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

Badinger, Harald; Egger, Peter

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Harald Badinger and Peter Egger

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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

$$A_{1,N}^{s,s'} = Q_{0,N} (I_T \otimes M_{s,N}^I M_{s,N}) - \text{diag}_{s=1}^{NT}[Q_{0,N} (I_T \otimes M_{s,N}^I M_{s,N})]$$

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

$$A_{3,N}^{s,s'} = Q_{I,N} (I_T \otimes M_{s,N}^I M_{s,N}) - \text{diag}_{s=1}^{NT}[Q_{I,N} (I_T \otimes M_{s,N}^I M_{s,N})]$$

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

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

$$A_{1,N}^{s,s'} = -\frac{1}{(T-1)} (e_T \otimes I_N) \text{diag}_{s=1}^{NT}[Q_{0,N} (I_T \otimes M_{s,N}^I M_{s,N})] (e_T \otimes I_N)$$

$$A_{1,N}^{s,s'} = \frac{1}{(T-1)} \text{diag}_{s=1}^{NT}[Q_{0,N} (I_T \otimes M_{s,N}^I M_{s,N})] (e_T \otimes I_N) .$$

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

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

$$A_{3,N}^{s,s'} = \frac{1}{2} [T(M_{s,N}^I M_{s,N} + M_{s,N}^I M_{s,N}) - 2(e_T \otimes I_N) \text{diag}_{s=1}^{NT}[(Q_{I,N} (I_T \otimes (M_{s,N}^I M_{s,N})) (e_T \otimes I_N))] ,$$

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