Tables

Table 1: Spatial Models by the Type of W

W	Spatial Models	
	Conventional SDPD (Lee and Yu 2012)	SDPD with an endogenous spatial weight matrix (Qu, Lee, and Yu 2017)
Exogenous	Consistent & Efficient	Consistent
Endogenous	Inconsistent	Consistent

Note: SDPD stands for spatial dynamic panel data model.

Table 2: Simulated Rejection Rates with Predicted Initial Conditions Using JIVE

		$W_n^{Queen} \circ W_{nt}^e$				$W_n^{Rook} \circ W_{nt}^e$			
δ_0	λ_0	$RS_\delta^{B,P}$	RS_δ^B	RS_δ^P	RS_δ^*	$RS_\delta^{B,P}$	RS_δ^B	RS_δ^P	RS_δ^*
0	0	0.048	0.05	0.048	0.049	0.048	0.048	0.048	0.048
	0.15	0.061	0.047	0.061	0.046	0.057	0.045	0.057	0.045
	0.3	0.077	0.039	0.077	0.039	0.067	0.036	0.067	0.036
0.05	0	0.934	0.934	0.934	0.933	0.932	0.931	0.932	0.930
	0.15	0.948	0.933	0.948	0.928	0.938	0.929	0.938	0.928
	0.3	0.952	0.921	0.952	0.918	0.941	0.915	0.941	0.914

Note: JIVE stands for the Jackknife Instrumental Variable Estimation (Philips and Hale 1977; Angrist et al. 1999; Blomquist and Dahlberg 1999). Replicated for 5,000 times. Sample sizes $(n, T) = (100, 50)$.

Table 3: Size of the Test Statistics

n	T	δ	Local Misspecification			$W_{nt}^{\text{Queen}} \circ W_{nt}^{e}$				$W_{nt}^{\text{Rook}} \circ W_{nt}^{e}$			
			λ	γ	ρ	RS_{δ}^{BP}	RS_{δ}^{B}	RS_{δ}^{P}	RS_{δ}^{*}	RS_{δ}^{BP}	RS_{δ}^{B}	RS_{δ}^{P}	RS_{δ}^{*}
49	50	0.00	0.00	0.00	0.00	0.050	0.054	0.050	0.050	0.050	0.052	0.050	0.051
			0.05	0.00	0.00	0.053	0.054	0.053	0.050	0.054	0.052	0.054	0.051
			0.10	0.00	0.00	0.059	0.053	0.059	0.050	0.058	0.052	0.058	0.051
			0.15	0.00	0.00	0.062	0.050	0.062	0.049	0.060	0.049	0.060	0.049
			0.20	0.00	0.00	0.061	0.047	0.061	0.046	0.060	0.046	0.060	0.046
			0.25	0.00	0.00	0.063	0.045	0.063	0.045	0.061	0.042	0.061	0.039
			0.30	0.00	0.00	0.070	0.037	0.070	0.036	0.065	0.034	0.065	0.033
100	50	0.00	0.00	0.00	0.00	0.054	0.053	0.054	0.052	0.054	0.054	0.054	0.053
			0.05	0.00	0.00	0.059	0.052	0.059	0.051	0.058	0.053	0.058	0.052
			0.10	0.00	0.00	0.062	0.051	0.062	0.051	0.061	0.051	0.061	0.050
			0.15	0.00	0.00	0.066	0.050	0.066	0.048	0.064	0.049	0.061	0.049
			0.20	0.00	0.00	0.069	0.047	0.069	0.046	0.065	0.044	0.065	0.043
			0.25	0.00	0.00	0.072	0.044	0.072	0.044	0.068	0.040	0.068	0.039
			0.30	0.00	0.00	0.082	0.044	0.082	0.044	0.072	0.040	0.072	0.040
49	100	0.00	0.00	0.00	0.00	0.052	0.055	0.052	0.055	0.052	0.057	0.052	0.052
			0.05	0.00	0.00	0.057	0.055	0.057	0.054	0.055	0.057	0.055	0.052
			0.10	0.00	0.00	0.061	0.055	0.061	0.054	0.056	0.056	0.056	0.052
			0.15	0.00	0.00	0.065	0.054	0.065	0.052	0.062	0.053	0.062	0.051
			0.20	0.00	0.00	0.067	0.052	0.067	0.050	0.067	0.050	0.067	0.047
			0.25	0.00	0.00	0.074	0.050	0.074	0.045	0.071	0.045	0.071	0.044
			0.30	0.00	0.00	0.073	0.042	0.073	0.040	0.068	0.038	0.068	0.037

Note: In the simulations, the size is set to 0.05. The parameters $\eta := (\lambda, \gamma, \rho)$ correspond to $(W_{nt}Y_{nt}, Y_{n,t-1}, W_{n,t-1}Y_{n,t-1})$, respectively. Note that γ is included in the simulations, given that Y_{nt} is observed to be weakly persistent. $RS_{\delta}^{B,P}$ is the score test where the score function is biased and η is locally misspecified; RS_{δ}^{B} the score test where the score function is biased; RS_{δ}^{P} the score test where η is locally misspecified; and RS_{δ}^{*} is my proposed test where the score function is unbiased and η is adjusted for local misspecification. Observe that as λ moves farther from zero, RS_{δ}^{*} achieves the true size as (n, T) increase.

