

Abstract

I derive the unconditional transformed likelihood function and its derivatives for a fixed-effects panel data model with time lags, spatial lags, and spatial time lags. I demonstrate that the model-consistent representation of the initial-period distribution involves higher-order spatial lag polynomials. Consistent estimation requires an appropriate truncation of these lag polynomials unless the spatial weights matrix has a regular structure. The finite sample evidence from Monte Carlo simulations shows that the proposed estimator works well in comparison to a bias-corrected conditional likelihood estimator. As an application, I estimate a time-space dynamic wage equation allowing for spillover effects within households.