



Supply side constraints in the Israeli housing market—The impact of state owned land



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ABSTRACT

House prices in Israel have risen since 2008 by as much as 98%. Much of this increase is attributed to low levels of housing supply and housing supply elasticities. In Israel land is frequently owned by the state. This results in heavy government involvement in the housing market through the control of land supply via land tenders. This paper estimates the impact of state owned land on the Israeli housing market focusing on these unusual conditions of land supply. A model for the creation of new housing units is proposed. This incorporates land tenders, enabling the estimation of housing supply dynamics with an accurate measure of public land supply. The model is tested using regional panel data which facilitates the dynamic estimation of national and local supply elasticities and regional spillovers. The paper uses novel data sources resulting in a panel of 45 spatial units over a span of 11 years (2002–2012). Due to the nonstationary nature of the data, spatial panel cointegration methods are used. The empirical results yield estimates of housing supply price elasticities and elasticities with respect to land supply. Results show that housing supply is positively impacted by governmental decisions but the impact is low. Supply elasticity with regard to government land tenders stands at around 0.05 over the short run and 0.08 over the long run. Government policy of offering land in low demand areas and fixing minimum-price tendering does not seem to affect housing supply. Policy implications point to the need for more sensitive management of the delicate balance between public and private source of land in order to mitigate the excesses of demand shocks.

1. Introduction

In recent years, housing market research has increasingly focused its attention on supply elasticity and its effect on the housing market (Gyourko, 2009; Paciorek, 2013). However, only a handful of papers have dealt specifically with the determinants of this elasticity. In this paper, we analyze the basic foundation of housing supply – land supply and its impact on housing supply elasticity. Most studies of the supply side of the housing market, examine land use regulation (Saiz, 2010; Paciorek, 2013). This situation results from the fact that most countries have a free market for land. However, the Israeli housing market presents a special case. An unusual land ownership regime and explicit governmental intervention in the land market strongly impact the housing market in general and the supply side in particular.

It is well established that land is the most basic input in creating new housing units or generating housing supply (Glaeser and Gyourko, 2005; Glaeser et al., 2006; Saiz, 2008; Saks, 2008; Sinai, 2010; Grimes and Aitken, 2010). In Israel, land is frequently owned and managed by the state which is unusual for a developed market economy

(Werczberger and Borukhov, 1999). The Israel Land Authority (ILA) is a highly potent force in the Israeli land market as ninety-three percent of Israeli land is owned by the State and managed on its behalf by the ILA. Land designated for housing construction is offered to developers through an auction system or tenders (invariably with a minimum price). The highest bidder obtains the rights to build on the land and to market the completed units to the public. The land developer obtains building permits, develops the land, constructs the units and then sells them to individual buyers, who lease the land directly from the state (the ILA). This almost monopolistic nature of land ownership and distribution in Israel has been heavily criticized. The ILA has been accused of increasing land prices by under-releasing land to the market (Borukhov, 1979; Eckstein and Perlman, 1997; Werczberger and Borukhov, 1999). In recent years, as housing prices have risen dramatically, this criticism has increased and has constantly featured in the media, public debate and decision-makers rhetoric.

It is important to note that new construction also takes place on private land. As house prices have risen over the last few years, building on private land has risen too and accounts for about 50% of all housing

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construction. In spite of the growing stake of private land in recent construction, this study focusses on publicly owned land which represents the vast majority of the land available for development. Additionally, control over publicly owned land makes for a powerful policy tool for coping with rising house prices and preventing the development of a housing market bubble.

This study examines whether the ILA and its land tender system constrain land supply and thereby contribute to rising house prices. While the planning process determines land use and therefore also mediates the relationship between the inelastic supply of land and housing starts, its role is not the focus of this paper. In practice, land designated as ‘developable’ by the planning process may not necessarily contribute to land supply as environmental or military restrictions not considered in the land designation process, may preclude its use. The following section reviews the relevant literature on land supply for housing and other cases of state owned land. Section 3 presents Israel’s atypical institutional land ownership and land management system. Section 4 describes the model depicting land supply for housing in Israel, Section 5 presents some methodological issues and discusses the data. Empirical results are presented in Section 6 which is followed by a discussion of policy implications arising from the findings.

2. The role of land supply in the housing market

In most cases housing supply is unavoidably sticky because the building of new homes takes time and supply cannot respond instantaneously to a rise in demand (Grimes and Aitken, 2010). When examining the determinants of housing supply, two major inputs are prevalent: land and structures (Saiz, 2008). Research shows that the cost of structures differs widely between regions (in the US) but still cannot explain housing prices differences (Gyourko, 2009). Gyourko and Saiz found that the supply elasticity of physical structures in the local housing market is 50(!). Differences in construction activity cannot therefore solely explain differences in housing prices (Gyourko and Saiz, 2006) and land prices are considered a strong factor in housing elasticity and pricing. In addition, evidence shows that most of the variance in US housing prices between 1975 and 2006 can be attributed to land price changes and not fluctuations in structure costs (Davis and Heathcote, 2007).

