

Appendix to

“Simulation Evaluation of Emerging Estimation Techniques for Multinomial Probit Models”

by

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Table 1a: Evaluation of the ability to recover true parameters for the cross-sectional diagonal case

Parameter	True Value	MACML Method					GHK-MSL Method					GHK-SGI Method					MCMC Method				
		Parameter Estimates		Standard Error Estimate		RMSE	Parameter Estimates		Standard Error Estimate		RMSE	Parameter Estimates		Standard Error Estimate		RMSE	Parameter Estimates		Standard Error Estimate		RMSE
		Mean Estimate	Absolute Percentage Bias	Asymptotic Standard Error	Finite Sample Standard Error	Root Mean Square Error	Mean Estimate	Absolute Percentage Bias	Asymptotic Standard Error	Finite Sample Standard Error	Root Mean Square Error	Mean Estimate	Absolute Percentage Bias	Asymptotic Standard Error	Finite Sample Standard Error	Root Mean Square Error	Mean Estimate	Absolute Percentage Bias	Asymptotic Standard Error	Finite Sample Standard Error	Root Mean Square Error
Mean values of the β vector																					
b_1	1.500	1.510	0.68%	0.202	0.183	0.209	1.518	1.23%	0.238	0.221	0.235	1.535	2.32%	0.186	0.174	0.196	1.442	3.89%	0.315	0.354	0.164
b_2	-1.000	-0.993	0.68%	0.274	0.252	0.264	-1.013	1.33%	0.369	0.346	0.347	-0.977	2.32%	0.334	0.299	0.308	-0.957	4.29%	0.175	0.189	0.258
b_3	2.000	1.988	0.60%	0.321	0.299	0.327	1.976	1.21%	0.304	0.290	0.307	1.956	2.18%	0.265	0.250	0.278	2.093	4.65%	0.213	0.229	0.233
b_4	1.000	1.006	0.61%	0.155	0.147	0.160	0.987	1.31%	0.346	0.306	0.309	1.021	2.11%	0.330	0.318	0.326	0.955	4.48%	0.143	0.148	0.274
b_5	-2.000	-2.014	0.71%	0.238	0.225	0.257	-1.977	1.16%	0.262	0.241	0.263	-2.048	2.41%	0.287	0.265	0.293	-1.923	3.85%	0.295	0.306	0.246
Covariance matrix of the β vector																					
Q_{11}	1.000	1.028	2.81%	0.343	0.337	0.350	0.953	4.67%	0.536	0.578	0.574	0.962	3.77%	0.485	0.450	0.459	1.032	3.22%	0.146	0.147	0.385
Q_{12}	0.000	-0.030	3.04%	0.457	0.458	0.467	0.053	5.34%	0.579	0.599	0.593	0.034	3.41%	0.524	0.498	0.504	-0.027	2.71%	0.180	0.188	0.423
Q_{13}	0.000	0.040	3.96%	0.281	0.296	0.302	0.046	4.58%	0.480	0.496	0.491	0.034	3.44%	0.457	0.419	0.424	-0.038	3.83%	0.212	0.222	0.356
Q_{14}	0.000	-0.039	3.86%	0.405	0.397	0.405	0.046	4.58%	0.530	0.525	0.520	-0.028	2.85%	0.528	0.506	0.512	0.029	2.90%	0.303	0.317	0.430
Q_{15}	0.000	0.030	3.00%	0.279	0.299	0.305	-0.050	5.01%	0.529	0.563	0.558	0.028	2.85%	0.487	0.452	0.457	0.034	3.38%	0.240	0.252	0.384
