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Empirical Discussion on the Coordinated Development of China's Real Estate Market and National Economy

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***ANSTRACT**: With the gradual acceleration of the market development of China's real estate industry, research on real estate and the national economy has gradually deepened in recent years. As a key pillar industry of China's national economy, China's real estate industry has greatly promoted the rapid development of the national economy. Based on HP filtering and cointegration analysis, this paper calculates the equilibrium price level of real estate and demonstrates the fluctuation of real estate prices from equilibrium prices. It is concluded that the deviation of the price of China's real estate market is only affected by some regions, that is, there is a "partial bubble". In order to further describe the interaction between the real estate market and the macro economy, it has been found that the impact of real estate investment has a long-term impact on economic growth, and the pulling effect on related industries is relatively large.*

***KEYWORDS**: real estate market; national economy; coordinated development*

1. Brief introduction of real estate market and national economic relations

As an emerging industry, the real estate industry plays an important role in China's economic development. Since the Chinese government proposed to develop housing construction into a new economic growth point, it has intensified the reform of the urban housing system[1]. Therefore, on the one hand, the real estate industry, which is mainly based on housing construction, has played an active role in stimulating economic growth and expanding employment. On the other hand, the rapid development of the real estate industry has also benefited from the sustained

and rapid growth of the national economy and residents. Increased disposable income and accelerated urbanization. As the real estate industry continues to improve its position in the national economy, the interaction between the real estate cycle and the economic cycle becomes more and more obvious. Therefore, it is particularly important to grasp the relationship between real estate investment and the economic cycle from a macro perspective[2].As the basic factor of social production and people's life, real estate development speed should also match the growth rate of residents' income and consumption. The health and stability of the real estate market is not only a development problem of an industry, but also related to the national economy and people's livelihood and the welfare of the people. However, in recent years, the rate of increase in real estate investment and real estate prices is significantly higher than the growth rate of the economy and residents' income and consumption. Therefore, whether the real estate investment is overheated and whether there is a bubble in the real estate market has not yet been determined[3]. In order to study whether the rapid growth of China's real estate industry is reasonable at this stage and whether it is coordinated with China's economic development, this paper uses the data as of the third quarter of 2017 to empirically analyze the interaction between the real estate market and the national economy, in order to correctly analyze the real estate market. The coordinated development relationship with economic growth provides a scientific basis.

2. Real estate equilibrium price and fluctuation analysis

2.1 Theoretical Analysis of Factors Affecting Real Estate Price

Real estate is not only a consumer product and a production factor, but also an investment product. Together with securities and monetary funds, it constitutes the main assets held by residents. As the special nature of investment products, real estate prices, like financial assets, will experience dramatic fluctuations.

Based on the micro perspective, real estate prices are determined by the demand and supply in the market. Usually demand can be divided into consumer demand[4], investment demand and speculative demand. Consumer demand refers to the demand caused by people buying homes for their own living. It is usually related to

people's income, wealth, and population growth in the area. Investment demand refers to the need to purchase a house for rent and expect to receive a return from rental income. If the rate of return on rent is lower than the interest rate, people will deposit the money into the bank without investing. Speculative demand means buying a house, hoping to change the house price, buy and sell a house, earn a difference, and earn income. If there is excessive speculation in the market, real estate prices will start to brew at the same time as the rapid growth, and the bubble will eventually burst.

Based on the analysis at the macroeconomic level, a country's economic growth means the expansion of the country's economic activity capacity, on the one hand[5], increasing the demand for commercial housing; on the other hand, as the economy grows, the income of residents increases, thereby increasing Demand for residential housing. At the same time, economic growth is bound to accelerate the urbanization process, which ultimately leads to an increase in demand for real estate. . In theory, the price of the real estate industry should maintain a long-term equilibrium relationship with various macroeconomic indicators that reflect the level of economic development. Therefore, this paper will study the impact of macroeconomic changes on real estate prices from the cointegration theory.

2.2 Establishing the real estate price co-integration equation

Based on the Hendry scholar modeling theory, this study first establishes the most general model and considers the factors that affect the real estate price. It gradually eliminates the obviously insignificant variables and reduces the model into a variable and parameters[6]. The thrifty model is finally tested on the model and the co-integration test is performed on the equation to avoid the pseudo-regression problem in the traditional econometric model. According to economic theory and data availability. This paper selects the sales price of commercial housing (P, yuan / square meter) on behalf of real estate prices as the explanatory variable, gross domestic product (GDP), five-year loan interest rate (R), money supply (M1), disposable income of urban residents (IR) and other indicators as explanatory variables, using the data from the first quarter of 1995 to the third quarter of 2005 to establish the following cointegration equation:

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$$In(P_t) = 3.07 + 0.54 \times In(GDP_t) + 0.51 \times In(IR_t) - 0.42 \times In(M_{it}) - 0.01 \times R_t + \hat{U}_t \quad (1)$$

$$\hat{U}_t = 0.93 \times \hat{U}_{t-1} - 0.53 \times \hat{U}_{t-2} + e_t \quad (2)$$

Available R=0.995, D.W.=1.67

Since there is sequence correlation in (1), the AR(2) model is used for correction, and the LM test after correction indicates that there is no sequence correlation. The unit root test is carried out on the residual et, and the result is stable, indicating that there is a long-term equilibrium relationship between the real estate price and the above-mentioned main economic variables. According to formula (1), it can be seen that for every 1% increase in GDP, real estate prices rise by 0.54%; for every 1% increase in urban residents' income, real estate prices rise by 0.51%. The impact of money supply and interest rates on real estate prices is negative. For every 1% increase in money supply, real estate prices fall by 0.42%.

