2.3033	0.5264	649.1569	341.6226	447.5294	11.1015
66	06	3	SAT-M	0.0000	6.3814	2,772.1840	5,821.3193	2,521.9241	-3.1079	0.6644	341.6226	718.7195	351.4029	10.6688
66	06	4	SAT-W	0.0000	6.5492	3,648.6474	2,521.9241	5,178.9065	-2.2066	0.6648	447.5294	351.4029	596.7070	14.0262
66	06	5	Hispanic	0.1148	-0.0001	-2.3033	-3.1079	-2.2066	0.1017	0.0000	-2.0388	-2.7509	-1.9532	-0.0214
66	06	6	Hispanic*HSGPA	-0.0001	0.0206	0.5264	0.6644	0.6648	0.0000	0.0206	0.5263	0.6642	0.6647	0.0144
66	06	7	Hispanic*SAT-CR	-2.3024	0.5264	649.1569	341.6226	447.5294	-2.0388	0.5263	643.8538	334.4671	442.4489	1.8500
66	06	8	Hispanic*SAT-M	-3.1067	0.6644	341.6226	718.7195	351.4029	-2.7509	0.6642	334.4671	709.0643	344.5475	2.0715
66	06	9	Hispanic*SAT-W	-2.2058	0.6648	447.5294	351.4029	596.7070	-1.9532	0.6647	442.4489	344.5475	591.8396	2.0882
66	06	10	FYGPA	2.9060	0.1354	11.1015	10.6688	14.0262	-0.0214	0.0144	1.8500	2.0715	2.0882	0.6837
66	07	1	HSGPA	0.0000	0.2225	5.3778	7.5876	7.0003	-0.0018	0.0302	-0.0949	0.2532	0.0204	0.1830
66	07	2	SAT-CR	0.0000	5.3778	5,555.0175	2,685.7296	3,769.4711	-4.3047	-0.0949	775.8549	340.1168	542.5115	12.6335
66	07	3	SAT-M	0.0000	7.5876	2,685.7296	5,640.9172	2,625.1841	-3.5568	0.2532	340.1168	736.7054	338.8553	12.6245
66	07	4	SAT-W	0.0000	7.0003	3,769.4711	2,625.1841	5,227.8499	-3.9367	0.0204	542.5115	338.8553	763.0475	16.3645
66	07	5	Hispanic	0.1386	-0.0018	-4.3047	-3.5568	-3.9367	0.1194	-0.0016	-3.7080	-3.0638	-3.3910	-0.0265
66	07	6	Hispanic*HSGPA	-0.0018	0.0302	-0.0949	0.2532	0.0204	-0.0016	0.0302	-0.1028	0.2466	0.0132	0.0219
66	07	7	Hispanic*SAT-CR	-4.3033	-0.0949	775.8549	340.1168	542.5115	-3.7080	-0.1028	757.3307	324.8108	525.5708	1.5216
66	07	8	Hispanic*SAT-M	-3.5557	0.2532	340.1168	736.7054	338.8553	-3.0638	0.2466	324.8108	724.0584	324.8577	1.6554
66	07	9	Hispanic*SAT-W	-3.9354	0.0204	542.5115	338.8553	763.0475	-3.3910	0.0132	525.5708	324.8577	747.5551	2.2574
66	07	10	FYGPA	2.7557	0.1830	12.6335	12.6245	16.3645	-0.0265	0.0219	1.5216	1.6554	2.2574	0.8102
67	08	1	HSGPA	0.0000	0.3011	14.5825	18.8164	20.1968	-0.0563	0.0625	3.4978	6.6704	4.2044	0.2371
67	08	2	SAT-CR	0.0000	14.5825	7,081.6410	4,998.9443	5,537.3544	-11.7707	3.4978	1,618.6667	1,435.9403	1,404.9273	17.9142
67	08	3	SAT-M	0.0000	18.8164	4,998.9443	8,458.8418	4,791.8025	-16.6030	6.6704	1,435.9403	2,234.8682	1,513.7524	30.6071
67	08	4	SAT-W	0.0000	20.1968	5,537.3544	4,791.8025	7,205.4029	-12.0727	4.2044	1,404.9273	1,513.7524	1,613.6886	30.2134
67	08	5	Hispanic	0.2193	-0.0563	-11.7707	-16.6030	-12.0727	0.1727	-0.0439	-9.1894	-12.9620	-9.4251	-0.1127
67	08	6	Hispanic*HSGPA	-0.0558	0.0625	3.4978	6.6704	4.2044	-0.0439	0.0593	2.8411	5.7442	3.5309	0.0901
67	08	7	Hispanic*SAT-CR	-11.6674	3.4978	1,618.6667	1,435.9403	1,404.9273	-9.1894	2.8411	1,481.3329	1,242.2257	1,264.0703	7.2365
67	08	8	Hispanic*SAT-M	-16.4574	6.6704	1,435.9403	2,234.8682	1,513.7524	-12.9620	5.7442	1,242.2257	1,961.6262	1,315.0681	11.0000
67	08	9	Hispanic*SAT-W	-11.9668	4.2044	1,404.9273	1,513.7524	1,613.6886	-9.4251	3.5309	1,264.0703	1,315.0681	1,469.2180	9.1266
67	08	10	FYGPA	3.0490	0.2371	17.9142	30.6071	30.2134	-0.1127	0.0901	7.2365	11.0000	9.1266	0.8316
69	07	1	HSGPA	0.0000	0.2878	17.2225	18.3516	18.7892	-0.0003	0.0122	0.4865	0.7682	0.4840	0.2149
69	07	2	SAT-CR	0.0000	17.2225	6,591.5883	3,916.7521	4,765.2306	-0.4525	0.4865	224.0836	140.4062	149.2937	17.1916
69	07	3	SAT-M	0.0000	18.3516	3,916.7521	6,939.4311	3,747.2819	-1.2503	0.7682	140.4062	251.0788	112.7922	16.8719
69	07	4	SAT-W	0.0000	18.7892	4,765.2306	3,747.2819	6,088.9908	-0.8808	0.4840	149.2937	112.7922	213.4861	22.6785
69	07	5	Hispanic	0.0409	-0.0003	-0.4525	-1.2503	-0.8808	0.0393	-0.0002	-0.4340	-1.1991	-0.8447	-0.0057
69	07	6	Hispanic*HSGPA	-0.0003	0.0122	0.4865	0.7682	0.4840	-0.0002	0.0122	0.4863	0.7679	0.4838	0.0117
69	07	7	Hispanic*SAT-CR	-0.4522	0.4865	224.0836	140.4062	149.2937	-0.4340	0.4863	223.8790	139.8409	148.8954	-0.2233
69	07	8	Hispanic*SAT-M	-1.2494	0.7682	140.4062	251.0788	112.7922	-1.1991	0.7679	139.8409	249.5166	111.6917	0.4808
69	07	9	Hispanic*SAT-W	-0.8802	0.4840	149.2937	112.7922	213.4861	-0.8447	0.4838	148.8954	111.6917	212.7109	0.5192
69	07	10	FYGPA	2.6121	0.2149	17.1916	16.8719	22.6785	-0.0057	0.0117	-0.2233	0.4808	0.5192	1.0308

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
69	08	1	HSGPA	0.0000	0.2753	12.7373	16.2310	16.2344	0.0066	0.0085	0.3065	0.2490	0.4035	0.1941
69	08	2	SAT-CR	0.0000	12.7373	6,377.1200	3,623.2313	4,283.9415	-1.0382	0.3065	373.7782	246.1743	232.5103	13.3866
69	08	3	SAT-M	0.0000	16.2310	3,623.2313	6,679.4012	3,391.8396	-1.2665	0.2490	246.1743	329.8189	187.8973	14.5943
69	08	4	SAT-W	0.0000	16.2344	4,283.9415	3,391.8396	5,755.5486	-0.6834	0.4035	232.5103	187.8973	254.0738	18.9419
69	08	5	Hispanic	0.0393	0.0066	-1.0382	-1.2665	-0.6834	0.0378	0.0063	-0.9974	-1.2168	-0.6566	-0.0022
69	08	6	Hispanic*HSGPA	0.0066	0.0085	0.3065	0.2490	0.4035	0.0063	0.0085	0.3134	0.2574	0.4080	0.0042
69	08	7	Hispanic*SAT-CR	-1.0375	0.3065	373.7782	246.1743	232.5103	-0.9974	0.3134	372.7010	244.8602	231.8012	1.2453
69	08	8	Hispanic*SAT-M	-1.2657	0.2490	246.1743	329.8189	187.8973	-1.2168	0.2574	244.8602	328.2159	187.0323	1.3119
69	08	9	Hispanic*SAT-W	-0.6830	0.4035	232.5103	187.8973	254.0738	-0.6566	0.4080	231.8012	187.0323	253.6070	1.1377
69	08	10	FYGPA	2.6499	0.1941	13.3866	14.5943	18.9419	-0.0022	0.0042	1.2453	1.3119	1.1377	0.9449
70	08	1	HSGPA	0.0000	0.1516	6.0118	6.4850	7.4594	-0.0306	0.0369	2.6643	3.3582	3.3196	0.0948
70	08	2	SAT-CR	0.0000	6.0118	6,012.7634	2,479.9017	4,218.5228	-7.7990	2.6643	1,572.8659	1,009.0850	1,247.7269	12.9842
70	08	3	SAT-M	0.0000	6.4850	2,479.9017	5,279.3911	2,354.9505	-9.4602	3.3582	1,009.0850	1,518.4167	984.8774	8.7163
70	08	4	SAT-W	0.0000	7.4594	4,218.5228	2,354.9505	6,444.8780	-7.9508	3.3196	1,247.7269	984.8774	1,403.3978	17.1016
70	08	5	Hispanic	0.1382	-0.0306	-7.7990	-9.4602	-7.9508	0.1192	-0.0264	-6.7210	-8.1525	-6.8518	-0.0499
70	08	6	Hispanic*HSGPA	-0.0306	0.0369	2.6643	3.3582	3.3196	-0.0264	0.0360	2.4258	3.0690	3.0765	0.0194
70	08	7	Hispanic*SAT-CR	-7.7929	2.6643	1,572.8659	1,009.0850	1,247.7269	-6.7210	2.4258	1,512.0892	935.3632	1,185.7674	2.9598
70	08	8	Hispanic*SAT-M	-9.4527	3.3582	1,009.0850	1,518.4167	984.8774	-8.1525	3.0690	935.3632	1,428.9925	909.7208	3.7830
70	08	9	Hispanic*SAT-W	-7.9445	3.3196	1,247.7269	984.8774	1,403.3978	-6.8518	3.0765	1,185.7674	909.7208	1,340.2324	3.6022
70	08	10	FYGPA	3.0311	0.0948	12.9842	8.7163	17.1016	-0.0499	0.0194	2.9598	3.7830	3.6022	0.4110
72	06	1	HSGPA	0.0000	0.1678	4.1899	5.3721	5.2285	-0.0148	0.0212	1.2579	1.5436	0.9815	0.1021
72	06	2	SAT-CR	0.0000	4.1899	4,917.2215	1,875.0422	3,198.4647	-3.9864	1.2579	806.2691	570.5862	581.1220	11.1947
72	06	3	SAT-M	0.0000	5.3721	1,875.0422	5,104.4983	1,726.7946	-6.2779	1.5436	570.5862	1,057.1438	522.3193	7.0836
72	06	4	SAT-W	0.0000	5.2285	3,198.4647	1,726.7946	4,980.5169	-3.5205	0.9815	581.1220	522.3193	731.2424	11.4580
72	06	5	Hispanic	0.1130	-0.0148	-3.9864	-6.2779	-3.5205	0.1003	-0.0131	-3.5361	-5.5687	-3.1228	-0.0101
72	06	6	Hispanic*HSGPA	-0.0148	0.0212	1.2579	1.5436	0.9815	-0.0131	0.0210	1.1990	1.4509	0.9295	0.0108
72	06	7	Hispanic*SAT-CR	-3.9836	1.2579	806.2691	570.5862	581.1220	-3.5361	1.1990	790.3890	545.5776	567.0978	1.0815
72	06	8	Hispanic*SAT-M	-6.2735	1.5436	570.5862	1,057.1438	522.3193	-5.5687	1.4509	545.5776	1,017.7594	500.2335	1.3044
72	06	9	Hispanic*SAT-W	-3.5180	0.9815	581.1220	522.3193	731.2424	-3.1228	0.9295	567.0978	500.2335	718.8572	1.3757
72	06	10	FYGPA	2.8811	0.1021	11.1947	7.0836	11.4580	-0.0101	0.0108	1.0815	1.3044	1.3757	0.4484
73	06	1	HSGPA	0.0000	0.2502	8.4189	9.2323	10.3127	-0.0009	0.0134	0.1875	0.4243	0.4470	0.1543
73	06	2	SAT-CR	0.0000	8.4189	5,679.0506	2,514.5428	3,631.2750	-0.3442	0.1875	189.7018	49.8282	93.9149	13.0185
73	06	3	SAT-M	0.0000	9.2323	2,514.5428	5,266.8759	2,315.2683	-1.3903	0.4243	49.8282	162.7695	105.2996	11.9204
73	06	4	SAT-W	0.0000	10.3127	3,631.2750	2,315.2683	5,168.0888	-0.6671	0.4470	93.9149	105.2996	197.8437	13.6233
73	06	5	Hispanic	0.0403	-0.0009	-0.3442	-1.3903	-0.6671	0.0387	-0.0009	-0.3304	-1.3342	-0.6402	-0.0107
73	06	6	Hispanic*HSGPA	-0.0009	0.0134	0.1875	0.4243	0.4470	-0.0009	0.0134	0.1872	0.4230	0.4464	0.0050
73	06	7	Hispanic*SAT-CR	-0.3440	0.1875	189.7018	49.8282	93.9149	-0.3304	0.1872	189.5834	49.3500	93.6854	0.8270
73	06	8	Hispanic*SAT-M	-1.3892	0.4243	49.8282	162.7695	105.2996	-1.3342	0.4230	49.3500	160.8381	104.3728	0.5236
73	06	9	Hispanic*SAT-W	-0.6666	0.4470	93.9149	105.2996	197.8437	-0.6402	0.4464	93.6854	104.3728	197.3990	0.5089
73	06	10	FYGPA	2.7747	0.1543	13.0185	11.9204	13.6233	-0.0107	0.0050	0.8270	0.5236	0.5089	0.4891

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
73	07	1	HSGPA	0.0000	0.2606	7.6055	7.5134	10.0443	-0.0145	0.0220	1.0735	0.9603	1.2535	0.1797
73	07	2	SAT-CR	0.0000	7.6055	5,379.3558	2,306.2935	3,550.0085	-1.8543	1.0735	350.1967	175.9347	293.9893	11.7469
73	07	3	SAT-M	0.0000	7.5134	2,306.2935	5,468.6269	2,089.8099	-2.0761	0.9603	175.9347	243.0931	182.3983	9.6411
73	07	4	SAT-W	0.0000	10.0443	3,550.0085	2,089.8099	4,885.2928	-2.0839	1.2535	293.9893	182.3983	392.7717	17.2437
73	07	5	Hispanic	0.0552	-0.0145	-1.8543	-2.0761	-2.0839	0.0522	-0.0137	-1.7519	-1.9615	-1.9689	-0.0215
73	07	6	Hispanic*HSGPA	-0.0145	0.0220	1.0735	0.9603	1.2535	-0.0137	0.0218	1.0466	0.9301	1.2232	0.0147
73	07	7	Hispanic*SAT-CR	-1.8530	1.0735	350.1967	175.9347	293.9893	-1.7519	1.0466	346.7608	172.0878	290.1279	1.1309
73	07	8	Hispanic*SAT-M	-2.0746	0.9603	175.9347	243.0931	182.3983	-1.9615	0.9301	172.0878	238.7861	178.0750	1.3589
73	07	9	Hispanic*SAT-W	-2.0825	1.2535	293.9893	182.3983	392.7717	-1.9689	1.2232	290.1279	178.0750	388.4320	1.6366
73	07	10	FYGPA	2.6770	0.1797	11.7469	9.6411	17.2437	-0.0215	0.0147	1.1309	1.3589	1.6366	0.7152
73	08	1	HSGPA	0.0000	0.2279	5.2820	6.6568	8.4708	-0.0002	0.0115	-0.1010	0.1475	0.4048	0.1681
73	08	2	SAT-CR	0.0000	5.2820	4,981.7615	2,088.0434	3,186.6607	-0.4760	-0.1010	128.0237	21.2873	38.3782	9.4451
73	08	3	SAT-M	0.0000	6.6568	2,088.0434	4,877.4298	1,819.3484	-0.7554	0.1475	21.2873	220.5127	72.0359	8.3090
73	08	4	SAT-W	0.0000	8.4708	3,186.6607	1,819.3484	4,765.8325	-0.8182	0.4048	38.3782	72.0359	135.1481	15.7827
73	08	5	Hispanic	0.0382	-0.0002	-0.4760	-0.7554	-0.8182	0.0368	-0.0002	-0.4579	-0.7265	-0.7869	-0.0005
73	08	6	Hispanic*HSGPA	-0.0002	0.0115	-0.1010	0.1475	0.4048	-0.0002	0.0115	-0.1010	0.1474	0.4046	0.0083
73	08	7	Hispanic*SAT-CR	-0.4757	-0.1010	128.0237	21.2873	38.3782	-0.4579	-0.1010	127.7972	20.9281	37.9890	0.3690
73	08	8	Hispanic*SAT-M	-0.7548	0.1475	21.2873	220.5127	72.0359	-0.7265	0.1474	20.9281	219.9426	71.4184	0.4452
73	08	9	Hispanic*SAT-W	-0.8175	0.4048	38.3782	72.0359	135.1481	-0.7869	0.4046	37.9890	71.4184	134.4793	0.6648
73	08	10	FYGPA	2.7425	0.1681	9.4451	8.3090	15.7827	-0.0005	0.0083	0.3690	0.4452	0.6648	0.6021
74	07	1	HSGPA	0.0000	0.2183	2.8097	6.7310	5.8615	-0.0093	0.0954	0.0286	2.2026	1.4559	0.1534
74	07	2	SAT-CR	0.0000	2.8097	6,815.1613	3,462.9261	4,852.5294	-11.6919	0.0286	2,815.0591	1,403.9516	1,903.8993	15.6559
74	07	3	SAT-M	0.0000	6.7310	3,462.9261	6,374.4495	3,544.3017	-10.5413	2.2026	1,403.9516	2,703.4083	1,408.0197	16.8665
74	07	4	SAT-W	0.0000	5.8615	4,852.5294	3,544.3017	6,474.3787	-12.3129	1.4559	1,903.8993	1,408.0197	2,619.8198	21.2195
74	07	5	Hispanic	0.4749	-0.0093	-11.6919	-10.5413	-12.3129	0.2496	-0.0049	-6.1392	-5.5351	-6.4653	-0.0565
74	07	6	Hispanic*HSGPA	-0.0093	0.0954	0.0286	2.2026	1.4559	-0.0049	0.0953	-0.0798	2.1050	1.3418	0.0678
74	07	7	Hispanic*SAT-CR	-11.6821	0.0286	2,815.0591	1,403.9516	1,903.8993	-6.1392	-0.0798	2,678.4725	1,280.8070	1,760.0580	6.8662
74	07	8	Hispanic*SAT-M	-10.5325	2.2026	1,403.9516	2,703.4083	1,408.0197	-5.5351	2.1050	1,280.8070	2,592.3828	1,278.3343	6.5125
74	07	9	Hispanic*SAT-W	-12.3026	1.4559	1,903.8993	1,408.0197	2,619.8198	-6.4653	1.3418	1,760.0580	1,278.3343	2,468.3385	8.5824
74	07	10	FYGPA	2.4123	0.1534	15.6559	16.8665	21.2195	-0.0565	0.0678	6.8662	6.5125	8.5824	0.8927
74	08	1	HSGPA	0.0000	0.2299	5.5486	8.0820	6.7354	-0.0163	0.1040	1.4554	2.5629	2.0465	0.1567
74	08	2	SAT-CR	0.0000	5.5486	6,799.6422	3,851.0030	4,934.7606	-13.1867	1.4554	3,201.1600	1,825.9741	2,342.5123	14.8654
74	08	3	SAT-M	0.0000	8.0820	3,851.0030	6,722.8850	3,564.1927	-11.5166	2.5629	1,825.9741	3,336.4388	1,635.3169	17.4384
74	08	4	SAT-W	0.0000	6.7354	4,934.7606	3,564.1927	6,606.8910	-12.2811	2.0465	2,342.5123	1,635.3169	3,211.9871	19.6118
74	08	5	Hispanic	0.5104	-0.0163	-13.1867	-11.5166	-12.2811	0.2501	-0.0080	-6.4566	-5.6389	-6.0132	-0.0505
74	08	6	Hispanic*HSGPA	-0.0163	0.1040	1.4554	2.5629	2.0465	-0.0080	0.1037	1.2403	2.3750	1.8462	0.0606
74	08	7	Hispanic*SAT-CR	-13.1769	1.4554	3,201.1600	1,825.9741	2,342.5123	-6.4566	1.2403	3,027.4000	1,674.2206	2,180.6853	6.4017
74	08	8	Hispanic*SAT-M	-11.5081	2.5629	1,825.9741	3,336.4388	1,635.3169	-5.6389	2.3750	1,674.2206	3,203.9048	1,493.9851	7.4620
74	08	9	Hispanic*SAT-W	-12.2720	2.0465	2,342.5123	1,635.3169	3,211.9871	-6.0132	1.8462	2,180.6853	1,493.9851	3,061.2734	8.7351
74	08	10	FYGPA	2.4585	0.1567	14.8654	17.4384	19.6118	-0.0505	0.0606	6.4017	7.4620	8.7351	0.9455

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
75	06	1	HSGPA	0.0000	0.2377	13.9527	16.5850	16.0441	-0.0059	0.0118	0.7656	0.7739	0.7851	0.1817
75	06	2	SAT-CR	0.0000	13.9527	6,794.8949	4,101.3681	4,901.6971	-1.3691	0.7656	283.1593	198.0207	217.5326	16.6902
75	06	3	SAT-M	0.0000	16.5850	4,101.3681	7,424.2889	3,907.7538	-1.3557	0.7739	198.0207	331.9961	205.6189	18.5402
75	06	4	SAT-W	0.0000	16.0441	4,901.6971	3,907.7538	6,500.1222	-1.4851	0.7851	217.5326	205.6189	294.5269	20.8909
75	06	5	Hispanic	0.0349	-0.0059	-1.3691	-1.3557	-1.4851	0.0337	-0.0057	-1.3214	-1.3084	-1.4333	-0.0054
75	06	6	Hispanic*HSGPA	-0.0059	0.0118	0.7656	0.7739	0.7851	-0.0057	0.0118	0.7576	0.7659	0.7763	0.0077
75	06	7	Hispanic*SAT-CR	-1.3688	0.7656	283.1593	198.0207	217.5326	-1.3214	0.7576	281.2852	196.1650	215.4998	0.3777
75	06	8	Hispanic*SAT-M	-1.3554	0.7739	198.0207	331.9961	205.6189	-1.3084	0.7659	196.1650	330.1586	203.6061	0.5647
75	06	9	Hispanic*SAT-W	-1.4847	0.7851	217.5326	205.6189	294.5269	-1.4333	0.7763	215.4998	203.6061	292.3219	0.4812
75	06	10	FYGPA	2.7997	0.1817	16.6902	18.5402	20.8909	-0.0054	0.0077	0.3777	0.5647	0.4812	0.6695
75	08	1	HSGPA	0.0000	0.2166	13.9185	14.3817	15.4756	-0.0036	0.0074	0.3094	0.3124	0.3749	0.1516
75	08	2	SAT-CR	0.0000	13.9185	6,325.4330	3,715.0906	4,475.6726	-1.2737	0.3094	216.3623	139.4320	159.5985	13.3284
75	08	3	SAT-M	0.0000	14.3817	3,715.0906	6,796.6232	3,464.9190	-1.1489	0.3124	139.4320	266.5543	136.9147	12.9748
75	08	4	SAT-W	0.0000	15.4756	4,475.6726	3,464.9190	6,201.0017	-1.1945	0.3749	159.5985	136.9147	212.1444	17.6051
75	08	5	Hispanic	0.0313	-0.0036	-1.2737	-1.1489	-1.1945	0.0303	-0.0035	-1.2338	-1.1129	-1.1571	-0.0049
75	08	6	Hispanic*HSGPA	-0.0036	0.0074	0.3094	0.3124	0.3749	-0.0035	0.0074	0.3049	0.3083	0.3706	0.0036
75	08	7	Hispanic*SAT-CR	-1.2733	0.3094	216.3623	139.4320	159.5985	-1.2338	0.3049	214.7405	137.9691	158.0774	0.2981
75	08	8	Hispanic*SAT-M	-1.1486	0.3124	139.4320	266.5543	136.9147	-1.1129	0.3083	137.9691	265.2346	135.5427	0.4435
75	08	9	Hispanic*SAT-W	-1.1942	0.3749	159.5985	136.9147	212.1444	-1.1571	0.3706	158.0774	135.5427	210.7178	0.4097
75	08	10	FYGPA	2.8985	0.1516	13.3284	12.9748	17.6051	-0.0049	0.0036	0.2981	0.4435	0.4097	0.5221
77	06	1	HSGPA	0.0000	0.2789	16.2010	18.9626	17.1746	-0.0025	0.0043	0.2661	0.3812	0.3344	0.1739
77	06	2	SAT-CR	0.0000	16.2010	6,957.8733	4,294.2439	5,145.6652	-0.6009	0.2661	99.6003	78.9787	77.0975	15.9564
77	06	3	SAT-M	0.0000	18.9626	4,294.2439	7,828.1785	4,021.1845	-0.8687	0.3812	78.9787	114.0616	65.3081	15.7828
77	06	4	SAT-W	0.0000	17.1746	5,145.6652	4,021.1845	6,750.8948	-0.3835	0.3344	77.0975	65.3081	123.8631	19.6510
77	06	5	Hispanic	0.0170	-0.0025	-0.6009	-0.8687	-0.3835	0.0168	-0.0024	-0.5907	-0.8539	-0.3769	0.0008
77	06	6	Hispanic*HSGPA	-0.0025	0.0043	0.2661	0.3812	0.3344	-0.0024	0.0043	0.2646	0.3791	0.3334	0.0028
77	06	7	Hispanic*SAT-CR	-0.6005	0.2661	99.6003	78.9787	77.0975	-0.5907	0.2646	99.2394	78.4571	76.8672	0.2286
77	06	8	Hispanic*SAT-M	-0.8681	0.3812	78.9787	114.0616	65.3081	-0.8539	0.3791	78.4571	113.3076	64.9752	0.3005
77	06	9	Hispanic*SAT-W	-0.3832	0.3344	77.0975	65.3081	123.8631	-0.3769	0.3334	76.8672	64.9752	123.7162	0.4145
77	06	10	FYGPA	3.0329	0.1739	15.9564	15.7828	19.6510	0.0008	0.0028	0.2286	0.3005	0.4145	0.4754
77	07	1	HSGPA	0.0000	0.2094	15.3880	16.2389	16.8290	-0.0016	0.0042	0.6816	0.6796	0.6097	0.0577
77	07	2	SAT-CR	0.0000	15.3880	6,872.3749	3,928.6399	5,065.6565	0.1653	0.6816	177.9519	129.0384	145.9599	9.3638
77	07	3	SAT-M	0.0000	16.2389	3,928.6399	7,443.2800	4,077.9600	-0.3053	0.6796	129.0384	191.7717	120.3581	7.3162
77	07	4	SAT-W	0.0000	16.8290	5,065.6565	4,077.9600	6,813.7521	-0.0457	0.6097	145.9599	120.3581	157.9391	10.1308
77	07	5	Hispanic	0.0185	-0.0016	0.1653	-0.3053	-0.0457	0.0182	-0.0016	0.1622	-0.2997	-0.0448	-0.0015
77	07	6	Hispanic*HSGPA	-0.0016	0.0042	0.6816	0.6796	0.6097	-0.0016	0.0042	0.6819	0.6791	0.6097	0.0011
77	07	7	Hispanic*SAT-CR	0.1651	0.6816	177.9519	129.0384	145.9599	0.1622	0.6819	177.9246	129.0888	145.9675	0.2527
77	07	8	Hispanic*SAT-M	-0.3050	0.6796	129.0384	191.7717	120.3581	-0.2997	0.6791	129.0888	191.6786	120.3442	0.2454
77	07	9	Hispanic*SAT-W	-0.0456	0.6097	145.9599	120.3581	157.9391	-0.0448	0.6097	145.9675	120.3442	157.9371	0.2981
77	07	10	FYGPA	3.4658	0.0577	9.3638	7.3162	10.1308	-0.0015	0.0011	0.2527	0.2454	0.2981	0.0880

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
77	08	1	HSGPA	0.0000	0.2338	12.1569	15.0082	15.4028	0.0019	0.0046	0.3516	0.1454	0.2523	0.1570
77	08	2	SAT-CR	0.0000	12.1569	6,719.2711	3,737.3224	5,147.7652	0.6919	0.3516	165.7210	49.7546	124.3379	16.6136
77	08	3	SAT-M	0.0000	15.0082	3,737.3224	7,023.7417	3,651.2070	-0.0465	0.1454	49.7546	59.3722	49.0925	14.2960
77	08	4	SAT-W	0.0000	15.4028	5,147.7652	3,651.2070	7,139.5854	0.4276	0.2523	124.3379	49.0925	118.2594	21.5532
77	08	5	Hispanic	0.0169	0.0019	0.6919	-0.0465	0.4276	0.0166	0.0018	0.6802	-0.0457	0.4204	0.0024
77	08	6	Hispanic*HSGPA	0.0019	0.0046	0.3516	0.1454	0.2523	0.0018	0.0046	0.3503	0.1455	0.2515	0.0037
77	08	7	Hispanic*SAT-CR	0.6914	0.3516	165.7210	49.7546	124.3379	0.6802	0.3503	165.2427	49.7867	124.0422	0.5250
77	08	8	Hispanic*SAT-M	-0.0464	0.1454	49.7546	59.3722	49.0925	-0.0457	0.1455	49.7867	59.3700	49.1123	0.2425
77	08	9	Hispanic*SAT-W	0.4273	0.2523	124.3379	49.0925	118.2594	0.4204	0.2515	124.0422	49.1123	118.0767	0.5787
77	08	10	FYGPA	3.1071	0.1570	16.6136	14.2960	21.5532	0.0024	0.0037	0.5250	0.2425	0.5787	0.4111
78	06	1	HSGPA	0.0000	0.1507	5.6420	5.6968	6.0213	0.0006	0.0148	0.0297	0.2558	0.0728	0.0612
78	06	2	SAT-CR	0.0000	5.6420	4,961.5437	1,743.9194	2,979.4134	-3.1376	0.0297	539.0737	243.5213	332.2301	11.9831
78	06	3	SAT-M	0.0000	5.6968	1,743.9194	4,658.3703	1,809.9680	-3.9057	0.2558	243.5213	550.0391	278.7518	8.5637
78	06	4	SAT-W	0.0000	6.0213	2,979.4134	1,809.9680	4,718.4393	-3.6788	0.0728	332.2301	278.7518	552.4957	11.7588
78	06	5	Hispanic	0.0960	0.0006	-3.1376	-3.9057	-3.6788	0.0869	0.0005	-2.8362	-3.5306	-3.3255	-0.0193
78	06	6	Hispanic*HSGPA	0.0006	0.0148	0.0297	0.2558	0.0728	0.0005	0.0148	0.0315	0.2580	0.0748	0.0060
78	06	7	Hispanic*SAT-CR	-3.1362	0.0297	539.0737	243.5213	332.2301	-2.8362	0.0315	529.2336	231.2722	320.6926	1.0027
78	06	8	Hispanic*SAT-M	-3.9040	0.2558	243.5213	550.0391	278.7518	-3.5306	0.2580	231.2722	534.7913	264.3898	1.1161
78	06	9	Hispanic*SAT-W	-3.6772	0.0728	332.2301	278.7518	552.4957	-3.3255	0.0748	320.6926	264.3898	538.9680	1.2184
78	06	10	FYGPA	3.0163	0.0612	11.9831	8.5637	11.7588	-0.0193	0.0060	1.0027	1.1161	1.2184	0.2367
78	07	1	HSGPA	0.0000	0.1554	4.8818	4.6706	5.0258	-0.0007	0.0146	0.1609	-0.0311	0.0238	0.0611
78	07	2	SAT-CR	0.0000	4.8818	4,872.0200	1,579.6562	2,885.4270	-3.5659	0.1609	492.9283	233.9162	377.5759	11.2964
78	07	3	SAT-M	0.0000	4.6706	1,579.6562	4,436.2587	1,541.0695	-3.6049	-0.0311	233.9162	519.7478	273.3216	7.9737
78	07	4	SAT-W	0.0000	5.0258	2,885.4270	1,541.0695	4,497.4303	-3.9795	0.0238	377.5759	273.3216	579.0381	11.6632
78	07	5	Hispanic	0.1004	-0.0007	-3.5659	-3.6049	-3.9795	0.0903	-0.0006	-3.2080	-3.2430	-3.5800	-0.0277
78	07	6	Hispanic*HSGPA	-0.0007	0.0146	0.1609	-0.0311	0.0238	-0.0006	0.0146	0.1585	-0.0336	0.0211	0.0043
78	07	7	Hispanic*SAT-CR	-3.5644	0.1609	492.9283	233.9162	377.5759	-3.2080	0.1585	480.2178	221.0669	363.3912	1.5229
78	07	8	Hispanic*SAT-M	-3.6034	-0.0311	233.9162	519.7478	273.3216	-3.2430	-0.0336	221.0669	506.7581	258.9820	1.2844
78	07	9	Hispanic*SAT-W	-3.9778	0.0238	377.5759	273.3216	579.0381	-3.5800	0.0211	363.3912	258.9820	563.2082	1.8709
78	07	10	FYGPA	3.0146	0.0611	11.2964	7.9737	11.6632	-0.0277	0.0043	1.5229	1.2844	1.8709	0.2691
78	08	1	HSGPA	0.0000	0.1442	4.5750	4.4984	3.9403	-0.0023	0.0182	0.4960	0.2216	0.5643	0.0520
78	08	2	SAT-CR	0.0000	4.5750	4,491.7937	1,430.7040	2,679.8205	-3.8089	0.4960	657.5275	301.7930	486.9222	10.2553
78	08	3	SAT-M	0.0000	4.4984	1,430.7040	4,178.5998	1,390.0759	-4.0142	0.2216	301.7930	664.6686	333.2338	7.4337
78	08	4	SAT-W	0.0000	3.9403	2,679.8205	1,390.0759	4,278.3006	-4.1661	0.5643	486.9222	333.2338	652.8391	10.3669
78	08	5	Hispanic	0.1203	-0.0023	-3.8089	-4.0142	-4.1661	0.1059	-0.0020	-3.3508	-3.5314	-3.6651	-0.0307
78	08	6	Hispanic*HSGPA	-0.0023	0.0182	0.4960	0.2216	0.5643	-0.0020	0.0182	0.4872	0.2123	0.5546	0.0055
78	08	7	Hispanic*SAT-CR	-3.8071	0.4960	657.5275	301.7930	486.9222	-3.3508	0.4872	643.0264	286.5106	471.0614	1.7004
78	08	8	Hispanic*SAT-M	-4.0122	0.2216	301.7930	664.6686	333.2338	-3.5314	0.2123	286.5106	648.5628	316.5183	1.6826
78	08	9	Hispanic*SAT-W	-4.1641	0.5643	486.9222	333.2338	652.8391	-3.6651	0.5546	471.0614	316.5183	635.4910	2.0299
78	08	10	FYGPA	3.0367	0.0520	10.2553	7.4337	10.3669	-0.0307	0.0055	1.7004	1.6826	2.0299	0.2242

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
80	07	1	HSGPA	0.0000	0.1569	3.0479	3.7190	3.8929	-0.0029	0.0045	0.2515	0.1701	0.2902	0.0793
80	07	2	SAT-CR	0.0000	3.0479	5,749.3323	2,283.4306	3,581.5091	-0.7888	0.2515	160.9882	59.2035	138.1899	8.6881
80	07	3	SAT-M	0.0000	3.7190	2,283.4306	5,603.6257	2,106.6297	-0.5967	0.1701	59.2035	126.5449	54.5182	5.0434
80	07	4	SAT-W	0.0000	3.8929	3,581.5091	2,106.6297	5,065.0481	-0.9519	0.2902	138.1899	54.5182	172.0712	10.3668
80	07	5	Hispanic	0.0236	-0.0029	-0.7888	-0.5967	-0.9519	0.0231	-0.0029	-0.7702	-0.5826	-0.9294	-0.0077
80	07	6	Hispanic*HSGPA	-0.0029	0.0045	0.2515	0.1701	0.2902	-0.0029	0.0045	0.2492	0.1683	0.2874	0.0028
80	07	7	Hispanic*SAT-CR	-0.7884	0.2515	160.9882	59.2035	138.1899	-0.7702	0.2492	160.3663	58.7331	137.4395	0.6440
80	07	8	Hispanic*SAT-M	-0.5963	0.1701	59.2035	126.5449	54.5182	-0.5826	0.1683	58.7331	126.1891	53.9505	0.3564
80	07	9	Hispanic*SAT-W	-0.9514	0.2902	138.1899	54.5182	172.0712	-0.9294	0.2874	137.4395	53.9505	171.1656	0.5433
80	07	10	FYGPA	3.0443	0.0793	8.6881	5.0434	10.3668	-0.0077	0.0028	0.6440	0.3564	0.5433	0.2984
82	06	1	HSGPA	0.0000	0.2040	6.2859	4.6183	7.3954	0.0039	0.0449	0.2839	-0.1713	0.1876	0.1065
82	06	2	SAT-CR	0.0000	6.2859	5,895.5222	2,286.6140	3,777.6908	-4.3442	0.2839	1,087.4616	507.6186	825.9493	10.8192
82	06	3	SAT-M	0.0000	4.6183	2,286.6140	5,123.0348	2,337.4240	-4.5734	-0.1713	507.6186	966.7231	590.1717	5.9910
82	06	4	SAT-W	0.0000	7.3954	3,777.6908	2,337.4240	5,395.1687	-5.3096	0.1876	825.9493	590.1717	1,107.8499	12.5860
82	06	5	Hispanic	0.1793	0.0039	-4.3442	-4.5734	-5.3096	0.1473	0.0032	-3.5654	-3.7535	-4.3577	-0.0240
82	06	6	Hispanic*HSGPA	0.0039	0.0449	0.2839	-0.1713	0.1876	0.0032	0.0449	0.3007	-0.1537	0.2080	0.0204
82	06	7	Hispanic*SAT-CR	-4.3408	0.2839	1,087.4616	507.6186	825.9493	-3.5654	0.3007	1,068.6044	487.7666	802.9016	2.2654
82	06	8	Hispanic*SAT-M	-4.5698	-0.1713	507.6186	966.7231	590.1717	-3.7535	-0.1537	487.7666	945.8236	565.9080	1.3935
82	06	9	Hispanic*SAT-W	-5.3054	0.1876	825.9493	590.1717	1,107.8499	-4.3577	0.2080	802.9016	565.9080	1,079.6805	1.8663
82	06	10	FYGPA	2.9239	0.1065	10.8192	5.9910	12.5860	-0.0240	0.0204	2.2654	1.3935	1.8663	0.4629
84	06	1	HSGPA	0.0000	0.2542	13.2777	11.6679	13.6410	-0.0087	0.0370	1.7890	1.3287	2.6995	0.1374
84	06	2	SAT-CR	0.0000	13.2777	5,886.1657	3,151.6796	4,223.8779	-5.3227	1.7890	990.7431	582.4751	894.8462	13.6744
84	06	3	SAT-M	0.0000	11.6679	3,151.6796	5,799.9493	3,111.8366	-6.5596	1.3287	582.4751	1,041.5279	673.1716	11.7483
84	06	4	SAT-W	0.0000	13.6410	4,223.8779	3,111.8366	6,022.8414	-7.0814	2.6995	894.8462	673.1716	1,264.6283	14.5857
84	06	5	Hispanic	0.1583	-0.0087	-5.3227	-6.5596	-7.0814	0.1335	-0.0073	-4.4800	-5.5211	-5.9603	-0.0140
84	06	6	Hispanic*HSGPA	-0.0087	0.0370	1.7890	1.3287	2.6995	-0.0073	0.0369	1.7428	1.2717	2.6380	0.0162
84	06	7	Hispanic*SAT-CR	-5.3141	1.7890	990.7431	582.4751	894.8462	-4.4800	1.7428	962.4582	547.6171	857.2151	1.5772
84	06	8	Hispanic*SAT-M	-6.5490	1.3287	582.4751	1,041.5279	673.1716	-5.5211	1.2717	547.6171	998.5695	626.7956	1.6450
84	06	9	Hispanic*SAT-W	-7.0700	2.6995	894.8462	673.1716	1,264.6283	-5.9603	2.6380	857.2151	626.7956	1,214.5628	2.3954
84	06	10	FYGPA	3.1681	0.1374	13.6744	11.7483	14.5857	-0.0140	0.0162	1.5772	1.6450	2.3954	0.3813
85	06	1	HSGPA	0.0000	0.1413	3.9435	4.2351	5.5054	-0.0027	0.0221	0.8951	0.7707	0.9498	0.0758
85	06	2	SAT-CR	0.0000	3.9435	6,515.2299	3,377.4011	4,375.2268	-5.3368	0.8951	1,210.4800	780.8721	904.9498	17.3852
85	06	3	SAT-M	0.0000	4.2351	3,377.4011	6,037.3294	3,143.4163	-5.7008	0.7707	780.8721	1,130.5387	707.8280	15.8498
85	06	4	SAT-W	0.0000	5.5054	4,375.2268	3,143.4163	5,988.7858	-4.6659	0.9498	904.9498	707.8280	1,123.7135	18.2864
85	06	5	Hispanic	0.1485	-0.0027	-5.3368	-5.7008	-4.6659	0.1265	-0.0023	-4.5442	-4.8540	-3.9729	-0.0295
85	06	6	Hispanic*HSGPA	-0.0027	0.0221	0.8951	0.7707	0.9498	-0.0023	0.0221	0.8806	0.7552	0.9372	0.0117
85	06	7	Hispanic*SAT-CR	-5.3359	0.8951	1,210.4800	780.8721	904.9498	-4.5442	0.8806	1,182.0032	750.4535	880.0531	4.2971
85	06	8	Hispanic*SAT-M	-5.6997	0.7707	780.8721	1,130.5387	707.8280	-4.8540	0.7552	750.4535	1,098.0459	681.2336	3.7180
85	06	9	Hispanic*SAT-W	-4.6651	0.9498	904.9498	707.8280	1,123.7135	-3.9729	0.9372	880.0531	681.2336	1,101.9468	3.9601
85	06	10	FYGPA	2.8637	0.0758	17.3852	15.8498	18.2864	-0.0295	0.0117	4.2971	3.7180	3.9601	0.4414

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
85	07	1	HSGPA	0.0000	0.1426	4.5042	4.6514	5.4701	-0.0025	0.0222	0.8096	0.6525	1.0243	0.0759
85	07	2	SAT-CR	0.0000	4.5042	6,864.1275	3,759.1242	4,847.9402	-5.5421	0.8096	1,190.9963	747.0416	906.3113	18.2750
85	07	3	SAT-M	0.0000	4.6514	3,759.1242	6,399.9684	3,481.7172	-5.8905	0.6525	747.0416	1,186.8659	675.9117	15.8991
85	07	4	SAT-W	0.0000	5.4701	4,847.9402	3,481.7172	6,296.2190	-5.4403	1.0243	906.3113	675.9117	1,068.4644	19.0253
85	07	5	Hispanic	0.1477	-0.0025	-5.5421	-5.8905	-5.4403	0.1259	-0.0021	-4.7234	-5.0204	-4.6367	-0.0297
85	07	6	Hispanic*HSGPA	-0.0025	0.0222	0.8096	0.6525	1.0243	-0.0021	0.0222	0.7957	0.6378	1.0107	0.0129
85	07	7	Hispanic*SAT-CR	-5.5411	0.8096	1,190.9963	747.0416	906.3113	-4.7234	0.7957	1,160.2870	714.4013	876.1656	3.9722
85	07	8	Hispanic*SAT-M	-5.8896	0.6525	747.0416	1,186.8659	675.9117	-5.0204	0.6378	714.4013	1,152.1732	643.8705	3.3300
85	07	9	Hispanic*SAT-W	-5.4394	1.0243	906.3113	675.9117	1,068.4644	-4.6367	1.0107	876.1656	643.8705	1,038.8722	3.8677
85	07	10	FYGPA	2.8814	0.0759	18.2750	15.8991	19.0253	-0.0297	0.0129	3.9722	3.3300	3.8677	0.4418
85	08	1	HSGPA	0.0000	0.1313	3.5104	4.1730	4.5859	-0.0050	0.0279	1.0770	1.3539	1.2410	0.0634
85	08	2	SAT-CR	0.0000	3.5104	6,867.4215	3,681.3869	4,779.2991	-6.9203	1.0770	1,574.5586	1,006.6730	1,195.5294	15.2106
85	08	3	SAT-M	0.0000	4.1730	3,681.3869	6,270.9478	3,363.6422	-7.1581	1.3539	1,006.6730	1,460.2079	966.2462	14.2931
85	08	4	SAT-W	0.0000	4.5859	4,779.2991	3,363.6422	6,271.4761	-7.0681	1.2410	1,195.5294	966.2462	1,428.3861	17.1721
85	08	5	Hispanic	0.1838	-0.0050	-6.9203	-7.1581	-7.0681	0.1500	-0.0041	-5.6487	-5.8428	-5.7693	-0.0383
85	08	6	Hispanic*HSGPA	-0.0050	0.0279	1.0770	1.3539	1.2410	-0.0041	0.0279	1.0421	1.3178	1.2054	0.0117
85	08	7	Hispanic*SAT-CR	-6.9191	1.0770	1,574.5586	1,006.6730	1,195.5294	-5.6487	1.0421	1,526.6760	957.1450	1,146.6244	4.0022
85	08	8	Hispanic*SAT-M	-7.1569	1.3539	1,006.6730	1,460.2079	966.2462	-5.8428	1.3178	957.1450	1,408.9779	915.6606	4.5730
85	08	9	Hispanic*SAT-W	-7.0669	1.2410	1,195.5294	966.2462	1,428.3861	-5.7693	1.2054	1,146.6244	915.6606	1,378.4368	4.2261
85	08	10	FYGPA	2.9256	0.0634	15.2106	14.2931	17.1721	-0.0383	0.0117	4.0022	4.5730	4.2261	0.4134
88	06	1	HSGPA	0.0000	0.2256	9.4964	10.9035	10.9504	-0.0079	0.0132	0.8703	0.9859	0.8943	0.1276
88	06	2	SAT-CR	0.0000	9.4964	7,310.6923	3,966.8617	5,510.9708	-1.4092	0.8703	441.4192	279.7581	392.8599	19.3309
88	06	3	SAT-M	0.0000	10.9035	3,966.8617	6,438.9214	3,892.2133	-1.6635	0.9859	279.7581	419.2827	320.9820	16.7129
88	06	4	SAT-W	0.0000	10.9504	5,510.9708	3,892.2133	7,244.5698	-1.9124	0.8943	392.8599	320.9820	479.3872	21.7486
88	06	5	Hispanic	0.0518	-0.0079	-1.4092	-1.6635	-1.9124	0.0492	-0.0075	-1.3361	-1.5773	-1.8133	-0.0107
88	06	6	Hispanic*HSGPA	-0.0079	0.0132	0.8703	0.9859	0.8943	-0.0075	0.0131	0.8592	0.9727	0.8791	0.0089
88	06	7	Hispanic*SAT-CR	-1.4085	0.8703	441.4192	279.7581	392.8599	-1.3361	0.8592	439.4345	277.4152	390.1663	1.6601
88	06	8	Hispanic*SAT-M	-1.6627	0.9859	279.7581	419.2827	320.9820	-1.5773	0.9727	277.4152	416.5169	317.8023	1.2787
88	06	9	Hispanic*SAT-W	-1.9115	0.8943	392.8599	320.9820	479.3872	-1.8133	0.8791	390.1663	317.8023	475.7316	1.7332
88	06	10	FYGPA	3.0160	0.1276	19.3309	16.7129	21.7486	-0.0107	0.0089	1.6601	1.2787	1.7332	0.3796
88	07	1	HSGPA	0.0000	0.2226	9.1786	9.8188	9.6547	-0.0037	0.0110	0.3165	0.7428	0.4089	0.1231
88	07	2	SAT-CR	0.0000	9.1786	7,295.8503	3,947.5524	5,360.6379	-1.1330	0.3165	260.7885	216.1951	171.1310	20.9293
88	07	3	SAT-M	0.0000	9.8188	3,947.5524	7,018.5171	3,755.5837	-1.3836	0.7428	216.1951	461.1598	172.0515	14.8576
88	07	4	SAT-W	0.0000	9.6547	5,360.6379	3,755.5837	6,893.9473	-1.1382	0.4089	171.1310	172.0515	227.8711	21.3937
88	07	5	Hispanic	0.0453	-0.0037	-1.1330	-1.3836	-1.1382	0.0433	-0.0035	-1.0817	-1.3209	-1.0867	-0.0056
88	07	6	Hispanic*HSGPA	-0.0037	0.0110	0.3165	0.7428	0.4089	-0.0035	0.0110	0.3123	0.7377	0.4047	0.0023
88	07	7	Hispanic*SAT-CR	-1.1325	0.3165	260.7885	216.1951	171.1310	-1.0817	0.3123	259.5054	214.6283	169.8420	0.6070
88	07	8	Hispanic*SAT-M	-1.3829	0.7428	216.1951	461.1598	172.0515	-1.3209	0.7377	214.6283	459.2465	170.4775	0.6018
88	07	9	Hispanic*SAT-W	-1.1377	0.4089	171.1310	172.0515	227.8711	-1.0867	0.4047	169.8420	170.4775	226.5762	0.5715
88	07	10	FYGPA	3.0005	0.1231	20.9293	14.8576	21.3937	-0.0056	0.0023	0.6070	0.6018	0.5715	0.3717



## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
88	08	1	HSGPA	0.0000	0.2109	7.5349	8.7985	7.5218	-0.0025	0.0097	0.1681	0.2158	0.1221	0.1160
88	08	2	SAT-CR	0.0000	7.5349	6,959.8641	3,645.7515	5,026.1973	-1.2346	0.1681	416.1424	255.7736	296.0669	18.2678
88	08	3	SAT-M	0.0000	8.7985	3,645.7515	6,606.6993	3,575.6247	-1.5556	0.2158	255.7736	387.9552	272.1673	14.1032
88	08	4	SAT-W	0.0000	7.5218	5,026.1973	3,575.6247	6,696.4701	-1.5167	0.1221	296.0669	272.1673	372.0556	18.6774
88	08	5	Hispanic	0.0522	-0.0025	-1.2346	-1.5556	-1.5167	0.0495	-0.0024	-1.1701	-1.4743	-1.4375	-0.0091
88	08	6	Hispanic*HSGPA	-0.0025	0.0097	0.1681	0.2158	0.1221	-0.0024	0.0097	0.1649	0.2118	0.1183	0.0045
88	08	7	Hispanic*SAT-CR	-1.2341	0.1681	416.1424	255.7736	296.0669	-1.1701	0.1649	414.6187	253.8538	294.1950	1.0558
88	08	8	Hispanic*SAT-M	-1.5550	0.2158	255.7736	387.9552	272.1673	-1.4743	0.2118	253.8538	385.5363	269.8088	0.9241
88	08	9	Hispanic*SAT-W	-1.5161	0.1221	296.0669	272.1673	372.0556	-1.4375	0.1183	294.1950	269.8088	369.7560	0.9309
88	08	10	FYGPA	3.0474	0.1160	18.2678	14.1032	18.6774	-0.0091	0.0045	1.0558	0.9241	0.9309	0.3431
89	06	1	HSGPA	0.0000	0.3941	22.0707	25.7009	23.5477	-0.0024	0.0037	0.3442	0.2760	0.2422	0.2820
89	06	2	SAT-CR	0.0000	22.0707	7,199.2467	4,301.2389	4,972.2628	-0.4271	0.3442	67.2295	68.7695	59.9004	24.3759
89	06	3	SAT-M	0.0000	25.7009	4,301.2389	7,262.7749	3,979.3243	-0.7926	0.2760	68.7695	121.5658	70.7561	25.1797
89	06	4	SAT-W	0.0000	23.5477	4,972.2628	3,979.3243	6,420.4110	-0.5913	0.2422	59.9004	70.7561	80.1528	25.8643
89	06	5	Hispanic	0.0141	-0.0024	-0.4271	-0.7926	-0.5913	0.0139	-0.0024	-0.4211	-0.7814	-0.5830	-0.0040
89	06	6	Hispanic*HSGPA	-0.0024	0.0037	0.3442	0.2760	0.2422	-0.0024	0.0037	0.3432	0.2741	0.2407	0.0040
89	06	7	Hispanic*SAT-CR	-0.4267	0.3442	67.2295	68.7695	59.9004	-0.4211	0.3432	67.0472	68.4314	59.6481	0.4724
89	06	8	Hispanic*SAT-M	-0.7918	0.2760	68.7695	121.5658	70.7561	-0.7814	0.2741	68.4314	120.9382	70.2879	0.1642
89	06	9	Hispanic*SAT-W	-0.5908	0.2422	59.9004	70.7561	80.1528	-0.5830	0.2407	59.6481	70.2879	79.8035	0.4571
89	06	10	FYGPA	2.7482	0.2820	24.3759	25.1797	25.8643	-0.0040	0.0040	0.4724	0.1642	0.4571	0.7179
89	08	1	HSGPA	0.0000	0.4171	18.0274	22.2150	22.7917	-0.0049	0.0085	0.1992	0.4530	0.0198	0.3195
89	08	2	SAT-CR	0.0000	18.0274	6,588.5132	3,822.0137	4,497.8310	-0.2935	0.1992	109.3153	37.5832	49.4126	17.4074
89	08	3	SAT-M	0.0000	22.2150	3,822.0137	6,913.2821	3,574.1867	-0.4832	0.4530	37.5832	86.1805	24.2035	21.5460
89	08	4	SAT-W	0.0000	22.7917	4,497.8310	3,574.1867	6,097.2042	0.0846	0.0198	49.4126	24.2035	59.6243	24.5967
89	08	5	Hispanic	0.0171	-0.0049	-0.2935	-0.4832	0.0846	0.0168	-0.0049	-0.2885	-0.4750	0.0832	0.0006
89	08	6	Hispanic*HSGPA	-0.0049	0.0085	0.1992	0.4530	0.0198	-0.0049	0.0084	0.1977	0.4506	0.0202	0.0019
89	08	7	Hispanic*SAT-CR	-0.2932	0.1992	109.3153	37.5832	49.4126	-0.2885	0.1977	109.2292	37.4415	49.4374	0.1388
89	08	8	Hispanic*SAT-M	-0.4828	0.4530	37.5832	86.1805	24.2035	-0.4750	0.4506	37.4415	85.9472	24.2444	0.0173
89	08	9	Hispanic*SAT-W	0.0846	0.0198	49.4126	24.2035	59.6243	0.0832	0.0202	49.4374	24.2444	59.6172	-0.0724
89	08	10	FYGPA	2.6615	0.3195	17.4074	21.5460	24.5967	0.0006	0.0019	0.1388	0.0173	-0.0724	0.9543
90	08	1	HSGPA	0.0000	0.1885	9.6561	11.8645	11.0116	-0.0020	0.0287	0.4872	1.1398	0.7012	0.1300
90	08	2	SAT-CR	0.0000	9.6561	6,409.3770	3,296.2177	4,560.7698	-3.8598	0.4872	973.4696	470.5059	640.8950	19.5679
90	08	3	SAT-M	0.0000	11.8645	3,296.2177	6,326.6539	3,438.7601	-4.0442	1.1398	470.5059	934.2998	457.2739	19.4818
90	08	4	SAT-W	0.0000	11.0116	4,560.7698	3,438.7601	6,479.0932	-5.4314	0.7012	640.8950	457.2739	923.4267	22.8882
90	08	5	Hispanic	0.1665	-0.0020	-3.8598	-4.0442	-5.4314	0.1388	-0.0017	-3.2172	-3.3708	-4.5271	-0.0473
90	08	6	Hispanic*HSGPA	-0.0020	0.0287	0.4872	1.1398	0.7012	-0.0017	0.0287	0.4795	1.1317	0.6904	0.0232
90	08	7	Hispanic*SAT-CR	-3.8577	0.4872	973.4696	470.5059	640.8950	-3.2172	0.4795	958.5796	454.9046	619.9422	3.3731
90	08	8	Hispanic*SAT-M	-4.0420	1.1398	470.5059	934.2998	457.2739	-3.3708	1.1317	454.9046	917.9533	435.3202	3.2000
90	08	9	Hispanic*SAT-W	-5.4285	0.7012	640.8950	457.2739	923.4267	-4.5271	0.6904	619.9422	435.3202	893.9424	3.7911
90	08	10	FYGPA	3.0790	0.1300	19.5679	19.4818	22.8882	-0.0473	0.0232	3.3731	3.2000	3.7911	0.4885

