

APPENDIX A. CRITICAL VALUES FOR TESTING SERIAL INDEPENDENCE FOR $N(0, 1)$ DATA

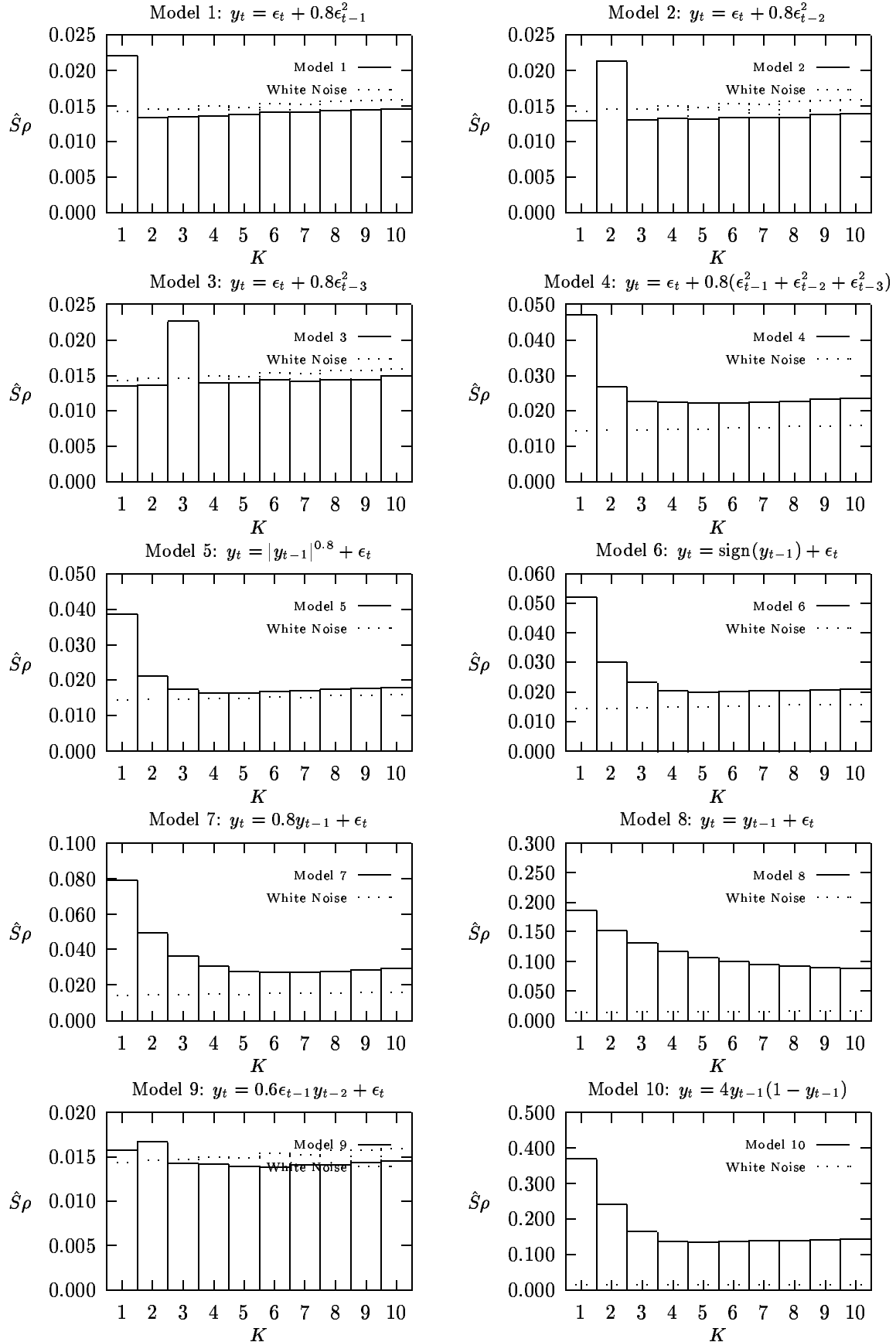
Percentiles: $n = 50$				Percentiles: $n = 75$			
Lag	90th	95th	99th	Lag	90th	95th	99th
1	0.024	0.041	0.100	1	0.020	0.032	0.087
2	0.026	0.042	0.102	2	0.019	0.032	0.093
3	0.025	0.043	0.103	3	0.020	0.033	0.094
4	0.026	0.044	0.105	4	0.020	0.033	0.097
5	0.026	0.045	0.106	5	0.020	0.034	0.095
6	0.026	0.044	0.105	6	0.020	0.033	0.093
7	0.027	0.046	0.112	7	0.020	0.034	0.091
8	0.027	0.046	0.109	8	0.021	0.035	0.092
9	0.026	0.046	0.111	9	0.021	0.035	0.091
10	0.028	0.047	0.108	10	0.021	0.037	0.096

Percentiles: $n = 100$				Percentiles: $n = 150$			
Lag	90th	95th	99th	Lag	90th	95th	99th
1	0.017	0.027	0.064	1	0.013	0.021	0.048
2	0.017	0.027	0.062	2	0.013	0.020	0.052
3	0.017	0.027	0.069	3	0.013	0.021	0.051
4	0.017	0.026	0.063	4	0.013	0.021	0.047
5	0.018	0.028	0.066	5	0.014	0.021	0.052
6	0.018	0.027	0.064	6	0.014	0.022	0.048
7	0.018	0.027	0.069	7	0.014	0.021	0.049
8	0.017	0.026	0.066	8	0.014	0.021	0.053
9	0.018	0.027	0.067	9	0.013	0.022	0.051
10	0.018	0.027	0.065	10	0.014	0.023	0.048

Percentiles: $n = 200$				Percentiles: $n = 300$			
Lag	90th	95th	99th	Lag	90th	95th	99th
1	0.011	0.016	0.039	1	0.009	0.012	0.028
2	0.011	0.016	0.039	2	0.009	0.012	0.030
3	0.011	0.017	0.041	3	0.008	0.012	0.031
4	0.012	0.017	0.040	4	0.009	0.012	0.030
5	0.011	0.017	0.040	5	0.008	0.012	0.031
6	0.011	0.017	0.042	6	0.009	0.012	0.030
7	0.011	0.017	0.041	7	0.009	0.012	0.030
8	0.011	0.017	0.041	8	0.009	0.013	0.029
9	0.011	0.017	0.040	9	0.009	0.012	0.029
10	0.011	0.017	0.042	10	0.009	0.012	0.030