Previous studies have identified a number of major factors affecting the supply of land for housing: land supply elasticity, land prices and price dynamics, land use regulation, land ownership (private or public), construction costs and topography constraints (Glaeser and Gyourko, 2005; Glaeser et al., 2006; Saiz, 2008; Saks, 2008; Sinai, 2010; Grimes and Aitken, 2010; Peng and Wheaton, 1994; Ihlanfeldt and Mayock, 2014). From these studies, we can essentially conclude that the amount of developable land for housing determines land supply elasticity and as a result housing supply elasticity (Saiz, 2008; Saks, 2008).

In addition to the amount of developable land, ownership of land also has a large part in determining supply elasticities. In theoretical models, considerable land ownership is shown to obstruct competition and change the expected spatial distribution of housing. Markusen and Scheffman’s model (1978) features a homogeneous circular city in which housing is perfectly flexible and divisible. They show that concentrated land ownership always gives large owners potential market power, which in turn interferes with the perfectly competitive spatial distribution of occupancy and land prices. This interference may lead to situations in which large land owners limit housing supply inside the city in order to increase rents and make higher profits. In an improved and more realistic model, which considers housing as non-malleable and indivisible, Vousden (1981) finds similar results. A single land owner in a city with competitive developers will not sell land “near” the edge of the city, will delay redevelopment in inner parts of the city and will redevelop at lower densities (Vousden, 1981). Mills (1980) was one of the first to raise the issue of market power in the real estate market. Facing a growing trend of “corporatization” of the

construction sector in the late 1970’s with fewer and fewer agents operating in the housing market, he challenged the traditional economic view of a competitive real estate market. Focusing on land ownership as the focal point of development, his theoretical model predicts that increased market power of landowners slows development and lowers its density because of the monopolistic nature of the market (Mills, 1980).

Previous studies have found that urban land scarcity leads to an increase in housing prices. But the mechanism leading to the price increase is subject to two competing explanations. The first, assuming myopic behavior of developers and investors, explains the price increase as a simple result of a decrease in housing supply. Where there is limited supply, housing supply may become inelastic and thus prices go up (Saiz, 2008). The second and more sophisticated explanation sees agents as forward-looking and holding price expectations. In this case, investors expect rent prices to go up because of a future supply drop. As a result, they immediately increase housing demand, which pushes prices up (Peng and Wheaton, 1994; Grimes and Aitken, 2010).

A well-researched empirical case similar to that of Israel is Hong Kong, where land is scarce and the supply of land for development is under strict government control. Peng and Wheaton (1994) found that in Hong Kong land supply restrictions did not lower housing construction, but did cause an increase in housing prices. The reason for these effects on housing supply and prices is that housing demand grew because of expected future high rents. At the same time housing supply did not decrease because enough land was sold in previous periods and because of flexible building regulation which allowed developers to build at higher densities when demand rose (Peng and Wheaton, 1994). Other studies of Hong Kong land and housing markets have resulted in contrary findings that fail to support the evidence of causality between land supply and housing prices. Tse (1998) and Lai and Wang (1999) describe a ‘land banking’ mechanism whereby developers hold on to land bought from the government in order to maximize profits. Their findings show that the low level of housing supply elasticity is not due to developer’s choice and land allocation but to rigid zoning regulations. Developers buy and hold land in order to increase profits. Planning regulation decreases the elasticity of housing supply but not necessarily, land supply.

Another similar case is Singapore, where heavy government involvement in the housing markets works through two mechanisms. The first is via extensive provision of subsidized public housing and the second through the distribution of publicly owned land for private residential development (Phang and Wong, 1997; Hwang and Lum, 2007). Much like the Israeli case, these interventions have led to a segmented public-private housing market with almost monopolistic control over the supply of raw land by the state. Regarding land use control and land supply, the Singapore government has an important role in regulating both. In the past, two sources of land were used, private and public. Development on private land was under strict control and large portions were reclaimed or controlled through compulsory acquisition. Today more than 80% of land in Singapore is held by the government (Phang and Wong, 1997), which has full control on the timing, extent and type of development (Hwang and Lum, 2007). Most land sale programs are effected through tenders, where private developers are required to submit development plans for the parcels on offer. The units developed by the private sector are leased for a period of 99 years (Phang, 1996). Government involvement in the Singapore housing market is a known and declared macroeconomic measure. When housing prices went up during the 1990’s the government increasingly released land for private development. While explicit government policy is to maintain a gradual appreciation of house prices there is an inherent incentive for higher inflation because of land sale revenues. (Hwang and Lum, 2007). Although land constrained, Singapore has a fairly elastic housing supply. For example, Tu (2004) recorded the long run elasticity of supply at 1.31. This high

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