Table 4: Power of the Test Statistics

n	T	δ	Local Misspecification			$W_{nt}^{\text{Queen}} \circ W_{nt}^{e}$				$W_{nt}^{\text{Rook}} \circ W_{nt}^{e}$			
			λ	γ	ρ	RS_{δ}^{BP}	RS_{δ}^{B}	RS_{δ}^{P}	RS_{δ}^{*}	RS_{δ}^{BP}	RS_{δ}^{B}	RS_{δ}^{P}	RS_{δ}^{*}
49	50	0.05	0.00	0.00	0.00	0.685	0.690	0.685	0.681	0.685	0.683	0.685	0.678
			0.05	0.00	0.00	0.700	0.694	0.700	0.682	0.696	0.683	0.696	0.679
			0.10	0.00	0.00	0.718	0.692	0.718	0.680	0.708	0.682	0.708	0.676
			0.15	0.00	0.00	0.731	0.687	0.731	0.674	0.709	0.676	0.709	0.671
			0.20	0.00	0.00	0.735	0.678	0.735	0.664	0.712	0.667	0.712	0.654
			0.25	0.00	0.00	0.744	0.664	0.744	0.653	0.711	0.644	0.711	0.642
			0.30	0.00	0.00	0.751	0.645	0.751	0.640	0.710	0.635	0.710	0.633
100	50	0.05	0.00	0.00	0.00	0.950	0.950	0.950	0.949	0.950	0.949	0.950	0.949
			0.05	0.00	0.00	0.953	0.950	0.953	0.949	0.951	0.949	0.951	0.949
			0.10	0.00	0.00	0.955	0.950	0.955	0.948	0.951	0.948	0.951	0.949
			0.15	0.00	0.00	0.956	0.947	0.956	0.944	0.949	0.942	0.949	0.941
			0.20	0.00	0.00	0.954	0.942	0.954	0.940	0.947	0.938	0.947	0.936
			0.25	0.00	0.00	0.955	0.938	0.955	0.935	0.944	0.934	0.944	0.932
			0.30	0.00	0.00	0.954	0.931	0.954	0.929	0.942	0.928	0.942	0.926
49	100	0.05	0.00	0.00	0.00	0.925	0.925	0.925	0.924	0.925	0.924	0.925	0.925
			0.05	0.00	0.00	0.928	0.925	0.928	0.924	0.929	0.924	0.929	0.925
			0.10	0.00	0.00	0.931	0.924	0.931	0.924	0.932	0.924	0.932	0.924
			0.15	0.00	0.00	0.935	0.924	0.935	0.924	0.930	0.923	0.930	0.921
			0.20	0.00	0.00	0.933	0.922	0.933	0.922	0.928	0.919	0.928	0.919
			0.25	0.00	0.00	0.933	0.919	0.933	0.918	0.925	0.916	0.925	0.911
			0.30	0.00	0.00	0.932	0.913	0.932	0.911	0.924	0.910	0.924	0.909

Note: The parameters $\eta := (\lambda, \gamma, \rho)$ correspond to $(W_{nt}Y_{nt}, Y_{n,t-1}, W_{n,t-1}Y_{n,t-1})$, respectively. Note that γ is included in the simulations, given that Y_{nt} is observed to be weakly persistent. $RS_{\delta}^{B,P}$ is the score test where the score function is biased and η is locally misspecified; RS_{δ}^{B} the score test where the score function is biased; RS_{δ}^{P} the score test where η is locally misspecified; and RS_{δ}^{*} is my proposed test where the score function is unbiased and η is adjusted for local misspecification. Observe that as λ moves farther from zero, RS_{δ}^{*} loses less power as (n, T) increase.

Table 5: Size of the Test Statistics Against Non-Normality (e.g., t-distribution)

n	T	Degree of Freedom	δ	Local Misspecification			$W_{nt}^{\text{Queen}} \circ W_{nt}^{e}$				$W_{nt}^{\text{Rook}} \circ W_{nt}^{e}$			
				λ	γ	ρ	RS_{δ}^{BP}	RS_{δ}^{B}	RS_{δ}^{P}	RS_{δ}^{*}	RS_{δ}^{BP}	RS_{δ}^{B}	RS_{δ}^{P}	RS_{δ}^{*}
49	50	10	0.00	0.00	0.00	0.00	0.091	0.093	0.091	0.095	0.091	0.093	0.091	0.093
				0.05	0.00	0.00	0.093	0.093	0.093	0.095	0.093	0.093	0.093	0.093
				0.10	0.00	0.00	0.094	0.092	0.094	0.094	0.088	0.091	0.088	0.091
				0.15	0.00	0.00	0.097	0.091	0.097	0.090	0.090	0.088	0.090	0.088
				0.20	0.00	0.00	0.094	0.088	0.094	0.089	0.089	0.084	0.089	0.086
				0.25	0.00	0.00	0.097	0.085	0.097	0.084	0.087	0.080	0.087	0.083
				0.30	0.00	0.00	0.098	0.079	0.098	0.079	0.086	0.073	0.086	0.074
		20	0.00	0.00	0.00	0.00	0.063	0.062	0.063	0.060	0.063	0.066	0.063	0.063
				0.05	0.00	0.00	0.065	0.063	0.065	0.060	0.065	0.066	0.065	0.064
				0.10	0.00	0.00	0.075	0.063	0.075	0.059	0.068	0.063	0.068	0.061
				0.15	0.00	0.00	0.076	0.062	0.076	0.059	0.070	0.060	0.070	0.058
				0.20	0.00	0.00	0.078	0.057	0.078	0.059	0.073	0.056	0.073	0.056
				0.25	0.00	0.00	0.077	0.056	0.077	0.053	0.073	0.050	0.073	0.051
				0.30	0.00	0.00	0.080	0.052	0.080	0.049	0.077	0.042	0.077	0.042

Note: In the simulations, the size is set to 0.05. This table reports the simulation results when the error term follows a non-normal distribution, such as a t distribution. Observe that as the degrees of freedom increase, the test size approaches the true value. The parameters $\eta := (\lambda, \gamma, \rho)$ correspond to $(W_{nt}Y_{nt}, Y_{n,t-1}, W_{n,t-1}Y_{n,t-1})$, respectively. Note that γ is included in the simulations, given that Y_{nt} is observed to be weakly persistent. $RS_{\delta}^{B,P}$ is the score test where the score function is biased and η is locally misspecified; RS_{δ}^{B} the score test where the score function is biased; RS_{δ}^{P} the score test where η is locally misspecified; and RS_{δ}^{*} is my proposed test where the score function is unbiased and η is adjusted for local misspecification.

Table 6: Power of the Test Statistics Against Non-Normality (e.g., t-distribution)

