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Spatial econometrics in RSUE: Retrospect and prospect ☆

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Abstract

This article reviews the stages of development of spatial econometrics since its inception in the early 1970s, especially as represented by publications in RSUE. It also reflects on promising future directions. The evolution of the field is categorized into three distinct periods: the preconditions for growth (early 1970s to late 1980s), the take off (1990s), and the steady state (post 2000). Each of these is characterized by a change in the focus of interest, an evolution of the disciplinary mix of scholars involved in the field, and a diversification of publication outlets.

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1. Introduction

Spatial econometrics featured prominently in the early years of the journal *Regional and Urban Economics*. In the very first issue, the second article by Walter Fisher (Fisher, 1971) dealt with "Econometric Estimation with Spatial Dependence." It constitutes one of the first papers in the applied economic literature addressing the topic of spatial autocorrelation and its implication for estimation in linear regression models. In the following years, articles covering spatial econometric topics remained a frequent appearance in the journal, with a significant increase after

☆ Some of the main ideas on the evolution of spatial econometrics as a field contained in this paper were earlier expressed in the Inaugural Arthur Getis Lecture in Spatial Analysis, San Diego State University, Oct. 2005, and in an address on "Spatial Econometrics: Past, Present and Future," part of a special session honoring Keith Ord at the 102nd Annual Meeting of the Association of American Geographers, Chicago, IL, March 2006.

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2000. This largely parallels the dissemination of the field in other economics journals (Anselin et al., 2004). Curiously, this contrasts with a marked absence of the much broader and interdisciplinary subject of *spatial data analysis* and related applications of geographic information systems. Apparently, Wallsten (2001) is the only paper in 35 years of RSUE that mentions "geographic information systems" in its title.

In this brief note, I formulate some remarks on spatial econometrics and how it relates to RSUE. It may be useful to provide some context and to start by considering the past. Therefore, I will first briefly comment on the evolution of spatial econometrics and how it relates to publications in the first 35 volumes of RSUE, complementing the review provided by Minerva and Ottaviano (2007-this issue). This is followed by some speculations about future directions.

2. Looking back

Spatial econometrics has its origins in the early 1970s, when Jean Paelinck used the term to refer to methodological aspects associated with incorporating dependence in cross-sectional multiregional econometric models. Initially, the development and application of spatial econometrics was mostly driven by the interests of regional scientists and applied economists in Europe, and several of the early classics appeared in RSUE. In part stimulated by advances in theory (social and spatial interaction) and technology (geographic information systems), the interest in spatial analysis in economics and other social sciences has seen tremendous growth in recent years (Goodchild et al., 2000). This culminated in the formal establishment in May 2006 of an international "Spatial Econometrics Association" at the Fifth Workshop on Spatial Econometrics and Statistics in Rome, Italy.

This increased interest in spatial problems in economics has coincided with a broadening of the publication outlets, and several recent theoretical advances have appeared in mainstream econometric journals, such as the *Journal of Econometrics* and *Econometrica*. Similarly, applications are no longer primarily targeted at regional science journals, but the leading field journals in economics have shown a dramatic increase in published spatial papers as well (for a recent overview, see Anselin et al., 2004).

In reviewing the evolution of the field since the early 1970s, I suggest a general classification into three distinct periods: the "preconditions for growth" (early 1970s to late 1980s), the "take off" (1990s), and "steady state" (post 2000). Each of these is characterized by a change in the focus of interest, an evolution of the disciplinary mix of scholars involved in the field, and a diversification of publication outlets.

Table 1
Spatial econometrics in RSUE — 1971 to 1990

Reference	Title
Fisher (1971)	Econometric estimation with spatial dependence
Hordijk (1974)	Spatial correlation in the disturbances of a linear interregional model
Bartels and Hordijk (1977)	On the power of the generalized Moran contiguity coefficient for spatial autocorrelation among regression disturbances
Steinnes (1980)	Aggregation, gerrymandering, and spatial econometrics
Blommestein (1983)	Specification and estimation of spatial econometric models: a discussion of alternative strategies for spatial economic modeling
Blommestein (1985)	Elimination of circular routes in spatial dynamic regression equations
Anselin (1990)	Some robust approaches to testing and estimation in spatial econometrics