Q_{22}	1.000	0.971	2.94%	0.417	0.427	0.440	1.047	4.72%	0.484	0.494	0.492	1.035	3.48%	0.510	0.504	0.513	0.965	3.53%	0.189	0.198	0.430
Q_{23}	0.000	-0.039	3.86%	0.448	0.460	0.469	0.050	5.01%	0.460	0.477	0.472	0.028	2.78%	0.544	0.526	0.532	0.026	2.55%	0.300	0.313	0.446
Q_{24}	0.000	0.031	3.14%	0.318	0.329	0.336	0.054	5.42%	0.494	0.526	0.520	-0.037	3.71%	0.421	0.408	0.412	-0.035	3.48%	0.289	0.306	0.346
Q_{25}	0.000	0.031	3.10%	0.333	0.327	0.334	0.044	4.39%	0.411	0.435	0.430	0.031	3.08%	0.449	0.442	0.448	0.036	3.63%	0.210	0.212	0.376
Q_{33}	1.000	0.962	3.80%	0.319	0.341	0.352	1.041	4.10%	0.465	0.491	0.490	1.032	3.21%	0.442	0.400	0.409	1.037	3.67%	0.161	0.158	0.344
Q_{34}	0.000	0.029	2.90%	0.283	0.281	0.287	0.040	4.01%	0.598	0.600	0.594	-0.034	3.38%	0.572	0.531	0.537	-0.027	2.68%	0.184	0.186	0.451
Q_{35}	0.000	0.031	3.10%	0.369	0.362	0.370	-0.049	4.87%	0.449	0.456	0.452	0.037	3.67%	0.523	0.515	0.521	0.034	3.45%	0.320	0.323	0.438
Q_{44}	1.000	1.026	2.64%	0.328	0.334	0.346	0.955	4.53%	0.521	0.529	0.526	0.968	3.24%	0.565	0.558	0.568	0.974	2.58%	0.203	0.208	0.476
Q_{45}	0.000	-0.033	3.27%	0.455	0.446	0.456	0.053	5.29%	0.563	0.554	0.549	-0.034	3.41%	0.490	0.463	0.469	0.027	2.71%	0.258	0.273	0.393
Q_{55}	1.000	1.039	3.86%	0.424	0.453	0.467	1.051	5.09%	0.581	0.600	0.597	0.966	3.38%	0.411	0.406	0.414	0.965	3.54%	0.306	0.297	0.348
Overall Mean Value Across		-	2.64%	0.330	0.333	0.345	-	3.89%	0.458	0.460	0.466	-	3.05%	0.438	0.418	0.429	-	3.45%	0.232	0.238	0.364
Mean Time		1.03					1.39					1.17					5.31				
Std. dev of Time		0.14					0.27					0.19					1.06				
% of Runs Converged		100%					100%					100%					100%				

Table 1b: Evaluation of the ability to recover true parameters for the cross-sectional non-diagonal case

Parameter	True Value	MACML Method					GHK-MSL Method					GHK-SGI Method					MCMC Method				
		Parameter Estimates		Standard Error Estimate		RMSE	Parameter Estimates		Standard Error Estimate		RMSE	Parameter Estimates		Standard Error Estimate		RMSE	Parameter Estimates		Standard Error Estimate		RMSE
		Mean Estimate	Absolute Percentage Bias	Asymptotic Standard Error	Finite Sample Standard Error	Root Mean Square Error	Mean Estimate	Absolute Percentage Bias	Asymptotic Standard Error	Finite Sample Standard Error	Root Mean Square Error	Mean Estimate	Absolute Percentage Bias	Asymptotic Standard Error	Finite Sample Standard Error	Root Mean Square Error	Mean Estimate	Absolute Percentage Bias	Asymptotic Standard Error	Finite Sample Standard Error	Root Mean Square Error
Mean values of the β vector																					