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
91	06	1	HSGPA	0.0000	0.1137	3.8510	4.0143	4.2271	-0.0046	0.0046	0.4293	0.4931	0.4489	0.0568
91	06	2	SAT-CR	0.0000	3.8510	5,753.4307	2,583.2393	3,817.3708	-1.0324	0.4293	244.2830	139.4998	172.9783	12.1105
91	06	3	SAT-M	0.0000	4.0143	2,583.2393	5,259.1274	2,606.4523	-1.3904	0.4931	139.4998	228.1133	129.2229	10.8215
91	06	4	SAT-W	0.0000	4.2271	3,817.3708	2,606.4523	5,443.7804	-0.9380	0.4489	172.9783	129.2229	204.7336	12.5264
91	06	5	Hispanic	0.0315	-0.0046	-1.0324	-1.3904	-0.9380	0.0305	-0.0045	-0.9998	-1.3466	-0.9084	-0.0040
91	06	6	Hispanic*HSGPA	-0.0046	0.0046	0.4293	0.4931	0.4489	-0.0045	0.0046	0.4245	0.4867	0.4445	0.0017
91	06	7	Hispanic*SAT-CR	-1.0321	0.4293	244.2830	139.4998	172.9783	-0.9998	0.4245	243.2176	138.0648	172.0103	0.4127
91	06	8	Hispanic*SAT-M	-1.3900	0.4931	139.4998	228.1133	129.2229	-1.3466	0.4867	138.0648	226.1807	127.9191	0.4342
91	06	9	Hispanic*SAT-W	-0.9377	0.4489	172.9783	129.2229	204.7336	-0.9084	0.4445	172.0103	127.9191	203.8541	0.4445
91	06	10	FYGPA	3.2281	0.0568	12.1105	10.8215	12.5264	-0.0040	0.0017	0.4127	0.4342	0.4445	0.2470
91	07	1	HSGPA	0.0000	0.1078	2.8124	1.9325	2.8490	-0.0020	0.0044	0.0927	-0.0234	0.1387	0.0531
91	07	2	SAT-CR	0.0000	2.8124	5,482.1139	2,331.0442	3,494.2186	-0.9087	0.0927	167.4797	99.5128	129.3224	9.4342
91	07	3	SAT-M	0.0000	1.9325	2,331.0442	5,171.9648	2,291.0756	-1.3285	-0.0234	99.5128	225.5198	94.4147	9.6336
91	07	4	SAT-W	0.0000	2.8490	3,494.2186	2,291.0756	5,202.6860	-0.8418	0.1387	129.3224	94.4147	193.8343	10.4662
91	07	5	Hispanic	0.0314	-0.0020	-0.9087	-1.3285	-0.8418	0.0304	-0.0019	-0.8801	-1.2867	-0.8154	-0.0042
91	07	6	Hispanic*HSGPA	-0.0020	0.0044	0.0927	-0.0234	0.1387	-0.0019	0.0044	0.0909	-0.0260	0.1370	0.0020
91	07	7	Hispanic*SAT-CR	-0.9084	0.0927	167.4797	99.5128	129.3224	-0.8801	0.0909	166.6543	98.3061	128.5577	0.4109
91	07	8	Hispanic*SAT-M	-1.3280	-0.0234	99.5128	225.5198	94.4147	-1.2867	-0.0260	98.3061	223.7556	93.2967	0.3214
91	07	9	Hispanic*SAT-W	-0.8416	0.1387	129.3224	94.4147	193.8343	-0.8154	0.1370	128.5577	93.2967	193.1258	0.4658
91	07	10	FYGPA	3.2148	0.0531	9.4342	9.6336	10.4662	-0.0042	0.0020	0.4109	0.3214	0.4658	0.3056
92	06	1	HSGPA	0.0000	0.2288	8.5046	7.5092	7.6404	0.0061	0.0192	1.5868	1.0301	0.7809	0.0990
92	06	2	SAT-CR	0.0000	8.5046	5,874.3377	3,038.2341	3,889.4526	-2.9132	1.5868	705.5318	545.5275	478.7319	8.3963
92	06	3	SAT-M	0.0000	7.5092	3,038.2341	6,601.4241	3,119.7725	-4.1376	1.0301	545.5275	953.2842	567.1346	6.8142
92	06	4	SAT-W	0.0000	7.6404	3,889.4526	3,119.7725	5,490.1823	-4.0084	0.7809	478.7319	567.1346	657.3128	9.5899
92	06	5	Hispanic	0.0674	0.0061	-2.9132	-4.1376	-4.0084	0.0629	0.0057	-2.7170	-3.8589	-3.7384	-0.0098
92	06	6	Hispanic*HSGPA	0.0061	0.0192	1.5868	1.0301	0.7809	0.0057	0.0191	1.6045	1.0553	0.8053	0.0015
92	06	7	Hispanic*SAT-CR	-2.9082	1.5868	705.5318	545.5275	478.7319	-2.7170	1.6045	697.0597	533.4945	467.0748	1.0816
92	06	8	Hispanic*SAT-M	-4.1305	1.0301	545.5275	953.2842	567.1346	-3.8589	1.0553	533.4945	936.1937	550.5780	1.7991
92	06	9	Hispanic*SAT-W	-4.0014	0.7809	478.7319	567.1346	657.3128	-3.7384	0.8053	467.0748	550.5780	641.2735	1.4131
92	06	10	FYGPA	3.4037	0.0990	8.3963	6.8142	9.5899	-0.0098	0.0015	1.0816	1.7991	1.4131	0.2346
92	07	1	HSGPA	0.0000	0.2048	11.0458	5.9387	9.0398	0.0075	0.0106	0.4339	-0.0915	0.3158	0.0768
92	07	2	SAT-CR	0.0000	11.0458	6,501.7414	3,047.5257	3,981.8972	0.0493	0.4339	276.1457	113.3121	158.1953	10.4417
92	07	3	SAT-M	0.0000	5.9387	3,047.5257	6,389.8422	2,462.0941	0.0021	-0.0915	113.3121	238.0354	68.3461	6.5028
92	07	4	SAT-W	0.0000	9.0398	3,981.8972	2,462.0941	5,584.6133	-1.2685	0.3158	158.1953	68.3461	284.0868	10.8708
92	07	5	Hispanic	0.0526	0.0075	0.0493	0.0021	-1.2685	0.0500	0.0071	0.0467	0.0019	-1.2017	-0.0021
92	07	6	Hispanic*HSGPA	0.0075	0.0106	0.4339	-0.0915	0.3158	0.0071	0.0105	0.4335	-0.0915	0.3254	0.0004
92	07	7	Hispanic*SAT-CR	0.0492	0.4339	276.1457	113.3121	158.1953	0.0467	0.4335	276.1433	113.3120	158.2578	0.3224
92	07	8	Hispanic*SAT-M	0.0021	-0.0915	113.3121	238.0354	68.3461	0.0019	-0.0915	113.3120	238.0354	68.3487	-0.1506
92	07	9	Hispanic*SAT-W	-1.2660	0.3158	158.1953	68.3461	284.0868	-1.2017	0.3254	158.2578	68.3487	282.4808	0.3045
92	07	10	FYGPA	3.4292	0.0768	10.4417	6.5028	10.8708	-0.0021	0.0004	0.3224	-0.1506	0.3045	0.1996

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
92	08	1	HSGPA	0.0000	0.1972	4.7113	6.0730	6.4019	0.0025	0.0052	-0.0930	0.1699	0.0828	0.0655
92	08	2	SAT-CR	0.0000	4.7113	5,437.6920	2,694.6687	3,606.4410	-1.7277	-0.0930	230.8534	136.5969	167.5230	8.2856
92	08	3	SAT-M	0.0000	6.0730	2,694.6687	5,214.6151	2,592.9348	-1.0390	0.1699	136.5969	276.3744	164.0581	6.6796
92	08	4	SAT-W	0.0000	6.4019	3,606.4410	2,592.9348	5,378.0472	-1.8025	0.0828	167.5230	164.0581	232.2173	9.5203
92	08	5	Hispanic	0.0446	0.0025	-1.7277	-1.0390	-1.8025	0.0427	0.0024	-1.6506	-0.9926	-1.7220	0.0014
92	08	6	Hispanic*HSGPA	0.0025	0.0052	-0.0930	0.1699	0.0828	0.0024	0.0052	-0.0887	0.1725	0.0874	-0.0002
92	08	7	Hispanic*SAT-CR	-1.7246	-0.0930	230.8534	136.5969	167.5230	-1.6506	-0.0887	227.8737	134.8050	164.4143	0.2961
92	08	8	Hispanic*SAT-M	-1.0371	0.1699	136.5969	276.3744	164.0581	-0.9926	0.1725	134.8050	275.2968	162.1886	0.4224
92	08	9	Hispanic*SAT-W	-1.7993	0.0828	167.5230	164.0581	232.2173	-1.7220	0.0874	164.4143	162.1886	228.9741	0.0996
92	08	10	FYGPA	3.4310	0.0655	8.2856	6.6796	9.5203	0.0014	-0.0002	0.2961	0.4224	0.0996	0.1812
94	07	1	HSGPA	0.0000	0.2375	7.4149	7.8529	9.2698	-0.0122	0.0199	0.7323	-0.1415	0.7006	0.1231
94	07	2	SAT-CR	0.0000	7.4149	5,779.8771	2,851.2566	4,241.9974	-2.5886	0.7323	485.7634	290.7267	370.8016	15.0047
94	07	3	SAT-M	0.0000	7.8529	2,851.2566	5,841.9260	2,945.8122	-2.2402	-0.1415	290.7267	538.6303	200.0491	14.3497
94	07	4	SAT-W	0.0000	9.2698	4,241.9974	2,945.8122	5,618.7915	-2.9491	0.7006	370.8016	200.0491	451.2919	16.2191
94	07	5	Hispanic	0.0804	-0.0122	-2.5886	-2.2402	-2.9491	0.0740	-0.0112	-2.3806	-2.0602	-2.7121	-0.0180
94	07	6	Hispanic*HSGPA	-0.0121	0.0199	0.7323	-0.1415	0.7006	-0.0112	0.0198	0.7008	-0.1687	0.6648	0.0108
94	07	7	Hispanic*SAT-CR	-2.5853	0.7323	485.7634	290.7267	370.8016	-2.3806	0.7008	479.0711	284.9350	363.1774	1.7854
94	07	8	Hispanic*SAT-M	-2.2374	-0.1415	290.7267	538.6303	200.0491	-2.0602	-0.1687	284.9350	533.6180	193.4509	0.8098
94	07	9	Hispanic*SAT-W	-2.9453	0.7006	370.8016	200.0491	451.2919	-2.7121	0.6648	363.1774	193.4509	442.6060	1.9114
94	07	10	FYGPA	3.0275	0.1231	15.0047	14.3497	16.2191	-0.0180	0.0108	1.7854	0.8098	1.9114	0.3660
97	06	1	HSGPA	0.0000	0.1069	5.1703	3.3769	3.5373	-0.0055	0.0130	0.1133	0.6262	-0.3642	0.0420
97	06	2	SAT-CR	0.0000	5.1703	5,824.1752	2,089.7214	3,185.5757	-7.6156	0.1133	1,151.2191	743.1897	895.4242	13.0526
97	06	3	SAT-M	0.0000	3.3769	2,089.7214	4,305.2646	2,132.8552	-7.1755	0.6262	743.1897	1,162.3705	795.0455	8.2449
97	06	4	SAT-W	0.0000	3.5373	3,185.5757	2,132.8552	4,808.9067	-6.6657	-0.3642	895.4242	795.0455	1,070.0750	11.4321
97	06	5	Hispanic	0.1000	-0.0055	-7.6156	-7.1755	-6.6657	0.0903	-0.0049	-6.8540	-6.4579	-5.9992	-0.0325
97	06	6	Hispanic*HSGPA	-0.0055	0.0130	0.1133	0.6262	-0.3642	-0.0049	0.0130	0.0715	0.5869	-0.4008	0.0021
97	06	7	Hispanic*SAT-CR	-7.5944	0.1133	1,151.2191	743.1897	895.4242	-6.8540	0.0715	1,093.3829	688.6959	844.8016	3.6325
97	06	8	Hispanic*SAT-M	-7.1556	0.6262	743.1897	1,162.3705	795.0455	-6.4579	0.5869	688.6959	1,111.0259	747.3484	2.4269
97	06	9	Hispanic*SAT-W	-6.6472	-0.3642	895.4242	795.0455	1,070.0750	-5.9992	-0.4008	844.8016	747.3484	1,025.7663	2.9820
97	06	10	FYGPA	3.4285	0.0420	13.0526	8.2449	11.4321	-0.0325	0.0021	3.6325	2.4269	2.9820	0.1417
98	06	1	HSGPA	0.0000	0.1900	8.3162	8.7596	7.5393	-0.0040	0.0061	0.4402	0.5000	0.3980	0.1030
98	06	2	SAT-CR	0.0000	8.3162	5,860.5671	2,768.4115	3,854.6068	-0.6665	0.4402	165.4908	117.7290	117.4831	12.0877
98	06	3	SAT-M	0.0000	8.7596	2,768.4115	5,897.7828	2,634.4169	-0.4466	0.5000	117.7290	193.7705	78.4449	10.8094
98	06	4	SAT-W	0.0000	7.5393	3,854.6068	2,634.4169	5,559.9511	-0.4830	0.3980	117.4831	78.4449	122.0570	12.1630
98	06	5	Hispanic	0.0204	-0.0040	-0.6665	-0.4466	-0.4830	0.0200	-0.0039	-0.6529	-0.4375	-0.4732	-0.0036
98	06	6	Hispanic*HSGPA	-0.0040	0.0061	0.4402	0.5000	0.3980	-0.0039	0.0061	0.4375	0.4982	0.3961	0.0028
98	06	7	Hispanic*SAT-CR	-0.6662	0.4402	165.4908	117.7290	117.4831	-0.6529	0.4375	165.0467	117.4315	117.1613	0.4168
98	06	8	Hispanic*SAT-M	-0.4464	0.5000	117.7290	193.7705	78.4449	-0.4375	0.4982	117.4315	193.5711	78.2293	0.5088
98	06	9	Hispanic*SAT-W	-0.4828	0.3980	117.4831	78.4449	122.0570	-0.4732	0.3961	117.1613	78.2293	121.8238	0.3645
98	06	10	FYGPA	3.1406	0.1030	12.0877	10.8094	12.1630	-0.0036	0.0028	0.4168	0.5088	0.3645	0.2816

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
100	06	1	HSGPA	0.0000	0.1409	4.9708	3.4691	6.7199	0.0005	0.0073	0.2453	0.2364	0.4041	0.1028
100	06	2	SAT-CR	0.0000	4.9708	4,879.7531	1,468.1718	3,093.3299	-1.6482	0.2453	269.4686	133.1952	199.7343	9.1985
100	06	3	SAT-M	0.0000	3.4691	1,468.1718	4,219.8455	1,653.8229	-0.9970	0.2364	133.1952	278.8096	125.5132	10.9383
100	06	4	SAT-W	0.0000	6.7199	3,093.3299	1,653.8229	5,224.5808	-1.6581	0.4041	199.7343	125.5132	326.1049	13.3264
100	06	5	Hispanic	0.0586	0.0005	-1.6482	-0.9970	-1.6581	0.0552	0.0005	-1.5516	-0.9385	-1.5609	-0.0006
100	06	6	Hispanic*HSGPA	0.0005	0.0073	0.2453	0.2364	0.4041	0.0005	0.0073	0.2461	0.2369	0.4049	0.0041
100	06	7	Hispanic*SAT-CR	-1.6472	0.2453	269.4686	133.1952	199.7343	-1.5516	0.2461	266.7537	131.5530	197.0031	0.1596
100	06	8	Hispanic*SAT-M	-0.9964	0.2364	133.1952	278.8096	125.5132	-0.9385	0.2369	131.5530	277.8163	123.8611	0.3737
100	06	9	Hispanic*SAT-W	-1.6571	0.4041	199.7343	125.5132	326.1049	-1.5609	0.4049	197.0031	123.8611	323.3574	0.4499
100	06	10	FYGPA	2.9508	0.1028	9.1985	10.9383	13.3264	-0.0006	0.0041	0.1596	0.3737	0.4499	0.5173
100	07	1	HSGPA	0.0000	0.1159	3.3305	3.2340	4.4991	-0.0064	0.0096	0.1719	0.0255	0.2429	0.0868
100	07	2	SAT-CR	0.0000	3.3305	5,155.5784	1,620.9735	3,302.2736	-0.6061	0.1719	278.8921	76.3649	202.9905	9.4925
100	07	3	SAT-M	0.0000	3.2340	1,620.9735	4,081.0971	1,589.4499	-1.1666	0.0255	76.3649	286.0174	92.6699	11.8372
100	07	4	SAT-W	0.0000	4.4991	3,302.2736	1,589.4499	5,369.5741	-0.4914	0.2429	202.9905	92.6699	313.3291	12.6593
100	07	5	Hispanic	0.0602	-0.0064	-0.6061	-1.1666	-0.4914	0.0566	-0.0060	-0.5696	-1.0964	-0.4618	-0.0152
100	07	6	Hispanic*HSGPA	-0.0064	0.0096	0.1719	0.0255	0.2429	-0.0060	0.0095	0.1680	0.0181	0.2398	0.0056
100	07	7	Hispanic*SAT-CR	-0.6057	0.1719	278.8921	76.3649	202.9905	-0.5696	0.1680	278.5250	75.6583	202.6928	0.5893
100	07	8	Hispanic*SAT-M	-1.1659	0.0255	76.3649	286.0174	92.6699	-1.0964	0.0181	75.6583	284.6572	92.0969	1.0523
100	07	9	Hispanic*SAT-W	-0.4911	0.2429	202.9905	92.6699	313.3291	-0.4618	0.2398	202.6928	92.0969	313.0877	0.7177
100	07	10	FYGPA	3.0262	0.0868	9.4925	11.8372	12.6593	-0.0152	0.0056	0.5893	1.0523	0.7177	0.4556
100	08	1	HSGPA	0.0000	0.1108	2.5148	1.9462	4.2744	0.0009	0.0068	-0.1696	0.0691	0.0755	0.0721
100	08	2	SAT-CR	0.0000	2.5148	4,712.8668	1,143.9433	2,732.6197	-1.0096	-0.1696	243.7824	75.2510	173.2629	8.9030
100	08	3	SAT-M	0.0000	1.9462	1,143.9433	3,689.6617	1,245.3134	-0.6950	0.0691	75.2510	233.4418	59.0077	9.2174
100	08	4	SAT-W	0.0000	4.2744	2,732.6197	1,245.3134	4,721.5301	-0.6257	0.0755	173.2629	59.0077	269.2663	11.5145
100	08	5	Hispanic	0.0625	0.0009	-1.0096	-0.6950	-0.6257	0.0587	0.0008	-0.9464	-0.6515	-0.5865	-0.0139
100	08	6	Hispanic*HSGPA	0.0009	0.0068	-0.1696	0.0691	0.0755	0.0008	0.0068	-0.1687	0.0697	0.0761	0.0030
100	08	7	Hispanic*SAT-CR	-1.0089	-0.1696	243.7824	75.2510	173.2629	-0.9464	-0.1687	242.7638	74.5498	172.6316	0.4339
100	08	8	Hispanic*SAT-M	-0.6945	0.0691	75.2510	233.4418	59.0077	-0.6515	0.0697	74.5498	232.9591	58.5732	0.4609
100	08	9	Hispanic*SAT-W	-0.6252	0.0755	173.2629	59.0077	269.2663	-0.5865	0.0761	172.6316	58.5732	268.8751	0.1650
100	08	10	FYGPA	3.0406	0.0721	8.9030	9.2174	11.5145	-0.0139	0.0030	0.4339	0.4609	0.1650	0.4238
101	07	1	HSGPA	0.0000	0.0967	4.3460	3.9924	4.3619	-0.0086	0.0099	0.7542	0.7254	0.7939	0.0391
101	07	2	SAT-CR	0.0000	4.3460	5,623.9841	2,403.7080	3,718.3059	-1.8334	0.7542	453.8242	283.4981	375.2823	12.4791
101	07	3	SAT-M	0.0000	3.9924	2,403.7080	5,235.4529	2,464.5357	-1.9307	0.7254	283.4981	461.2254	286.7461	8.3437
101	07	4	SAT-W	0.0000	4.3619	3,718.3059	2,464.5357	5,819.3666	-1.7900	0.7939	375.2823	286.7461	477.6847	13.3958
101	07	5	Hispanic	0.0599	-0.0086	-1.8334	-1.9307	-1.7900	0.0564	-0.0081	-1.7235	-1.8149	-1.6827	-0.0149
101	07	6	Hispanic*HSGPA	-0.0086	0.0099	0.7542	0.7254	0.7939	-0.0081	0.0098	0.7384	0.7088	0.7786	0.0064
101	07	7	Hispanic*SAT-CR	-1.8325	0.7542	453.8242	283.4981	375.2823	-1.7235	0.7384	450.4645	279.9601	372.0021	1.5312
101	07	8	Hispanic*SAT-M	-1.9298	0.7254	283.4981	461.2254	286.7461	-1.8149	0.7088	279.9601	457.4997	283.2918	1.1561
101	07	9	Hispanic*SAT-W	-1.7892	0.7939	375.2823	286.7461	477.6847	-1.6827	0.7786	372.0021	283.2918	474.4821	1.6299
101	07	10	FYGPA	3.3297	0.0391	12.4791	8.3437	13.3958	-0.0149	0.0064	1.5312	1.1561	1.6299	0.1981

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
101	08	1	HSGPA	0.0000	0.0955	5.2749	4.7381	3.7417	-0.0037	0.0073	0.5518	0.5057	0.5356	0.0401
101	08	2	SAT-CR	0.0000	5.2749	5,650.9392	2,402.6316	3,719.6412	-2.4325	0.5518	449.1946	214.8879	337.9340	12.4488
101	08	3	SAT-M	0.0000	4.7381	2,402.6316	5,410.0467	2,410.9320	-2.4738	0.5057	214.8879	480.6671	282.2378	9.6855
101	08	4	SAT-W	0.0000	3.7417	3,719.6412	2,410.9320	5,755.8687	-2.0961	0.5356	337.9340	282.2378	478.4448	12.8021
101	08	5	Hispanic	0.0589	-0.0037	-2.4325	-2.4738	-2.0961	0.0554	-0.0035	-2.2894	-2.3282	-1.9727	-0.0133
101	08	6	Hispanic*HSGPA	-0.0037	0.0073	0.5518	0.5057	0.5356	-0.0035	0.0072	0.5428	0.4964	0.5277	0.0037
101	08	7	Hispanic*SAT-CR	-2.4311	0.5518	449.1946	214.8879	337.9340	-2.2894	0.5428	443.2808	208.8739	332.8383	1.3896
101	08	8	Hispanic*SAT-M	-2.4723	0.5057	214.8879	480.6671	282.2378	-2.3282	0.4964	208.8739	474.5512	277.0557	1.4409
101	08	9	Hispanic*SAT-W	-2.0948	0.5356	337.9340	282.2378	478.4448	-1.9727	0.5277	332.8383	277.0557	474.0539	1.4173
101	08	10	FYGPA	3.3377	0.0401	12.4488	9.6855	12.8021	-0.0133	0.0037	1.3896	1.4409	1.4173	0.2097
102	06	1	HSGPA	0.0000	0.1281	3.3606	5.7349	4.6615	-0.0049	0.0112	0.5571	0.6383	0.6464	0.0479
102	06	2	SAT-CR	0.0000	3.3606	6,999.6593	3,418.4971	4,977.1895	-3.3139	0.5571	680.3594	444.9525	544.2279	11.7842
102	06	3	SAT-M	0.0000	5.7349	3,418.4971	6,492.5873	3,278.9932	-3.1456	0.6383	444.9525	538.8667	402.7141	9.3938
102	06	4	SAT-W	0.0000	4.6615	4,977.1895	3,278.9932	6,729.9200	-3.1853	0.6464	544.2279	402.7141	634.1574	12.5817
102	06	5	Hispanic	0.0641	-0.0049	-3.3139	-3.1456	-3.1853	0.0600	-0.0046	-3.1013	-2.9438	-2.9811	-0.0095
102	06	6	Hispanic*HSGPA	-0.0049	0.0112	0.5571	0.6383	0.6464	-0.0046	0.0112	0.5408	0.6230	0.6308	0.0033
102	06	7	Hispanic*SAT-CR	-3.3126	0.5571	680.3594	444.9525	544.2279	-3.1013	0.5408	669.3818	434.5323	533.6760	1.4405
102	06	8	Hispanic*SAT-M	-3.1444	0.6383	444.9525	538.8667	402.7141	-2.9438	0.6230	434.5323	528.9758	392.6981	0.9854
102	06	9	Hispanic*SAT-W	-3.1842	0.6464	544.2279	402.7141	634.1574	-2.9811	0.6308	533.6760	392.6981	624.0147	1.5391
102	06	10	FYGPA	3.2308	0.0479	11.7842	9.3938	12.5817	-0.0095	0.0033	1.4405	0.9854	1.5391	0.1925
102	08	1	HSGPA	0.0000	0.1101	4.5709	4.9173	5.2123	-0.0114	0.0148	1.9263	1.5023	1.8959	0.0402
102	08	2	SAT-CR	0.0000	4.5709	7,108.9224	3,330.2622	4,746.0159	-5.4309	1.9263	989.6434	660.9528	856.5140	12.8717
102	08	3	SAT-M	0.0000	4.9173	3,330.2622	5,816.4021	3,123.9085	-4.5240	1.5023	660.9528	744.2047	648.3522	8.6769
102	08	4	SAT-W	0.0000	5.2123	4,746.0159	3,123.9085	6,176.0674	-5.0022	1.8959	856.5140	648.3522	934.4599	12.4942
102	08	5	Hispanic	0.0660	-0.0114	-5.4309	-4.5240	-5.0022	0.0617	-0.0106	-5.0724	-4.2254	-4.6720	-0.0140
102	08	6	Hispanic*HSGPA	-0.0114	0.0148	1.9263	1.5023	1.8959	-0.0106	0.0146	1.8646	1.4509	1.8391	0.0067
102	08	7	Hispanic*SAT-CR	-5.4289	1.9263	989.6434	660.9528	856.5140	-5.0724	1.8646	960.1594	636.3923	829.3575	2.1261
102	08	8	Hispanic*SAT-M	-4.5223	1.5023	660.9528	744.2047	648.3522	-4.2254	1.4509	636.3923	723.7454	625.7304	1.4220
102	08	9	Hispanic*SAT-W	-5.0003	1.8959	856.5140	648.3522	934.4599	-4.6720	1.8391	829.3575	625.7304	909.4472	2.0158
102	08	10	FYGPA	3.2824	0.0402	12.8717	8.6769	12.4942	-0.0140	0.0067	2.1261	1.4220	2.0158	0.1649
103	06	1	HSGPA	0.0000	0.2551	10.4908	16.8200	10.6203	-0.0178	0.0583	2.3212	3.4570	1.4332	0.2004
103	06	2	SAT-CR	0.0000	10.4908	6,932.3648	3,679.4059	4,471.8204	-6.2393	2.3212	1,172.7010	786.9197	646.6964	20.2307
103	06	3	SAT-M	0.0000	16.8200	3,679.4059	7,061.5919	3,369.8277	-6.8190	3.4570	786.9197	1,046.7906	521.3248	25.6735
103	06	4	SAT-W	0.0000	10.6203	4,471.8204	3,369.8277	5,836.2853	-4.9573	1.4332	646.6964	521.3248	754.1352	19.3028
103	06	5	Hispanic	0.1538	-0.0178	-6.2393	-6.8190	-4.9573	0.1308	-0.0151	-5.2794	-5.7699	-4.1946	-0.0241
103	06	6	Hispanic*HSGPA	-0.0177	0.0583	2.3212	3.4570	1.4332	-0.0151	0.0580	2.2107	3.3362	1.3454	0.0294
103	06	7	Hispanic*SAT-CR	-6.2093	2.3212	1,172.7010	786.9197	646.6964	-5.2794	2.2107	1,133.9591	744.5782	615.9152	1.5622
103	06	8	Hispanic*SAT-M	-6.7862	3.4570	786.9197	1,046.7906	521.3248	-5.7699	3.3362	744.5782	1,000.5150	487.6836	2.5167
103	06	9	Hispanic*SAT-W	-4.9334	1.4332	646.6964	521.3248	754.1352	-4.1946	1.3454	615.9152	487.6836	729.6789	1.9702
103	06	10	FYGPA	2.5862	0.2004	20.2307	25.6735	19.3028	-0.0241	0.0294	1.5622	2.5167	1.9702	0.8450

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
103	07	1	HSGPA	0.0000	0.2909	12.6035	9.8340	15.1070	-0.0295	0.0361	2.6431	2.4480	2.2885	0.2783
103	07	2	SAT-CR	0.0000	12.6035	6,918.0188	3,080.8506	4,664.2529	-5.8553	2.6431	1,026.7306	670.2435	914.0475	30.7092
103	07	3	SAT-M	0.0000	9.8340	3,080.8506	5,343.6825	3,239.4741	-3.2005	2.4480	670.2435	901.3671	754.3461	21.5101
103	07	4	SAT-W	0.0000	15.1070	4,664.2529	3,239.4741	5,787.9186	-6.8789	2.2885	914.0475	754.3461	1,155.8791	31.1183
103	07	5	Hispanic	0.1322	-0.0295	-5.8553	-3.2005	-6.8789	0.1152	-0.0256	-5.0815	-2.7775	-5.9698	-0.0446
103	07	6	Hispanic*HSGPA	-0.0294	0.0361	2.6431	2.4480	2.2885	-0.0256	0.0352	2.4709	2.3539	2.0863	0.0476
103	07	7	Hispanic*SAT-CR	-5.8295	2.6431	1,026.7306	670.2435	914.0475	-5.0815	2.4709	992.5968	651.5863	873.9469	5.9303
103	07	8	Hispanic*SAT-M	-3.1864	2.4480	670.2435	901.3671	754.3461	-2.7775	2.3539	651.5863	891.1692	732.4276	5.4020
103	07	9	Hispanic*SAT-W	-6.8486	2.2885	914.0475	754.3461	1,155.8791	-5.9698	2.0863	873.9469	732.4276	1,108.7687	4.8552
103	07	10	FYGPA	2.3307	0.2783	30.7092	21.5101	31.1183	-0.0446	0.0476	5.9303	5.4020	4.8552	1.0563
103	08	1	HSGPA	0.0000	0.3032	15.6399	20.7411	19.7259	-0.0205	0.0494	2.1002	2.7042	3.2998	0.2574
103	08	2	SAT-CR	0.0000	15.6399	8,084.0397	4,371.8333	5,896.7401	-4.5915	2.1002	1,288.7401	748.0873	952.2870	18.1132
103	08	3	SAT-M	0.0000	20.7411	4,371.8333	7,313.4643	4,666.3452	-5.8173	2.7042	748.0873	1,192.8966	724.4055	18.6158
103	08	4	SAT-W	0.0000	19.7259	5,896.7401	4,666.3452	7,798.1230	-6.0669	3.2998	952.2870	724.4055	1,087.0983	22.4797
103	08	5	Hispanic	0.1422	-0.0205	-4.5915	-5.8173	-6.0669	0.1225	-0.0176	-3.9385	-4.9899	-5.2040	-0.0300
103	08	6	Hispanic*HSGPA	-0.0204	0.0494	2.1002	2.7042	3.2998	-0.0176	0.0489	2.0063	2.5852	3.1758	0.0648
103	08	7	Hispanic*SAT-CR	-4.5711	2.1002	1,288.7401	748.0873	952.2870	-3.9385	2.0063	1,267.7523	721.4962	924.5550	2.3953
103	08	8	Hispanic*SAT-M	-5.7914	2.7042	748.0873	1,192.8966	724.4055	-4.9899	2.5852	721.4962	1,159.2065	689.2698	2.2937
103	08	9	Hispanic*SAT-W	-6.0399	3.2998	952.2870	724.4055	1,087.0983	-5.2040	3.1758	924.5550	689.2698	1,050.4550	4.1288
103	08	10	FYGPA	2.7320	0.2574	18.1132	18.6158	22.4797	-0.0300	0.0648	2.3953	2.2937	4.1288	1.0809
106	06	1	HSGPA	0.0000	0.1536	5.7120	5.3640	6.8490	-0.0003	0.0017	0.0624	0.0432	0.1470	0.0923
106	06	2	SAT-CR	0.0000	5.7120	5,405.0741	2,129.5951	3,450.9797	-0.1388	0.0624	40.1916	15.9060	25.4515	12.0096
106	06	3	SAT-M	0.0000	5.3640	2,129.5951	5,167.1319	2,105.9246	-0.3268	0.0432	15.9060	65.4071	13.0220	10.6793
106	06	4	SAT-W	0.0000	6.8490	3,450.9797	2,105.9246	5,300.0088	-0.1356	0.1470	25.4515	13.0220	46.4336	13.6866
106	06	5	Hispanic	0.0140	-0.0003	-0.1388	-0.3268	-0.1356	0.0138	-0.0003	-0.1369	-0.3222	-0.1337	-0.0001
106	06	6	Hispanic*HSGPA	-0.0003	0.0017	0.0624	0.0432	0.1470	-0.0003	0.0017	0.0624	0.0431	0.1470	0.0007
106	06	7	Hispanic*SAT-CR	-0.1388	0.0624	40.1916	15.9060	25.4515	-0.1369	0.0624	40.1723	15.8606	25.4327	0.0881
106	06	8	Hispanic*SAT-M	-0.3266	0.0432	15.9060	65.4071	13.0220	-0.3222	0.0431	15.8606	65.3003	12.9777	0.1196
106	06	9	Hispanic*SAT-W	-0.1355	0.1470	25.4515	13.0220	46.4336	-0.1337	0.1470	25.4327	12.9777	46.4152	0.2727
106	06	10	FYGPA	3.1329	0.0923	12.0096	10.6793	13.6866	-0.0001	0.0007	0.0881	0.1196	0.2727	0.4038
106	07	1	HSGPA	0.0000	0.1406	4.7337	4.8613	4.8182	0.0000	0.0016	0.1349	0.0233	0.0508	0.0845
106	07	2	SAT-CR	0.0000	4.7337	6,046.1126	2,476.0816	3,883.1969	-0.0148	0.1349	60.8585	47.9792	31.4046	10.8807
106	07	3	SAT-M	0.0000	4.8613	2,476.0816	5,382.3887	2,242.1750	-0.0185	0.0233	47.9792	90.0762	26.8072	10.4755
106	07	4	SAT-W	0.0000	4.8182	3,883.1969	2,242.1750	5,397.0757	-0.1588	0.0508	31.4046	26.8072	58.8103	13.4878
106	07	5	Hispanic	0.0104	0.0000	-0.0148	-0.0185	-0.1588	0.0103	0.0000	-0.0147	-0.0183	-0.1572	-0.0022
106	07	6	Hispanic*HSGPA	0.0000	0.0016	0.1349	0.0233	0.0508	0.0000	0.0016	0.1349	0.0233	0.0508	0.0008
106	07	7	Hispanic*SAT-CR	-0.0148	0.1349	60.8585	47.9792	31.4046	-0.0147	0.1349	60.8583	47.9789	31.4023	0.0272
106	07	8	Hispanic*SAT-M	-0.0185	0.0233	47.9792	90.0762	26.8072	-0.0183	0.0233	47.9789	90.0758	26.8043	-0.2013
106	07	9	Hispanic*SAT-W	-0.1587	0.0508	31.4046	26.8072	58.8103	-0.1572	0.0508	31.4023	26.8043	58.7851	0.1694
106	07	10	FYGPA	3.2179	0.0845	10.8807	10.4755	13.4878	-0.0022	0.0008	0.0272	-0.2013	0.1694	0.3666

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
106	08	1	HSGPA	0.0000	0.1334	3.6789	2.5618	4.1950	-0.0001	0.0028	-0.0646	-0.0790	-0.0817	0.0859
106	08	2	SAT-CR	0.0000	3.6789	5,376.6812	2,154.1974	3,488.6923	0.0072	-0.0646	108.1034	9.9039	31.2539	10.2318
106	08	3	SAT-M	0.0000	2.5618	2,154.1974	5,056.7356	2,068.0787	-0.2806	-0.0790	9.9039	76.4112	27.6961	8.6244
106	08	4	SAT-W	0.0000	4.1950	3,488.6923	2,068.0787	5,374.5960	-0.2533	-0.0817	31.2539	27.6961	103.1405	12.6122
106	08	5	Hispanic	0.0194	-0.0001	0.0072	-0.2806	-0.2533	0.0190	-0.0001	0.0070	-0.2752	-0.2484	-0.0022
106	08	6	Hispanic*HSGPA	-0.0001	0.0028	-0.0646	-0.0790	-0.0817	-0.0001	0.0028	-0.0646	-0.0790	-0.0818	0.0011
106	08	7	Hispanic*SAT-CR	0.0072	-0.0646	108.1034	9.9039	31.2539	0.0070	-0.0646	108.1033	9.9059	31.2557	-0.3512
106	08	8	Hispanic*SAT-M	-0.2805	-0.0790	9.9039	76.4112	27.6961	-0.2752	-0.0790	9.9059	76.3325	27.6251	0.0223
106	08	9	Hispanic*SAT-W	-0.2532	-0.0817	31.2539	27.6961	103.1405	-0.2484	-0.0818	31.2557	27.6251	103.0763	-0.1841
106	08	10	FYGPA	3.2573	0.0859	10.2318	8.6244	12.6122	-0.0022	0.0011	-0.3512	0.0223	-0.1841	0.3531
108	06	1	HSGPA	0.0000	0.2311	5.3200	7.9251	7.5336	0.0093	0.0354	2.1370	2.0015	1.9032	0.1147
108	06	2	SAT-CR	0.0000	5.3200	5,636.6168	2,630.4737	4,086.6027	-3.6349	2.1370	810.0720	540.4354	606.7151	10.2732
108	06	3	SAT-M	0.0000	7.9251	2,630.4737	5,740.9000	3,034.6104	-5.6064	2.0015	540.4354	1,225.9175	628.1122	8.8405
108	06	4	SAT-W	0.0000	7.5336	4,086.6027	3,034.6104	5,789.9242	-2.4523	1.9032	606.7151	628.1122	920.2336	14.9963
108	06	5	Hispanic	0.1835	0.0093	-3.6349	-5.6064	-2.4523	0.1504	0.0076	-2.9678	-4.5775	-2.0023	-0.0160
108	06	6	Hispanic*HSGPA	0.0093	0.0354	2.1370	2.0015	1.9032	0.0076	0.0353	2.1707	2.0535	1.9260	0.0111
108	06	7	Hispanic*SAT-CR	-3.6213	2.1370	810.0720	540.4354	606.7151	-2.9678	2.1707	796.9088	520.1328	597.8344	0.8379
108	06	8	Hispanic*SAT-M	-5.5854	2.0015	540.4354	1,225.9175	628.1122	-4.5775	2.0535	520.1328	1,194.6031	614.4149	0.0470
108	06	9	Hispanic*SAT-W	-2.4432	1.9032	606.7151	628.1122	920.2336	-2.0023	1.9260	597.8344	614.4149	914.2421	1.3455
108	06	10	FYGPA	2.9341	0.1147	10.2732	8.8405	14.9963	-0.0160	0.0111	0.8379	0.0470	1.3455	0.3138
108	07	1	HSGPA	0.0000	0.2329	12.4202	6.0710	13.8570	-0.0079	0.0495	0.8260	0.3570	2.5495	0.1428
108	07	2	SAT-CR	0.0000	12.4202	7,230.6968	4,038.1217	5,072.4279	-5.4631	0.8260	1,685.5218	1,067.8773	1,335.8686	21.5707
108	07	3	SAT-M	0.0000	6.0710	4,038.1217	6,326.1256	3,640.5594	-6.6897	0.3570	1,067.8773	1,572.8209	1,037.8833	17.4410
108	07	4	SAT-W	0.0000	13.8570	5,072.4279	3,640.5594	6,446.8114	-6.8428	2.5495	1,335.8686	1,037.8833	1,640.4084	19.3561
108	07	5	Hispanic	0.1958	-0.0079	-5.4631	-6.6897	-6.8428	0.1580	-0.0063	-4.3934	-5.3799	-5.5030	-0.0220
108	07	6	Hispanic*HSGPA	-0.0079	0.0495	0.8260	0.3570	2.5495	-0.0063	0.0495	0.7831	0.3044	2.4957	0.0250
108	07	7	Hispanic*SAT-CR	-5.4440	0.8260	1,685.5218	1,067.8773	1,335.8686	-4.3934	0.7831	1,655.7803	1,031.4582	1,298.6160	5.0954
108	07	8	Hispanic*SAT-M	-6.6663	0.3570	1,067.8773	1,572.8209	1,037.8833	-5.3799	0.3044	1,031.4582	1,528.2249	992.2666	4.8143
108	07	9	Hispanic*SAT-W	-6.8189	2.5495	1,335.8686	1,037.8833	1,640.4084	-5.5030	2.4957	1,298.6160	992.2666	1,593.7477	5.0230
108	07	10	FYGPA	3.0087	0.1428	21.5707	17.4410	19.3561	-0.0220	0.0250	5.0954	4.8143	5.0230	0.4197
109	06	1	HSGPA	0.0000	0.1391	7.2735	8.1730	8.1819	0.0085	0.0226	-0.2259	0.0576	0.3214	0.0575
109	06	2	SAT-CR	0.0000	7.2735	5,944.5415	2,962.9728	4,138.7851	-6.9199	-0.2259	1,170.9691	626.3319	873.3365	12.5516
109	06	3	SAT-M	0.0000	8.1730	2,962.9728	6,094.5451	3,090.9320	-6.2444	0.0576	626.3319	1,208.3420	590.7988	7.3958
109	06	4	SAT-W	0.0000	8.1819	4,138.7851	3,090.9320	5,941.6674	-5.9646	0.3214	873.3365	590.7988	1,200.8067	13.6657
109	06	5	Hispanic	0.1816	0.0085	-6.9199	-6.2444	-5.9646	0.1487	0.0070	-5.6632	-5.1104	-4.8814	-0.0380
109	06	6	Hispanic*HSGPA	0.0085	0.0226	-0.2259	0.0576	0.3214	0.0070	0.0225	-0.1670	0.1108	0.3722	0.0042
109	06	7	Hispanic*SAT-CR	-6.9146	-0.2259	1,170.9691	626.3319	873.3365	-5.6632	-0.1670	1,123.1205	583.1546	832.0940	3.0334
109	06	8	Hispanic*SAT-M	-6.2396	0.0576	626.3319	1,208.3420	590.7988	-5.1104	0.1108	583.1546	1,169.3799	553.5826	1.8396
109	06	9	Hispanic*SAT-W	-5.9600	0.3214	873.3365	590.7988	1,200.8067	-4.8814	0.3722	832.0940	553.5826	1,165.2582	3.2032
109	06	10	FYGPA	3.2487	0.0575	12.5516	7.3958	13.6657	-0.0380	0.0042	3.0334	1.8396	3.2032	0.2268

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
109	07	1	HSGPA	0.0000	0.1177	3.7177	4.6744	3.7476	0.0049	0.0226	0.6080	0.5128	0.3818	0.0465
109	07	2	SAT-CR	0.0000	3.7177	5,375.8516	1,900.0541	3,248.4074	-5.9477	0.6080	1,211.2673	646.2924	817.4792	8.9086
109	07	3	SAT-M	0.0000	4.6744	1,900.0541	5,062.0346	2,089.2229	-6.6625	0.5128	646.2924	1,179.6822	597.1343	5.7188
109	07	4	SAT-W	0.0000	3.7476	3,248.4074	2,089.2229	4,806.8174	-6.2881	0.3818	817.4792	597.1343	1,089.3120	9.0922
109	07	5	Hispanic	0.1898	0.0049	-5.9477	-6.6625	-6.2881	0.1539	0.0040	-4.8186	-5.3977	-5.0944	-0.0252
109	07	6	Hispanic*HSGPA	0.0049	0.0226	0.6080	0.5128	0.3818	0.0040	0.0226	0.6372	0.5455	0.4126	0.0064
109	07	7	Hispanic*SAT-CR	-5.9433	0.6080	1,211.2673	646.2924	817.4792	-4.8186	0.6372	1,175.9182	606.6952	780.1072	1.9773
109	07	8	Hispanic*SAT-M	-6.6575	0.5128	646.2924	1,179.6822	597.1343	-5.3977	0.5455	606.6952	1,135.3264	555.2711	2.2419
109	07	9	Hispanic*SAT-W	-6.2834	0.3818	817.4792	597.1343	1,089.3120	-5.0944	0.4126	780.1072	555.2711	1,049.8015	2.3084
109	07	10	FYGPA	3.3002	0.0465	8.9086	5.7188	9.0922	-0.0252	0.0064	1.9773	2.2419	2.3084	0.1947
109	08	1	HSGPA	0.0000	0.1199	6.6511	7.3031	6.2283	0.0049	0.0252	0.2168	0.8105	0.1293	0.0556
109	08	2	SAT-CR	0.0000	6.6511	6,017.2242	2,928.4921	4,223.0365	-6.2957	0.2168	1,445.9453	632.0097	1,052.8594	13.7662
109	08	3	SAT-M	0.0000	7.3031	2,928.4921	5,585.4110	2,789.2347	-5.9740	0.8105	632.0097	1,378.7214	593.8270	9.5014
109	08	4	SAT-W	0.0000	6.2283	4,223.0365	2,789.2347	6,036.5626	-6.4658	0.1293	1,052.8594	593.8270	1,498.5497	15.8239
109	08	5	Hispanic	0.2237	0.0049	-6.2957	-5.9740	-6.4658	0.1738	0.0038	-4.8871	-4.6373	-5.0191	-0.0261
109	08	6	Hispanic*HSGPA	0.0049	0.0252	0.2168	0.8105	0.1293	0.0038	0.0252	0.2478	0.8398	0.1610	0.0074
109	08	7	Hispanic*SAT-CR	-6.2900	0.2168	1,445.9453	632.0097	1,052.8594	-4.8871	0.2478	1,406.3453	594.4335	1,012.1897	3.5931
109	08	8	Hispanic*SAT-M	-5.9685	0.8105	632.0097	1,378.7214	593.8270	-4.6373	0.8398	594.4335	1,343.0656	555.2359	1.7727
109	08	9	Hispanic*SAT-W	-6.4599	0.1293	1,052.8594	593.8270	1,498.5497	-5.0191	0.1610	1,012.1897	555.2359	1,456.7816	4.4584
109	08	10	FYGPA	3.2628	0.0556	13.7662	9.5014	15.8239	-0.0261	0.0074	3.5931	1.7727	4.4584	0.2217
110	08	1	HSGPA	0.0000	0.1413	5.1132	6.6835	5.6251	0.0004	0.0019	0.0441	-0.0355	-0.0312	0.0872
110	08	2	SAT-CR	0.0000	5.1132	5,557.0506	2,267.5101	3,897.9118	-2.1649	0.0441	357.0180	203.1445	255.3371	14.2107
110	08	3	SAT-M	0.0000	6.6835	2,267.5101	4,834.4033	2,157.1584	-1.9123	-0.0355	203.1445	178.1246	160.6157	13.0485
110	08	4	SAT-W	0.0000	5.6251	3,897.9118	2,157.1584	5,860.2147	-1.8364	-0.0312	255.3371	160.6157	286.0003	16.3024
110	08	5	Hispanic	0.0350	0.0004	-2.1649	-1.9123	-1.8364	0.0338	0.0004	-2.0891	-1.8455	-1.7722	-0.0065
110	08	6	Hispanic*HSGPA	0.0004	0.0019	0.0441	-0.0355	-0.0312	0.0004	0.0019	0.0451	-0.0346	-0.0304	0.0012
110	08	7	Hispanic*SAT-CR	-2.1604	0.0441	357.0180	203.1445	255.3371	-2.0891	0.0451	352.3410	199.0130	251.3697	0.1777
110	08	8	Hispanic*SAT-M	-1.9084	-0.0355	203.1445	178.1246	160.6157	-1.8455	-0.0346	199.0130	174.4750	157.1111	0.4228
110	08	9	Hispanic*SAT-W	-1.8326	-0.0312	255.3371	160.6157	286.0003	-1.7722	-0.0304	251.3697	157.1111	282.6348	0.1161
110	08	10	FYGPA	3.1429	0.0872	14.2107	13.0485	16.3024	-0.0065	0.0012	0.1777	0.4228	0.1161	0.2648
112	07	1	HSGPA	0.0000	0.1867	6.8550	8.4105	7.1795	-0.0002	0.0215	0.5939	0.7587	0.4000	0.0920
112	07	2	SAT-CR	0.0000	6.8550	5,407.7774	2,497.7137	3,651.4571	-1.1643	0.5939	567.3135	257.4209	407.8854	13.7805
112	07	3	SAT-M	0.0000	8.4105	2,497.7137	5,312.6069	2,401.4454	-2.5643	0.7587	257.4209	561.5423	249.2137	12.7549
112	07	4	SAT-W	0.0000	7.1795	3,651.4571	2,401.4454	5,239.6712	-2.0052	0.4000	407.8854	249.2137	557.5832	15.7332
112	07	5	Hispanic	0.1002	-0.0002	-1.1643	-2.5643	-2.0052	0.0902	-0.0002	-1.0477	-2.3074	-1.8043	-0.0207
112	07	6	Hispanic*HSGPA	-0.0002	0.0215	0.5939	0.7587	0.4000	-0.0002	0.0215	0.5937	0.7581	0.3996	0.0120
112	07	7	Hispanic*SAT-CR	-1.1632	0.5939	567.3135	257.4209	407.8854	-1.0477	0.5937	565.9591	254.4380	405.5528	1.5022
112	07	8	Hispanic*SAT-M	-2.5619	0.7587	257.4209	561.5423	249.2137	-2.3074	0.7581	254.4380	554.9728	244.0766	1.0969
112	07	9	Hispanic*SAT-W	-2.0033	0.4000	407.8854	249.2137	557.5832	-1.8043	0.3996	405.5528	244.0766	553.5661	1.2949
112	07	10	FYGPA	3.0743	0.0920	13.7805	12.7549	15.7332	-0.0207	0.0120	1.5022	1.0969	1.2949	0.3647



## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
112	08	1	HSGPA	0.0000	0.1962	8.5199	8.1622	9.2132	0.0056	0.0191	0.1366	0.7550	0.5371	0.1063
112	08	2	SAT-CR	0.0000	8.5199	5,978.6244	2,945.3857	4,213.3810	-3.2823	0.1366	538.3797	270.6987	402.0279	15.3616
112	08	3	SAT-M	0.0000	8.1622	2,945.3857	5,422.4079	2,833.9031	-2.7869	0.7550	270.6987	591.0324	294.8490	13.9887
112	08	4	SAT-W	0.0000	9.2132	4,213.3810	2,833.9031	5,885.5622	-3.4802	0.5371	402.0279	294.8490	563.5229	16.5000
112	08	5	Hispanic	0.1062	0.0056	-3.2823	-2.7869	-3.4802	0.0950	0.0050	-2.9337	-2.4909	-3.1105	-0.0146
112	08	6	Hispanic*HSGPA	0.0056	0.0191	0.1366	0.7550	0.5371	0.0050	0.0191	0.1549	0.7706	0.5565	0.0116
112	08	7	Hispanic*SAT-CR	-3.2792	0.1366	538.3797	270.6987	402.0279	-2.9337	0.1549	527.6165	261.5600	390.6157	1.4166
112	08	8	Hispanic*SAT-M	-2.7842	0.7550	270.6987	591.0324	294.8490	-2.4909	0.7706	261.5600	583.2732	285.1594	2.1600
112	08	9	Hispanic*SAT-W	-3.4769	0.5371	402.0279	294.8490	563.5229	-3.1105	0.5565	390.6157	285.1594	551.4227	1.2880
112	08	10	FYGPA	3.0954	0.1063	15.3616	13.9887	16.5000	-0.0146	0.0116	1.4166	2.1600	1.2880	0.3718
113	06	1	HSGPA	0.0000	0.1771	5.6809	4.8295	6.6239	-0.0043	0.0204	0.5587	0.0595	0.5469	0.0541
113	06	2	SAT-CR	0.0000	5.6809	6,326.4017	2,852.6704	4,448.2976	-4.6497	0.5587	663.3321	405.2316	564.4250	14.7624
113	06	3	SAT-M	0.0000	4.8295	2,852.6704	5,324.4752	2,405.8644	-2.3652	0.0595	405.2316	734.7964	287.8256	9.6052
113	06	4	SAT-W	0.0000	6.6239	4,448.2976	2,405.8644	5,569.0683	-5.1112	0.5469	564.4250	287.8256	831.2344	14.2340
113	06	5	Hispanic	0.1253	-0.0043	-4.6497	-2.3652	-5.1112	0.1099	-0.0038	-4.0669	-2.0687	-4.4705	-0.0256
113	06	6	Hispanic*HSGPA	-0.0043	0.0204	0.5587	0.0595	0.5469	-0.0038	0.0204	0.5385	0.0492	0.5248	0.0062
113	06	7	Hispanic*SAT-CR	-4.6368	0.5587	663.3321	405.2316	564.4250	-4.0669	0.5385	641.7725	394.2648	540.7256	2.3020
113	06	8	Hispanic*SAT-M	-2.3586	0.0595	405.2316	734.7964	287.8256	-2.0687	0.0492	394.2648	729.2178	275.7703	2.1785
113	06	9	Hispanic*SAT-W	-5.0969	0.5469	564.4250	287.8256	831.2344	-4.4705	0.5248	540.7256	275.7703	805.1829	2.0279
113	06	10	FYGPA	3.3283	0.0541	14.7624	9.6052	14.2340	-0.0256	0.0062	2.3020	2.1785	2.0279	0.2050
113	07	1	HSGPA	0.0000	0.1718	5.1875	7.0893	6.4548	-0.0153	0.0179	0.9337	0.9630	0.5388	0.0754
113	07	2	SAT-CR	0.0000	5.1875	6,828.2659	2,750.1086	4,325.3530	-4.8730	0.9337	953.3534	534.9312	607.4169	12.9968
113	07	3	SAT-M	0.0000	7.0893	2,750.1086	5,522.1683	2,600.0366	-2.9527	0.9630	534.9312	734.3463	422.9251	9.1988
113	07	4	SAT-W	0.0000	6.4548	4,325.3530	2,600.0366	5,980.7420	-2.8022	0.5388	607.4169	422.9251	726.6370	10.2461
113	07	5	Hispanic	0.1366	-0.0153	-4.8730	-2.9527	-2.8022	0.1182	-0.0132	-4.2074	-2.5494	-2.4194	-0.0231
113	07	6	Hispanic*HSGPA	-0.0153	0.0179	0.9337	0.9630	0.5388	-0.0132	0.0177	0.8594	0.9179	0.4961	0.0069
113	07	7	Hispanic*SAT-CR	-4.8604	0.9337	953.3534	534.9312	607.4169	-4.2074	0.8594	929.6685	520.5796	593.7968	2.6876
113	07	8	Hispanic*SAT-M	-2.9451	0.9630	534.9312	734.3463	422.9251	-2.5494	0.9179	520.5796	725.6502	414.6723	1.6081
113	07	9	Hispanic*SAT-W	-2.7950	0.5388	607.4169	422.9251	726.6370	-2.4194	0.4961	593.7968	414.6723	718.8048	1.5600
113	07	10	FYGPA	3.2896	0.0754	12.9968	9.1988	10.2461	-0.0231	0.0069	2.6876	1.6081	1.5600	0.2265
113	08	1	HSGPA	0.0000	0.1688	6.2925	8.7844	7.3147	-0.0108	0.0248	0.8092	1.1672	1.1679	0.0680
113	08	2	SAT-CR	0.0000	6.2925	5,504.7192	2,471.6743	3,744.1578	-3.8151	0.8092	732.7202	333.7805	550.9174	13.7353
113	08	3	SAT-M	0.0000	8.7844	2,471.6743	5,199.7316	2,313.1558	-3.8746	1.1672	333.7805	595.9521	299.0637	9.1786
113	08	4	SAT-W	0.0000	7.3147	3,744.1578	2,313.1558	5,578.7227	-3.5787	1.1679	550.9174	299.0637	659.7875	14.4946
113	08	5	Hispanic	0.1092	-0.0108	-3.8151	-3.8746	-3.5787	0.0975	-0.0096	-3.3984	-3.4514	-3.1879	-0.0150
113	08	6	Hispanic*HSGPA	-0.0107	0.0248	0.8092	1.1672	1.1679	-0.0096	0.0247	0.7683	1.1257	1.1295	0.0152
113	08	7	Hispanic*SAT-CR	-3.8069	0.8092	732.7202	333.7805	550.9174	-3.3984	0.7683	718.1968	319.0305	537.2938	2.7872
113	08	8	Hispanic*SAT-M	-3.8663	1.1672	333.7805	595.9521	299.0637	-3.4514	1.1257	319.0305	580.9720	285.2276	1.3130
113	08	9	Hispanic*SAT-W	-3.5710	1.1679	550.9174	299.0637	659.7875	-3.1879	1.1295	537.2938	285.2276	647.0080	2.8179
113	08	10	FYGPA	3.2813	0.0680	13.7353	9.1786	14.4946	-0.0150	0.0152	2.7872	1.3130	2.8179	0.2425

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
114	06	1	HSGPA	0.0000	0.1960	0.3915	1.4637	3.4736	-0.0054	0.0145	-0.0181	0.0987	0.2955	0.0875
114	06	2	SAT-CR	0.0000	0.3915	5,690.6030	2,347.0789	3,847.7591	-0.9319	-0.0181	468.0049	216.9004	309.9987	9.7554
114	06	3	SAT-M	0.0000	1.4637	2,347.0789	5,321.9788	2,331.3090	-1.0719	0.0987	216.9004	377.0418	199.6796	7.6328
114	06	4	SAT-W	0.0000	3.4736	3,847.7591	2,331.3090	5,642.6209	-1.7331	0.2955	309.9987	199.6796	421.5161	12.8779
114	06	5	Hispanic	0.0601	-0.0054	-0.9319	-1.0719	-1.7331	0.0565	-0.0051	-0.8759	-1.0074	-1.6289	-0.0176
114	06	6	Hispanic*HSGPA	-0.0054	0.0145	-0.0181	0.0987	0.2955	-0.0051	0.0144	-0.0231	0.0929	0.2862	0.0056
114	06	7	Hispanic*SAT-CR	-0.9315	-0.0181	468.0049	216.9004	309.9987	-0.8759	-0.0231	467.1368	215.9019	308.3843	0.9093
114	06	8	Hispanic*SAT-M	-1.0713	0.0987	216.9004	377.0418	199.6796	-1.0074	0.0929	215.9019	375.8934	197.8228	0.9727
114	06	9	Hispanic*SAT-W	-1.7322	0.2955	309.9987	199.6796	421.5161	-1.6289	0.2862	308.3843	197.8228	418.5139	1.4384
114	06	10	FYGPA	2.9214	0.0875	9.7554	7.6328	12.8779	-0.0176	0.0056	0.9093	0.9727	1.4384	0.4276
114	07	1	HSGPA	0.0000	0.1961	3.2942	4.3582	4.9883	-0.0058	0.0126	0.0084	0.0408	0.1493	0.0940
114	07	2	SAT-CR	0.0000	3.2942	5,813.9409	2,457.0805	3,969.3898	-0.8144	0.0084	365.3766	179.9922	279.7096	11.7523
114	07	3	SAT-M	0.0000	4.3582	2,457.0805	5,692.0721	2,559.0159	-1.5300	0.0408	179.9922	361.5636	216.0069	8.1699
114	07	4	SAT-W	0.0000	4.9883	3,969.3898	2,559.0159	5,617.6173	-1.0513	0.1493	279.7096	216.0069	371.8144	13.4301
114	07	5	Hispanic	0.0562	-0.0058	-0.8144	-1.5300	-1.0513	0.0531	-0.0055	-0.7686	-1.4440	-0.9922	-0.0117
114	07	6	Hispanic*HSGPA	-0.0058	0.0126	0.0084	0.0408	0.1493	-0.0055	0.0126	0.0037	0.0319	0.1433	0.0032
114	07	7	Hispanic*SAT-CR	-0.8141	0.0084	365.3766	179.9922	279.7096	-0.7686	0.0037	364.7136	178.7467	278.8538	0.7710
114	07	8	Hispanic*SAT-M	-1.5294	0.0408	179.9922	361.5636	216.0069	-1.4440	0.0319	178.7467	359.2235	214.3990	0.8068
114	07	9	Hispanic*SAT-W	-1.0509	0.1493	279.7096	216.0069	371.8144	-0.9922	0.1433	278.8538	214.3990	370.7096	0.9715
114	07	10	FYGPA	2.9783	0.0940	11.7523	8.1699	13.4301	-0.0117	0.0032	0.7710	0.8068	0.9715	0.3841
114	08	1	HSGPA	0.0000	0.2005	3.2037	3.8953	5.6064	0.0003	0.0146	-0.4350	-0.2195	-0.0816	0.1025
114	08	2	SAT-CR	0.0000	3.2037	5,756.9825	2,345.4182	3,936.5152	-2.5720	-0.4350	528.5311	284.1314	410.0861	9.9886
114	08	3	SAT-M	0.0000	3.8953	2,345.4182	5,362.4271	2,321.7564	-2.6931	-0.2195	284.1314	440.3971	258.4807	8.4443
114	08	4	SAT-W	0.0000	5.6064	3,936.5152	2,321.7564	5,772.4816	-2.9432	-0.0816	410.0861	258.4807	483.7325	13.4997
114	08	5	Hispanic	0.0647	0.0003	-2.5720	-2.6931	-2.9432	0.0605	0.0003	-2.4056	-2.5188	-2.7528	-0.0174
114	08	6	Hispanic*HSGPA	0.0003	0.0146	-0.4350	-0.2195	-0.0816	0.0003	0.0146	-0.4342	-0.2186	-0.0806	0.0018
114	08	7	Hispanic*SAT-CR	-2.5709	-0.4350	528.5311	284.1314	410.0861	-2.4056	-0.4342	521.9187	277.2077	402.5195	1.3847
114	08	8	Hispanic*SAT-M	-2.6919	-0.2195	284.1314	440.3971	258.4807	-2.5188	-0.2186	277.2077	433.1476	250.5579	1.3741
114	08	9	Hispanic*SAT-W	-2.9419	-0.0816	410.0861	258.4807	483.7325	-2.7528	-0.0806	402.5195	250.5579	475.0740	1.4846
114	08	10	FYGPA	3.0496	0.1025	9.9886	8.4443	13.4997	-0.0174	0.0018	1.3847	1.3741	1.4846	0.3815
115	06	1	HSGPA	0.0000	0.0899	2.9223	1.8460	2.4005	-0.0005	0.0113	-0.1297	-0.1975	-0.0281	0.0306
115	06	2	SAT-CR	0.0000	2.9223	4,618.5777	1,297.7381	2,635.3059	-4.1603	-0.1297	608.6808	436.3266	537.9060	8.1344
115	06	3	SAT-M	0.0000	1.8460	1,297.7381	4,224.6809	1,522.3262	-4.8494	-0.1975	436.3266	856.1348	462.4820	4.1014
115	06	4	SAT-W	0.0000	2.4005	2,635.3059	1,522.3262	4,329.3650	-4.2521	-0.0281	537.9060	462.4820	662.3930	8.1906
115	06	5	Hispanic	0.0977	-0.0005	-4.1603	-4.8494	-4.2521	0.0882	-0.0004	-3.7540	-4.3758	-3.8369	-0.0234
115	06	6	Hispanic*HSGPA	-0.0005	0.0113	-0.1297	-0.1975	-0.0281	-0.0004	0.0113	-0.1316	-0.1997	-0.0301	0.0005
115	06	7	Hispanic*SAT-CR	-4.1561	-0.1297	608.6808	436.3266	537.9060	-3.7540	-0.1316	591.3902	416.1720	520.2338	1.5768
115	06	8	Hispanic*SAT-M	-4.8445	-0.1975	436.3266	856.1348	462.4820	-4.3758	-0.1997	416.1720	832.6418	441.8826	0.9100
115	06	9	Hispanic*SAT-W	-4.2478	-0.0281	537.9060	462.4820	662.3930	-3.8369	-0.0301	520.2338	441.8826	644.3308	1.6330
115	06	10	FYGPA	3.4190	0.0306	8.1344	4.1014	8.1906	-0.0234	0.0005	1.5768	0.9100	1.6330	0.1508

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
115	07	1	HSGPA	0.0000	0.0869	2.0215	2.8285	2.5949	-0.0073	0.0114	0.3940	0.2222	0.6323	0.0263
115	07	2	SAT-CR	0.0000	2.0215	4,600.9678	1,331.8747	2,709.4288	-4.5678	0.3940	704.5265	430.5892	550.5159	7.2936
115	07	3	SAT-M	0.0000	2.8285	1,331.8747	4,284.1192	1,533.8684	-6.4807	0.2222	430.5892	960.3084	488.0683	5.9877
115	07	4	SAT-W	0.0000	2.5949	2,709.4288	1,533.8684	4,348.2444	-5.3665	0.6323	550.5159	488.0683	830.1752	8.6319
115	07	5	Hispanic	0.1045	-0.0073	-4.5678	-6.4807	-5.3665	0.0937	-0.0066	-4.0904	-5.8034	-4.8056	-0.0309
115	07	6	Hispanic*HSGPA	-0.0073	0.0114	0.3940	0.2222	0.6323	-0.0066	0.0113	0.3606	0.1748	0.5931	0.0060
115	07	7	Hispanic*SAT-CR	-4.5627	0.3940	704.5265	430.5892	550.5159	-4.0904	0.3606	683.6849	401.0194	526.0299	1.5362
115	07	8	Hispanic*SAT-M	-6.4736	0.2222	430.5892	960.3084	488.0683	-5.8034	0.1748	401.0194	918.3550	453.3279	2.2804
115	07	9	Hispanic*SAT-W	-5.3606	0.6323	550.5159	488.0683	830.1752	-4.8056	0.5931	526.0299	453.3279	801.4076	2.3513
115	07	10	FYGPA	3.4339	0.0263	7.2936	5.9877	8.6319	-0.0309	0.0060	1.5362	2.2804	2.3513	0.1469
115	08	1	HSGPA	0.0000	0.0986	3.3533	2.9447	2.7357	-0.0142	0.0149	0.6358	0.3006	0.5128	0.0282
115	08	2	SAT-CR	0.0000	3.3533	4,588.9547	1,724.1620	2,526.7998	-4.1942	0.6358	594.6303	335.1909	425.2202	6.7672
115	08	3	SAT-M	0.0000	2.9447	1,724.1620	4,468.6240	1,492.1294	-4.9634	0.3006	335.1909	724.0600	331.7119	5.1470
115	08	4	SAT-W	0.0000	2.7357	2,526.7998	1,492.1294	4,559.0941	-4.5877	0.5128	425.2202	331.7119	639.0649	7.1779
115	08	5	Hispanic	0.1093	-0.0142	-4.1942	-4.9634	-4.5877	0.0975	-0.0127	-3.7356	-4.4207	-4.0861	-0.0249
115	08	6	Hispanic*HSGPA	-0.0142	0.0149	0.6358	0.3006	0.5128	-0.0127	0.0147	0.5762	0.2301	0.4477	0.0062
115	08	7	Hispanic*SAT-CR	-4.1890	0.6358	594.6303	335.1909	425.2202	-3.7356	0.5762	577.0606	314.3992	406.0020	1.6988
115	08	8	Hispanic*SAT-M	-4.9573	0.3006	335.1909	724.0600	331.7119	-4.4207	0.2301	314.3992	699.4552	308.9693	1.5581
115	08	9	Hispanic*SAT-W	-4.5821	0.5128	425.2202	331.7119	639.0649	-4.0861	0.4477	406.0020	308.9693	618.0434	1.9187
115	08	10	FYGPA	3.4294	0.0282	6.7672	5.1470	7.1779	-0.0249	0.0062	1.6988	1.5581	1.9187	0.1407
117	06	1	HSGPA	0.0000	0.1221	3.6575	1.7865	3.4542	-0.0057	0.0123	0.7337	0.4282	0.8059	0.0475
117	06	2	SAT-CR	0.0000	3.6575	4,342.0504	1,432.4074	2,468.7292	-2.4275	0.7337	333.2665	239.0710	290.9593	7.3603
117	06	3	SAT-M	0.0000	1.7865	1,432.4074	4,286.5992	1,541.9660	-2.9485	0.4282	239.0710	484.6020	326.2654	3.7586
117	06	4	SAT-W	0.0000	3.4542	2,468.7292	1,541.9660	4,248.1546	-3.0719	0.8059	290.9593	326.2654	455.9128	8.4685
117	06	5	Hispanic	0.0622	-0.0057	-2.4275	-2.9485	-3.0719	0.0584	-0.0053	-2.2764	-2.7650	-2.8807	-0.0268
117	06	6	Hispanic*HSGPA	-0.0057	0.0123	0.7337	0.4282	0.8059	-0.0053	0.0123	0.7199	0.4115	0.7884	0.0090
117	06	7	Hispanic*SAT-CR	-2.4249	0.7337	333.2665	239.0710	290.9593	-2.2764	0.7199	327.3801	231.9211	283.5102	1.9205
117	06	8	Hispanic*SAT-M	-2.9455	0.4282	239.0710	484.6020	326.2654	-2.7650	0.4115	231.9211	475.9172	317.2173	1.9871
117	06	9	Hispanic*SAT-W	-3.0687	0.8059	290.9593	326.2654	455.9128	-2.8807	0.7884	283.5102	317.2173	446.4862	2.3556
117	06	10	FYGPA	3.2610	0.0475	7.3603	3.7586	8.4685	-0.0268	0.0090	1.9205	1.9871	2.3556	0.2213
117	07	1	HSGPA	0.0000	0.1187	3.4879	3.3379	3.1732	-0.0040	0.0113	0.2614	0.3143	0.5813	0.0500
117	07	2	SAT-CR	0.0000	3.4879	4,792.3817	1,641.3902	2,582.5554	-3.2897	0.2614	528.0578	326.5778	341.8594	7.2476
117	07	3	SAT-M	0.0000	3.3379	1,641.3902	3,911.8888	1,476.2686	-4.0050	0.3143	326.5778	586.4135	325.2894	5.8556
117	07	4	SAT-W	0.0000	3.1732	2,582.5554	1,476.2686	4,132.5173	-3.2401	0.5813	341.8594	325.2894	397.5792	7.2053
117	07	5	Hispanic	0.0657	-0.0040	-3.2897	-4.0050	-3.2401	0.0614	-0.0038	-3.0736	-3.7420	-3.0274	-0.0230
117	07	6	Hispanic*HSGPA	-0.0040	0.0113	0.2614	0.3143	0.5813	-0.0038	0.0113	0.2481	0.2981	0.5682	0.0049
117	07	7	Hispanic*SAT-CR	-3.2864	0.2614	528.0578	326.5778	341.8594	-3.0736	0.2481	517.2466	313.4157	331.2110	2.1439
117	07	8	Hispanic*SAT-M	-4.0010	0.3143	326.5778	586.4135	325.2894	-3.7420	0.2981	313.4157	570.3892	312.3255	2.3729
117	07	9	Hispanic*SAT-W	-3.2369	0.5813	341.8594	325.2894	397.5792	-3.0274	0.5682	331.2110	312.3255	387.0911	2.0688
117	07	10	FYGPA	3.3142	0.0500	7.2476	5.8556	7.2053	-0.0230	0.0049	2.1439	2.3729	2.0688	0.1869

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
117	08	1	HSGPA	0.0000	0.1102	4.6244	3.7817	2.7117	-0.0040	0.0086	0.3191	0.2003	0.2875	0.0344
117	08	2	SAT-CR	0.0000	4.6244	4,731.8873	2,032.8934	2,654.1806	-2.0323	0.3191	355.8945	218.9804	267.4928	7.3162
117	08	3	SAT-M	0.0000	3.7817	2,032.8934	4,400.9847	1,895.0471	-3.9437	0.2003	218.9804	554.4308	285.0880	5.4978
117	08	4	SAT-W	0.0000	2.7117	2,654.1806	1,895.0471	4,717.0651	-2.3038	0.2875	267.4928	285.0880	436.8947	8.8741
117	08	5	Hispanic	0.0757	-0.0040	-2.0323	-3.9437	-2.3038	0.0701	-0.0037	-1.8785	-3.6452	-2.1294	-0.0171
117	08	6	Hispanic*HSGPA	-0.0040	0.0086	0.3191	0.2003	0.2875	-0.0037	0.0086	0.3110	0.1845	0.2783	0.0029
117	08	7	Hispanic*SAT-CR	-2.0296	0.3191	355.8945	218.9804	267.4928	-1.8785	0.3110	351.7697	210.9763	262.8170	0.8060
117	08	8	Hispanic*SAT-M	-3.9385	0.2003	218.9804	554.4308	285.0880	-3.6452	0.1845	210.9763	538.8988	276.0145	0.7444
117	08	9	Hispanic*SAT-W	-2.3008	0.2875	267.4928	285.0880	436.8947	-2.1294	0.2783	262.8170	276.0145	431.5941	1.1885
117	08	10	FYGPA	3.3364	0.0344	7.3162	5.4978	8.8741	-0.0171	0.0029	0.8060	0.7444	1.1885	0.1655
118	06	1	HSGPA	0.0000	0.2691	13.7013	14.3168	12.4116	-0.0181	0.1034	1.1567	3.8499	1.8695	0.1661
118	06	2	SAT-CR	0.0000	13.7013	8,120.9634	4,067.2099	5,087.9218	-13.8440	1.1567	3,015.5801	1,094.0865	1,691.5356	20.1667
118	06	3	SAT-M	0.0000	14.3168	4,067.2099	7,196.4592	3,336.6361	-9.9240	3.8499	1,094.0865	2,955.8045	914.3175	18.5777
118	06	4	SAT-W	0.0000	12.4116	5,087.9218	3,336.6361	6,627.5603	-10.0131	1.8695	1,691.5356	914.3175	2,604.1585	19.0087
118	06	5	Hispanic	0.4936	-0.0181	-13.8440	-9.9240	-10.0131	0.2510	-0.0091	-7.0111	-5.0259	-5.0710	-0.0563
118	06	6	Hispanic*HSGPA	-0.0180	0.1034	1.1567	3.8499	1.8695	-0.0091	0.1030	0.9078	3.6714	1.6894	0.0587
118	06	7	Hispanic*SAT-CR	-13.7846	1.1567	3,015.5801	1,094.0865	1,691.5356	-7.0111	0.9078	2,824.7469	957.2890	1,553.5089	8.7962
118	06	8	Hispanic*SAT-M	-9.8814	3.8499	1,094.0865	2,955.8045	914.3175	-5.0259	3.6714	957.2890	2,857.7420	815.3740	8.4610
118	06	9	Hispanic*SAT-W	-9.9702	1.8695	1,691.5356	914.3175	2,604.1585	-5.0710	1.6894	1,553.5089	815.3740	2,504.3259	7.3832
118	06	10	FYGPA	2.7631	0.1661	20.1667	18.5777	19.0087	-0.0563	0.0587	8.7962	8.4610	7.3832	0.5096
119	07	1	HSGPA	0.0000	0.2000	10.3643	11.3776	12.2842	-0.0047	0.0070	0.3070	0.4469	0.4441	0.1164
119	07	2	SAT-CR	0.0000	10.3643	6,312.4182	3,162.3520	4,529.0770	-1.0014	0.3070	215.0714	130.4511	170.2166	14.7855
119	07	3	SAT-M	0.0000	11.3776	3,162.3520	6,250.4033	3,182.8231	-0.9557	0.4469	130.4511	224.7784	132.6164	13.6942
119	07	4	SAT-W	0.0000	12.2842	4,529.0770	3,182.8231	6,251.4267	-0.9473	0.4441	170.2166	132.6164	202.3813	16.6599
119	07	5	Hispanic	0.0273	-0.0047	-1.0014	-0.9557	-0.9473	0.0266	-0.0046	-0.9741	-0.9295	-0.9214	-0.0072
119	07	6	Hispanic*HSGPA	-0.0047	0.0070	0.3070	0.4469	0.4441	-0.0046	0.0070	0.3022	0.4423	0.4397	0.0048
119	07	7	Hispanic*SAT-CR	-1.0012	0.3070	215.0714	130.4511	170.2166	-0.9741	0.3022	214.0688	129.4943	169.2681	0.6027
119	07	8	Hispanic*SAT-M	-0.9554	0.4469	130.4511	224.7784	132.6164	-0.9295	0.4423	129.4943	223.8653	131.7113	0.6768
119	07	9	Hispanic*SAT-W	-0.9471	0.4441	170.2166	132.6164	202.3813	-0.9214	0.4397	169.2681	131.7113	201.4841	0.6306
119	07	10	FYGPA	3.1271	0.1164	14.7855	13.6942	16.6599	-0.0072	0.0048	0.6027	0.6768	0.6306	0.3507
119	08	1	HSGPA	0.0000	0.1711	9.4813	9.4700	10.9488	-0.0045	0.0076	0.3896	0.5365	0.4715	0.1093
119	08	2	SAT-CR	0.0000	9.4813	6,508.4416	3,191.5387	4,670.2633	-1.1850	0.3896	229.4650	146.5645	180.8099	15.1557
119	08	3	SAT-M	0.0000	9.4700	3,191.5387	5,949.6587	3,241.2124	-1.1794	0.5365	146.5645	252.3701	160.6808	13.3376
119	08	4	SAT-W	0.0000	10.9488	4,670.2633	3,241.2124	6,498.7850	-1.3662	0.4715	180.8099	160.6808	259.7126	17.5082
119	08	5	Hispanic	0.0324	-0.0045	-1.1850	-1.1794	-1.3662	0.0314	-0.0043	-1.1465	-1.1411	-1.3219	-0.0074
119	08	6	Hispanic*HSGPA	-0.0045	0.0076	0.3896	0.5365	0.4715	-0.0043	0.0076	0.3843	0.5313	0.4654	0.0043
119	08	7	Hispanic*SAT-CR	-1.1847	0.3896	229.4650	146.5645	180.8099	-1.1465	0.3843	228.0611	145.1674	179.1914	0.6649
119	08	8	Hispanic*SAT-M	-1.1791	0.5365	146.5645	252.3701	160.6808	-1.1411	0.5313	145.1674	250.9794	159.0698	0.6949
119	08	9	Hispanic*SAT-W	-1.3659	0.4715	180.8099	160.6808	259.7126	-1.3219	0.4654	179.1914	159.0698	257.8465	0.7566
119	08	10	FYGPA	3.1547	0.1093	15.1557	13.3376	17.5082	-0.0074	0.0043	0.6649	0.6949	0.7566	0.3229

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
120	08	1	HSGPA	0.0000	0.2779	16.1939	14.8601	14.5481	-0.0047	0.0164	0.0548	0.9256	0.0938	0.1585
120	08	2	SAT-CR	0.0000	16.1939	6,841.1229	3,567.5596	4,868.6482	0.6503	0.0548	397.7961	154.1024	315.8409	25.6620
120	08	3	SAT-M	0.0000	14.8601	3,567.5596	6,337.8742	3,482.6565	-1.4429	0.9256	154.1024	359.1078	238.2914	16.5377
120	08	4	SAT-W	0.0000	14.5481	4,868.6482	3,482.6565	6,251.5379	-0.4444	0.0938	315.8409	238.2914	473.5144	26.3209
120	08	5	Hispanic	0.0673	-0.0047	0.6503	-1.4429	-0.4444	0.0630	-0.0044	0.6065	-1.3458	-0.4145	-0.0008
120	08	6	Hispanic*HSGPA	-0.0047	0.0164	0.0548	0.9256	0.0938	-0.0044	0.0164	0.0578	0.9189	0.0917	0.0022
120	08	7	Hispanic*SAT-CR	0.6481	0.0548	397.7961	154.1024	315.8409	0.6065	0.0578	397.3746	155.0376	316.1289	2.4192
120	08	8	Hispanic*SAT-M	-1.4381	0.9256	154.1024	359.1078	238.2914	-1.3458	0.9189	155.0376	357.0328	237.6523	1.0718
120	08	9	Hispanic*SAT-W	-0.4429	0.0938	315.8409	238.2914	473.5144	-0.4145	0.0917	316.1289	237.6523	473.3175	2.2968
120	08	10	FYGPA	2.9963	0.1585	25.6620	16.5377	26.3209	-0.0008	0.0022	2.4192	1.0718	2.2968	0.4516
121	06	1	HSGPA	0.0000	0.1215	6.2269	5.4059	5.9211	0.0016	0.0044	0.4369	0.5753	0.3240	0.0595
121	06	2	SAT-CR	0.0000	6.2269	6,465.2202	2,569.4809	4,281.1303	-2.7589	0.4369	722.5818	466.2753	634.2677	14.9621
121	06	3	SAT-M	0.0000	5.4059	2,569.4809	5,114.0812	2,677.1610	-2.5805	0.5753	466.2753	602.3964	498.7202	10.5566
121	06	4	SAT-W	0.0000	5.9211	4,281.1303	2,677.1610	6,003.7166	-3.6465	0.3240	634.2677	498.7202	723.6361	15.9142
121	06	5	Hispanic	0.0605	0.0016	-2.7589	-2.5805	-3.6465	0.0570	0.0015	-2.5919	-2.4243	-3.4257	-0.0135
121	06	6	Hispanic*HSGPA	0.0016	0.0044	0.4369	0.5753	0.3240	0.0015	0.0044	0.4412	0.5793	0.3297	0.0004
121	06	7	Hispanic*SAT-CR	-2.7522	0.4369	722.5818	466.2753	634.2677	-2.5919	0.4412	714.9888	459.1734	624.2319	2.1375
121	06	8	Hispanic*SAT-M	-2.5742	0.5753	466.2753	602.3964	498.7202	-2.4243	0.5793	459.1734	595.7538	489.3335	1.3917
121	06	9	Hispanic*SAT-W	-3.6376	0.3240	634.2677	498.7202	723.6361	-3.4257	0.3297	624.2319	489.3335	710.3715	2.5748
121	06	10	FYGPA	3.4336	0.0595	14.9621	10.5566	15.9142	-0.0135	0.0004	2.1375	1.3917	2.5748	0.1808
121	07	1	HSGPA	0.0000	0.1310	10.0100	8.2258	9.7673	0.0001	0.0112	0.6261	0.6763	0.4717	0.0663
121	07	2	SAT-CR	0.0000	10.0100	6,378.2481	3,341.1505	4,291.3284	-5.4031	0.6261	1,020.6542	942.2494	818.9319	13.6657
121	07	3	SAT-M	0.0000	8.2258	3,341.1505	5,330.8878	3,131.3313	-6.2277	0.6763	942.2494	1,112.7884	825.3383	10.7279
121	07	4	SAT-W	0.0000	9.7673	4,291.3284	3,131.3313	5,941.6592	-4.7330	0.4717	818.9319	825.3383	792.4376	15.5776
121	07	5	Hispanic	0.0652	0.0001	-5.4031	-6.2277	-4.7330	0.0611	0.0001	-5.0511	-5.8219	-4.4246	-0.0221
121	07	6	Hispanic*HSGPA	0.0001	0.0112	0.6261	0.6763	0.4717	0.0001	0.0112	0.6264	0.6766	0.4720	0.0062
121	07	7	Hispanic*SAT-CR	-5.3878	0.6261	1,020.6542	942.2494	818.9319	-5.0511	0.6264	991.5432	908.6957	793.4316	2.8224
121	07	8	Hispanic*SAT-M	-6.2101	0.6763	942.2494	1,112.7884	825.3383	-5.8219	0.6766	908.6957	1,074.1139	795.9463	2.7841
121	07	9	Hispanic*SAT-W	-4.7196	0.4717	818.9319	825.3383	792.4376	-4.4246	0.4720	793.4316	795.9463	770.1001	2.3460
121	07	10	FYGPA	3.3960	0.0663	13.6657	10.7279	15.5776	-0.0221	0.0062	2.8224	2.7841	2.3460	0.1751
121	08	1	HSGPA	0.0000	0.1354	4.9251	3.6136	5.7794	-0.0140	0.0143	1.1141	0.7152	1.7119	0.0596
121	08	2	SAT-CR	0.0000	4.9251	5,780.9131	2,202.0122	3,507.8144	-6.1300	1.1141	1,356.8596	713.9992	1,086.0620	12.7612
121	08	3	SAT-M	0.0000	3.6136	2,202.0122	4,387.8437	2,089.0123	-3.6345	0.7152	713.9992	722.8677	559.7932	9.1352
121	08	4	SAT-W	0.0000	5.7794	3,507.8144	2,089.0123	5,499.0333	-7.1311	1.7119	1,086.0620	559.7932	1,142.5655	14.2086
121	08	5	Hispanic	0.0896	-0.0140	-6.1300	-3.6345	-7.1311	0.0818	-0.0128	-5.5808	-3.3089	-6.4922	-0.0387
121	08	6	Hispanic*HSGPA	-0.0140	0.0143	1.1141	0.7152	1.7119	-0.0128	0.0141	1.0285	0.6644	1.6123	0.0144
121	08	7	Hispanic*SAT-CR	-6.1123	1.1141	1,356.8596	713.9992	1,086.0620	-5.5808	1.0285	1,319.3911	691.7840	1,042.4746	3.8249
121	08	8	Hispanic*SAT-M	-3.6240	0.7152	713.9992	722.8677	559.7932	-3.3089	0.6644	691.7840	709.6963	533.9501	3.0998
121	08	9	Hispanic*SAT-W	-7.1105	1.7119	1,086.0620	559.7932	1,142.5655	-6.4922	1.6123	1,042.4746	533.9501	1,091.8598	4.1926
121	08	10	FYGPA	3.3839	0.0596	12.7612	9.1352	14.2086	-0.0387	0.0144	3.8249	3.0998	4.1926	0.2048

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
122	06	1	HSGPA	0.0000	0.2426	8.0549	10.0721	9.5994	0.0036	0.0488	-0.1097	1.8240	0.7081	0.1215
122	06	2	SAT-CR	0.0000	8.0549	6,723.1491	3,416.0294	5,083.1412	-9.2606	-0.1097	1,478.9459	682.1136	1,187.4881	18.1442
122	06	3	SAT-M	0.0000	10.0721	3,416.0294	6,964.5387	3,896.7492	-7.9663	1.8240	682.1136	1,800.3310	1,080.1460	13.5976
122	06	4	SAT-W	0.0000	9.5994	5,083.1412	3,896.7492	6,827.0280	-9.9550	0.7081	1,187.4881	1,080.1460	1,770.2978	20.8571
122	06	5	Hispanic	0.2417	0.0036	-9.2606	-7.9663	-9.9550	0.1839	0.0028	-7.0221	-6.0406	-7.5487	-0.0496
122	06	6	Hispanic*HSGPA	0.0036	0.0488	-0.1097	1.8240	0.7081	0.0028	0.0488	-0.0762	1.8528	0.7442	0.0241
122	06	7	Hispanic*SAT-CR	-9.2300	-0.1097	1,478.9459	682.1136	1,187.4881	-7.0221	-0.0762	1,393.4706	608.5851	1,095.6037	4.5256
122	06	8	Hispanic*SAT-M	-7.9399	1.8240	682.1136	1,800.3310	1,080.1460	-6.0406	1.8528	608.5851	1,737.0797	1,001.1043	4.5626
122	06	9	Hispanic*SAT-W	-9.9220	0.7081	1,187.4881	1,080.1460	1,770.2978	-7.5487	0.7442	1,095.6037	1,001.1043	1,671.5238	5.0634
122	06	10	FYGPA	2.8536	0.1215	18.1442	13.5976	20.8571	-0.0496	0.0241	4.5256	4.5626	5.0634	0.4704
122	07	1	HSGPA	0.0000	0.2140	8.8614	5.4492	6.8178	0.0055	0.0296	-0.8456	-0.9747	-0.4402	0.1553
122	07	2	SAT-CR	0.0000	8.8614	6,236.7394	3,016.5960	4,514.1275	-5.3219	-0.8456	1,274.3264	900.2326	1,193.5931	13.9626
122	07	3	SAT-M	0.0000	5.4492	3,016.5960	6,918.4287	3,160.6821	-6.4822	-0.9747	900.2326	1,635.6984	1,022.1917	8.6750
122	07	4	SAT-W	0.0000	6.8178	4,514.1275	3,160.6821	6,016.5737	-5.5286	-0.4402	1,193.5931	1,022.1917	1,370.9282	13.4719
122	07	5	Hispanic	0.1793	0.0055	-5.3219	-6.4822	-5.5286	0.1477	0.0045	-4.3678	-5.3201	-4.5374	-0.0113
122	07	6	Hispanic*HSGPA	0.0055	0.0296	-0.8456	-0.9747	-0.4402	0.0045	0.0296	-0.8165	-0.9392	-0.4099	0.0094
122	07	7	Hispanic*SAT-CR	-5.3007	-0.8456	1,274.3264	900.2326	1,193.5931	-4.3678	-0.8165	1,246.1165	865.8722	1,164.2875	0.7523
122	07	8	Hispanic*SAT-M	-6.4564	-0.9747	900.2326	1,635.6984	1,022.1917	-5.3201	-0.9392	865.8722	1,593.8465	986.4967	2.0799
122	07	9	Hispanic*SAT-W	-5.5066	-0.4402	1,193.5931	1,022.1917	1,370.9282	-4.5374	-0.4099	1,164.2875	986.4967	1,340.4845	1.9829
122	07	10	FYGPA	2.9338	0.1553	13.9626	8.6750	13.4719	-0.0113	0.0094	0.7523	2.0799	1.9829	0.4703
122	08	1	HSGPA	0.0000	0.2320	9.7759	11.7383	8.9895	0.0058	0.0672	2.1217	2.0939	2.3742	0.1053
122	08	2	SAT-CR	0.0000	9.7759	7,361.0665	4,592.8902	4,967.7711	-13.3399	2.1217	2,911.7215	2,011.3320	1,903.8077	13.2386
122	08	3	SAT-M	0.0000	11.7383	4,592.8902	7,720.2725	4,239.2274	-16.1481	2.0939	2,011.3320	2,728.6428	1,677.1637	11.1205
122	08	4	SAT-W	0.0000	8.9895	4,967.7711	4,239.2274	6,739.9953	-10.8755	2.3742	1,903.8077	1,677.1637	2,083.3312	18.2462
122	08	5	Hispanic	0.3058	0.0058	-13.3399	-16.1481	-10.8755	0.2130	0.0040	-9.2600	-11.2093	-7.5493	-0.0358
122	08	6	Hispanic*HSGPA	0.0058	0.0672	2.1217	2.0939	2.3742	0.0040	0.0672	2.1989	2.1875	2.4372	0.0222
122	08	7	Hispanic*SAT-CR	-13.2940	2.1217	2,911.7215	2,011.3320	1,903.8077	-9.2600	2.1989	2,734.3814	1,796.6587	1,759.2292	4.2235
122	08	8	Hispanic*SAT-M	-16.0926	2.0939	2,011.3320	2,728.6428	1,677.1637	-11.2093	2.1875	1,796.6587	2,468.7770	1,502.1489	2.6528
122	08	9	Hispanic*SAT-W	-10.8381	2.3742	1,903.8077	1,677.1637	2,083.3312	-7.5493	2.4372	1,759.2292	1,502.1489	1,965.4621	4.0720
122	08	10	FYGPA	2.9255	0.1053	13.2386	11.1205	18.2462	-0.0358	0.0222	4.2235	2.6528	4.0720	0.3774
123	06	1	HSGPA	0.0000	0.3035	8.6633	9.8715	22.9505	-0.0150	0.1380	1.4755	-1.2204	4.9737	0.0928
123	06	2	SAT-CR	0.0000	8.6633	5,620.1991	3,325.1778	3,624.0398	-5.1494	1.4755	2,243.8871	835.8015	720.2141	-1.0856
123	06	3	SAT-M	0.0000	9.8715	3,325.1778	7,199.2176	2,938.5491	-8.6131	-1.2204	835.8015	3,051.4281	420.7307	-8.9738
123	06	4	SAT-W	0.0000	22.9505	3,624.0398	2,938.5491	6,317.7809	-15.7326	4.9737	720.2141	420.7307	1,837.8977	4.4413
123	06	5	Hispanic	0.5526	-0.0150	-5.1494	-8.6131	-15.7326	0.2539	-0.0067	-2.3037	-3.8532	-7.0383	0.0573
123	06	6	Hispanic*HSGPA	-0.0146	0.1380	1.4755	-1.2204	4.9737	-0.0067	0.1378	1.4001	-1.3465	4.7433	0.0915
123	06	7	Hispanic*SAT-CR	-5.0139	1.4755	2,243.8871	835.8015	720.2141	-2.3037	1.4001	2,218.0690	792.6167	641.3333	-4.3383
123	06	8	Hispanic*SAT-M	-8.3864	-1.2204	835.8015	3,051.4281	420.7307	-3.8532	-1.3465	792.6167	2,979.1951	288.7906	-4.2349
123	06	9	Hispanic*SAT-W	-15.3186	4.9737	720.2141	420.7307	1,837.8977	-7.0383	4.7433	641.3333	288.7906	1,596.8973	0.0892
123	06	10	FYGPA	2.8418	0.0928	-1.0856	-8.9738	4.4413	0.0573	0.0915	-4.3383	-4.2349	0.0892	0.3378

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
124	08	1	HSGPA	0.0000	0.2573	13.4499	16.3125	15.0831	-0.0025	0.0146	0.1870	0.4272	-0.2150	0.1418
124	08	2	SAT-CR	0.0000	13.4499	7,299.9549	4,103.5501	5,614.3995	-3.8640	0.1870	765.3291	649.3928	648.7842	19.9448
124	08	3	SAT-M	0.0000	16.3125	4,103.5501	7,084.8706	3,728.8653	-4.4326	0.4272	649.3928	786.4089	612.8642	18.9078
124	08	4	SAT-W	0.0000	15.0831	5,614.3995	3,728.8653	7,113.9350	-4.0113	-0.2150	648.7842	612.8642	744.8724	20.8520
124	08	5	Hispanic	0.0727	-0.0025	-3.8640	-4.4326	-4.0113	0.0677	-0.0023	-3.5830	-4.1103	-3.7196	-0.0211
124	08	6	Hispanic*HSGPA	-0.0025	0.0146	0.1870	0.4272	-0.2150	-0.0023	0.0146	0.1773	0.4161	-0.2250	0.0047
124	08	7	Hispanic*SAT-CR	-3.8499	0.1870	765.3291	649.3928	648.7842	-3.5830	0.1773	750.4531	632.3274	633.3411	2.9223
124	08	8	Hispanic*SAT-M	-4.4165	0.4272	649.3928	786.4089	612.8642	-4.1103	0.4161	632.3274	766.8320	595.1483	3.0812
124	08	9	Hispanic*SAT-W	-3.9967	-0.2150	648.7842	612.8642	744.8724	-3.7196	-0.2250	633.3411	595.1483	728.8406	3.1441
124	08	10	FYGPA	3.1444	0.1418	19.9448	18.9078	20.8520	-0.0211	0.0047	2.9223	3.0812	3.1441	0.3860
125	06	1	HSGPA	0.0000	0.3212	12.3458	13.8611	12.2473	-0.0016	0.0140	0.2324	0.4472	0.3522	0.2050
125	06	2	SAT-CR	0.0000	12.3458	6,330.5131	3,762.2820	4,394.6543	-0.9310	0.2324	247.6098	182.9339	189.7589	16.1181
125	06	3	SAT-M	0.0000	13.8611	3,762.2820	6,966.6623	3,533.0321	-1.4655	0.4472	182.9339	316.8675	177.8593	13.3167
125	06	4	SAT-W	0.0000	12.2473	4,394.6543	3,533.0321	5,958.1274	-1.4927	0.3522	189.7589	177.8593	343.1059	17.2377
125	06	5	Hispanic	0.0502	-0.0016	-0.9310	-1.4655	-1.4927	0.0478	-0.0015	-0.8843	-1.3918	-1.4177	-0.0123
125	06	6	Hispanic*HSGPA	-0.0016	0.0140	0.2324	0.4472	0.3522	-0.0015	0.0140	0.2309	0.4449	0.3499	0.0081
125	06	7	Hispanic*SAT-CR	-0.9299	0.2324	247.6098	182.9339	189.7589	-0.8843	0.2309	246.7440	181.5712	188.3708	0.5216
125	06	8	Hispanic*SAT-M	-1.4637	0.4472	182.9339	316.8675	177.8593	-1.3918	0.4449	181.5712	314.7225	175.6745	0.3492
125	06	9	Hispanic*SAT-W	-1.4909	0.3522	189.7589	177.8593	343.1059	-1.4177	0.3499	188.3708	175.6745	340.8805	0.8150
125	06	10	FYGPA	2.7932	0.2050	16.1181	13.3167	17.2377	-0.0123	0.0081	0.5216	0.3492	0.8150	0.6752
127	06	1	HSGPA	0.0000	0.2295	9.1807	7.3219	9.6348	-0.0047	0.0071	0.1914	0.3302	-0.0233	0.1241
127	06	2	SAT-CR	0.0000	9.1807	7,232.0252	3,980.0201	4,713.1097	-1.6240	0.1914	374.6968	290.4360	223.7012	20.1111
127	06	3	SAT-M	0.0000	7.3219	3,980.0201	6,824.1310	3,394.6599	-4.1471	0.3302	290.4360	574.3118	275.3527	16.2121
127	06	4	SAT-W	0.0000	9.6348	4,713.1097	3,394.6599	6,116.7316	-2.2910	-0.0233	223.7012	275.3527	312.7384	16.9688
127	06	5	Hispanic	0.0574	-0.0047	-1.6240	-4.1471	-2.2910	0.0542	-0.0044	-1.5307	-3.9089	-2.1595	-0.0083
127	06	6	Hispanic*HSGPA	-0.0047	0.0071	0.1914	0.3302	-0.0233	-0.0044	0.0071	0.1837	0.3107	-0.0340	0.0049
127	06	7	Hispanic*SAT-CR	-1.6216	0.1914	374.6968	290.4360	223.7012	-1.5307	0.1837	372.0634	283.7111	219.9861	1.9602
127	06	8	Hispanic*SAT-M	-4.1410	0.3302	290.4360	574.3118	275.3527	-3.9089	0.3107	283.7111	557.1385	265.8654	1.8183
127	06	9	Hispanic*SAT-W	-2.2877	-0.0233	223.7012	275.3527	312.7384	-2.1595	-0.0340	219.9861	265.8654	307.4973	1.3829
127	06	10	FYGPA	2.5697	0.1241	20.1111	16.2121	16.9688	-0.0083	0.0049	1.9602	1.8183	1.3829	0.6965
128	07	1	HSGPA	0.0000	0.1454	8.7628	10.1102	7.5005	-0.0021	0.0068	0.2008	0.4975	0.2626	0.0699
128	07	2	SAT-CR	0.0000	8.7628	5,906.1646	2,608.2626	3,708.8640	-0.8157	0.2008	192.0059	119.5128	166.1447	13.4957
128	07	3	SAT-M	0.0000	10.1102	2,608.2626	5,950.7548	2,227.1964	-1.8821	0.4975	119.5128	325.6418	162.4745	9.9246
128	07	4	SAT-W	0.0000	7.5005	3,708.8640	2,227.1964	5,269.3174	-0.8204	0.2626	166.1447	162.4745	208.3009	13.2047
128	07	5	Hispanic	0.0440	-0.0021	-0.8157	-1.8821	-0.8204	0.0421	-0.0020	-0.7798	-1.7993	-0.7843	-0.0046
128	07	6	Hispanic*HSGPA	-0.0021	0.0068	0.2008	0.4975	0.2626	-0.0020	0.0067	0.1991	0.4936	0.2609	0.0031
128	07	7	Hispanic*SAT-CR	-0.8145	0.2008	192.0059	119.5128	166.1447	-0.7798	0.1991	191.3415	117.9798	165.4765	0.4030
128	07	8	Hispanic*SAT-M	-1.8794	0.4975	119.5128	325.6418	162.4745	-1.7993	0.4936	117.9798	322.1045	160.9327	0.8804
128	07	9	Hispanic*SAT-W	-0.8192	0.2626	166.1447	162.4745	208.3009	-0.7843	0.2609	165.4765	160.9327	207.6289	0.5359
128	07	10	FYGPA	3.2225	0.0699	13.4957	9.9246	13.2047	-0.0046	0.0031	0.4030	0.8804	0.5359	0.1952

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
128	08	1	HSGPA	0.0000	0.1707	4.2869	9.3021	7.4186	-0.0047	0.0120	0.6445	0.8675	0.9286	0.0838
128	08	2	SAT-CR	0.0000	4.2869	5,437.7748	2,545.6466	3,270.4957	-2.0100	0.6445	392.5874	216.0659	271.3685	9.4128
128	08	3	SAT-M	0.0000	9.3021	2,545.6466	5,546.0894	2,505.9360	-2.8372	0.8675	216.0659	404.3056	272.4707	8.4195
128	08	4	SAT-W	0.0000	7.4186	3,270.4957	2,505.9360	4,984.4494	-1.9196	0.9286	271.3685	272.4707	380.2571	11.9919
128	08	5	Hispanic	0.0591	-0.0047	-2.0100	-2.8372	-1.9196	0.0557	-0.0044	-1.8912	-2.6694	-1.8061	-0.0162
128	08	6	Hispanic*HSGPA	-0.0047	0.0120	0.6445	0.8675	0.9286	-0.0044	0.0119	0.6351	0.8542	0.9196	0.0049
128	08	7	Hispanic*SAT-CR	-2.0075	0.6445	392.5874	216.0659	271.3685	-1.8912	0.6351	388.5524	210.3704	267.5150	1.3453
128	08	8	Hispanic*SAT-M	-2.8336	0.8675	216.0659	404.3056	272.4707	-2.6694	0.8542	210.3704	396.2663	267.0314	1.3906
128	08	9	Hispanic*SAT-W	-1.9172	0.9286	271.3685	272.4707	380.2571	-1.8061	0.9196	267.5150	267.0314	376.5770	1.4305
128	08	10	FYGPA	3.1785	0.0838	9.4128	8.4195	11.9919	-0.0162	0.0049	1.3453	1.3906	1.4305	0.2366
129	07	1	HSGPA	0.0000	0.1614	3.6550	4.4684	6.0582	-0.0028	0.0182	-0.6648	0.6057	0.1944	0.0525
129	07	2	SAT-CR	0.0000	3.6550	4,498.3507	1,586.7104	2,871.6759	-4.5867	-0.6648	738.5232	527.3758	497.1002	5.2366
129	07	3	SAT-M	0.0000	4.4684	1,586.7104	4,387.5491	1,941.3605	-5.0194	0.6057	527.3758	760.6154	459.8167	6.8383
129	07	4	SAT-W	0.0000	6.0582	2,871.6759	1,941.3605	4,939.4242	-3.5766	0.1944	497.1002	459.8167	541.3396	7.1018
129	07	5	Hispanic	0.0666	-0.0028	-4.5867	-5.0194	-3.5766	0.0622	-0.0027	-4.2814	-4.6854	-3.3385	-0.0101
129	07	6	Hispanic*HSGPA	-0.0028	0.0182	-0.6648	0.6057	0.1944	-0.0027	0.0182	-0.6778	0.5914	0.1842	0.0056
129	07	7	Hispanic*SAT-CR	-4.5789	-0.6648	738.5232	527.3758	497.1002	-4.2814	-0.6778	717.5214	504.3926	480.7237	1.0069
129	07	8	Hispanic*SAT-M	-5.0109	0.6057	527.3758	760.6154	459.8167	-4.6854	0.5914	504.3926	735.4637	441.8950	1.3740
129	07	9	Hispanic*SAT-W	-3.5705	0.1944	497.1002	459.8167	541.3396	-3.3385	0.1842	480.7237	441.8950	528.5697	1.1201
129	07	10	FYGPA	3.3915	0.0525	5.2366	6.8383	7.1018	-0.0101	0.0056	1.0069	1.3740	1.1201	0.1389
131	08	1	HSGPA	0.0000	0.2786	7.5028	8.8790	10.3179	0.0236	0.0801	0.2304	1.5216	2.7465	0.1321
131	08	2	SAT-CR	0.0000	7.5028	7,874.9320	4,423.3890	5,872.9653	-8.7789	0.2304	2,167.2746	1,226.2009	1,808.6678	19.5490
131	08	3	SAT-M	0.0000	8.8790	4,423.3890	7,700.0743	4,478.7137	-10.2792	1.5216	1,226.2009	2,694.6855	1,644.1556	16.4110
131	08	4	SAT-W	0.0000	10.3179	5,872.9653	4,478.7137	7,715.8793	-7.5071	2.7465	1,808.6678	1,644.1556	2,775.6647	23.9149
131	08	5	Hispanic	0.3730	0.0236	-8.7789	-10.2792	-7.5071	0.2348	0.0148	-5.5042	-6.4449	-4.7068	-0.0437
131	08	6	Hispanic*HSGPA	0.0236	0.0801	0.2304	1.5216	2.7465	0.0148	0.0795	0.4371	1.7637	2.9233	0.0394
131	08	7	Hispanic*SAT-CR	-8.7440	0.2304	2,167.2746	1,226.2009	1,808.6678	-5.5042	0.4371	2,090.5122	1,136.3194	1,743.0255	5.2066
131	08	8	Hispanic*SAT-M	-10.2384	1.5216	1,226.2009	2,694.6855	1,644.1556	-6.4449	1.7637	1,136.3194	2,589.4428	1,567.2947	3.3729
131	08	9	Hispanic*SAT-W	-7.4773	2.7465	1,808.6678	1,644.1556	2,775.6647	-4.7068	2.9233	1,743.0255	1,567.2947	2,719.5316	9.5790
131	08	10	FYGPA	2.7916	0.1321	19.5490	16.4110	23.9149	-0.0437	0.0394	5.2066	3.3729	9.5790	0.5397
132	08	1	HSGPA	0.0000	0.2704	10.7034	14.1917	15.5315	-0.0068	0.0251	1.4890	1.9299	1.9867	0.1897
132	08	2	SAT-CR	0.0000	10.7034	6,614.8692	4,131.6926	5,253.2291	-3.4724	1.4890	691.0482	502.2531	512.6972	14.0319
132	08	3	SAT-M	0.0000	14.1917	4,131.6926	8,110.8820	4,334.3950	-3.8604	1.9299	502.2531	880.9902	523.8937	23.2957
132	08	4	SAT-W	0.0000	15.5315	5,253.2291	4,334.3950	7,026.0476	-2.8302	1.9867	512.6972	523.8937	622.9315	20.3854
132	08	5	Hispanic	0.0818	-0.0068	-3.4724	-3.8604	-2.8302	0.0753	-0.0063	-3.1882	-3.5445	-2.5985	-0.0260
132	08	6	Hispanic*HSGPA	-0.0068	0.0251	1.4890	1.9299	1.9867	-0.0063	0.0250	1.4653	1.9035	1.9674	0.0165
132	08	7	Hispanic*SAT-CR	-3.4635	1.4890	691.0482	502.2531	512.6972	-3.1882	1.4653	679.0213	488.8823	502.8949	0.1163
132	08	8	Hispanic*SAT-M	-3.8506	1.9299	502.2531	880.9902	523.8937	-3.5445	1.9035	488.8823	866.1252	512.9960	0.7498
132	08	9	Hispanic*SAT-W	-2.8229	1.9867	512.6972	523.8937	622.9315	-2.5985	1.9674	502.8949	512.9960	614.9422	1.7421
132	08	10	FYGPA	2.9470	0.1897	14.0319	23.2957	20.3854	-0.0260	0.0165	0.1163	0.7498	1.7421	0.8169



## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
134	06	1	HSGPA	0.0000	0.1344	7.5872	6.3973	7.3568	-0.0065	0.0179	0.9465	0.8791	1.1160	0.0589
134	06	2	SAT-CR	0.0000	7.5872	5,681.6822	2,616.9097	3,840.8722	-5.6953	0.9465	1,123.5523	688.3870	996.4881	10.6345
134	06	3	SAT-M	0.0000	6.3973	2,616.9097	5,145.9540	2,701.8909	-5.4531	0.8791	688.3870	932.6683	686.2745	8.3530
134	06	4	SAT-W	0.0000	7.3568	3,840.8722	2,701.8909	5,476.8804	-6.1442	1.1160	996.4881	686.2745	1,190.9219	11.8294
134	06	5	Hispanic	0.1089	-0.0065	-5.6953	-5.4531	-6.1442	0.0971	-0.0058	-5.0750	-4.8591	-5.4750	-0.0206
134	06	6	Hispanic*HSGPA	-0.0065	0.0179	0.9465	0.8791	1.1160	-0.0058	0.0178	0.9096	0.8438	1.0763	0.0079
134	06	7	Hispanic*SAT-CR	-5.6914	0.9465	1,123.5523	688.3870	996.4881	-5.0750	0.9096	1,091.1382	657.3513	961.5187	2.2155
134	06	8	Hispanic*SAT-M	-5.4494	0.8791	688.3870	932.6683	686.2745	-4.8591	0.8438	657.3513	902.9525	652.7923	1.6607
134	06	9	Hispanic*SAT-W	-6.1401	1.1160	996.4881	686.2745	1,190.9219	-5.4750	1.0763	961.5187	652.7923	1,153.1959	2.5000
134	06	10	FYGPA	3.3408	0.0589	10.6345	8.3530	11.8294	-0.0206	0.0079	2.2155	1.6607	2.5000	0.1732
134	07	1	HSGPA	0.0000	0.1273	6.7408	6.6390	7.3758	-0.0068	0.0118	0.1909	0.4897	0.3595	0.0546
134	07	2	SAT-CR	0.0000	6.7408	5,339.5070	2,208.9107	3,497.9042	-2.8117	0.1909	570.7216	356.7018	332.0066	11.0145
134	07	3	SAT-M	0.0000	6.6390	2,208.9107	4,385.1157	2,228.0662	-3.8036	0.4897	356.7018	657.7697	344.0682	8.4817
134	07	4	SAT-W	0.0000	7.3758	3,497.9042	2,228.0662	5,140.2150	-3.4292	0.3595	332.0066	344.0682	491.9250	11.1456
134	07	5	Hispanic	0.0883	-0.0068	-2.8117	-3.8036	-3.4292	0.0806	-0.0062	-2.5634	-3.4678	-3.1264	-0.0158
134	07	6	Hispanic*HSGPA	-0.0068	0.0118	0.1909	0.4897	0.3595	-0.0062	0.0118	0.1718	0.4638	0.3362	0.0044
134	07	7	Hispanic*SAT-CR	-2.8097	0.1909	570.7216	356.7018	332.0066	-2.5634	0.1718	562.8216	346.0147	322.3716	0.9607
134	07	8	Hispanic*SAT-M	-3.8010	0.4897	356.7018	657.7697	344.0682	-3.4678	0.4638	346.0147	643.3122	331.0340	1.0324
134	07	9	Hispanic*SAT-W	-3.4268	0.3595	332.0066	344.0682	491.9250	-3.1264	0.3362	322.3716	331.0340	480.1739	0.6796
134	07	10	FYGPA	3.3140	0.0546	11.0145	8.4817	11.1456	-0.0158	0.0044	0.9607	1.0324	0.6796	0.2001
134	08	1	HSGPA	0.0000	0.1275	6.0895	7.1719	7.0422	-0.0073	0.0120	0.3464	0.6201	0.3325	0.0558
134	08	2	SAT-CR	0.0000	6.0895	5,070.2296	2,360.2407	3,285.9117	-3.8490	0.3464	686.2251	431.5644	582.9673	10.3284
134	08	3	SAT-M	0.0000	7.1719	2,360.2407	4,804.2201	2,271.8591	-3.9819	0.6201	431.5644	654.9935	463.0390	10.0954
134	08	4	SAT-W	0.0000	7.0422	3,285.9117	2,271.8591	5,473.4991	-4.2013	0.3325	582.9673	463.0390	823.7954	11.8831
134	08	5	Hispanic	0.0860	-0.0073	-3.8490	-3.9819	-4.2013	0.0787	-0.0066	-3.5180	-3.6395	-3.8400	-0.0187
134	08	6	Hispanic*HSGPA	-0.0073	0.0120	0.3464	0.6201	0.3325	-0.0066	0.0119	0.3185	0.5912	0.3020	0.0043
134	08	7	Hispanic*SAT-CR	-3.8458	0.3464	686.2251	431.5644	582.9673	-3.5180	0.3185	671.4228	416.2509	566.8099	1.6804
134	08	8	Hispanic*SAT-M	-3.9786	0.6201	431.5644	654.9935	463.0390	-3.6395	0.5912	416.2509	639.1511	446.3236	1.8490
134	08	9	Hispanic*SAT-W	-4.1979	0.3325	582.9673	463.0390	823.7954	-3.8400	0.3020	566.8099	446.3236	806.1589	1.9467
134	08	10	FYGPA	3.3126	0.0558	10.3284	10.0954	11.8831	-0.0187	0.0043	1.6804	1.8490	1.9467	0.1903
135	06	1	HSGPA	0.0000	0.1571	7.8848	8.6452	9.3810	-0.0109	0.0169	0.2465	0.9190	0.8688	0.0823
135	06	2	SAT-CR	0.0000	7.8848	5,068.4209	2,593.5666	3,224.4347	-3.5244	0.2465	552.7964	440.2751	409.8466	13.6576
135	06	3	SAT-M	0.0000	8.6452	2,593.5666	5,576.8416	2,477.0325	-4.5646	0.9190	440.2751	815.1961	469.0212	11.6260
135	06	4	SAT-W	0.0000	9.3810	3,224.4347	2,477.0325	5,189.4900	-3.4108	0.8688	409.8466	469.0212	549.3379	15.4097
135	06	5	Hispanic	0.0779	-0.0109	-3.5244	-4.5646	-3.4108	0.0719	-0.0101	-3.2498	-4.2089	-3.1449	-0.0193
135	06	6	Hispanic*HSGPA	-0.0109	0.0169	0.2465	0.9190	0.8688	-0.0101	0.0168	0.2080	0.8693	0.8316	0.0060
135	06	7	Hispanic*SAT-CR	-3.5214	0.2465	552.7964	440.2751	409.8466	-3.2498	0.2080	540.3857	424.2014	397.8361	1.5031
135	06	8	Hispanic*SAT-M	-4.5606	0.9190	440.2751	815.1961	469.0212	-4.2089	0.8693	424.2014	794.3784	453.4659	1.3216
135	06	9	Hispanic*SAT-W	-3.4078	0.8688	409.8466	469.0212	549.3379	-3.1449	0.8316	397.8361	453.4659	537.7148	1.5591
135	06	10	FYGPA	3.2256	0.0823	13.6576	11.6260	15.4097	-0.0193	0.0060	1.5031	1.3216	1.5591	0.2405

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
136	07	1	HSGPA	0.0000	0.2361	18.5470	21.1978	19.9301	-0.0064	0.0099	0.6644	0.8882	0.8312	0.1380
136	07	2	SAT-CR	0.0000	18.5470	8,061.2068	5,657.6752	6,491.9873	-1.4333	0.6644	367.9198	297.2253	324.4839	21.0953
136	07	3	SAT-M	0.0000	21.1978	5,657.6752	9,580.8793	5,737.4420	-2.0359	0.8882	297.2253	483.9772	333.6709	19.7645
136	07	4	SAT-W	0.0000	19.9301	6,491.9873	5,737.4420	8,345.7729	-1.6836	0.8312	324.4839	333.6709	404.6469	22.4728
136	07	5	Hispanic	0.0381	-0.0064	-1.4333	-2.0359	-1.6836	0.0367	-0.0062	-1.3787	-1.9582	-1.6194	-0.0129
136	07	6	Hispanic*HSGPA	-0.0064	0.0099	0.6644	0.8882	0.8312	-0.0062	0.0099	0.6552	0.8752	0.8205	0.0066
136	07	7	Hispanic*SAT-CR	-1.4331	0.6644	367.9198	297.2253	324.4839	-1.3787	0.6552	365.8657	294.3075	322.0710	1.1571
136	07	8	Hispanic*SAT-M	-2.0356	0.8882	297.2253	483.9772	333.6709	-1.9582	0.8752	294.3075	479.8328	330.2437	1.3660
136	07	9	Hispanic*SAT-W	-1.6834	0.8312	324.4839	333.6709	404.6469	-1.6194	0.8205	322.0710	330.2437	401.8128	1.3866
136	07	10	FYGPA	3.0871	0.1380	21.0953	19.7645	22.4728	-0.0129	0.0066	1.1571	1.3660	1.3866	0.3699
136	08	1	HSGPA	0.0000	0.2529	19.5685	23.0917	21.7774	-0.0089	0.0146	0.9135	1.2595	0.9954	0.1655
136	08	2	SAT-CR	0.0000	19.5685	8,326.4435	5,961.3685	6,717.0952	-1.9656	0.9135	449.1715	373.4064	379.6704	23.1722
136	08	3	SAT-M	0.0000	23.0917	5,961.3685	9,650.5311	6,086.8584	-2.7366	1.2595	373.4064	630.2795	383.9040	24.2305
136	08	4	SAT-W	0.0000	21.7774	6,717.0952	6,086.8584	8,722.4593	-2.2068	0.9954	379.6704	383.9040	465.5778	27.5126
136	08	5	Hispanic	0.0500	-0.0089	-1.9656	-2.7366	-2.2068	0.0475	-0.0085	-1.8673	-2.5997	-2.0964	-0.0122
136	08	6	Hispanic*HSGPA	-0.0089	0.0146	0.9135	1.2595	0.9954	-0.0085	0.0145	0.8960	1.2351	0.9758	0.0073
136	08	7	Hispanic*SAT-CR	-1.9654	0.9135	449.1715	373.4064	379.6704	-1.8673	0.8960	445.3083	368.0279	375.3333	1.1878
136	08	8	Hispanic*SAT-M	-2.7363	1.2595	373.4064	630.2795	383.9040	-2.5997	1.2351	368.0279	622.7914	377.8658	1.7019
136	08	9	Hispanic*SAT-W	-2.2065	0.9954	379.6704	383.9040	465.5778	-2.0964	0.9758	375.3333	377.8658	460.7086	1.4868
136	08	10	FYGPA	2.9903	0.1655	23.1722	24.2305	27.5126	-0.0122	0.0073	1.1878	1.7019	1.4868	0.4993
137	06	1	HSGPA	0.0000	0.2259	9.5727	11.5354	9.8865	-0.0030	0.0230	0.3131	1.5324	0.4200	0.1325
137	06	2	SAT-CR	0.0000	9.5727	5,116.9540	2,460.6153	3,347.8089	-2.5586	0.3131	719.0132	227.1984	482.2894	15.7469
137	06	3	SAT-M	0.0000	11.5354	2,460.6153	5,413.3309	2,400.2320	-5.1671	1.5324	227.1984	1,041.7664	338.6960	12.9905
137	06	4	SAT-W	0.0000	9.8865	3,347.8089	2,400.2320	4,979.4323	-3.7046	0.4200	482.2894	338.6960	665.5298	14.7235
137	06	5	Hispanic	0.1343	-0.0030	-2.5586	-5.1671	-3.7046	0.1165	-0.0026	-2.2149	-4.4730	-3.2069	-0.0298
137	06	6	Hispanic*HSGPA	-0.0030	0.0230	0.3131	1.5324	0.4200	-0.0026	0.0230	0.3053	1.5169	0.4088	0.0132
137	06	7	Hispanic*SAT-CR	-2.5544	0.3131	719.0132	227.1984	482.2894	-2.2149	0.3053	712.4774	213.9996	472.8265	2.5644
137	06	8	Hispanic*SAT-M	-5.1585	1.5324	227.1984	1,041.7664	338.6960	-4.4730	1.5169	213.9996	1,015.1117	319.5859	2.6110
137	06	9	Hispanic*SAT-W	-3.6984	0.4200	482.2894	338.6960	665.5298	-3.2069	0.4088	472.8265	319.5859	651.8288	2.4828
137	06	10	FYGPA	3.0368	0.1325	15.7469	12.9905	14.7235	-0.0298	0.0132	2.5644	2.6110	2.4828	0.3145
137	07	1	HSGPA	0.0000	0.2473	7.4595	11.2306	9.7724	-0.0033	0.0310	-0.2633	0.4253	0.4821	0.1445
137	07	2	SAT-CR	0.0000	7.4595	4,745.2987	2,550.6100	3,160.2048	-2.2422	-0.2633	555.1812	280.8162	396.6181	9.3761
137	07	3	SAT-M	0.0000	11.2306	2,550.6100	5,761.7971	2,494.9946	-4.8539	0.4253	280.8162	563.3459	269.3554	12.6118
137	07	4	SAT-W	0.0000	9.7724	3,160.2048	2,494.9946	5,005.6353	-2.4797	0.4821	396.6181	269.3554	576.4929	14.6777
137	07	5	Hispanic	0.1379	-0.0033	-2.2422	-4.8539	-2.4797	0.1191	-0.0028	-1.9331	-4.1847	-2.1378	-0.0188
137	07	6	Hispanic*HSGPA	-0.0033	0.0310	-0.2633	0.4253	0.4821	-0.0028	0.0310	-0.2707	0.4095	0.4740	0.0165
137	07	7	Hispanic*SAT-CR	-2.2387	-0.2633	555.1812	280.8162	396.6181	-1.9331	-0.2707	550.1615	269.9498	391.0667	1.3386
137	07	8	Hispanic*SAT-M	-4.8462	0.4253	280.8162	563.3459	269.3554	-4.1847	0.4095	269.9498	539.8227	257.3380	1.6628
137	07	9	Hispanic*SAT-W	-2.4758	0.4821	396.6181	269.3554	576.4929	-2.1378	0.4740	391.0667	257.3380	570.3536	2.2483
137	07	10	FYGPA	3.0887	0.1445	9.3761	12.6118	14.6777	-0.0188	0.0165	1.3386	1.6628	2.2483	0.3163

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
137	08	1	HSGPA	0.0000	0.2370	5.8400	9.1290	9.6252	-0.0143	0.0285	0.4430	1.2638	0.9725	0.1133
137	08	2	SAT-CR	0.0000	5.8400	5,474.0465	2,553.4993	3,891.0214	-1.6619	0.4430	631.0816	323.1425	439.2678	9.9938
137	08	3	SAT-M	0.0000	9.1290	2,553.4993	5,669.4674	2,484.7868	-3.2710	1.2638	323.1425	935.6035	323.8528	9.5586
137	08	4	SAT-W	0.0000	9.6252	3,891.0214	2,484.7868	5,484.3709	-1.9825	0.9725	439.2678	323.8528	575.0863	13.0203
137	08	5	Hispanic	0.1361	-0.0143	-1.6619	-3.2710	-1.9825	0.1178	-0.0123	-1.4356	-2.8256	-1.7126	-0.0180
137	08	6	Hispanic*HSGPA	-0.0142	0.0285	0.4430	1.2638	0.9725	-0.0123	0.0283	0.4193	1.2172	0.9443	0.0151
137	08	7	Hispanic*SAT-CR	-1.6592	0.4430	631.0816	323.1425	439.2678	-1.4356	0.4193	628.3242	317.7154	435.9785	1.1870
137	08	8	Hispanic*SAT-M	-3.2657	1.2638	323.1425	935.6035	323.8528	-2.8256	1.2172	317.7154	924.9216	317.3787	2.2786
137	08	9	Hispanic*SAT-W	-1.9793	0.9725	439.2678	323.8528	575.0863	-1.7126	0.9443	435.9785	317.3787	571.1624	1.5841
137	08	10	FYGPA	3.0628	0.1133	9.9938	9.5586	13.0203	-0.0180	0.0151	1.1870	2.2786	1.5841	0.3228
138	06	1	HSGPA	0.0000	0.1617	10.8317	8.3079	8.7127	-0.0074	0.0144	1.1126	0.4229	1.2286	0.0833
138	06	2	SAT-CR	0.0000	10.8317	6,308.1359	2,445.3853	4,160.7324	-2.8713	1.1126	634.8781	286.1786	527.7601	20.7660
138	06	3	SAT-M	0.0000	8.3079	2,445.3853	5,303.0831	2,011.6620	-1.8857	0.4229	286.1786	300.2639	243.9393	13.8869
138	06	4	SAT-W	0.0000	8.7127	4,160.7324	2,011.6620	5,696.9263	-3.9849	1.2286	527.7601	243.9393	630.0339	19.0810
138	06	5	Hispanic	0.0493	-0.0074	-2.8713	-1.8857	-3.9849	0.0470	-0.0070	-2.7297	-1.7927	-3.7885	-0.0164
138	06	6	Hispanic*HSGPA	-0.0074	0.0144	1.1126	0.4229	1.2286	-0.0070	0.0144	1.0915	0.4090	1.1992	0.0066
138	06	7	Hispanic*SAT-CR	-2.8645	1.1126	634.8781	286.1786	527.7601	-2.7297	1.0915	626.6534	280.7771	516.3452	2.3966
138	06	8	Hispanic*SAT-M	-1.8812	0.4229	286.1786	300.2639	243.9393	-1.7927	0.4090	280.7771	296.7165	236.4427	1.4093
138	06	9	Hispanic*SAT-W	-3.9756	1.2286	527.7601	243.9393	630.0339	-3.7885	1.1992	516.3452	236.4427	614.1916	2.3974
138	06	10	FYGPA	3.1593	0.0833	20.7660	13.8869	19.0810	-0.0164	0.0066	2.3966	1.4093	2.3974	0.3116
138	07	1	HSGPA	0.0000	0.1340	3.6178	3.8586	3.6317	-0.0020	0.0093	0.0901	0.2210	0.0619	0.0626
138	07	2	SAT-CR	0.0000	3.6178	5,339.5516	1,852.4487	3,423.4825	-4.0313	0.0901	524.0806	293.1797	499.6552	13.2716
138	07	3	SAT-M	0.0000	3.8586	1,852.4487	4,624.6645	1,916.2111	-2.5809	0.2210	293.1797	389.0179	321.9059	8.9417
138	07	4	SAT-W	0.0000	3.6317	3,423.4825	1,916.2111	5,297.6816	-3.3436	0.0619	499.6552	321.9059	616.1128	15.7362
138	07	5	Hispanic	0.0596	-0.0020	-4.0313	-2.5809	-3.3436	0.0561	-0.0018	-3.7913	-2.4272	-3.1445	-0.0225
138	07	6	Hispanic*HSGPA	-0.0020	0.0093	0.0901	0.2210	0.0619	-0.0018	0.0093	0.0822	0.2159	0.0553	0.0013
138	07	7	Hispanic*SAT-CR	-4.0213	0.0901	524.0806	293.1797	499.6552	-3.7913	0.0822	507.8693	282.8011	486.2096	2.4564
138	07	8	Hispanic*SAT-M	-2.5745	0.2210	293.1797	389.0179	321.9059	-2.4272	0.2159	282.8011	382.3734	313.2979	1.4369
138	07	9	Hispanic*SAT-W	-3.3353	0.0619	499.6552	321.9059	616.1128	-3.1445	0.0553	486.2096	313.2979	604.9610	2.5089
138	07	10	FYGPA	3.2115	0.0626	13.2716	8.9417	15.7362	-0.0225	0.0013	2.4564	1.4369	2.5089	0.2633
138	08	1	HSGPA	0.0000	0.1127	5.5738	3.6394	5.7000	-0.0032	0.0057	-0.1307	0.1617	-0.1371	0.0518
138	08	2	SAT-CR	0.0000	5.5738	4,934.4096	1,703.0176	3,003.0308	-1.8621	-0.1307	179.9121	150.5145	189.5212	11.9377
138	08	3	SAT-M	0.0000	3.6394	1,703.0176	4,559.3315	1,569.8700	-3.4819	0.1617	150.5145	366.3417	197.6130	6.5240
138	08	4	SAT-W	0.0000	5.7000	3,003.0308	1,569.8700	4,835.1896	-2.5613	-0.1371	189.5212	197.6130	379.0592	11.5625
138	08	5	Hispanic	0.0500	-0.0032	-1.8621	-3.4819	-2.5613	0.0476	-0.0030	-1.7690	-3.3078	-2.4332	-0.0029
138	08	6	Hispanic*HSGPA	-0.0031	0.0057	-0.1307	0.1617	-0.1371	-0.0030	0.0056	-0.1366	0.1507	-0.1452	0.0002
138	08	7	Hispanic*SAT-CR	-1.8569	-0.1307	179.9121	150.5145	189.5212	-1.7690	-0.1366	176.4543	144.0489	184.7650	0.1125
138	08	8	Hispanic*SAT-M	-3.4722	0.1617	150.5145	366.3417	197.6130	-3.3078	0.1507	144.0489	354.2518	188.7196	0.3320
138	08	9	Hispanic*SAT-W	-2.5542	-0.1371	189.5212	197.6130	379.0592	-2.4332	-0.1452	184.7650	188.7196	372.5172	0.7784
138	08	10	FYGPA	3.2649	0.0518	11.9377	6.5240	11.5625	-0.0029	0.0002	0.1125	0.3320	0.7784	0.2047

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
140	07	1	HSGPA	0.0000	0.2471	11.0441	10.5386	12.8578	-0.0025	0.0033	0.1616	0.1546	0.1423	0.1647
140	07	2	SAT-CR	0.0000	11.0441	6,188.5467	2,999.1569	4,215.7731	-0.6424	0.1616	103.0682	73.8788	62.0616	11.8143
140	07	3	SAT-M	0.0000	10.5386	2,999.1569	6,002.9368	2,832.1887	-0.7744	0.1546	73.8788	135.7459	55.0658	12.3820
140	07	4	SAT-W	0.0000	12.8578	4,215.7731	2,832.1887	5,913.1112	-0.4278	0.1423	62.0616	55.0658	57.0615	15.6657
140	07	5	Hispanic	0.0170	-0.0025	-0.6424	-0.7744	-0.4278	0.0167	-0.0024	-0.6315	-0.7613	-0.4205	-0.0053
140	07	6	Hispanic*HSGPA	-0.0025	0.0033	0.1616	0.1546	0.1423	-0.0024	0.0033	0.1600	0.1527	0.1412	0.0023
140	07	7	Hispanic*SAT-CR	-0.6419	0.1616	103.0682	73.8788	62.0616	-0.6315	0.1600	102.6558	73.3817	61.7870	0.3572
140	07	8	Hispanic*SAT-M	-0.7738	0.1546	73.8788	135.7459	55.0658	-0.7613	0.1527	73.3817	135.1466	54.7348	0.6880
140	07	9	Hispanic*SAT-W	-0.4274	0.1423	62.0616	55.0658	57.0615	-0.4205	0.1412	61.7870	54.7348	56.8786	0.2660
140	07	10	FYGPA	3.1384	0.1647	11.8143	12.3820	15.6657	-0.0053	0.0023	0.3572	0.6880	0.2660	0.4375
141	08	1	HSGPA	0.0000	0.2068	15.0461	15.8395	17.1269	-0.0115	0.0136	1.3966	1.0609	1.3856	0.1401
141	08	2	SAT-CR	0.0000	15.0461	6,883.9519	3,754.8647	5,164.8540	-2.1679	1.3966	350.1508	260.7189	293.1889	17.6492
141	08	3	SAT-M	0.0000	15.8395	3,754.8647	6,649.1914	3,822.8775	-1.8436	1.0609	260.7189	308.1880	227.8603	16.7259
141	08	4	SAT-W	0.0000	17.1269	5,164.8540	3,822.8775	7,334.4628	-1.8572	1.3856	293.1889	227.8603	309.7279	20.2882
141	08	5	Hispanic	0.0318	-0.0115	-2.1679	-1.8436	-1.8572	0.0308	-0.0112	-2.0990	-1.7850	-1.7981	-0.0143
141	08	6	Hispanic*HSGPA	-0.0115	0.0136	1.3966	1.0609	1.3856	-0.0112	0.0135	1.3716	1.0397	1.3642	0.0059
141	08	7	Hispanic*SAT-CR	-2.1644	1.3966	350.1508	260.7189	293.1889	-2.0990	1.3716	345.4585	256.7286	289.1691	1.3333
141	08	8	Hispanic*SAT-M	-1.8407	1.0609	260.7189	308.1880	227.8603	-1.7850	1.0397	256.7286	304.7946	224.4419	0.7592
141	08	9	Hispanic*SAT-W	-1.8542	1.3856	293.1889	227.8603	309.7279	-1.7981	1.3642	289.1691	224.4419	306.2843	0.8824
141	08	10	FYGPA	3.0408	0.1401	17.6492	16.7259	20.2882	-0.0143	0.0059	1.3333	0.7592	0.8824	0.4083
142	07	1	HSGPA	0.0000	0.1802	4.1304	3.2441	2.4205	-0.0074	0.1000	0.4077	1.2255	0.6084	0.0708
142	07	2	SAT-CR	0.0000	4.1304	8,472.6555	4,761.2570	6,355.6086	-18.2756	0.4077	4,489.1308	2,550.2996	3,331.7032	20.4247
142	07	3	SAT-M	0.0000	3.2441	4,761.2570	8,148.1727	4,362.2959	-21.8053	1.2255	2,550.2996	4,412.8443	2,410.0155	14.9699
142	07	4	SAT-W	0.0000	2.4205	6,355.6086	4,362.2959	7,529.6228	-16.1553	0.6084	3,331.7032	2,410.0155	3,942.2770	17.1529
142	07	5	Hispanic	0.5670	-0.0074	-18.2756	-21.8053	-16.1553	0.2464	-0.0032	-7.9124	-9.4406	-6.9944	-0.0738
142	07	6	Hispanic*HSGPA	-0.0073	0.1000	0.4077	1.2255	0.6084	-0.0032	0.0999	0.2736	1.0656	0.4899	0.0231
142	07	7	Hispanic*SAT-CR	-18.2055	0.4077	4,489.1308	2,550.2996	3,331.7032	-7.9124	0.2736	4,156.4141	2,153.3216	3,037.5868	8.8607
142	07	8	Hispanic*SAT-M	-21.7218	1.2255	2,550.2996	4,412.8443	2,410.0155	-9.4406	1.0656	2,153.3216	3,939.1934	2,059.0931	5.6713
142	07	9	Hispanic*SAT-W	-16.0934	0.6084	3,331.7032	2,410.0155	3,942.2770	-6.9944	0.4899	3,037.5868	2,059.0931	3,682.2826	6.7022
142	07	10	FYGPA	2.7245	0.0708	20.4247	14.9699	17.1529	-0.0738	0.0231	8.8607	5.6713	6.7022	0.4223
142	08	1	HSGPA	0.0000	0.1838	-2.0045	1.6761	-0.0567	0.0125	0.1015	1.6785	1.9434	1.8584	0.0755
142	08	2	SAT-CR	0.0000	-2.0045	9,004.4298	6,359.6991	6,573.4761	-23.6524	1.6785	4,580.5994	3,263.5139	3,262.4480	20.0030
142	08	3	SAT-M	0.0000	1.6761	6,359.6991	9,750.7964	5,567.5311	-23.6020	1.9434	3,263.5139	5,031.2992	2,925.0229	22.9218
142	08	4	SAT-W	0.0000	-0.0567	6,573.4761	5,567.5311	7,387.5123	-20.8086	1.8584	3,262.4480	2,925.0229	3,835.2425	19.1683
142	08	5	Hispanic	0.5578	0.0125	-23.6524	-23.6020	-20.8086	0.2473	0.0055	-10.4581	-10.4358	-9.2007	-0.0747
142	08	6	Hispanic*HSGPA	0.0125	0.1015	1.6785	1.9434	1.8584	0.0055	0.1013	1.9732	2.2375	2.1177	0.0444
142	08	7	Hispanic*SAT-CR	-23.5916	1.6785	4,580.5994	3,263.5139	3,262.4480	-10.4581	1.9732	4,022.6028	2,706.7067	2,771.5410	13.4648
142	08	8	Hispanic*SAT-M	-23.5413	1.9434	3,263.5139	5,031.2992	2,925.0229	-10.4358	2.2375	2,706.7067	4,475.6790	2,435.1624	14.0009
142	08	9	Hispanic*SAT-W	-20.7551	1.8584	3,262.4480	2,925.0229	3,835.2425	-9.2007	2.1177	2,771.5410	2,435.1624	3,403.3587	11.9556
142	08	10	FYGPA	2.6824	0.0755	20.0030	22.9218	19.1683	-0.0747	0.0444	13.4648	14.0009	11.9556	0.5850

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
145	08	1	HSGPA	0.0000	0.2682	12.9654	14.3379	12.6087	0.0020	0.0424	1.5729	1.5871	1.3554	0.1830
145	08	2	SAT-CR	0.0000	12.9654	7,339.1911	4,791.0101	5,307.0267	-4.2747	1.5729	1,185.1216	837.9873	913.0060	22.7853
145	08	3	SAT-M	0.0000	14.3379	4,791.0101	7,851.2742	4,401.0873	-5.3263	1.5871	837.9873	1,308.6187	826.7701	22.6568
145	08	4	SAT-W	0.0000	12.6087	5,307.0267	4,401.0873	6,889.7619	-4.9083	1.3554	913.0060	826.7701	1,175.4395	24.8490
145	08	5	Hispanic	0.1552	0.0020	-4.2747	-5.3263	-4.9083	0.1311	0.0017	-3.6114	-4.4997	-4.1466	-0.0441
145	08	6	Hispanic*HSGPA	0.0020	0.0424	1.5729	1.5871	1.3554	0.0017	0.0424	1.5815	1.5978	1.3653	0.0278
145	08	7	Hispanic*SAT-CR	-4.2736	1.5729	1,185.1216	837.9873	913.0060	-3.6114	1.5815	1,166.8531	815.2249	892.0299	4.8625
145	08	8	Hispanic*SAT-M	-5.3249	1.5871	837.9873	1,308.6187	826.7701	-4.4997	1.5978	815.2249	1,280.2568	800.6340	4.4750
145	08	9	Hispanic*SAT-W	-4.9070	1.3554	913.0060	826.7701	1,175.4395	-4.1466	1.3653	892.0299	800.6340	1,151.3546	5.3635
145	08	10	FYGPA	2.8455	0.1830	22.7853	22.6568	24.8490	-0.0441	0.0278	4.8625	4.4750	5.3635	0.6491
146	06	1	HSGPA	0.0000	0.1714	8.0527	10.0275	9.1001	0.0019	0.0096	0.2835	0.4118	0.1727	0.0996
146	06	2	SAT-CR	0.0000	8.0527	6,693.1440	3,262.6000	4,732.7123	-1.7383	0.2835	560.1617	306.1820	471.9646	13.4950
146	06	3	SAT-M	0.0000	10.0275	3,262.6000	6,172.5175	2,717.8687	-0.5800	0.4118	306.1820	467.4221	328.6655	9.6122
146	06	4	SAT-W	0.0000	9.1001	4,732.7123	2,717.8687	6,092.2846	-1.7186	0.1727	471.9646	328.6655	496.3608	15.8498
146	06	5	Hispanic	0.0584	0.0019	-1.7383	-0.5800	-1.7186	0.0551	0.0018	-1.6368	-0.5461	-1.6182	-0.0059
146	06	6	Hispanic*HSGPA	0.0019	0.0096	0.2835	0.4118	0.1727	0.0018	0.0096	0.2869	0.4129	0.1760	0.0028
146	06	7	Hispanic*SAT-CR	-1.7344	0.2835	560.1617	306.1820	471.9646	-1.6368	0.2869	557.1467	305.1760	468.9838	1.3336
146	06	8	Hispanic*SAT-M	-0.5787	0.4118	306.1820	467.4221	328.6655	-0.5461	0.4129	305.1760	467.0864	327.6709	0.9915
146	06	9	Hispanic*SAT-W	-1.7148	0.1727	471.9646	328.6655	496.3608	-1.6182	0.1760	468.9838	327.6709	493.4137	1.7320
146	06	10	FYGPA	3.3456	0.0996	13.4950	9.6122	15.8498	-0.0059	0.0028	1.3336	0.9915	1.7320	0.2344
146	07	1	HSGPA	0.0000	0.1661	5.6943	8.5829	6.6155	-0.0039	0.0081	0.2210	1.1145	0.4335	0.0855
146	07	2	SAT-CR	0.0000	5.6943	5,888.5791	2,082.6900	3,637.5675	-2.0971	0.2210	339.0966	154.9750	284.5069	10.8939
146	07	3	SAT-M	0.0000	8.5829	2,082.6900	5,183.9382	2,193.6218	-1.8174	1.1145	154.9750	413.8702	115.5821	6.3248
146	07	4	SAT-W	0.0000	6.6155	3,637.5675	2,193.6218	5,359.8840	-1.5676	0.4335	284.5069	115.5821	431.5417	12.4352
146	07	5	Hispanic	0.0641	-0.0039	-2.0971	-1.8174	-1.5676	0.0601	-0.0036	-1.9627	-1.7009	-1.4671	-0.0114
146	07	6	Hispanic*HSGPA	-0.0039	0.0081	0.2210	1.1145	0.4335	-0.0036	0.0081	0.2129	1.1074	0.4274	0.0058
146	07	7	Hispanic*SAT-CR	-2.0926	0.2210	339.0966	154.9750	284.5069	-1.9627	0.2129	334.7081	151.1718	281.2265	1.0253
146	07	8	Hispanic*SAT-M	-1.8135	1.1145	154.9750	413.8702	115.5821	-1.7009	1.1074	151.1718	410.5744	112.7393	0.8615
146	07	9	Hispanic*SAT-W	-1.5642	0.4335	284.5069	115.5821	431.5417	-1.4671	0.4274	281.2265	112.7393	429.0897	1.1342
146	07	10	FYGPA	3.2971	0.0855	10.8939	6.3248	12.4352	-0.0114	0.0058	1.0253	0.8615	1.1342	0.2503
146	08	1	HSGPA	0.0000	0.1384	3.4652	6.4608	4.2237	-0.0036	0.0110	0.0686	0.0691	-0.2300	0.0745
146	08	2	SAT-CR	0.0000	3.4652	6,496.0759	3,554.4913	4,355.5432	-2.7758	0.0686	659.7842	492.9570	421.9385	12.3302
146	08	3	SAT-M	0.0000	6.4608	3,554.4913	6,507.7336	3,352.6852	-4.1927	0.0691	492.9570	749.8042	502.6651	10.8812
146	08	4	SAT-W	0.0000	4.2237	4,355.5432	3,352.6852	6,238.9924	-2.9057	-0.2300	421.9385	502.6651	620.6219	15.2757
146	08	5	Hispanic	0.0792	-0.0036	-2.7758	-4.1927	-2.9057	0.0730	-0.0034	-2.5561	-3.8608	-2.6757	-0.0087
146	08	6	Hispanic*HSGPA	-0.0036	0.0110	0.0686	0.0691	-0.2300	-0.0034	0.0110	0.0585	0.0538	-0.2405	0.0055
146	08	7	Hispanic*SAT-CR	-2.7704	0.0686	659.7842	492.9570	421.9385	-2.5561	0.0585	652.0942	481.3415	413.8885	1.3516
146	08	8	Hispanic*SAT-M	-4.1846	0.0691	492.9570	749.8042	502.6651	-3.8608	0.0538	481.3415	732.2594	490.5060	1.6626
146	08	9	Hispanic*SAT-W	-2.9001	-0.2300	421.9385	502.6651	620.6219	-2.6757	-0.2405	413.8885	490.5060	612.1952	1.4856
146	08	10	FYGPA	3.3125	0.0745	12.3302	10.8812	15.2757	-0.0087	0.0055	1.3516	1.6626	1.4856	0.2132

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
147	08	1	HSGPA	0.0000	0.2889	13.5545	14.5457	14.9049	-0.0208	0.0342	2.3793	2.3273	2.7098	0.1838
147	08	2	SAT-CR	0.0000	13.5545	7,413.5516	4,261.1652	5,347.3754	-6.5790	2.3793	1,006.1136	651.9859	734.5165	17.1502
147	08	3	SAT-M	0.0000	14.5457	4,261.1652	6,969.3255	4,061.5733	-4.8685	2.3273	651.9859	914.5340	633.9931	13.8303
147	08	4	SAT-W	0.0000	14.9049	5,347.3754	4,061.5733	6,724.1251	-5.0051	2.7098	734.5165	633.9931	864.0316	17.7458
147	08	5	Hispanic	0.1024	-0.0208	-6.5790	-4.8685	-5.0051	0.0920	-0.0187	-5.9054	-4.3700	-4.4927	-0.0072
147	08	6	Hispanic*HSGPA	-0.0208	0.0342	2.3793	2.3273	2.7098	-0.0187	0.0338	2.2427	2.2262	2.6058	0.0259
147	08	7	Hispanic*SAT-CR	-6.5715	2.3793	1,006.1136	651.9859	734.5165	-5.9054	2.2427	962.8798	619.9923	701.6253	1.6160
147	08	8	Hispanic*SAT-M	-4.8630	2.3273	651.9859	914.5340	633.9931	-4.3700	2.2262	619.9923	890.8583	609.6532	1.8946
147	08	9	Hispanic*SAT-W	-4.9994	2.7098	734.5165	633.9931	864.0316	-4.4927	2.6058	701.6253	609.6532	839.0087	2.0255
147	08	10	FYGPA	2.9461	0.1838	17.1502	13.8303	17.7458	-0.0072	0.0259	1.6160	1.8946	2.0255	0.5291
148	06	1	HSGPA	0.0000	0.2158	5.5854	2.3724	6.0704	-0.0043	0.0069	0.3095	0.3942	0.2815	0.1205
148	06	2	SAT-CR	0.0000	5.5854	5,643.8211	1,626.7495	3,674.7412	-1.6770	0.3095	333.1617	97.8071	297.6938	12.8807
148	06	3	SAT-M	0.0000	2.3724	1,626.7495	4,588.2195	1,363.1470	-1.2930	0.3942	97.8071	135.5618	52.9745	9.5820
148	06	4	SAT-W	0.0000	6.0704	3,674.7412	1,363.1470	5,527.8468	-1.8219	0.2815	297.6938	52.9745	454.5204	12.2644
148	06	5	Hispanic	0.0295	-0.0043	-1.6770	-1.2930	-1.8219	0.0286	-0.0042	-1.6276	-1.2549	-1.7683	-0.0153
148	06	6	Hispanic*HSGPA	-0.0043	0.0069	0.3095	0.3942	0.2815	-0.0042	0.0069	0.3022	0.3886	0.2736	0.0052
148	06	7	Hispanic*SAT-CR	-1.6744	0.3095	333.1617	97.8071	297.6938	-1.6276	0.3022	330.3537	95.6421	294.6432	0.6432
148	06	8	Hispanic*SAT-M	-1.2910	0.3942	97.8071	135.5618	52.9745	-1.2549	0.3886	95.6421	133.8926	50.6224	0.6006
148	06	9	Hispanic*SAT-W	-1.8191	0.2815	297.6938	52.9745	454.5204	-1.7683	0.2736	294.6432	50.6224	451.2060	0.6196
148	06	10	FYGPA	2.8523	0.1205	12.8807	9.5820	12.2644	-0.0153	0.0052	0.6432	0.6006	0.6196	0.3531
148	08	1	HSGPA	0.0000	0.2019	6.4888	4.7825	8.8685	-0.0119	0.0105	0.7577	0.6532	0.2642	0.1498
148	08	2	SAT-CR	0.0000	6.4888	6,187.3829	1,936.6416	4,157.4060	-1.4132	0.7577	160.8731	84.1787	63.8571	16.4426
148	08	3	SAT-M	0.0000	4.7825	1,936.6416	4,369.6933	1,863.7713	-2.0601	0.6532	84.1787	247.5952	96.5603	9.4939
148	08	4	SAT-W	0.0000	8.8685	4,157.4060	1,863.7713	5,974.8976	-0.7948	0.2642	63.8571	96.5603	142.9149	18.6620
148	08	5	Hispanic	0.0408	-0.0119	-1.4132	-2.0601	-0.7948	0.0392	-0.0114	-1.3555	-1.9760	-0.7624	-0.0071
148	08	6	Hispanic*HSGPA	-0.0119	0.0105	0.7577	0.6532	0.2642	-0.0114	0.0103	0.7410	0.6287	0.2548	0.0034
148	08	7	Hispanic*SAT-CR	-1.4110	0.7577	160.8731	84.1787	63.8571	-1.3555	0.7410	158.8792	81.2721	62.7356	0.4256
148	08	8	Hispanic*SAT-M	-2.0568	0.6532	84.1787	247.5952	96.5603	-1.9760	0.6287	81.2721	243.3580	94.9255	0.4286
148	08	9	Hispanic*SAT-W	-0.7936	0.2642	63.8571	96.5603	142.9149	-0.7624	0.2548	62.7356	94.9255	142.2841	0.0846
148	08	10	FYGPA	2.8041	0.1498	16.4426	9.4939	18.6620	-0.0071	0.0034	0.4256	0.4286	0.0846	0.4512
149	08	1	HSGPA	0.0000	0.1754	6.0672	5.9446	6.9804	0.0025	0.0064	0.2159	0.2018	0.1532	0.0957
149	08	2	SAT-CR	0.0000	6.0672	4,138.4009	1,631.7037	2,839.0942	-0.5075	0.2159	181.0513	85.1366	120.1723	10.4920
149	08	3	SAT-M	0.0000	5.9446	1,631.7037	4,380.8573	1,852.5227	-1.6799	0.2018	85.1366	245.3906	121.0582	7.0430
149	08	4	SAT-W	0.0000	6.9804	2,839.0942	1,852.5227	4,645.3957	-1.1676	0.1532	120.1723	121.0582	187.4779	12.4136
149	08	5	Hispanic	0.0442	0.0025	-0.5075	-1.6799	-1.1676	0.0423	0.0023	-0.4850	-1.6056	-1.1160	-0.0023
149	08	6	Hispanic*HSGPA	0.0025	0.0064	0.2159	0.2018	0.1532	0.0023	0.0064	0.2172	0.2060	0.1561	0.0028
149	08	7	Hispanic*SAT-CR	-0.5070	0.2159	181.0513	85.1366	120.1723	-0.4850	0.2172	180.7940	84.2849	119.5804	0.6090
149	08	8	Hispanic*SAT-M	-1.6784	0.2018	85.1366	245.3906	121.0582	-1.6056	0.2060	84.2849	242.5711	119.0984	0.4766
149	08	9	Hispanic*SAT-W	-1.1666	0.1532	120.1723	121.0582	187.4779	-1.1160	0.1561	119.5804	119.0984	186.1158	0.7805
149	08	10	FYGPA	3.1697	0.0957	10.4920	7.0430	12.4136	-0.0023	0.0028	0.6090	0.4766	0.7805	0.2410

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
151	06	1	HSGPA	0.0000	0.3491	14.5990	15.5807	18.3069	-0.0044	0.0079	0.2853	0.2965	0.3989	0.2340
151	06	2	SAT-CR	0.0000	14.5990	6,037.2026	3,388.8057	4,227.6048	-0.3787	0.2853	126.6721	49.0154	87.7774	17.1886
151	06	3	SAT-M	0.0000	15.5807	3,388.8057	6,653.2502	3,284.4818	-0.7314	0.2965	49.0154	107.8404	49.6162	14.4997
151	06	4	SAT-W	0.0000	18.3069	4,227.6048	3,284.4818	5,954.7708	-0.5744	0.3989	87.7774	49.6162	111.1918	19.4465
151	06	5	Hispanic	0.0193	-0.0044	-0.3787	-0.7314	-0.5744	0.0189	-0.0043	-0.3714	-0.7173	-0.5633	-0.0014
151	06	6	Hispanic*HSGPA	-0.0044	0.0079	0.2853	0.2965	0.3989	-0.0043	0.0079	0.2837	0.2932	0.3964	0.0035
151	06	7	Hispanic*SAT-CR	-0.3785	0.2853	126.6721	49.0154	87.7774	-0.3714	0.2837	126.5287	48.7385	87.5600	0.1946
151	06	8	Hispanic*SAT-M	-0.7312	0.2965	49.0154	107.8404	49.6162	-0.7173	0.2932	48.7385	107.3056	49.1963	0.1899
151	06	9	Hispanic*SAT-W	-0.5742	0.3989	87.7774	49.6162	111.1918	-0.5633	0.3964	87.5600	49.1963	110.8620	0.2378
151	06	10	FYGPA	2.7796	0.2340	17.1886	14.4997	19.4465	-0.0014	0.0035	0.1946	0.1899	0.2378	0.6834
153	06	1	HSGPA	0.0000	0.0849	6.6153	6.3412	6.0156	0.0055	0.0067	-0.0887	0.0109	0.0645	0.0179
153	06	2	SAT-CR	0.0000	6.6153	5,427.5326	2,632.2057	3,924.2980	-3.3428	-0.0887	760.0026	500.2873	554.7561	9.8462
153	06	3	SAT-M	0.0000	6.3412	2,632.2057	4,804.6430	2,596.0036	-4.8396	0.0109	500.2873	880.8120	482.7854	6.1933
153	06	4	SAT-W	0.0000	6.0156	3,924.2980	2,596.0036	5,148.9098	-3.8524	0.0645	554.7561	482.7854	719.3437	10.8048
153	06	5	Hispanic	0.1244	0.0055	-3.3428	-4.8396	-3.8524	0.1091	0.0048	-2.9269	-4.2375	-3.3731	-0.0071
153	06	6	Hispanic*HSGPA	0.0055	0.0067	-0.0887	0.0109	0.0645	0.0048	0.0067	-0.0704	0.0373	0.0855	-0.0011
153	06	7	Hispanic*SAT-CR	-3.3375	-0.0887	760.0026	500.2873	554.7561	-2.9269	-0.0704	748.8462	484.1355	541.8990	0.8314
153	06	8	Hispanic*SAT-M	-4.8318	0.0109	500.2873	880.8120	482.7854	-4.2375	0.0373	484.1355	857.4280	464.1714	0.9273
153	06	9	Hispanic*SAT-W	-3.8462	0.0645	554.7561	482.7854	719.3437	-3.3731	0.0855	541.8990	464.1714	704.5266	1.0780
153	06	10	FYGPA	3.4593	0.0179	9.8462	6.1933	10.8048	-0.0071	-0.0011	0.8314	0.9273	1.0780	0.1245
155	06	1	HSGPA	0.0000	0.2430	10.8941	10.5767	11.3321	-0.0026	0.0060	-0.0125	0.1181	0.1356	0.1365
155	06	2	SAT-CR	0.0000	10.8941	6,786.2977	3,439.4866	4,681.3320	-1.3215	-0.0125	259.9418	154.9271	185.0877	16.5382
155	06	3	SAT-M	0.0000	10.5767	3,439.4866	6,696.2274	3,031.5412	-1.6376	0.1181	154.9271	230.8679	155.9936	13.2896
155	06	4	SAT-W	0.0000	11.3321	4,681.3320	3,031.5412	6,212.7751	-1.4476	0.1356	185.0877	155.9936	249.5380	17.0426
155	06	5	Hispanic	0.0293	-0.0026	-1.3215	-1.6376	-1.4476	0.0285	-0.0026	-1.2827	-1.5896	-1.4051	-0.0098
155	06	6	Hispanic*HSGPA	-0.0026	0.0060	-0.0125	0.1181	0.1356	-0.0026	0.0060	-0.0159	0.1138	0.1317	0.0035
155	06	7	Hispanic*SAT-CR	-1.3204	-0.0125	259.9418	154.9271	185.0877	-1.2827	-0.0159	258.1969	152.7647	183.1763	0.8169
155	06	8	Hispanic*SAT-M	-1.6364	0.1181	154.9271	230.8679	155.9936	-1.5896	0.1138	152.7647	228.1882	153.6249	0.8762
155	06	9	Hispanic*SAT-W	-1.4464	0.1356	185.0877	155.9936	249.5380	-1.4051	0.1317	183.1763	153.6249	247.4442	0.9157
155	06	10	FYGPA	2.9483	0.1365	16.5382	13.2896	17.0426	-0.0098	0.0035	0.8169	0.8762	0.9157	0.4176
155	07	1	HSGPA	0.0000	0.2454	6.5547	9.3029	8.8145	-0.0006	0.0108	0.1194	0.0705	0.0681	0.1516
155	07	2	SAT-CR	0.0000	6.5547	6,429.9182	2,916.6514	4,175.3364	-0.9313	0.1194	265.5588	109.0220	199.7369	13.5553
155	07	3	SAT-M	0.0000	9.3029	2,916.6514	5,862.6406	2,698.8647	-1.3831	0.0705	109.0220	242.4415	117.5070	9.9117
155	07	4	SAT-W	0.0000	8.8145	4,175.3364	2,698.8647	5,515.2268	-1.0837	0.0681	199.7369	117.5070	244.7717	16.4870
155	07	5	Hispanic	0.0413	-0.0006	-0.9313	-1.3831	-1.0837	0.0396	-0.0005	-0.8928	-1.3260	-1.0389	-0.0013
155	07	6	Hispanic*HSGPA	-0.0006	0.0108	0.1194	0.0705	0.0681	-0.0005	0.0108	0.1189	0.0697	0.0675	0.0040
155	07	7	Hispanic*SAT-CR	-0.9309	0.1194	265.5588	109.0220	199.7369	-0.8928	0.1189	264.6919	107.7344	198.7281	0.4207
155	07	8	Hispanic*SAT-M	-1.3825	0.0705	109.0220	242.4415	117.5070	-1.3260	0.0697	107.7344	240.5293	116.0088	-0.0906
155	07	9	Hispanic*SAT-W	-1.0832	0.0681	199.7369	117.5070	244.7717	-1.0389	0.0675	198.7281	116.0088	243.5979	0.3793
155	07	10	FYGPA	2.8983	0.1516	13.5553	9.9117	16.4870	-0.0013	0.0040	0.4207	-0.0906	0.3793	0.4473

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
155	08	1	HSGPA	0.0000	0.1972	2.9497	5.5050	4.4730	-0.0023	0.0092	-0.5560	-0.0232	-0.3848	0.1168
155	08	2	SAT-CR	0.0000	2.9497	6,099.1690	2,922.3123	4,160.0129	-2.6415	-0.5560	553.7660	333.7892	394.2650	10.5148
155	08	3	SAT-M	0.0000	5.5050	2,922.3123	5,712.3302	2,638.0862	-2.9787	-0.0232	333.7892	515.4704	314.4797	8.9602
155	08	4	SAT-W	0.0000	4.4730	4,160.0129	2,638.0862	5,641.0905	-2.5446	-0.3848	394.2650	314.4797	431.9105	11.9345
155	08	5	Hispanic	0.0610	-0.0023	-2.6415	-2.9787	-2.5446	0.0573	-0.0022	-2.4804	-2.7970	-2.3894	-0.0032
155	08	6	Hispanic*HSGPA	-0.0023	0.0092	-0.5560	-0.0232	-0.3848	-0.0022	0.0092	-0.5621	-0.0301	-0.3907	0.0025
155	08	7	Hispanic*SAT-CR	-2.6404	-0.5560	553.7660	333.7892	394.2650	-2.4804	-0.5621	546.7913	325.9242	387.5461	-0.0932
155	08	8	Hispanic*SAT-M	-2.9774	-0.0232	333.7892	515.4704	314.4797	-2.7970	-0.0301	325.9242	506.6015	306.9032	0.3300
155	08	9	Hispanic*SAT-W	-2.5435	-0.3848	394.2650	314.4797	431.9105	-2.3894	-0.3907	387.5461	306.9032	425.4381	0.3949
155	08	10	FYGPA	2.9454	0.1168	10.5148	8.9602	11.9345	-0.0032	0.0025	-0.0932	0.3300	0.3949	0.3702
156	07	1	HSGPA	0.0000	0.3111	16.6799	17.8721	19.8374	-0.0419	0.0590	1.9631	2.5281	3.2688	0.1845
156	07	2	SAT-CR	0.0000	16.6799	6,018.7522	3,375.9137	4,397.0583	-3.7898	1.9631	1,030.4839	527.2036	702.3870	16.3743
156	07	3	SAT-M	0.0000	17.8721	3,375.9137	6,300.6991	3,375.0854	-4.0821	2.5281	527.2036	890.8923	486.3964	17.0698
156	07	4	SAT-W	0.0000	19.8374	4,397.0583	3,375.0854	6,374.3455	-4.7905	3.2688	702.3870	486.3964	954.1932	19.4385
156	07	5	Hispanic	0.1460	-0.0419	-3.7898	-4.0821	-4.7905	0.1249	-0.0358	-3.2366	-3.4863	-4.0912	-0.0476
156	07	6	Hispanic*HSGPA	-0.0418	0.0590	1.9631	2.5281	3.2688	-0.0358	0.0572	1.8047	2.3574	3.0686	0.0375
156	07	7	Hispanic*SAT-CR	-3.7835	1.9631	1,030.4839	527.2036	702.3870	-3.2366	1.8047	1,016.1452	511.7589	684.2624	1.5812
156	07	8	Hispanic*SAT-M	-4.0753	2.5281	527.2036	890.8923	486.3964	-3.4863	2.3574	511.7589	874.2563	466.8738	1.9072
156	07	9	Hispanic*SAT-W	-4.7824	3.2688	702.3870	486.3964	954.1932	-4.0912	3.0686	684.2624	466.8738	931.2830	2.2170
156	07	10	FYGPA	2.9224	0.1845	16.3743	17.0698	19.4385	-0.0476	0.0375	1.5812	1.9072	2.2170	0.4584
156	08	1	HSGPA	0.0000	0.3085	18.6831	20.4169	18.0641	-0.0229	0.0466	2.6217	3.0991	2.7648	0.1632
156	08	2	SAT-CR	0.0000	18.6831	5,777.5879	3,373.8157	3,988.0228	-4.4737	2.6217	790.4954	651.6019	588.7761	15.9252
156	08	3	SAT-M	0.0000	20.4169	3,373.8157	6,394.9390	3,350.8803	-5.8218	3.0991	651.6019	1,111.7256	555.5108	15.9190
156	08	4	SAT-W	0.0000	18.0641	3,988.0228	3,350.8803	5,711.8338	-3.7708	2.7648	588.7761	555.5108	765.9021	16.8500
156	08	5	Hispanic	0.1407	-0.0229	-4.4737	-5.8218	-3.7708	0.1211	-0.0197	-3.8443	-5.0027	-3.2403	-0.0474
156	08	6	Hispanic*HSGPA	-0.0229	0.0466	2.6217	3.0991	2.7648	-0.0197	0.0461	2.5194	2.9659	2.6786	0.0249
156	08	7	Hispanic*SAT-CR	-4.4652	2.6217	790.4954	651.6019	588.7761	-3.8443	2.5194	770.5199	625.6068	571.9387	3.1725
156	08	8	Hispanic*SAT-M	-5.8107	3.0991	651.6019	1,111.7256	555.5108	-5.0027	2.9659	625.6068	1,077.8971	533.5995	3.9120
156	08	9	Hispanic*SAT-W	-3.7637	2.7648	588.7761	555.5108	765.9021	-3.2403	2.6786	571.9387	533.5995	751.7098	3.9325
156	08	10	FYGPA	2.9344	0.1632	15.9252	15.9190	16.8500	-0.0474	0.0249	3.1725	3.9120	3.9325	0.4523
157	06	1	HSGPA	0.0000	0.1769	7.9730	8.9274	8.7729	-0.0114	0.0174	0.7750	1.0333	1.0738	0.1197
157	06	2	SAT-CR	0.0000	7.9730	5,495.8678	2,638.5214	3,669.0301	-1.1350	0.7750	273.3198	170.1644	188.7050	15.3536
157	06	3	SAT-M	0.0000	8.9274	2,638.5214	5,444.6363	2,379.9285	-1.2591	1.0333	170.1644	330.8805	172.1344	12.2182
157	06	4	SAT-W	0.0000	8.7729	3,669.0301	2,379.9285	5,503.7337	-1.7291	1.0738	188.7050	172.1344	262.1579	17.1570
157	06	5	Hispanic	0.0395	-0.0114	-1.1350	-1.2591	-1.7291	0.0379	-0.0110	-1.0902	-1.2094	-1.6608	-0.0143
157	06	6	Hispanic*HSGPA	-0.0114	0.0174	0.7750	1.0333	1.0738	-0.0110	0.0173	0.7621	1.0190	1.0541	0.0113
157	06	7	Hispanic*SAT-CR	-1.1345	0.7750	273.3198	170.1644	188.7050	-1.0902	0.7621	272.0322	168.7360	186.7435	1.0780
157	06	8	Hispanic*SAT-M	-1.2585	1.0333	170.1644	330.8805	172.1344	-1.2094	1.0190	168.7360	329.2958	169.9583	1.3508
157	06	9	Hispanic*SAT-W	-1.7282	1.0738	188.7050	172.1344	262.1579	-1.6608	1.0541	186.7435	169.9583	259.1697	1.2517
157	06	10	FYGPA	2.8969	0.1197	15.3536	12.2182	17.1570	-0.0143	0.0113	1.0780	1.3508	1.2517	0.5108



## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
158	06	1	HSGPA	0.0000	0.3258	8.9444	9.1129	11.1562	0.0058	0.0826	2.6657	2.0128	3.3427	0.2021
158	06	2	SAT-CR	0.0000	8.9444	8,092.2222	4,512.0818	6,041.5356	-7.1699	2.6657	2,187.0806	1,125.3846	1,603.3182	22.9574
158	06	3	SAT-M	0.0000	9.1129	4,512.0818	7,115.6920	4,297.8038	-6.6005	2.0128	1,125.3846	1,740.7012	1,146.3077	17.0984
158	06	4	SAT-W	0.0000	11.1562	6,041.5356	4,297.8038	7,704.0011	-5.4279	3.3427	1,603.3182	1,146.3077	1,949.5352	23.2959
158	06	5	Hispanic	0.2342	0.0058	-7.1699	-6.6005	-5.4279	0.1798	0.0044	-5.4908	-5.0547	-4.1567	-0.0009
158	06	6	Hispanic*HSGPA	0.0058	0.0826	2.6657	2.0128	3.3427	0.0044	0.0826	2.7073	2.0511	3.3742	0.0540
158	06	7	Hispanic*SAT-CR	-7.1531	2.6657	2,187.0806	1,125.3846	1,603.3182	-5.4908	2.7073	2,135.7935	1,078.1703	1,564.4920	5.3440
158	06	8	Hispanic*SAT-M	-6.5851	2.0128	1,125.3846	1,740.7012	1,146.3077	-5.0547	2.0511	1,078.1703	1,697.2362	1,110.5648	3.9769
158	06	9	Hispanic*SAT-W	-5.4152	3.3427	1,603.3182	1,146.3077	1,949.5352	-4.1567	3.3742	1,564.4920	1,110.5648	1,920.1425	5.8123
158	06	10	FYGPA	3.0827	0.2021	22.9574	17.0984	23.2959	-0.0009	0.0540	5.3440	3.9769	5.8123	0.5693
159	07	1	HSGPA	0.0000	0.1748	8.1284	7.6658	10.0127	-0.0180	0.0369	1.3809	1.3519	1.8340	0.1014
159	07	2	SAT-CR	0.0000	8.1284	6,807.9842	3,629.7474	4,986.3645	-7.7904	1.3809	1,284.5940	858.8984	1,045.0207	19.1017
159	07	3	SAT-M	0.0000	7.6658	3,629.7474	7,002.0364	3,514.9279	-8.5477	1.3519	858.8984	1,497.3419	873.1627	15.5668
159	07	4	SAT-W	0.0000	10.0127	4,986.3645	3,514.9279	6,481.4032	-8.1353	1.8340	1,045.0207	873.1627	1,301.8770	21.8388
159	07	5	Hispanic	0.1791	-0.0180	-7.7904	-8.5477	-8.1353	0.1471	-0.0147	-6.3953	-7.0170	-6.6784	-0.0427
159	07	6	Hispanic*HSGPA	-0.0180	0.0369	1.3809	1.3519	1.8340	-0.0147	0.0366	1.2411	1.1984	1.6879	0.0234
159	07	7	Hispanic*SAT-CR	-7.7867	1.3809	1,284.5940	858.8984	1,045.0207	-6.3953	1.2411	1,223.9330	792.3401	981.6738	4.1503
159	07	8	Hispanic*SAT-M	-8.5437	1.3519	858.8984	1,497.3419	873.1627	-7.0170	1.1984	792.3401	1,424.3130	803.6574	3.9148
159	07	9	Hispanic*SAT-W	-8.1315	1.8340	1,045.0207	873.1627	1,301.8770	-6.6784	1.6879	981.6738	803.6574	1,235.7253	4.4557
159	07	10	FYGPA	2.9254	0.1014	19.1017	15.5668	21.8388	-0.0427	0.0234	4.1503	3.9148	4.4557	0.4794
159	08	1	HSGPA	0.0000	0.1753	7.6138	8.6063	9.8039	-0.0171	0.0375	1.9592	1.8302	2.1623	0.1102
159	08	2	SAT-CR	0.0000	7.6138	6,834.6899	3,622.8709	5,005.6794	-9.3642	1.9592	1,674.9814	1,021.5247	1,350.8678	18.8330
159	08	3	SAT-M	0.0000	8.6063	3,622.8709	6,880.2261	3,676.6367	-10.6300	1.8302	1,021.5247	1,686.2963	1,075.3641	16.0266
159	08	4	SAT-W	0.0000	9.8039	5,005.6794	3,676.6367	6,910.6415	-9.8494	2.1623	1,350.8678	1,075.3641	1,687.3562	23.4205
159	08	5	Hispanic	0.1990	-0.0171	-9.3642	-10.6300	-9.8494	0.1594	-0.0137	-7.5011	-8.5151	-7.8898	-0.0565
159	08	6	Hispanic*HSGPA	-0.0171	0.0375	1.9592	1.8302	2.1623	-0.0137	0.0373	1.7992	1.6485	1.9940	0.0207
159	08	7	Hispanic*SAT-CR	-9.3613	1.9592	1,674.9814	1,021.5247	1,350.8678	-7.5011	1.7992	1,587.3205	922.0138	1,258.6642	4.7695
159	08	8	Hispanic*SAT-M	-10.6268	1.8302	1,021.5247	1,686.2963	1,075.3641	-8.5151	1.6485	922.0138	1,573.3334	970.6964	4.6809
159	08	9	Hispanic*SAT-W	-9.8464	2.1623	1,350.8678	1,075.3641	1,687.3562	-7.8898	1.9940	1,258.6642	970.6964	1,590.3746	5.9152
159	08	10	FYGPA	2.7890	0.1102	18.8330	16.0266	23.4205	-0.0565	0.0207	4.7695	4.6809	5.9152	0.6235
161	06	1	HSGPA	0.0000	0.2465	5.1884	11.1650	7.0318	-0.0246	0.0244	1.4023	2.3605	1.7333	0.0678
161	06	2	SAT-CR	0.0000	5.1884	9,010.7687	3,599.3387	5,898.3021	-2.4244	1.4023	835.5407	546.1785	683.5056	25.8636
161	06	3	SAT-M	0.0000	11.1650	3,599.3387	5,791.9797	3,166.6878	-1.5998	2.3605	546.1785	719.4218	540.3835	17.0700
161	06	4	SAT-W	0.0000	7.0318	5,898.3021	3,166.6878	6,848.3936	-2.2534	1.7333	683.5056	540.3835	695.8202	25.8736
161	06	5	Hispanic	0.0725	-0.0246	-2.4244	-1.5998	-2.2534	0.0675	-0.0228	-2.2487	-1.4839	-2.0901	-0.0230
161	06	6	Hispanic*HSGPA	-0.0244	0.0244	1.4023	2.3605	1.7333	-0.0228	0.0238	1.3431	2.3214	1.6782	0.0039
161	06	7	Hispanic*SAT-CR	-2.4127	1.4023	835.5407	546.1785	683.5056	-2.2487	1.3431	829.6915	542.3187	678.0689	2.8948
161	06	8	Hispanic*SAT-M	-1.5921	2.3605	546.1785	719.4218	540.3835	-1.4839	2.3214	542.3187	716.8747	536.7959	2.1628
161	06	9	Hispanic*SAT-W	-2.2425	1.7333	683.5056	540.3835	695.8202	-2.0901	1.6782	678.0689	536.7959	690.7668	2.8635
161	06	10	FYGPA	2.9148	0.0678	25.8636	17.0700	25.8736	-0.0230	0.0039	2.8948	2.1628	2.8635	0.5034

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
161	07	1	HSGPA	0.0000	0.2248	8.2628	10.3359	8.3792	-0.0191	0.0222	2.6804	0.9809	1.6049	0.1456
161	07	2	SAT-CR	0.0000	8.2628	8,441.5385	4,456.3370	6,571.1355	-6.4872	2.6804	997.8571	492.7446	769.9765	27.6182
161	07	3	SAT-M	0.0000	10.3359	4,456.3370	6,691.4181	4,267.2318	-4.2967	0.9809	492.7446	549.4517	499.2827	16.6428
161	07	4	SAT-W	0.0000	8.3792	6,571.1355	4,267.2318	8,419.6651	-5.5934	1.6049	769.9765	499.2827	922.4561	29.9903
161	07	5	Hispanic	0.1071	-0.0191	-6.4872	-4.2967	-5.5934	0.0962	-0.0171	-5.7921	-3.8363	-4.9941	-0.0335
161	07	6	Hispanic*HSGPA	-0.0190	0.0222	2.6804	0.9809	1.6049	-0.0171	0.0218	2.5570	0.8992	1.4985	0.0215
161	07	7	Hispanic*SAT-CR	-6.4541	2.6804	997.8571	492.7446	769.9765	-5.7921	2.5570	955.9884	465.0134	733.8761	4.6782
161	07	8	Hispanic*SAT-M	-4.2748	0.9809	492.7446	549.4517	499.2827	-3.8363	0.8992	465.0134	531.0842	475.3721	1.8484
161	07	9	Hispanic*SAT-W	-5.5649	1.6049	769.9765	499.2827	922.4561	-4.9941	1.4985	733.8761	475.3721	891.3295	2.7931
161	07	10	FYGPA	2.9015	0.1456	27.6182	16.6428	29.9903	-0.0335	0.0215	4.6782	1.8484	2.7931	0.4576
161	08	1	HSGPA	0.0000	0.1783	6.7361	3.8678	6.1553	-0.0175	0.0317	2.3165	1.4480	1.0074	0.0752
161	08	2	SAT-CR	0.0000	6.7361	7,193.9987	3,404.5136	4,985.2412	-9.3670	2.3165	1,588.0512	761.6526	918.9424	21.4560
161	08	3	SAT-M	0.0000	3.8678	3,404.5136	5,370.4610	3,499.8985	-8.7949	1.4480	761.6526	1,419.3269	720.7880	17.6174
161	08	4	SAT-W	0.0000	6.1553	4,985.2412	3,499.8985	6,820.3515	-9.4354	1.0074	918.9424	720.7880	1,110.8472	22.9181
161	08	5	Hispanic	0.1959	-0.0175	-9.3670	-8.7949	-9.4354	0.1583	-0.0141	-7.5322	-7.0722	-7.5872	-0.0419
161	08	6	Hispanic*HSGPA	-0.0174	0.0317	2.3165	1.4480	1.0074	-0.0141	0.0314	2.1531	1.2946	0.8429	0.0166
161	08	7	Hispanic*SAT-CR	-9.3187	2.3165	1,588.0512	761.6526	918.9424	-7.5322	2.1531	1,500.7624	679.6949	831.0164	2.5923
161	08	8	Hispanic*SAT-M	-8.7496	1.4480	761.6526	1,419.3269	720.7880	-7.0722	1.2946	679.6949	1,342.3748	638.2321	2.5803
161	08	9	Hispanic*SAT-W	-9.3868	1.0074	918.9424	720.7880	1,110.8472	-7.5872	0.8429	831.0164	638.2321	1,022.2795	2.4866
161	08	10	FYGPA	2.9625	0.0752	21.4560	17.6174	22.9181	-0.0419	0.0166	2.5923	2.5803	2.4866	0.3626
162	06	1	HSGPA	0.0000	0.2299	2.3058	6.2527	6.5194	-0.0058	0.0156	-0.3500	-0.3751	-0.0020	0.1619
162	06	2	SAT-CR	0.0000	2.3058	5,384.0289	2,159.5560	3,311.1674	0.4760	-0.3500	257.1329	124.2874	146.4005	8.1329
162	06	3	SAT-M	0.0000	6.2527	2,159.5560	4,854.3658	2,178.0019	-0.0944	-0.3751	124.2874	242.7866	101.9349	6.3311
162	06	4	SAT-W	0.0000	6.5194	3,311.1674	2,178.0019	4,839.5746	-0.8105	-0.0020	146.4005	101.9349	228.5212	11.9786
162	06	5	Hispanic	0.0395	-0.0058	0.4760	-0.0944	-0.8105	0.0380	-0.0056	0.4572	-0.0907	-0.7785	-0.0222
162	06	6	Hispanic*HSGPA	-0.0058	0.0156	-0.3500	-0.3751	-0.0020	-0.0056	0.0156	-0.3473	-0.3756	-0.0067	0.0111
162	06	7	Hispanic*SAT-CR	0.4751	-0.3500	257.1329	124.2874	146.4005	0.4572	-0.3473	256.9068	124.3322	146.7856	0.4062
162	06	8	Hispanic*SAT-M	-0.0942	-0.3751	124.2874	242.7866	101.9349	-0.0907	-0.3756	124.3322	242.7777	101.8585	-0.8739
162	06	9	Hispanic*SAT-W	-0.8090	-0.0020	146.4005	101.9349	228.5212	-0.7785	-0.0067	146.7856	101.8585	227.8654	1.3921
162	06	10	FYGPA	2.6413	0.1619	8.1329	6.3311	11.9786	-0.0222	0.0111	0.4062	-0.8739	1.3921	0.7408
162	08	1	HSGPA	0.0000	0.2451	2.8747	3.7787	6.8109	-0.0003	0.0117	0.1886	0.1626	0.1796	0.1866
162	08	2	SAT-CR	0.0000	2.8747	5,313.4746	2,179.8106	3,637.2418	-1.5062	0.1886	625.1194	359.0117	511.6763	9.0436
162	08	3	SAT-M	0.0000	3.7787	2,179.8106	4,888.2539	2,409.1534	-0.6307	0.1626	359.0117	354.3956	326.2632	7.2503
162	08	4	SAT-W	0.0000	6.8109	3,637.2418	2,409.1534	5,512.2346	-1.9582	0.1796	511.6763	326.2632	609.1867	15.0635
162	08	5	Hispanic	0.0547	-0.0003	-1.5062	-0.6307	-1.9582	0.0518	-0.0003	-1.4238	-0.5962	-1.8511	-0.0172
162	08	6	Hispanic*HSGPA	-0.0003	0.0117	0.1886	0.1626	0.1796	-0.0003	0.0117	0.1882	0.1624	0.1790	0.0070
162	08	7	Hispanic*SAT-CR	-1.5030	0.1886	625.1194	359.0117	511.6763	-1.4238	0.1882	622.8556	358.0638	508.7332	1.6273
162	08	8	Hispanic*SAT-M	-0.6293	0.1626	359.0117	354.3956	326.2632	-0.5962	0.1624	358.0638	353.9987	325.0310	1.1411
162	08	9	Hispanic*SAT-W	-1.9539	0.1796	511.6763	326.2632	609.1867	-1.8511	0.1790	508.7332	325.0310	605.3606	2.0292
162	08	10	FYGPA	2.5923	0.1866	9.0436	7.2503	15.0635	-0.0172	0.0070	1.6273	1.1411	2.0292	0.7385

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
164	08	1	HSGPA	0.0000	0.1730	5.0930	4.5866	3.9632	-0.0054	0.0481	0.2595	-0.4820	-0.1447	0.0660
164	08	2	SAT-CR	0.0000	5.0930	5,967.8397	2,640.9753	3,974.8223	-6.8606	0.2595	1,494.1374	782.4402	1,002.2276	13.2110
164	08	3	SAT-M	0.0000	4.5866	2,640.9753	5,155.0542	2,549.5067	-7.1802	-0.4820	782.4402	1,495.2292	717.0801	11.5734
164	08	4	SAT-W	0.0000	3.9632	3,974.8223	2,549.5067	5,784.9083	-8.5197	-0.1447	1,002.2276	717.0801	1,474.9478	14.3063
164	08	5	Hispanic	0.2702	-0.0054	-6.8606	-7.1802	-8.5197	0.1976	-0.0039	-5.0072	-5.2404	-6.2181	-0.0428
164	08	6	Hispanic*HSGPA	-0.0053	0.0481	0.2595	-0.4820	-0.1447	-0.0039	0.0480	0.2229	-0.5204	-0.1903	0.0141
164	08	7	Hispanic*SAT-CR	-6.8457	0.2595	1,494.1374	782.4402	1,002.2276	-5.0072	0.2229	1,447.1720	733.2872	943.9049	3.8816
164	08	8	Hispanic*SAT-M	-7.1645	-0.4820	782.4402	1,495.2292	717.0801	-5.2404	-0.5204	733.2872	1,443.7866	656.0408	3.9454
164	08	9	Hispanic*SAT-W	-8.5011	-0.1447	1,002.2276	717.0801	1,474.9478	-6.2181	-0.1903	943.9049	656.0408	1,402.5214	4.4616
164	08	10	FYGPA	3.2045	0.0660	13.2110	11.5734	14.3063	-0.0428	0.0141	3.8816	3.9454	4.4616	0.2400
165	06	1	HSGPA	0.0000	0.1689	2.8669	2.2435	4.3328	-0.0008	0.0433	0.4203	-0.1389	0.6433	0.0818
165	06	2	SAT-CR	0.0000	2.8669	5,300.8110	2,606.3020	3,261.6153	-5.6221	0.4203	1,178.3767	670.9389	793.5980	8.7148
165	06	3	SAT-M	0.0000	2.2435	2,606.3020	5,941.2178	2,561.0630	-9.4168	-0.1389	670.9389	1,491.1314	647.1794	8.9121
165	06	4	SAT-W	0.0000	4.3328	3,261.6153	2,561.0630	4,689.1318	-6.0225	0.6433	793.5980	647.1794	1,171.7550	11.7390
165	06	5	Hispanic	0.2314	-0.0008	-5.6221	-9.4168	-6.0225	0.1781	-0.0006	-4.3209	-7.2374	-4.6287	-0.0278
165	06	6	Hispanic*HSGPA	-0.0008	0.0433	0.4203	-0.1389	0.6433	-0.0006	0.0433	0.4160	-0.1462	0.6386	0.0125
165	06	7	Hispanic*SAT-CR	-5.6139	0.4203	1,178.3767	670.9389	793.5980	-4.3209	0.4160	1,146.8146	618.0737	759.7881	3.1134
165	06	8	Hispanic*SAT-M	-9.4031	-0.1389	670.9389	1,491.1314	647.1794	-7.2374	-0.1462	618.0737	1,402.5847	590.5493	2.4027
165	06	9	Hispanic*SAT-W	-6.0137	0.6433	793.5980	647.1794	1,171.7550	-4.6287	0.6386	759.7881	590.5493	1,135.5372	3.8588
165	06	10	FYGPA	3.1569	0.0818	8.7148	8.9121	11.7390	-0.0278	0.0125	3.1134	2.4027	3.8588	0.2663
165	07	1	HSGPA	0.0000	0.1521	3.2394	2.9800	3.6982	0.0011	0.0371	1.3687	0.2833	0.9049	0.0748
165	07	2	SAT-CR	0.0000	3.2394	5,280.5090	2,410.9480	3,453.9409	-6.7927	1.3687	1,590.9153	839.3524	1,061.3768	7.4888
165	07	3	SAT-M	0.0000	2.9800	2,410.9480	5,518.3610	2,632.3713	-7.0022	0.2833	839.3524	1,539.8304	858.5694	6.8451
165	07	4	SAT-W	0.0000	3.6982	3,453.9409	2,632.3713	5,136.8150	-6.0165	0.9049	1,061.3768	858.5694	1,419.8040	9.4544
165	07	5	Hispanic	0.2421	0.0011	-6.7927	-7.0022	-6.0165	0.1838	0.0008	-5.1479	-5.3068	-4.5597	-0.0340
165	07	6	Hispanic*HSGPA	0.0011	0.0371	1.3687	0.2833	0.9049	0.0008	0.0371	1.3760	0.2909	0.9114	0.0166
165	07	7	Hispanic*SAT-CR	-6.7834	1.3687	1,590.9153	839.3524	1,061.3768	-5.1479	1.3760	1,544.8381	791.8535	1,020.5648	2.9761
165	07	8	Hispanic*SAT-M	-6.9927	0.2833	839.3524	1,539.8304	858.5694	-5.3068	0.2909	791.8535	1,490.8659	816.4982	1.4487
165	07	9	Hispanic*SAT-W	-6.0082	0.9049	1,061.3768	858.5694	1,419.8040	-4.5597	0.9114	1,020.5648	816.4982	1,383.6556	2.9872
165	07	10	FYGPA	3.1718	0.0748	7.4888	6.8451	9.4544	-0.0340	0.0166	2.9761	1.4487	2.9872	0.2558
166	06	1	HSGPA	0.0000	0.1458	2.5054	2.9551	2.4770	-0.0012	0.0038	-0.3078	0.0913	-0.1176	0.0776
166	06	2	SAT-CR	0.0000	2.5054	5,673.5510	2,462.0948	3,493.4319	-1.5175	-0.3078	330.6992	241.0026	236.8563	6.0397
166	06	3	SAT-M	0.0000	2.9551	2,462.0948	5,279.4886	2,152.9359	-2.4744	0.0913	241.0026	448.3591	232.7367	6.4013
166	06	4	SAT-W	0.0000	2.4770	3,493.4319	2,152.9359	4,970.6461	-1.3808	-0.1176	236.8563	232.7367	264.9604	6.3635
166	06	5	Hispanic	0.0344	-0.0012	-1.5175	-2.4744	-1.3808	0.0332	-0.0011	-1.4654	-2.3894	-1.3334	-0.0057
166	06	6	Hispanic*HSGPA	-0.0012	0.0038	-0.3078	0.0913	-0.1176	-0.0011	0.0038	-0.3096	0.0884	-0.1193	-0.0010
166	06	7	Hispanic*SAT-CR	-1.5146	-0.3078	330.6992	241.0026	236.8563	-1.4654	-0.3096	328.4008	237.2548	234.7648	0.9436
166	06	8	Hispanic*SAT-M	-2.4697	0.0913	241.0026	448.3591	232.7367	-2.3894	0.0884	237.2548	442.2480	229.3265	1.4813
166	06	9	Hispanic*SAT-W	-1.3782	-0.1176	236.8563	232.7367	264.9604	-1.3334	-0.1193	234.7648	229.3265	263.0574	0.7569
166	06	10	FYGPA	3.2734	0.0776	6.0397	6.4013	6.3635	-0.0057	-0.0010	0.9436	1.4813	0.7569	0.3313

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
166	07	1	HSGPA	0.0000	0.1222	4.2586	3.3242	4.5701	-0.0045	0.0076	0.4221	0.1284	0.0559	0.0696
166	07	2	SAT-CR	0.0000	4.2586	6,550.6338	3,215.1195	4,280.1085	-3.2270	0.4221	424.7556	246.3100	286.9811	9.8810
166	07	3	SAT-M	0.0000	3.3242	3,215.1195	6,295.6349	2,855.3305	-2.2607	0.1284	246.3100	294.6300	219.9386	7.4417
166	07	4	SAT-W	0.0000	4.5701	4,280.1085	2,855.3305	5,907.2955	-2.4897	0.0559	286.9811	219.9386	326.0408	12.4239
166	07	5	Hispanic	0.0472	-0.0045	-3.2270	-2.2607	-2.4897	0.0451	-0.0043	-3.0747	-2.1540	-2.3722	-0.0126
166	07	6	Hispanic*HSGPA	-0.0045	0.0076	0.4221	0.1284	0.0559	-0.0043	0.0075	0.4076	0.1183	0.0447	0.0047
166	07	7	Hispanic*SAT-CR	-3.2214	0.4221	424.7556	246.3100	286.9811	-3.0747	0.4076	414.3602	239.0275	278.9609	1.7882
166	07	8	Hispanic*SAT-M	-2.2567	0.1284	246.3100	294.6300	219.9386	-2.1540	0.1183	239.0275	289.5282	214.3200	0.7940
166	07	9	Hispanic*SAT-W	-2.4853	0.0559	286.9811	219.9386	326.0408	-2.3722	0.0447	278.9609	214.3200	319.8531	0.9561
166	07	10	FYGPA	3.2920	0.0696	9.8810	7.4417	12.4239	-0.0126	0.0047	1.7882	0.7940	0.9561	0.3034
166	08	1	HSGPA	0.0000	0.1387	4.5469	4.9261	5.3147	-0.0062	0.0068	0.6985	0.4172	0.5555	0.0845
166	08	2	SAT-CR	0.0000	4.5469	6,207.0125	2,777.0569	4,431.2729	-3.5747	0.6985	621.2831	386.0520	474.8390	12.2118
166	08	3	SAT-M	0.0000	4.9261	2,777.0569	5,745.1394	2,539.6171	-3.2763	0.4172	386.0520	435.3342	347.5702	9.5520
166	08	4	SAT-W	0.0000	5.3147	4,431.2729	2,539.6171	6,220.7965	-3.2492	0.5555	474.8390	347.5702	453.6491	16.1818
166	08	5	Hispanic	0.0355	-0.0062	-3.5747	-3.2763	-3.2492	0.0343	-0.0060	-3.4479	-3.1600	-3.1339	-0.0187
166	08	6	Hispanic*HSGPA	-0.0062	0.0068	0.6985	0.4172	0.5555	-0.0060	0.0067	0.6763	0.3969	0.5353	0.0051
166	08	7	Hispanic*SAT-CR	-3.5673	0.6985	621.2831	386.0520	474.8390	-3.4479	0.6763	608.5310	374.3646	463.2482	2.1021
166	08	8	Hispanic*SAT-M	-3.2694	0.4172	386.0520	435.3342	347.5702	-3.1600	0.3969	374.3646	424.6227	336.9472	1.4695
166	08	9	Hispanic*SAT-W	-3.2424	0.5555	474.8390	347.5702	453.6491	-3.1339	0.5353	463.2482	336.9472	443.1139	1.6991
166	08	10	FYGPA	3.2538	0.0845	12.2118	9.5520	16.1818	-0.0187	0.0051	2.1021	1.4695	1.6991	0.3511
167	06	1	HSGPA	0.0000	0.3316	11.9028	18.9185	12.8684	0.0145	0.1004	3.7307	5.2831	3.7534	0.1827
167	06	2	SAT-CR	0.0000	11.9028	8,411.6485	5,189.1258	5,677.0284	-4.7155	3.7307	2,337.2645	1,682.3790	1,571.7708	26.6876
167	06	3	SAT-M	0.0000	18.9185	5,189.1258	7,872.7921	4,355.8355	-7.9262	5.2831	1,682.3790	2,341.2136	1,315.6664	29.1299
167	06	4	SAT-W	0.0000	12.8684	5,677.0284	4,355.8355	7,295.2138	-2.5575	3.7534	1,571.7708	1,315.6664	1,890.4831	25.9363
167	06	5	Hispanic	0.2836	0.0145	-4.7155	-7.9262	-2.5575	0.2047	0.0104	-3.3783	-5.6784	-1.8322	-0.0587
167	06	6	Hispanic*HSGPA	0.0144	0.1004	3.7307	5.2831	3.7534	0.0104	0.1002	3.7988	5.3975	3.7904	0.0664
167	06	7	Hispanic*SAT-CR	-4.6803	3.7307	2,337.2645	1,682.3790	1,571.7708	-3.3783	3.7988	2,315.1943	1,645.2819	1,559.8008	11.2376
167	06	8	Hispanic*SAT-M	-7.8670	5.2831	1,682.3790	2,341.2136	1,315.6664	-5.6784	5.3975	1,645.2819	2,278.8585	1,295.5465	10.5053
167	06	9	Hispanic*SAT-W	-2.5384	3.7534	1,571.7708	1,315.6664	1,890.4831	-1.8322	3.7904	1,559.8008	1,295.5465	1,883.9910	8.1877
167	06	10	FYGPA	2.4904	0.1827	26.6876	29.1299	25.9363	-0.0587	0.0664	11.2376	10.5053	8.1877	0.6597
167	07	1	HSGPA	0.0000	0.2669	19.0949	16.9053	18.6395	-0.0286	0.0557	2.5583	1.9695	2.4533	0.2346
167	07	2	SAT-CR	0.0000	19.0949	7,439.6415	4,185.1793	5,547.9882	-3.9499	2.5583	1,766.9901	896.7942	1,149.8009	36.5226
167	07	3	SAT-M	0.0000	16.9053	4,185.1793	6,449.4814	4,222.3669	-2.6641	1.9695	896.7942	1,420.5145	904.3836	26.9843
167	07	4	SAT-W	0.0000	18.6395	5,547.9882	4,222.3669	6,908.4615	-5.3964	2.4533	1,149.8009	904.3836	1,485.6923	35.6727
167	07	5	Hispanic	0.2471	-0.0286	-3.9499	-2.6641	-5.3964	0.1871	-0.0215	-2.9740	-2.0059	-4.0632	-0.0428
167	07	6	Hispanic*HSGPA	-0.0284	0.0557	2.5583	1.9695	2.4533	-0.0215	0.0548	2.4460	1.8937	2.2999	0.0431
167	07	7	Hispanic*SAT-CR	-3.9266	2.5583	1,766.9901	896.7942	1,149.8009	-2.9740	2.4460	1,751.4803	886.3332	1,128.6110	10.0120
167	07	8	Hispanic*SAT-M	-2.6484	1.9695	896.7942	1,420.5145	904.3836	-2.0059	1.8937	886.3332	1,413.4587	890.0914	5.9188
167	07	9	Hispanic*SAT-W	-5.3647	2.4533	1,149.8009	904.3836	1,485.6923	-4.0632	2.2999	1,128.6110	890.0914	1,456.7419	5.6644
167	07	10	FYGPA	2.5619	0.2346	36.5226	26.9843	35.6727	-0.0428	0.0431	10.0120	5.9188	5.6644	0.8132

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
167	08	1	HSGPA	0.0000	0.2583	10.2753	10.5063	10.3984	-0.0001	0.0509	2.2215	2.8961	0.2825	0.1889
167	08	2	SAT-CR	0.0000	10.2753	7,594.6502	3,050.2634	5,013.2193	-3.7111	2.2215	1,833.8355	1,008.6334	1,457.4616	25.8674
167	08	3	SAT-M	0.0000	10.5063	3,050.2634	6,922.9206	2,879.0841	-5.1938	2.8961	1,008.6334	2,271.2021	1,130.7803	15.3219
167	08	4	SAT-W	0.0000	10.3984	5,013.2193	2,879.0841	6,687.0715	-5.3133	0.2825	1,457.4616	1,130.7803	2,100.5535	24.3078
167	08	5	Hispanic	0.2563	-0.0001	-3.7111	-5.1938	-5.3133	0.1918	0.0000	-2.7601	-3.8629	-3.9518	0.0114
167	08	6	Hispanic*HSGPA	-0.0001	0.0509	2.2215	2.8961	0.2825	0.0000	0.0509	2.2214	2.8958	0.2823	0.0511
167	08	7	Hispanic*SAT-CR	-3.6879	2.2215	1,833.8355	1,008.6334	1,457.4616	-2.7601	2.2214	1,820.1494	989.4793	1,437.8668	6.7211
167	08	8	Hispanic*SAT-M	-5.1613	2.8961	1,008.6334	2,271.2021	1,130.7803	-3.8629	2.8958	989.4793	2,244.3952	1,103.3567	5.4430
167	08	9	Hispanic*SAT-W	-5.2801	0.2825	1,457.4616	1,130.7803	2,100.5535	-3.9518	0.2823	1,437.8668	1,103.3567	2,072.4989	7.6133
167	08	10	FYGPA	2.6736	0.1889	25.8674	15.3219	24.3078	0.0114	0.0511	6.7211	5.4430	7.6133	0.7682
169	06	1	HSGPA	0.0000	0.2906	9.4839	10.5442	11.5371	-0.0031	0.0084	0.4387	0.7095	0.6242	0.1881
169	06	2	SAT-CR	0.0000	9.4839	4,827.7370	2,451.4964	2,994.6338	-0.8869	0.4387	153.5548	116.0483	135.6459	8.6810
169	06	3	SAT-M	0.0000	10.5442	2,451.4964	5,468.1060	2,235.7555	-1.0747	0.7095	116.0483	268.3630	93.5742	11.8535
169	06	4	SAT-W	0.0000	11.5371	2,994.6338	2,235.7555	4,557.6856	-0.7234	0.6242	135.6459	93.5742	259.2077	14.0742
169	06	5	Hispanic	0.0369	-0.0031	-0.8869	-1.0747	-0.7234	0.0355	-0.0030	-0.8542	-1.0351	-0.6968	-0.0114
169	06	6	Hispanic*HSGPA	-0.0031	0.0084	0.4387	0.7095	0.6242	-0.0030	0.0084	0.4359	0.7062	0.6220	0.0050
169	06	7	Hispanic*SAT-CR	-0.8860	0.4387	153.5548	116.0483	135.6459	-0.8542	0.4359	152.7690	115.0961	135.0049	0.1159
169	06	8	Hispanic*SAT-M	-1.0737	0.7095	116.0483	268.3630	93.5742	-1.0351	0.7062	115.0961	267.2092	92.7974	0.7907
169	06	9	Hispanic*SAT-W	-0.7227	0.6242	135.6459	93.5742	259.2077	-0.6968	0.6220	135.0049	92.7974	258.6848	1.0948
169	06	10	FYGPA	2.7726	0.1881	8.6810	11.8535	14.0742	-0.0114	0.0050	0.1159	0.7907	1.0948	0.7757
169	07	1	HSGPA	0.0000	0.2678	9.6647	8.5334	9.8572	-0.0027	0.0116	0.5402	0.2719	0.4404	0.1735
169	07	2	SAT-CR	0.0000	9.6647	4,581.1151	2,112.0051	3,016.8889	-0.4966	0.5402	244.9149	133.8477	164.1778	11.8736
169	07	3	SAT-M	0.0000	8.5334	2,112.0051	4,490.8050	1,981.6576	-0.5305	0.2719	133.8477	228.4749	86.9820	9.7694
169	07	4	SAT-W	0.0000	9.8572	3,016.8889	1,981.6576	4,570.2038	-0.2948	0.4404	164.1778	86.9820	240.1659	13.7365
169	07	5	Hispanic	0.0407	-0.0027	-0.4966	-0.5305	-0.2948	0.0390	-0.0026	-0.4765	-0.5089	-0.2828	-0.0042
169	07	6	Hispanic*HSGPA	-0.0027	0.0116	0.5402	0.2719	0.4404	-0.0026	0.0116	0.5388	0.2705	0.4396	0.0059
169	07	7	Hispanic*SAT-CR	-0.4962	0.5402	244.9149	133.8477	164.1778	-0.4765	0.5388	244.6685	133.5845	164.0316	-0.0566
169	07	8	Hispanic*SAT-M	-0.5300	0.2719	133.8477	228.4749	86.9820	-0.5089	0.2705	133.5845	228.1938	86.8258	0.2469
169	07	9	Hispanic*SAT-W	-0.2945	0.4404	164.1778	86.9820	240.1659	-0.2828	0.4396	164.0316	86.8258	240.0791	0.1351
169	07	10	FYGPA	2.8504	0.1735	11.8736	9.7694	13.7365	-0.0042	0.0059	-0.0566	0.2469	0.1351	0.5268
169	08	1	HSGPA	0.0000	0.2727	6.7213	6.6410	7.3388	-0.0020	0.0092	0.4128	0.1069	0.6372	0.1821
169	08	2	SAT-CR	0.0000	6.7213	4,640.8691	2,078.4475	2,864.2813	-0.1509	0.4128	241.8105	53.9549	167.6428	7.9502
169	08	3	SAT-M	0.0000	6.6410	2,078.4475	4,560.5831	1,855.2374	-0.4123	0.1069	53.9549	170.5214	75.3562	8.3414
169	08	4	SAT-W	0.0000	7.3388	2,864.2813	1,855.2374	4,449.3865	-0.4244	0.6372	167.6428	75.3562	245.4766	15.0361
169	08	5	Hispanic	0.0406	-0.0020	-0.1509	-0.4123	-0.4244	0.0390	-0.0020	-0.1448	-0.3956	-0.4071	-0.0023
169	08	6	Hispanic*HSGPA	-0.0020	0.0092	0.4128	0.1069	0.6372	-0.0020	0.0092	0.4125	0.1061	0.6363	0.0066
169	08	7	Hispanic*SAT-CR	-0.1508	0.4128	241.8105	53.9549	167.6428	-0.1448	0.4125	241.7877	53.8927	167.5788	0.2724
169	08	8	Hispanic*SAT-M	-0.4119	0.1069	53.9549	170.5214	75.3562	-0.3956	0.1061	53.8927	170.3515	75.1814	0.2113
169	08	9	Hispanic*SAT-W	-0.4239	0.6372	167.6428	75.3562	245.4766	-0.4071	0.6363	167.5788	75.1814	245.2967	1.2179
169	08	10	FYGPA	2.6906	0.1821	7.9502	8.3414	15.0361	-0.0023	0.0066	0.2724	0.2113	1.2179	0.8034

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
170	06	1	HSGPA	0.0000	0.1685	7.1977	6.1274	6.6542	-0.0163	0.0179	-0.4839	-0.5385	0.2468	0.0778
170	06	2	SAT-CR	0.0000	7.1977	6,681.9802	3,041.9399	4,530.5919	-1.6331	-0.4839	873.6941	450.1508	592.5087	20.6141
170	06	3	SAT-M	0.0000	6.1274	3,041.9399	5,487.3693	3,027.7168	-4.6705	-0.5385	450.1508	1,052.3578	548.6982	17.1213
170	06	4	SAT-W	0.0000	6.6542	4,530.5919	3,027.7168	5,965.7849	-4.8028	0.2468	592.5087	548.6982	798.2473	20.1550
170	06	5	Hispanic	0.1063	-0.0163	-1.6331	-4.6705	-4.8028	0.0954	-0.0145	-1.4596	-4.1741	-4.2923	-0.0406
170	06	6	Hispanic*HSGPA	-0.0162	0.0179	-0.4839	-0.5385	0.2468	-0.0145	0.0177	-0.5104	-0.6141	0.1690	0.0047
170	06	7	Hispanic*SAT-CR	-1.6252	-0.4839	873.6941	450.1508	592.5087	-1.4596	-0.5104	871.0399	442.5600	584.7031	4.6704
170	06	8	Hispanic*SAT-M	-4.6479	-0.5385	450.1508	1,052.3578	548.6982	-4.1741	-0.6141	442.5600	1,030.6495	526.3751	4.3615
170	06	9	Hispanic*SAT-W	-4.7796	0.2468	592.5087	548.6982	798.2473	-4.2923	0.1690	584.7031	526.3751	775.2921	5.3532
170	06	10	FYGPA	3.1476	0.0778	20.6141	17.1213	20.1550	-0.0406	0.0047	4.6704	4.3615	5.3532	0.2696
171	06	1	HSGPA	0.0000	0.2195	5.8222	6.6087	8.6867	-0.0071	0.0123	0.6645	0.7137	0.5141	0.1415
171	06	2	SAT-CR	0.0000	5.8222	5,244.6869	2,134.5590	3,222.2102	-2.0608	0.6645	457.5629	296.2470	330.6795	10.5828
171	06	3	SAT-M	0.0000	6.6087	2,134.5590	5,455.7268	1,934.3305	-2.1564	0.7137	296.2470	326.0755	271.2007	8.2555
171	06	4	SAT-W	0.0000	8.6867	3,222.2102	1,934.3305	5,078.0014	-2.0636	0.5141	330.6795	271.2007	341.5746	14.7263
171	06	5	Hispanic	0.0342	-0.0071	-2.0608	-2.1564	-2.0636	0.0331	-0.0069	-1.9904	-2.0827	-1.9930	-0.0117
171	06	6	Hispanic*HSGPA	-0.0071	0.0123	0.6645	0.7137	0.5141	-0.0069	0.0122	0.6498	0.6984	0.4995	0.0067
171	06	7	Hispanic*SAT-CR	-2.0587	0.6645	457.5629	296.2470	330.6795	-1.9904	0.6498	453.3202	291.8076	326.4313	0.9977
171	06	8	Hispanic*SAT-M	-2.1542	0.7137	296.2470	326.0755	271.2007	-2.0827	0.6984	291.8076	321.4303	266.7555	0.8010
171	06	9	Hispanic*SAT-W	-2.0614	0.5141	330.6795	271.2007	341.5746	-1.9930	0.4995	326.4313	266.7555	337.3208	0.8490
171	06	10	FYGPA	2.8988	0.1415	10.5828	8.2555	14.7263	-0.0117	0.0067	0.9977	0.8010	0.8490	0.4778
171	07	1	HSGPA	0.0000	0.2309	6.5575	6.0944	10.2083	-0.0121	0.0155	0.1853	0.4404	0.4789	0.1564
171	07	2	SAT-CR	0.0000	6.5575	5,346.6693	2,177.6825	3,562.7437	-2.6868	0.1853	481.3294	386.8009	411.0004	12.9041
171	07	3	SAT-M	0.0000	6.0944	2,177.6825	5,334.5176	2,255.4833	-3.3596	0.4404	386.8009	526.3974	404.1796	11.2932
171	07	4	SAT-W	0.0000	10.2083	3,562.7437	2,255.4833	5,277.9268	-2.9778	0.4789	411.0004	404.1796	502.4987	17.0604
171	07	5	Hispanic	0.0395	-0.0121	-2.6868	-3.3596	-2.9778	0.0380	-0.0117	-2.5806	-3.2268	-2.8601	-0.0262
171	07	6	Hispanic*HSGPA	-0.0121	0.0155	0.1853	0.4404	0.4789	-0.0117	0.0153	0.1527	0.3997	0.4428	0.0092
171	07	7	Hispanic*SAT-CR	-2.6839	0.1853	481.3294	386.8009	411.0004	-2.5806	0.1527	474.1182	377.7838	403.0082	1.4231
171	07	8	Hispanic*SAT-M	-3.3560	0.4404	386.8009	526.3974	404.1796	-3.2268	0.3997	377.7838	515.1223	394.1860	2.1556
171	07	9	Hispanic*SAT-W	-2.9746	0.4789	411.0004	404.1796	502.4987	-2.8601	0.4428	403.0082	394.1860	493.6409	2.0605
171	07	10	FYGPA	2.8287	0.1564	12.9041	11.2932	17.0604	-0.0262	0.0092	1.4231	2.1556	2.0605	0.5494
173	07	1	HSGPA	0.0000	0.1412	4.1752	5.9030	4.7523	-0.0351	0.0537	3.4231	3.8902	3.6425	0.0587
173	07	2	SAT-CR	0.0000	4.1752	7,291.8773	4,390.4013	5,271.7718	-17.4869	3.4231	2,992.1319	2,197.1888	2,435.0923	17.4689
173	07	3	SAT-M	0.0000	5.9030	4,390.4013	7,723.0744	4,356.7684	-18.0363	3.8902	2,197.1888	3,096.0299	2,198.2438	16.5617
173	07	4	SAT-W	0.0000	4.7523	5,271.7718	4,356.7684	6,796.2043	-17.3057	3.6425	2,435.0923	2,198.2438	2,707.1769	16.9837
173	07	5	Hispanic	0.2560	-0.0351	-17.4869	-18.0363	-17.3057	0.1906	-0.0261	-13.0097	-13.4184	-12.8749	-0.0808
173	07	6	Hispanic*HSGPA	-0.0351	0.0537	3.4231	3.8902	3.6425	-0.0261	0.0525	2.8098	3.2576	3.0355	0.0245
173	07	7	Hispanic*SAT-CR	-17.4795	3.4231	2,992.1319	2,197.1888	2,435.0923	-13.0097	2.8098	2,686.4702	1,881.9243	2,132.5972	9.1897
173	07	8	Hispanic*SAT-M	-18.0286	3.8902	2,197.1888	3,096.0299	2,198.2438	-13.4184	3.2576	1,881.9243	2,770.8608	1,886.2453	8.9953
173	07	9	Hispanic*SAT-W	-17.2984	3.6425	2,435.0923	2,198.2438	2,707.1769	-12.8749	3.0355	2,132.5972	1,886.2453	2,407.8155	8.8821
173	07	10	FYGPA	3.0843	0.0587	17.4689	16.5617	16.9837	-0.0808	0.0245	9.1897	8.9953	8.8821	0.2434

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
173	08	1	HSGPA	0.0000	0.1312	4.5370	6.5723	5.4203	-0.0307	0.0548	2.6746	4.2247	3.2422	0.0473
173	08	2	SAT-CR	0.0000	4.5370	7,508.8408	4,708.8206	5,824.4188	-20.0446	2.6746	3,362.4509	2,631.9349	2,931.4842	19.3542
173	08	3	SAT-M	0.0000	6.5723	4,708.8206	8,107.6858	4,805.0315	-22.0180	4.2247	2,631.9349	3,910.3120	2,764.2021	19.0216
173	08	4	SAT-W	0.0000	5.4203	5,824.4188	4,805.0315	7,723.5038	-21.8698	3.2422	2,931.4842	2,764.2021	3,579.1705	21.3295
173	08	5	Hispanic	0.3330	-0.0307	-20.0446	-22.0180	-21.8698	0.2222	-0.0205	-13.3689	-14.6851	-14.5862	-0.0894
173	08	6	Hispanic*HSGPA	-0.0307	0.0548	2.6746	4.2247	3.2422	-0.0205	0.0539	2.0601	3.5497	2.5718	0.0185
173	08	7	Hispanic*SAT-CR	-20.0359	2.6746	3,362.4509	2,631.9349	2,931.4842	-13.3689	2.0601	2,960.8402	2,190.7843	2,493.3040	9.6694
173	08	8	Hispanic*SAT-M	-22.0085	4.2247	2,631.9349	3,910.3120	2,764.2021	-14.6851	3.5497	2,190.7843	3,425.7287	2,282.8817	10.5787
173	08	9	Hispanic*SAT-W	-21.8603	3.2422	2,931.4842	2,764.2021	3,579.1705	-14.5862	2.5718	2,493.3040	2,282.8817	3,101.0909	10.5931
173	08	10	FYGPA	3.1183	0.0473	19.3542	19.0216	21.3295	-0.0894	0.0185	9.6694	10.5787	10.5931	0.2454
174	06	1	HSGPA	0.0000	0.2556	10.3373	16.9136	12.9830	-0.0140	0.0297	1.0210	1.9645	1.3477	0.1533
174	06	2	SAT-CR	0.0000	10.3373	6,752.7790	3,894.3005	4,515.0802	-0.4597	1.0210	714.3915	577.9781	528.7333	17.9154
174	06	3	SAT-M	0.0000	16.9136	3,894.3005	6,797.5160	3,578.8770	-1.0611	1.9645	577.9781	966.7081	539.2797	18.3940
174	06	4	SAT-W	0.0000	12.9830	4,515.0802	3,578.8770	5,728.1283	-0.5401	1.3477	528.7333	539.2797	627.0831	19.6686
174	06	5	Hispanic	0.1144	-0.0140	-0.4597	-1.0611	-0.5401	0.1016	-0.0124	-0.4071	-0.9397	-0.4783	-0.0085
174	06	6	Hispanic*HSGPA	-0.0139	0.0297	1.0210	1.9645	1.3477	-0.0124	0.0295	1.0146	1.9498	1.3402	0.0111
174	06	7	Hispanic*SAT-CR	-0.4584	1.0210	714.3915	577.9781	528.7333	-0.4071	1.0146	714.1808	577.4917	528.4857	2.0904
174	06	8	Hispanic*SAT-M	-1.0580	1.9645	577.9781	966.7081	539.2797	-0.9397	1.9498	577.4917	965.5856	538.7083	2.2257
174	06	9	Hispanic*SAT-W	-0.5385	1.3477	528.7333	539.2797	627.0831	-0.4783	1.3402	528.4857	538.7083	626.7923	2.2906
174	06	10	FYGPA	2.6977	0.1533	17.9154	18.3940	19.6686	-0.0085	0.0111	2.0904	2.2257	2.2906	0.5030
175	06	1	HSGPA	0.0000	0.1804	1.3515	3.1440	3.5865	-0.0050	0.0482	0.8913	1.3872	1.2367	0.1026
175	06	2	SAT-CR	0.0000	1.3515	5,246.6865	2,453.6359	3,234.3071	-7.5750	0.8913	1,440.8350	826.0141	946.7680	9.5370
175	06	3	SAT-M	0.0000	3.1440	2,453.6359	5,221.6003	2,170.9435	-7.2390	1.3872	826.0141	1,466.7647	720.0763	10.1900
175	06	4	SAT-W	0.0000	3.5865	3,234.3071	2,170.9435	4,531.1133	-6.0144	1.2367	946.7680	720.0763	1,197.1392	12.5774
175	06	5	Hispanic	0.2408	-0.0050	-7.5750	-7.2390	-6.0144	0.1829	-0.0038	-5.7508	-5.4958	-4.5660	-0.0479
175	06	6	Hispanic*HSGPA	-0.0050	0.0482	0.8913	1.3872	1.2367	-0.0038	0.0482	0.8538	1.3513	1.2068	0.0297
175	06	7	Hispanic*SAT-CR	-7.5714	0.8913	1,440.8350	826.0141	946.7680	-5.7508	0.8538	1,383.4816	771.2047	901.2308	3.8864
175	06	8	Hispanic*SAT-M	-7.2356	1.3872	826.0141	1,466.7647	720.0763	-5.4958	1.3513	771.2047	1,414.3864	676.5589	3.7725
175	06	9	Hispanic*SAT-W	-6.0115	1.2367	946.7680	720.0763	1,197.1392	-4.5660	1.2068	901.2308	676.5589	1,160.9837	3.9929
175	06	10	FYGPA	2.5941	0.1026	9.5370	10.1900	12.5774	-0.0479	0.0297	3.8864	3.7725	3.9929	0.7289
175	07	1	HSGPA	0.0000	0.1952	0.4580	2.6510	2.9600	0.0054	0.0566	0.7218	0.9501	1.1942	0.0980
175	07	2	SAT-CR	0.0000	0.4580	6,147.9769	2,829.4038	4,004.8604	-6.3237	0.7218	2,098.1708	1,098.1016	1,458.6155	12.3190
175	07	3	SAT-M	0.0000	2.6510	2,829.4038	5,506.9400	2,597.7442	-7.1348	0.9501	1,098.1016	1,803.9391	974.2908	10.6879
175	07	4	SAT-W	0.0000	2.9600	4,004.8604	2,597.7442	5,166.7007	-5.8869	1.1942	1,458.6155	974.2908	1,666.4321	14.3771
175	07	5	Hispanic	0.2728	0.0054	-6.3237	-7.1348	-5.8869	0.1985	0.0039	-4.5983	-5.1881	-4.2807	-0.0496
175	07	6	Hispanic*HSGPA	0.0054	0.0566	0.7218	0.9501	1.1942	0.0039	0.0565	0.7560	0.9886	1.2260	0.0260
175	07	7	Hispanic*SAT-CR	-6.3210	0.7218	2,098.1708	1,098.1016	1,458.6155	-4.5983	0.7560	2,058.1990	1,053.0028	1,421.4048	5.8804
175	07	8	Hispanic*SAT-M	-7.1317	0.9501	1,098.1016	1,803.9391	974.2908	-5.1881	0.9886	1,053.0028	1,753.0555	932.3072	4.7050
175	07	9	Hispanic*SAT-W	-5.8843	1.1942	1,458.6155	974.2908	1,666.4321	-4.2807	1.2260	1,421.4048	932.3072	1,631.7919	5.9106
175	07	10	FYGPA	2.6812	0.0980	12.3190	10.6879	14.3771	-0.0496	0.0260	5.8804	4.7050	5.9106	0.6367

## Appendix F

## White-Hispanic Raw Sample Covariance Matrices

ID	Yr.	Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
175	08	1	HSGPA	0.0000	0.1814	1.6846	3.4252	3.3361	-0.0041	0.0490	0.8604	1.4639	1.1817	0.1027
175	08	2	SAT-CR	0.0000	1.6846	6,029.7237	3,078.6223	3,854.9036	-8.3899	0.8604	1,870.8861	1,168.8732	1,284.4216	10.4965
175	08	3	SAT-M	0.0000	3.4252	3,078.6223	5,560.1913	2,556.0655	-9.4233	1.4639	1,168.8732	1,854.2682	995.2396	11.8369
175	08	4	SAT-W	0.0000	3.3361	3,854.9036	2,556.0655	5,161.6623	-7.5162	1.1817	1,284.4216	995.2396	1,561.4274	13.5804
175	08	5	Hispanic	0.2768	-0.0041	-8.3899	-9.4233	-7.5162	0.2003	-0.0030	-6.0673	-6.8147	-5.4355	-0.0494
175	08	6	Hispanic*HSGPA	-0.0041	0.0490	0.8604	1.4639	1.1817	-0.0030	0.0490	0.8258	1.4249	1.1506	0.0255
175	08	7	Hispanic*SAT-CR	-8.3864	0.8604	1,870.8861	1,168.8732	1,284.4216	-6.0673	0.8258	1,800.5252	1,089.8458	1,221.3882	4.4109
175	08	8	Hispanic*SAT-M	-9.4194	1.4639	1,168.8732	1,854.2682	995.2396	-6.8147	1.4249	1,089.8458	1,765.5067	924.4421	4.7090
175	08	9	Hispanic*SAT-W	-7.5130	1.1817	1,284.4216	995.2396	1,561.4274	-5.4355	1.1506	1,221.3882	924.4421	1,504.9582	4.7173
175	08	10	FYGPA	2.7206	0.1027	10.4965	11.8369	13.5804	-0.0494	0.0255	4.4109	4.7090	4.7173	0.5906
176	06	1	HSGPA	0.0000	0.1711	2.3164	3.3825	3.1920	-0.0016	0.0055	0.4210	0.5414	0.3216	0.0803
176	06	2	SAT-CR	0.0000	2.3164	6,836.4192	3,313.1421	4,859.6156	-1.4916	0.4210	319.3265	216.4941	265.0851	18.0745
176	06	3	SAT-M	0.0000	3.3825	3,313.1421	5,917.3254	2,894.3995	-1.6272	0.5414	216.4941	318.9315	177.9866	13.6085
176	06	4	SAT-W	0.0000	3.1920	4,859.6156	2,894.3995	6,269.1973	-1.5089	0.3216	265.0851	177.9866	324.4568	16.5829
176	06	5	Hispanic	0.0287	-0.0016	-1.4916	-1.6272	-1.5089	0.0279	-0.0015	-1.4488	-1.5805	-1.4656	-0.0069
176	06	6	Hispanic*HSGPA	-0.0016	0.0055	0.4210	0.5414	0.3216	-0.0015	0.0055	0.4187	0.5389	0.3193	0.0034
176	06	7	Hispanic*SAT-CR	-1.4907	0.4210	319.3265	216.4941	265.0851	-1.4488	0.4187	317.1029	214.0683	262.8357	1.0108
176	06	8	Hispanic*SAT-M	-1.6262	0.5414	216.4941	318.9315	177.9866	-1.5805	0.5389	214.0683	316.2852	175.5327	1.1043
176	06	9	Hispanic*SAT-W	-1.5080	0.3216	265.0851	177.9866	324.4568	-1.4656	0.3193	262.8357	175.5327	322.1813	1.1944
176	06	10	FYGPA	2.8885	0.0803	18.0745	13.6085	16.5829	-0.0069	0.0034	1.0108	1.1043	1.1944	0.3812
176	07	1	HSGPA	0.0000	0.1669	5.4298	5.4489	6.7847	-0.0088	0.0113	0.7974	0.7519	0.5882	0.0953
176	07	2	SAT-CR	0.0000	5.4298	7,010.5379	3,402.0518	4,735.9524	-2.1366	0.7974	522.4058	317.9580	330.4743	16.0572
176	07	3	SAT-M	0.0000	5.4489	3,402.0518	5,807.5442	2,865.0440	-2.0553	0.7519	317.9580	389.5657	240.3598	13.7328
176	07	4	SAT-W	0.0000	6.7847	4,735.9524	2,865.0440	6,001.5915	-1.4893	0.5882	330.4743	240.3598	365.8474	17.5677
176	07	5	Hispanic	0.0477	-0.0088	-2.1366	-2.0553	-1.4893	0.0455	-0.0084	-2.0346	-1.9572	-1.4182	-0.0099
176	07	6	Hispanic*HSGPA	-0.0088	0.0113	0.7974	0.7519	0.5882	-0.0084	0.0112	0.7785	0.7338	0.5751	0.0073
176	07	7	Hispanic*SAT-CR	-2.1351	0.7974	522.4058	317.9580	330.4743	-2.0346	0.7785	517.8440	313.5698	327.2945	1.5562
176	07	8	Hispanic*SAT-M	-2.0538	0.7519	317.9580	389.5657	240.3598	-1.9572	0.7338	313.5698	385.3445	237.3010	1.0652
176	07	9	Hispanic*SAT-W	-1.4883	0.5882	330.4743	240.3598	365.8474	-1.4182	0.5751	327.2945	237.3010	363.6309	1.6487
176	07	10	FYGPA	2.8741	0.0953	16.0572	13.7328	17.5677	-0.0099	0.0073	1.5562	1.0652	1.6487	0.3645
176	08	1	HSGPA	0.0000	0.1586	3.2400	3.8409	4.5011	-0.0084	0.0113	0.2109	0.2568	0.3662	0.0852
176	08	2	SAT-CR	0.0000	3.2400	6,888.4002	2,847.2243	4,494.3623	-2.2687	0.2109	474.6732	267.3577	360.4955	14.4574
176	08	3	SAT-M	0.0000	3.8409	2,847.2243	5,319.0351	2,553.9852	-1.7584	0.2568	267.3577	364.6021	250.2395	10.1050
176	08	4	SAT-W	0.0000	4.5011	4,494.3623	2,553.9852	5,929.5425	-1.9337	0.3662	360.4955	250.2395	435.4511	15.4294
176	08	5	Hispanic	0.0506	-0.0084	-2.2687	-1.7584	-1.9337	0.0481	-0.0080	-2.1539	-1.6694	-1.8359	-0.0040
176	08	6	Hispanic*HSGPA	-0.0084	0.0113	0.2109	0.2568	0.3662	-0.0080	0.0112	0.1919	0.2421	0.3500	0.0059
176	08	7	Hispanic*SAT-CR	-2.2675	0.2109	474.6732	267.3577	360.4955	-2.1539	0.1919	469.5290	263.3706	356.1109	0.8496
176	08	8	Hispanic*SAT-M	-1.7574	0.2568	267.3577	364.6021	250.2395	-1.6694	0.2421	263.3706	361.5118	246.8411	0.9227
176	08	9	Hispanic*SAT-W	-1.9327	0.3662	360.4955	250.2395	435.4511	-1.8359	0.3500	356.1109	246.8411	431.7138	0.9036
176	08	10	FYGPA	2.8837	0.0852	14.4574	10.1050	15.4294	-0.0040	0.0059	0.8496	0.9227	0.9036	0.3408



Appendix F

White-Hispanic Raw Sample Covariance Matrices

ID	Yr. Var.	Variable	Mean	1	2	3	4	5	6	7	8	9	10
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## Appendix G.

