SAS

CANONICAL CORRELATION ANALYSIS

APPENDIX VII
TABLE 44
HEALTH

240 OBSERVATIONS
3 'VAR' VARIABLES
3 'WITH' VARIABLES

	CANONICAL CORRELATION	ADJUSTED CANONICAL CORRELATION	APPROX STANDARD ERROR	SQUARED CANONICAL CORRELATION	EIGENVALUES OF INV(E)*H = CANRSQ/(1-CANRSQ) EIGENVALUE	DIFFERENCE	PROPORTION	CUMULATIVE
1	0.590995	0.582503	0.042092	0.349275	0.5367	0.5276	0.9827	0.9827
2	0.095226	.	0.064098	0.009068	0.0092	0.0088	0.0168	0.9994
3	0.017770	.	0.064664	0.000316	0.0003	.	0.0006	1.0000

TESTS OF H0: THE CANONICAL CORRELATION IN THE CURRENT ROW AND ALL THAT FOLLOW ARE ZERO

	LIKELIHOOD RATIO	APPROX F	NUM DF	DEN DF	PR > F
1	0.64462042	12.5145	9	569.645	0.0001
2	0.99061914	0.5550	4	470	0.6954
3	0.99968421	0.0745	1	236	0.7851

MULTIVARIATE TEST STATISTICS AND F APPROXIMATIONS
S=3 M=-0.5 N=116.5

STATISTIC	VALUE	F	NUM DF	DEN DF	PR > F
WILKS' LAMBDA	0.6446204	12.514	9	569.645	0.0001
PILLAI'S TRACE	0.3586589	10.682	9	708	0.0001
HOTELLING-LAWLEY TRACE	0.5462148	14.121	9	698	0.0001
ROY'S GREATEST ROOT	0.536748	42.224	3	236	0.0001

NOTE: F STATISTIC FOR ROY'S GREATEST ROOT IS AN UPPER BOUND

RAW CANONICAL COEFFICIENTS FOR THE 'VAR' VARIABLES

	V1	V2	V3
CFFRSC	0.0607333063	-.3408276197	-.0366314979
SFFRSC	-.0026178587	0.1500464182	0.2696513671
ROFRSC	-.0193739759	0.2743080056	-.1698496144

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CANONICAL CORRELATION ANALYSIS

RAW CANONICAL COEFFICIENTS FOR THE 'WITH' VARIABLES

	W1	W2	W3
CFSC	-.1470370610	-.5384905689	-.1307192163
SFFSC	0.2586448348	0.1547441428	-.5848057476
ROFSC	0.234900203	0.1644043015	0.3078728957

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CANONICAL CORRELATION ANALYSIS

120 OBSERVATIONS
3 'VAR' VARIABLES
3 'WITH' VARIABLES

	CANONICAL CORRELATION	ADJUSTED CANONICAL CORRELATION	APPROX STANDARD ERROR	SQUARED CANONICAL CORRELATION	EIGENVALUES OF INV(E)*H = CANRSQ/(1-CANRSQ) EIGENVALUE	DIFFERENCE	PROPORTION	CUMULATIVE
1	0.572557	0.554303	0.061619	0.327821	0.4877	0.4809	0.9863	0.9863
2	0.082085	.	0.091052	0.006738	0.0068	0.0068	0.0137	1.0000
3	0.001837	.	0.091670	0.000003	0.0000	.	0.0000	1.0000

TESTS OF H0: THE CANONICAL CORRELATION IN THE CURRENT ROW AND ALL THAT FOLLOW ARE ZERO

	LIKELIHOOD RATIO	APPROX F	NUM DF	DEN DF	PR > F
1	0.66764764	5.5695	9	277.597	0.0001
2	0.99325870	0.1948	4	230	0.9409
3	0.99999662	0.0004	1	116	0.9842

MULTIVARIATE TEST STATISTICS AND F APPROXIMATIONS
S=3 M=-0.5 N=56.5

STATISTIC	VALUE	F	NUM DF	DEN DF	PR > F
WILKS' LAMBDA	0.6676476	5.570	9	277.597	0.0001
PILLAI'S TRACE	0.3345623	4.853	9	348	0.0001
HOTELLING-LAWLEY TRACE	0.494486	6.190	9	338	0.0001
ROY'S GREATEST ROOT	0.487699	18.858	3	116	0.0001

