



Spatio-temporal effects of an urban development announcement and its cancellation on house prices: A quasi-natural experiment



Dongwoo Hyun^a, Stanimira Milcheva^b

^a Real Estate and Planning, University of Reading, Whiteknights, Reading RG6 6UD, United Kingdom

^b The Bartlett School of Construction and Project Management, University College London, United Kingdom

ARTICLE INFO

JEL classification:

C21
R15
R31
R53

Keywords:

Announcement effect
Spatio-temporal autoregressive model
Difference-in-differences
Apartment transaction prices

ABSTRACT

We use a spatio-temporal autoregressive difference-in-differences (SDID) framework to assess the strength of announcement effects associated with an urban development on house prices over time and across locations. The quasi-natural experimental setting of a large-scale urban redevelopment project in Seoul, South Korea, announced in 2007 and cancelled six years later without any construction having taken place, allows us to cleanly disentangle the announcement effect from the actual development effect. Using more than 21,000 apartment transactions between 2006 and 2015, we find that the development announcement increases apartment prices between 2.4% and 7.3% for properties within 1 km radius of the project site. However, for buildings beyond 1 km, the effect becomes negative suggesting spatial redistribution of housing demand. The cancellation of the project leads to a significant decline in prices between 3.5% and 5.2% for apartments within 1 km from the project site nearly cancelling the associated positive effects. We find that properties which are located around the project site but are not in direct proximity actually have a significant price cut after each announcement. Overall, we show that announcement and cancellation of development projects have a significant impact on residential property prices near the site but vary considerably in strength and direction across space.

1. Introduction

Tiebout (1956) argues that facing an array of communities that offer different types and levels of public services and amenities, each individual household will move from one local community to another to maximise their utility. This process known as "voting with their feet" can explain the heterogeneity of house price levels among communities. Higher level of house prices in a certain community reflects better provision of public services and amenities in the community via higher willingness to pay for purchasing or renting a house by households. Starting with Oates (1969), a large number of empirical research tests the Tiebout theory and finds that the development of a new amenity has a significant impact on surrounding house prices. For example, amenities such as a new transit line or a sports stadium may have an overall positive impact on surrounding residential prices,¹ whereas other facilitates, such as landfill, power plants or airports, may have a negative effect on the value of the surrounding residential properties.² Some

studies³ show that the overall effect from a development or an amenity (the development effect or the amenity effect) begins to be capitalised into property prices surrounding the development site as early as the first announcement of the development. This is due to the anticipation of future housing value growth after the completion of the development (McMillen & McDonald, 2004). Since property prices show this early response to news about developments, developers, government bodies and politicians need to be careful with this transmission mechanism to house prices as prices can be affected even without any construction taking place at all. What is the size of such purely announcement effects will be the focus of this paper.

While a number of studies has quantified effects associated with the announcement of new developments or amenities, such developments in deed take place and hence the anticipated house price increases are just capitalised somewhat earlier. We are interested in quantifying the effect on prices simply following an announcement of a new development and disentangling it from the actual development effect. This we

E-mail addresses: d.hyun@pgr.reading.ac.uk (D. Hyun), s.milcheva@ucl.ac.uk (S. Milcheva).

¹ See Ahlfeldt and Maennig (2009), Bowes and Ihlanfeldt (2001), Dehring et al. (2007), Gatzlaff and Smith (1993), Gibbons and Machin (2005), Kavetsos (2012) and Dubé et al. (2014), McDonald and Osuji (1995), McMillen and McDonald (2004), Tu (2005).

² See Cohen and Coughlin (2008), Dröes and Koster (2016) and Bauer et al. (2017), Jud and Winkler (2006), Kiel (1995), Kohlhase (1991), Michaels and Smith (1990), Nelson (2004), Tomkins, Topham et al. (1998).

³ We discuss the studies in Section 2.

<https://doi.org/10.1016/j.jhe.2018.09.008>

Received 24 March 2018; Accepted 20 September 2018

Available online 21 September 2018

1051-1377/ © 2018 Published by Elsevier Inc.

call the announcement effect. However, assessing whether and to what degree the announcement effect exists is empirically challenging for various reasons. First, it is difficult to isolate the announcement effect from the effect of the actual development as those go hand in hand. As the development takes a long time, house prices can be influenced by incidental developments such as building a new road prior to the full completion of the amenity. House price changes can occur from the moment of announcement of the project throughout the whole construction phase and eventually event afterwards if the value of the project is over- or underestimated (McMillen & McDonald, 2004). Such price adjustments occur only gradually throughout the development process. Thus, it is not straight forward to define the cut-off point of when the announcement effect ends and the development effect takes over (that is, the announcement effect period, see Ahlfeldt and Kavetsos (2014) and Immergluck (2009)). This is even harder to identify for large-scale urban development projects, which may include multiple facilities and take dozens of years. Second, the announcement effect may vary in strength depending on the location of the properties in relation to the project site. We can observe spatial spillovers across property markets and spatial dependence in property prices following the announcement effect suggesting that some house price changes may not be associated with the announcement effects but rather with the spatial effects of house price changes.⁴