## Male-Female Model Parameter Estimates for Full Model, without Corrections

ID	Yr.	n	$\alpha_F$	Int.	Raw Regression Parameter Estimates									$\sigma^2$	R <sup>2</sup>
					HSGPA	SAT-CR	SAT-M	SAT-W	Female	HSGPA x Fem.	SAT-CR x Fem.	SAT-M x Fem.	SAT-W x Fem.		
1	07	1,798	.885	2.8071	0.4195	0.0008	0.0013	0.0014	0.2034	-0.0912	-0.0001	0.0001	0.0001	0.358	.215
1	08	1,548	.866	2.8555	0.3813	0.0002	0.0017	0.0020	0.1984	-0.0188	0.0003	-0.0004	-0.0005	0.281	.255
2	08	1,042	.846	3.1448	0.3813	0.0003	0.0003	0.0013	0.1812	-0.1141	0.0001	0.0008	-0.0002	0.138	.322
3	08	3,090	.859	3.1420	0.4641	0.0001	0.0011	0.0016	0.2568	-0.1381	0.0002	0.0001	-0.0004	0.324	.228
4	06	469	.859	2.4579	0.4364	0.0013	0.0007	0.0007	0.1564	0.0527	-0.0003	0.0012	0.0000	0.207	.370
4	07	487	.859	2.4515	0.4704	0.0003	-0.0001	0.0024	0.3175	-0.0155	0.0003	0.0015	-0.0005	0.225	.439
4	08	417	.859	2.5271	0.6337	0.0007	0.0003	0.0026	0.1037	-0.2061	0.0001	0.0013	-0.0009	0.242	.413
5	08	306	.859	2.7756	0.5407	-0.0010	0.0022	0.0018	0.2955	-0.0996	0.0005	-0.0008	0.0003	0.373	.426
6	06	538	.821	3.0370	0.5406	0.0009	0.0012	0.0006	0.1411	-0.1616	-0.0008	-0.0005	0.0011	0.193	.322
6	07	506	.832	3.0199	0.4190	0.0013	0.0004	0.0007	0.1285	-0.0336	-0.0013	0.0008	0.0014	0.213	.343
6	08	494	.826	3.0361	0.4862	0.0009	0.0009	0.0012	0.1120	-0.0345	-0.0004	0.0001	0.0000	0.210	.320
7	07	1,124	.859	2.4569	0.3794	0.0014	0.0003	0.0005	0.1218	-0.0049	-0.0010	0.0015	0.0007	0.539	.143
8	06	253	.859	3.2380	0.1614	0.0012	0.0000	0.0014	0.1482	-0.0326	-0.0010	0.0005	-0.0002	0.157	.230
8	07	217	.859	3.2730	0.1686	-0.0004	0.0023	0.0013	0.1242	-0.0028	0.0008	-0.0015	0.0001	0.121	.301
8	08	212	.859	3.2696	0.2767	-0.0006	0.0002	0.0019	0.1852	-0.1264	0.0006	0.0016	-0.0014	0.116	.240
9	07	3,273	.852	2.8174	0.3905	0.0003	0.0010	0.0017	0.1711	-0.0961	0.0010	0.0005	-0.0002	0.271	.311
9	08	3,081	.852	2.8471	0.3715	0.0007	0.0011	0.0014	0.1798	0.0373	0.0005	0.0004	-0.0003	0.266	.301
10	06	1,000	.772	3.3239	0.2330	0.0005	0.0001	0.0008	0.1037	0.0671	0.0003	0.0003	-0.0002	0.111	.183
10	07	1,100	.756	3.3390	0.2831	0.0005	0.0008	0.0008	0.0846	0.0141	-0.0002	0.0004	0.0001	0.110	.206
10	08	797	.764	3.3125	0.2663	0.0000	0.0005	0.0015	0.0617	0.0392	0.0012	-0.0002	-0.0010	0.129	.210
11	06	1,441	.824	2.6909	0.4129	0.0009	0.0010	0.0005	0.1574	0.0435	0.0000	0.0005	0.0001	0.468	.185
11	07	1,473	.836	2.6655	0.4423	-0.0001	0.0005	0.0017	0.1815	-0.0083	0.0003	0.0011	-0.0008	0.517	.153
11	08	1,492	.830	2.6811	0.4907	0.0003	0.0008	0.0012	0.1976	-0.0805	0.0002	0.0009	-0.0006	0.492	.174
12	07	609	.859	2.1135	0.7986	0.0017	-0.0005	-0.0002	0.1451	-0.1128	-0.0035	0.0015	0.0016	0.923	.207
12	08	626	.859	2.1999	0.6492	-0.0008	-0.0005	0.0026	0.1243	0.0701	0.0014	0.0008	-0.0020	0.945	.185
13	06	1,637	.856	2.8298	0.4884	0.0005	-0.0002	0.0013	0.1877	-0.0986	0.0001	0.0012	-0.0004	0.283	.244
14	06	1,425	.866	3.0132	0.4758	0.0005	0.0003	0.0011	0.0483	-0.1058	-0.0002	0.0004	0.0005	0.226	.259
14	07	1,506	.863	2.9788	0.4578	0.0004	0.0010	0.0010	0.1454	-0.0732	0.0000	-0.0005	0.0001	0.225	.250
14	08	1,430	.844	3.0165	0.3555	0.0007	0.0011	0.0008	0.1088	0.0357	-0.0004	-0.0010	0.0007	0.171	.267
15	06	394	.859	3.0659	0.5638	0.0005	-0.0010	0.0000	0.1032	-0.2770	0.0004	0.0015	0.0012	0.243	.259
15	07	350	.859	3.0946	0.6601	-0.0014	0.0007	0.0018	0.0282	-0.2775	0.0027	-0.0009	-0.0003	0.257	.308
15	08	288	.859	2.9717	0.6669	-0.0004	-0.0002	0.0018	0.0237	-0.1702	0.0014	0.0005	-0.0014	0.359	.215
16	07	645	.845	2.7677	0.3633	-0.0013	0.0019	0.0026	-0.0410	0.0124	0.0008	0.0006	-0.0013	0.631	.265
16	08	636	.845	2.8043	0.3681	0.0004	0.0019	0.0008	0.0714	0.0873	-0.0003	-0.0008	0.0003	0.379	.330

## Appendix G.

## Male-Female Model Parameter Estimates for Full Model, without Corrections

Raw Regression Parameter Estimates															
ID	Yr.	n	$\alpha_F$	Int.	HSGPA	SAT-CR	SAT-M	SAT-W	Female	HSGPA x Fem.	SAT-CR x Fem.	SAT-M x Fem.	SAT-W x Fem.	$\sigma^2$	R <sup>2</sup>
17	06	302	.859	2.7761	0.4139	0.0001	0.0007	0.0011	0.3009	-0.1193	-0.0010	0.0003	0.0004	0.398	.202
17	07	238	.859	2.7854	0.4373	0.0007	0.0019	-0.0012	0.3420	0.0484	-0.0001	-0.0012	0.0020	0.220	.361
17	08	355	.859	2.8827	0.3167	-0.0019	0.0015	0.0008	0.2985	0.0081	0.0025	-0.0014	0.0002	0.247	.240
18	07	286	.859	2.3175	0.3310	0.0001	0.0001	0.0010	0.2725	0.1748	-0.0018	0.0013	0.0001	0.668	.147
18	08	291	.859	2.4477	0.5729	0.0009	0.0026	-0.0020	0.2374	-0.1494	-0.0001	-0.0015	0.0036	0.572	.222
19	06	462	.829	2.9663	0.2484	0.0005	0.0011	0.0018	0.0458	0.2319	-0.0002	0.0003	-0.0015	0.177	.406
19	07	457	.838	2.9220	0.4750	0.0002	0.0008	0.0014	0.0846	-0.2926	0.0007	0.0001	0.0003	0.229	.324
19	08	917	.844	2.7734	0.4003	0.0000	0.0016	0.0013	0.1619	0.0986	-0.0001	-0.0007	0.0003	0.401	.275
20	08	799	.859	3.2054	0.3711	-0.0002	0.0013	0.0020	0.1028	-0.0087	0.0003	-0.0008	-0.0003	0.200	.253
21	07	895	.848	2.6529	0.5821	-0.0002	0.0007	0.0022	0.1518	-0.0906	-0.0008	0.0007	0.0002	0.594	.240
21	08	896	.853	2.7427	0.4353	-0.0010	0.0014	0.0030	0.0526	-0.0697	0.0015	0.0012	-0.0021	0.681	.191
22	06	1,620	.832	3.3204	0.3883	0.0007	0.0007	0.0010	0.0367	-0.0892	0.0002	0.0000	0.0005	0.141	.254
23	06	574	.866	2.9026	0.5316	-0.0004	0.0009	0.0009	0.1104	-0.0055	0.0018	-0.0008	0.0003	0.251	.279
23	08	636	.834	2.9525	0.4297	0.0013	0.0014	0.0007	0.1347	-0.1996	-0.0008	-0.0002	0.0012	0.231	.288
24	06	332	.859	2.9713	0.5039	0.0012	0.0005	0.0016	0.1832	-0.0720	0.0007	0.0003	-0.0012	0.322	.383
24	07	380	.859	3.0280	0.5251	0.0010	0.0008	0.0008	0.1806	-0.0690	-0.0004	0.0006	0.0000	0.240	.423
25	06	310	.859	3.2679	0.1401	0.0007	0.0007	0.0008	0.1604	0.0163	0.0011	-0.0004	0.0003	0.090	.373
26	06	6,430	.859	3.0745	0.3425	0.0005	0.0016	0.0017	0.1544	-0.1266	0.0003	0.0002	-0.0002	0.336	.256
26	07	6,433	.859	2.9797	0.4594	0.0005	0.0017	0.0019	0.1658	-0.1224	0.0006	-0.0001	-0.0005	0.387	.259
26	08	5,627	.859	3.0738	0.3732	0.0004	0.0014	0.0016	0.1213	-0.0526	0.0002	0.0003	-0.0002	0.339	.234
27	06	2,070	.874	3.1369	0.2340	0.0008	0.0000	0.0002	0.1404	0.1059	-0.0007	0.0005	0.0006	0.330	.112
27	07	1,615	.864	3.1533	0.4348	0.0011	0.0004	0.0007	0.1588	-0.1731	-0.0010	0.0001	0.0008	0.306	.163
27	08	1,870	.847	3.1182	0.3747	0.0004	0.0005	0.0009	0.1922	-0.0968	0.0003	0.0000	0.0001	0.298	.156
28	07	361	.859	2.3439	0.5036	-0.0002	-0.0010	0.0014	0.0840	-0.0930	0.0004	0.0036	-0.0012	0.895	.173
28	08	366	.859	2.3779	0.2985	-0.0005	-0.0004	0.0031	0.0890	0.2266	0.0013	0.0019	-0.0040	0.849	.167
29	06	1,738	.874	2.6690	0.4736	0.0007	0.0004	0.0015	0.1892	0.0419	-0.0004	0.0011	-0.0003	0.557	.246
29	07	1,962	.874	2.6970	0.5803	-0.0001	0.0006	0.0013	0.2379	-0.0418	0.0006	0.0008	0.0001	0.538	.261
29	08	2,167	.874	2.7895	0.6005	0.0000	-0.0002	0.0014	0.1875	-0.1778	0.0006	0.0009	0.0006	0.427	.278
30	06	232	.860	2.6498	0.3407	0.0008	0.0017	0.0013	0.2049	0.1902	0.0010	-0.0011	0.0000	0.302	.445
31	07	1,635	.879	2.1195	0.5286	0.0008	0.0019	0.0000	0.2842	-0.0574	0.0012	0.0003	0.0008	0.700	.228
31	08	1,720	.876	2.2735	0.6461	-0.0001	0.0011	0.0009	0.1419	-0.2246	0.0011	0.0011	0.0007	0.648	.242
32	08	728	.859	3.0679	0.3862	0.0005	0.0006	0.0007	0.1652	-0.1072	0.0000	0.0001	0.0002	0.162	.278
33	06	3,446	.876	3.0214	0.4563	0.0008	0.0006	0.0014	0.1490	0.0320	0.0000	0.0002	-0.0004	0.284	.293

## Appendix G.

## Male-Female Model Parameter Estimates for Full Model, without Corrections

Raw Regression Parameter Estimates															
ID	Yr.	n	$\alpha_F$	Int.	HSGPA	SAT-CR	SAT-M	SAT-W	Female	x Fem.	SAT-CR	SAT-M	SAT-W	$\sigma^2$	R <sup>2</sup>
34	06	1,727	.854	2.9189	0.5868	-0.0005	0.0012	0.0010	0.1508	-0.1173	0.0006	-0.0003	0.0004	0.358	.246
34	07	1,834	.830	2.9554	0.5368	-0.0004	0.0011	0.0017	0.1518	0.0585	0.0002	0.0000	-0.0007	0.315	.282
34	08	1,835	.847	2.9316	0.5297	0.0001	0.0010	0.0015	0.1324	0.0365	0.0003	-0.0001	-0.0005	0.349	.277
35	06	1,018	.845	3.1324	0.3691	0.0007	0.0012	0.0011	0.1012	-0.0201	-0.0001	0.0005	0.0002	0.194	.268
35	07	973	.824	3.0779	0.3749	-0.0001	0.0020	0.0011	0.0456	0.0465	0.0010	-0.0008	0.0001	0.185	.253
35	08	875	.835	3.0935	0.4602	0.0008	0.0016	0.0006	0.1011	0.0298	-0.0009	-0.0002	0.0006	0.208	.258
36	07	401	.859	2.9359	0.4941	0.0019	-0.0001	0.0008	0.2336	-0.2052	-0.0010	0.0017	0.0004	0.249	.368
36	08	373	.859	2.9913	0.5391	0.0015	0.0013	0.0001	0.1486	-0.1499	-0.0016	0.0000	0.0019	0.207	.392
37	07	412	.859	2.4602	0.7132	0.0026	0.0004	0.0003	0.0449	-0.0646	-0.0019	0.0000	0.0013	0.637	.246
37	08	410	.859	2.4576	0.7224	0.0019	0.0007	-0.0003	0.0464	0.1789	-0.0005	-0.0003	0.0003	0.724	.251
38	07	204	.859	2.9833	0.3751	0.0004	0.0015	0.0014	0.2281	0.1175	0.0004	-0.0005	0.0003	0.222	.394
38	08	172	.859	3.0383	0.5806	0.0008	0.0012	0.0009	0.2067	-0.6029	-0.0008	0.0012	0.0002	0.165	.428
39	07	301	.859	2.8937	0.3072	0.0008	0.0011	0.0005	0.0642	-0.2105	0.0004	0.0018	0.0006	0.188	.257
40	06	2,525	.859	3.0271	0.3800	0.0004	0.0006	0.0013	0.1932	-0.0937	0.0007	0.0004	-0.0004	0.236	.264
40	07	2,553	.859	3.0965	0.4396	0.0011	0.0006	0.0010	0.1247	-0.1259	-0.0006	0.0002	-0.0001	0.225	.270
40	08	2,442	.857	3.0487	0.4566	0.0010	0.0006	0.0008	0.1247	-0.1307	-0.0004	0.0002	0.0001	0.250	.217
41	07	5,406	.855	3.0475	0.3225	0.0006	0.0006	0.0011	0.1378	-0.0112	0.0001	0.0006	0.0000	0.286	.162
41	08	4,323	.855	3.1179	0.2635	0.0004	0.0008	0.0009	0.1288	0.0939	0.0002	0.0001	0.0000	0.252	.162
42	07	975	.759	3.4459	0.2685	0.0004	0.0004	0.0009	0.0187	-0.1329	0.0004	0.0009	-0.0003	0.128	.133
42	08	876	.759	3.5106	0.1592	0.0003	0.0006	0.0014	-0.0342	-0.1283	0.0002	-0.0001	0.0001	0.117	.148
43	06	393	.859	3.2769	0.2820	0.0020	0.0005	0.0002	0.0637	-0.1597	-0.0013	0.0006	0.0011	0.113	.328
43	07	443	.859	3.2903	0.3000	0.0012	0.0016	0.0008	-0.0188	0.0299	0.0002	-0.0006	0.0000	0.113	.391
43	08	299	.859	3.2811	0.2411	0.0008	0.0019	0.0007	0.0352	-0.0100	-0.0003	-0.0008	0.0008	0.098	.385
44	06	303	.841	2.7532	0.4877	0.0009	0.0009	0.0025	0.1369	-0.0605	0.0005	0.0004	-0.0021	0.333	.365
45	06	1,125	.821	2.8585	0.3036	-0.0010	0.0009	0.0019	0.1613	0.0218	0.0016	0.0009	-0.0007	0.475	.148
45	07	1,316	.820	2.7709	0.5101	0.0015	-0.0001	0.0010	0.2960	-0.1534	-0.0007	0.0014	0.0000	0.446	.218
45	08	1,222	.823	2.7028	0.5277	0.0007	0.0014	0.0002	0.2312	-0.1506	-0.0006	-0.0002	0.0011	0.520	.178
46	08	414	.864	3.0207	0.3001	0.0006	0.0021	0.0007	0.1396	0.1506	0.0000	-0.0013	0.0007	0.178	.424
47	08	975	.905	2.3374	0.6706	0.0008	0.0000	0.0017	0.1157	-0.2398	0.0003	0.0008	0.0001	0.581	.236
48	06	789	.794	3.2210	0.3889	0.0001	0.0007	0.0012	0.1052	-0.0986	0.0006	-0.0004	-0.0004	0.199	.215
48	07	787	.811	3.1747	0.4555	0.0004	0.0000	0.0005	0.2060	-0.1910	0.0004	0.0007	0.0000	0.202	.209
48	08	722	.803	3.1835	0.5068	0.0007	0.0001	0.0016	0.1541	-0.1892	0.0001	0.0007	-0.0009	0.173	.301
49	06	2,352	.854	2.6817	0.4478	0.0011	0.0005	0.0009	0.1529	-0.0668	0.0000	0.0004	0.0007	0.362	.265
49	07	2,580	.856	2.6934	0.4529	0.0010	0.0009	0.0010	0.1731	-0.1013	0.0001	0.0008	0.0003	0.340	.283
49	08	2,412	.847	2.5897	0.4961	0.0009	0.0006	0.0013	0.2496	-0.1156	0.0000	0.0003	0.0002	0.367	.264

## Appendix G.

## Male-Female Model Parameter Estimates for Full Model, without Corrections

Raw Regression Parameter Estimates															
ID	Yr.	n	$\alpha_F$	Int.	HSGPA	SAT-CR	SAT-M	SAT-W	Female	x Fem.	SAT-CR	SAT-M	SAT-W	$\sigma^2$	R <sup>2</sup>
50	06	190	.859	3.0874	0.5390	-0.0010	0.0016	0.0001	-0.0876	-0.6108	0.0003	0.0018	0.0014	0.376	.197
53	06	2,573	.846	3.0201	0.4800	0.0009	0.0004	0.0013	0.1632	-0.0681	-0.0001	0.0003	0.0001	0.272	.246
53	07	3,183	.838	3.0613	0.4055	0.0012	0.0005	0.0007	0.1360	0.0026	-0.0005	0.0003	0.0003	0.228	.284
53	08	2,836	.854	3.0634	0.4070	0.0007	0.0011	0.0009	0.1148	-0.0090	0.0001	0.0001	0.0002	0.225	.250
54	06	203	.859	2.5777	0.8998	-0.0009	-0.0006	0.0033	0.3461	-0.5268	0.0015	0.0018	-0.0010	0.565	.414
55	07	442	.859	2.2170	0.4177	0.0013	-0.0003	0.0028	0.2488	0.0086	-0.0002	0.0008	-0.0007	0.532	.276
55	08	390	.859	2.3232	0.3066	-0.0004	0.0005	0.0004	0.2065	0.0578	-0.0005	0.0011	0.0025	0.541	.178
56	06	354	.859	3.2150	0.2064	0.0007	0.0013	0.0009	0.1149	0.1084	0.0002	-0.0004	-0.0003	0.137	.314
56	07	358	.859	3.2194	0.1665	0.0013	-0.0003	0.0007	0.1156	0.2542	-0.0005	0.0003	0.0000	0.126	.258
56	08	320	.859	3.2697	0.3410	0.0014	0.0008	0.0013	0.0719	-0.0696	-0.0009	0.0002	0.0003	0.107	.386
57	07	398	.859	2.9440	0.5335	0.0008	0.0003	0.0008	0.1781	-0.1281	0.0005	0.0009	0.0006	0.259	.325
58	06	2,746	.899	2.4739	0.6378	0.0004	0.0006	0.0010	0.2147	-0.1675	0.0001	0.0011	0.0002	0.840	.146
58	07	2,594	.894	2.4334	0.5832	0.0002	0.0013	0.0018	0.2073	0.0159	0.0006	0.0002	-0.0003	0.749	.193
58	08	2,588	.904	2.5164	0.5933	0.0001	0.0010	0.0015	0.2482	0.0600	0.0009	0.0009	-0.0010	0.749	.184
59	06	3,686	.807	3.1204	0.4461	0.0001	0.0005	0.0007	0.1127	-0.0930	-0.0001	0.0003	0.0003	0.248	.194
59	07	3,583	.849	3.1974	0.4244	0.0007	0.0006	0.0006	0.1214	-0.1209	-0.0001	-0.0001	0.0004	0.218	.171
59	08	3,267	.829	3.2157	0.3392	0.0000	0.0007	0.0015	0.1288	-0.0311	0.0001	0.0003	-0.0005	0.197	.183
60	06	1,341	.892	2.7271	0.2575	-0.0001	-0.0006	0.0014	0.1712	-0.0310	0.0009	0.0007	-0.0006	0.388	.093
60	07	1,446	.892	2.5291	0.4182	-0.0003	0.0002	0.0009	0.2809	0.0335	0.0000	0.0013	0.0003	0.642	.128
60	08	1,375	.892	2.5620	0.4777	-0.0007	-0.0010	0.0015	0.2845	-0.1143	0.0002	0.0012	0.0002	0.585	.146
61	06	723	.859	2.6393	0.6214	0.0006	0.0001	0.0005	0.1949	-0.2196	-0.0006	0.0015	0.0010	0.470	.198
61	07	667	.880	2.5759	0.6069	0.0005	0.0007	0.0008	0.2242	0.0808	0.0012	0.0005	-0.0011	0.633	.204
61	08	790	.869	2.6471	0.5198	0.0008	0.0009	0.0008	0.3050	0.0671	0.0004	0.0011	-0.0012	0.484	.247
62	06	3,483	.859	2.9479	0.4022	0.0004	0.0009	0.0010	0.1262	-0.0182	0.0002	0.0003	0.0001	0.363	.178
64	06	3,707	.859	2.4364	0.4503	0.0001	0.0019	0.0015	0.1588	-0.0390	0.0007	0.0006	-0.0004	0.733	.186
65	08	459	.878	3.0914	0.4197	-0.0003	0.0023	0.0003	0.1900	0.0795	0.0006	-0.0020	0.0002	0.288	.244
66	06	2,971	.890	2.7687	0.6970	0.0001	0.0005	0.0014	0.3003	-0.2657	0.0001	0.0012	-0.0004	0.541	.212
66	07	3,555	.890	2.6355	0.7367	0.0003	0.0005	0.0019	0.2425	-0.1079	0.0001	0.0011	-0.0008	0.637	.233
67	08	151	.901	2.8189	0.5759	-0.0019	0.0021	0.0023	0.2364	0.2028	0.0024	-0.0011	-0.0014	0.613	.349
68	06	185	.859	2.3828	0.6616	-0.0041	0.0018	0.0021	0.1520	-0.3404	0.0059	-0.0020	-0.0002	0.907	.175
68	07	230	.859	2.3220	0.3720	-0.0007	-0.0003	0.0026	0.1249	0.2668	0.0027	0.0032	-0.0046	0.866	.186
69	07	1,815	.916	2.4918	0.6535	0.0001	-0.0001	0.0014	0.1621	-0.1330	-0.0011	0.0016	0.0008	0.856	.180
69	08	1,882	.916	2.5260	0.6698	-0.0002	0.0002	0.0014	0.2024	-0.2169	0.0002	0.0010	0.0003	0.797	.174
70	08	1,803	.859	2.8964	0.4518	0.0003	0.0015	0.0011	0.2102	-0.0785	0.0002	-0.0012	0.0002	0.321	.214

## Appendix G.

## Male-Female Model Parameter Estimates for Full Model, without Corrections

Raw Regression Parameter Estimates															
ID	Yr.	n	$\alpha_F$	Int.	HSGPA	SAT-CR	SAT-M	SAT-W	Female	HSGPA x Fem.	SAT-CR x Fem.	SAT-M x Fem.	SAT-W x Fem.	$\sigma^2$	R <sup>2</sup>
71	06	352	.786	3.2267	0.3972	0.0004	0.0003	0.0013	0.0440	-0.1772	-0.0002	0.0013	-0.0004	0.146	.199
71	08	320	.786	3.2334	0.3232	0.0008	0.0007	0.0009	0.1031	-0.2066	0.0003	0.0002	0.0000	0.125	.253
72	06	1,983	.840	2.7833	0.4988	0.0011	0.0009	0.0006	0.1474	0.0118	-0.0007	-0.0003	-0.0002	0.379	.167
73	06	1,512	.886	2.5762	0.4083	0.0006	0.0008	0.0006	0.2515	0.0900	0.0005	0.0007	-0.0005	0.378	.246
73	07	1,596	.882	2.4926	0.5041	-0.0003	-0.0002	0.0026	0.2599	0.0577	0.0001	0.0017	-0.0010	0.565	.238
73	08	1,359	.882	2.5460	0.6238	0.0003	0.0009	0.0010	0.2659	-0.0923	-0.0007	-0.0005	0.0019	0.462	.268
74	07	2,545	.859	2.3657	0.5015	-0.0002	0.0019	0.0018	0.1999	-0.1212	0.0004	0.0011	-0.0001	0.722	.194
74	08	2,775	.859	2.3966	0.6056	-0.0008	0.0023	0.0022	0.1934	-0.1411	0.0007	0.0003	-0.0006	0.771	.199
75	06	5,535	.878	2.6828	0.5797	-0.0006	0.0009	0.0012	0.2423	-0.0193	0.0011	0.0006	-0.0007	0.530	.231
75	08	4,629	.870	2.7972	0.5373	-0.0004	0.0009	0.0013	0.2027	-0.0159	0.0005	0.0001	-0.0002	0.410	.229
76	08	158	.859	3.0863	0.1942	0.0003	0.0009	0.0007	0.2188	0.1594	0.0014	-0.0004	-0.0011	0.153	.198
77	06	1,830	.878	2.9298	0.4869	0.0000	0.0003	0.0015	0.1589	-0.0395	0.0004	0.0007	-0.0004	0.388	.261
77	07	1,260	.874	3.4284	0.1599	0.0005	0.0002	0.0007	0.0696	0.0087	-0.0002	0.0001	-0.0001	0.065	.267
77	08	1,717	.874	3.0323	0.5712	0.0001	0.0000	0.0017	0.1374	-0.1711	0.0001	0.0009	-0.0001	0.307	.304
78	06	3,302	.859	2.9512	0.3303	0.0008	0.0008	0.0009	0.0685	-0.0743	0.0005	0.0001	0.0002	0.191	.218
78	07	3,334	.859	2.9502	0.3254	0.0012	0.0006	0.0012	0.0777	-0.0822	-0.0003	0.0003	0.0001	0.221	.195
78	08	2,925	.859	2.9739	0.3056	0.0007	0.0012	0.0011	0.0553	-0.0397	0.0003	-0.0002	0.0000	0.198	.188
79	08	355	.859	3.0349	0.4985	0.0023	0.0004	0.0000	0.1708	-0.0815	-0.0016	0.0004	0.0014	0.211	.359
80	07	2,004	.838	2.9312	0.4895	0.0006	0.0002	0.0008	0.1907	-0.1360	-0.0002	0.0003	0.0006	0.238	.219
81	07	435	.859	2.1439	0.6360	0.0011	0.0017	0.0012	0.1008	0.1051	0.0014	-0.0013	-0.0019	0.755	.274
82	06	1,677	.845	2.8289	0.4243	0.0007	0.0000	0.0012	0.1240	0.0019	-0.0003	0.0010	0.0003	0.394	.187
83	06	107	.859	3.0664	0.9844	-0.0005	-0.0008	0.0012	0.0960	-0.1933	0.0028	0.0020	-0.0022	0.353	.370
83	07	123	.859	2.7517	0.5969	-0.0006	0.0007	0.0015	0.1062	0.1942	-0.0032	0.0001	0.0040	0.376	.292
83	08	149	.859	2.9110	0.5115	-0.0006	0.0021	0.0017	0.0443	0.1468	0.0016	0.0005	-0.0001	0.440	.311
84	06	895	.881	2.9761	0.4653	0.0016	0.0012	-0.0003	0.2185	-0.0867	-0.0013	-0.0005	0.0014	0.324	.259
85	06	6,611	.867	2.7913	0.3898	0.0007	0.0013	0.0011	0.1375	-0.0098	0.0002	0.0004	0.0002	0.351	.212
85	07	6,967	.859	2.8100	0.3603	0.0004	0.0011	0.0015	0.1377	0.0329	0.0009	0.0003	-0.0005	0.349	.216
85	08	6,730	.863	2.8509	0.4055	0.0003	0.0013	0.0013	0.1387	-0.0820	0.0003	0.0002	0.0001	0.334	.194
86	08	165	.843	2.7803	0.7535	-0.0019	0.0008	0.0021	0.1056	0.0098	0.0014	-0.0011	0.0008	0.646	.287
87	08	123	.908	2.9613	0.7353	-0.0008	-0.0014	0.0052	0.1251	-0.3417	0.0001	0.0038	-0.0028	0.549	.424
88	06	2,538	.866	2.9239	0.4206	0.0005	0.0010	0.0009	0.1578	-0.0678	-0.0001	-0.0002	0.0005	0.277	.276
88	07	2,513	.856	2.9454	0.4309	0.0012	0.0003	0.0013	0.1025	-0.0350	-0.0004	0.0002	0.0001	0.259	.299
88	08	3,161	.852	2.9810	0.4755	0.0012	0.0005	0.0009	0.1206	-0.0942	-0.0003	0.0003	0.0002	0.246	.297

## Appendix G.

## Male-Female Model Parameter Estimates for Full Model, without Corrections

Raw Regression Parameter Estimates															
ID	Yr.	n	$\alpha_F$	Int.	HSGPA	SAT-CR	SAT-M	SAT-W	Female	HSGPA x Fem.	SAT-CR x Fem.	SAT-M x Fem.	SAT-W x Fem.	$\sigma^2$	R <sup>2</sup>
89	06	1,178	.853	2.5327	0.5028	0.0006	0.0012	0.0005	0.2765	0.0226	-0.0001	0.0002	0.0005	0.507	.337
89	07	1,351	.873	2.4348	0.5970	0.0002	0.0005	0.0001	0.2758	-0.0144	0.0003	0.0004	0.0010	0.638	.279
89	08	1,247	.904	2.4959	0.6135	0.0000	0.0000	0.0010	0.2409	-0.0349	-0.0006	0.0016	0.0006	0.680	.288
90	08	2,364	.888	2.9471	0.5310	0.0008	0.0007	0.0014	0.1622	-0.0804	0.0001	0.0007	-0.0002	0.371	.277
91	06	4,546	.857	3.1468	0.3551	0.0003	0.0012	0.0013	0.0805	0.0375	0.0008	0.0001	-0.0006	0.199	.242
91	07	3,976	.851	3.1362	0.3687	0.0000	0.0012	0.0011	0.0856	0.0617	0.0007	0.0003	-0.0001	0.263	.184
92	06	708	.828	3.2943	0.4065	0.0003	0.0002	0.0005	0.2037	-0.2308	-0.0003	0.0005	0.0008	0.181	.243
92	07	614	.884	3.2970	0.2421	0.0002	0.0006	0.0015	0.2397	-0.0175	0.0006	0.0001	-0.0013	0.146	.288
92	08	647	.838	3.3634	0.2228	0.0003	0.0005	0.0014	0.1430	-0.0422	0.0000	0.0005	-0.0008	0.150	.205
93	07	464	.859	2.0975	0.6013	0.0016	0.0030	-0.0006	0.3796	0.0153	-0.0007	-0.0027	0.0025	0.841	.272
93	08	588	.859	2.2612	0.7055	0.0005	-0.0009	0.0018	0.1703	-0.1191	-0.0007	0.0041	-0.0015	0.789	.251
94	07	985	.811	2.9551	0.3216	0.0006	0.0018	0.0010	0.0611	0.0514	0.0003	-0.0007	0.0001	0.309	.241
95	06	469	.862	2.9665	0.4423	0.0014	-0.0002	0.0012	0.1118	-0.0850	-0.0008	0.0016	-0.0003	0.240	.273
95	07	434	.862	2.9069	0.4606	0.0000	0.0003	0.0015	0.1776	0.0823	0.0005	-0.0007	0.0005	0.213	.357
95	08	440	.862	2.8675	0.4076	0.0005	0.0003	0.0013	0.2684	0.1024	0.0007	0.0007	-0.0011	0.232	.364
96	07	176	.859	2.7825	0.6028	0.0008	-0.0018	0.0035	0.2407	0.0956	-0.0013	0.0005	-0.0006	0.381	.439
96	08	190	.859	3.0673	0.4282	0.0007	0.0018	0.0013	-0.0584	0.0711	-0.0018	-0.0019	0.0022	0.416	.296
97	06	526	.859	3.3626	0.3310	0.0006	0.0009	0.0014	0.0445	-0.0525	0.0006	-0.0002	-0.0010	0.110	.324
98	06	2,511	.851	3.0679	0.4714	0.0004	0.0005	0.0008	0.1282	-0.1167	0.0006	0.0007	-0.0006	0.215	.255
99	08	514	.859	3.1367	0.4918	0.0005	0.0009	0.0011	0.2163	-0.1105	0.0002	0.0001	-0.0004	0.181	.334
100	06	2,482	.843	2.8774	0.5683	-0.0001	0.0023	0.0013	0.1408	-0.0326	0.0007	-0.0007	-0.0010	0.430	.190
100	07	2,304	.829	2.9722	0.5600	0.0000	0.0024	0.0009	0.1150	0.0200	0.0001	-0.0008	0.0000	0.373	.194
100	08	2,044	.826	2.9950	0.5660	0.0003	0.0020	0.0010	0.0922	-0.0077	0.0004	-0.0002	-0.0005	0.360	.180
101	07	3,224	.859	3.2603	0.3110	0.0009	0.0007	0.0012	0.1039	-0.0414	0.0000	-0.0002	-0.0002	0.160	.233
101	08	2,416	.859	3.2823	0.2958	0.0006	0.0011	0.0013	0.0780	-0.0319	0.0004	-0.0004	-0.0003	0.169	.232
102	06	4,522	.859	3.1459	0.2944	0.0006	0.0006	0.0007	0.0795	-0.0511	0.0000	0.0002	0.0004	0.161	.232
102	08	4,473	.859	3.1884	0.2601	0.0003	0.0009	0.0012	0.0823	-0.0362	0.0006	-0.0003	-0.0003	0.139	.245
103	06	320	.859	2.3202	0.7097	0.0005	0.0014	0.0005	0.2455	-0.1170	0.0007	0.0001	-0.0003	0.715	.249
103	07	343	.859	2.0030	0.6129	0.0000	0.0007	0.0025	0.2606	0.2302	0.0024	0.0001	-0.0025	0.768	.312
103	08	337	.859	2.4625	0.6584	0.0023	-0.0005	0.0001	0.2109	0.1862	-0.0025	0.0016	0.0003	0.835	.238
104	07	388	.835	3.0836	0.2238	0.0000	0.0015	0.0015	0.1735	0.1583	0.0001	0.0004	0.0000	0.182	.243
105	08	492	.859	3.0301	0.3600	-0.0002	0.0003	0.0022	0.1688	0.0425	0.0005	0.0003	-0.0010	0.196	.280
106	06	2,514	.874	2.9775	0.4707	0.0006	0.0017	0.0008	0.2060	-0.0744	0.0004	-0.0003	0.0006	0.332	.245
106	07	2,496	.874	3.0677	0.4699	-0.0003	0.0014	0.0020	0.2129	-0.0957	0.0009	0.0004	-0.0008	0.303	.257
106	08	2,310	.874	3.0980	0.4803	0.0005	0.0014	0.0009	0.2063	0.0234	0.0001	0.0002	0.0007	0.292	.258

## Appendix G.

## Male-Female Model Parameter Estimates for Full Model, without Corrections

Raw Regression Parameter Estimates															
ID	Yr.	n	$\alpha_F$	Int.	HSGPA	SAT-CR	SAT-M	SAT-W	Female	HSGPA x Fem.	SAT-CR x Fem.	SAT-M x Fem.	SAT-W x Fem.	$\sigma^2$	R <sup>2</sup>
107	08	347	.859	2.6948	0.4425	-0.0032	-0.0001	0.0039	0.1711	0.0064	0.0037	-0.0001	-0.0026	0.450	.231
108	06	327	.841	2.9312	0.4459	0.0002	-0.0008	0.0015	-0.0192	0.0352	0.0006	0.0005	0.0002	0.252	.256
108	07	357	.831	2.9474	0.4536	0.0011	0.0009	0.0010	0.1229	-0.0143	0.0009	0.0006	-0.0018	0.289	.312
109	06	2,119	.832	3.1940	0.2779	0.0007	0.0002	0.0009	0.1131	-0.1028	-0.0002	-0.0003	0.0004	0.189	.191
109	07	2,267	.816	3.2284	0.3240	0.0007	0.0004	0.0011	0.1095	-0.0905	0.0003	-0.0002	-0.0001	0.164	.193
109	08	1,833	.824	3.2012	0.3281	0.0009	0.0000	0.0014	0.1128	-0.0816	-0.0003	0.0004	0.0002	0.169	.252
110	07	604	.856	3.0591	0.2277	0.0011	0.0007	0.0019	0.1209	0.1634	-0.0001	0.0008	-0.0010	0.162	.405
110	08	570	.856	3.0498	0.5080	0.0011	0.0010	0.0017	0.0955	-0.1043	-0.0004	0.0005	-0.0003	0.183	.391
111	06	461	.858	2.9335	0.3936	0.0005	0.0001	0.0017	0.1378	-0.0366	0.0003	0.0001	-0.0010	0.262	.173
111	07	451	.826	2.9657	0.3370	-0.0009	0.0015	0.0030	0.1399	-0.1034	0.0013	0.0002	-0.0018	0.194	.283
111	08	449	.810	2.9331	0.5248	0.0020	0.0000	0.0006	0.2052	-0.1922	-0.0013	0.0010	-0.0001	0.175	.317
112	07	1,242	.851	2.9455	0.3708	0.0002	0.0017	0.0016	0.1728	-0.1102	0.0006	-0.0007	-0.0001	0.292	.233
112	08	1,218	.869	2.9560	0.4590	0.0012	0.0012	0.0008	0.1844	-0.1392	-0.0008	0.0005	0.0005	0.287	.279
113	06	581	.830	3.1900	0.2525	0.0007	0.0002	0.0018	0.1151	-0.0162	0.0003	0.0004	-0.0010	0.179	.242
113	07	608	.830	3.1221	0.4413	-0.0001	0.0003	0.0013	0.1911	-0.1734	0.0016	0.0007	-0.0014	0.166	.290
113	08	722	.830	3.1021	0.2793	0.0019	0.0000	0.0010	0.1697	0.0143	-0.0007	0.0008	0.0001	0.194	.297
114	06	3,165	.852	2.8180	0.3456	0.0001	0.0007	0.0015	0.1009	0.0355	0.0006	0.0002	-0.0004	0.367	.148
114	07	3,716	.839	2.8367	0.3768	0.0008	0.0006	0.0012	0.1368	-0.0277	0.0002	0.0004	-0.0002	0.320	.194
114	08	3,389	.845	2.8917	0.4184	0.0002	0.0011	0.0012	0.1574	-0.0829	0.0008	0.0002	0.0002	0.318	.223
115	06	1,533	.823	3.3602	0.2460	0.0006	0.0005	0.0009	0.0557	0.0087	0.0003	-0.0002	-0.0002	0.129	.154
115	07	1,458	.823	3.3659	0.1899	0.0004	0.0008	0.0012	0.0846	0.0259	0.0000	0.0000	0.0001	0.130	.171
115	08	1,241	.823	3.3947	0.2360	0.0005	0.0008	0.0011	0.0436	-0.0584	0.0001	-0.0001	-0.0003	0.130	.148
116	07	107	.859	2.9008	0.5598	-0.0008	0.0002	0.0030	0.1517	-0.0142	0.0001	0.0004	-0.0005	0.235	.393
116	08	121	.859	2.9121	0.2236	0.0012	0.0014	-0.0008	0.3321	0.1496	-0.0011	0.0015	0.0009	0.259	.314
117	06	1,251	.827	3.1564	0.3690	0.0007	0.0008	0.0008	0.1477	-0.0755	-0.0003	0.0000	0.0005	0.194	.199
117	07	1,319	.818	3.1853	0.3839	0.0006	0.0016	0.0003	0.1344	-0.0770	0.0000	-0.0008	0.0010	0.164	.231
117	08	969	.822	3.2196	0.3835	0.0004	0.0005	0.0013	0.1327	-0.2258	0.0000	0.0003	0.0003	0.148	.242
118	06	427	.857	2.6454	0.4304	0.0014	0.0011	0.0012	0.0241	-0.1837	-0.0006	-0.0002	0.0007	0.451	.220
119	07	4,984	.872	3.0590	0.4268	0.0004	0.0009	0.0009	0.1106	-0.0306	0.0002	-0.0001	0.0002	0.263	.265
119	08	5,230	.867	3.0770	0.5520	0.0004	0.0009	0.0010	0.1227	-0.1477	0.0002	0.0001	0.0001	0.235	.304
120	07	347	.903	2.9143	0.4913	0.0001	0.0012	0.0025	0.1737	0.0676	0.0009	-0.0002	-0.0019	0.260	.426
120	08	323	.908	2.8326	0.5249	0.0002	0.0002	0.0025	0.3250	-0.3495	0.0014	0.0006	-0.0009	0.274	.392
121	06	580	.859	3.3656	0.4869	0.0007	0.0004	0.0015	0.0616	-0.3349	0.0004	0.0002	-0.0003	0.140	.342
121	07	502	.859	3.2896	0.3235	-0.0002	0.0006	0.0018	0.1464	-0.0090	0.0008	0.0001	-0.0007	0.125	.349
121	08	465	.859	3.3059	0.2621	0.0007	0.0007	0.0017	0.0720	-0.0376	0.0000	-0.0002	-0.0006	0.154	.264



## Appendix G.

## Male-Female Model Parameter Estimates for Full Model, without Corrections

Raw Regression Parameter Estimates																
ID	Yr.	n	$\alpha_F$	Int.	Raw Regression Parameter Estimates										$\sigma^2$	R <sup>2</sup>
					HSGPA	SAT-CR	SAT-M	SAT-W	Female	x Fem.	x Fem.	x Fem.	x Fem.			
122	06	675	.859	2.7661	0.4498	0.0011	0.0002	0.0009	0.1611	-0.1871	0.0003	0.0002	0.0003	0.380	.221	
122	07	585	.859	2.7908	0.5160	0.0013	0.0013	0.0000	0.2097	-0.0723	-0.0006	-0.0010	0.0015	0.331	.274	
122	08	628	.859	2.8060	0.4606	-0.0005	0.0006	0.0011	0.0918	-0.1209	0.0011	-0.0007	0.0006	0.309	.191	
123	06	1,113	.868	2.6723	0.4545	0.0005	0.0017	-0.0002	0.1493	-0.0426	0.0010	-0.0007	0.0014	0.540	.195	
124	06	374	.849	3.0071	0.3960	0.0008	-0.0004	0.0014	0.1128	-0.1047	-0.0005	0.0017	0.0003	0.333	.272	
124	07	365	.842	2.9569	0.4715	0.0003	0.0012	0.0019	0.2229	-0.1231	0.0003	0.0005	-0.0011	0.291	.371	
124	08	329	.865	3.0384	0.4349	0.0014	0.0007	0.0003	0.0715	-0.0462	-0.0005	0.0009	0.0004	0.335	.305	
125	06	1,106	.858	2.6967	0.4764	0.0005	-0.0002	0.0016	0.0986	0.0372	0.0000	0.0007	-0.0008	0.569	.183	
126	07	266	.859	2.2552	0.9421	0.0015	-0.0022	0.0013	-0.1052	0.0934	0.0003	0.0016	-0.0019	0.908	.265	
126	08	237	.859	2.0631	0.7387	0.0009	0.0012	-0.0001	0.1854	-0.1061	0.0013	-0.0015	0.0007	0.831	.250	
127	06	789	.859	2.4868	0.2548	0.0008	0.0011	0.0011	0.0910	0.1851	0.0004	0.0000	-0.0003	0.597	.157	
128	07	837	.828	3.1540	0.2834	0.0006	0.0003	0.0016	0.1124	0.0640	0.0005	0.0005	-0.0009	0.146	.280	
128	08	914	.815	3.1232	0.3989	0.0004	0.0001	0.0018	0.0979	-0.0437	0.0001	0.0005	-0.0009	0.186	.242	
129	07	742	.859	3.3279	0.2231	0.0005	0.0007	0.0004	0.0989	-0.0180	-0.0005	0.0004	0.0006	0.119	.198	
130	08	172	.859	3.1534	0.6629	0.0002	0.0012	0.0000	0.0021	-0.1297	0.0012	-0.0013	0.0007	0.291	.328	
131	08	317	.830	2.6506	0.2702	0.0009	0.0007	0.0004	0.2348	0.0965	-0.0014	0.0000	0.0027	0.414	.233	
132	08	492	.867	2.8340	0.5851	0.0008	0.0023	-0.0002	0.2418	-0.1089	-0.0017	-0.0007	0.0015	0.604	.243	
133	06	926	.885	2.6764	0.4095	0.0004	0.0009	0.0012	0.1346	0.1617	0.0004	0.0007	-0.0002	0.512	.243	
134	06	1,907	.862	3.2681	0.3042	0.0000	0.0006	0.0012	0.0912	-0.0654	0.0007	0.0001	0.0000	0.141	.254	
134	07	1,924	.860	3.2400	0.2922	0.0009	0.0008	0.0009	0.0804	-0.0747	-0.0002	0.0003	0.0002	0.172	.220	
134	08	1,502	.860	3.2608	0.3505	0.0004	0.0009	0.0010	0.0529	-0.0896	0.0005	0.0002	-0.0002	0.151	.255	
135	06	1,433	.859	3.1301	0.3396	0.0011	0.0008	0.0012	0.1436	-0.0847	-0.0005	0.0001	0.0002	0.175	.300	
136	07	8,979	.894	2.9822	0.4009	0.0007	0.0006	0.0006	0.1775	-0.0527	-0.0001	0.0003	0.0003	0.274	.291	
136	08	9,895	.897	2.8716	0.4498	0.0000	0.0009	0.0013	0.1689	-0.0170	0.0003	0.0002	-0.0001	0.383	.288	
137	06	734	.859	2.9305	0.3973	0.0020	0.0003	0.0007	0.1740	0.0865	-0.0009	0.0006	-0.0001	0.215	.346	
137	07	767	.859	2.9810	0.5115	-0.0002	0.0012	0.0015	0.1677	-0.1481	0.0004	-0.0002	0.0000	0.226	.319	
137	08	715	.859	2.9095	0.3056	0.0003	0.0006	0.0011	0.2363	0.1057	0.0000	0.0006	-0.0004	0.250	.244	
138	06	531	.859	3.1098	0.3677	0.0010	0.0010	0.0016	0.0736	-0.2256	0.0002	0.0007	0.0000	0.231	.312	
138	07	500	.859	3.1564	0.4953	0.0006	0.0009	0.0020	0.0373	-0.3278	0.0009	0.0000	-0.0005	0.222	.283	
138	08	437	.859	3.1706	0.4110	0.0009	0.0014	0.0007	0.1372	-0.1871	0.0006	-0.0002	0.0002	0.173	.266	
139	06	210	.859	2.6056	0.1599	0.0009	0.0017	0.0005	0.0868	0.3723	-0.0012	0.0003	0.0018	0.315	.189	
139	07	197	.859	2.7731	0.3058	-0.0006	0.0016	0.0009	0.0195	0.1766	0.0021	0.0016	-0.0019	0.217	.239	
139	08	239	.859	2.8627	0.5255	-0.0011	0.0013	0.0009	-0.0777	0.0298	0.0003	0.0006	0.0013	0.224	.229	
140	07	1,376	.874	3.0486	0.5906	-0.0001	0.0009	0.0008	0.1482	-0.0916	0.0001	0.0000	0.0006	0.324	.280	
141	08	695	.883	2.9242	0.7094	0.0002	0.0008	0.0005	0.1548	-0.4009	0.0003	0.0001	0.0007	0.305	.313	

