Assessing Systemic Risks in the Chinese Housing Market

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Abstract

As prices and vacancy rates skyrocket, the Chinese housing market inspires speculation that a market correction would ripple into a global economic slowdown. This paper draws on available market data and studies the unique aspects of the Chinese housing market to determine whether Chinese home prices are overpriced, and if such a mispricing poses any threat to the global economy. This paper concludes that the social, legal and economic values suggests that prices should be driven down rather than up, pointing to a mispricing in the market. However, this incongruence does not necessarily predict an impending market crash; over time, there is potential for a market correction with appropriate adjustments in the short-, medium- and long-term time scales.

Introduction

The Chinese housing market has been the object of global scrutiny since the United States housing market crashed in 2008 and catalysed a global financial crisis. Coverage of the phenomenon of Chinese "ghost cities" has captured the fascination of people around the world and worried many who have investment exposure to China. Meanwhile, the ratio of house prices to income levels for Shanghai and Beijing outstrip those of some of the most expensive cities in the world, including New York, London, and Dublin. (Shen 2012) As such, we must consider: is the Chinese housing market working efficiently? Are homes in China appropriately priced? Can the current prices and vacancy rates be justified? The answers to these questions have profound implications for the global economy. A crash in the Chinese housing market would undoubtedly slow Chinese construction and serve as a damper on the world's second-largest economy. (World Bank Group 2017) This could in turn have unpredictable destabilising consequences on the balance of power and economic prosperity in the current global status quo.

In the first part of this paper, I argue that several features of the Chinese market suggest that price-to-income ratios in China should be much *lower* than those of Western cities, and as a result the data accumulated in the academic literature, which finds that price-to-income ratios are comparable to Western cities, suggest that the Chinese housing market is overvalued. However, the consensus of academic literature seems to be that these conditions do not predict a market crash. My interpretation of the evidence does not run counter to the prevailing literature on the topic. Rather it argues against the possibility of a 2008-type housing crash but does not deny a mispricing in the market. A market mispricing can exist without implying an impending violent market correction.

The outlook of the market is left to the second portion of this paper, where I will discuss the implications of a housing market mispricing. These are significantly different from what one might expect in the case of a housing bubble in a more liberal Western economy, due to the unique aspects of investment capital management in the Chinese economy. China's mountain of foreign exchange reserves (valued at over three trillion USD) suggests that any mispricing in the housing market could be sustained in the medium term (Neely 2017). In the long term, appropriate policy measures can be taken to stabilise home prices and prevent a violent market correction.

Is There a Mispricing?

The first goal of my research was to discover whether the prices observed in the Chinese housing market are justified by underlying economic fundamentals. Much of the literature on the Chinese housing market is focused on identifying whether a crash can be predicted. As I will discuss later, most papers, especially that of Glaeser et al. (2017) and Shen (2012), conclude that no such violent market correction lies in store. However, this does not necessarily mean that homes are priced properly. In finance, an asset is considered "mispriced" when the market consistently values it differently from some sort of underlying "fundamental value".[1] The most important factor to consider in housing markets' affordability. As noted above, price to income rates based on current income levels in China greatly outstrip those observed in even the most expensive Western cities. However, Shen (2012) argues that, once incomes are adjusted to recognise high predicted growth rates, the ratio of price to so-called "permanent income" is in line with other major urban areas. That said, the rest of the academic literature suggests that the price-to-income rate in Chinese cities should be significantly lower than that of Western cities. In particular, vacancy rates, home longevity, and monetary policy factors all suggest that prices in China may exceed fundamental values.

Vacancy

Vacancy rates in China are one of the most obvious justifications for

1 It is important to note that, in almost all cases, "fundamental value" is a subjective matter. Fundamental value calculations are often based on assumptions with respect to market and economic conditions. However, a large departure from model predictions is often considered to represent a mispricing.

