Universe Scientific Publishing

On the Fluctuation of Real Estate Market and Financial Stability

Jianhui Wang

Shanghai Lixin University of Accounting and Finance 201620

Abstract: For a long time, real estate and finance contain and influence each other. The development of real estate is inseparable from the support of funds. The size of real estate sales is related to the financial interest rate, and the development of real estate is inseparable from the support of credit from financial institutions. In turn, financial stability affects the development of real estate. This paper discusses the factors affecting the fluctuation of real estate price, and then considers the impact of the rise or fall of real estate price on financial stability. Finally, we use the probability system above mathematics to analyze the relationship between the fluctuation of real estate market and finance.[1]

Key words: Real estate; Market fluctuations; Financial stability

1、Introduction

Since the reform and opening up, China's real estate industry has gradually become a giant in the financial sector, but the development and development of real estate is not very stable. Its stability may lead to the outbreak of financial crisis in the whole country or the world. For example, the global financial crisis that began in the United States in 2008 will then affect the world. This suggests that the stability of our financial market has a great relationship with the fluctuation of the real estate market, so the real estate price cannot be too high or too low. Although China has a large land area, it has a large population, so the per person land area is small. Therefore, this has created the imbalance between the real estate market and the financial market.[2]

2、Influencing factors of real estate price fluctuation

2.1 Market supply

Market supply and demand will have an impact on real estate price fluctuations. Assuming that the market demand remains unchanged, if the market supply is greater than the demand, that is, the supply exceeds the demand, the real estate price will decline; If the market supply is less than the demand, that is, the supply is less than the demand, then the real estate price will rise; Real estate investment cost and investment amount will affect its supply. On the contrary, if the market supply remains unchanged, that is, the supply remains unchanged, and the demand of the real estate market continues to rise, that is, when there is a phenomenon of short supply, the price of real estate will naturally rise. Similarly, if the market supply remains unchanged and the demand decreases, that is, when there are redundant houses, the real estate price will naturally decline.

2.2 inflation

If inflation is sudden and prices rise rapidly without any warning, it will lead to the phenomenon of rush buying in the market, and there will be a vicious cycle of rising prices. For real estate, if real estate prices suddenly rise, then there will be a lot of bubbles in the later stage. Of course, if the price rises step by step, it has little impact on the price of the real estate market.

2.3 exchange rate

Most people who buy a house pay a part of the deposit first, and then buy a house with a monthly loan. If the economic development is good and the bank loan interest rate is gradually rising, the interest required to pay for the loan will increase, and the real estate operation cost is also increasing, which will lead to the depreciation of the RMB.

3、Mechanism of real estate price affecting financial stability

3.1 Rising real estate prices

3.1.1 direct influence

If the real estate price continues to rise, it will directly affect the increase of the proportion of real estate loans in all asset businesses. If the real estate price is false, the bank credit time will become longer and longer, which will have a negative impact on the stability of the financial system itself. On the other hand, if real estate prices continue to rise, real estate developers will aim to obtain more benefits and put more funds on investment. If you can›t get enough loans from commercial banks, real estate developers will get enough funds through other channels, such as non-governmental organizations. If the later real estate developers make enough money, the savings funds of commercial banks will flow out one after another.[3]

3.1.2 Indirect influence

If real estate prices continue to rise, similarly, the interests of consumers will be more and more. There are two ways for consumers to obtain benefits. On the one hand, they appropriately improve the consumption level, on the other hand, they mortgage the benefits to financial institutions and make loans when necessary. Then, the risk of real estate price fluctuation will transfer to financial institutions. On the other hand, real estate prices will affect the allocation of resources. If the real estate price rises, the market price will gradually become false.

3.2 Real estate prices fell

If real estate prices fall, the wealth accumulated by real estate developers, that is, consumers, will be reduced and market stability will be hindered. The premise of real estate development is closely related to banks. If there is an impact on banks from the outside, bank loans will be reduced step by step, and banks› investment in real estate will be greatly reduced. If real estate developers do not have enough funds, the price of real estate will decline rapidly, resulting in a large number of buyers, Then the house will be in short supply, which will affect the financial stability.