NOTE: F STATISTIC FOR ROY'S GREATEST ROOT IS AN UPPER BOUND

RAW CANONICAL COEFFICIENTS FOR THE 'VAR' VARIABLES

	V1	V2	V3
CFFRSC	0.1038106103	-.0764268837	-.3313518324
SFFRSC	-.0060384314	0.2333597821	0.0386425394
ROFRSC	-.0664469302	-.0917473051	0.3577455686

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CANONICAL CORRELATION ANALYSIS

RAW CANONICAL COEFFICIENTS FOR THE 'WITH' VARIABLES

	W1	W2	W3
CFSC	-.0307640195	-.5528989831	0.3240654503
SFFSC	0.2787900623	-.1926321399	-.5087902611
ROFSC	0.1667209075	0.3761507833	0.0772108841

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CANONICAL CORRELATION ANALYSIS

120 OBSERVATIONS
3 'VAR' VARIABLES
3 'WITH' VARIABLES

	CANONICAL CORRELATION	ADJUSTED CANONICAL CORRELATION	APPROX STANDARD ERROR	SQUARED CANONICAL CORRELATION	EIGENVALUE	EIGENVALUES OF INV(E)*H = CANRSQ/(1-CANRSQ) DIFFERENCE	PROPORTION	CUMULATIVE
1	0.627565	0.612494	0.055567	0.393838	0.6497	0.6236	0.9507	0.9507
2	0.159471	.	0.089339	0.025431	0.0261	0.0185	0.0382	0.9889
3	0.086846	.	0.090978	0.007542	0.0076	.	0.0111	1.0000

TESTS OF H0: THE CANONICAL CORRELATION IN THE CURRENT ROW AND ALL THAT FOLLOW ARE ZERO

	LIKELIHOOD RATIO	APPROX F	NUM DF	DEN DF	PR > F
1	0.58629109	7.5666	9	277.597	0.0001
2	0.96721861	0.9663	4	230	0.4267
3	0.99245774	0.8816	1	116	0.3497

MULTIVARIATE TEST STATISTICS AND F APPROXIMATIONS
S=3 M=-0.5 N=56.5

STATISTIC	VALUE	F	NUM DF	DEN DF	PR > F
WILKS' LAMBDA	0.5862911	7.567	9	277.597	0.0001
PILLAI'S TRACE	0.42688113	6.414	9	348	0.0001
HOTELLING-LAWLEY TRACE	0.6834183	8.555	9	338	0.0001
ROY'S GREATEST ROOT	0.6497242	25.123	3	116	0.0001

NOTE: F STATISTIC FOR ROY'S GREATEST ROOT IS AN UPPER BOUND

RAW CANONICAL COEFFICIENTS FOR THE 'VAR' VARIABLES

	V1	V2	V3
CFFRSC	0.0421024105	-.4721018818	-.0913694865
FFRSC	-.0126606376	0.4322748013	0.4025377256
OFRSC	0.0099923830	0.1933805472	-.2154660735

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CANONICAL CORRELATION ANALYSIS

RAW CANONICAL COEFFICIENTS FOR THE 'WITH' VARIABLES

	W1	W2	W3
CFSC	-.2240743788	-.2407517067	0.4135063130
SFFSC	0.2174121410	0.5677152198	0.3825620467
ROFSC	0.2882820314	-.1383966417	-.2948421652

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CANONICAL CORRELATION ANALYSIS

240 OBSERVATIONS
3 'VAR' VARIABLES
3 'WITH' VARIABLES

	CANONICAL CORRELATION	ADJUSTED CANONICAL CORRELATION	APPROX STANDARD ERROR	SQUARED CANONICAL CORRELATION	EIGENVALUE	EIGENVALUES OF INV(E)*H = CANRSQ/(1-CANRSQ) DIFFERENCE	PROPORTION	CUMULATIVE
1	0.546203	0.535768	0.045367	0.298338	0.4252	0.3921	0.9225	0.9225
2	0.178869	0.156513	0.062615	0.031994	0.0331	0.0304	0.0717	0.9942
3	0.051516	.	0.064513	0.002654	0.0027	.	0.0058	1.0000

