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 $A_{l,N}^{s,s'}$ and $A_{3,N}^{s,s'}$, appearing in the quadratic form of the moment conditions in equations (12a) and (12c).

In equation (12a), the correct definition of matrix $A_{l,N}^{s,s'}$ is

$$A_{l,N}^{s,s'} = Q_{0,N} (I_T \otimes M'_{s,N}) - \text{diag}_{n=1} (Q_{0,N} (I_T \otimes M'_{s,N} M_{s,N})_{nn}) .$$

In equation (12c), the correct definition of matrix $A_{3,N}^{s,s'}$ is

$$A_{3,N}^{s,s'} = Q_{l,N} (I_T \otimes M'_{s',N} M_{s,N}) - \text{diag}_{n=1} (Q_{l,N} (I_T \otimes M'_{s',N} M_{s,N})_{nn}) .$$

The definition of the GM estimator (equations (13)-(18)) does not make use of the matrices $A_{l,N}^{s,s'}$ and $A_{3,N}^{s,s'}$ and remains unchanged. The only consequential error appears in the derivation of the variance-covariance matrix of the GM estimator, where the matrices $A_{l,N}^{s,s'}$ and $A_{3,N}^{s,s'}$ enter through equation (22) and show up ultimately in the definition of the blocks of the matrices $\overline{A}_{l,N}^{s,s'}$ and $\overline{A}_{3,N}^{s,s'}$ in equations (26a)-(26d).

In equation (26a), the correct definitions of the blocks of matrix $\overline{A}_{l,N}^{s,s'}$ are

$$A_{l,N}^{s,s'} = \frac{1}{2(T-1)} [A_{l,N}^{s,s'} + (A_{l,N}^{s,s'})'] ,$$

$$A_{l,N}^{s,s'} = - \frac{1}{(T-1)} (e'_{T} \otimes I_N) \text{diag}_{n=1} (Q_{0,N} (I_T \otimes M'_{s,N} M_{s,N})) (e_T \otimes I_N) ,$$

$$A_{l,N}^{s,s'} = - \frac{1}{(T-1)} \text{diag}_{n=1} (Q_{l,N} (I_T \otimes M'_{s',N} M_{s,N})) (e_T \otimes I_N) .$$

In equation (26c), the correct definitions of the blocks of matrix $\overline{A}_{3,N}^{s,s'}$ are

$$A_{3,N}^{s,s'} = \frac{1}{2} [Q_{l,N} (I_T \otimes (M'_{s,N} M_{s,N} + M'_{s',N} M_{s,N})) - 2 \text{diag}_{n=1} ((Q_{l,N} (I_T \otimes (M'_{s,N} M_{s,N}))) |(e_T \otimes I_N) ] ,$$

$$A_{3,N}^{s,s'} = \frac{1}{2} [Q_{l,N} (I_T \otimes (M'_{s,N} M_{s,N} + M'_{s',N} M_{s,N})) - 2 \text{diag}_{n=1} ((Q_{l,N} (I_T \otimes (M'_{s',N} M_{s,N}))) (e_T \otimes I_N) ] ,$$

$$A_{3,N}^{s,s'} = \frac{1}{2} [(e_T \otimes (M'_{s',N} M_{s,N} + M'_{s,N} M_{s,N})) - 2 \text{diag}_{n=1} ((Q_{l,N} (I_T \otimes (M'_{s',N} M_{s,N}))) (e_T \otimes I_N) ] .$$