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Evaluating conditions in major Chinese housing markets☆

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ABSTRACT

High and rising prices in Chinese housing markets have attracted global attention. Price-to-rent ratios in Beijing and seven other large markets across the country have increased by 30% to 70% since the beginning of 2007. Current price-to-rent ratios imply very low user costs of no more than 2%–3% of house value. Very high expected capital gains appear necessary to justify such low user costs of owning. Our calculations suggest that even modest declines in expected appreciation would lead to large price declines of over 40% in markets such as Beijing, absent offsetting rent increases or other countervailing factors. Price-to-income ratios also are at their highest levels ever in Beijing and select other markets, but urban income growth has outpaced price appreciation in major markets off the coast. Much of the increase in prices is occurring in land values. Using data from the local land auction market in Beijing, we are able to produce a constant quality land price index for that city. Real, constant quality land values have increased by nearly 800% since the first quarter of 2003, with half that rise occurring over the past two years. State-owned enterprises controlled by the central government have played an important role in this increase, as our analysis shows they paid 27% more than other bidders for an otherwise equivalent land parcel.

1. Introduction

Fig. 1 depicts a more than doubling of real constant quality house prices across 35 major Chinese cities over the past decade, with about 60% of that increase occurring since the first quarter of 2007 (2007(1)). Price changes of this magnitude and speed naturally raise questions about their sustainability, with global interest high among investors, public officials and scholars both because of China's growing economic importance and the fact that a collapse in U.S. housing markets helped precipitate a worldwide financial crisis.

For example, it is not hard to find highly respected professional investors on both sides of the 'is China's housing a bubble?' question.[1] The Chinese government has indicated its own concern via a series of policy interventions over the past year.[2] Scholarly

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[1] See for example the January 7, 2010, *New York Times* article by David Barboza entitled "Contrarian Investor Sees Economic Crash in China", which contrasts the diametrically opposed views of James Chanos, a famous short seller who directs the hedge fund Kynikos Associates and believes Chinese housing is a bubble, and Jim Rogers, an equally successful investor who helped found the Quantum Fund, who believes it is not. The article is accessible at http://www.nytimes.com/2010/01/08/business/global/08chanos.html.

[2] These include the following: (a) increased equity down payment shares from 20% to 30% for first homes of more than 90 square meters in size; (b) increased equity down payment shares from 40% to 60% for second homes; (c) general discouragement of the use of any leverage on third homes or by external buyers (i.e., those not living in the market of the intended purchase); (d) new rules to prevent developers from hoarding housing units; (e) the pilot implementation of property tax levies in Shanghai and Chongqing since January 2011; this change could be very important because it would raise the cost of carry on speculative investments in owner-occupied housing; and (f) in some cities such as Beijing, new policy prohibits local households from purchasing more than one unit of housing, and suspends households from buying any homes in cities if they have not been long-time (5 years or more) residents and cannot provide tax or social insurance certificates to show their length of residence. For more details, see the "Gazette of Executive Meeting of the State Council," December 14, 2009; "Circular of the State Council on Resolutely Containing the Precipitous Rise of Housing Prices in Some Cities" (Decree No. [2010] 10), April 17, 2010; and the "Gazette of Executive Meeting of the State Council," January 26, 2011.

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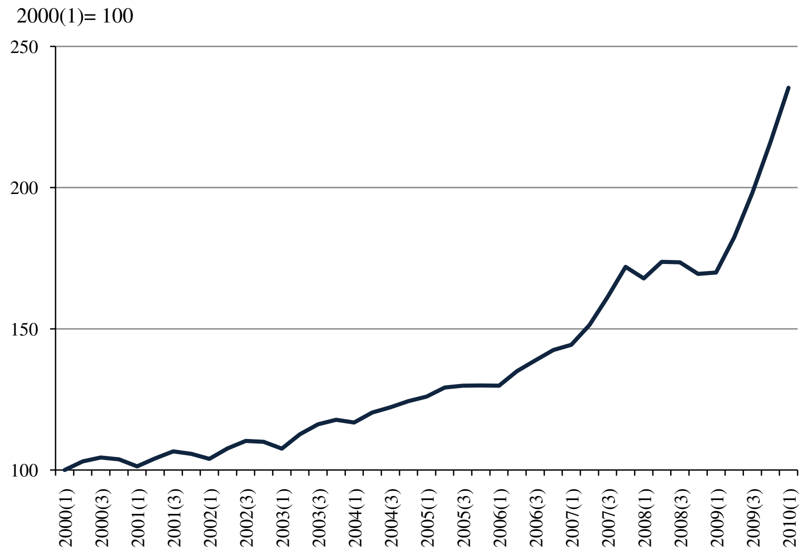

Source : Institute of Real Estate Studies, Tsinghua University.