Percentiles: $n = 400$				Percentiles: $n = 500$			
Lag	90th	95th	99th	Lag	90th	95th	99th
1	0.007	0.009	0.020	1	0.006	0.009	0.020
2	0.007	0.010	0.021	2	0.007	0.009	0.022
3	0.007	0.010	0.021	3	0.006	0.009	0.022
4	0.007	0.009	0.019	4	0.006	0.009	0.021
5	0.007	0.010	0.022	5	0.007	0.009	0.022
6	0.007	0.010	0.019	6	0.006	0.009	0.022
7	0.007	0.010	0.020	7	0.006	0.009	0.023
8	0.007	0.010	0.020	8	0.007	0.009	0.021
9	0.007	0.010	0.020	9	0.007	0.009	0.023
10	0.007	0.009	0.021	10	0.006	0.009	0.022

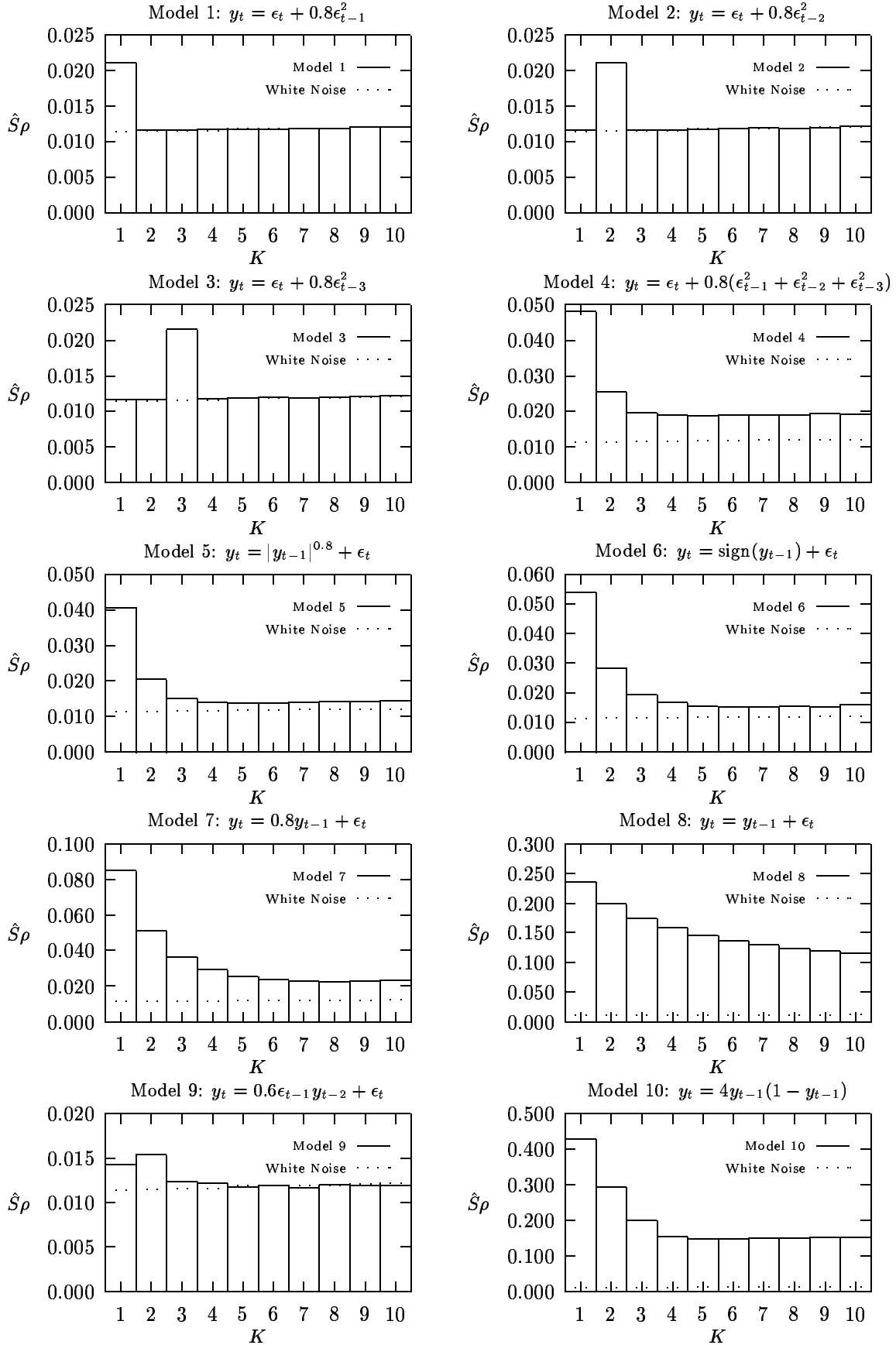
APPENDIX B. GRAPH OF MEAN $\hat{S}\rho$ VERSUS K OVER 1,000 REPLICATIONS: $n = 50$



B.1. Mean, Median, Standard Deviation, and Interquartile Range: $n = 50$.

