

Research on the Relationship between Exchange Rate Change and Commodity Housing Price

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Abstract

After the reform of the RMB exchange rate formation mechanism in July 2005, the RMB exchange rate fluctuated sharply and the real estate price skyrocketed. This paper describes the characteristics of RMB exchange rate and real estate price fluctuation since RMB exchange rate reform in 2005, analyzes the transmission mechanism of RMB exchange rate affecting real estate price, analyzes the relationship between RMB exchange rate change and real estate market price in China, and puts forward some suggestions to stabilize RMB exchange rate and regulate real estate market.

Keywords

RMB exchange rate, real estate, transmission mechanism.

1. Research Background

Since 1998, China has officially entered the period of housing allocation monetization, the real estate market continues to boom, and the housing price rises steadily. Since 2000, China's asset class has been growing rapidly, making it the largest in real estate and the largest share of population in asset allocation. Over the past 10 years, China's property prices have risen by an average of 9% a year. At the same time, the government work report from 2010 to 2012 all intensified the regulation of the real estate market, and issued supporting policies. China's real estate market is undergoing the most stringent macro-control in history. Along with rising property prices has been the appreciation of the renminbi against the dollar. Since the "exchange rate reform" in July 2005, the renminbi has no longer been pegged solely to the us dollar, but has moved to a more flexible and managed floating exchange rate regime. Since the reform of the RMB exchange rate, the nominal effective exchange rate of the RMB has appreciated by 45.87% and the real effective exchange rate by 56.15%. In August 2015, the central bank improved the quotation mechanism of RMB central parity. The announcement, to a certain extent, to increase the flexibility of the yuan exchange rate.

The Chinese economy has now entered a new normal. The so-called "new normal" is a comparison with the past normal. Today, China's economic growth rate averages about 10 percent a year, known as the "economic miracle." On the other hand, the problems of unbalanced economic structure, inefficient utilization of resources, unequal income distribution and environmental pollution are becoming more and more prominent. To move towards the new normal and bid farewell to the "economic miracle" of the past, we mainly rely on two aspects of transformation: one is the transformation of the economic growth model. The political model that relied on investment and export growth, with more resources, is no longer sustainable, and has shifted to a growth model dominated by domestic demand and mainly productivity. The second is the challenge of the middle-income trap. Now that the labor market has gone from surplus to scarcity, wages continue to rise and the cost of other inputs, including energy, land and capital, has risen or is about to rise, which means the loss of competitiveness of labor-intensive and low-value-added industries. To maintain the high growth rate of China's economy, we must upgrade and transform industries. For the new

normal, first of all, it is necessary to change the mode of economic growth from the traditional dependence on real estate and energy and other industries with high energy consumption to the emerging industries.

In the context of economic globalization, the relationship between each country and each market is getting closer and closer. The changes in the market of any one country will affect other markets. The real estate industry is known as "second finance". This is determined by the special nature of the real estate industry itself. The real estate industry not only combines the nature of consumer goods, but also includes the nature of investment goods. This shows that the development of the real estate industry will be restricted by the country's macroeconomic and real estate policies. At the same time, a large number of foreign investors saw profit opportunities in the real estate industry and poured large amounts of money into the real estate market, which further intensified the impact of the foreign exchange market on the real estate market. In addition, the RMB exchange rate is one of the main factors affecting foreign trade, while the real estate industry has a strong industrial driving effect, both of which have an impact on the national economy through different mechanisms. Therefore, it is of great practical significance to study the impact of RMB exchange rate fluctuations on real estate prices. The purpose of this paper is to use the latest statistical data, from the perspective of long-term economic development, comprehensively investigate the impact of exchange rate fluctuations on domestic commercial housing sales prices.

2. Theoretical Basis

2.1. Foreign Exchange Rate

Foreign exchange rate refers to the rate at which one country's currency is converted into the currency of other countries. Under the condition of open economy, exchange rate, as a lever to adjust the national economy, is one of the most important policy tools in the financial field. The change of exchange rate will have a great impact on a country's economy. The higher the degree of integration between a country and the world economy, the more significant the impact of exchange rate will be. There are many methods of dividing the exchange rate, such as nominal exchange rate and real exchange rate, spot exchange rate and forward exchange rate, official exchange rate and market exchange rate, bilateral exchange rate and multilateral exchange rate. Next, we introduce the real effective exchange rate mainly used in our article from the perspective of the most basic nominal exchange rate and real exchange rate.