n	T	Degree of Freedom	δ	Local Misspecification			$W_{nt}^{\text{Queen}} \circ W_{nt}^{e}$				$W_{nt}^{\text{Rook}} \circ W_{nt}^{e}$			
				λ	γ	ρ	RS_{δ}^{BP}	RS_{δ}^{B}	RS_{δ}^{P}	RS_{δ}^{*}	RS_{δ}^{BP}	RS_{δ}^{B}	RS_{δ}^{P}	RS_{δ}^{*}
49	50	10	0.05	0.00	0.00	0.00	0.664	0.673	0.664	0.670	0.664	0.666	0.664	0.666
				0.05	0.00	0.00	0.675	0.673	0.675	0.669	0.673	0.666	0.673	0.667
				0.10	0.00	0.00	0.688	0.672	0.688	0.668	0.677	0.664	0.677	0.665
				0.15	0.00	0.00	0.700	0.669	0.700	0.665	0.684	0.659	0.684	0.652
				0.20	0.00	0.00	0.706	0.664	0.706	0.660	0.685	0.655	0.685	0.650
				0.25	0.00	0.00	0.712	0.659	0.712	0.651	0.689	0.648	0.689	0.642
				0.30	0.00	0.00	0.710	0.648	0.710	0.639	0.688	0.640	0.688	0.633
			0.10	0.00	0.00	0.00	0.993	0.994	0.993	0.993	0.993	0.993	0.993	0.993
				0.05	0.00	0.00	0.993	0.994	0.993	0.993	0.993	0.993	0.993	0.993
				0.10	0.00	0.00	0.994	0.994	0.994	0.993	0.994	0.993	0.994	0.993
				0.15	0.00	0.00	0.994	0.994	0.994	0.993	0.994	0.993	0.994	0.993
				0.20	0.00	0.00	0.994	0.994	0.994	0.993	0.994	0.993	0.994	0.993
				0.25	0.00	0.00	0.994	0.994	0.994	0.993	0.994	0.993	0.994	0.993
				0.30	0.00	0.00	0.994	0.993	0.994	0.993	0.994	0.993	0.994	0.993
		20	0.05	0.00	0.00	0.00	0.679	0.679	0.679	0.674	0.679	0.680	0.679	0.675
				0.05	0.00	0.00	0.688	0.678	0.688	0.674	0.688	0.679	0.688	0.675
				0.10	0.00	0.00	0.702	0.676	0.702	0.673	0.692	0.677	0.692	0.670
				0.15	0.00	0.00	0.711	0.673	0.711	0.668	0.694	0.668	0.694	0.666
				0.20	0.00	0.00	0.714	0.667	0.714	0.659	0.693	0.662	0.693	0.658
				0.25	0.00	0.00	0.720	0.659	0.720	0.651	0.694	0.649	0.694	0.640
				0.30	0.00	0.00	0.731	0.643	0.731	0.639	0.692	0.629	0.692	0.627
			0.10	0.00	0.00	0.00	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998
				0.05	0.00	0.00	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998
				0.10	0.00	0.00	0.998	0.998	0.998	0.998	0.998	0.998	0.998	0.998
				0.15	0.00	0.00	0.998	0.998	0.998	0.998	0.997	0.998	0.997	0.998
				0.20	0.00	0.00	0.998	0.998	0.998	0.998	0.997	0.998	0.997	0.998
				0.25	0.00	0.00	0.998	0.998	0.998	0.998	0.997	0.997	0.997	0.997
				0.30	0.00	0.00	0.998	0.997	0.998	0.997	0.997	0.997	0.997	0.997

Note: This table reports the simulation results when the error term follows a non-normal distribution, such as a t distribution. The parameters $\eta := (\lambda, \gamma, \rho)$ correspond to $(W_{nt}Y_{nt}, Y_{n,t-1}, W_{n,t-1}Y_{n,t-1})$, respectively. Note that γ is included in the simulations, given that Y_{nt} is observed to be weakly persistent. $RS_{\delta}^{B,P}$ is the score test where the score function is biased and η is locally misspecified; RS_{δ}^{B} the score test where the score function is biased; RS_{δ}^{P} the score test where η is locally misspecified; and RS_{δ}^{*} is my proposed test where the score function is unbiased and η is adjusted for local misspecification.

Table 7: Comparison of Size: $RS^*_\delta(\tilde{\theta})$ and $C(\alpha)|_{\hat{\theta}}$

n	T	δ	Local Misspecification			$W^{\text{Queen}}_{nt} \circ W^e_{nt}$		$W^{\text{Rook}}_{nt} \circ W^e_{nt}$	
			λ	γ	ρ	$RS^*_\delta(\tilde{\theta})$	$C(\alpha)|_{\hat{\theta}}$	$RS^*_\delta(\tilde{\theta})$	$C(\alpha)|_{\hat{\theta}}$
49	50	0.00	0.00	0.00	0.00	0.050	0.049	0.051	0.052
			0.05	0.00	0.00	0.050	0.050	0.051	0.051
			0.10	0.00	0.00	0.050	0.050	0.051	0.052
			0.15	0.00	0.00	0.049	0.050	0.049	0.052
			0.20	0.00	0.00	0.046	0.050	0.046	0.052
			0.25	0.00	0.00	0.045	0.050	0.039	0.051
			0.30	0.00	0.00	0.036	0.050	0.033	0.051
49	100	0.00	0.25	0.00	0.00	0.045	0.055	0.044	0.055
			0.30	0.00	0.00	0.040	0.055	0.037	0.055
100	50	0.00	0.25	0.00	0.00	0.044	0.052	0.039	0.054
			0.30	0.00	0.00	0.044	0.052	0.040	0.054

Table 8: Comparison of Power: $RS^*_\delta(\tilde{\theta})$ and $C(\alpha)|_{\hat{\theta}}$

n	T	δ	Local Misspecification			$W^{\text{Queen}}_{nt} \circ W^e_{nt}$		$W^{\text{Rook}}_{nt} \circ W^e_{nt}$	
			λ	γ	ρ	$RS^*_\delta(\tilde{\theta})$	$C(\alpha)\|_{\hat{\theta}}$	$RS^*_\delta(\tilde{\theta})$	$C(\alpha)\|_{\hat{\theta}}$
49	50	0.05	0.00	0.00	0.00	0.681	0.685	0.678	0.682
			0.05	0.00	0.00	0.682	0.686	0.679	0.683
			0.10	0.00	0.00	0.680	0.687	0.676	0.682
			0.15	0.00	0.00	0.674	0.685	0.671	0.682
			0.20	0.00	0.00	0.664	0.687	0.654	0.683
			0.25	0.00	0.00	0.653	0.686	0.642	0.683
			0.30	0.00	0.00	0.640	0.687	0.633	0.684
49	100	0.05	0.00	0.00	0.00	0.924	0.925	0.925	0.925
			0.30	0.00	0.00	0.911	0.925	0.909	0.925
100	50	0.05	0.00	0.00	0.00	0.949	0.949	0.949	0.949
			0.30	0.00	0.00	0.929	0.951	0.926	0.950

Table 9: Comparison of Elapsed Time: $RS^*_\delta(\tilde{\theta})$ and $C(\alpha)|_{\hat{\theta}}$

n	T	$W^{\text{Queen}}_{nt} \circ W^e_{nt}$		$W^{\text{Rook}}_{nt} \circ W^e_{nt}$	
		$RS^*_\delta(\tilde{\theta})$	$C(\alpha)\|_{\hat{\theta}}$	$RS^*_\delta(\tilde{\theta})$	$C(\alpha)\|_{\hat{\theta}}$
25	10	0.298	0.481	0.287	0.486
121	10	2.737	4.102	2.244	4.692
400	10	37.443	62.773	40.64	56.576
1024	10	335.361	572.303	380.444	493.345
25	10	0.298	0.481	0.287	0.486
25	50	1.956	3.415	1.674	3.282
25	100	8.239	11.743	8.288	11.147

Note: $p = 1$. Elapsed time in seconds.