Model 0 $y_t = \epsilon_t$					Model 1 $y_t = \epsilon_t + 0.8\epsilon_{t-1}^2$					Model 2 $y_t = \epsilon_t + 0.8\epsilon_{t-2}^2$				
Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$
1	0.014	0.008	0.022	0.007	1	0.022	0.016	0.023	0.013	1	0.013	0.008	0.016	0.008
2	0.015	0.008	0.023	0.007	2	0.013	0.009	0.018	0.008	2	0.021	0.015	0.020	0.013
3	0.015	0.008	0.023	0.007	3	0.014	0.009	0.018	0.008	3	0.013	0.009	0.016	0.008
4	0.015	0.009	0.023	0.007	4	0.014	0.009	0.018	0.008	4	0.013	0.009	0.017	0.008
5	0.015	0.008	0.023	0.008	5	0.014	0.009	0.018	0.008	5	0.013	0.008	0.016	0.008
6	0.015	0.009	0.024	0.008	6	0.014	0.009	0.019	0.008	6	0.013	0.009	0.016	0.008
7	0.015	0.008	0.023	0.007	7	0.014	0.009	0.019	0.008	7	0.013	0.009	0.017	0.008
8	0.016	0.009	0.024	0.008	8	0.014	0.009	0.020	0.009	8	0.013	0.009	0.017	0.008
9	0.016	0.009	0.024	0.008	9	0.014	0.009	0.020	0.009	9	0.014	0.009	0.017	0.008
10	0.016	0.009	0.024	0.008	10	0.015	0.009	0.020	0.009	10	0.014	0.009	0.017	0.009
Model 3 $y_t = \epsilon_t + 0.8\epsilon_{t-3}^2$					Model 4 $y_t = \epsilon_t + 0.8(\epsilon_{t-1}^2 + \epsilon_{t-2}^2 + \epsilon_{t-3}^2)$					Model 5 $y_t = y_{t-1} ^{0.8} + \epsilon_t$				
Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$
1	0.014	0.008	0.017	0.008	1	0.047	0.040	0.031	0.034	1	0.039	0.030	0.029	0.025
2	0.014	0.009	0.017	0.008	2	0.027	0.020	0.024	0.020	2	0.021	0.014	0.023	0.015
3	0.023	0.016	0.023	0.014	3	0.023	0.016	0.023	0.016	3	0.017	0.011	0.023	0.011
4	0.014	0.009	0.020	0.008	4	0.023	0.016	0.023	0.016	4	0.016	0.010	0.021	0.010
5	0.014	0.009	0.018	0.009	5	0.022	0.016	0.022	0.016	5	0.016	0.010	0.021	0.009
6	0.014	0.009	0.019	0.009	6	0.022	0.015	0.022	0.017	6	0.017	0.010	0.021	0.010
7	0.014	0.009	0.019	0.008	7	0.022	0.016	0.023	0.016	7	0.017	0.010	0.022	0.010
8	0.014	0.009	0.019	0.008	8	0.023	0.016	0.023	0.016	8	0.017	0.011	0.022	0.011
9	0.014	0.009	0.019	0.008	9	0.023	0.016	0.023	0.017	9	0.018	0.011	0.023	0.011
10	0.015	0.009	0.020	0.009	10	0.024	0.016	0.024	0.017	10	0.018	0.011	0.023	0.011
Model 6 $y_t = \text{sign}(y_{t-1}) + \epsilon_t$					Model 7 $y_t = 0.8y_{t-1} + \epsilon_t$					Model 8 $y_t = y_{t-1} + \epsilon_t$				
Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$
1	0.052	0.042	0.037	0.033	1	0.079	0.068	0.047	0.053	1	0.186	0.178	0.092	0.139
2	0.030	0.021	0.032	0.021	2	0.049	0.039	0.039	0.040	2	0.152	0.139	0.090	0.138
3	0.023	0.015	0.029	0.016	3	0.036	0.026	0.036	0.031	3	0.131	0.115	0.089	0.134
4	0.021	0.012	0.028	0.013	4	0.031	0.020	0.033	0.025	4	0.117	0.097	0.087	0.131
5	0.020	0.012	0.028	0.012	5	0.028	0.018	0.031	0.022	5	0.107	0.083	0.085	0.125
6	0.020	0.012	0.029	0.012	6	0.027	0.018	0.031	0.020	6	0.100	0.074	0.083	0.119
7	0.020	0.012	0.031	0.012	7	0.027	0.017	0.031	0.021	7	0.095	0.066	0.081	0.115
8	0.021	0.013	0.030	0.012	8	0.028	0.018	0.031	0.020	8	0.092	0.064	0.079	0.109
9	0.021	0.013	0.029	0.013	9	0.028	0.018	0.032	0.023	9	0.089	0.063	0.077	0.102
10	0.021	0.013	0.030	0.013	10	0.029	0.019	0.032	0.022	10	0.088	0.063	0.076	0.098
Model 9 $y_t = 0.6\epsilon_{t-1}y_{t-2} + \epsilon_t$					Model 10 $y_t = 4y_{t-1}(1 - y_{t-1})$									
Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$					
1	0.016	0.010	0.020	0.009	1	0.368	0.365	0.082	0.111					
2	0.017	0.011	0.020	0.009	2	0.241	0.231	0.097	0.134					
3	0.014	0.009	0.019	0.008	3	0.165	0.147	0.095	0.126					
4	0.014	0.009	0.019	0.007	4	0.137	0.117	0.087	0.105					
5	0.014	0.009	0.019	0.008	5	0.136	0.117	0.081	0.099					
6	0.014	0.008	0.019	0.008	6	0.136	0.118	0.079	0.097					
7	0.014	0.008	0.025	0.007	7	0.138	0.121	0.078	0.096					
8	0.014	0.008	0.019	0.007	8	0.140	0.123	0.079	0.096					
9	0.014	0.008	0.021	0.008	9	0.140	0.123	0.079	0.099					
10	0.014	0.009	0.020	0.008	10	0.142	0.126	0.079	0.099					

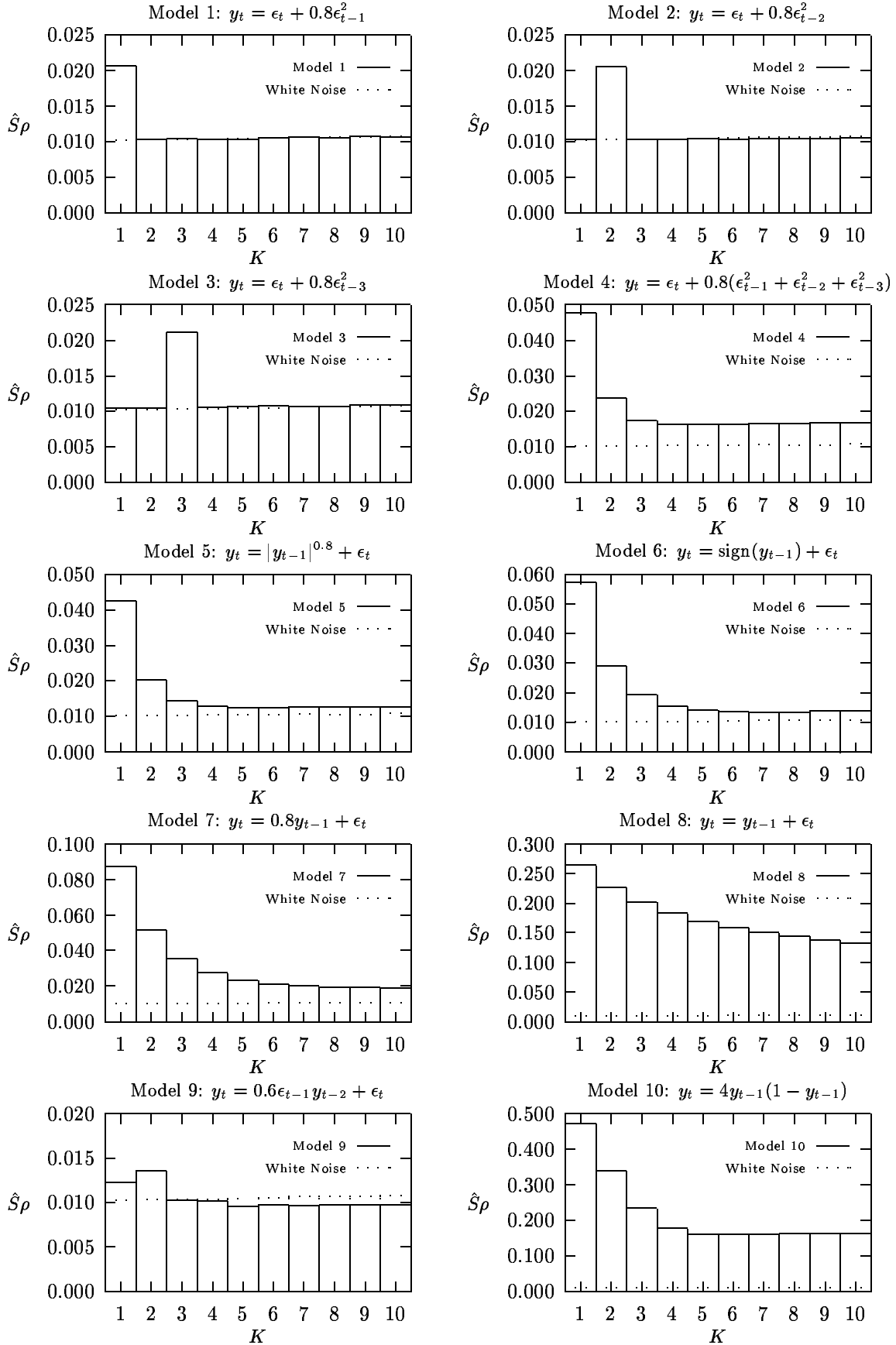
APPENDIX C. GRAPH OF MEAN $\hat{S}\rho$ VERSUS K OVER 1,000 REPLICATIONS: $n = 75$