b_1	1.500	1.511	0.76%	0.346	0.369	0.378	1.513	0.88%	0.301	0.306	0.390	1.487	0.84%	0.364	0.328	0.439	1.482	1.18%	0.373	0.419	0.696
b_2	-1.000	-1.008	0.77%	0.236	0.234	0.240	-0.991	0.87%	0.311	0.318	0.397	-1.009	0.86%	0.218	0.209	0.280	-0.989	1.10%	0.259	0.291	0.482
b_3	2.000	1.986	0.71%	0.288	0.301	0.321	2.018	0.88%	0.334	0.353	0.457	1.984	0.81%	0.296	0.280	0.390	2.022	1.08%	0.222	0.243	0.438
b_4	1.000	0.993	0.66%	0.190	0.188	0.195	0.992	0.77%	0.302	0.323	0.403	0.992	0.77%	0.229	0.209	0.279	0.989	1.12%	0.391	0.442	0.726
b_5	-2.000	-2.013	0.67%	0.310	0.337	0.357	-1.983	0.86%	0.321	0.333	0.435	-2.015	0.74%	0.306	0.288	0.399	-2.023	1.13%	0.320	0.363	0.620
Covariance matrix of the β vector																					
Q_{11}	1.000	1.043	4.34%	0.286	0.394	0.398	0.937	6.29%	0.401	0.356	0.443	1.046	4.64%	0.282	0.299	0.394	1.207	20.67%	0.308	0.353	0.585
Q_{12}	-0.500	-0.479	4.30%	0.192	0.267	0.268	-0.474	5.22%	0.480	0.445	0.549	-0.478	4.49%	0.319	0.360	0.466	-0.612	22.45%	0.263	0.304	0.498
Q_{13}	0.250	0.259	3.70%	0.153	0.203	0.203	0.262	4.99%	0.356	0.337	0.415	0.236	5.49%	0.209	0.224	0.289	0.308	23.31%	0.194	0.242	0.396
Q_{14}	0.750	0.780	3.94%	0.220	0.292	0.295	0.791	5.49%	0.318	0.297	0.370	0.778	3.75%	0.181	0.207	0.274	0.587	21.75%	0.267	0.336	0.550
Q_{15}	0.000	0.041	4.14%	0.305	0.420	0.419	0.059	5.86%	0.379	0.330	0.406	0.055	5.45%	0.299	0.318	0.411	0.224	22.39%	0.180	0.219	0.358
Q_{22}	1.000	0.957	4.34%	0.247	0.318	0.323	1.047	4.67%	0.364	0.335	0.419	1.040	4.03%	0.348	0.392	0.512	1.197	19.73%	0.231	0.283	0.474
Q_{23}	0.250	0.241	3.54%	0.318	0.426	0.425	0.264	5.49%	0.314	0.291	0.358	0.238	4.61%	0.186	0.202	0.261	0.311	24.54%	0.277	0.349	0.569
Q_{24}	-0.500	-0.477	4.66%	0.304	0.389	0.388	-0.522	4.41%	0.368	0.320	0.396	-0.522	4.46%	0.162	0.174	0.229	-0.601	20.24%	0.292	0.342	0.559
Q_{25}	0.000	0.043	4.26%	0.254	0.355	0.355	0.049	4.90%	0.345	0.308	0.380	0.054	5.39%	0.275	0.294	0.380	0.209	20.88%	0.273	0.330	0.537
Q_{33}	1.000	1.035	3.46%	0.159	0.208	0.216	1.051	5.11%	0.360	0.341	0.426	1.055	5.53%	0.222	0.236	0.315	1.197	19.73%	0.266	0.316	0.527
Q_{34}	0.333	0.317	3.82%	0.319	0.437	0.437	0.347	5.00%	0.363	0.327	0.404	0.315	4.55%	0.336	0.377	0.488	0.400	21.31%	0.261	0.307	0.501
Q_{35}	0.000	0.037	3.66%	0.176	0.228	0.227	0.061	6.08%	0.476	0.418	0.515	0.049	4.92%	0.218	0.245	0.316	0.213	21.31%	0.289	0.358	0.583
Q_{44}	1.000	1.041	4.14%	0.159	0.201	0.209	1.053	5.27%	0.434	0.385	0.480	0.952	4.78%	0.278	0.319	0.418	0.770	23.04%	0.354	0.422	0.691
Q_{45}	0.000	-0.037	3.70%	0.260	0.333	0.332	0.058	5.76%	0.466	0.434	0.534	-0.042	4.17%	0.320	0.354	0.457	0.172	17.22%	0.280	0.328	0.534
