



How does sentiment affect returns of urban housing?



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ABSTRACT

Many urbanized housing markets have been overheating over the last two decades, particularly in China. However, little is known about how sentiment affects housing returns, during the dynamic process of urbanization. With this in mind, this study aims to investigate the dynamic effect of sentiment on housing returns in one of the most important urbanized cities in China, i.e. Shanghai. The study creates the buyer-seller sentiment and developer sentiment indexes using principal components analysis, followed by implementing a lag-property return model and VAR model. Evidence suggest that overall the impact of buyer-seller sentiment on housing returns is negative, while that of developer sentiment is positive. Yet interestingly, the influence of sentiment marked a noticeable change within the period under study. Before 2009, both types of sentiment had a positive effect on housing returns in the short run. After that, a higher developer sentiment drove up returns, but a higher buyer-seller sentiment had a low return. This study offers meaningful implications for policy makers in cooling down not only the housing scene of the urbanized city, but also sheds light on other urbanized housing markets globally. More importantly, it contributes to a sustainable urbanization and economic development, while providing home buyers and developers with practical suggestions.

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1. Introduction

The boom and bust of the stock markets during the last two decades has caused heated discussions in academia. Apart from the fundamental analysis, more and more scholars were trying to use investors' psychology and irrational behaviors to explain the volatility in stock prices, i.e. how investor sentiment affects future stock prices. Investor sentiment, as Baker and Wurgler (2007) define, is a belief idea regarding future cash flows and risks in investment which cannot be explained by existing market information. Nevertheless, since it is a relatively new area, the majority of literature are limited to the effect of sentiment on the US stock market (Brown & Cliff, 2005; Lemmon & Portniaguina, 2006; Baker & Wurgler, 2006, 2007; Baker, Wurgler, & Yuan, 2012). On the other

hand, the real estate sector, with an estimated total value of 217 trillion USD worldwide in 2015,¹ has not received as much attention as stock markets when it comes to investor sentiment, despite the fact that a large part of its variations cannot be explained by market fundamentals and rational factors.

This is particularly the case when it comes to the Chinese housing market. Since its reform in 1998, the housing market has gone through a period of rapid development. Housing prices increased at an alarming speed until the 2008 global financial crisis. After that, the housing price has experienced huge fluctuations under the influence of regulation policy and financial crisis. However, in the recent two years, it has continued to surge, against a decelerating trend in China's economy, coupled with plummeting stock prices and different government policy measures trying to curb rampant speculations, especially in the first-tier cities. For example, Shanghai, the economic and financial center of China, whose housing prices kept a rising trend apart from a slight pull-back in 2008 and 2012. Even in last year, housing prices still increased at an alarming speed even though the economy was as good as expected. As shown in Fig. 1, the growth rate of housing price diverged significantly from the growth rates of GDP and income per capita, especially in 2003, 2009 and 2015.

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¹ This data source comes from the report "Around the World in Dollars and Cents 2016" written by international real estate adviser, Savills. http://www.savills.co.uk/research_articles/188297/198667-0.

Previous literature found that market fundamentals are not able to explain the change in housing prices comprehensively. That is, there may have bubbles existing in its housing market (Wong, Hui, Seabrooke, & Raftery, 2005; Jin, Soydemir, & Tidwell, 2014; Shih, Li, & Qin, 2014). So, how does this happen? One explanation for having a bubble is the psychological effect, as investors tend to overreact towards unexpected and dramatic news events (De Bondt and Thaler, 1987), which in turn lead them to make some irrational investment decisions, thereby affecting assets prices substantially. This resembles the situations described in Nobel laureate Robert Shiller's famous book, "irrational exuberance", that the true value of the market is difficult to compute as the investors rely on many psychological factors for assets valuation. In other words, "irrational exuberance" raises asset prices above fundamental values. These studies have laid the foundations for the study of investor sentiment (i.e. buyer-seller sentiment), which is one of the most important factors that lead to the volatility in the stock market and also the mispricing of housing assets.

Nonetheless, as real estate development involves both the housing market and the land market, a study of sentiment in housing markets is not considered comprehensive if only the buyer-seller sentiment is investigated. Instead, both buyer-seller sentiment and developer sentiment (i.e. land market sentiment) should be explored. Also, is it possible that the market sentiment effect alters as time goes by? And is there any difference between the effect of buyer-seller sentiment and developer sentiment on the housing market?