C.1. Mean, Median, Standard Deviation, and Interquartile Range: $n = 75$.

Model 0 $y_t = \epsilon_t$					Model 1 $y_t = \epsilon_t + 0.8\epsilon_{t-1}^2$					Model 2 $y_t = \epsilon_t + 0.8\epsilon_{t-2}^2$				
Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$
1	0.011	0.007	0.015	0.006	1	0.021	0.016	0.018	0.012	1	0.012	0.008	0.013	0.007
2	0.011	0.007	0.015	0.006	2	0.012	0.008	0.013	0.006	2	0.021	0.016	0.018	0.013
3	0.012	0.007	0.015	0.006	3	0.012	0.008	0.013	0.006	3	0.012	0.008	0.014	0.007
4	0.012	0.007	0.015	0.006	4	0.012	0.008	0.013	0.006	4	0.012	0.008	0.013	0.006
5	0.012	0.008	0.015	0.006	5	0.012	0.008	0.013	0.007	5	0.012	0.008	0.014	0.006
6	0.012	0.007	0.015	0.006	6	0.012	0.008	0.013	0.006	6	0.012	0.008	0.014	0.007
7	0.012	0.008	0.015	0.006	7	0.012	0.008	0.013	0.006	7	0.012	0.009	0.014	0.007
8	0.012	0.008	0.015	0.006	8	0.012	0.008	0.013	0.007	8	0.012	0.008	0.014	0.007
9	0.012	0.008	0.016	0.006	9	0.012	0.008	0.014	0.006	9	0.012	0.008	0.014	0.007
10	0.012	0.008	0.016	0.006	10	0.012	0.008	0.014	0.007	10	0.012	0.008	0.014	0.007
Model 3 $y_t = \epsilon_t + 0.8\epsilon_{t-3}^2$					Model 4 $y_t = \epsilon_t + 0.8(\epsilon_{t-1}^2 + \epsilon_{t-2}^2 + \epsilon_{t-3}^2)$					Model 5 $y_t = y_{t-1} ^{0.8} + \epsilon_t$				
Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$
1	0.012	0.008	0.012	0.006	1	0.048	0.043	0.027	0.028	1	0.041	0.034	0.025	0.023
2	0.012	0.008	0.012	0.006	2	0.025	0.020	0.020	0.017	2	0.020	0.015	0.019	0.015
3	0.022	0.016	0.017	0.013	3	0.020	0.015	0.017	0.013	3	0.015	0.010	0.017	0.010
4	0.012	0.008	0.012	0.007	4	0.019	0.014	0.018	0.013	4	0.014	0.009	0.017	0.008
5	0.012	0.008	0.012	0.007	5	0.019	0.014	0.017	0.012	5	0.014	0.009	0.016	0.008
6	0.012	0.008	0.012	0.007	6	0.019	0.014	0.017	0.012	6	0.014	0.009	0.016	0.008
7	0.012	0.008	0.012	0.007	7	0.019	0.014	0.018	0.013	7	0.014	0.009	0.016	0.008
8	0.012	0.008	0.012	0.007	8	0.019	0.014	0.018	0.013	8	0.014	0.009	0.017	0.008
9	0.012	0.008	0.013	0.007	9	0.019	0.014	0.018	0.012	9	0.014	0.009	0.017	0.008
10	0.012	0.009	0.013	0.007	10	0.019	0.014	0.018	0.013	10	0.014	0.010	0.017	0.008
Model 6 $y_t = \text{sign}(y_{t-1}) + \epsilon_t$					Model 7 $y_t = 0.8y_{t-1} + \epsilon_t$					Model 8 $y_t = y_{t-1} + \epsilon_t$				
Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$
1	0.054	0.047	0.031	0.029	1	0.085	0.075	0.044	0.049	1	0.236	0.233	0.096	0.144
2	0.028	0.022	0.025	0.018	2	0.051	0.042	0.035	0.036	2	0.199	0.194	0.096	0.148
3	0.020	0.014	0.021	0.012	3	0.037	0.028	0.031	0.029	3	0.175	0.166	0.097	0.152
4	0.017	0.011	0.021	0.011	4	0.029	0.021	0.028	0.024	4	0.158	0.146	0.096	0.153
5	0.015	0.010	0.020	0.008	5	0.026	0.017	0.027	0.020	5	0.146	0.131	0.096	0.149
6	0.015	0.010	0.020	0.009	6	0.024	0.016	0.026	0.018	6	0.136	0.118	0.095	0.145
7	0.015	0.010	0.020	0.008	7	0.023	0.016	0.025	0.016	7	0.129	0.111	0.094	0.144
8	0.016	0.010	0.021	0.009	8	0.023	0.015	0.024	0.016	8	0.124	0.103	0.093	0.140
9	0.015	0.010	0.019	0.009	9	0.023	0.015	0.025	0.016	9	0.119	0.097	0.091	0.137
10	0.016	0.010	0.021	0.009	10	0.023	0.016	0.025	0.017	10	0.116	0.093	0.090	0.133
Model 9 $y_t = 0.6\epsilon_{t-1}y_{t-2} + \epsilon_t$					Model 10 $y_t = 4y_{t-1}(1 - y_{t-1})$									
Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$					
1	0.014	0.009	0.017	0.009	1	0.429	0.425	0.069	0.094					
2	0.015	0.011	0.017	0.009	2	0.294	0.286	0.088	0.120					
3	0.012	0.008	0.015	0.006	3	0.201	0.187	0.091	0.123					
4	0.012	0.008	0.016	0.007	4	0.155	0.137	0.085	0.109					
5	0.012	0.008	0.016	0.006	5	0.148	0.130	0.080	0.097					
6	0.012	0.008	0.016	0.007	6	0.148	0.133	0.074	0.093					
7	0.012	0.007	0.016	0.006	7	0.150	0.135	0.074	0.094					
8	0.012	0.008	0.016	0.006	8	0.151	0.136	0.076	0.094					
9	0.012	0.008	0.016	0.006	9	0.152	0.139	0.075	0.096					
10	0.012	0.007	0.016	0.006	10	0.152	0.140	0.075	0.095					