2.2. The Nominal Exchange Rate

The nominal exchange rate is a monetary concept that measures the relative prices of two currencies. It represents the relative prices of two currencies. It is an exchange rate directly observed in the daily economy. The exchange rate we usually refer to in our daily life is the nominal exchange rate.

2.3. The Real Exchange Rate

The real exchange rate is the exchange rate after price adjustment for the nominal exchange rate. It is a general measure of the prices of goods and services in one country relative to the prices of goods and services in another country. It is the relative prices of goods and services in two countries. The real exchange rate is divided into bilateral real exchange rate and multilateral real exchange rate.

3. Data Source and Analysis

3.1. The Following Table Shows the RMB/Usd Exchange Rate and Commodity Housing Price Data in the Past 20 Years

Table 1. exchange rate and the average price of commercial housing

Indicators year	RMB/usd exchange rate (usd =100)(yuan)	Average selling price of commercial housing (yuan/square meter)
2016	664.23	7476
2015	622.84	6793
2014	614.28	6324
2013	619.32	6237
2012	631.25	5790.99
2011	645.88	5357.1
2010	676.95	5032
2009	683.1	4681
2008	694.51	3800
2007	760.4	3863.9
2006	797.18	3366.79
2005	819.17	3167.66
2004	827.68	2778
2003	827.7	2359
2002	827.7	2250
2001	827.7	2170
2000	827.84	2112
1999	827.83	
1998	827.91	
1997	828.98	

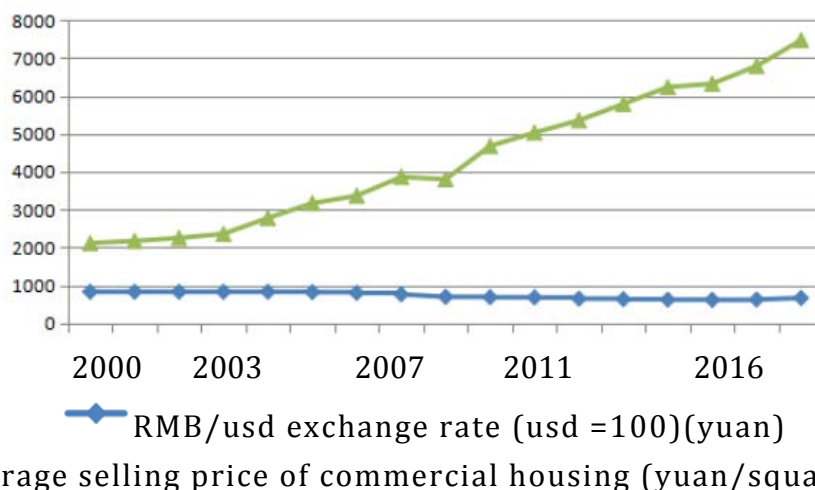


Figure 1: Broken line chart of exchange rate and average price trend of commercial housing

3.2. Data Analysis

3.2.1. According to Table 1, Make a Table of RMB Exchange Rate and the Change Range of the Average Price of Commercial Housing:

Table 2: the change range of RMB exchange rate and the average price of commercial housing

Indicators year	RMB/usd exchange rate (usd =100)(yuan)	Devaluatio n	Average selling price of commercial housing (RMB/m2)	Increase in average selling price of commercial housing
2000	827.84	0.00%	2112	0.00%
2001	827.7	-0.02%	2170	2.75%
2002	827.7	0.00%	2250	3.69%
2003	827.7	0.00%	2359	4.84%
2004	827.68	0.00%	2778	17.76%
2005	819.17	-1.03%	3167.66	14.03%
2006	797.18	-2.68%	3366.79	6.29%
2007	760.4	-4.61%	3863.9	14.77%
2008	694.51	-8.67%	3800	-1.65%
2009	683.1	-1.64%	4681	23.18%
2010	676.95	-0.90%	5032	7.50%
2011	645.88	-4.59%	5357.1	6.46%
2012	631.25	-2.27%	5790.99	8.10%
2013	619.32	-1.89%	6237	7.70%
2014	614.28	-0.81%	6324	1.39%
2015	622.84	1.39%	6793	7.42%
2016	664.23	6.65%	7476	10.05%

