

# Credit Expansion, Real Estate Investment and Resource Allocation Efficiency of Manufacturing Sector

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**Abstract:** The bank credit concentration model expands the ownership of bank real estate credit reward, but the bank's optimism and the evaluation of penetration call option are that the real estate price rises and the basic price exceeds the linked price. The fluctuation of real estate prices has led to the increase of banking fragility, and the burst of the real estate bubble has aggravated the bank's balance sheet, credit crisis and the "credit crisis" trap. International experience shows that the expansion of bank credit will bring great danger. In addition, the inflation of the real estate price in our country depends on the bank credit to a great extent, which leads to the accumulation of bank risk. Commercial banks in some parts of China have highlighted the rapid growth of bad real estate bonds.

## 1. Introduction

A classic financial model: financial policy and bank credit have a great influence on the fluctuation of real estate price. The crisis myopia of commercial banks led to further concentration of bank credit during the period of high real estate prices. With the rise of the real estate bubble, the wrong increase in real estate values has led to big loans from banks. Residential loans into the asset market have contributed greatly to the bubble economy[1]. If the bubble burst, the change in credit bad assets will trigger a banking crisis. The scale of the banking crisis depends on the size of the mortgage, the ratio of the guaranteed value to the credit line, and the total credit ratio of the bank's investment in the asset market. At present, the real estate credit risk of China's commercial banks cannot be underestimated. This paper focuses on the theoretical and empirical analysis of the impact of bank credit on real estate price volatility, as well as the impact of real estate price volatility on bank stability.

## 2. Credit Expansion and Real Estate Bubble Model Analysis

Another study by Winston T.H. KOH (2004) suggests that the collapse of the Asian real estate bubble in 1990s was due to underestimation of existing residential banks by non residential mortgages. This under evaluation comes from the reasonable response of lenders to optimism, disaster myopia, market stimulus policies (middleman competition, savings insurance, bank shareholders' limited liability). Empirical evidence shows that the underestimation of Thailand, Malaysia and Indonesia has led to the collapse of housing market in these countries, which is more serious than that of Hong Kong and Singapore. However, Hong Kong and Singapore are dominated and interfered by the government due to their low evaluation, or adopt more appropriate induction mechanism[2]. Assume that the bank is a financial intermediary and accepts deposits from investors (borrowers) who purchase real estate or problem loans. All agents are risk neutral. We define the basic price of real estate assets as the discount price of the future economy, which is expressed by  $F$ , that is, the price paid by a reasonable investor without paying back the credit loan or fully.

## 3. International Experience of Real Estate Bubble Burst and Banking Crisis

Many literature studies show that the collapse of the real estate market bubble is an important reason for the Asian financial crisis. In fact, at the same time in 1996, the IMF pointed out that the real estate industry will bring risks to the stability of the entire financial system[3]. In the 1990s, due to the overheating of several East Asian countries and regions, the credit scale expanded rapidly. The expansion of bank credit has brought huge financial risks. And that was initially reflected in the bad debts of the banking system. As of the beginning of 1997, the NPL ratios of the banking system were 3.9% in Taiwan, 8.4% in South Korea, 12.9% in Indonesia, 9.9% in Malaysia, 14% in the Philippines and 13.3% in Thailand (koseti, J, penseti, P and rupiah Ni, N, 1999). As long as the real estate loan is concerned, the banking system of Southeast Asian countries is the real estate sector borrowing more. Therefore, the growth rate of risk exposure in the real estate sector is higher than that of GDP, which also increases the banking system of some countries, which is the real estate type of real estate development loans that cannot be classified, or other types of enterprises. In the real estate development and speculation for their loans, we used. Table 1 shows J.P[4]. Morgan's estimate of real estate risk exposure in banking systems in several Asian countries and regions at the end of 1997.

Table 1 Unit root test of each variable

Variable	Test type	ADF	5% critical value	Conclusion
CR	(C,0,0)	-4.3957	-2.9434	stable
HP	(C,0,0)	-4.4166	-2.9434	stable
Z	(C,T,0)	-2.6492	-3.5298	Uneven
dZ	(C,0,0)	-3.0651	-1.9496	stable

#### 4. Variable Selection and Data Description

The instability index of commercial banks describes the original and other methods (2007). The core indicators of bank instability are non-performing bond rate, national loan growth rate, inflation rate and 8% - capital adequacy ratio[5]. The arithmetic mean of the index is used as the instability index of state-owned commercial banks. The smaller the index, the more stable the banking system. From 1999 to 2005, the data of non-performing loan ratio and capital adequacy ratio of commercial banks came from 2007 to 2007, and from 2006 to 2011 from China Banking Regulatory Commission. The above two indicators are only annual data. Four data are obtained by cubic spline interpolation. In addition, the housing loan has not been publicly used in China. Using the method of Zhou Jingjun (2005), the real estate developer's capital source is multiplied by 75% of its own capital, which is equivalent to the consumer's housing loan obtained from the bank by consumers. As a source of development funds, domestic loans are the credit support that developers get from banks. The two totals represent the total credit input of the banking system to the real estate industry. Based on a wide range of measures of housing prices, the national average quarterly sales price of commercial housing (commercial housing sales divided by the space of commercial housing sales) is selected to represent housing prices. This article selects the quarterly data from January 2001 to March 2011 to process the original data. The national loan growth rate is calculated quarterly based on the level data to measure the real estate credit growth rate, house price change rate and bank instability. For the sake of brevity, this article uses Z, Cr and HP to express the instability of commercial banks, the growth rate of real estate credit, and the change rate of house price[6]. The data in this paper are from China Statistical Yearbook, China economic network, China real estate industry analysis report and China Banking Regulatory Commission statistics.