Table 10: Testing Results Diagnosing the Endogeneity of W_{nt}

	Spatial Weight Matrix		Testing Results			
Year	Pre-determined Part	Non-predetermined Part	$RS^*_\delta(\tilde{\theta})$	Decision	$C(\alpha)\|_{\hat{\theta}}$	Decision
1950-1990	Geographic distance	Trade distance	31.209	Endogenous	43.869	Endogenous

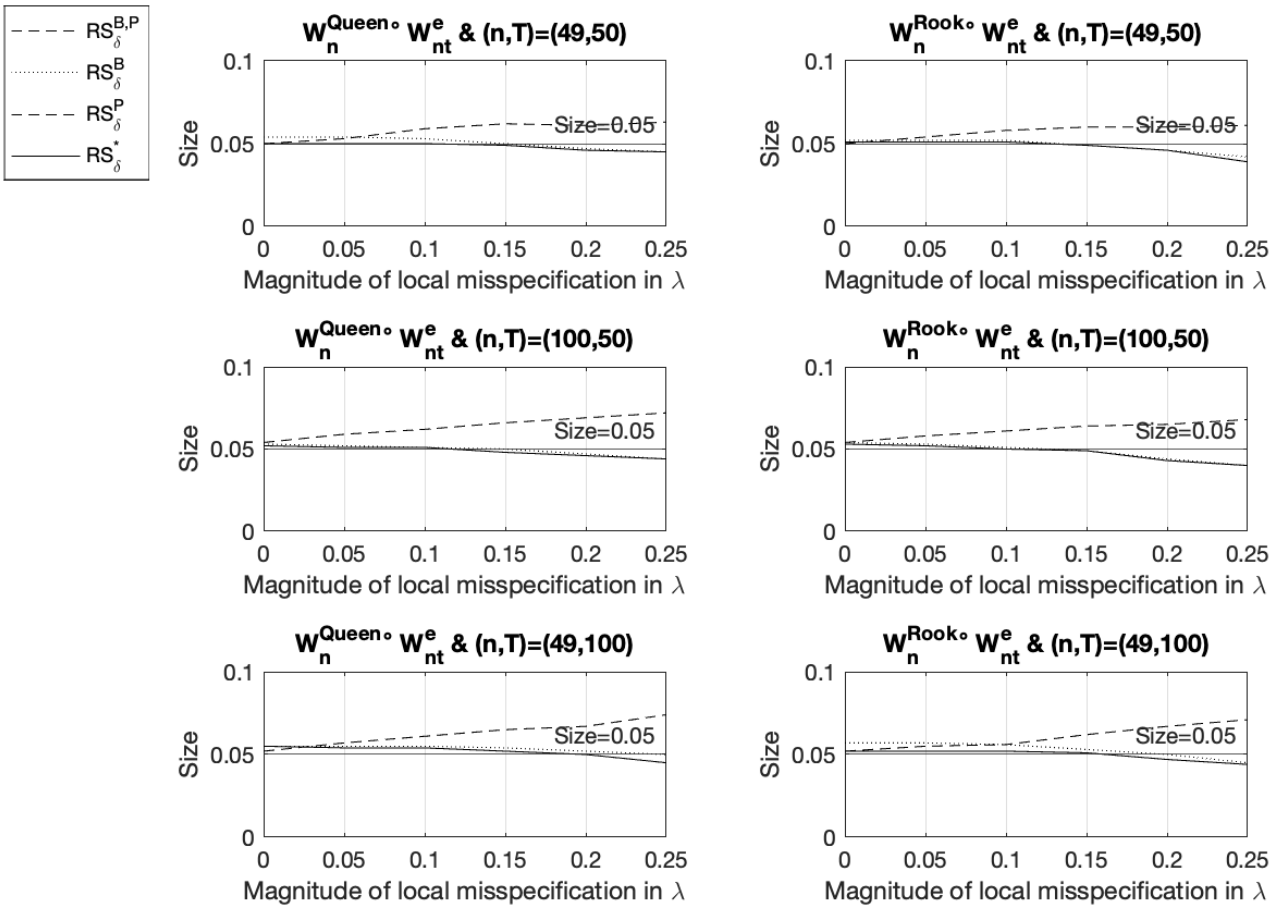
Note: $(n, T) = (55, 41)$. Geographic distance is calculated using the great-circle distance. Trade distance is calculated by the Euclidean distance of the difference in total trade volume between countries i and j, $i, j = 1, \ldots, n$. $RS^*_\delta(\tilde{\theta})$ is my proposed robust score test where $\tilde{\theta}$ is the ML estimates under $H_0^{\delta,\eta}: (\delta, \eta')' = 0$ and $C(\alpha)|_{\hat{\theta}}$ denotes the $C(\alpha)$ test at the ML estimates under $H_0^{\delta}: \delta = 0$. Since the dimension of the non-predetermined triggers for the spatial weight matrix is 1 (i.e., $p = 1$), the critical value at the 5% significance level is $\chi^2_1 = 3.8415$.

Table 11: Estimation Results

Variable	Parameters	Estimates
$W_{nt}\ln(Y_{nt}/L_{nt})$	λ_y	0.117*** (0.007)
$\ln(Y_{n,t-1}/L_{n,t-1})$	γ	0.624*** (0.013)
$W_{n,t-1}\ln(Y_{n,t-1}/L_{n,t-1})$	ρ	0.002 (0.007)
$\ln s_{nt}$	β_1	0.101*** (0.011)
$\ln(n_{nt}+g+d)$	β_2	0.263*** (0.018)
$W_{nt}\ln s_{nt}$	λ_{x_1}	-0.103*** (0.013)
$W_{nt}\ln(n_{nt}+g+d)$	λ_{x_2}	0.078*** (0.024)
Associated with the endogeneity of W_{nt}	δ	0.227*** (0.010)
$\ln Z_{n,t-1}$	κ	0.786*** (0.024)
$\ln(Y_{n,t-1}/L_{n,t-1})$	Γ_1	0.179*** (0.032)
$\ln s_{nt}$	Γ_2	0.059*** (0.026)
$\ln(n_{nt}+g+d)$	Γ_3	1.279*** (0.041)
Variance of the idiosyncratic error	σ_ξ^2	0.011
Variance of the auxiliary error	σ_ϵ^2	0.079
Variance of the outcome error	σ_v^2	0.015
Correlation between v_{it} and ϵ_{it}	$\frac{\sigma_{v\epsilon}}{\sigma_v\sigma_\epsilon}$	0.527