To address these questions and fill the research gap, this paper aims to investigate the dynamic effect of market sentiment on housing returns, based on the data from Shanghai from January 2006 to July 2016. To be specific, extending from Baker and Wurgler (2006, 2007, 2012)'s work in the stock market, this paper uses principal component analysis to compose the buyer-seller sentiment and developer sentiment indices for Shanghai's housing market. Then, by implementing a lag model and VAR model, this paper investigates the dynamic effect of market sentiment (buyer-seller sentiment and developer sentiment) on future returns in two different housing markets (namely, newly-built and second-hand), as well as the relative roles of fundamentals versus sentiments played in newly-built and secondary housing market returns.

The remaining of the paper is set out as follows: Section 2 gives a literature review. Section 3 demonstrates how to generate a buyer-seller sentiment index and developer sentiment index. Section 4

establishes our model and explain data resources. Section 5 presents the empirical analysis and discusses the main findings. Section 6 is the conclusion.

2. The research framework

2.1. Literature review

Previous literature in behavioral finance suggests that the mispricing of assets is the result of the activities of sentimental and irrational traders and sentiment-free rational arbitrageurs (De Long, Shleifer, Summers, & Waldmann, 1990). However, as arbitraging against irrational investors is both costly and risky (Shleifer & Vishny, 1997), rational arbitrageurs are unable to render the prices of mispriced asset back to its intrinsic values. A growing number of relevant studies (Brown & Cliff, 2005; Schmeling, 2009; Lemmon & Portniaguina, 2006; Gao & Suss, 2015) have attempted to explore the influence of investor sentiment on asset value in recent years. A classical paper by Baker and Wurgler (2006), demonstrated the construction of the investor sentiment index for the US stock market based on six relevant proxies and then examined how investor sentiment predicted stock returns. Their finding showed that higher investor sentiment was followed by lower stock returns. Baker and Wurgler (2007), in their subsequent study, investigated the type of stocks that were mostly affected by investor sentiment. Using a "top-down" (or macroeconomic) approach, they found that speculative and difficult-to arbitrage stocks were more likely to be subject to the influence of investor sentiment. Later, Baker et al. (2012)'s study on six major international stock markets revealed that both global and local sentiment were negatively correlated with country-level returns, and that global sentiment was formed as sentiment spreads across markets via private capital flows.

Different from the stock market where the housing market is much more illiquid with higher transaction cost, housing price cannot respond to the changes of information as quickly as stock price. As Baker and Wurgler (2006) suggested, assets with limit arbitrage were prone to be influenced by sentiment more easily. In behavioral finance area, housing markets have not received as much scholarly attentions as capital markets do. Comparatively, few studies looked into either the real estate market or the securitized real estate market. Clayton, Ling, and Naranjo (2009) employed a direct survey and created a sentiment index to

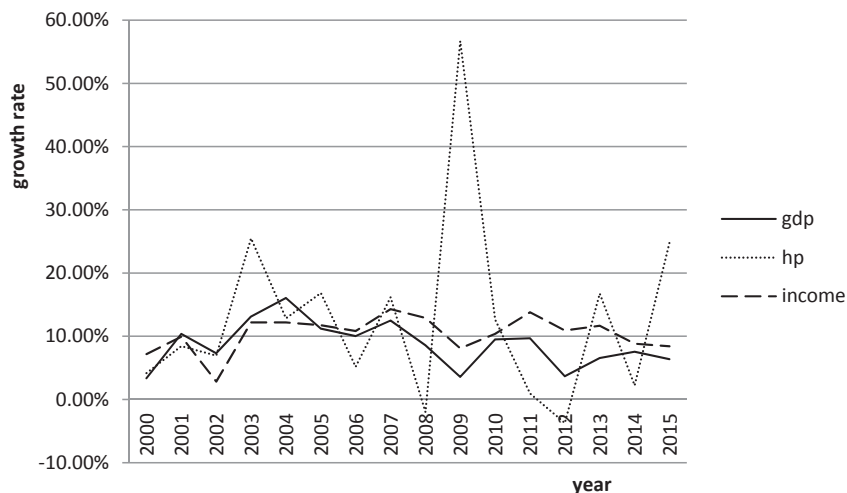


Fig. 1. Growth of housing price, GDP per capita and income per capita from 2000 to 2015.

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