3.2.2. Make a Line Chart of RMB Exchange Rate and the Average Price of Commercial Housing According to the above Table:

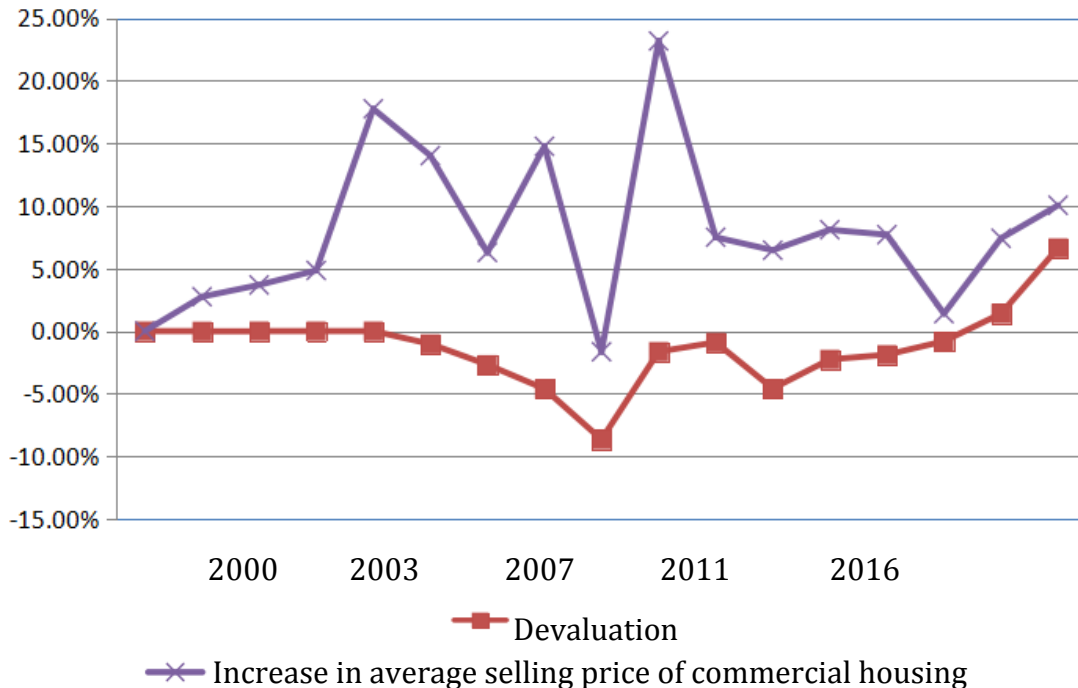


Figure 2: Break-line diagram of the change of average price of commercial housing

As can be seen from the above figure, from 2008 to 2009, the depreciation of RMB exchange rate increased, and the change of housing price also increased significantly at the same time, indicating that the RMB exchange rate has a strong correlation with the sales price of commercial housing. From 2010 to 2016, the exchange rate of RMB against the us dollar rose significantly, and the overall price of commercial housing also changed accordingly. According to the exchange rate of RMB against the us dollar and the change of house price, the corresponding XY scatter chart is made (see figure 3).According to the distribution of points in the scatter diagram, it is assumed that the exchange rate between RMB and us dollar is linearly related to the selling price of commercial housing. The linear regression model is: $Y=\beta X_1+C$,Where Y is the exchange rate between RMB and us dollar, represents the estimated value of regression coefficient, X1 is the selling price of commercial housing, and C is a constant term. The linear regression model shown in figure 3 can be obtained: $y = -18.603x + 17861$.