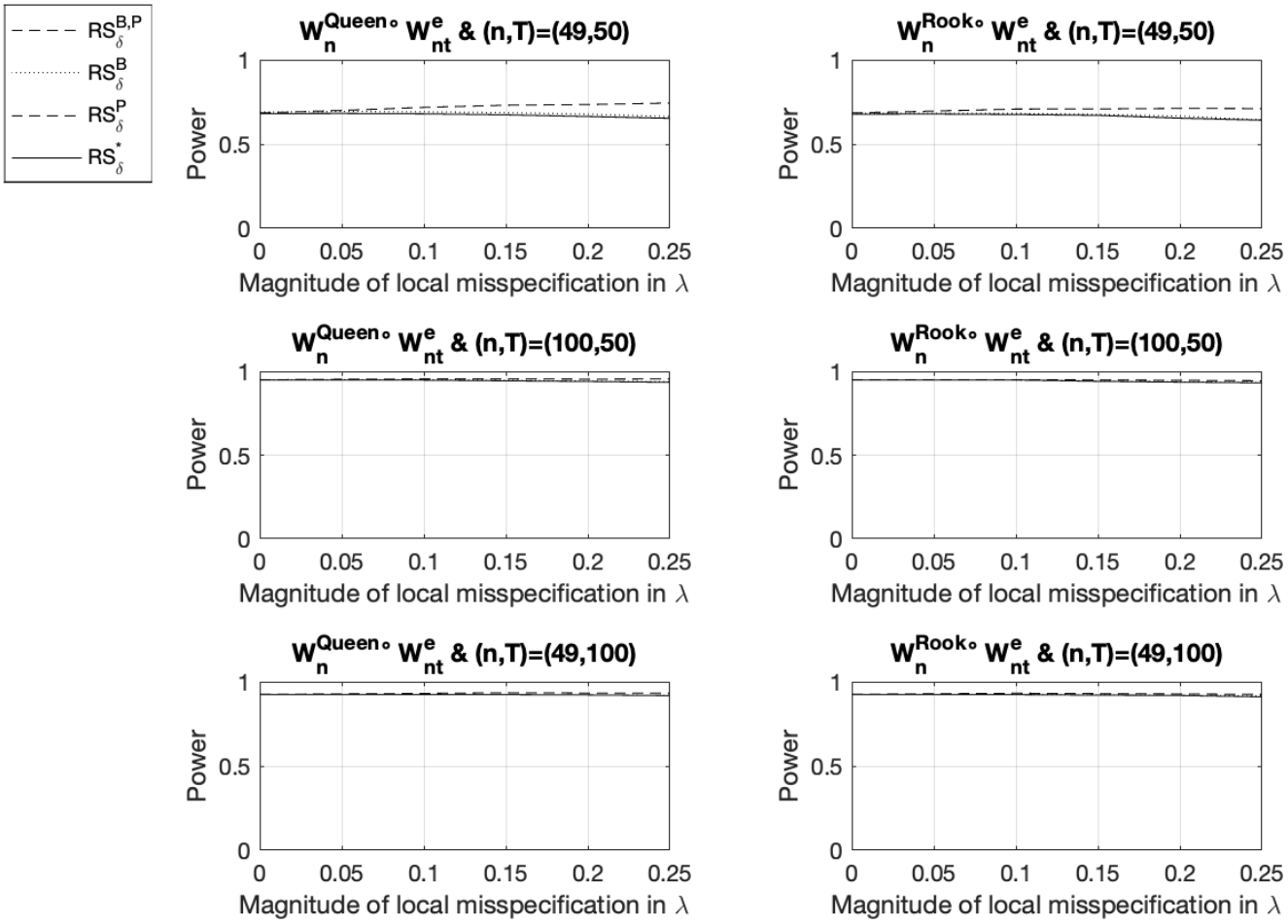
Note: $(n,T)=(55,41)$. Standard errors are reported in parentheses. Significance levels are indicated by *** (1%), ** (5%), and * (10%). Y_{nt}/L_{nt} is the real income per worker at time t; $X_{1nt}=(\ln s_{nt},\ \ln(n_{nt}+g+d))'$ with s_{it} being a constant fraction of output saved for country $i=1,\ldots,n$; n_{it} the exogenous labor growth rate for country i; d the annual rate of depreciation of physical capital for all countries and assumed constant; and g being the balanced growth rate; $X_{2nt}=(\ln(Y_{n,t-1}/L_{n,t-1}),\ \ln s_{nt},\ \ln(n_{nt}+g+d))'$ overlaps with X_{1nt} but additionally includes $\ln(Y_{n,t-1}/L_{n,t-1})$ to account for sequential spillovers in $\ln(Y_{n,t}/L_{n,t})$; w_{ij}^d indicates the geographic proximity, which is predetermined, measured by the great-circle distance; $w_{ij,nt}^e$ indicates the inverse of the absolute difference in non-predetermined variables, which are trade in this application; Z_{nt} is the *total* trade volume as the sum of exports and imports, which measures the knowledge level of an economy; and c_{nj} and τ_{nj} are the individual and time fixed effects, respectively for $j=1,2$.