Q_{55}	1.000	1.037	3.66%	0.145	0.186	0.195	1.062	6.19%	0.352	0.321	0.403	1.041	4.13%	0.305	0.351	0.460	0.757	24.33%	0.250	0.302	0.497
Overall Mean Value Across	-	-	3.16%	0.251	0.303	0.309	-	4.25%	0.358	0.341	0.429	-	3.72%	0.274	0.285	0.373	-	16.43%	0.279	0.328	0.541
Mean Time	2.58					3.17					3.02					6.44					
Std. dev of Time	0.38					0.62					0.45					1.22					
% of Runs Converged	100%					100%					100%					100%					

Table 1c: Evaluation of the ability to recover true parameters for the panel diagonal case

Parameter	True Value	MACML Method					GHK-MSL Method					GHK-CML Method					GHK-SGI Method					MCMC Method				
		Parameter Estimates		Standard Error Estimate		RMSE	Parameter Estimates		Standard Error Estimate		RMSE	Parameter Estimates		Standard Error Estimate		RMSE	Parameter Estimates		Standard Error Estimate		RMSE	Parameter Estimates		Standard Error Estimate		RMSE
		Mean Estimate	Absolute Percentage Bias	Asymptotic Standard Error	Finite Sample Standard Error	Root Mean Square Error	Mean Estimate	Absolute Percentage Bias	Asymptotic Standard Error	Finite Sample Standard Error	Root Mean Square Error	Mean Estimate	Absolute Percentage Bias	Asymptotic Standard Error	Finite Sample Standard Error	Root Mean Square Error	Mean Estimate	Absolute Percentage Bias	Asymptotic Standard Error	Finite Sample Standard Error	Root Mean Square Error	Mean Estimate	Absolute Percentage Bias	Asymptotic Standard Error	Finite Sample Standard Error	Root Mean Square Error
Mean values of the β vector																										
b_1	1.500	1.474	1.76%	0.123	0.145	0.182	1.448	3.47%	0.267	0.280	0.443	1.471	2.02%	0.207	0.199	0.294	1.841	22.76%	0.180	0.165	0.643	1.402	6.52%	0.188	0.199	0.441
b_2	-1.000	-1.016	1.60%	0.121	0.146	0.173	-0.962	3.79%	0.210	0.223	0.347	-1.020	2.02%	0.211	0.195	0.278	-0.756	24.35%	0.246	0.229	0.784	-1.063	6.33%	0.175	0.192	0.418
b_3	2.000	1.970	1.52%	0.246	0.297	0.352	2.066	3.29%	0.125	0.136	0.267	1.957	2.22%	0.131	0.123	0.222	2.428	21.39%	0.065	0.059	0.468	2.129	6.45%	0.147	0.155	0.410
b_4	1.000	0.982	1.76%	0.191	0.225	0.256	1.033	3.33%	0.200	0.205	0.324	0.977	2.38%	0.159	0.151	0.219	0.779	22.08%	0.090	0.084	0.318	1.065	6.45%	0.174	0.182	0.396
b_5	-2.000	-2.030	1.52%	0.120	0.137	0.192	-2.064	3.22%	0.197	0.206	0.357	-2.039	2.00%	0.292	0.281	0.414	-2.423	21.17%	0.168	0.163	0.707	-2.133	6.64%	0.115	0.122	0.360
Covariance matrix of the β vector																										