2.3 Real Estate Equilibrium Price and Volatility Analysis

In order to get a balanced real estate price, it is necessary to use the long-term trend of various factors of economic fundamentals to portray. In this paper, H-P filtering is used to obtain the long-term trend of each index (represented by the superscript hp), and the real estate equilibrium price equation similar to equation (1) is reconstructed:

$$In(P_t) = 3.07 + 0.54 \times In(GDP_t) + 0.51 \times In(P_t^{hp}) = 2.34 + 0.74 \times In(GDP_t^{hp}) + 0.80 \times In(IR_t^{hp}) - 0.73 \times In(IR_t^{hp}) - 0.02 \times In(IR_t^{hp}) + \hat{u}_t \quad (3)$$

$$\hat{U}_t = 2.21 \times \hat{U}_{t-1} - 1.59 \times \hat{U}_{t-2} + 0.33 \times \hat{U}_{t-3} + e_t \quad (4)$$

Available R = 0.99, D.W. = 2.08

According to the economic fundamentals variable at the right end of formula (3) above, the equilibrium price of real estate can be obtained, recorded as PE (see Figure 3), and the degree to which the real estate price deviates from its equilibrium price is calculated (see Figure 4).

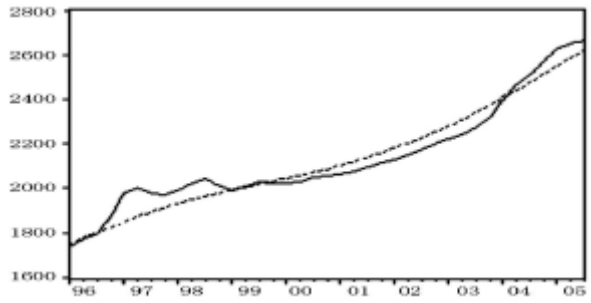

Figure 3 Real estate prices and equilibrium prices

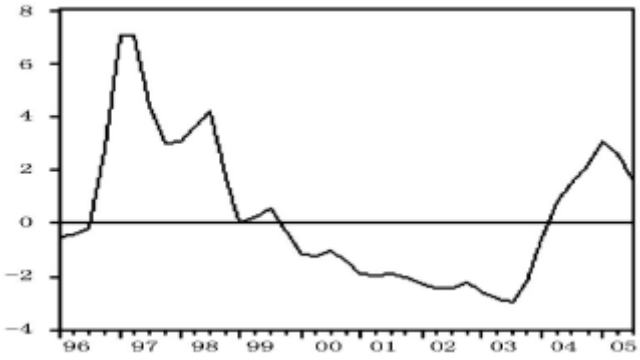

Figure 4 Real estate prices deviate from the equilibrium price of real estate

According to the above, we can find that the first stage above the equilibrium price is due to the fact that China's real estate market has broken the welfare housing for many years, monetized housing, commercial housing distribution has begun to be marketized, and long-term backlog of consumer demand has been released, making demand in the market increase. So that the real estate prices rose. The second stage above the equilibrium price is consistent with the development of the entire macro economy. As the economic situation develops well, people are optimistic about the future income and prospects, which will inevitably stimulate the demand of the real estate market, while the supply of the real estate market is lagging. Inevitably, the real estate price is higher than the equilibrium price. From the fourth quarter to the first quarter, real estate prices are lower than the equilibrium price. This is mainly due to the impact of the Asian financial crisis. China's economy and even the global

economy are developing slowly. In addition, the real estate market in some neighboring countries is affected by the Asian financial crisis. Impact, there are varying degrees of foam rupture. Therefore, due to various factors, China's real estate prices are lower than the equilibrium price.

2.4 There is a partial bubble in China's real estate market

Based on the above-mentioned national starting point, consider the real estate price changes. After consulting relevant data, it was found that the average price in the country has been rising. The price of Beijing has declined slightly in the period of stability. However, the real estate price in Shanghai has been rising rapidly as the trend of national prices. Moreover, the slope has increased significantly since 2012. Large, that is, the price increase in each year has increased significantly. This shows that the Beijing real estate market is relatively mature, and real estate prices are gradually reasonable but there is still a bubble. In summary, the deviation of China's real estate market price is only affected by some regions, that is, there is a “local bubble“. Therefore, the government should adopt a macro-control policy that treats differently to ensure the harmonious development of the real estate market.

3.Conclusion

This paper uses the real estate equilibrium price model to conclude that they are mutually pulling and mutually restrained. With the continuous improvement of the market economic system, the interaction between them is getting stronger and stronger. At present, the real estate price is higher than the equilibrium price, but the existence of the bubble is partial. Therefore, the regulatory policies should be adopted to ensure the coordinated development of the real estate market.

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