Figure 1: Size of the Test Statistics



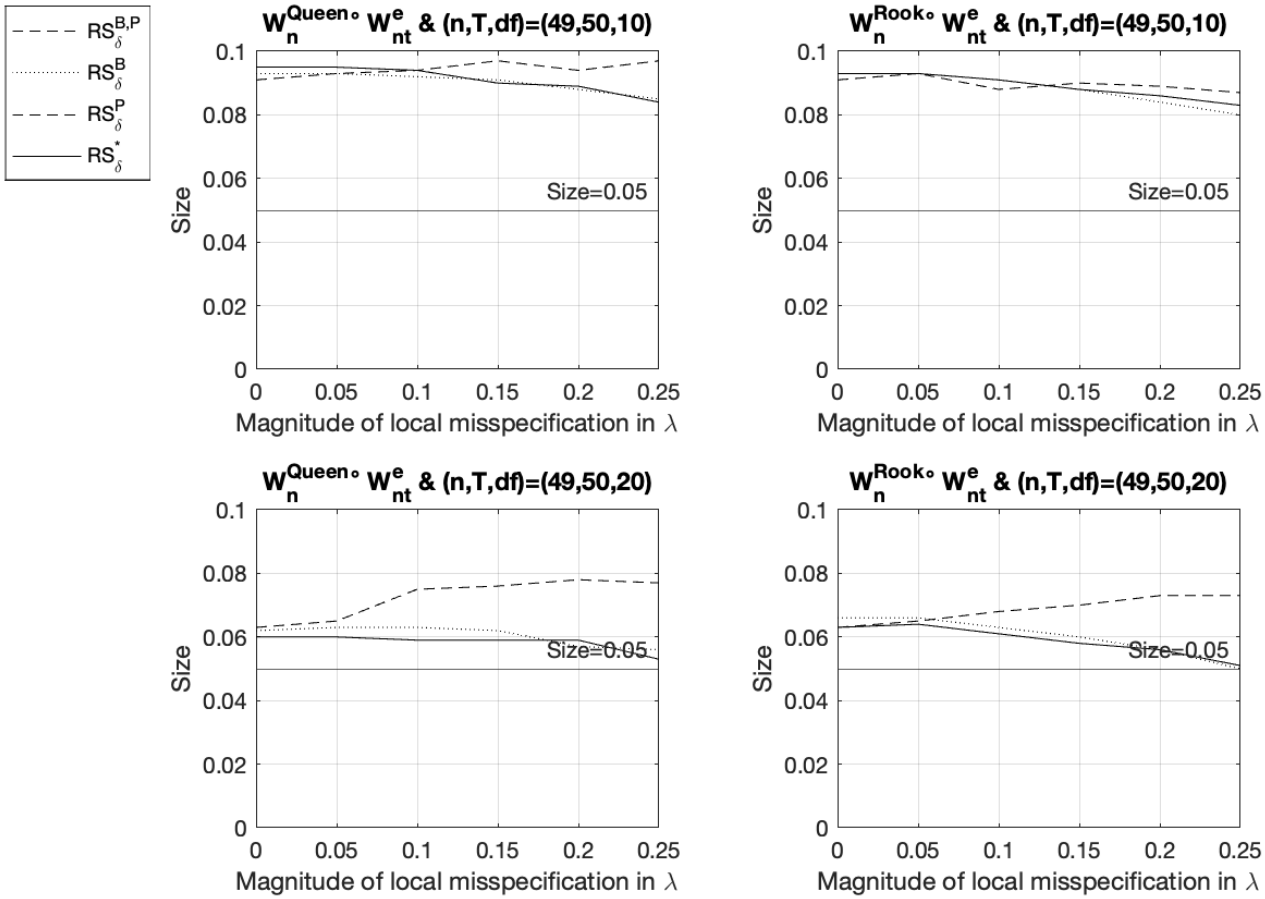
Note: The size is set to 0.05.

Figure 2: Power of the Test Statistics



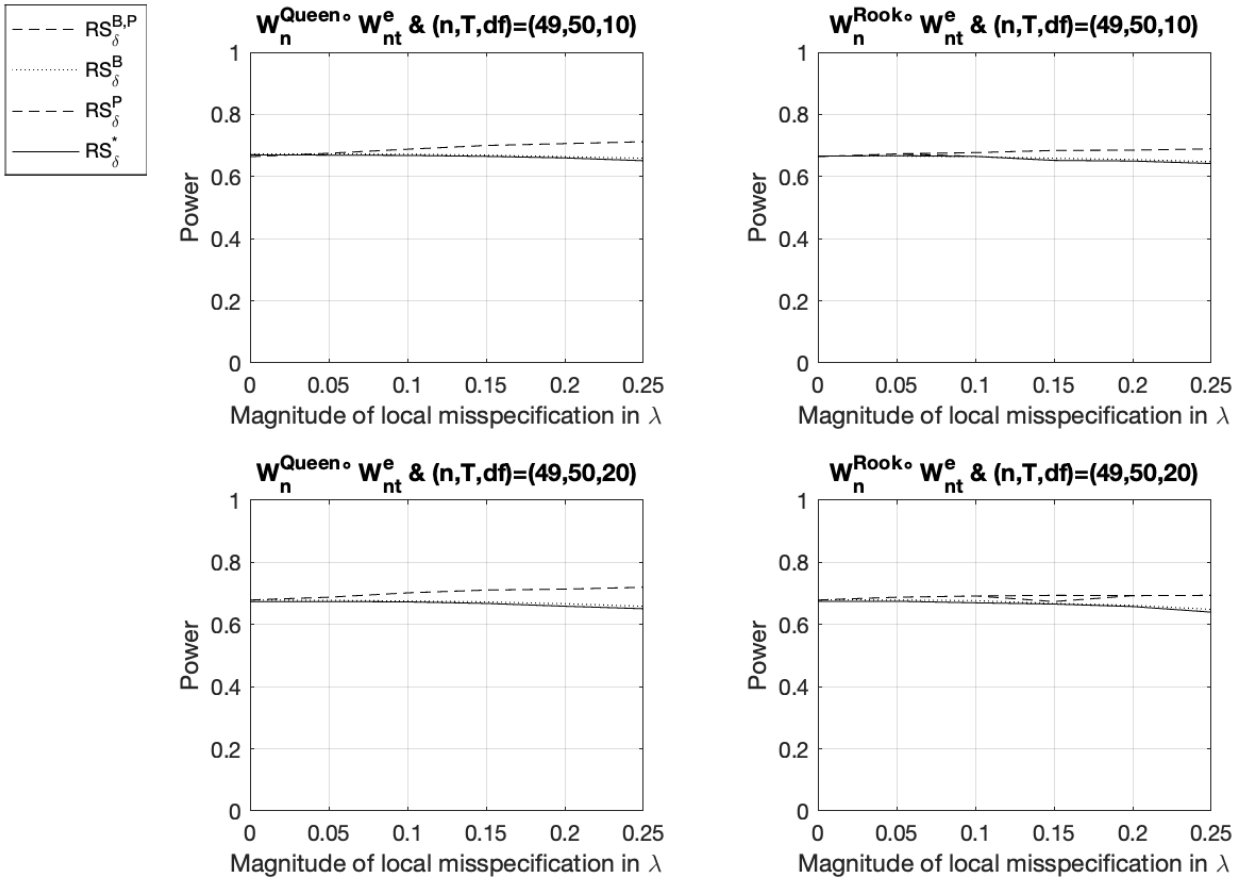
Note: δ is set as 0.05.