TESTS OF HO: THE CANONICAL CORRELATION IN THE CURRENT ROW AND ALL THAT FOLLOW ARE ZERO

	LIKELIHOOD RATIO	APPROX F	NUM DF	DEN DF	PR > F
1	0.67741056	10.9846	9	569.645	0.0001
2	0.96543708	2.0848	4	470	0.0817
3	0.99734613	0.6280	1	236	0.4289

MULTIVARIATE TEST STATISTICS AND F APPROXIMATIONS
S=3 M=-0.5 N=116.5

STATISTIC	VALUE	F	NUM DF	DEN DF	PR > F
WILKS' LAMBDA	0.6774106	10.985	9	569.645	0.0001
PILLAI'S TRACE	0.3329858	9.822	9	706	0.0001
HOTELLING-LAWLEY TRACE	0.4608999	11.915	9	698	0.0001
ROY'S GREATEST ROOT	0.4251875	33.448	3	236	0.0001

NOTE: F STATISTIC FOR ROY'S GREATEST ROOT IS AN UPPER BOUND

RAW CANONICAL COEFFICIENTS FOR THE 'VAR' VARIABLES

	V1	V2	V3
CFERSC	0.0111393169	-.2540231388	0.0383069361
SFERSC	0.1735041945	-.0183362703	-.7424310750
ROFRSC	-.0198931219	0.1418884627	0.2442197465

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CANONICAL CORRELATION ANALYSIS

RAW CANONICAL COEFFICIENTS FOR THE 'WITH' VARIABLES

	W1	W2	W3
CFSC	0.0807013965	0.1599236733	-.4741040466
SFFSC	0.7994273067	0.4506238350	0.4918616179
ROFSC	0.0529287845	-.1423598762	0.0660150346

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CANONICAL CORRELATION ANALYSIS

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120 OBSERVATIONS
3 'VAR' VARIABLES
3 'WITH' VARIABLES

	CANONICAL CORRELATION	ADJUSTED CANONICAL CORRELATION	APPROX STANDARD ERROR	SQUARED CANONICAL CORRELATION	EIGENVALUE	EIGENVALUES OF INV(E)*H = CANRSQ/(1-CANRSQ) DIFFERENCE	PROPORTION	CUMULATIVE
1	0.463466	0.433915	0.071979	0.214801	0.2736	0.2317	0.8655	0.8655
2	0.200557	0.167849	0.087983	0.040223	0.0419	0.0413	0.1326	0.9981
3	0.024351	.	0.091615	0.000593	0.0006	.	0.0019	1.0000

TESTS OF H0: THE CANONICAL CORRELATION IN THE CURRENT ROW AND ALL THAT FOLLOW ARE ZERO

	LIKELIHOOD RATIO	APPROX F	NUM DF	DEN DF	PR > F
1	0.75316876	3.8101	9	277.597	0.0001
2	0.95920767	1.2099	4	230	0.3073
3	0.99940703	0.0688	1	116	0.7935

MULTIVARIATE TEST STATISTICS AND F APPROXIMATIONS
S=3 M=-0.5 N=56.5

STATISTIC	VALUE	F	NUM DF	DEN DF	PR > F
WILKS' LAMBDA	0.7531688	3.810	9	277.597	0.0001
PILLAI'S TRACE	0.2556173	3.601	9	346	0.0003
HOTELLING-LAWLEY TRACE	0.316065	3.957	9	338	0.0001
ROY'S GREATEST ROOT	0.2735627	10.578	3	116	0.0001

NOTE: F STATISTIC FOR ROY'S GREATEST ROOT IS AN UPPER BOUND

RAW CANONICAL COEFFICIENTS FOR THE 'VAR' VARIABLES

	V1	V2	V3
CFFRSC	-.0159854188	-.1838244917	0.0241413992
SFFRSC	0.0980053537	-.0133997457	-.6683635891
ROFRSC	0.0011217143	0.0983418149	0.2277726734