4、Mathematical analysis of the impact of real estate market on financial stability

Under the limited conditions of the real estate market, when we are uncertain about the three conditions of investors, real estate developers and finance, we discuss the factors of rising and falling house prices according to the psychological situation and reality of all personnel. In order to facilitate research, we do not consider the second-hand housing market here, but only think from the perspective of buyers.[4]

We might as well assume that there are n buyers in the real estate market. When each buyer makes a decision to buy a house, there is a house purchase price in his heart, that is, the reference price. Psychological reference price is a price that buyers pay for the real estate industry according to the current cash value, depreciation rate and other factors. If we assume that the buyer’s psychological reference price is, then the distribution function of the buyer’s psychological reference price is F()。 Only when the psychological reference price of the buyer is higher than the current market price, that is, it does not exceed the budget, the buyer will make a purchase decision. Generally, buyers will pay half the price of the house through a commercial bank loan. In order to unify the variables, we assume that buyers can only buy houses through bank loans. The amount of loans provided by commercial banks to each purchaser is marked as L,

Then, through calculation, we can conclude that the total demand of the real estate market is,

$D=P(\geq P)*N*L=(1-F(P))*N*L$

This formula is based on the fixed supply of real estate in the short term, that is, S=Q*P. as can be seen from the questions=D, that is, Q*P=(1-F(P))*N*L

Thus, the house price mainly depends on the demand of the real estate market.

According to the data and combined with the reality, it can be obtained that the psychological reference price of real estate buyers is related to the market price of real estate in the short term. However, because buyers have herd mentality, the probability of buyers' psychological reference price service obeys the normal distribution.

P（≥P)=1-F()=1-

Combine the above formula with (1-F(P)) and substitute it to obtain Q*P=(1-F(P))*N*L,

That is,（1-）*N*L= Q*P

Taking the first derivative of the above formula, we can get the following formula

-*N*L*+（）*N=Q*

As can be seen from the equation>0

From the above analysis, we can draw the following conclusions,

When the buyer's access to bank funds continues to increase, the real estate price will rise accordingly with the price given by the bank. Due to the inner conformity psychology of buyers, in addition, with the rise of house prices, the psychological reference price will gradually rise with the market price.

If within a certain period of time, the bank's loan amount to the buyer is certain, then we take the first-order derivative of the time when

P（≥P)=1-F()=1- ,Then there -f(p--)(-) *N*L=Q*

We can get the result by deriving t again

/∂=

From the previous formula, The sign of /∂,or /∂<0 depends on p-- symbols for.

When p<+ ,then p--<0, and the second derivative of the formula has /∂>0, so the real estate price will gradually rise with the passage of time.

But his first derivative >0, so the total market demand P will gradually rise, gradually smaller, once p>+, then p-->0, second derivative of formula /∂ Will be less than 0, that is, the real estate price will decline after rising to a certain stage.

And when p=+ ,then p--=0. At this time, the real estate is an inflection point from rising to falling. This indicates the fact that when the house price just rises, the herd mentality of investors makes the house price rise higher and higher. Then when the house price falls, investors return to rationality and the psychological reference price of buyers' changes. House prices fell sharply after rising, which shows that observing the rising speed of house prices can predict the future trend of house prices.

From this formula, we can also draw the following conclusion: after the real estate price begins to fall, buyers are mostly on the sidelines. Therefore, when there are too many people on the sidelines, house prices will fall rapidly. After a period of time, the decline of house prices will slow down. When it falls to a certain extent, it will not fall again after reaching the value developed by real estate developers, and then the house price will rise.

5、 Conclusion

The real estate price is related to the price given by the bank to the developer. If the real estate price given by the bank is insufficient, the real estate developers can›t start construction if they can›t get corresponding help in social assistance. The psychological reference price of the buyer is also related to the bank. If the bank gives the buyer enough money, the psychological reference price of buyers will rise. Otherwise, the psychological reference price will fall. The psychological reference price of buyers is also closely related to the real estate price. When the real estate price just began to rise, people›s herd mentality will speed up people›s purchase, so the house price will be higher and higher.

When the house price just fell, people›s wait-and-see mentality will make the house price fall again until the lowest. Therefore, we should reasonably adjust the number of bank loans and changes in house prices.[5]

Reference

[1] Tian Li. Research on the relationship between real estate price fluctuation and regional financial stability in Henan Province [D]. Zhengzhou University, 2018.

[2] Dong Xiaoyu, Li Xingye. Study on the correlation between real estate cycle fluctuation and financial stability [J]. China business theory, 2014, 000 (09z): 99-100.

[3] Li Xiaoxuan. Analysis of the impact of real estate price fluctuation on financial stability [J]. New business week, 2019, 000 (011): p.113-113.

[4] Xiang Yintao. Bounded rationality, real estate market volatility and financial stability [J]. Shanghai finance, 2011, 000 (006): 20-27.

[5] Lin Pu. Study on the impact mechanism of real estate price fluctuation on regional financial stability [J]. Financial economy, 2007, 000 (009): 142-143.