Figure 3: Size of the Test Statistics Against Non-Normality (e.g., t-distribution)



Note: *df* stands for degrees of freedom. Observe that as the degrees of freedom increase, RS_δ^* approaches the true size (0.05) more closely.

Figure 4: Power of the Test Statistics Against Non-Normality (e.g., t-distribution)



Note: *df* stands for degrees of freedom. Observe that as the degrees of freedom increase, RS_δ^* more closely approaches the power observed when the error terms are normally distributed (0.681 for Queen contiguity and 0.678 for Rook contiguity).

Figure 5: Comparison of Size and Power: $RS^{*}_{\delta}(\tilde{\theta})$ and $C(\alpha)|_{\hat{\theta}}$

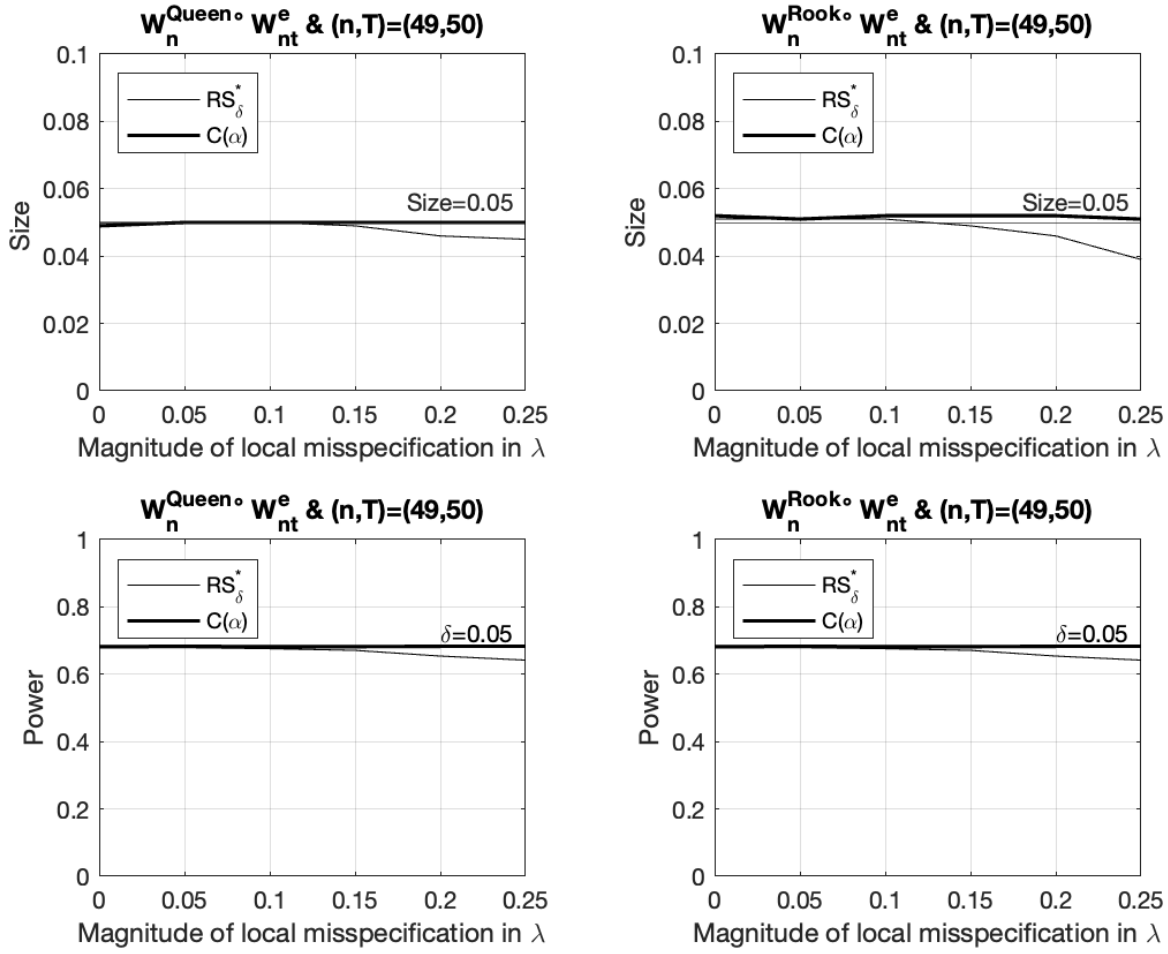


Figure 6: Elapsed Time for $RS^*_\delta(\tilde{\theta})$ and $C(\alpha)|_{\hat{\theta}}$