In this paper, we quantify the announcement effect of an urban redevelopment project by using a quasi-natural experiment. We investigate the Yongsan International Business District (YIBD) project in Seoul, South Korea. What makes this project unique is that after it was officially announced in 2007 no further action and no construction has been taken and the development has been cancelled six years later. In August 2007, the Seoul metropolitan government announced for the first time the YIBD redevelopment. The main aim of the project was to turn a deprived downtown area of 515,483 m² (356,000 m² of which was a railroad maintenance depot and the rest, a residential area) into a global business district similar to the one in Roppongi Hills, Tokyo, and Canary Wharf, London. Totalling approximately \$28.2 billion,⁵ the project was planned to develop commercial, retail, leisure and hotels. The announcement of the YIBD is enough to give rise to a constellation of the anticipation about future housing value growth near the project site. The project is to turn a huge land plot of dis-amenity facilities in the central urban area into amenity facilities. Most of the project site is a railway maintenance depot which is undesirable in an urban residential area due to noise and air pollution. The project would be expected to improve residential environment substantially by not only demolishing the dis-amenity facilities but also providing a number of aesthetic skyscrapers and consumption benefits from various facilities. Furthermore, after the official development announcement, the project labelled ‘the priciest real estate development project in the history of Korea’⁶ was frequently exposed to the public by mass media. In April 2013, the cancellation of the project was announced. Two factors are generally pointed out as primary causes of the project failure - the economic recession after the 2008 global financial crisis and the intense conflicts among the investors. During the 67-month period between the development announcement and the cancellation announcement, the project site consolidation had been conducted, however the construction of visible structures was not commenced.

We quantify the effect on house prices associated with two types of announcements – positive announcements of a new urban development

⁴ For example, housing sellers who observe an increase in housing transaction prices in a neighbourhood due to the announcement effect may ask the premium even if they have no idea why the neighbouring property prices increase or do not realise the development or announcement but just because the properties are in the same neighbourhood.

⁵ The currency in this paper corresponds the US Dollar based on the exchange rate of 1100 Korean Won for 1 USD.

⁶ ‘Seoul Stays Stuck in a Bad ‘Dream’’, *The Wall Street Journal*, 29 April, 2014.

and negative announcements of the cancellation of the development. We examine whether the announcement is capitalised into house prices by comparing transaction prices of properties surrounding the project site before and after the announcement. If the residential price changes are mainly driven by the anticipation of the development, then those should be offset with the cancellation of the project. A cancellation of the project is expected to result in an immediate and sharp price decline without any adjustment period. This can be compared to the effects from a collapse of a speculative housing bubble. Therefore, the bigger the announcement effect, the larger the negative impact of the cancellation would be on house prices. Assuming that the Seoul housing market is relatively efficient⁷ given the short-term inelastic supply of new housing, the capitalisation in house prices following the announcement effects would be substantially prominent and rapid (Gibbons & Machin, 2005; Glaeser et al., 2008; Mian & Sufi, 2009). Thus, we would not expect a significant net change in house prices after the two announcements.⁸

We assume that the changes in property prices near the project site following the announcement would embed all positive and negative externalities expected by the development. Therefore, the announcement effects can be principally inferred from the spatial variation in the transaction prices of residential properties surrounding the development site after the announcements. For this purpose, we use a spatial difference-in-differences (DID) approach. A DID methodology essentially compares two samples of data – a treatment group and a control group – compared in two subperiods -before and after the announcement. The treatment group in our case consists of the apartment transactions in the ‘impact’ area, the area closest to the redevelopment site. The control sample comprises of the properties in the ‘control’ area, which is located further away from the project site where property prices are unlikely to be affected by the development. This quasi-experimental approach controls for the possible omission of significant variables correlated with the announcement effect (Ahlfeldt & Kavetsos, 2014; Gibbons & Machin, 2005; Pope & Pope, 2015). We apply the DID setting into a spatio-temporal autoregressive model (STAR), which we call the spatial DID model (SDID), rather than estimating a classic DID hedonic price model (HDID). The SDID looks at spatial dependence between transaction prices in the impact area and the control area. Thus, the SDID controls for the spatial autocorrelation effects across house prices which may not be directly related to the announcement.

We use apartment transaction data from the Ministry of Land of South Korea, covering all 21,200 apartment transactions in the area of interest between 2006 and 2015. The results provide strong evidence for the existence of significant announcement effects. Following the announcement of the redevelopment, apartment prices within 0.5 km from the project site increase by 7.3% relative to comparable apartments located 3–3.5 km away from the project site. However, for buildings further away from the site, the positive announcement effect

⁷ First, the market is transparent in terms of easy access to information on individual housing transactions. There is a large number of real estate brokers in neighbourhoods (normally multiple brokers within a single apartment complex), and they provide daily updated information of housing transactions in the neighbourhood. Second, the homogeneity of properties allows sellers and buyers to compare the quality of properties as well as those transaction prices. Apartments are typically constructed within a large complex of multi-storey buildings with highly standardised floor plans, building materials and structures, and complex amenities. Third, the market is liquid. Transaction costs are relatively low (mainly composed of brokerage fees of up to 0.9% of the transaction price) and the homogeneity of property keeps searching costs low, hence transactions are quite frequent (Hwang et al., 2006; Hyun & Milcheva, 2018).

⁸ The cancellation of the development may not necessarily lead to a zero net announcement effect. Individuals still may anticipate some form of construction at a later stage. However, given the large uncertainty with any future development in the respective area, we can assume that those expectations should not have strong fundamental grounds and hence would be negligible.

Download English Version:

<https://daneshyari.com/en/article/11263136>

Download Persian Version:

<https://daneshyari.com/article/11263136>

[Daneshyari.com](https://daneshyari.com)