Notes: Hedonic models are used to control for quality changes in underlying samples of newly-built, private homes in 35 major markets in China. Real indices are created by deflating with the CPI series for each market. Aggregate indices are computed as the weighted average of the local market series, with transactions volume between 2000-2008 as the fixed weight.

Fig. 1. Constant quality real price index for newly-built private housing in 35 major Chinese cities, 2000(1)–2010(1).

interest in the area has expanded over the past few years, too, both in Chinese and English. Much of this effort attempts to gauge any potential mispricing by comparing actual market values with predicted fundamental prices.[3]

Chinese markets already have experienced real price appreciation on a par with or in excess of that realized in other markets that are widely agreed to have had pricing bubbles. For example, the S&P/Case–Shiller national price index for the United States shows a 144% increase in nominal home values from the start of that country's long boom in 1995 and the peak of prices in the second quarter of 2006. That implies a 7.7% average annual compounded appreciation rate over those nearly twelve years. Price growth was even higher, at 169%, in some of the fastest appreciating markets such as Las Vegas. Thus far, the bursting of the American housing bubble has seen the S&P/Case–Shiller national index decline by 53% from its peak through the latest available data for 2010(3), with the Las Vegas market down by even more at −58%.[4]

Price growth in major mainland Chinese markets tends to have been much higher since our data begin in 2003(1). For example, the Beijing, Chengdu, Hangzhou, Shanghai and Shenzhen markets have appreciated by at least 10% per year between 2003(1) and 2010(1), with Beijing's growth rate much closer to 20% per annum. The slower appreciating markets of Tianjin, Wuhan and Xian have grown from 5.9% to 8.7% annually, which is close to the rate experienced by the U.S. before its recent bust.[5]

What has happened in many mainland markets in terms of magnitudes is more akin to what happened in Hong Kong in the 1990s. From the beginning of 1990 through its pricing peak in 1997(3), Hong Kong house prices grew by 296% nominally. There was more substantial inflation during that period, but real prices still escalated by 113% for a compound average annual growth rate of nearly 15%. Prices then fell by nearly two-thirds from that peak to a trough in the middle of 2003.[6]

Of course, these simple comparisons across countries are only suggestive. To gain deeper insight into the riskiness of current Chinese house prices and whether there likely is any fundamental mispricing, we provide a new and updated analysis of conditions in Chinese housing markets in this paper. Because of very limited data due to the fact that there has only been a truly private market in land and housing units since the late 1990s, we do not follow some of the recent scholarly literature in attempting to construct or test a formal structural model of supply and demand for housing. Not only have there not been the multiple housing cycles needed for comparison purposes, but economics still does not provide a well-specified test for the presence of a bubble in any asset market.[7] Hence, our research strategy is to look at as wide a variety of data as possible to help gauge the current riskiness of Chinese housing markets.

We do so in three ways. First, we exploit one of the important strengths of the Chinese data, which is that land prices can be observed separately from the value of the housing structure. Using micro data on over 300 recent residential land auctions in the capital city of Beijing dating back to 2003, we provide the first constant quality land price series for a Chinese market. The estimated growth in land values is nothing short of extraordinary—almost an eight-fold increase since 2003. It is also clear that this is not simply a function of prices escalating prior to the Summer Olympics in 2008. Beijing's land prices nearly tripled since the end of 2008. We also are able to compare land prices to the values of finished home sales (i.e., land plus the physical unit) in nearby transactions. From 2003 through 2009, the ratio of land to house values among our matched pairs hovered between 30% and 40%. In early 2010, however, this ratio doubled to just over 60% on average.

There also is a statistically and economically strong positive correlation between land auction price in Beijing and the winning bidder being a state-owned enterprise (SOE) associated with the central government. All else constant, prices are about 27% higher when a central government-owned SOE wins a land auction, so these

[3] Research along these lines includes Shen and Liu (2004), Hui and Shen (2006), Liang and Gao (2007), Kuang (2008), Hu et al. (2008), and Chow and Niu (2010).

[4] Source: Standard & Pools, "S&P/Case–Shiller Home Price Indices".

[5] Source: Institute of Real Estate Studies, Tsinghua University.

[6] Source: Rating and Valuation Department, Hong Kong SAR.

[7] See Flood and Hodrick (1990) for an early analysis of what would be required to determine convincingly whether or not a speculative bubble exists. Their criteria clearly cannot be met in the case of China's housing markets.