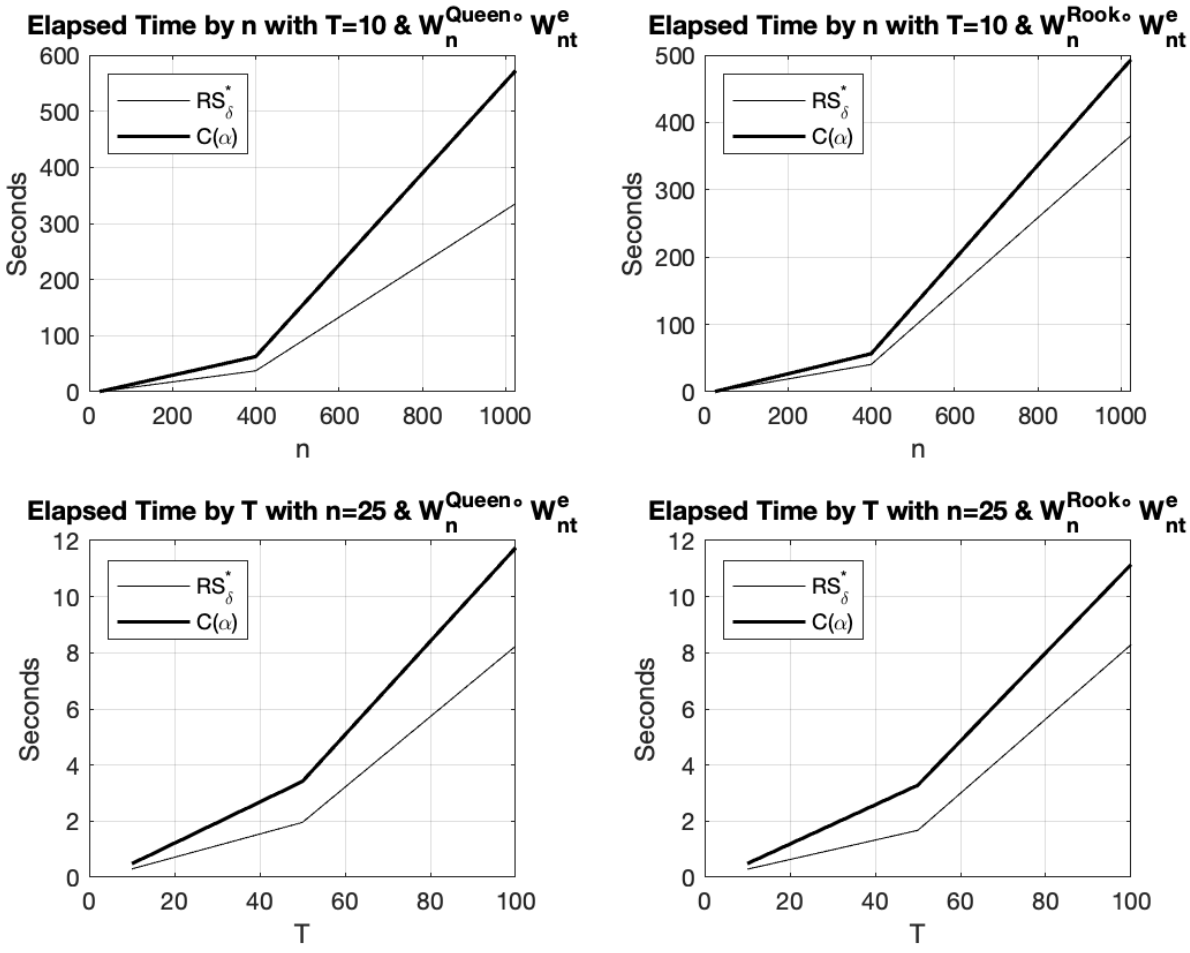
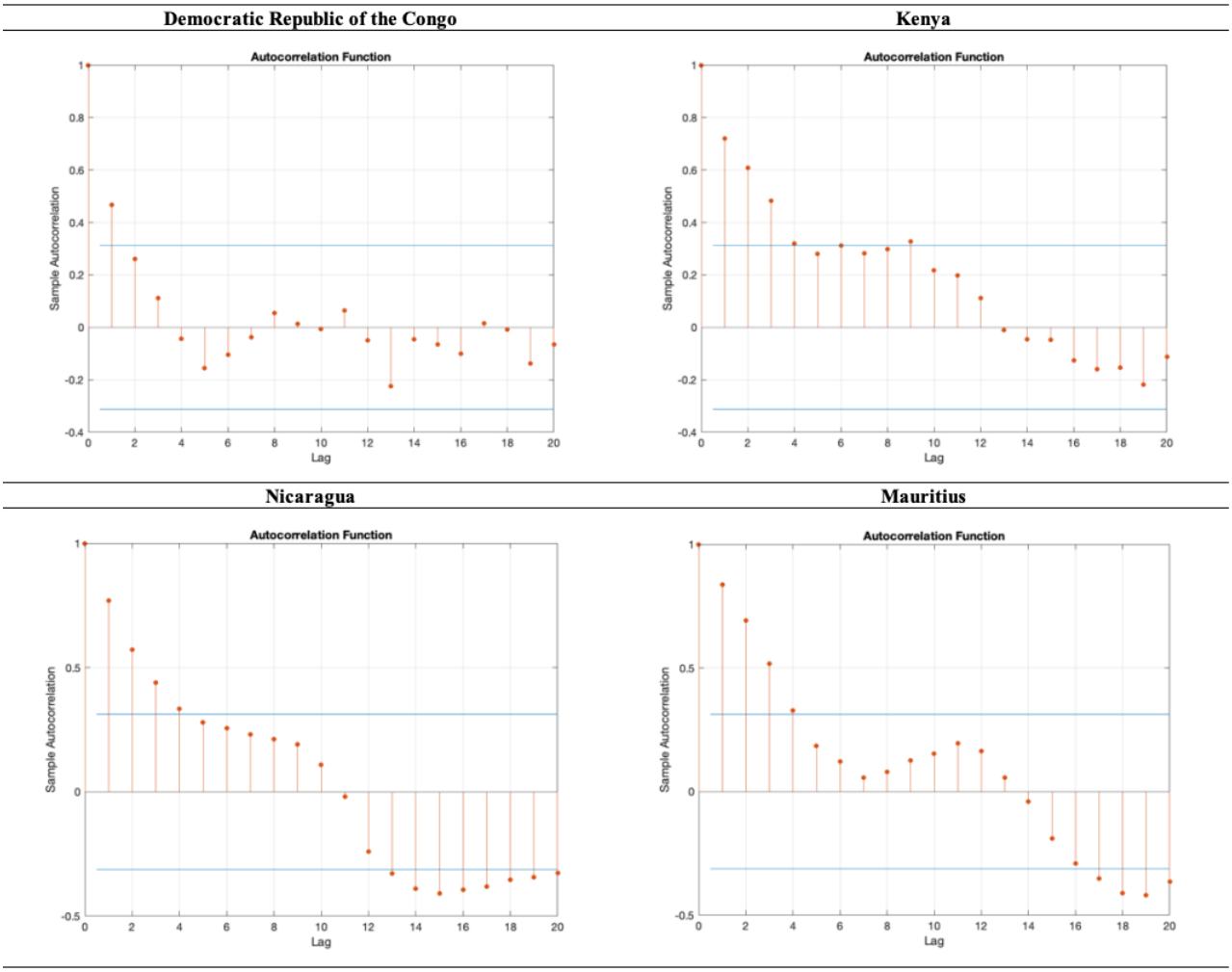


Figure 7: Autocorrelation Function Plots for the Time Series in Real Income per Worker



Note: Data from the Penn World Table version 7.1; The years in this plot range from 1950 to 1990.

Figure Captions

1. Size of the Test Statistics
2. Power of the Test Statistics
3. Size of the Test Statistics Against Non-Normality (e.g., t-distribution)
4. Power of the Test Statistics Against Non-Normality (e.g., t-distribution)
5. Comparison of Size and Power: $RS^*_\delta(\tilde{\theta})$ and $C(\alpha)|_{\hat{\theta}}$
6. Elapsed Time for $RS^*_\delta(\tilde{\theta})$ and $C(\alpha)|_{\hat{\theta}}$
7. Autocorrelation Function Plots for the Time Series in Real Income per Worker