an expected housing market bubble in China. At roughly 20 percent, vacancy rates in China's most populated cities give serious cause for concern (Glaeser, Huang, et al. 2017). For comparison, the average vacancy rate across the largest metropolitan areas in the United States are roughly 8.5 percent (United States Census Bureau 2018). For a nation with a population over 1.3 billion people who are restricted in their economic movement by a "hukou" permit system, such vacancy suggests a clear market inefficiency (Central Intelligence Agency 2018) (Li, et al. 2017), Part of the vacancy problem may be driven by the type of homes being built. The majority of homes being constructed are high-quality developments, aimed at the wealthier end of Chinese society. Meanwhile, one of the major demand drivers in the Chinese housing market is the process of relocating low-income rural village-dwellers into urban environments. China's Gini Coefficient of roughly 4.5 reveals that a vast share of the wealth in the Chinese economy is concentrated in the hands of very few people and families. This further emphasizes the fact that these poor rural-to-urban migrants are ill-suited to purchase the luxury homes that define the construction trends in Chinese cities. (Chen, Pu and Hou 2018) Coupling a low-income population with high-priced homes which they cannot afford is a recipe for a mispricing, or at the very least a misallocation of resources to housing projects.

Much has been said about China's so-called "ghost cities". Characterised by wide streets, towering skyscrapers, and cavernous shopping malls, these cities are also entirely devoid of life. The striking image of these seemingly abandoned urban developments is one of the main pieces of evidence cited to support the theory of a Chinese housing bubble. However, academics and journalists who have studied the ghost cities argue that they are anything but forgotten. Shepard (2015) profiles the Chinese ghost cities as nascent urban centres that are still under construction. He argues that often these cities will feature impressive high-rises, but that the trimmings that make such a development habitable have not yet been installed. Examples of such necessities include public transportation and schools. Interestingly, he notes that one of the early social hubs of these communities is often the local Starbucks. Once these are installed, he argues, the ghost cities are quickly inhabited. This process causes some cognitive dissonance for Westerners, who are not accustomed to cities being "built".

Finally, it is important to note, as Glaeser et al (2017) did, that vacancy should not be taken as an indicator that the homes are not in demand. Many of these homes are owned, but were purchased only as an investment, and not for occupation. That said, the value of a home is ultimately driven by its offering shelter to inhabitants. Even speculative movements in the market are aimed toward predicting the future price that people are willing to pay for a roof over their head. If prices outpace the demand for purely speculative reasons, this represents a divergence between the fundamental value of the home and the market price. This is the essence of a mispricing.

Longevity of Housing Projects

One factor which suggests that Chinese residential real estate should be valued at a lower rate of income than that of Western cities is that Chinese homes are not intended to stand for as long as those of the West. In fact, Deputy Minister of Housing and Urban-Rural Development, Qiu Baoxing, commented that the average Chinese building was intended to stand for just twenty-five to thirty years, far lower than the average expectancy of seventy-four years in the United States. (S. Li 2014) This implies that, ceteris paribus, a home in Shanghai should be valued at a steep discount from the price of a comparable home in a New York. In other terms, its affordability should be much higher.

The assumptions that go into this argument are too broad to directly compute an affordability index that defines the appropriate price level in China. However, the broad implication is that housing prices should reflect the incredibly short longevity for which it is intended. This should hold true for people who buy for speculative reasons and for people who purchase a home with intent to reside. In both cases, the value derived from the home is based on its potential to provide shelter for an inhabitant, whether or not that person is the owner, and regardless of whether the home is actually occupied at that time. Put simply, the value of a home should be based on its practical utility. As such, a home which stands for less time provides fewer months of rent for a speculative buyer, or months of shelter for a resident. Regardless of how the home is used, a shorter lifespan corresponds to a lower fundamental value and a smaller price tag in a well-functioning market.

The legal environment surrounding real estate in China also plays a significant role in the market. Most salient is the fact that all land in China is owned by the government. When a developer undertakes to build a residential building, they first obtain land-use rights from the local government for a certain fee. In the case of residential land-use, the rights can last up to 70 years. (Shepard 2015) The economic implications of such a legal framework are profound.

One large impact is that the value of the real estate that a person "owns" is not guaranteed to rise, even in a stable market. In most Western countries, real estate is considered an "investment" on the part of the owner, since it is a large purchase that is reasonably expected to either retain or increase its value. However, in the case of China, as a land-use permit matures, the clock counts down on the rights it affords the owner. In this way, it is much like a typical real estate lease in Canada. The value of such a lease declines over time, as the commitment of the lessee to the lessor dwindles. However, the value of a land-use permit is not guaranteed to decline over time, provided that the increase in the underlying value of the property rises to offset the amortisation of the permit over time.