## Appendix G.

## Male-Female Model Parameter Estimates for Full Model, without Corrections

Raw Regression Parameter Estimates															
ID	Yr.	n	$\alpha_F$	Int.	HSGPA	SAT-CR	SAT-M	SAT-W	Female	x Fem.	SAT-CR	SAT-M	SAT-W	$\sigma^2$	R <sup>2</sup>
142	07	467	.859	2.6425	0.3872	0.0019	0.0013	-0.0006	0.1784	-0.0908	-0.0013	0.0000	0.0015	0.374	.168
142	08	745	.859	2.6179	0.3684	-0.0004	0.0017	0.0020	0.1295	0.0645	0.0010	-0.0002	-0.0010	0.510	.160
143	06	421	.859	3.0956	0.4740	0.0002	-0.0006	0.0011	0.0562	0.0329	0.0000	0.0013	0.0006	0.276	.300
144	06	483	.873	2.7619	0.5083	0.0010	0.0001	0.0003	0.1307	-0.1932	-0.0006	0.0009	0.0014	0.416	.234
144	07	472	.869	2.8718	0.4630	0.0001	0.0004	0.0021	0.1567	-0.1661	0.0014	0.0005	-0.0003	0.290	.373
144	08	423	.878	2.8106	0.5399	0.0012	0.0001	0.0012	0.1969	-0.1098	-0.0007	0.0011	0.0001	0.316	.352
145	08	4,529	.874	2.7394	0.5209	0.0002	0.0007	0.0018	0.1951	-0.0515	0.0001	0.0007	-0.0002	0.483	.273
146	06	587	.864	3.1799	0.5276	0.0000	0.0002	0.0015	0.2040	-0.1332	0.0006	0.0006	-0.0004	0.160	.369
146	07	604	.864	3.1441	0.5044	0.0009	-0.0003	0.0012	0.2231	-0.1640	-0.0001	0.0013	-0.0002	0.194	.298
146	08	668	.864	3.1545	0.4392	0.0004	0.0006	0.0010	0.2098	-0.0261	0.0003	0.0000	0.0004	0.146	.348
147	08	1,047	.872	2.8276	0.4991	0.0009	0.0003	0.0002	0.1600	-0.0618	0.0001	0.0001	0.0008	0.400	.242
148	06	777	.882	2.6629	0.3060	0.0006	0.0017	0.0011	0.2240	0.2160	0.0001	-0.0002	-0.0004	0.278	.277
148	08	724	.882	2.7166	0.5411	0.0012	-0.0006	0.0020	0.1587	0.0573	-0.0004	0.0027	-0.0012	0.306	.339
149	08	1,227	.847	3.0679	0.4701	0.0009	0.0003	0.0011	0.1562	-0.1209	0.0001	0.0002	-0.0001	0.171	.304
150	06	419	.859	3.1144	0.3741	0.0009	0.0014	0.0013	0.1061	0.1521	-0.0001	-0.0001	-0.0010	0.220	.416
151	06	2,868	.891	2.7251	0.5937	0.0007	-0.0001	0.0008	0.1154	-0.0676	0.0001	0.0008	0.0000	0.517	.247
152	06	286	.851	2.8601	0.4158	0.0018	0.0008	0.0004	0.1149	-0.0242	-0.0004	0.0001	0.0010	0.223	.344
153	06	968	.859	3.4297	-0.0043	0.0008	0.0007	0.0010	0.0458	0.0795	-0.0004	-0.0004	0.0001	0.105	.176
154	08	128	.859	2.5220	1.0221	-0.0024	0.0025	0.0020	-0.2276	0.0565	0.0012	-0.0026	0.0002	0.992	.343
155	06	1,548	.832	2.8660	0.4334	0.0003	0.0005	0.0014	0.1563	-0.0413	0.0006	0.0007	-0.0005	0.322	.254
155	07	2,606	.867	2.8193	0.5269	0.0005	0.0000	0.0018	0.1537	-0.0199	0.0000	0.0004	-0.0005	0.331	.275
155	08	2,764	.834	2.8519	0.5282	0.0004	0.0006	0.0008	0.1521	-0.0428	0.0005	0.0000	0.0001	0.294	.240
156	07	826	.859	2.7845	0.4807	-0.0003	0.0007	0.0008	0.1040	-0.0477	0.0006	0.0004	0.0003	0.361	.264
156	08	671	.859	2.7592	0.3747	0.0012	0.0007	0.0005	0.2092	0.0346	-0.0012	0.0006	0.0000	0.357	.249
157	06	2,663	.878	2.8066	0.5094	0.0005	0.0011	0.0010	0.1419	-0.0476	0.0003	-0.0001	0.0002	0.405	.222
158	06	588	.863	2.9386	0.3893	0.0002	-0.0001	0.0020	0.2636	0.0015	0.0021	0.0016	-0.0023	0.393	.324
159	07	3,946	.850	2.8433	0.3994	0.0005	0.0011	0.0013	0.1546	-0.0413	0.0006	-0.0002	0.0000	0.377	.229
159	08	5,754	.850	2.6775	0.5067	0.0005	0.0006	0.0017	0.1470	-0.1076	-0.0002	0.0007	0.0000	0.530	.189
160	06	164	.859	2.9193	0.4387	0.0000	0.0021	0.0017	-0.0608	-0.2663	-0.0004	-0.0027	-0.0025	0.222	.231
161	06	274	.859	2.8304	0.2196	0.0008	0.0003	0.0026	0.2010	0.0278	-0.0001	0.0012	-0.0009	0.407	.245
161	07	265	.859	2.7930	0.5588	0.0014	0.0004	0.0013	0.2307	-0.2153	0.0001	-0.0006	0.0010	0.285	.398
161	08	247	.859	2.9244	0.1522	-0.0006	0.0015	0.0025	0.1063	0.2894	0.0013	0.0007	-0.0010	0.253	.340
162	06	611	.859	2.4510	0.3904	-0.0013	-0.0006	0.0018	0.2261	0.1985	0.0020	0.0010	-0.0006	0.625	.167
162	08	501	.859	2.3240	0.2322	-0.0012	0.0005	0.0025	0.3126	0.5893	0.0021	0.0002	-0.0017	0.551	.259
163	06	125	.859	2.8288	0.5927	-0.0045	0.0040	0.0025	0.3435	-0.2963	0.0047	-0.0035	-0.0003	0.195	.480

## Appendix G.

## Male-Female Model Parameter Estimates for Full Model, without Corrections

Raw Regression Parameter Estimates															
ID	Yr.	n	$\alpha_F$	Int.	HSGPA	SAT-CR	SAT-M	SAT-W	Female	HSGPA x Fem.	SAT-CR x Fem.	SAT-M x Fem.	SAT-W x Fem.	$\sigma^2$	R <sup>2</sup>
164	08	776	.859	3.1063	0.4295	0.0011	0.0010	0.0004	0.1446	-0.2132	-0.0004	-0.0001	0.0006	0.203	.222
165	06	983	.864	2.9955	0.3445	0.0002	0.0009	0.0011	0.2169	0.0723	-0.0002	0.0004	0.0003	0.219	.246
165	07	1,056	.863	3.0785	0.5772	0.0002	0.0006	0.0012	0.1574	-0.2929	0.0003	0.0004	-0.0004	0.212	.248
166	06	815	.859	3.2292	0.3939	-0.0002	0.0011	0.0011	0.1042	-0.2397	0.0007	0.0002	-0.0002	0.284	.155
166	07	844	.859	3.1970	0.5875	0.0000	0.0011	0.0013	0.2014	-0.2146	0.0000	-0.0003	-0.0001	0.239	.244
166	08	710	.859	3.1541	0.5559	-0.0002	0.0013	0.0017	0.1470	-0.2932	0.0002	0.0001	0.0000	0.285	.237
167	06	155	.822	2.5465	0.4623	0.0012	0.0015	0.0010	0.0200	-0.0356	-0.0004	-0.0002	0.0003	0.506	.265
167	07	192	.825	2.4286	0.2161	0.0040	0.0012	0.0009	0.1651	0.7095	-0.0048	-0.0009	0.0015	0.497	.419
167	08	174	.879	2.6693	0.4563	0.0008	-0.0003	0.0022	-0.0380	0.2452	0.0011	0.0005	-0.0011	0.592	.240
168	06	316	.858	2.7063	0.5830	0.0018	0.0014	0.0012	0.2682	-0.1207	0.0001	-0.0009	-0.0005	0.289	.475
168	07	346	.864	2.7570	0.6827	0.0021	0.0004	0.0002	0.1705	-0.2272	0.0000	0.0015	-0.0002	0.335	.391
168	08	279	.835	2.6897	0.4586	0.0015	0.0007	0.0024	0.2294	-0.1941	-0.0009	0.0008	-0.0004	0.309	.430
169	06	1,597	.824	2.5475	0.6082	0.0001	0.0008	0.0010	0.2060	-0.1081	-0.0001	0.0006	0.0006	0.646	.192
169	07	1,626	.792	2.6993	0.5104	0.0012	0.0006	0.0004	0.1216	-0.0439	-0.0011	0.0008	0.0013	0.381	.240
169	08	1,656	.866	2.4790	0.5615	-0.0004	0.0004	0.0022	0.2315	-0.0535	0.0013	0.0013	-0.0010	0.633	.199
170	06	269	.824	3.1157	0.2359	0.0015	0.0011	0.0018	0.0297	0.2231	-0.0004	0.0002	-0.0007	0.173	.377
171	06	1,106	.866	2.7287	0.5370	-0.0002	0.0001	0.0023	0.2114	-0.0317	0.0010	0.0014	-0.0010	0.364	.300
171	07	1,105	.879	2.5826	0.5348	0.0001	0.0005	0.0014	0.2979	-0.0553	0.0007	0.0014	-0.0002	0.416	.322
172	06	377	.890	3.3135	0.2853	0.0010	0.0008	0.0009	0.1293	0.0064	0.0002	0.0002	-0.0015	0.116	.331
172	07	376	.872	3.3117	0.2758	0.0019	0.0005	0.0007	0.0860	0.1495	-0.0007	0.0003	-0.0004	0.113	.386
172	08	339	.884	3.2492	0.4195	0.0000	0.0008	0.0020	0.1310	-0.0210	0.0008	0.0003	-0.0010	0.121	.422
173	07	3,337	.835	3.0217	0.3550	0.0008	0.0008	0.0010	0.0973	-0.0694	0.0006	0.0001	-0.0004	0.179	.261
173	08	3,238	.845	3.0484	0.2481	0.0007	0.0009	0.0012	0.1073	-0.0269	0.0003	0.0000	0.0001	0.175	.284
174	06	422	.859	2.5218	0.3060	-0.0002	0.0012	0.0010	0.2627	0.1984	0.0018	-0.0005	0.0001	0.385	.277
175	06	2,422	.880	2.4401	0.5261	-0.0001	0.0009	0.0018	0.2801	-0.1392	0.0007	0.0012	-0.0010	0.626	.150
175	07	2,660	.846	2.5350	0.4247	0.0005	0.0009	0.0017	0.2629	0.0047	0.0002	0.0008	-0.0007	0.528	.160
175	08	2,747	.865	2.5614	0.5040	-0.0004	0.0014	0.0012	0.2355	-0.0541	0.0007	0.0000	0.0004	0.493	.171
176	06	2,048	.841	2.7706	0.3792	0.0015	0.0009	0.0006	0.1474	-0.0230	0.0000	0.0005	0.0002	0.289	.254
176	07	1,825	.809	2.7775	0.4174	0.0001	0.0007	0.0016	0.1302	-0.0264	0.0008	0.0007	-0.0006	0.276	.267
176	08	2,193	.825	2.7770	0.4362	0.0011	0.0004	0.0012	0.1447	-0.0298	-0.0005	0.0008	0.0002	0.265	.255
<b>Combined</b>		477,769	.859	2.9011	0.4370	0.0004	0.0008	0.0012	0.1527	-0.0511	0.0002	0.0003	-0.0001	0.3467	.239

## Appendix H.

## White-Black Model Parameter Estimates for Full Model, without Corrections

Raw Regression Parameter Estimates															
ID	Yr.	n	$\alpha_F$	Int.	HSGPA	SAT-CR	SAT-M	SAT-W	Black	HSGPA x Blk.	SAT-CR x Blk.	SAT-M x Blk.	SAT-W x Blk.	$\sigma^2$	R <sup>2</sup>
1	07	1,610	.885	2.9533	0.3733	0.0007	0.0007	0.0017	-0.0836	0.1524	0.0003	0.0012	0.0000	0.365	.197
1	08	1,414	.866	3.0144	0.4289	0.0002	0.0008	0.0021	-0.3164	0.0929	0.0001	-0.0011	0.0001	0.284	.241
2	08	937	.846	3.2626	0.3890	0.0003	0.0002	0.0015	-0.0767	-0.2336	0.0003	0.0006	-0.0003	0.141	.286
3	08	2,813	.859	3.2922	0.4396	-0.0002	0.0006	0.0021	-0.0976	-0.0861	0.0012	-0.0004	-0.0012	0.334	.197
5	08	280	.859	2.9633	0.6150	-0.0003	0.0006	0.0021	-0.3516	0.0475	-0.0022	-0.0002	-0.0005	0.344	.451
7	07	926	.859	2.5901	0.5033	0.0006	0.0003	0.0011	-0.2351	-0.0982	0.0002	0.0024	-0.0007	0.531	.168
9	07	2,715	.852	2.9448	0.3850	0.0006	0.0009	0.0020	-0.2193	-0.0895	0.0009	-0.0020	0.0016	0.267	.312
9	08	2,653	.852	2.9740	0.4072	0.0008	0.0007	0.0017	-0.3128	-0.1521	-0.0006	-0.0005	-0.0004	0.268	.286
10	06	703	.772	3.3912	0.2959	0.0007	-0.0001	0.0006	-0.4979	0.0979	-0.0014	-0.0014	-0.0011	0.114	.174
10	07	784	.756	3.4068	0.2763	0.0004	0.0006	0.0008	-0.2000	0.0045	0.0012	-0.0012	-0.0003	0.105	.214
10	08	569	.764	3.3727	0.3324	0.0009	0.0002	0.0010	-0.1703	-0.0902	-0.0015	0.0008	-0.0003	0.127	.217
11	06	324	.824	2.8196	0.5133	0.0005	0.0012	0.0004	-0.2981	-0.3114	-0.0016	-0.0025	0.0012	0.452	.176
11	07	325	.836	2.7034	0.4963	0.0006	0.0004	0.0012	0.1210	-0.0677	0.0010	0.0027	-0.0045	0.585	.135
11	08	329	.830	2.7317	0.3883	0.0011	-0.0005	0.0018	-0.5262	0.0179	-0.0080	0.0004	0.0050	0.536	.192
12	07	539	.859	2.2269	0.7090	-0.0003	0.0000	0.0013	-0.0073	0.3291	0.0031	-0.0031	0.0007	0.935	.197
12	08	534	.859	2.2884	0.7332	0.0000	-0.0008	0.0012	0.0994	-0.8849	-0.0007	0.0047	0.0082	0.954	.177
13	06	1,463	.856	2.9683	0.4993	0.0002	-0.0001	0.0012	-0.2813	-0.2463	0.0000	0.0005	-0.0003	0.287	.224
14	06	977	.866	3.1000	0.4415	0.0003	0.0002	0.0012	-0.1761	-0.0755	0.0015	0.0001	-0.0021	0.206	.232
14	07	1,050	.863	3.0856	0.5095	0.0006	0.0004	0.0013	-0.2985	0.1012	-0.0011	-0.0016	-0.0003	0.222	.264
14	08	966	.844	3.1368	0.3819	0.0006	0.0004	0.0010	-0.2929	-0.0872	-0.0002	-0.0019	0.0005	0.166	.251
15	06	310	.859	3.1187	0.4522	0.0005	-0.0002	0.0013	0.0920	-0.3369	0.0007	0.0017	-0.0009	0.246	.239
15	07	282	.859	3.0984	0.5063	0.0004	-0.0001	0.0020	0.1259	-0.0651	-0.0009	0.0002	0.0013	0.286	.291
15	08	228	.859	3.0472	0.4946	0.0015	0.0002	-0.0002	-0.0503	-0.0557	-0.0052	0.0021	0.0044	0.322	.220
16	07	316	.845	2.9221	0.2870	0.0002	0.0004	0.0012	-0.4574	0.1407	-0.0017	0.0013	-0.0002	0.572	.304
16	08	341	.845	2.8487	0.6341	0.0008	0.0004	0.0007	-0.1184	-0.2325	-0.0002	0.0001	0.0003	0.388	.363
17	06	272	.859	3.0321	0.4841	-0.0004	0.0002	0.0012	-0.3374	-0.6064	-0.0035	0.0027	0.0024	0.373	.222
17	08	313	.859	3.1146	0.3761	-0.0001	0.0000	0.0018	-0.3564	0.3849	-0.0015	-0.0048	-0.0017	0.258	.228
18	07	231	.859	2.5011	0.4236	-0.0021	0.0006	0.0021	-0.0267	0.1884	0.0035	-0.0023	-0.0013	0.746	.100
18	08	249	.859	2.7160	0.6436	-0.0009	0.0010	0.0007	-0.1125	-0.1594	0.0040	0.0015	-0.0006	0.500	.261
19	06	384	.829	3.0335	0.3712	0.0006	0.0011	0.0011	-0.3225	-0.0513	-0.0005	-0.0012	0.0002	0.168	.428
19	07	368	.838	2.9989	0.3422	0.0009	0.0005	0.0014	-0.2575	0.1383	-0.0028	0.0007	0.0015	0.224	.342
19	08	760	.844	2.9172	0.5007	0.0001	0.0009	0.0014	-0.1706	-0.0216	-0.0013	-0.0002	0.0011	0.391	.269
20	08	566	.859	3.2846	0.4026	0.0000	0.0003	0.0024	-0.1090	-0.2019	0.0011	-0.0004	-0.0012	0.188	.259
22	06	1,188	.832	3.3877	0.4209	0.0006	0.0004	0.0010	-0.2350	-0.1468	0.0001	-0.0016	0.0018	0.129	.260

## Appendix H.

## White-Black Model Parameter Estimates for Full Model, without Corrections

Raw Regression Parameter Estimates															
ID	Yr.	n	$\alpha_F$	Int.	HSGPA	SAT-CR	SAT-M	SAT-W	Black	HSGPA x Blk.	SAT-CR x Blk.	SAT-M x Blk.	SAT-W x Blk.	$\sigma^2$	R <sup>2</sup>
26	06	3,579	.859	3.2020	0.3418	0.0008	0.0011	0.0015	-0.1873	-0.0136	0.0006	-0.0006	-0.0006	0.325	.227
26	07	3,539	.859	3.1472	0.3976	0.0007	0.0005	0.0021	-0.1935	-0.1932	0.0005	0.0010	-0.0015	0.365	.222
26	08	3,155	.859	3.2067	0.3336	0.0004	0.0009	0.0018	-0.1560	-0.0848	-0.0005	0.0000	0.0007	0.329	.198
27	06	1,337	.874	3.2621	0.2957	0.0003	-0.0003	0.0011	-0.4776	0.0531	-0.0015	-0.0003	-0.0005	0.299	.152
27	07	995	.864	3.2689	0.4203	0.0006	-0.0004	0.0017	-0.1267	0.0219	-0.0026	0.0012	0.0009	0.287	.191
27	08	1,035	.847	3.2832	0.3376	-0.0001	0.0000	0.0016	-0.1909	-0.1713	0.0009	-0.0006	0.0004	0.264	.157
28	07	286	.859	2.3299	0.5751	0.0001	0.0020	-0.0006	-0.2862	-0.1928	-0.0028	-0.0018	0.0015	0.911	.187
28	08	275	.859	2.4139	0.4767	0.0001	0.0007	0.0007	-0.3553	-0.3475	0.0062	-0.0031	-0.0010	0.932	.163
29	06	1,352	.874	2.8305	0.5858	0.0003	0.0006	0.0017	-0.2036	-0.5346	0.0016	-0.0009	0.0018	0.542	.249
29	07	1,545	.874	2.8860	0.6286	0.0000	0.0004	0.0017	-0.1537	-0.3572	-0.0006	0.0013	0.0007	0.528	.248
29	08	1,673	.874	2.9401	0.5548	0.0001	-0.0002	0.0023	-0.1226	-0.0900	0.0019	-0.0003	-0.0012	0.434	.258
31	07	1,385	.879	2.3196	0.5948	0.0014	0.0016	0.0006	-0.1471	-0.2168	-0.0019	0.0001	0.0016	0.724	.216
31	08	1,459	.876	2.4160	0.6671	0.0006	0.0009	0.0017	-0.2245	-0.4299	-0.0007	0.0006	-0.0001	0.631	.254
33	06	2,352	.876	3.1432	0.5175	0.0005	-0.0002	0.0018	-0.2360	-0.1544	0.0007	0.0006	-0.0013	0.271	.328
34	06	1,423	.854	2.9826	0.6192	-0.0004	0.0008	0.0014	-0.1961	-0.4975	0.0010	0.0006	0.0001	0.347	.264
34	07	1,457	.830	3.0254	0.5815	-0.0006	0.0009	0.0018	-0.3097	-0.1178	-0.0014	-0.0001	-0.0006	0.296	.298
34	08	1,546	.847	3.0087	0.6059	0.0002	0.0005	0.0015	-0.3176	-0.2590	-0.0020	0.0009	0.0005	0.345	.286
35	06	768	.845	3.2048	0.3727	0.0006	0.0011	0.0011	-0.2125	-0.0166	0.0014	-0.0013	-0.0012	0.194	.228
35	07	768	.824	3.1292	0.3987	0.0001	0.0013	0.0012	-0.4322	-0.3804	-0.0015	-0.0006	0.0016	0.178	.272
35	08	669	.835	3.1936	0.4741	0.0004	0.0009	0.0011	-0.0383	-0.1021	0.0037	0.0013	-0.0028	0.191	.283
40	06	1,858	.859	3.1808	0.4073	0.0007	0.0002	0.0015	-0.1476	-0.1979	0.0005	0.0003	-0.0007	0.224	.271
40	07	1,888	.859	3.2261	0.4031	0.0006	0.0004	0.0010	-0.1672	-0.1651	-0.0001	-0.0010	0.0016	0.209	.276
40	08	1,783	.857	3.1766	0.4191	0.0008	0.0002	0.0010	-0.2412	-0.0533	-0.0003	-0.0002	-0.0002	0.233	.235
41	07	4,232	.855	3.1407	0.3473	0.0005	0.0003	0.0014	-0.1807	-0.0183	0.0002	0.0003	-0.0006	0.281	.172
41	08	3,414	.855	3.2031	0.3311	0.0005	0.0004	0.0013	-0.1130	0.0723	0.0008	0.0004	-0.0013	0.254	.166
42	07	618	.759	3.4896	0.2195	0.0008	0.0003	0.0002	-0.2092	0.0686	-0.0013	0.0019	0.0003	0.126	.193
42	08	533	.759	3.5371	0.2661	0.0000	0.0004	0.0012	-0.1638	-0.2731	0.0016	-0.0007	0.0008	0.104	.252
43	06	267	.859	3.3175	0.1890	0.0017	0.0008	0.0003	-0.3486	0.1644	-0.0005	-0.0020	0.0014	0.118	.376
43	07	307	.859	3.2975	0.3442	0.0007	0.0017	0.0011	-0.1819	-0.0741	0.0028	-0.0018	-0.0023	0.103	.439
43	08	197	.859	3.3485	0.2568	0.0003	0.0009	0.0014	-0.1784	0.1299	-0.0007	0.0003	0.0000	0.082	.467
44	06	256	.841	2.8394	0.5069	0.0013	0.0004	0.0011	-0.0889	0.0790	-0.0015	0.0001	0.0014	0.326	.370
45	06	1,026	.821	2.9662	0.3582	0.0001	0.0005	0.0019	-0.3029	0.0283	-0.0028	0.0015	-0.0009	0.476	.146
45	07	1,194	.820	2.9300	0.5345	0.0008	-0.0001	0.0016	-0.0813	-0.2606	-0.0006	-0.0011	0.0012	0.467	.188
45	08	1,133	.823	2.8543	0.5327	0.0003	0.0007	0.0011	-0.2874	-0.2004	-0.0017	-0.0006	0.0008	0.533	.170
47	08	902	.905	2.4236	0.5887	0.0010	0.0001	0.0018	-0.0414	-0.1360	0.0005	0.0002	0.0006	0.589	.228

## Appendix H.

## White-Black Model Parameter Estimates for Full Model, without Corrections

Raw Regression Parameter Estimates															
ID	Yr.	n	$\alpha_F$	Int.	HSGPA	SAT-CR	SAT-M	SAT-W	Black	HSGPA x Blk.	SAT-CR x Blk.	SAT-M x Blk.	SAT-W x Blk.	$\sigma^2$	R <sup>2</sup>
48	06	562	.794	3.3233	0.4343	0.0003	0.0003	0.0008	-0.3795	0.2616	0.0034	-0.0044	0.0004	0.171	.287
48	07	553	.811	3.3174	0.3974	0.0009	-0.0001	0.0002	-0.0521	-0.1076	-0.0024	-0.0023	0.0043	0.206	.189
48	08	494	.803	3.2806	0.4608	0.0008	0.0001	0.0010	-0.0327	0.0309	0.0012	0.0014	-0.0009	0.174	.308
49	06	2,027	.854	2.7996	0.4771	0.0009	0.0001	0.0017	-0.0950	-0.2812	-0.0008	0.0013	0.0008	0.364	.245
49	07	2,200	.856	2.8075	0.4552	0.0009	0.0008	0.0014	-0.2079	-0.2600	0.0011	-0.0008	-0.0005	0.351	.248
49	08	2,081	.847	2.7651	0.5263	0.0008	-0.0001	0.0018	-0.1727	-0.3193	-0.0019	0.0010	0.0004	0.375	.232
52	06	350	.887	2.7230	0.5844	0.0002	0.0022	0.0028	-0.5546	0.1649	-0.0030	-0.0038	0.0017	0.540	.383
52	07	358	.875	2.7910	0.7818	0.0014	0.0004	0.0009	-0.0646	-0.5795	0.0025	0.0005	0.0005	0.423	.386
52	08	274	.901	2.6302	0.7124	-0.0008	0.0020	0.0030	-0.1465	-0.5182	-0.0039	0.0005	0.0050	0.600	.348
53	06	2,254	.846	3.1217	0.4905	0.0007	-0.0001	0.0015	-0.0995	-0.0655	0.0012	0.0011	-0.0013	0.272	.239
53	07	2,772	.838	3.1388	0.4610	0.0010	0.0002	0.0011	-0.2095	-0.3006	-0.0003	0.0008	-0.0003	0.229	.281
53	08	2,495	.854	3.1349	0.4327	0.0007	0.0006	0.0014	-0.1277	-0.1931	-0.0013	0.0011	0.0004	0.221	.252
54	06	169	.859	2.7345	0.7513	-0.0011	-0.0010	0.0051	0.1493	-0.1791	0.0109	-0.0037	-0.0087	0.566	.405
57	07	336	.859	3.0565	0.6062	0.0006	0.0002	0.0011	-0.0131	-0.9943	0.0041	-0.0025	0.0032	0.257	.327
58	06	2,091	.899	2.6135	0.6523	0.0006	0.0001	0.0012	-0.1404	-0.0815	-0.0016	0.0016	0.0012	0.847	.144
58	07	2,000	.894	2.6110	0.6126	0.0000	0.0008	0.0022	-0.1610	-0.0047	0.0006	-0.0006	0.0002	0.734	.191
58	08	1,972	.904	2.6979	0.6949	-0.0001	0.0005	0.0020	-0.2200	-0.1794	0.0019	0.0000	-0.0019	0.746	.185
59	06	3,013	.807	3.1813	0.4537	0.0000	0.0001	0.0013	-0.1228	-0.3222	-0.0001	0.0004	-0.0003	0.239	.204
59	07	2,987	.849	3.2744	0.4077	0.0005	0.0001	0.0010	-0.1908	-0.2177	-0.0001	0.0001	0.0002	0.214	.169
59	08	2,731	.829	3.2837	0.3589	0.0000	0.0004	0.0014	-0.1189	-0.2307	0.0011	-0.0002	0.0000	0.197	.172
60	06	1,162	.892	2.7979	0.3290	0.0001	-0.0007	0.0014	-0.1717	-0.4106	-0.0025	-0.0002	0.0019	0.388	.090
60	07	1,254	.892	2.6529	0.5494	-0.0003	0.0002	0.0014	-0.0032	-0.4402	-0.0005	0.0002	0.0014	0.654	.116
60	08	1,222	.892	2.6929	0.4934	-0.0006	-0.0011	0.0020	-0.1369	-0.2074	-0.0010	0.0000	0.0000	0.605	.120
61	06	641	.859	2.7357	0.5579	0.0002	0.0003	0.0012	0.0030	-0.2648	-0.0004	0.0018	0.0013	0.490	.172
61	07	576	.880	2.7405	0.6872	0.0007	0.0002	0.0008	0.1089	-0.0494	0.0029	-0.0001	-0.0006	0.606	.188
61	08	713	.869	2.8492	0.6051	0.0011	0.0000	0.0007	-0.2439	-0.0167	-0.0029	0.0019	0.0004	0.479	.210
62	06	2,720	.859	3.0401	0.4196	0.0006	0.0004	0.0011	-0.3014	-0.4354	-0.0012	-0.0004	0.0014	0.361	.161
63	06	328	.859	3.3893	0.3543	0.0002	0.0010	0.0003	-0.4557	0.0167	0.0021	-0.0019	-0.0019	0.131	.321
63	07	330	.859	3.3223	0.2342	0.0007	0.0003	0.0015	-0.0448	-0.0651	0.0009	-0.0025	0.0014	0.125	.310
63	08	309	.859	3.3776	0.3806	0.0005	-0.0002	0.0008	-0.5090	-0.0558	-0.0020	-0.0029	0.0030	0.133	.260
64	06	1,878	.859	2.5877	0.5578	0.0002	0.0013	0.0017	-0.1359	-0.1843	0.0000	-0.0002	0.0001	0.702	.207
66	06	2,398	.890	2.9196	0.6430	0.0000	0.0003	0.0017	-0.1817	0.1622	0.0005	0.0004	-0.0010	0.544	.187
66	07	2,786	.890	2.7732	0.7628	0.0002	0.0002	0.0017	-0.1429	-0.2294	0.0009	0.0000	-0.0003	0.625	.221
67	08	114	.901	3.1075	0.4010	-0.0030	0.0021	0.0035	-0.3565	0.6460	0.0036	-0.0041	-0.0043	0.630	.359

## Appendix H.

## White-Black Model Parameter Estimates for Full Model, without Corrections

Raw Regression Parameter Estimates															
ID	Yr.	n	$\alpha_F$	Int.	HSGPA	SAT-CR	SAT-M	SAT-W	Black	HSGPA x Blk.	SAT-CR x Blk.	SAT-M x Blk.	SAT-W x Blk.	$\sigma^2$	R <sup>2</sup>
69	07	1,589	.916	2.6004	0.6243	-0.0005	-0.0002	0.0023	-0.1754	-0.2901	-0.0006	0.0028	-0.0009	0.853	.178
69	08	1,648	.916	2.6389	0.6350	-0.0004	-0.0002	0.0018	-0.0654	-0.2171	0.0010	0.0003	0.0009	0.811	.162
70	08	1,190	.859	3.0606	0.5714	0.0006	-0.0001	0.0019	-0.1455	-0.1738	0.0008	-0.0009	-0.0009	0.304	.235
72	06	1,485	.840	2.8620	0.5650	0.0015	0.0002	0.0009	0.0047	-0.0464	-0.0011	0.0011	-0.0014	0.367	.191
73	06	1,359	.886	2.7681	0.5515	0.0005	0.0006	0.0009	-0.4133	-0.3094	0.0007	0.0004	-0.0031	0.371	.247
73	07	1,412	.882	2.6849	0.6063	-0.0003	0.0000	0.0025	-0.3272	-0.2053	-0.0025	-0.0006	0.0015	0.558	.218
73	08	1,247	.882	2.7331	0.6585	-0.0004	0.0001	0.0024	-0.4069	-0.2424	0.0011	-0.0011	0.0006	0.468	.253
74	07	1,103	.859	2.4197	0.5862	-0.0006	0.0009	0.0024	-0.0774	-0.1380	0.0017	0.0005	0.0000	0.723	.206
74	08	1,187	.859	2.4641	0.6587	-0.0005	0.0009	0.0021	-0.2151	-0.2173	-0.0001	0.0008	0.0013	0.851	.216
75	06	4,584	.878	2.7948	0.6472	-0.0002	0.0003	0.0016	-0.4510	-0.2457	0.0002	-0.0014	-0.0009	0.518	.237
75	08	3,944	.870	2.8973	0.6174	-0.0003	0.0000	0.0016	-0.1605	-0.2296	0.0012	0.0014	-0.0012	0.404	.231
77	06	1,601	.878	3.0131	0.5320	-0.0002	-0.0001	0.0017	-0.4026	-0.2169	0.0009	0.0010	-0.0014	0.374	.280
77	07	1,098	.874	3.4649	0.1920	0.0004	-0.0001	0.0007	0.0132	-0.1347	0.0003	0.0004	0.0004	0.066	.253
77	08	1,548	.874	3.0969	0.5550	0.0003	-0.0002	0.0017	-0.2090	-0.1822	-0.0009	0.0007	0.0024	0.293	.319
78	06	2,224	.859	3.0306	0.2834	0.0013	0.0006	0.0011	-0.1010	0.1623	0.0014	0.0006	-0.0022	0.182	.233
78	07	2,221	.859	3.0386	0.3058	0.0010	0.0006	0.0013	-0.2098	-0.1472	-0.0001	0.0000	-0.0014	0.209	.194
78	08	1,905	.859	3.0617	0.2834	0.0010	0.0006	0.0012	-0.1874	0.0050	-0.0016	0.0000	0.0011	0.173	.214
80	07	1,720	.838	3.0476	0.4634	0.0004	-0.0001	0.0015	-0.4330	0.0320	-0.0004	-0.0006	-0.0007	0.243	.196
82	06	1,191	.845	2.9322	0.4664	0.0003	-0.0002	0.0016	-0.1232	-0.0387	0.0008	0.0012	-0.0004	0.381	.203
84	06	634	.881	3.1435	0.4654	0.0006	0.0003	0.0009	-0.0982	0.0461	0.0002	0.0005	-0.0012	0.321	.251
85	06	5,021	.867	2.8863	0.4318	0.0007	0.0010	0.0015	-0.1780	-0.0403	-0.0011	0.0005	-0.0016	0.345	.200
85	07	5,325	.859	2.9056	0.4171	0.0007	0.0008	0.0015	-0.1774	-0.2644	-0.0006	-0.0003	0.0004	0.352	.197
85	08	5,062	.863	2.9604	0.4158	0.0004	0.0007	0.0017	-0.2205	-0.0644	0.0002	-0.0001	-0.0011	0.334	.179
86	08	153	.843	2.8820	0.8104	-0.0015	-0.0002	0.0027	-0.6166	0.1562	0.0021	-0.0042	0.0011	0.642	.324
88	06	1,958	.866	3.0181	0.4345	0.0005	0.0006	0.0016	-0.1901	-0.0705	-0.0015	-0.0006	-0.0013	0.270	.285
88	07	1,985	.856	2.9984	0.4520	0.0011	0.0000	0.0016	0.1702	0.0186	0.0009	0.0011	-0.0017	0.255	.318
88	08	2,504	.852	3.0512	0.4574	0.0010	0.0002	0.0014	-0.1288	-0.3502	0.0004	0.0008	-0.0020	0.243	.296
89	06	1,099	.853	2.7264	0.5820	0.0004	0.0005	0.0012	-0.3897	-0.3800	-0.0003	0.0023	-0.0005	0.510	.328
89	07	1,270	.873	2.5998	0.6871	0.0003	-0.0001	0.0011	-0.6020	-0.7333	-0.0018	-0.0010	0.0022	0.660	.264
89	08	1,160	.904	2.6356	0.6868	-0.0007	0.0004	0.0017	-0.1479	-0.5412	0.0000	0.0004	0.0018	0.703	.276
90	08	1,759	.888	3.1147	0.4719	0.0005	0.0008	0.0017	-0.2806	0.0487	-0.0007	0.0005	-0.0013	0.353	.283
91	06	3,853	.857	3.2111	0.4155	0.0008	0.0009	0.0010	-0.1497	-0.0710	-0.0003	0.0002	-0.0003	0.195	.253
91	07	3,343	.851	3.2027	0.4361	0.0004	0.0011	0.0010	-0.1076	-0.0698	0.0000	0.0002	-0.0001	0.259	.177
92	06	556	.828	3.4109	0.4300	0.0003	-0.0002	0.0010	0.0018	-0.5882	-0.0066	0.0009	0.0084	0.180	.244
94	07	755	.811	3.0347	0.4161	0.0008	0.0011	0.0009	-0.3689	-0.5231	-0.0014	0.0020	-0.0004	0.276	.275

## Appendix H.

## White-Black Model Parameter Estimates for Full Model, without Corrections

Raw Regression Parameter Estimates															
ID	Yr.	n	$\alpha_F$	Int.	HSGPA	SAT-CR	SAT-M	SAT-W	Black	HSGPA x Blk.	SAT-CR x Blk.	SAT-M x Blk.	SAT-W x Blk.	$\sigma^2$	R <sup>2</sup>
96	08	159	.859	3.0897	0.4572	0.0000	0.0002	0.0025	0.0906	-0.2248	-0.0014	0.0013	0.0028	0.390	.317
97	06	350	.859	3.4393	0.3082	0.0009	0.0007	0.0011	-0.0549	0.3053	-0.0003	0.0002	0.0002	0.083	.407
98	06	2,237	.851	3.1360	0.4634	0.0006	0.0004	0.0010	-0.2775	-0.2530	-0.0007	0.0009	-0.0008	0.215	.261
100	06	1,740	.843	2.9341	0.6374	0.0000	0.0017	0.0013	-0.1848	-0.4177	0.0005	-0.0012	0.0010	0.415	.208
100	07	1,586	.829	3.0277	0.6578	0.0000	0.0018	0.0013	-0.1553	-0.1205	0.0002	-0.0001	-0.0024	0.360	.212
100	08	1,437	.826	3.0403	0.5705	0.0004	0.0016	0.0014	-0.1345	-0.0986	-0.0018	0.0003	0.0010	0.347	.200
101	07	2,159	.859	3.3302	0.2704	0.0010	0.0003	0.0013	-0.1358	-0.0033	-0.0002	0.0002	-0.0010	0.151	.230
101	08	1,689	.859	3.3358	0.2989	0.0008	0.0005	0.0012	-0.1254	-0.2078	-0.0005	0.0016	-0.0005	0.166	.241
102	06	2,660	.859	3.2293	0.3177	0.0007	0.0003	0.0010	-0.2501	-0.0568	-0.0010	-0.0007	0.0010	0.155	.226
102	08	2,609	.859	3.2809	0.2805	0.0008	0.0003	0.0011	-0.0860	-0.0808	-0.0012	0.0009	-0.0001	0.128	.239
103	06	260	.859	2.4932	0.6965	0.0013	0.0015	0.0004	-0.2380	0.0651	-0.0014	-0.0022	0.0012	0.725	.261
103	07	282	.859	2.2112	0.7218	0.0013	0.0004	0.0024	-0.5044	-0.2642	-0.0015	-0.0034	0.0007	0.695	.352
103	08	281	.859	2.6552	0.6944	0.0004	-0.0002	0.0008	-0.2485	-0.1912	-0.0004	0.0008	0.0000	0.879	.200
106	06	2,321	.874	3.1131	0.4991	0.0006	0.0008	0.0012	-0.1778	-0.2361	0.0004	-0.0002	0.0019	0.333	.238
106	07	2,303	.874	3.1942	0.5152	0.0000	0.0008	0.0017	-0.2785	-0.2370	-0.0003	-0.0002	0.0010	0.305	.255
106	08	2,139	.874	3.2371	0.5779	0.0004	0.0007	0.0015	-0.4031	-0.3586	0.0008	0.0000	-0.0007	0.287	.273
109	06	1,171	.832	3.2714	0.3612	0.0007	-0.0005	0.0014	-0.2279	-0.1208	0.0020	-0.0008	-0.0019	0.182	.242
109	07	1,201	.816	3.3178	0.3685	0.0008	-0.0002	0.0010	-0.1078	-0.2664	0.0005	0.0003	0.0004	0.158	.217
109	08	978	.824	3.2685	0.3633	0.0006	0.0002	0.0015	-0.0878	-0.1329	0.0004	0.0005	-0.0006	0.160	.298
110	07	527	.856	3.1328	0.3918	0.0012	0.0008	0.0011	0.0523	-0.1583	0.0019	0.0007	0.0003	0.157	.421
110	08	516	.856	3.1266	0.4775	0.0007	0.0010	0.0016	-0.1304	0.0238	0.0012	0.0002	-0.0002	0.175	.414
112	07	1,020	.851	3.0852	0.3526	0.0004	0.0008	0.0019	-0.2302	-0.1801	-0.0001	-0.0006	0.0012	0.286	.241
112	08	1,001	.869	3.0961	0.4071	0.0006	0.0008	0.0014	-0.0548	0.0929	-0.0021	0.0017	0.0025	0.285	.273
113	06	330	.830	3.3463	0.2125	0.0009	0.0002	0.0014	-0.0062	-0.6103	-0.0020	0.0009	0.0031	0.142	.277
113	07	360	.830	3.3040	0.3858	0.0012	0.0005	0.0002	-0.2237	-0.1586	-0.0006	0.0001	0.0008	0.185	.246
113	08	454	.830	3.2779	0.2599	0.0010	0.0002	0.0013	0.0453	0.3016	0.0019	0.0003	-0.0003	0.182	.265
114	06	2,451	.852	2.9146	0.4224	0.0006	0.0004	0.0014	-0.1349	-0.0631	0.0001	0.0005	-0.0002	0.357	.166
114	07	2,848	.839	2.9601	0.4425	0.0008	0.0001	0.0014	-0.1551	-0.1904	-0.0002	0.0007	-0.0002	0.313	.201
114	08	2,634	.845	3.0386	0.4850	0.0002	0.0003	0.0015	-0.1908	-0.1437	0.0011	0.0008	0.0001	0.311	.250
115	06	957	.823	3.4277	0.3147	0.0008	0.0002	0.0011	-0.1516	0.0522	-0.0008	0.0000	0.0002	0.118	.225
115	07	877	.823	3.4499	0.2099	0.0007	0.0004	0.0011	-0.1870	-0.0897	0.0010	0.0000	-0.0009	0.115	.212
115	08	775	.823	3.4461	0.2093	0.0006	0.0003	0.0008	-0.2830	-0.0233	0.0010	-0.0009	0.0009	0.120	.214
117	06	996	.827	3.2753	0.3102	0.0006	-0.0002	0.0011	-0.2502	0.1944	0.0001	0.0000	0.0006	0.185	.209
117	07	1,047	.818	3.3208	0.3820	0.0004	0.0002	0.0008	-0.3687	-0.2738	0.0014	-0.0009	0.0000	0.149	.256
117	08	772	.822	3.3299	0.2519	0.0004	0.0002	0.0013	-0.1494	0.0349	-0.0005	0.0018	-0.0004	0.137	.262



## Appendix H.

## White-Black Model Parameter Estimates for Full Model, without Corrections

Raw Regression Parameter Estimates															
ID	Yr.	n	$\alpha_F$	Int.	HSGPA	SAT-CR	SAT-M	SAT-W	Black	HSGPA x Blk.	SAT-CR x Blk.	SAT-M x Blk.	SAT-W x Blk.	$\sigma^2$	R <sup>2</sup>
118	06	219	.857	2.8144	0.5647	-0.0005	0.0004	0.0015	-0.3888	-0.5498	0.0031	-0.0012	0.0013	0.467	.313
119	07	4,327	.872	3.1171	0.4531	0.0005	0.0005	0.0011	-0.0907	-0.1003	-0.0012	-0.0001	0.0010	0.265	.258
119	08	4,577	.867	3.1430	0.5088	0.0004	0.0005	0.0013	-0.0989	0.0117	0.0012	-0.0005	-0.0010	0.234	.301
121	06	407	.859	3.4262	0.3776	0.0008	0.0006	0.0013	-0.2349	0.0338	0.0013	-0.0002	-0.0024	0.118	.405
121	07	350	.859	3.4036	0.3393	0.0002	0.0002	0.0017	-0.0883	-0.4259	0.0013	-0.0005	-0.0004	0.116	.336
121	08	337	.859	3.4067	0.2871	0.0008	0.0005	0.0014	-0.5299	-0.4373	-0.0033	-0.0025	0.0031	0.144	.296
122	06	246	.859	2.9023	0.3988	0.0005	-0.0004	0.0022	-0.0089	0.1393	0.0044	0.0016	-0.0071	0.380	.235
122	07	227	.859	2.9260	0.7271	0.0007	-0.0003	0.0010	0.1790	-0.1546	0.0038	0.0011	-0.0021	0.333	.335
122	08	232	.859	2.9539	0.4415	-0.0006	-0.0005	0.0030	0.0076	0.4680	0.0014	0.0018	-0.0029	0.295	.291
123	06	1,028	.868	2.6724	-0.2238	0.0005	-0.0027	0.0038	0.1186	0.6824	0.0006	0.0041	-0.0027	0.522	.200
124	06	333	.849	3.0736	0.4574	0.0004	-0.0002	0.0017	-0.4138	-0.3948	-0.0003	-0.0013	0.0028	0.330	.309
124	07	321	.842	3.0888	0.4876	0.0008	0.0012	0.0007	0.0404	0.0011	-0.0041	0.0033	0.0042	0.279	.386
124	08	280	.865	3.1303	0.4312	0.0008	0.0006	0.0009	-0.4224	-0.3141	0.0042	0.0014	-0.0041	0.298	.344
125	06	917	.858	2.7792	0.5734	0.0006	-0.0002	0.0014	-0.1913	-0.4057	-0.0006	0.0007	-0.0012	0.527	.211
127	06	667	.859	2.5704	0.4352	0.0013	0.0008	0.0005	-0.0086	-0.3596	-0.0054	0.0008	0.0067	0.598	.159
129	07	578	.859	3.3883	0.2733	0.0002	0.0009	0.0006	-0.2254	-0.1710	0.0009	-0.0023	0.0011	0.115	.215
131	08	174	.830	2.8372	0.3695	0.0005	0.0009	0.0013	-0.2061	0.1412	-0.0036	-0.0012	0.0033	0.397	.253
133	06	863	.885	2.7846	0.5246	0.0008	0.0007	0.0012	-0.3622	-0.0929	0.0010	0.0009	-0.0020	0.507	.250
134	06	1,394	.862	3.3453	0.3293	0.0004	0.0004	0.0012	-0.2121	-0.3417	0.0002	0.0002	0.0013	0.132	.302
134	07	1,416	.860	3.3122	0.2957	0.0008	0.0006	0.0010	-0.2710	-0.2497	0.0007	0.0008	-0.0007	0.161	.278
134	08	1,193	.860	3.3111	0.3126	0.0006	0.0008	0.0010	-0.1936	-0.1172	-0.0009	-0.0007	0.0013	0.144	.280
135	06	1,105	.859	3.2339	0.3751	0.0008	0.0005	0.0016	-0.0845	-0.3144	-0.0011	0.0000	0.0014	0.164	.315
136	07	7,708	.894	3.0824	0.4345	0.0008	0.0000	0.0010	-0.1761	-0.1545	-0.0009	0.0006	0.0008	0.273	.284
136	08	8,488	.897	2.9727	0.4901	0.0002	0.0001	0.0017	-0.2018	-0.0483	-0.0002	0.0003	0.0003	0.374	.300
137	06	565	.859	3.0639	0.4801	0.0014	0.0002	0.0008	-0.1984	0.3049	0.0011	0.0002	-0.0011	0.212	.352
137	07	581	.859	3.1015	0.5076	-0.0005	0.0005	0.0018	-0.3438	-0.5393	-0.0005	0.0004	-0.0007	0.220	.328
137	08	572	.859	3.0735	0.4031	0.0004	0.0001	0.0013	-0.1668	0.0685	-0.0029	0.0036	-0.0017	0.256	.232
138	06	434	.859	3.1462	0.3035	0.0014	0.0009	0.0015	-0.0770	-0.1506	0.0010	-0.0005	-0.0008	0.225	.310
138	07	406	.859	3.2099	0.4052	0.0006	0.0005	0.0020	-0.7196	-0.4580	0.0041	-0.0007	-0.0074	0.201	.330
138	08	365	.859	3.2451	0.3429	0.0014	0.0004	0.0010	-0.5206	0.0201	-0.0038	0.0027	-0.0015	0.166	.326
140	07	1,216	.874	3.1366	0.5898	-0.0003	0.0005	0.0014	-0.1418	-0.2259	0.0008	-0.0003	0.0004	0.316	.281
141	08	640	.883	3.0381	0.5503	0.0003	0.0005	0.0011	-0.3606	-0.0241	-0.0019	0.0013	-0.0009	0.304	.301
142	07	145	.859	2.8476	0.5051	0.0007	0.0008	0.0015	-0.1493	0.1224	0.0001	-0.0015	-0.0007	0.329	.266
142	08	227	.859	2.8129	0.4124	-0.0003	0.0009	0.0013	-0.1748	0.1101	-0.0016	0.0005	0.0038	0.533	.207

## Appendix H.

## White-Black Model Parameter Estimates for Full Model, without Corrections

Raw Regression Parameter Estimates															
ID	Yr.	n	$\alpha_F$	Int.	HSGPA	SAT-CR	SAT-M	SAT-W	Black	HSGPA x Blk.	SAT-CR x Blk.	SAT-M x Blk.	SAT-W x Blk.	$\sigma^2$	R <sup>2</sup>
144	06	435	.873	2.8358	0.4257	0.0010	0.0001	0.0011	-0.6683	-0.5400	-0.0046	-0.0016	0.0036	0.414	.218
144	07	424	.869	2.9853	0.3955	0.0007	0.0003	0.0023	-0.6227	0.3327	0.0051	-0.0065	-0.0033	0.289	.375
144	08	398	.878	2.9138	0.5931	0.0009	0.0000	0.0015	-0.0156	-0.2857	-0.0026	0.0033	0.0000	0.316	.356
145	08	3,306	.874	2.8888	0.5569	0.0003	0.0006	0.0017	-0.1848	-0.1227	-0.0002	0.0010	-0.0005	0.463	.265
147	08	858	.872	2.9213	0.5446	0.0009	-0.0002	0.0010	-0.1606	-0.4254	0.0025	-0.0030	0.0012	0.406	.252
148	06	648	.882	2.8562	0.4944	0.0010	0.0012	0.0008	0.1876	-0.1741	0.0023	0.0020	0.0001	0.256	.297
149	08	1,092	.847	3.1679	0.4633	0.0009	0.0001	0.0014	-0.0824	-0.2476	0.0019	0.0008	-0.0047	0.170	.295
151	06	2,570	.891	2.7748	0.5963	0.0008	-0.0001	0.0009	-0.1650	-0.3738	0.0000	0.0002	-0.0003	0.514	.248
153	06	635	.859	3.4532	0.0605	0.0007	0.0000	0.0016	-0.1799	-0.0304	-0.0007	0.0002	-0.0006	0.102	.234
155	06	1,281	.832	2.9550	0.4610	0.0007	0.0003	0.0012	0.1055	-0.3625	-0.0013	0.0032	0.0033	0.318	.244
155	07	2,122	.867	2.8925	0.5546	0.0004	-0.0002	0.0019	-0.1492	0.0041	-0.0010	0.0015	-0.0034	0.331	.271
155	08	2,259	.834	2.9416	0.5598	0.0007	0.0002	0.0011	0.0219	-0.3818	0.0007	-0.0004	-0.0005	0.285	.243
156	07	616	.859	2.9342	0.4354	0.0004	0.0007	0.0012	-0.2994	-0.0438	-0.0026	-0.0006	0.0002	0.336	.289
156	08	534	.859	2.9617	0.4400	0.0005	0.0001	0.0008	-0.2052	0.0074	-0.0020	0.0003	0.0007	0.339	.238
157	06	2,116	.878	2.8833	0.5569	0.0008	0.0002	0.0016	-0.2659	-0.0647	0.0004	-0.0001	-0.0031	0.399	.225
158	06	366	.863	3.0457	0.5298	0.0016	0.0002	0.0010	-0.1432	-0.2816	-0.0008	-0.0005	0.0011	0.424	.297
159	07	2,116	.850	2.9363	0.3961	0.0005	0.0004	0.0022	-0.0581	-0.0564	0.0017	-0.0001	-0.0015	0.369	.224
159	08	3,180	.850	2.8119	0.4997	0.0006	0.0001	0.0021	-0.1484	-0.0239	-0.0006	0.0001	-0.0001	0.472	.216
162	06	531	.859	2.6621	0.6689	0.0006	-0.0001	0.0010	-0.1759	-0.2767	-0.0011	0.0000	-0.0002	0.598	.167
162	08	451	.859	2.5986	0.7226	0.0001	0.0000	0.0016	-0.4623	-0.7002	0.0000	0.0015	-0.0018	0.573	.228
164	08	364	.859	3.2511	0.3237	0.0006	0.0007	0.0012	0.1139	-0.3324	0.0044	0.0011	-0.0026	0.171	.268
165	06	615	.864	3.1644	0.5001	-0.0001	0.0006	0.0014	-0.2937	-0.1387	-0.0007	-0.0014	0.0004	0.234	.250
165	07	630	.863	3.1923	0.4683	0.0000	0.0005	0.0011	-0.0916	-0.0644	0.0005	0.0008	-0.0010	0.202	.233
166	06	552	.859	3.2612	0.5319	0.0001	0.0004	0.0007	-0.2268	-0.2861	0.0025	-0.0011	0.0009	0.280	.222
166	07	584	.859	3.2858	0.5001	-0.0002	0.0002	0.0017	-0.0889	-0.1693	-0.0010	0.0002	0.0010	0.251	.199
166	08	506	.859	3.2460	0.5209	-0.0001	0.0003	0.0021	-0.5011	-0.4615	0.0005	-0.0005	-0.0006	0.279	.276
169	06	1,432	.824	2.7560	0.5839	-0.0006	0.0006	0.0016	-0.2519	0.0269	0.0013	-0.0007	0.0002	0.613	.208
169	07	1,464	.792	2.8123	0.5755	0.0004	0.0003	0.0015	-0.1421	-0.1659	0.0000	0.0009	-0.0008	0.377	.249
169	08	1,501	.866	2.6445	0.6116	-0.0010	0.0002	0.0028	-0.1211	0.0259	0.0026	0.0006	-0.0023	0.635	.201
171	06	998	.866	2.8817	0.5719	0.0003	0.0001	0.0017	-0.3415	-0.3893	-0.0010	-0.0015	0.0045	0.368	.287
171	07	995	.879	2.8046	0.5915	0.0005	0.0005	0.0014	-0.4463	-0.2521	0.0002	-0.0011	0.0000	0.410	.297
173	07	1,833	.835	3.1827	0.3453	0.0009	0.0005	0.0008	-0.1430	0.1688	0.0000	-0.0006	-0.0006	0.171	.181
173	08	1,657	.845	3.2282	0.2870	0.0007	0.0006	0.0015	-0.1194	-0.0952	-0.0003	0.0001	-0.0008	0.168	.220
174	06	343	.859	2.6744	0.5014	0.0006	0.0003	0.0016	-0.2548	-0.3455	0.0001	0.0010	-0.0004	0.409	.260