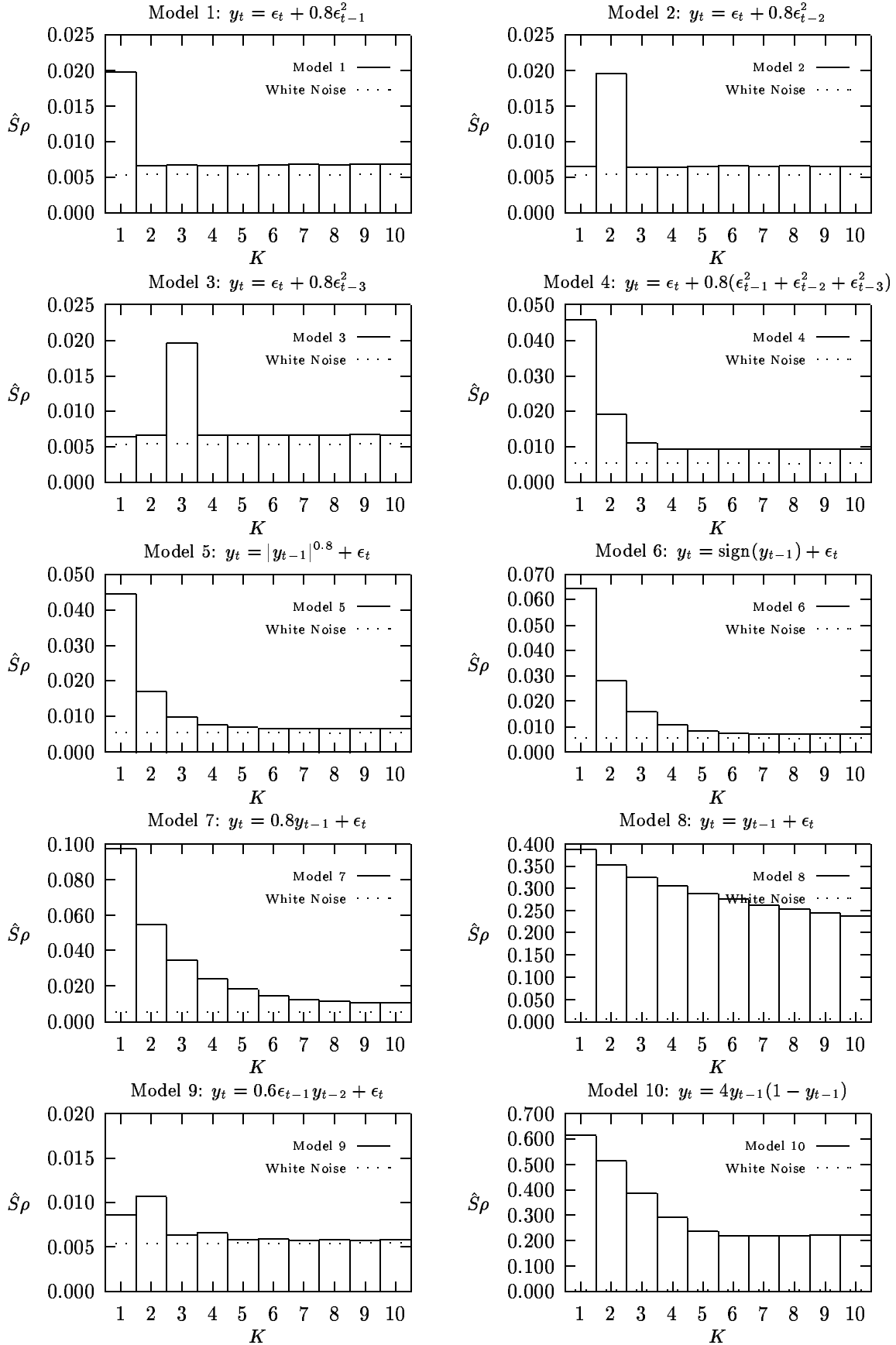
APPENDIX D. GRAPH OF MEAN $\hat{S}\rho$ VERSUS K OVER 1,000 REPLICATIONS: $n = 100$



D.1. Mean, Median, Standard Deviation, and Interquartile Range: $n = 100$.