As such, the eventual expiration of the land-use permit must play into the value of a home, and as a result, the affordability (price-to-income ratio) of a house or apartment in, say, Beijing should be higher than that of a comparable house or apartment in, say, New York, all else being equal.

Monetary Policy Factors

A striking feature of the Chinese economy in recent years has been a sustained credit boom (Chen and Kang 2018). In fact, in the past 10 years the average discount rate for China has been 3.14 percent. (Federal Reserve Bank of St. Louis 2018) While this may appear relatively high in light of the near-zero benchmark rates of the US and Canada, this rate still represents a markedly expansionary policy compared to the prior decade which featured much higher rates, up to the 8.55 percent mark. Such expansionary monetary policies can easily have an impact on the investment behaviours and prices of large long-term investments (like housing) in the country.

In fact, Qi and Cao (2007) found a causal link between Chinese monetary policy moves and home prices in the country. Therefore, a low prevailing interest rate in China has several impacts that result in a drive to invest in housing. The first result is that mortgages are relatively cheap, and therefore Chinese people see an opportunity to make investments in homes, regardless of whether they intend to live in the home or if it is simply a financial asset to them. This in turn can lead to a market that involves relatively unsophisticated investors, who do not recognize that the current interest rate environment is transient, are not equipped to explore the implications of vacancy rates on their market power, and are not in a position to determine the impact of the home's longevity on its fundamental value. Shepard (2015) provides ample anecdotal evidence that describes Chinese teachers, workers, and young professionals purchasing homes in other cities and regions from where they live, and homes which they have never seen despite owning that home for years. Such evidence suggests that these consumers are making investments about which they are clearly not very knowledgeable.

Shepard argues that this is simply a feature of Chinese society, and that consistently rising house prices are justification for such investments. However, such anecdotes when, consistently uncovered, are evidence that points toward what Galbraith famously dubbed “financial euphoria”, a condition in which belief that prices will lead to ever-growing investment in an asset resulting in an upward spiral of that draws asset prices well beyond their underlying values (Galbraith 1994).

Determination on Mispricing

Despite Shen’s (2012) insistence that the Chinese ratio of home prices to permanent income is in line with China’s Western counterparts, one simply cannot be confident that the Chinese housing market is priced efficiently. Scholarship has often argued that the Chinese housing market’s idiosyncrasies mean that high price-to-income ratios could be justified. However, upon exploring those idiosyncrasies, as I have done above, one arrives at the conclusion that such features suggest that Chinese housing market should be more affordable than those of Western economies, not less. This paper does not attempt to quantify the impact that such factors have on the market, and therefore will not attempt to estimate the appropriate price levels or the degree to which homes are mispriced in China. Moreover, this evidence does not allow us to predict a market correction in the near term, which will be explained in the second part of the paper.

Can We Expect a Crash?

Upon conclusion that the Chinese housing market is mispriced, we must determine what the implications are of this mispricing. The academic literature surrounding the Chinese housing market argues that there is no impending market “crash”. Such arguments are made in light of the recent housing crash in the United States. We cannot expect a violent market correction, in the model of 2008, to deflate home prices suddenly and drastically in China. This is because of several factors explored below, all of which reflect the considerable control that the Chinese government exerts over the flow of capital in the country and the investment projects that are undertaken.

The Formal Financial Services Sector

The Chinese financial services sector is held up by five major state-owned banks. These are the Bank of China (BOC), the Industrial and Commercial Bank of China (ICBC), the Agricultural Bank of China (ABC), the China Construction Bank (CCB), and the Bank of Communications (BCOM). Together, these five banks account for over 50 percent of assets and deposits in the Chinese banking system (Turner, Tan and Sadeghian 2012). Such a concentration in the financial services industry may at first glance seem to expose the economy to more risk. After all, one of the key drivers of the global financial crisis was the United States allowing a few immense banks to control a disproportionate share of the financial markets (Johnson and Kwak 2011). However, the example of Canada in the same crisis suggests that in the case that a few dominant financial institutions are well-regulated and highly diversified, their size can actually help to prop up the market and weather the crisis (Thériault and Burt 2010). The five major state-owned banks in China certainly fit this description, but perhaps not in the way that Canadian banks did in 2007. First, they are heavily influenced by senior members of the Chinese central government through pressures exerted by the Ministry of Finance, the China Banking Regulatory Commission, and the People's Bank of China. Moreover, lending regulations are often crafted to support the Communist party's agenda. For example, the regulators, especially the Ministry of Finance, discourage lending to coal miners, ship builders, real estate developers, and other industries that the government would like to slow down (Turner, Tan and Sadeghian 2012). Conversely, the central government often exerts both formal and informal pressure to invest in industries that it has identified are strategically important, like renewable energy and high-tech. These criteria can be based on patronage or other factors that do not necessarily reflect the expected return on making such investments, which somewhat erodes the argument that the banks are "well-diversified".