$Q11$	1.000	1.030	2.98%	0.249	0.277	0.313	0.902	9.82%	0.279	0.278	0.428	1.045	4.51%	0.263	0.268	0.373	1.318	31.82%	0.116	0.112	0.458	0.925	7.53%	0.216	0.239	0.506
$Q12$	0.000	0.041	4.15%	0.141	0.165	0.182	-0.072	7.17%	0.339	0.314	0.474	0.045	4.51%	0.229	0.219	0.298	0.290	28.99%	0.210	0.208	0.701	0.108	10.79%	0.229	0.249	0.516
$Q13$	0.000	-0.030	3.05%	0.206	0.251	0.277	0.072	7.17%	0.178	0.178	0.270	0.057	5.78%	0.202	0.197	0.268	-0.306	30.56%	0.100	0.099	0.339	-0.088	8.80%	0.225	0.241	0.498
$Q14$	0.000	-0.041	4.11%	0.172	0.196	0.217	-0.074	7.43%	0.227	0.208	0.314	0.052	5.25%	0.143	0.149	0.202	0.299	29.93%	0.249	0.262	0.882	0.093	9.25%	0.239	0.257	0.531
$Q15$	0.000	0.034	3.44%	0.312	0.352	0.388	-0.101	10.09%	0.236	0.237	0.359	0.043	4.35%	0.266	0.261	0.354	0.280	28.04%	0.188	0.187	0.633	-0.082	8.16%	0.091	0.096	0.199
$Q22$	1.000	1.035	3.55%	0.301	0.336	0.376	1.102	10.17%	0.358	0.352	0.540	1.057	5.73%	0.275	0.270	0.375	1.268	26.78%	0.170	0.167	0.607	1.073	7.35%	0.095	0.096	0.235
$Q23$	0.000	0.032	3.19%	0.321	0.389	0.429	-0.092	9.20%	0.209	0.209	0.316	0.053	5.36%	0.289	0.303	0.411	0.258	25.84%	0.161	0.168	0.566	0.095	9.52%	0.276	0.288	0.595
$Q24$	0.000	0.030	3.01%	0.216	0.242	0.267	0.092	9.20%	0.281	0.258	0.390	0.059	5.94%	0.190	0.197	0.268	0.353	35.29%	0.113	0.113	0.385	0.091	9.07%	0.121	0.129	0.267
$Q25$	0.000	-0.043	4.25%	0.189	0.216	0.238	0.072	7.17%	0.363	0.353	0.533	0.050	5.04%	0.293	0.292	0.396	-0.293	29.30%	0.071	0.070	0.242	-0.082	8.16%	0.112	0.116	0.240
$Q33$	1.000	1.036	3.62%	0.298	0.357	0.399	1.093	9.29%	0.272	0.268	0.417	1.047	4.72%	0.277	0.280	0.389	0.745	25.52%	0.257	0.249	0.848	0.907	9.34%	0.106	0.114	0.257
$Q34$	0.000	-0.034	3.37%	0.222	0.267	0.295	0.074	7.43%	0.233	0.226	0.341	0.062	6.31%	0.243	0.250	0.339	0.340	34.03%	0.118	0.121	0.414	-0.080	7.98%	0.087	0.090	0.186
$Q35$	0.000	0.039	3.90%	0.296	0.350	0.386	0.098	9.82%	0.210	0.195	0.295	0.048	4.83%	0.247	0.240	0.326	0.268	26.78%	0.077	0.080	0.274	0.084	8.44%	0.194	0.199	0.411
$Q44$	1.000	1.038	3.79%	0.245	0.295	0.332	1.103	10.26%	0.209	0.201	0.319	0.947	5.36%	0.202	0.195	0.274	0.622	37.81%	0.130	0.127	0.445	1.095	9.52%	0.167	0.172	0.380
$Q45$	0.000	-0.028	2.84%	0.186	0.210	0.232	-0.094	9.38%	0.329	0.328	0.495	-0.063	6.36%	0.223	0.230	0.312	-0.325	32.45%	0.205	0.202	0.682	0.085	8.53%	0.197	0.199	0.411
$Q55$	1.000	1.041	4.15%	0.246	0.297	0.334	0.901	9.91%	0.316	0.295	0.453	1.047	4.72%	0.258	0.250	0.350	0.720	28.04%	0.236	0.235	0.803	1.097	9.70%	0.196	0.216	0.463
Overall Mean Value Across Parameters	-	-	3.08%	0.221	0.256	0.291	-	7.53%	0.252	0.253	0.384	-	7.53%	0.229	0.234	0.318	-	28.15%	0.159	0.164	0.560	-	8.23%	0.170	0.181	0.386
