Hedonic Methods and the Housing Market as a Multi-Level Spatial System

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ABSTRACT

The idea that housing submarkets are likely to exist within the urban housing system is now a working hypothesis for many mainstream housing economists. Since the early 1990s the literature has seen the publication of numerous studies and the subject has proven one of the most fertile for the development of econometric and other empirical techniques during the past decade. Despite this volume of work, there is as yet a general lack of consensus regarding the appropriate methods for identifying submarkets. There is also considerable friction between commonly employed cross-sectional methods of submarket identification and definition and the fact that submarket boundaries are unlikely to be static over time. In previous work by this author and others, the stability of a spatial submarket system in the Glasgow housing market is tested using time series methods. However, the approach suffers from the necessary limitation that the spatial areas used to form time series data are fixed.

This paper builds on a series of previous papers by the author and others and, in keeping with these previous studies, focuses on the economics of the Glasgow housing market. The paper reconsiders the issue of submarket boundary stability and explores boundary changes using hedonic OLS and multilevel (random coefficients) approaches. Temporal change in submarket boundaries is explored using a combination of GIS methods and parametric tests. A multilevel model is proposed in which sufficient flexibility exists to deal with both coefficient heterogeneity within the urban housing market and the possibility of submarket boundary change over time. The paper concludes that multilevel methods are likely to be of value in seeking to capture and model the changing spatial dynamics of intra-urban housing prices.

Key Words: housing economics, submarkets, multi-level modellings, spatial temporal change