This tight control by Beijing also manifests in very high restrictions on lending behaviours by these banks. China's loan-to-deposit ratio of 75 percent is completely unmatched by that of any Western country (Chen and Kang 2018). Moreover, because reserve requirements are monitored daily, banks find it necessary to retain excess reserves representing an average of 1.5 percent of assets (Turner, Tan and Sadeghian 2012). These strict controls have cascading effects. Clearly, bank balance sheets in China are incredibly robust. However, the result of these severe limitations is that banks often look outside of the "traditional" banking sector and pursue riskier off-balance-sheet projects that offer higher returns (Chen and Kang 2018). It also leads to a funneling of funds from the “formal” banking sector into the “informal”, or shadow banking sector.

Shadow Banking

Shadow banking is loosely defined by the Financial Stability Board as “credit intermediation involving entities and activities outside the regular banking system” (Financial Stability Board 2011). In some spheres, shadow banking is understood to be any financing activities outside of standard lending products like mortgages and corporate loans. Elliott et al. identify Chinese shadow banking as encompassing products like microfinance, pawn shops, and wealth management products (like money market mutual funds) (Elliott, Kroeber and Qiao 2015). The shadow banking sector in China draws considerable attention, if for no other reason than that Western economists are mystified by the stranglehold that the Chinese politburo exerts on the financial services sector in the country.

Shadow banking has broad implications for economic stability. Since it operates ‘in the shadows’ with relatively less regulatory oversight, the informal financial services industry is often speculated to be the source of financial crashes. In the case of the global financial crisis, mortgage-backed securities, credit default obligations, and credit default swaps, all products traded as over-the-counter financial products in the US ‘shadow banking’ sector, fuelled the exploding real estate market, then transmitted the shock of the subsequent crash across the entire US financial market. (Johnson and Kwak 2011) As such, it is clear to see that unregulated financial markets can pose a real risk to the stability of a country’s financial markets. This might lend some legitimacy to fears that a price correction in the housing market could lead to a subsequent market crash.

However, does the Chinese shadow banking sector pose such a risk? Elliott et al. argue that it does not. They point out that while the Chinese shadow banking sector is certainly notable, it is positively tame among developed financial sectors, and that Chinese non-bank financial institutions only control assets amounting to 43 percent of GDP. That figure for the US, UK, and the Netherlands was 120 percent, 348 percent, and 760 percent of GDP, respectively (Elliott, Kroeber and Qiao 2015). When put alongside the highly regulated, even regimented, banking sector described by Turner et al., it seems that the Chinese shadow banking sector, with only 24 percent of all financial assets, could suffer a significant market correction without turning the economy on its head.

Government Interventions

One of the defining features of Chinese society is the pervasive influence and control of the Chinese Communist Politburo, which exerts immense influence over all institutions in Chinese society. This influence extends to the economy. For example, the value of the Chinese yuan is closely watched by the Communist party and adjusted regularly through direct and indirect means. This level of management extends to even the housing markets in Chinese cities. Zhang et al. explored the record that the Communist government had for market intervention and found that the party had both an appetite and a talent for housing market policy corrections (Zhang, et al. 2016). In both 2010 and 2011, moves to deflate what were widely suspected to be systemic market mispricings in Beijing and Shanghai were effective, stabilising the housing markets in those cities. Such successes bode well for future stabilising moves made by the party.

Conclusion

The arguments made in this paper draw together to important arguments surrounding the Chinese housing market. Firstly, there is sufficient evidence in the academic literature that the housing market in Chinese cities represents a notable mispricing. Moreover, it is clear that there are a large number of confounding social, legal, and economic variables which make the Chinese housing market entirely unique. However, this paper has highlighted the fact that while these factors do pose a barrier to predicting fundamental home values, they should drive home prices down, rather than up. This serves to validate the opinion of many financiers and economists who look on the Chinese housing market with apprehension. However, as a second consideration, this mispricing does not necessarily suggest an impending crash. This should be determined in light of the short-, medium-, and long-term implication of current market conditions in China. In the short term, market momentum and optimism appear to support existing price levels. In the medium term, high levels of savings and limited investment options mean that Chinese investors have few other places to direct their capital. In the long run, it is reasonable to predict that the Chinese government will take appropriate measures to defuse the market departure from fundamental values.