Model 0 $y_t = \epsilon_t$					Model 1 $y_t = \epsilon_t + 0.8\epsilon_{t-1}^2$					Model 2 $y_t = \epsilon_t + 0.8\epsilon_{t-2}^2$				
Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$
1	0.010	0.007	0.014	0.005	1	0.021	0.017	0.016	0.012	1	0.010	0.008	0.010	0.005
2	0.010	0.007	0.014	0.005	2	0.010	0.008	0.011	0.005	2	0.021	0.016	0.014	0.012
3	0.010	0.007	0.013	0.005	3	0.010	0.008	0.011	0.006	3	0.010	0.008	0.009	0.005
4	0.010	0.007	0.013	0.005	4	0.010	0.008	0.011	0.005	4	0.010	0.008	0.009	0.006
5	0.010	0.007	0.014	0.005	5	0.010	0.008	0.012	0.005	5	0.010	0.008	0.010	0.006
6	0.010	0.007	0.014	0.005	6	0.010	0.008	0.011	0.006	6	0.010	0.008	0.010	0.005
7	0.011	0.007	0.014	0.005	7	0.011	0.008	0.012	0.006	7	0.010	0.008	0.009	0.006
8	0.011	0.007	0.014	0.005	8	0.011	0.008	0.012	0.006	8	0.010	0.008	0.009	0.005
9	0.011	0.007	0.014	0.005	9	0.011	0.008	0.012	0.006	9	0.010	0.008	0.010	0.006
10	0.011	0.007	0.014	0.005	10	0.011	0.008	0.012	0.006	10	0.011	0.008	0.010	0.006
Model 3 $y_t = \epsilon_t + 0.8\epsilon_{t-3}^2$					Model 4 $y_t = \epsilon_t + 0.8(\epsilon_{t-1}^2 + \epsilon_{t-2}^2 + \epsilon_{t-3}^2)$					Model 5 $y_t = y_{t-1} ^{0.8} + \epsilon_t$				
Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$
1	0.011	0.008	0.011	0.005	1	0.048	0.043	0.024	0.024	1	0.042	0.037	0.024	0.023
2	0.010	0.008	0.011	0.005	2	0.024	0.020	0.017	0.014	2	0.020	0.016	0.017	0.014
3	0.021	0.017	0.016	0.012	3	0.018	0.013	0.015	0.011	3	0.014	0.010	0.015	0.009
4	0.011	0.008	0.011	0.006	4	0.016	0.012	0.015	0.010	4	0.013	0.009	0.015	0.007
5	0.011	0.008	0.011	0.006	5	0.016	0.013	0.014	0.010	5	0.013	0.008	0.015	0.007
6	0.011	0.008	0.011	0.006	6	0.016	0.013	0.015	0.010	6	0.012	0.008	0.015	0.007
7	0.011	0.008	0.011	0.005	7	0.017	0.013	0.015	0.010	7	0.013	0.008	0.015	0.007
8	0.011	0.008	0.011	0.006	8	0.017	0.013	0.015	0.010	8	0.013	0.008	0.015	0.007
9	0.011	0.008	0.011	0.006	9	0.017	0.013	0.015	0.010	9	0.013	0.008	0.015	0.007
10	0.011	0.008	0.011	0.006	10	0.017	0.013	0.015	0.010	10	0.013	0.008	0.015	0.007
Model 6 $y_t = \text{sign}(y_{t-1}) + \epsilon_t$					Model 7 $y_t = 0.8y_{t-1} + \epsilon_t$					Model 8 $y_t = y_{t-1} + \epsilon_t$				
Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$
1	0.057	0.051	0.028	0.028	1	0.087	0.080	0.037	0.044	1	0.264	0.261	0.098	0.147
2	0.029	0.024	0.021	0.019	2	0.052	0.046	0.029	0.034	2	0.226	0.219	0.099	0.150
3	0.019	0.015	0.018	0.013	3	0.036	0.030	0.025	0.027	3	0.201	0.192	0.100	0.154
4	0.016	0.011	0.016	0.010	4	0.028	0.022	0.022	0.022	4	0.183	0.171	0.100	0.153
5	0.014	0.010	0.016	0.009	5	0.023	0.017	0.020	0.018	5	0.170	0.155	0.100	0.155
6	0.014	0.009	0.016	0.008	6	0.021	0.015	0.019	0.016	6	0.159	0.142	0.100	0.154
7	0.014	0.009	0.016	0.008	7	0.020	0.014	0.019	0.014	7	0.150	0.131	0.100	0.153
8	0.014	0.009	0.016	0.008	8	0.019	0.014	0.018	0.013	8	0.143	0.121	0.099	0.153
9	0.014	0.009	0.016	0.008	9	0.019	0.014	0.018	0.013	9	0.138	0.115	0.098	0.152
10	0.014	0.009	0.017	0.008	10	0.019	0.014	0.018	0.013	10	0.133	0.109	0.098	0.147
Model 9 $y_t = 0.6\epsilon_{t-1}y_{t-2} + \epsilon_t$					Model 10 $y_t = 4y_{t-1}(1 - y_{t-1})$									
Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$					
1	0.012	0.009	0.012	0.007	1	0.472	0.469	0.066	0.084					
2	0.014	0.010	0.012	0.008	2	0.340	0.333	0.117	0.113					
3	0.010	0.007	0.010	0.005	3	0.234	0.227	0.087	0.121					
4	0.010	0.007	0.010	0.005	4	0.176	0.164	0.089	0.118					
5	0.010	0.007	0.010	0.005	5	0.160	0.148	0.076	0.099					
6	0.010	0.007	0.010	0.005	6	0.160	0.149	0.072	0.093					
7	0.010	0.007	0.010	0.005	7	0.161	0.150	0.071	0.094					
8	0.010	0.007	0.010	0.005	8	0.161	0.151	0.071	0.094					
9	0.010	0.007	0.010	0.005	9	0.162	0.152	0.072	0.096					
10	0.010	0.007	0.010	0.005	10	0.163	0.152	0.076	0.095					

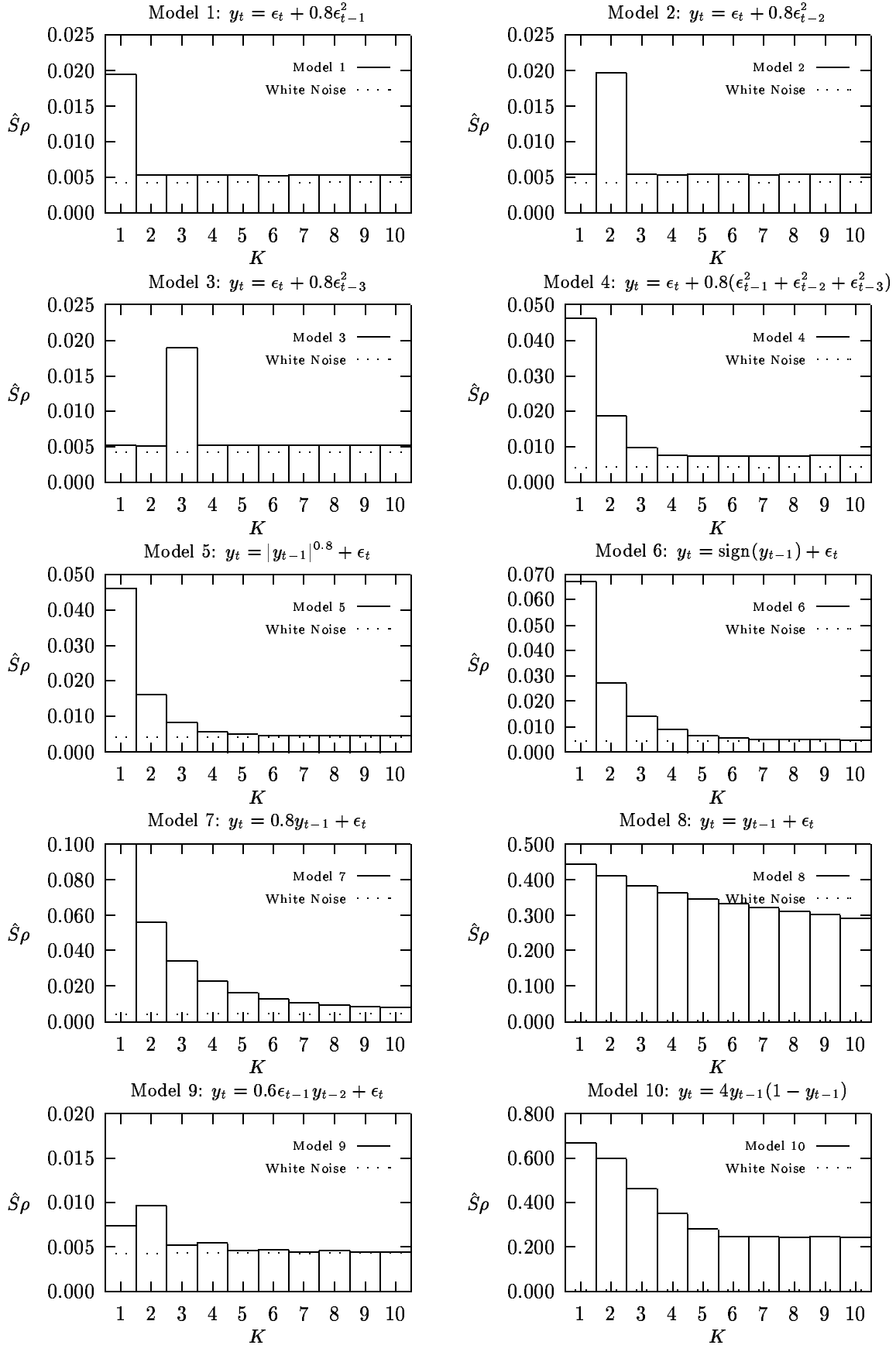
APPENDIX E. GRAPH OF MEAN $\hat{S}\rho$ VERSUS K OVER 1,000 REPLICATIONS: $n = 300$