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CANONICAL CORRELATION ANALYSIS

RAW CANONICAL COEFFICIENTS FOR THE 'WITH' VARIABLES

	W1	W2	W3
CFSC	0.1029854582	0.1535577584	0.4417938169
SFFSC	0.3676456925	0.3641814605	-.3813132071
ROFSC	0.0210202275	-.1433887606	-.0455385476

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CANONICAL CORRELATION ANALYSIS

120 OBSERVATIONS
3 'VAR' VARIABLES
3 'WITH' VARIABLES

	CANONICAL CORRELATION	ADJUSTED CANONICAL CORRELATION	APPROX STANDARD ERROR	SQUARED CANONICAL CORRELATION	EIGENVALUE	EIGENVALUES OF INV(E)*H = CANRSQ/(1-CANRSQ) DIFFERENCE	PROPORTION	CUMULATIVE
1	0.679027	0.666695	0.049403	0.461078	0.8556	0.8218	0.9542	0.9542
2	0.180589	0.125579	0.088680	0.032612	0.0337	0.0264	0.0376	0.9918
3	0.085482	.	0.091000	0.007307	0.0074	.	0.0082	1.0000

TESTS OF H0: THE CANONICAL CORRELATION IN THE CURRENT ROW AND ALL THAT FOLLOW ARE ZERO

	LIKELIHOOD RATIO	APPROX F	NUM DF	DEN DF	PR > F
1	0.51753679	9.5866	9	277.597	0.0001
2	0.96031878	1.1760	4	230	0.3221
3	0.99269278	0.8539	1	116	0.3574

MULTIVARIATE TEST STATISTICS AND F APPROXIMATIONS
S=3 M=-0.5 N=56.5

STATISTIC	VALUE	F	NUM DF	DEN DF	PR > F
WILKS' LAMBDA	0.5175368	9.587	9	277.597	0.0001
PILLAI'S TRACE	0.5009977	7.752	9	348	0.0001
HOTELLING-LAWLEY TRACE	0.8966293	11.224	9	338	0.0001
ROY'S GREATEST ROOT	0.8555566	33.082	3	116	0.0001

NOTE: F STATISTIC FOR ROY'S GREATEST ROOT IS AN UPPER BOUND

RAW CANONICAL COEFFICIENTS FOR THE 'VAR' VARIABLES

	V1	V2	V3
CFFRSC	0.3114854464	-.1543420873	-.9939427521
SFFRSC	0.1161202901	-.7809156528	0.5283453011
ROFRSC	-.1768782238	0.3607323837	0.3641389263

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CANONICAL CORRELATION ANALYSIS

RAW CANONICAL COEFFICIENTS FOR THE 'WITH' VARIABLES

	W1	W2	W3
CFSC	0.0308351137	-.4139178411	0.3608507381
SFFSC	0.2268550316	0.5885135892	0.3440414917
ROFSC	0.0973491241	0.0374247983	-.1566303778

CANONICAL CORRELATION ANALYSIS

RECREATION

120 OBSERVATIONS
3 'VAR' VARIABLES
3 'WITH' VARIABLES

	CANONICAL CORRELATION	ADJUSTED CANONICAL CORRELATION	APPROX STANDARD ERROR	SQUARED CANONICAL CORRELATION	EIGENVALUE	EIGENVALUES OF INV(E)*H = CANRSQ/(1-CANRSQ) DIFFERENCE	PROPORTION	CUMULATIVE
1	0.439939	0.407893	0.073928	0.193546	0.2400	0.2062	0.8667	0.8667
2	0.160812	0.139391	0.088673	0.032693	0.0338	0.0307	0.1221	0.9887
3	0.055750	.	0.091385	0.003108	0.0031	.	0.0113	1.0000

