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 $A_{1,N}^{s,s'}$ 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 $A_{1,N}^{s,s'}$ is

$$A_{1,N}^{s,s'} = Q_{0,N} (I_T \otimes M_{s,N}') M_{s,N}) - diag_{s=1}^{T} [Q_{0,N} (I_T \otimes M_{s,N}') M_{s,N})_{nn}] .$$

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

$$A_{3,N}^{s,s'} = Q_{1,N} (I_T \otimes M_{s,N}'M_{s,N}) - diag_{s=1}^{T} [Q_{1,N} (I_T \otimes M_{s,N}'M_{s,N})_{nn}] .$$

The definition of the GM estimator (equations (13)-(18)) does not make use of the matrices $A_{1,N}^{s,s'}$ 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 $A_{1,N}^{s,s'}$ and $A_{3,N}^{s,s'}$ enter through equation (22) and show up ultimately in the definition of the blocks of the matrices $\bar{A}_{1,N}^{s,s'}$ and $\bar{A}_{3,N}^{s,s'}$ in equations (26a)-(26d).

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

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

$$\bar{A}_{1,p,u,N}^{s,s'} = -\frac{1}{(T-1)} (e_T' \otimes I_N) diag_{s=1}^{T} [Q_{0,N} (I_T \otimes M_{s,N}') M_{s,N})] (e_T \otimes I_N)$$

$$\bar{A}_{1,v,u,N}^{s,s'} = -\frac{1}{(T-1)} diag_{s=1}^{T} [Q_{0,N} (I_T \otimes M_{s,N}'M_{s,N})] (e_T \otimes I_N) .$$

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

$$\bar{A}_{3,N}^{s,s'} = \frac{1}{2} [Q_{1,N} [I_T \otimes (M_{s,N}'M_{s,N} + M_{s,N}'M_{s,N}')] Q_{1,N} - 2 diag_{s=1}^{T} [(Q_{1,N} (I_T \otimes (M_{s,N}'M_{s,N}))] or$$

$$\bar{A}_{3,p,u,N}^{s,s'} = \frac{1}{2} [A_{1,p,u,N}^{s,s'} + (A_{1,p,u,N}^{s,s'})'] ,$$

$$\bar{A}_{3,v,u,N}^{s,s'} = \frac{1}{2} \{ T(M_{s,N}'M_{s,N} + M_{s,N}'M_{s,N}) - 2(e_T' \otimes I_N) diag_{s=1}^{T} [(Q_{1,N} (I_T \otimes (M_{s,N}'M_{s,N}))] (e_T \otimes I_N) \},$$

$$\bar{A}_{3,v,u,N}^{s,s'} = \frac{1}{2} \{ (e_T \otimes (M_{s,N}'M_{s,N} + M_{s,N}'M_{s,N}]) - 2 diag_{s=1}^{T} [(Q_{1,N} (I_T \otimes (M_{s,N}'M_{s,N}]) (e_T \otimes I_N)] .$$