Mean Time	18.86						30.65					20.6					32.77					7.02				
Std. dev of Time	2.95						5.54					3.58					5.08					1.13				
% of Runs Converged	100%						100%					100%					100%					100%				

Table 1d: Evaluation of the ability to recover true parameters for the panel non-diagonal case

Parameter	True Value	MACML Method					GHK-MSL Method					GHK-CML Method					GHK-SGI Method					MCMC Method				
		Parameter Estimates		Standard Error Estimate		RMSE	Parameter Estimates		Standard Error Estimate		RMSE	Parameter Estimates		Standard Error Estimate		RMSE	Parameter Estimates		Standard Error Estimate		RMSE	Parameter Estimates		Standard Error Estimate		RMSE
		Mean Estimate	Absolute Percentage Bias	Asymptotic Standard Error	Finite Sample Standard Error	Root Mean Square Error	Mean Estimate	Absolute Percentage Bias	Asymptotic Standard Error	Finite Sample Standard Error	Root Mean Square Error	Mean Estimate	Absolute Percentage Bias	Asymptotic Standard Error	Finite Sample Standard Error	Root Mean Square Error	Mean Estimate	Absolute Percentage Bias	Asymptotic Standard Error	Finite Sample Standard Error	Root Mean Square Error	Mean Estimate	Absolute Percentage Bias	Asymptotic Standard Error	Finite Sample Standard Error	Root Mean Square Error
Mean values of the β vector																										
b_1	1.500	1.467	2.21%	0.307	0.287	0.495	1.554	3.63%	0.171	0.196	0.403	1.545	2.85%	0.156	0.160	0.294	1.874	24.96%	0.145	0.111	0.710	1.558	3.86%	0.225	0.284	0.700
b_2	-1.000	-1.022	2.21%	0.168	0.158	0.279	-0.959	4.13%	0.188	0.220	0.421	-0.968	3.02%	0.134	0.148	0.253	-1.245	24.48%	0.157	0.120	0.643	-0.968	3.23%	0.167	0.225	0.544
b_3	2.000	2.042	2.10%	0.225	0.218	0.412	1.925	3.75%	0.113	0.139	0.331	2.061	2.93%	0.233	0.254	0.450	2.433	21.66%	0.174	0.132	0.877	1.932	3.40%	0.087	0.108	0.358
b_4	1.000	0.979	2.12%	0.183	0.178	0.307	0.960	4.01%	0.219	0.248	0.472	0.972	2.69%	0.242	0.249	0.411	0.746	25.43%	0.176	0.137	0.663	1.036	3.61%	0.223	0.281	0.677
b_5	-2.000	-1.950	2.51%	0.116	0.110	0.250	-1.924	3.78%	0.260	0.297	0.591	-2.062	2.96%	0.285	0.290	0.510	-1.491	25.43%	0.197	0.150	0.789	-2.063	3.16%	0.200	0.252	0.661
Covariance matrix of the β vector																										
$Q11$	1.000	0.954	4.59%	0.095	0.112	0.207	1.101	10.05%	0.291	0.255	0.489	0.936	6.87%	0.132	0.139	0.241	1.420	42.02%	0.098	0.081	0.517	1.290	29.03%	0.154	0.166	0.422
$Q12$	-0.500	-0.521	4.18%	0.115	0.130	0.220	-0.448	10.33%	0.163	0.142	0.267	-0.530	6.40%	0.197	0.213	0.348	-0.694	38.84%	0.130	0.103	0.510	-0.627	25.37%	0.226	0.244	0.579