E.1. Mean, Median, Standard Deviation, and Interquartile Range: $n = 300$.

Model 0 $y_t = \epsilon_t$					Model 1 $y_t = \epsilon_t + 0.8\epsilon_{t-1}^2$					Model 2 $y_t = \epsilon_t + 0.8\epsilon_{t-2}^2$				
Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$
1	0.005	0.004	0.005	0.002	1	0.020	0.018	0.010	0.010	1	0.007	0.006	0.004	0.003
2	0.005	0.004	0.005	0.002	2	0.007	0.006	0.005	0.003	2	0.020	0.018	0.009	0.010
3	0.005	0.004	0.005	0.002	3	0.007	0.006	0.005	0.003	3	0.006	0.006	0.004	0.003
4	0.005	0.004	0.006	0.002	4	0.007	0.006	0.005	0.003	4	0.006	0.006	0.004	0.003
5	0.005	0.004	0.005	0.002	5	0.007	0.006	0.005	0.003	5	0.007	0.006	0.004	0.003
6	0.005	0.004	0.005	0.002	6	0.007	0.005	0.005	0.003	6	0.007	0.006	0.004	0.003
7	0.005	0.004	0.005	0.002	7	0.007	0.006	0.005	0.003	7	0.007	0.006	0.004	0.003
8	0.005	0.004	0.005	0.002	8	0.007	0.006	0.005	0.003	8	0.007	0.006	0.004	0.003
9	0.005	0.004	0.005	0.002	9	0.007	0.006	0.005	0.003	9	0.007	0.006	0.004	0.003
10	0.005	0.004	0.006	0.002	10	0.007	0.006	0.005	0.003	10	0.007	0.005	0.004	0.003
Model 3 $y_t = \epsilon_t + 0.8\epsilon_{t-3}^2$					Model 4 $y_t = \epsilon_t + 0.8(\epsilon_{t-1}^2 + \epsilon_{t-2}^2 + \epsilon_{t-3}^2)$					Model 5 $y_t = y_{t-1} ^{0.8} + \epsilon_t$				
Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$
1	0.006	0.005	0.004	0.003	1	0.046	0.044	0.012	0.015	1	0.045	0.041	0.015	0.014
2	0.007	0.005	0.004	0.003	2	0.019	0.018	0.007	0.008	2	0.017	0.015	0.009	0.008
3	0.020	0.018	0.009	0.010	3	0.011	0.010	0.006	0.005	3	0.010	0.008	0.007	0.006
4	0.007	0.005	0.004	0.003	4	0.009	0.008	0.005	0.004	4	0.008	0.006	0.007	0.004
5	0.007	0.005	0.004	0.003	5	0.009	0.008	0.005	0.005	5	0.007	0.005	0.007	0.003
6	0.007	0.006	0.004	0.003	6	0.009	0.008	0.005	0.005	6	0.007	0.005	0.006	0.003
7	0.007	0.005	0.004	0.003	7	0.009	0.008	0.005	0.005	7	0.007	0.005	0.006	0.003
8	0.007	0.006	0.004	0.003	8	0.009	0.008	0.005	0.005	8	0.007	0.005	0.006	0.003
9	0.007	0.006	0.004	0.003	9	0.009	0.008	0.005	0.005	9	0.007	0.005	0.007	0.003
10	0.007	0.005	0.004	0.003	10	0.009	0.008	0.005	0.005	10	0.007	0.005	0.007	0.003
Model 6 $y_t = \text{sign}(y_{t-1}) + \epsilon_t$					Model 7 $y_t = 0.8y_{t-1} + \epsilon_t$					Model 8 $y_t = y_{t-1} + \epsilon_t$				
Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$
1	0.065	0.061	0.017	0.019	1	0.098	0.093	0.026	0.030	1	0.388	0.393	0.091	0.121
2	0.028	0.027	0.011	0.012	2	0.055	0.052	0.019	0.023	2	0.352	0.354	0.094	0.129
3	0.016	0.014	0.009	0.009	3	0.035	0.031	0.015	0.017	3	0.326	0.326	0.098	0.138
4	0.011	0.009	0.007	0.006	4	0.024	0.021	0.013	0.014	4	0.305	0.303	0.100	0.144
5	0.008	0.007	0.006	0.004	5	0.018	0.016	0.011	0.012	5	0.288	0.287	0.103	0.149
6	0.008	0.006	0.006	0.004	6	0.015	0.012	0.010	0.010	6	0.275	0.274	0.104	0.153
7	0.007	0.006	0.006	0.003	7	0.013	0.010	0.009	0.008	7	0.263	0.262	0.106	0.152
8	0.007	0.005	0.006	0.003	8	0.011	0.009	0.009	0.007	8	0.253	0.251	0.107	0.154
9	0.007	0.005	0.006	0.003	9	0.011	0.008	0.009	0.007	9	0.245	0.241	0.108	0.158
10	0.007	0.005	0.006	0.003	10	0.011	0.008	0.009	0.006	10	0.237	0.231	0.109	0.158
Model 9 $y_t = 0.6\epsilon_{t-1}y_{t-2} + \epsilon_t$					Model 10 $y_t = 4y_{t-1}(1 - y_{t-1})$									
Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$					
1	0.009	0.007	0.006	0.004	1	0.614	0.611	0.045	0.048					
2	0.011	0.009	0.007	0.005	2	0.513	0.499	0.171	0.067					
3	0.006	0.005	0.006	0.003	3	0.386	0.376	0.128	0.085					
4	0.007	0.005	0.006	0.003	4	0.291	0.288	0.071	0.096					
5	0.006	0.005	0.005	0.002	5	0.237	0.232	0.073	0.097					
6	0.006	0.005	0.005	0.002	6	0.218	0.212	0.066	0.086					
7	0.006	0.004	0.006	0.002	7	0.218	0.212	0.063	0.082					
8	0.006	0.005	0.006	0.002	8	0.218	0.213	0.063	0.082					
9	0.006	0.004	0.006	0.002	9	0.220	0.212	0.064	0.080					
10	0.006	0.005	0.006	0.003	10	0.220	0.213	0.062	0.079					

APPENDIX F. GRAPH OF MEAN $\hat{S}\rho$ VERSUS K OVER 1,000 REPLICATIONS: $n = 500$



F.1. Mean, Median, Standard Deviation, and Interquartile Range: $n = 500$.

