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Spatial dependence in apartment transaction prices during boom and bust

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ABSTRACT

Due to the illiquid and intransparent nature of housing markets, property sellers and buyers may hugely rely on information about transaction prices of nearby properties with comparable characteristics to agree upon a transaction price. We show that the spatial dependence in house prices is more pronounced in a rising housing market than in a falling market and can be associated with behavioural biases such as sellers' loss aversion tendency or herding of buyers. Using a spatio-temporal autoregressive model for 30,541 apartment transactions in Seoul, South Korea between 2006 and 2015, we find that spatial dependence in house prices is eight time higher in a boom as opposed to a bust. This shows huge asymmetric spatial effects across apartment transactions which suggests that neighbouring property prices can serve as an appropriate benchmark during a rising market but they may not be suitable to capture the housing market dynamics in a falling market. This implies that behavioural aspects such as sellers' loss aversion should be taken into account in the price formation when house prices are falling.

JEL classification: C21, D12, E32, R15, R21, R31

Keywords: Spatio-temporal autoregressive model, hedonic house price, spatial dependence, loss aversion, boom and bust.

1. Introduction

Housing transaction prices reflect not only hedonic characteristics of the property fundamentals but also capture the dynamics of neighbouring property transactions thus accounting for unobserved characteristics and local dynamics. The housing market is highly illiquid and market participants may not easily assess the true value of their houses given their characteristics. In order to agree upon a transaction price, buyers and sellers may hugely rely on information about historical prices of nearby properties with comparable characteristics (Can and Megbolugbe, 1997; Small and Steimetz, 2012). However, this spatial dependence across housing prices may vary across time depending on the point in the housing cycle in which the transaction takes place. The spatial dependence can be defined as "the coincidence of value similarity with locational similarity" (Anselin