$Q13$	0.250	0.241	3.58%	0.198	0.224	0.371	0.223	10.61%	0.260	0.230	0.428	0.230	8.51%	0.093	0.100	0.164	0.144	42.37%	0.179	0.141	0.654	0.198	20.92%	0.219	0.227	0.534
$Q14$	0.750	0.775	3.30%	0.201	0.235	0.397	0.808	7.80%	0.271	0.231	0.438	0.801	7.42%	0.243	0.251	0.411	0.498	33.54%	0.147	0.116	0.551	0.950	26.67%	0.091	0.097	0.259
$Q15$	0.000	0.043	4.35%	0.186	0.199	0.331	0.112	11.18%	0.249	0.212	0.394	0.071	7.73%	0.238	0.241	0.389	0.300	30.01%	0.218	0.180	0.837	-0.282	28.24%	0.178	0.190	0.448
$Q22$	1.000	1.037	3.70%	0.219	0.253	0.430	1.095	9.49%	0.226	0.197	0.383	0.915	9.21%	0.258	0.281	0.463	1.417	41.66%	0.220	0.178	0.905	1.272	27.20%	0.148	0.158	0.406
$Q23$	0.250	0.262	4.75%	0.156	0.171	0.284	0.276	10.24%	0.301	0.266	0.495	0.230	8.51%	0.173	0.177	0.287	0.179	28.25%	0.138	0.109	0.503	0.304	21.44%	0.235	0.255	0.601
$Q24$	-0.500	-0.522	4.43%	0.222	0.243	0.406	-0.450	9.96%	0.189	0.163	0.306	-0.529	6.32%	0.167	0.172	0.282	-0.673	34.60%	0.074	0.060	0.329	-0.361	27.72%	0.170	0.183	0.432
$Q25$	0.000	0.047	4.75%	0.207	0.226	0.374	-0.092	9.20%	0.303	0.273	0.507	0.069	7.42%	0.222	0.231	0.373	0.342	34.25%	0.253	0.199	0.923	0.209	20.92%	0.132	0.136	0.321
$Q33$	1.000	1.034	3.38%	0.115	0.134	0.239	0.896	10.43%	0.207	0.173	0.335	1.068	7.34%	0.107	0.112	0.206	0.682	31.78%	0.070	0.054	0.302	1.248	24.84%	0.283	0.285	0.690
$Q34$	0.333	0.344	4.35%	0.118	0.129	0.217	0.359	8.92%	0.164	0.143	0.269	0.305	8.12%	0.205	0.209	0.339	0.197	40.25%	0.135	0.108	0.500	0.235	28.76%	0.265	0.264	0.622
$Q35$	0.000	0.041	4.14%	0.203	0.231	0.383	0.094	9.39%	0.160	0.135	0.251	0.080	8.67%	0.175	0.193	0.312	0.339	33.90%	0.113	0.093	0.439	0.267	26.67%	0.148	0.162	0.383
$Q44$	1.000	0.958	4.18%	0.122	0.136	0.243	0.908	9.20%	0.250	0.223	0.424	0.931	7.50%	0.189	0.200	0.335	1.304	30.36%	0.113	0.092	0.541	0.718	28.24%	0.197	0.212	0.506
$Q45$	0.000	-0.036	3.62%	0.091	0.107	0.177	0.113	11.27%	0.280	0.239	0.444	-0.060	6.48%	0.261	0.282	0.456	0.385	38.49%	0.179	0.143	0.669	-0.241	24.06%	0.193	0.196	0.460
$Q55$	1.000	0.961	3.90%	0.153	0.172	0.299	1.112	11.18%	0.136	0.119	0.252	1.086	9.29%	0.191	0.199	0.338	1.395	39.54%	0.183	0.142	0.756	0.689	31.12%	0.211	0.225	0.538
Overall Mean Value Across Parameters		-	3.62%	0.168	0.184	0.316	-	8.34%	0.222	0.214	0.395	-	6.14%	0.199	0.211	0.343	-	33.09%	0.157	0.125	0.631	-	20.42%	0.193	0.206	0.507
Mean Time		23.09					44.98					27.29					49.37					8.97				
Std. dev of Time		3.58					7.82					4.55					8.37					1.79				
% of Runs Converged		100%					100%					100%					100%					100%				