Model 0 $y_t = \epsilon_t$					Model 1 $y_t = \epsilon_t + 0.8\epsilon_{t-1}^2$					Model 2 $y_t = \epsilon_t + 0.8\epsilon_{t-2}^2$				
Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$
1	0.004	0.003	0.003	0.002	1	0.020	0.019	0.007	0.009	1	0.005	0.005	0.003	0.002
2	0.004	0.003	0.003	0.001	2	0.005	0.005	0.002	0.002	2	0.020	0.019	0.008	0.010
3	0.004	0.003	0.003	0.002	3	0.005	0.005	0.002	0.002	3	0.005	0.005	0.003	0.002
4	0.004	0.004	0.003	0.002	4	0.005	0.005	0.002	0.002	4	0.005	0.005	0.003	0.002
5	0.004	0.003	0.003	0.002	5	0.005	0.005	0.002	0.002	5	0.005	0.005	0.003	0.002
6	0.004	0.003	0.003	0.002	6	0.005	0.005	0.002	0.002	6	0.006	0.005	0.003	0.002
7	0.004	0.003	0.003	0.002	7	0.005	0.005	0.002	0.002	7	0.005	0.005	0.003	0.002
8	0.004	0.004	0.003	0.002	8	0.005	0.005	0.002	0.002	8	0.005	0.005	0.003	0.002
9	0.004	0.004	0.003	0.002	9	0.005	0.005	0.003	0.002	9	0.005	0.005	0.003	0.002
10	0.004	0.004	0.003	0.002	10	0.005	0.005	0.002	0.002	10	0.005	0.005	0.003	0.002
Model 3 $y_t = \epsilon_t + 0.8\epsilon_{t-3}^2$					Model 4 $y_t = \epsilon_t + 0.8(\epsilon_{t-1}^2 + \epsilon_{t-2}^2 + \epsilon_{t-3}^2)$					Model 5 $y_t = y_{t-1} ^{0.8} + \epsilon_t$				
Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$
1	0.005	0.005	0.002	0.002	1	0.046	0.045	0.010	0.013	1	0.046	0.045	0.010	0.012
2	0.005	0.004	0.002	0.002	2	0.019	0.018	0.006	0.007	2	0.016	0.016	0.005	0.006
3	0.019	0.018	0.007	0.009	3	0.010	0.009	0.005	0.004	3	0.008	0.008	0.003	0.004
4	0.005	0.005	0.002	0.002	4	0.008	0.007	0.004	0.003	4	0.006	0.005	0.003	0.003
5	0.005	0.005	0.002	0.002	5	0.007	0.007	0.004	0.003	5	0.005	0.004	0.002	0.002
6	0.005	0.005	0.002	0.002	6	0.007	0.007	0.004	0.003	6	0.005	0.004	0.002	0.002
7	0.005	0.005	0.002	0.002	7	0.007	0.007	0.004	0.003	7	0.005	0.004	0.002	0.002
8	0.005	0.005	0.002	0.002	8	0.008	0.007	0.004	0.003	8	0.005	0.004	0.002	0.002
9	0.005	0.005	0.002	0.002	9	0.008	0.007	0.004	0.003	9	0.005	0.004	0.003	0.002
10	0.005	0.005	0.002	0.002	10	0.008	0.007	0.004	0.003	10	0.005	0.004	0.003	0.002
Model 6 $y_t = \text{sign}(y_{t-1}) + \epsilon_t$					Model 7 $y_t = 0.8y_{t-1} + \epsilon_t$					Model 8 $y_t = y_{t-1} + \epsilon_t$				
Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$
1	0.067	0.066	0.012	0.016	1	0.103	0.100	0.021	0.026	1	0.443	0.443	0.084	0.122
2	0.027	0.026	0.007	0.009	2	0.056	0.054	0.014	0.017	2	0.409	0.406	0.088	0.131
3	0.014	0.013	0.005	0.006	3	0.034	0.033	0.011	0.013	3	0.384	0.379	0.093	0.144
4	0.009	0.008	0.004	0.005	4	0.023	0.022	0.009	0.011	4	0.363	0.358	0.096	0.148
5	0.007	0.006	0.003	0.004	5	0.017	0.015	0.008	0.009	5	0.346	0.340	0.099	0.150
6	0.006	0.005	0.003	0.003	6	0.013	0.011	0.007	0.007	6	0.331	0.325	0.100	0.152
7	0.005	0.005	0.003	0.002	7	0.011	0.009	0.006	0.006	7	0.320	0.312	0.102	0.155
8	0.005	0.004	0.003	0.002	8	0.009	0.008	0.006	0.005	8	0.309	0.301	0.104	0.160
9	0.005	0.004	0.002	0.002	9	0.008	0.007	0.006	0.004	9	0.300	0.293	0.106	0.163
10	0.005	0.004	0.002	0.002	10	0.008	0.007	0.006	0.004	10	0.292	0.282	0.107	0.168
Model 9 $y_t = 0.6\epsilon_{t-1}y_{t-2} + \epsilon_t$					Model 10 $y_t = 4y_{t-1}(1 - y_{t-1})$									
Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$	Lag	$\hat{\mathcal{P}}$	$\hat{S}\rho_{med}$	$\hat{\sigma}_{\hat{S}\rho}$	$\hat{S}\rho_{iqr}$					
1	0.007	0.006	0.005	0.004	1	0.669	0.661	0.065	0.038					
2	0.010	0.009	0.005	0.004	2	0.597	0.561	0.387	0.055					
3	0.005	0.004	0.004	0.002	3	0.464	0.441	0.217	0.073					
4	0.005	0.005	0.004	0.003	4	0.350	0.345	0.067	0.087					
5	0.005	0.004	0.003	0.002	5	0.282	0.278	0.068	0.095					
6	0.005	0.004	0.003	0.002	6	0.248	0.243	0.064	0.090					
7	0.004	0.004	0.003	0.002	7	0.245	0.238	0.068	0.087					
8	0.005	0.004	0.004	0.002	8	0.244	0.238	0.059	0.084					
9	0.004	0.004	0.003	0.002	9	0.245	0.240	0.062	0.087					
10	0.004	0.004	0.003	0.002	10	0.244	0.240	0.058	0.081					