References

Central Intelligence Agency. 2018. *CIA World Factbook*. October 29. https://

www.cia.gov/library/publications/the-world-factbook/geos/ch.html.
Chen, Jiandong, Ming Pu, and Wenxuan Hou. 2018. *The trend of the Gini coefficient of China (1978-2010)*. SSRN.
Chen, Sally, and Joong Shik Kang. 2018. *Credit Booms-Is China Different?* The International Monetary Fund.
Chen, Stephen. 2017. "Ghost town: developer demolishes over 100 houses unsold for nearly decade in southern China." *South China Morning Post*, June 12.
Elliott, Douglas, Arthur Kroeber, and Yu Qiao. 2015. *Shadow banking China: A primer*. The Brookings Institute.
Federal Reserve Bank of St. Louis. 2018. *Interest Rates, Discount Rate for China*. St. Louis: FRED.
Financial Stability Board. 2011. *Shadow Banking: Strengthening Oversight and Regulation*. London: Financial Stability Board.
Galbraith, John Kenneth. 1994. *A Short History of Financial Euphoria*. New York: Penguin.
Glaeser, Edward, and Joseph Gyourko. 2018. "The Economic Implications of Housing Supply." *Journal of Economic Perspectives* 3-30.
Glaeser, Edward, Wei Huang, Yueran Ma, and Andrei Shleifer. 2017. "A Real Estate Boom with Chinese Characteristics." *Journal of Economic Perspectives* 93-116.
Holz, Carsten A. 2007. "Have China Scholars All Been Bought?" *Far East Economic Review* 36.
Johnson, Simon, and James Kwak. 2011. *13 Bankers: The Wall Streeet Takeover and the Next Financial Meltdown*. New York: Penguin Random House.
Li, Hongbin, Prashant Loyalka, Scott Rozelle, and Binzhen Wu. 2017. "Human Capital and China's Future Growth." *Journal of Economic Perspectives* 25-48.
Li, Shiqiao. 2014. *Understanding the Chinese City*. Sage.
Martin, Michael F. 2012. *China's Banking System: Issues for Congress*. Washington, D.C.: Congressional Research Service.
Neely, Christopher J. 2017. *Chinese Foreign Exchange Reserves, Policy Choices, and the U.S. Economy*. St. Louis: The Federal Reserve Bank of St. Louis.
Noble, Josh. 2015. "Why are China's stock markets so volatile?" *The Financial Times*, July 2.
Qi, Liang, and Hua Cao. 2007. "Property Prices and Bank Lending in China." *Journal of Asian Economics* 63-75.
Shen, Ling. 2012. "Are House Prices Too High in China?" *China Economic Review*.
Shepard, Wade. 2015. *Ghost Cities of China*. London: Zed Books.
Thériault, Louis, and Michael Burt. 2010. "The Financial Sector is Unique and Needs New Standards." In *Crisis and Intervention: Lessons from the Financial Meltdown and Recession*, by The Conference Board of Canada, 56-68. Ottawa: The Conference Board of Canada.
Turner, Grant, Nicholas Tan, and Dena Sadeghian. 2012. "The Chinese Banking System." *Reserve Bank of Australia Bulletin* 53-64.
United States Census Bureau. 2018. *Quarterly Vacancy and Homeownership*

Rates by State and MSA. Washington, D.C.: US Department of Commerce.
Xie, Yu, and XIang Zhou. 2014. "Income inequality in today's China." *Proceedings of the National Academy of Sciences*.
Zhang, Dayong, Ziyin Liu, Gang-Zhi Fan, and Nicholas Horsewood. 2016. "Price bubbles and policy interventions in the Chinese housing market." *Journal of Housing and the Built Environment*.
Zou, Patrick X. W., Guomin Zhang, and Jiayuan Wang. 2007. "Understanding the key risks in construction projects in China." *International Journal of Project Management* 601-614.