Fixed Effects and Random Effects Estimation of Higher-Order Spatial Autoregressive Models with Spatial Autoregressive and Heteroskedastic Disturbances

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We are grateful to Di Liu for pointing out two errors in the definition of the matrices $A_{1,s,a}$ and $A_{2,s,a}$, appearing in the quadratic form of the moment conditions in equations (12a) and (12c).

In equation (12a), the correct definition of matrix $A_{1,s,a}$ is

$$A_{1,s,a} = Q_{0,N} (I_T \otimes M_{r,N}^T M_{s,N}) - \text{diag}_{s=1}^{NT}[Q_{0,N} (I_T \otimes M_{r,N}^T M_{s,N})_{nn}] .$$

In equation (12c), the correct definition of matrix $A_{2,s,a}$ is

$$A_{2,s,a} = Q_{0,N} (I_T \otimes M_{r,N}^T M_{s,N}) - \text{diag}_{s=1}^{NT}[Q_{0,N} (I_T \otimes M_{r,N}^T M_{s,N})_{nn}] .$$

The definition of the GM estimator (equations (13)-(18)) does not make use of the matrices $A_{1,s,a}$ and $A_{2,s,a}$ and remains unchanged. The only consequential error appears in the derivation of the variance-covariance matrix of the GM estimator, where the matrices $A_{1,s,a}$ and $A_{2,s,a}$ enter through equation (22) and show up ultimately in the definition of the blocks of the matrices $\widetilde{A}_{1,s,a}$ and $\widetilde{A}_{2,s,a}$ in equations (26a)-(26d).

In equation (26a), the correct definitions of the blocks of matrix $\widetilde{A}_{1,s,a}$ are

$$A_{1,s,a} = \frac{1}{2(T-1)} [A_{1,s,a} + (A_{1,s,a})^T]$$

$$A_{1,s,a} = -\frac{1}{(T-1)} (e_T^T \otimes I_N) \text{diag}_{s=1}^{NT}[Q_{0,N} (I_T \otimes M_{r,N}^T M_{s,N})] (e_T \otimes I_N)$$

$$A_{1,s,a} = -\frac{1}{(T-1)} \text{diag}_{s=1}^{NT}[Q_{0,N} (I_T \otimes M_{r,N}^T M_{s,N})] (e_T \otimes I_N) .$$

In equation (26c), the correct definitions of the blocks of matrix $\widetilde{A}_{2,s,a}$ are

$$A_{2,s,a} = \frac{1}{2} [Q_{0,N} (I_T \otimes (M_{r,N}^T M_{s,N} + M_{r,N}^T M_{s,N}^T))] - \frac{1}{2} \text{diag}_{s=1}^{NT}[(Q_{0,N} (I_T \otimes (M_{r,N}^T M_{s,N}^T))]$$

$$A_{2,s,a} = \frac{1}{2} [\{T(M_{r,N}^T M_{s,N} + M_{r,N}^T M_{s,N}^T) - 2(e_T^T \otimes I_N) \text{diag}_{s=1}^{NT}[(Q_{0,N} (I_T \otimes (M_{r,N}^T M_{s,N}^T))] (e_T \otimes I_N)\},$$

$$A_{2,s,a} = \frac{1}{2} \{[(e_T \otimes (M_{r,N}^T M_{s,N} + M_{r,N}^T M_{s,N}^T)] - 2\text{diag}_{s=1}^{NT}[(Q_{0,N} (I_T \otimes (M_{r,N}^T M_{s,N}^T))] (e_T \otimes I_N)\}.$$