## Appendix H.

## White-Black Model Parameter Estimates for Full Model, without Corrections

Raw Regression Parameter Estimates															
ID	Yr.	n	$\alpha_F$	Int.	HSGPA	SAT-CR	SAT-M	SAT-W	Black	HSGPA x Blk.	SAT-CR x Blk.	SAT-M x Blk.	SAT-W x Blk.	$\sigma^2$	R <sup>2</sup>
175	06	1,728	.880	2.6450	0.5076	-0.0001	0.0007	0.0019	-0.0082	-0.1108	0.0005	0.0007	-0.0007	0.616	.112
175	07	1,830	.846	2.7393	0.4957	0.0003	0.0004	0.0017	-0.0858	0.2627	-0.0004	0.0002	-0.0004	0.524	.135
175	08	1,900	.865	2.7731	0.5399	-0.0003	0.0009	0.0019	-0.2425	0.0918	-0.0010	-0.0013	-0.0002	0.483	.163
176	06	1,627	.841	2.8846	0.4190	0.0015	0.0008	0.0009	-0.0248	-0.5271	-0.0005	0.0018	0.0008	0.296	.230
176	07	1,409	.809	2.8675	0.4626	0.0004	0.0010	0.0016	-0.0504	-0.1061	0.0010	-0.0015	-0.0005	0.274	.252
176	08	1,767	.825	2.8748	0.4696	0.0007	0.0004	0.0016	-0.1702	-0.1789	0.0012	0.0000	-0.0020	0.264	.240
<b>Combined</b>		334,106	.859	3.0079	0.4660	0.0004	0.0004	0.0015	-0.1831	-0.1431	-0.0001	0.0001	-0.0001	0.3453	.236

## Appendix I.

## White-Hispanic Model Parameter Estimates for Full Model, without Corrections

Raw Regression Parameter Estimates															
ID	Yr.	n	$\alpha_F$	Int.	HSGPA	SAT-CR	SAT-M	SAT-W	Hisp.	HSGPA x Hsp.	SAT-CR x Hsp.	SAT-M x Hsp.	SAT-W x Hsp.	$\sigma^2$	R <sup>2</sup>
1	07	1,551	.885	2.9640	0.3733	0.0007	0.0007	0.0017	0.0019	0.1012	-0.0002	0.0029	-0.0017	0.368	.173
1	08	1,382	.866	3.0176	0.4289	0.0002	0.0008	0.0021	-0.1849	-0.0689	-0.0027	0.0026	-0.0010	0.283	.233
2	08	908	.846	3.2708	0.3890	0.0003	0.0002	0.0015	-0.1526	-0.0882	-0.0002	0.0021	-0.0025	0.142	.280
3	08	2,630	.859	3.3020	0.4396	-0.0002	0.0006	0.0021	-0.2361	0.1171	0.0002	0.0014	-0.0025	0.336	.196
6	06	420	.821	3.1649	0.5122	0.0007	0.0002	0.0013	-0.4232	-0.1284	0.0002	-0.0018	0.0013	0.186	.338
6	07	407	.832	3.1204	0.4763	0.0002	0.0002	0.0023	-0.0694	0.0177	0.0019	0.0038	-0.0041	0.216	.317
6	08	400	.826	3.1254	0.5384	0.0012	0.0003	0.0011	-0.0195	-0.2279	0.0015	0.0036	-0.0040	0.197	.335
7	07	895	.859	2.5947	0.5033	0.0006	0.0003	0.0011	-0.1438	-0.3272	0.0003	-0.0004	-0.0001	0.529	.135
8	06	174	.859	3.2922	0.3207	0.0014	-0.0001	0.0013	-0.0488	-0.0585	-0.0015	0.0008	0.0006	0.164	.284
8	07	147	.859	3.3846	0.2432	-0.0003	0.0010	0.0014	-0.1751	-0.3470	0.0035	-0.0006	-0.0003	0.106	.357
8	08	155	.859	3.3499	0.4229	-0.0004	0.0007	0.0014	0.0103	-0.5861	0.0010	0.0015	-0.0016	0.121	.251
9	07	2,727	.852	2.9558	0.3850	0.0006	0.0009	0.0020	-0.0973	0.0988	0.0001	0.0002	-0.0005	0.266	.285
9	08	2,674	.852	2.9845	0.4072	0.0008	0.0007	0.0017	-0.0146	0.2865	0.0009	0.0001	-0.0012	0.263	.278
10	06	724	.772	3.3940	0.2959	0.0007	-0.0001	0.0006	-0.0684	-0.0497	0.0005	0.0000	0.0009	0.112	.163
10	07	774	.756	3.4138	0.2763	0.0004	0.0006	0.0008	-0.1111	-0.0576	-0.0004	0.0008	-0.0004	0.104	.171
10	08	586	.764	3.3776	0.3324	0.0009	0.0002	0.0010	-0.0874	-0.0683	-0.0006	-0.0001	-0.0004	0.126	.171
11	06	346	.824	2.7951	0.5133	0.0005	0.0012	0.0004	-0.3338	-0.3783	0.0020	0.0003	-0.0024	0.432	.205
11	07	335	.836	2.7035	0.4963	0.0006	0.0004	0.0012	-0.0423	-0.3789	0.0018	0.0005	0.0006	0.620	.135
11	08	341	.830	2.7419	0.3883	0.0011	-0.0005	0.0018	0.0557	0.0682	0.0013	-0.0015	0.0024	0.527	.151
12	07	544	.859	2.2327	0.7090	-0.0003	0.0000	0.0013	-0.1540	0.2662	-0.0017	0.0002	-0.0021	0.934	.198
12	08	544	.859	2.3031	0.7332	0.0000	-0.0008	0.0012	0.1007	-0.0530	0.0004	0.0010	0.0027	0.936	.180
13	06	1,392	.856	2.9824	0.4993	0.0002	-0.0001	0.0012	-0.0672	-0.1193	0.0019	0.0003	0.0011	0.284	.209
14	06	1,104	.866	3.0824	0.4415	0.0003	0.0002	0.0012	-0.1024	-0.1011	0.0004	-0.0007	0.0013	0.217	.264
14	07	1,156	.863	3.0782	0.5095	0.0006	0.0004	0.0013	-0.0766	-0.1847	0.0002	-0.0006	-0.0002	0.224	.247
14	08	1,113	.844	3.1258	0.3819	0.0006	0.0004	0.0010	-0.0678	0.0258	0.0001	-0.0003	0.0003	0.169	.253
15	06	300	.859	3.1293	0.4522	0.0005	-0.0002	0.0013	-0.2962	-0.1505	0.0041	-0.0029	-0.0042	0.249	.264
15	07	275	.859	3.1080	0.5063	0.0004	-0.0001	0.0020	-0.1239	-0.1360	0.0015	0.0001	-0.0044	0.273	.278
15	08	221	.859	3.0601	0.4946	0.0015	0.0002	-0.0002	-0.1110	-0.3050	0.0029	-0.0015	-0.0031	0.327	.196
16	07	191	.845	3.0375	0.2870	0.0002	0.0004	0.0012	-0.2700	0.0441	-0.0021	0.0044	-0.0004	0.638	.271
16	08	221	.845	2.9927	0.6341	0.0008	0.0004	0.0007	0.0029	-0.2219	0.0010	-0.0007	0.0027	0.346	.435
18	07	231	.859	2.5063	0.4236	-0.0021	0.0006	0.0021	0.0065	0.1399	0.0025	0.0003	-0.0035	0.736	.092
18	08	228	.859	2.7537	0.6436	-0.0009	0.0010	0.0007	-0.2866	-0.6746	0.0058	0.0068	-0.0066	0.529	.237
19	06	381	.829	3.0414	0.3712	0.0006	0.0011	0.0011	-0.1494	0.0885	0.0004	0.0000	-0.0027	0.176	.395
19	07	361	.838	3.0058	0.3422	0.0009	0.0005	0.0014	-0.1537	0.0154	-0.0016	0.0013	-0.0006	0.228	.297
19	08	763	.844	2.9307	0.5007	0.0001	0.0009	0.0014	-0.1797	-0.0041	-0.0005	0.0016	-0.0004	0.412	.258

## Appendix I.

## White-Hispanic Model Parameter Estimates for Full Model, without Corrections

Raw Regression Parameter Estimates															
ID	Yr.	n	$\alpha_F$	Int.	HSGPA	SAT-CR	SAT-M	SAT-W	Hisp.	HSGPA x Hsp.	SAT-CR x Hsp.	SAT-M x Hsp.	SAT-W x Hsp.	$\sigma^2$	R <sup>2</sup>
20	08	565	.859	3.2908	0.4026	0.0000	0.0003	0.0024	-0.0876	-0.0462	-0.0013	0.0020	0.0000	0.196	.276
21	07	823	.848	2.9067	0.5983	-0.0024	0.0024	0.0019	-0.2067	-0.0417	0.0020	-0.0020	0.0005	0.600	.225
22	06	1,292	.832	3.3880	0.4209	0.0006	0.0004	0.0010	-0.2061	-0.1726	0.0006	-0.0005	0.0002	0.134	.250
23	06	502	.866	2.9902	0.5498	0.0007	-0.0001	0.0014	0.0230	-0.3034	-0.0022	0.0007	0.0016	0.252	.250
23	08	572	.834	3.0367	0.4210	0.0009	0.0011	0.0014	0.0924	-0.2133	-0.0032	0.0007	0.0001	0.219	.293
26	06	4,442	.859	3.1628	0.3418	0.0008	0.0011	0.0015	-0.1058	-0.0262	-0.0006	-0.0003	0.0008	0.342	.231
26	07	4,394	.859	3.1171	0.3976	0.0007	0.0005	0.0021	-0.1549	0.1140	0.0006	0.0002	-0.0003	0.392	.253
26	08	3,959	.859	3.1728	0.3336	0.0004	0.0009	0.0018	-0.1629	0.0340	0.0005	0.0001	-0.0006	0.336	.220
27	06	1,343	.874	3.2701	0.2957	0.0003	-0.0003	0.0011	-0.3094	-0.0894	0.0002	0.0002	-0.0012	0.308	.115
27	07	1,011	.864	3.2727	0.4203	0.0006	-0.0004	0.0017	-0.0016	-0.1629	-0.0004	0.0008	0.0002	0.291	.164
27	08	1,027	.847	3.2900	0.3376	-0.0001	0.0000	0.0016	-0.1654	0.0636	0.0003	-0.0005	0.0000	0.266	.142
28	07	293	.859	2.3645	0.5751	0.0001	0.0020	-0.0006	0.2401	-0.2738	0.0004	-0.0046	0.0043	0.878	.189
28	08	324	.859	2.4134	0.4767	0.0001	0.0007	0.0007	0.1140	0.1114	-0.0007	-0.0003	-0.0015	0.873	.145
29	06	1,464	.874	2.8198	0.5858	0.0003	0.0006	0.0017	-0.1810	-0.1504	-0.0001	-0.0001	0.0005	0.555	.247
29	07	1,659	.874	2.8855	0.6286	0.0000	0.0004	0.0017	-0.1612	-0.0232	-0.0001	0.0011	0.0003	0.540	.251
29	08	1,844	.874	2.9284	0.5548	0.0001	-0.0002	0.0023	-0.1156	-0.0978	0.0009	0.0001	-0.0010	0.442	.250
31	07	1,152	.879	2.3938	0.5948	0.0014	0.0016	0.0006	-0.0514	0.0072	-0.0006	-0.0017	0.0008	0.749	.194
31	08	1,165	.876	2.5011	0.6671	0.0006	0.0009	0.0017	-0.0192	-0.0866	-0.0003	0.0013	0.0001	0.681	.238
32	08	667	.859	3.1682	0.3728	0.0003	0.0001	0.0011	-0.0389	-0.0526	0.0008	-0.0001	-0.0009	0.165	.245
33	06	2,052	.876	3.1911	0.5175	0.0005	-0.0002	0.0018	-0.1673	-0.0315	-0.0003	-0.0001	-0.0002	0.267	.266
34	06	1,414	.854	2.9914	0.6192	-0.0004	0.0008	0.0014	-0.2069	-0.4426	-0.0017	-0.0015	0.0024	0.346	.259
34	07	1,448	.830	3.0337	0.5815	-0.0006	0.0009	0.0018	-0.1614	-0.1493	0.0036	-0.0018	-0.0032	0.298	.283
34	08	1,510	.847	3.0165	0.6059	0.0002	0.0005	0.0015	-0.0395	-0.0310	0.0004	-0.0002	0.0010	0.338	.282
35	06	790	.845	3.2084	0.3727	0.0006	0.0011	0.0011	-0.1458	-0.1570	-0.0013	-0.0005	0.0031	0.193	.237
35	07	788	.824	3.1338	0.3987	0.0001	0.0013	0.0012	-0.0505	-0.0570	0.0021	0.0000	-0.0007	0.180	.237
35	08	703	.835	3.1894	0.4741	0.0004	0.0009	0.0011	-0.1945	0.0943	-0.0008	-0.0001	-0.0007	0.200	.255
36	07	341	.859	3.0663	0.3964	0.0014	0.0004	0.0013	0.1754	0.0419	-0.0008	0.0022	0.0002	0.261	.315
36	08	302	.859	3.1315	0.4945	0.0006	0.0006	0.0016	-0.0545	-0.1264	-0.0020	0.0018	0.0030	0.185	.420
39	07	214	.859	2.9170	0.4154	0.0010	0.0017	0.0008	0.0362	-0.3555	0.0030	0.0022	-0.0042	0.162	.329
40	06	1,838	.859	3.1882	0.4073	0.0007	0.0002	0.0015	-0.1262	-0.1802	-0.0002	0.0004	-0.0006	0.220	.261
40	07	1,870	.859	3.2341	0.4031	0.0006	0.0004	0.0010	-0.2515	-0.0784	-0.0002	0.0001	-0.0002	0.209	.266
40	08	1,781	.857	3.1832	0.4191	0.0008	0.0002	0.0010	-0.1894	-0.0266	0.0008	-0.0008	-0.0002	0.227	.227
41	07	4,484	.855	3.1495	0.3473	0.0005	0.0003	0.0014	-0.0048	-0.0407	-0.0002	0.0001	-0.0002	0.277	.145
41	08	3,622	.855	3.2154	0.3311	0.0005	0.0004	0.0013	0.0137	-0.0158	-0.0007	0.0001	0.0002	0.251	.131

## Appendix I.

## White-Hispanic Model Parameter Estimates for Full Model, without Corrections

Raw Regression Parameter Estimates															
ID	Yr.	n	$\alpha_F$	Int.	HSGPA	SAT-CR	SAT-M	SAT-W	Hisp.	HSGPA x Hsp.	SAT-CR x Hsp.	SAT-M x Hsp.	SAT-W x Hsp.	$\sigma^2$	R <sup>2</sup>
42	07	568	.759	3.4981	0.2195	0.0008	0.0003	0.0002	0.0034	0.0295	0.0001	0.0018	0.0003	0.113	.103
42	08	483	.759	3.5530	0.2661	0.0000	0.0004	0.0012	-0.0458	0.0799	0.0015	0.0004	0.0007	0.107	.151
43	06	263	.859	3.3365	0.1890	0.0017	0.0008	0.0003	0.0086	-0.0323	-0.0022	0.0023	0.0004	0.113	.287
43	07	304	.859	3.3158	0.3442	0.0007	0.0017	0.0011	0.0095	-0.0935	0.0003	0.0014	-0.0007	0.099	.425
43	08	194	.859	3.3714	0.2568	0.0003	0.0009	0.0014	-0.1810	-0.0395	0.0009	0.0001	-0.0014	0.085	.358
45	06	947	.821	2.9732	0.3582	0.0001	0.0005	0.0019	0.0204	-0.1703	-0.0013	0.0044	0.0008	0.484	.140
45	07	1,088	.820	2.9389	0.5345	0.0008	-0.0001	0.0016	0.0617	0.0177	0.0001	0.0038	-0.0058	0.467	.194
45	08	989	.823	2.8608	0.5327	0.0003	0.0007	0.0011	0.0300	-0.3417	0.0016	0.0001	-0.0002	0.538	.165
46	08	363	.864	3.1135	0.4858	0.0004	0.0014	0.0014	0.0659	-0.1912	0.0014	-0.0015	-0.0009	0.189	.395
47	08	849	.905	2.4317	0.5887	0.0010	0.0001	0.0018	-0.1655	-0.4340	0.0009	0.0036	-0.0025	0.587	.229
48	06	622	.794	3.3191	0.4343	0.0003	0.0003	0.0008	-0.0548	-0.4942	0.0008	0.0017	-0.0005	0.185	.250
48	07	600	.811	3.3211	0.3974	0.0009	-0.0001	0.0002	-0.0443	-0.1655	-0.0009	0.0011	0.0015	0.208	.171
48	08	560	.803	3.2759	0.4608	0.0008	0.0001	0.0010	0.0248	-0.1148	-0.0003	-0.0009	0.0014	0.176	.277
49	06	2,019	.854	2.8139	0.4771	0.0009	0.0001	0.0017	-0.0968	-0.2186	-0.0002	0.0013	-0.0001	0.355	.234
49	07	2,230	.856	2.8069	0.4552	0.0009	0.0008	0.0014	-0.1338	-0.0999	0.0026	-0.0008	-0.0022	0.349	.249
49	08	2,122	.847	2.7594	0.5263	0.0008	-0.0001	0.0018	-0.1404	-0.1494	-0.0009	-0.0006	0.0016	0.379	.244
51	08	129	.859	3.4540	0.2616	0.0006	0.0007	0.0017	-0.1999	-0.3086	0.0000	-0.0043	0.0010	0.102	.357
52	08	271	.901	2.6619	0.7124	-0.0008	0.0020	0.0030	-0.0082	-0.9034	-0.0002	-0.0035	-0.0003	0.610	.310
53	06	2,096	.846	3.1402	0.4905	0.0007	-0.0001	0.0015	-0.2895	-0.0649	0.0009	-0.0009	0.0006	0.273	.207
53	07	2,574	.838	3.1563	0.4610	0.0010	0.0002	0.0011	-0.1085	0.1229	-0.0019	-0.0018	0.0022	0.225	.265
53	08	2,312	.854	3.1556	0.4327	0.0007	0.0006	0.0014	-0.0642	0.2089	-0.0012	-0.0008	-0.0004	0.222	.221
54	06	172	.859	2.7465	0.7513	-0.0011	-0.0010	0.0051	0.0619	-0.0671	-0.0019	0.0048	-0.0031	0.554	.388
58	06	2,059	.899	2.6292	0.6523	0.0006	0.0001	0.0012	-0.0581	-0.2750	-0.0010	0.0013	0.0007	0.860	.123
58	07	1,929	.894	2.6343	0.6126	0.0000	0.0008	0.0022	-0.0829	0.0090	0.0020	0.0005	-0.0015	0.735	.179
58	08	1,993	.904	2.7088	0.6949	-0.0001	0.0005	0.0020	-0.1302	0.1466	0.0012	-0.0003	-0.0016	0.760	.180
59	06	2,952	.807	3.1867	0.4537	0.0000	0.0001	0.0013	-0.0527	0.1854	-0.0006	0.0006	-0.0005	0.237	.208
59	07	2,879	.849	3.2833	0.4077	0.0005	0.0001	0.0010	-0.0904	0.1069	0.0006	0.0011	-0.0020	0.212	.154
59	08	2,665	.829	3.2900	0.3589	0.0000	0.0004	0.0014	-0.0086	-0.0428	0.0001	0.0000	0.0000	0.194	.156
60	06	1,123	.892	2.8038	0.3290	0.0001	-0.0007	0.0014	0.0825	0.2094	0.0025	-0.0002	-0.0006	0.386	.099
60	07	1,216	.892	2.6650	0.5494	-0.0003	0.0002	0.0014	-0.1360	-0.8458	-0.0012	-0.0014	-0.0011	0.669	.112
60	08	1,188	.892	2.6976	0.4934	-0.0006	-0.0011	0.0020	-0.0579	0.2101	-0.0053	0.0000	0.0023	0.593	.131
61	06	624	.859	2.7531	0.5579	0.0002	0.0003	0.0012	0.1017	-0.2337	0.0020	0.0006	-0.0030	0.484	.151
61	07	563	.880	2.7523	0.6872	0.0007	0.0002	0.0008	-0.3756	0.2382	0.0024	-0.0036	-0.0010	0.632	.192
61	08	698	.869	2.8625	0.6051	0.0011	0.0000	0.0007	-0.2022	0.0739	-0.0022	0.0043	-0.0008	0.497	.211
62	06	2,704	.859	3.0459	0.4196	0.0006	0.0004	0.0011	-0.1789	0.2355	-0.0006	0.0001	0.0005	0.357	.160

## Appendix I.

## White-Hispanic Model Parameter Estimates for Full Model, without Corrections

Raw Regression Parameter Estimates															
ID	Yr.	n	$\alpha_F$	Int.	HSGPA	SAT-CR	SAT-M	SAT-W	Hisp.	HSGPA x Hsp.	SAT-CR x Hsp.	SAT-M x Hsp.	SAT-W x Hsp.	$\sigma^2$	R <sup>2</sup>
63	06	328	.859	3.3927	0.3543	0.0002	0.0010	0.0003	-0.4969	-0.4017	-0.0007	-0.0015	0.0002	0.122	.270
63	07	321	.859	3.3331	0.2342	0.0007	0.0003	0.0015	-0.1299	-0.2934	0.0012	-0.0006	-0.0010	0.131	.255
63	08	318	.859	3.3779	0.3806	0.0005	-0.0002	0.0008	-0.1416	-0.1842	-0.0007	0.0025	-0.0004	0.138	.205
64	06	2,768	.859	2.5643	0.5578	0.0002	0.0013	0.0017	-0.1958	-0.1305	0.0008	-0.0004	-0.0004	0.744	.192
66	06	2,586	.890	2.9251	0.6430	0.0000	0.0003	0.0017	-0.1446	-0.0323	0.0004	0.0006	-0.0001	0.568	.171
66	07	3,030	.890	2.7753	0.7628	0.0002	0.0002	0.0017	-0.1339	-0.0517	-0.0008	0.0004	0.0008	0.636	.217
67	08	114	.901	3.1109	0.4010	-0.0030	0.0021	0.0035	-0.2656	0.9228	0.0018	-0.0047	0.0006	0.587	.350
69	07	1,515	.916	2.6163	0.6243	-0.0005	-0.0002	0.0023	-0.1331	0.4384	-0.0053	-0.0002	0.0015	0.853	.178
69	08	1,553	.916	2.6560	0.6350	-0.0004	-0.0002	0.0018	0.0049	-0.3175	0.0007	0.0027	0.0001	0.797	.161
70	08	1,266	.859	3.0474	0.5714	0.0006	-0.0001	0.0019	-0.3084	-0.3220	-0.0014	0.0001	-0.0008	0.318	.232
72	06	1,443	.840	2.8719	0.5650	0.0015	0.0002	0.0009	0.0168	-0.0988	-0.0022	-0.0001	0.0009	0.368	.185
73	06	1,315	.886	2.7836	0.5515	0.0005	0.0006	0.0009	-0.2678	-0.2087	0.0035	-0.0014	-0.0015	0.377	.235
73	07	1,395	.882	2.6854	0.6063	-0.0003	0.0000	0.0025	-0.1842	-0.1818	-0.0019	0.0020	0.0001	0.568	.211
73	08	1,231	.882	2.7411	0.6585	-0.0004	0.0001	0.0024	0.0911	-0.0021	0.0034	0.0008	-0.0002	0.459	.243
74	07	1,196	.859	2.4470	0.5862	-0.0006	0.0009	0.0024	-0.0616	0.0845	0.0014	-0.0006	-0.0004	0.739	.178
74	08	1,350	.859	2.4792	0.6587	-0.0005	0.0009	0.0021	-0.0411	-0.1381	0.0000	0.0000	0.0001	0.803	.156
75	06	4,561	.878	2.7986	0.6472	-0.0002	0.0003	0.0016	-0.0671	0.0054	-0.0010	0.0003	-0.0016	0.516	.231
75	08	3,928	.870	2.8997	0.6174	-0.0003	0.0000	0.0016	-0.0805	-0.2087	-0.0005	0.0009	-0.0007	0.407	.222
77	06	1,526	.878	3.0302	0.5320	-0.0002	-0.0001	0.0017	0.2579	-0.0754	-0.0010	0.0026	0.0006	0.354	.260
77	07	1,080	.874	3.4671	0.1920	0.0004	-0.0001	0.0007	-0.0920	-0.3563	-0.0002	0.0003	0.0014	0.066	.253
77	08	1,483	.874	3.1066	0.5550	0.0003	-0.0002	0.0017	0.0384	0.1522	-0.0047	-0.0005	0.0065	0.286	.310
78	06	2,374	.859	3.0265	0.2834	0.0013	0.0006	0.0011	-0.1634	0.1210	-0.0009	-0.0004	-0.0003	0.185	.222
78	07	2,371	.859	3.0333	0.3058	0.0010	0.0006	0.0013	-0.2128	-0.0250	-0.0007	-0.0004	0.0004	0.216	.201
78	08	2,062	.859	3.0579	0.2834	0.0010	0.0006	0.0012	-0.2003	-0.0573	-0.0010	0.0001	0.0002	0.178	.209
80	07	1,734	.838	3.0491	0.4634	0.0004	-0.0001	0.0015	-0.2225	-0.0854	0.0035	0.0004	-0.0033	0.243	.189
82	06	1,255	.845	2.9448	0.4664	0.0003	-0.0002	0.0016	-0.1246	-0.0114	0.0013	0.0006	-0.0018	0.391	.161
84	06	619	.881	3.1660	0.4654	0.0006	0.0003	0.0009	-0.0089	-0.1083	-0.0010	0.0003	0.0001	0.299	.227
85	06	5,642	.867	2.8774	0.4318	0.0007	0.0010	0.0015	-0.0794	-0.0510	0.0008	-0.0001	-0.0004	0.350	.209
85	07	5,991	.859	2.8948	0.4171	0.0007	0.0008	0.0015	-0.0836	0.0257	0.0006	-0.0002	-0.0002	0.351	.206
85	08	5,910	.863	2.9457	0.4158	0.0004	0.0007	0.0017	-0.1117	-0.1456	-0.0003	0.0010	-0.0006	0.339	.181
88	06	2,007	.866	3.0186	0.4345	0.0005	0.0006	0.0016	-0.0511	0.0401	0.0011	-0.0011	0.0000	0.269	.294
88	07	2,031	.856	3.0014	0.4520	0.0011	0.0000	0.0016	-0.0577	-0.3318	0.0001	-0.0001	-0.0005	0.260	.305
88	08	2,585	.852	3.0519	0.4574	0.0010	0.0002	0.0014	-0.0960	-0.0604	0.0005	0.0003	-0.0010	0.243	.294
89	06	1,062	.853	2.7495	0.5820	0.0004	0.0005	0.0012	-0.2443	0.0465	0.0064	-0.0082	0.0025	0.499	.311
89	08	1,114	.904	2.6577	0.6868	-0.0007	0.0004	0.0017	0.1793	-0.3896	0.0039	-0.0011	-0.0057	0.700	.273

## Appendix I.

## White-Hispanic Model Parameter Estimates for Full Model, without Corrections

ID	Yr.	n	$\alpha_F$	Int.	HSGPA	SAT-CR	SAT-M	SAT-W	Hisp.	Raw Regression Parameter Estimates					$\sigma^2$	R <sup>2</sup>
										HSGPA	SAT-CR	SAT-M	SAT-W			
										x Hsp.	x Hsp.	x Hsp.	x Hsp.			
90	08	1,880	.888	3.1170	0.4719	0.0005	0.0008	0.0017	-0.2303	0.2520	0.0008	-0.0004	-0.0004	0.347	.293	
91	06	3,648	.857	3.2271	0.4155	0.0008	0.0009	0.0010	-0.0385	-0.2774	-0.0008	-0.0002	0.0002	0.192	.223	
91	07	3,182	.851	3.2155	0.4361	0.0004	0.0011	0.0010	-0.0356	-0.0428	0.0006	-0.0007	0.0001	0.258	.157	
92	06	579	.828	3.4127	0.4300	0.0003	-0.0002	0.0010	-0.0114	-0.4485	-0.0006	0.0015	0.0002	0.183	.234	
92	07	513	.884	3.4324	0.3195	0.0003	0.0002	0.0012	-0.0283	-0.3519	0.0013	-0.0017	-0.0007	0.161	.209	
92	08	560	.838	3.4272	0.2903	0.0005	0.0001	0.0011	0.0983	-0.3831	0.0015	0.0018	-0.0027	0.148	.196	
94	07	784	.811	3.0338	0.4161	0.0008	0.0011	0.0009	-0.0451	-0.0212	0.0000	-0.0011	0.0018	0.273	.263	
97	06	360	.859	3.4412	0.3082	0.0009	0.0007	0.0011	-0.1967	-0.1825	0.0010	-0.0015	-0.0004	0.096	.339	
98	06	2,201	.851	3.1414	0.4634	0.0006	0.0004	0.0010	-0.0861	-0.2526	-0.0012	0.0012	0.0005	0.211	.252	
100	06	1,706	.843	2.9477	0.6374	0.0000	0.0017	0.0013	0.0024	-0.1260	-0.0012	-0.0007	-0.0002	0.420	.193	
100	07	1,594	.829	3.0350	0.6578	0.0000	0.0018	0.0013	-0.1496	-0.1935	0.0002	0.0010	-0.0005	0.361	.211	
100	08	1,423	.826	3.0534	0.5705	0.0004	0.0016	0.0014	-0.2130	-0.0378	0.0018	-0.0007	-0.0030	0.348	.184	
101	07	2,169	.859	3.3381	0.2704	0.0010	0.0003	0.0013	-0.1328	0.0768	0.0001	-0.0006	0.0004	0.154	.227	
101	08	1,682	.859	3.3444	0.2989	0.0008	0.0005	0.0012	-0.0844	-0.0753	0.0004	0.0009	-0.0006	0.166	.215	
102	06	2,713	.859	3.2325	0.3177	0.0007	0.0003	0.0010	-0.0357	-0.1504	0.0000	-0.0008	0.0008	0.154	.201	
102	08	2,651	.859	3.2820	0.2805	0.0008	0.0003	0.0011	-0.0660	-0.0556	0.0002	-0.0008	-0.0003	0.128	.225	
103	06	208	.859	2.5763	0.6965	0.0013	0.0015	0.0004	-0.0624	-0.2339	-0.0027	-0.0012	0.0019	0.672	.240	
103	07	227	.859	2.3282	0.7218	0.0013	0.0004	0.0024	-0.0084	0.3138	0.0021	0.0021	-0.0047	0.745	.323	
103	08	225	.859	2.7433	0.6944	0.0004	-0.0002	0.0008	-0.0796	0.6589	-0.0002	-0.0017	-0.0005	0.876	.222	
106	06	2,145	.874	3.1323	0.4991	0.0006	0.0008	0.0012	0.0723	-0.6842	-0.0034	0.0006	0.0066	0.326	.197	
106	07	2,117	.874	3.2198	0.5152	0.0000	0.0008	0.0017	-0.1639	-0.1528	0.0009	-0.0047	0.0017	0.291	.209	
106	08	2,010	.874	3.2590	0.5779	0.0004	0.0007	0.0015	-0.1156	-0.2856	-0.0032	0.0003	-0.0027	0.275	.224	
108	06	267	.841	2.9513	0.4629	0.0000	0.0002	0.0022	-0.1807	-0.0449	-0.0012	-0.0022	0.0002	0.233	.283	
108	07	286	.831	3.0113	0.5212	0.0010	0.0012	0.0003	0.0104	-0.0350	0.0009	0.0008	-0.0008	0.302	.303	
109	06	1,294	.832	3.2872	0.3612	0.0007	-0.0005	0.0014	-0.1935	-0.1265	0.0002	0.0001	0.0000	0.176	.229	
109	07	1,338	.816	3.3213	0.3685	0.0008	-0.0002	0.0010	-0.0950	-0.1049	-0.0010	0.0010	0.0003	0.161	.180	
109	08	1,095	.824	3.2804	0.3633	0.0006	0.0002	0.0015	-0.0633	-0.0626	0.0001	-0.0006	0.0010	0.165	.262	
110	08	486	.856	3.1432	0.4775	0.0007	0.0010	0.0016	-0.1412	0.3087	-0.0033	0.0035	-0.0023	0.175	.351	
112	07	1,068	.851	3.0902	0.3526	0.0004	0.0008	0.0019	-0.2113	0.1688	0.0014	-0.0014	-0.0018	0.284	.229	
112	08	1,045	.869	3.1044	0.4071	0.0006	0.0008	0.0014	-0.1045	0.1600	0.0011	0.0016	-0.0027	0.283	.245	
113	06	359	.830	3.3426	0.2125	0.0009	0.0002	0.0014	-0.1230	0.0250	0.0004	0.0016	-0.0013	0.156	.257	
113	07	388	.830	3.3008	0.3858	0.0012	0.0005	0.0002	-0.0739	-0.1746	0.0013	-0.0004	-0.0006	0.178	.234	
113	08	467	.830	3.2844	0.2599	0.0010	0.0002	0.0013	0.0231	0.2343	0.0012	-0.0011	0.0008	0.186	.247	



## Appendix I.

## White-Hispanic Model Parameter Estimates for Full Model, without Corrections

ID	Yr.	n	$\alpha_F$	Int.	HSGPA	SAT-CR	SAT-M	SAT-W	Hisp.	Raw Regression Parameter Estimates					$\sigma^2$	R <sup>2</sup>
										HSGPA	SAT-CR	SAT-M	SAT-W	$\sigma^2$		
										x Hsp.	x Hsp.	x Hsp.	x Hsp.			
114	06	2,013	.852	2.9341	0.4224	0.0006	0.0004	0.0014	-0.2047	-0.1580	-0.0009	0.0006	0.0008	0.362	.157	
114	07	2,418	.839	2.9857	0.4425	0.0008	0.0001	0.0014	-0.1511	-0.2766	-0.0005	0.0004	0.0003	0.314	.185	
114	08	2,303	.845	3.0622	0.4850	0.0002	0.0003	0.0015	-0.1570	-0.3165	0.0003	0.0011	-0.0004	0.305	.204	
115	06	983	.823	3.4351	0.3147	0.0008	0.0002	0.0011	-0.2228	-0.2848	0.0003	-0.0015	0.0001	0.122	.198	
115	07	909	.823	3.4538	0.2099	0.0007	0.0004	0.0011	-0.2119	0.1273	-0.0015	0.0002	0.0004	0.119	.196	
115	08	814	.823	3.4454	0.2093	0.0006	0.0003	0.0008	-0.1026	0.0359	0.0001	0.0001	0.0007	0.120	.154	
117	06	964	.827	3.2831	0.3102	0.0006	-0.0002	0.0011	-0.2558	0.1051	0.0008	0.0008	0.0005	0.183	.179	
117	07	1,005	.818	3.3320	0.3820	0.0004	0.0002	0.0008	-0.1027	-0.1442	0.0009	0.0014	0.0009	0.150	.203	
117	08	753	.822	3.3486	0.2519	0.0004	0.0002	0.0013	-0.2363	-0.0577	-0.0005	-0.0018	0.0012	0.139	.171	
118	06	233	.857	2.8322	0.5647	-0.0005	0.0004	0.0015	-0.0722	-0.0818	0.0023	0.0009	-0.0006	0.384	.276	
119	07	4,206	.872	3.1302	0.4531	0.0005	0.0005	0.0011	-0.1051	0.0587	0.0004	0.0005	-0.0010	0.264	.249	
119	08	4,469	.867	3.1570	0.5088	0.0004	0.0005	0.0013	-0.0923	-0.1198	0.0003	0.0000	-0.0004	0.232	.282	
120	08	297	.908	2.9950	0.4151	0.0009	-0.0003	0.0026	-0.0598	-0.2633	0.0041	-0.0008	-0.0006	0.302	.352	
121	06	413	.859	3.4395	0.3776	0.0008	0.0006	0.0013	-0.0133	-0.4246	-0.0012	-0.0020	0.0035	0.118	.363	
121	07	353	.859	3.4084	0.3393	0.0002	0.0002	0.0017	-0.2812	0.1688	0.0014	-0.0012	-0.0013	0.119	.338	
121	08	346	.859	3.4036	0.2871	0.0008	0.0005	0.0014	-0.2323	0.3480	-0.0014	0.0022	-0.0007	0.145	.312	
122	06	302	.859	2.8902	0.3988	0.0005	-0.0004	0.0022	-0.1395	0.0761	0.0012	0.0010	-0.0016	0.373	.230	
122	07	251	.859	2.9438	0.7271	0.0007	-0.0003	0.0010	-0.0366	-0.4218	-0.0044	0.0012	0.0030	0.348	.286	
122	08	291	.859	2.9567	0.4415	-0.0006	-0.0005	0.0030	-0.1416	-0.1344	0.0013	-0.0008	-0.0015	0.300	.231	
123	06	38	.868	2.6403	-0.2238	0.0005	-0.0027	0.0038	0.2929	0.9233	-0.0025	0.0025	-0.0040	0.286	.359	
124	08	275	.865	3.1563	0.4312	0.0008	0.0006	0.0009	-0.0492	-0.0872	-0.0012	0.0005	0.0028	0.283	.291	
125	06	836	.858	2.8027	0.5734	0.0006	-0.0002	0.0014	-0.2401	-0.0026	0.0009	-0.0020	-0.0003	0.530	.223	
127	06	679	.859	2.5693	0.4352	0.0013	0.0008	0.0005	0.2057	0.2508	0.0019	0.0007	0.0018	0.595	.157	
128	07	705	.828	3.2245	0.3484	0.0009	0.0001	0.0013	0.0022	-0.0546	-0.0009	0.0018	-0.0006	0.141	.286	
128	08	795	.815	3.1902	0.4376	0.0005	-0.0002	0.0014	-0.1664	-0.3027	0.0006	0.0006	0.0001	0.179	.254	
129	07	586	.859	3.3934	0.2733	0.0002	0.0009	0.0006	-0.0088	0.0269	0.0004	-0.0003	0.0003	0.114	.189	
131	08	252	.830	2.8373	0.3695	0.0005	0.0009	0.0013	-0.1668	0.0520	-0.0011	-0.0025	0.0028	0.428	.235	
132	08	391	.867	2.9620	0.5793	-0.0004	0.0019	0.0009	-0.4444	0.0453	-0.0053	-0.0044	0.0048	0.650	.223	
134	06	1,469	.862	3.3480	0.3293	0.0004	0.0004	0.0012	-0.1049	0.0009	-0.0002	-0.0005	-0.0001	0.132	.244	
134	07	1,461	.860	3.3204	0.2957	0.0008	0.0006	0.0010	-0.1419	-0.0068	0.0004	-0.0002	-0.0018	0.159	.212	
134	08	1,221	.860	3.3200	0.3126	0.0006	0.0008	0.0010	-0.0894	-0.1075	-0.0003	0.0005	-0.0001	0.146	.236	
135	06	1,142	.859	3.2306	0.3751	0.0008	0.0005	0.0016	-0.1577	-0.1512	0.0007	-0.0016	-0.0003	0.169	.304	
136	07	7,523	.894	3.0947	0.4345	0.0008	0.0000	0.0010	-0.1967	-0.0406	-0.0005	0.0001	0.0006	0.269	.274	
136	08	8,196	.897	2.9938	0.4901	0.0002	0.0001	0.0017	-0.0838	-0.2139	-0.0011	0.0009	0.0004	0.364	.271	

## Appendix I.

## White-Hispanic Model Parameter Estimates for Full Model, without Corrections

Raw Regression Parameter Estimates															
ID	Yr.	n	$\alpha_F$	Int.	HSGPA	SAT-CR	SAT-M	SAT-W	Hisp.	HSGPA x Hsp.	SAT-CR x Hsp.	SAT-M x Hsp.	SAT-W x Hsp.	$\sigma^2$	R <sup>2</sup>
137	06	603	.859	3.0610	0.4801	0.0014	0.0002	0.0008	-0.1528	0.0068	0.0007	0.0002	0.0002	0.211	.339
137	07	631	.859	3.1020	0.5076	-0.0005	0.0005	0.0018	-0.0568	-0.0398	0.0003	0.0004	0.0012	0.214	.333
137	08	617	.859	3.0730	0.4031	0.0004	0.0001	0.0013	-0.0502	0.0071	-0.0004	0.0013	-0.0001	0.256	.219
138	06	426	.859	3.1618	0.3035	0.0014	0.0009	0.0015	-0.0573	-0.1455	-0.0001	0.0009	-0.0002	0.220	.309
138	07	403	.859	3.2237	0.4052	0.0006	0.0005	0.0020	-0.1705	-0.3225	0.0013	-0.0008	-0.0001	0.194	.279
138	08	360	.859	3.2602	0.3429	0.0014	0.0004	0.0010	0.0955	-0.2670	-0.0046	0.0007	0.0028	0.159	.242
140	07	1,179	.874	3.1416	0.5898	-0.0003	0.0005	0.0014	-0.0701	-0.0974	-0.0001	0.0044	-0.0027	0.317	.281
141	08	629	.883	3.0454	0.5503	0.0003	0.0005	0.0011	-0.3634	-0.5048	0.0060	-0.0029	-0.0048	0.297	.284
142	07	261	.859	2.7606	0.5051	0.0007	0.0008	0.0015	-0.1135	-0.2848	0.0011	-0.0010	-0.0015	0.351	.197
142	08	389	.859	2.7648	0.4124	-0.0003	0.0009	0.0013	-0.0840	-0.0361	0.0015	0.0004	-0.0004	0.499	.167
145	08	3,731	.874	2.8841	0.5569	0.0003	0.0006	0.0017	-0.2324	0.0023	0.0005	-0.0008	0.0009	0.472	.274
146	06	445	.864	3.3496	0.5078	0.0004	-0.0002	0.0015	-0.0128	-0.2034	-0.0036	-0.0009	0.0056	0.156	.347
146	07	468	.864	3.3045	0.4460	0.0006	-0.0005	0.0015	-0.0926	0.3294	0.0017	-0.0009	-0.0011	0.191	.252
146	08	518	.864	3.3133	0.4696	0.0004	0.0000	0.0018	0.0444	0.0728	-0.0001	0.0011	-0.0001	0.147	.323
147	08	879	.872	2.9306	0.5446	0.0009	-0.0002	0.0010	0.1469	0.2332	-0.0007	0.0008	-0.0009	0.400	.252
148	06	645	.882	2.8612	0.4944	0.0010	0.0012	0.0008	-0.6418	0.0690	-0.0006	-0.0042	-0.0022	0.258	.281
148	08	637	.882	2.7997	0.6636	0.0009	0.0005	0.0014	-0.0691	-0.5549	0.0007	0.0003	-0.0027	0.311	.320
149	08	1,108	.847	3.1711	0.4633	0.0009	0.0001	0.0014	0.0261	-0.1341	-0.0002	-0.0003	0.0025	0.171	.298
151	06	2,540	.891	2.7776	0.5963	0.0008	-0.0001	0.0009	0.0729	-0.1769	-0.0007	0.0009	-0.0003	0.516	.248
153	06	627	.859	3.4581	0.0605	0.0007	0.0000	0.0016	0.0074	-0.2402	-0.0009	0.0004	-0.0001	0.101	.199
155	06	1,296	.832	2.9539	0.4610	0.0007	0.0003	0.0012	-0.1223	0.0136	0.0003	0.0009	0.0001	0.319	.241
155	07	2,155	.867	2.8971	0.5546	0.0004	-0.0002	0.0019	-0.0262	-0.1951	0.0007	-0.0015	-0.0007	0.330	.266
155	08	2,344	.834	2.9418	0.5598	0.0007	0.0002	0.0011	0.0031	-0.2923	-0.0029	0.0000	0.0018	0.283	.238
156	07	596	.859	2.9450	0.4354	0.0004	0.0007	0.0012	-0.2108	0.0939	-0.0001	-0.0008	-0.0018	0.334	.283
156	08	526	.859	2.9709	0.4400	0.0005	0.0001	0.0008	-0.2490	-0.2029	-0.0018	0.0005	0.0030	0.348	.243
157	06	2,052	.878	2.9011	0.5569	0.0008	0.0002	0.0016	-0.1562	-0.1761	0.0001	0.0014	-0.0011	0.403	.215
158	06	427	.863	3.0645	0.5298	0.0016	0.0002	0.0010	0.0662	0.0339	-0.0008	0.0004	0.0002	0.408	.299
159	07	2,122	.850	2.9390	0.3961	0.0005	0.0004	0.0022	-0.0816	0.0899	0.0005	0.0002	-0.0010	0.375	.221
159	08	3,272	.850	2.8145	0.4997	0.0006	0.0001	0.0021	-0.1681	-0.1398	-0.0011	0.0001	0.0004	0.504	.195
161	06	207	.859	2.9251	0.1789	0.0008	0.0008	0.0026	-0.4371	-0.8930	-0.0024	0.0017	0.0016	0.400	.240
161	07	196	.859	2.9072	0.5253	0.0008	-0.0007	0.0029	-0.0626	0.0001	0.0036	0.0002	-0.0045	0.291	.394
161	08	194	.859	2.9570	0.2790	0.0011	0.0017	0.0017	-0.1378	0.1578	-0.0016	-0.0014	-0.0009	0.262	.310
162	06	532	.859	2.6599	0.6689	0.0006	-0.0001	0.0010	-0.4529	-0.2154	0.0026	-0.0070	0.0047	0.605	.197
162	08	457	.859	2.6067	0.7226	0.0001	0.0000	0.0016	-0.2442	-0.1687	-0.0009	0.0010	0.0009	0.585	.223
164	08	459	.859	3.2343	0.3237	0.0006	0.0007	0.0012	-0.0766	-0.0171	-0.0003	0.0008	0.0006	0.181	.260

## Appendix I.

## White-Hispanic Model Parameter Estimates for Full Model, without Corrections

Raw Regression Parameter Estimates															
ID	Yr.	n	$\alpha_F$	Int.	HSGPA	SAT-CR	SAT-M	SAT-W	Hisp.	x Hsp.	x Hsp.	x Hsp.	x Hsp.	$\sigma^2$	R <sup>2</sup>
165	06	687	.864	3.1748	0.5001	-0.0001	0.0006	0.0014	-0.0553	-0.2554	0.0008	-0.0006	0.0011	0.203	.246
165	07	731	.863	3.2040	0.4683	0.0000	0.0005	0.0011	-0.1462	-0.0652	0.0004	-0.0012	0.0004	0.205	.208
166	06	524	.859	3.2765	0.5319	0.0001	0.0004	0.0007	0.1125	-0.8105	0.0008	0.0037	-0.0017	0.282	.162
166	07	572	.859	3.2986	0.5001	-0.0002	0.0002	0.0017	0.0322	-0.1165	0.0054	-0.0011	-0.0025	0.246	.200
166	08	479	.859	3.2624	0.5209	-0.0001	0.0003	0.0021	-0.6017	-0.2837	0.0020	-0.0023	-0.0033	0.273	.238
167	06	134	.822	2.5572	0.3515	-0.0001	0.0014	0.0020	-0.2379	0.1962	0.0035	-0.0012	-0.0019	0.503	.290
167	07	170	.825	2.5686	0.6288	0.0001	-0.0002	0.0037	-0.0661	-0.0824	0.0057	0.0015	-0.0062	0.535	.377
167	08	160	.879	2.6416	0.5405	0.0020	0.0001	0.0009	0.1480	0.5037	-0.0026	-0.0007	0.0037	0.591	.274
169	06	1,058	.824	2.7811	0.5839	-0.0006	0.0006	0.0016	-0.3164	-0.3601	-0.0096	0.0025	0.0054	0.638	.185
169	07	1,033	.792	2.8523	0.5755	0.0004	0.0003	0.0015	-0.0759	-0.0144	-0.0037	0.0015	-0.0004	0.402	.244
169	08	985	.866	2.6905	0.6116	-0.0010	0.0002	0.0028	0.0148	-0.1848	-0.0033	-0.0010	0.0042	0.658	.188
170	06	207	.824	3.1733	0.3321	0.0011	0.0011	0.0011	-0.1391	-0.1327	0.0013	-0.0003	0.0026	0.165	.416
171	06	965	.866	2.9022	0.5719	0.0003	0.0001	0.0017	-0.2640	-0.1660	0.0007	-0.0016	-0.0012	0.370	.232
171	07	936	.879	2.8411	0.5915	0.0005	0.0005	0.0014	-0.6616	-0.5523	-0.0034	-0.0003	0.0011	0.416	.250
173	07	2,363	.835	3.1238	0.3453	0.0009	0.0005	0.0008	-0.1556	-0.1327	0.0001	0.0002	0.0000	0.174	.288
173	08	2,297	.845	3.1488	0.2870	0.0007	0.0006	0.0015	-0.1198	-0.1632	-0.0002	0.0003	-0.0002	0.170	.311
174	06	341	.859	2.6977	0.5014	0.0006	0.0003	0.0016	-0.0330	-0.2818	0.0001	-0.0004	0.0010	0.389	.246
175	06	2,122	.880	2.6330	0.5076	-0.0001	0.0007	0.0019	-0.1604	0.0344	0.0006	-0.0003	-0.0004	0.641	.124
175	07	2,320	.846	2.7327	0.4957	0.0003	0.0004	0.0017	-0.1716	-0.0821	0.0004	0.0000	0.0003	0.548	.143
175	08	2,395	.865	2.7578	0.5399	-0.0003	0.0009	0.0019	-0.1357	-0.0925	0.0004	-0.0002	-0.0002	0.500	.157
176	06	1,636	.841	2.8900	0.4190	0.0015	0.0008	0.0009	-0.0118	-0.0715	-0.0031	0.0012	0.0026	0.296	.228
176	07	1,425	.809	2.8748	0.4626	0.0004	0.0010	0.0016	-0.0288	0.0045	-0.0003	-0.0019	0.0026	0.273	.255
176	08	1,798	.825	2.8780	0.4696	0.0007	0.0004	0.0016	0.1345	0.0731	0.0000	0.0015	-0.0011	0.263	.232
Combined		344,499	.859	3.0217	0.4634	0.0004	0.0004	0.0014	-0.1059	-0.0763	-0.0001	0.0001	-0.0001	0.3414	.225

## Appendix J.

## Regression Parameter Estimates for the Full Model based on Subgroup-Specific, Meta-Analytically Derived Covariance Matrices

Regression Parameter Estimates																			
Corrections	Group	n	Intercept		HSGPA			SAT-CR			SAT-M			SAT-W			$\sigma^2$	R <sup>2</sup>	
			Est.	SE	z	Est.	SE	z	Est.	SE	z	Est.	SE	z	Est.	SE			z
None	Male	220,433	2.8976	0.0014		0.4487	0.0031		0.0004	<0.0001		0.0008	<0.0001		0.0012	<0.0001		0.390	0.187
	Female	260,838	3.0579	0.0012	-86.23***	0.4012	0.0027	11.59***	0.0007	<0.0001	-7.91***	0.0011	<0.0001	-11.23***	0.0012	<0.0001	1.44	0.317	0.222
	White	330,793	3.0085	0.0010		0.4860	0.0024		0.0005	<0.0001		0.0004	<0.0001		0.0015	<0.0001		0.336	0.206
	Black	31,211	2.8289	0.0057	31.29***	0.3586	0.0077	15.76***	0.0004	0.0001	0.15	0.0006	0.0001	-3.07**	0.0013	0.0001	1.44	0.439	0.134
	Hispanic	37,644	2.8522	0.0041	37.23***	0.4257	0.0079	7.30***	0.0006	0.0001	-1.54	0.0006	0.0001	-4.23***	0.0014	0.0001	0.88	0.450	0.151
Restriction-of-Range	Male	220,433	2.8971	0.0014		0.4386	0.0027		0.0004	<0.0001		0.0008	<0.0001		0.0012	<0.0001		0.394	0.328
	Female	260,838	3.0583	0.0012	-87.01***	0.3850	0.0024	15.03***	0.0007	<0.0001	-7.69***	0.0011	<0.0001	-11.71***	0.0012	<0.0001	1.41	0.321	0.368
	White	330,793	3.0089	0.0010		0.4675	0.0021		0.0005	<0.0001		0.0004	<0.0001		0.0014	<0.0001		0.338	0.319
	Black	31,211	2.8328	0.0049	35.23***	0.3566	0.0067	15.78***	0.0004	0.0001	0.31	0.0006	0.0001	-3.30***	0.0014	0.0001	0.51	0.450	0.239
	Hispanic	37,644	2.8499	0.0039	39.71***	0.4099	0.0067	8.17***	0.0005	0.0001	-0.81	0.0006	0.0001	-3.78***	0.0014	0.0001	0.28	0.461	0.260
Restriction-of-Range & Criterion Reliability	Male	220,433	2.8971	0.0013		0.4386	0.0024		0.0004	<0.0001		0.0008	<0.0001		0.0012	<0.0001		0.313	0.380
	Female	260,838	3.0583	0.0010	-97.97***	0.3850	0.0021	16.93***	0.0007	<0.0001	-8.66***	0.0011	<0.0001	-13.19***	0.0012	<0.0001	1.58	0.251	0.428
	White	330,793	3.0089	0.0009		0.4675	0.0019		0.0005	<0.0001		0.0004	<0.0001		0.0014	<0.0001		0.270	0.369
	Black	31,211	2.8328	0.0044	38.94***	0.3566	0.0061	17.45***	0.0004	0.0001	0.34	0.0006	0.0001	-3.64***	0.0014	0.0001	0.56	0.369	0.277
	Hispanic	37,644	2.8499	0.0035	44.08***	0.4099	0.0061	9.07***	0.0005	0.0001	-0.90	0.0006	<0.0001	-4.20***	0.0014	0.0001	0.31	0.375	0.302
Restriction-of-Range, Criterion & Predictor Reliability	Male	220,433	2.9162	0.0013		0.5714	0.0027		-0.0002	<0.0001	n/a	0.0005	<0.0001		0.0018	<0.0001		0.294	0.419
	Female	260,838	3.0453	0.0011	-77.73***	0.4964	0.0024	20.76***	0.0001	<0.0001	-6.41***	0.0009	<0.0001	-15.45***	0.0017	<0.0001	1.56	0.237	0.459
	White	330,793	3.0089	0.0009		0.6035	0.0022		-0.0001	<0.0001		0.0001	<0.0001		0.0020	<0.0001		0.252	0.412
	Black	31,211	2.8391	0.0044	37.74***	0.4483	0.0068	21.66***	0.0000	0.0001	-0.28	0.0004	0.0001	-5.20***	0.0019	0.0001	0.49	0.354	0.306
	Hispanic	37,644	2.8450	0.0034	46.07***	0.5180	0.0068	11.94***	0.0000	0.0001	-0.08	0.0004	0.0001	-4.95***	0.0021	0.0001	-1.15	0.358	0.333

Note. z = test of equality of regression coefficients between the focal and reference group (i.e., females to males, Black and Hispanic students to White students).

\* p < .05, \*\* p < .01, \*\*\* p < .001.