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Spatial Dynamic Panel Data Models with Interactive Fixed Effects[☆]

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Abstract

This paper studies the estimation of a dynamic spatial panel data model with interactive individual and time effects with large n and T. The model has a rich spatial structure including contemporaneous spatial interaction and spatial heterogeneity. Dynamic features include individual time lag and spatial diffusion. The interactive effects capture heterogeneous impacts of time effects on cross sectional units. The interactive effects are treated as parameters, so as to allow correlations between the interactive effects and the regressors. We consider a quasi-maximum likelihood estimation and show estimator consistency and characterize its asymptotic distribution. The Monte Carlo experiment shows that the estimator performs well and the proposed bias correction is effective. We illustrate the empirical relevance of the model by applying it to examine the effects of house price dynamics on reverse mortgage origination rates in the US.

Keywords: Spatial panel, dynamics, multiplicative individual and time effects

JEL classification: C13, C23, C51

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