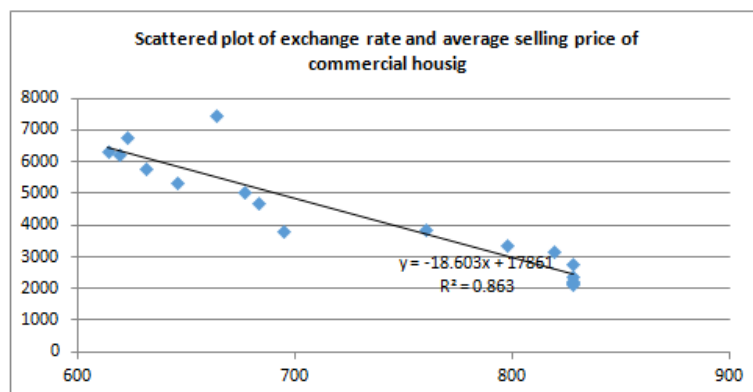


Figure 3: Scatter plot of exchange rate and average price of commercial housing

From the linear regression shown in FIG. 3, it can be seen that, $\beta=18.603$, $C=-17861$, $R^2=0.863$, in which $R^2>0.8$ indicates that the exchange rate of RMB/usd in the model is highly correlated with the sales price of commercial housing.

4. Summary and Suggestions

4.1. Summary

According to the regression model constructed from the time data from 2000 to 2016, the specific quantitative relationship is shown as follows: when the exchange rate of RMB against the us dollar rises by 1 unit, the sales price of commercial housing in China declines by 18.603. The above data shows that the RMB exchange rate has a strong influence on the selling price of commercial housing. Generally speaking, the RMB exchange rate depends on market supply and demand, basket currency and stable demand. With a large trade surplus and strict capital controls, there is no basis for a significant depreciation of the renminbi. The impact of exchange rates on property prices is also limited. On the contrary, under the current policy framework, the interest rate cut by the central bank will lead to the depreciation of the RMB and the appreciation of the housing price, showing the reverse trend. The positive correlation between exchange rates and house prices becomes more pronounced only when the capital account becomes more open. In addition, there are two factors to consider in total. First, the policy interest rate level of monetary policy. If the central bank cuts interest rates, there will be downward pressure on the exchange rate and house prices will regain support. Second, the degree of capital account openness. If companies and residents are gradually allowed to hold overseas assets, expectations of currency depreciation will rise rapidly and demand in the property market will drop significantly.

4.2. Suggestions

4.2.1. Stabilize the RMB Exchange Rate

RMB exchange rate and real estate price have a vital impact on promoting the sustained macroeconomic growth of our country. Therefore, maintain a stable original intention standard.

4.2.2. Reasonable Regulation of Real Estate Prices

Improve real estate speculative arbitrage costs. The government should strengthen the supervision of the price of the real estate market and curb the soaring house prices, so as to appropriately limit the high profits of the real estate openers and prevent the phenomenon of overheating in the real estate market. The government can also increase the cost of real estate speculative arbitrage by collecting land idle tax, controlling the time of house transfer and increasing the transfer cost, so as to reduce the profit space of the real estate investment opener.

4.2.3. Correctly Respond to Market Demand and Rationally Adjust the Structure of Real Estate Supply.

From the point of view of real estate supply, at present, there are structural problems in the real estate supply system of our country, which have more development of middle and high-grade housing and less investment in ordinary housing, resulting in a large number of idle middle and high-grade housing resources and the situation that the comfortable housing is in short supply. To this end, real estate developers should speed up the supply-side reform of the real estate market, adjust the development structure reasonably according to the market demand, and build more affordable housing and affordable housing according to the consumption capacity of residents, which can not only expand domestic demand to promote economic growth, but also help to improve people's welfare and promote social stability.

4.2.4. Improve the Real Estate Macro-monitoring System

Timely prevention of real estate market bubble expansion. It is necessary to establish a more comprehensive macro monitoring system for the real estate market, collect and sort out the real estate information in time, analyze and evaluate it, increase the degree of information disclosure, and avoid consumers blindly following the crowd to form irrational expectations. Through land supply, tax and other means to the real estate market timely and reasonable intervention and macro-control, effectively prevent the real estate industry bubble expansion. Correct response to market demand, reasonable adjustment of real estate structure.

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