TESTS OF H0: THE CANONICAL CORRELATION IN THE CURRENT ROW AND ALL THAT FOLLOW ARE ZERO

	LIKELIHOOD RATIO	APPROX F	NUM DF	DEN DF	PR > F
1	0.77766398	3.3574	9	277.597	0.0006
2	0.96430060	1.0547	4	230	0.3798
3	0.99689196	0.3617	1	116	0.5488

MULTIVARIATE TEST STATISTICS AND F APPROXIMATIONS
S=3 M=-0.5 N=56.5

STATISTIC	VALUE	F	NUM DF	DEN DF	PR > F
WILKS' LAMBDA	0.777664	3.357	9	277.597	0.0006
PILLAI'S TRACE	0.2293471	3.201	9	348	0.0010
HOTELLING-LAWLEY TRACE	0.2769121	3.467	9	338	0.0004
ROY'S GREATEST ROOT	0.2399965	9.280	3	116	0.0001

NOTE: F STATISTIC FOR ROY'S GREATEST ROOT IS AN UPPER BOUND

RAW CANONICAL COEFFICIENTS FOR THE 'VAR' VARIABLES

	V1	V2	V3
CFFRSC	0.0209348648	0.0819554442	-.1386866543
SFFRSC	0.2490509517	-.5699577459	-.1421992802
ROFRSC	-.1450407107	0.4785844702	0.4551926520

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CANONICAL CORRELATION ANALYSIS

RAW CANONICAL COEFFICIENTS FOR THE 'WITH' VARIABLES

	W1	W2	W3
CFSC	0.355993155	-0.191673656	0.478748983
SFFSC	0.397790375	0.108479269	-0.399585789
ROFSC	-0.011879217	1.077209047	-0.558556660

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CANONICAL CORRELATION ANALYSIS

120 OBSERVATIONS
3 'VAR' VARIABLES
3 'WITH' VARIABLES

	CANONICAL CORRELATION	ADJUSTED CANONICAL CORRELATION	APPROX STANDARD ERROR	SQUARED CANONICAL CORRELATION	EIGENVALUE	EIGENVALUES OF INV(E)*H = CANRSQ/(1-CANRSQ) DIFFERENCE	PROPORTION	CUMULATIVE
1	0.580810	0.561769	0.060746	0.337340	0.5091	0.4522	0.8773	0.8773
2	0.232001	0.191473	0.086736	0.053824	0.0569	0.0426	0.0980	0.9754
3	0.118068	.	0.090379	0.014082	0.0143	.	0.0246	1.0000

TESTS OF H0: THE CANONICAL CORRELATION IN THE CURRENT ROW AND ALL THAT FOLLOW ARE ZERO

	LIKELIHOOD RATIO	APPROX F	NUM DF	DEN DF	PR > F
1	0.61816317	6.7401	9	277.597	0.0001
2	0.93285144	2.0335	4	230	0.0906
3	0.98591797	1.6568	1	116	0.2006

MULTIVARIATE TEST STATISTICS AND F APPROXIMATIONS
S=3 M=-0.5 N=56.5

STATISTIC	VALUE	F	NUM DF	DEN DF	PR > F
WILKS' LAMBDA	0.6181632	6.740	9	277.597	0.0001
PILLAI'S TRACE	0.4052467	6.039	9	348	0.0001
HOTELLING-LAWLEY TRACE	0.5802395	7.264	9	336	0.0001
ROY'S GREATEST ROOT	0.5090699	19.684	3	116	0.0001

NOTE: F STATISTIC FOR ROY'S GREATEST ROOT IS AN UPPER BOUND

RAW CANONICAL COEFFICIENTS FOR THE 'VAR' VARIABLES

	V1	V2	V3
CFFRSC	-.0826715149	0.1920797428	-.0762581752
SFFRSC	0.3678297364	-.2421611650	-.2316930264
ROFRSC	-.0049232125	-.1269574288	0.4729462903

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CANONICAL CORRELATION ANALYSIS

RAW CANONICAL COEFFICIENTS FOR THE 'WITH' VARIABLES

	W1	W2	W3
CFSC	0.1398690369	0.5000221648	-.4336543068
SFFSC	0.3434337089	0.2453849466	0.5242937395
ROFSC	-.9375400710	0.4906776134	0.7337935415