#### 5. Analysis of Empirical Results

##### 5.1. Unit Root Test

Before the empirical test, the stability of the above three variables is tested by ADF[7]. Under

the 5% credit level, the real estate credit growth rate and house price change series are stable, the bank instability index is unstable, but the first time difference is stable.

## **5.2. Granger Causality Test**

The level of bank instability index is not stable, the first difference is stable. Therefore, the first difference of the bank's instability index, house price growth rate and real estate credit growth rate is used to carry out the Granger causality test. The results show that the 5% important level shows that the change of real estate credit scale is Granger's reason for determining the change of house price, while the change of house price is not Granger's reason for determining the change of real estate credit scale. The growth of real estate credit is a risk factor for bank instability[8]. Due to the excessive expansion of credit, the probability of bad debts in the banking system will increase. At the same time, under the rigid constraint of the reserve ratio of the central bank, the bank credit expansion will affect the capital adequacy ratio of the bank. Moreover, it will affect the stability of the banking system. At the same time, the fluctuation of house price is the cause of the enviable instability of banks, which shows that the fluctuation of asset price may increase the risk of the banking system and make the banking system more vulnerable.

## **6. Variance Decomposition Analysis of Real Estate Credit, House Price Change and Bank Instability**

In order to further characterize the instability of banks and the impact of real estate credit on house prices, variance analysis is used[9]. The decentralized breakdown of house price changes is shown in Table 4. It can be seen from the table that if the long-term impact on the growth of house prices is 1, 81.7% will be obtained from its own obstacles, and the growth rate of real estate credit will be 18.3%. With the increase of delay time, the total decentralized proportion caused by the growth rate of real estate credit gradually increased, and finally stabilized at 31.1%. This shows that the growth of house prices is mainly affected by obstacles. The scale of real estate credit has a long-term impact on the change of house prices, and the instability of banks has little impact on house prices. The contribution rate of the bank's instability to the unstable and decentralized changes is gradually decreasing, and finally stable at 73.3%, while the contribution rate of the housing price change is gradually increasing, and finally stable at 23.2% of the credit lion's contribution to the change. The pulse response analysis is the same, the 10th session is all below 4%, with limited contribution. Table 6 shows the decentralized decomposition results of real estate credit. The contribution rate of the change of real estate credit to the change of real estate credit gradually decreases, and finally stabilizes at 74.5%. The unstable contribution rate of banks gradually increases, and finally stabilizes at 22.5%. The contribution of the change of decentralized credit is limited. This shows that the change of credit has a great impact on the instability of banks.

## **7. Conclusion**

Through the above analysis, first of all, the change of real estate credit scale is Granger's reason for the change of house price. Impulse response analysis shows that the impact response of house price change on real estate credit growth is not stable, which has a greater positive impact at the beginning of the cycle, a greater negative impact in the middle and gradually stable[10]. The impact of the bank's instability on the housing price is not important at the initial stage, but what is important is not. But after the third stage, the impact on the housing price is through negation, which is also the feedback mechanism of the bank. The risk of the banking industry will increase and the housing price will plummet. Decentralized decomposition indicates that credit expansion is the most important reason for the rise of real estate prices. Second, the change of real estate credit scale and house price is the reason for the instability of banks. The instability of banks will have a negative reaction to the impact of real estate credit and house price. The appropriate rise of house price will improve the stability of the banking system. Decentralized analysis shows that house price is an important reason for bank instability, and the contribution of credit to bank volatility is

limited. Third, the change of house price is not Granger's reason for the change of real estate credit scale. The results of impulse response and decentralized decomposition show that the impact of house price on credit is not stable and limited, and the instability of banks is the main reason for the change of credit. This empirical analysis shows that excessive financial support is an important reason for the rise of house prices in China. Within the appropriate range of real estate credit scale, as long as the change of managed credit scale is the rise of real estate price, it will have a great impact. Therefore, the overall credit of commercial banks in real estate related industries can be adjusted, and the structure is the rising trend of housing price. In addition, the change of credit scale and house price will affect the stability of commercial banks. Commercial banks should strengthen the research on the impact of relevant asset price changes on banks and financial stability, establish a real estate credit risk management team, and cultivate internal risk awareness. Such risks are reasonably managed and managed. At the same time, commercial banks should further improve the pressure control mode of real estate price fluctuation, so that it can objectively and scientifically conform to the actual situation of real estate in China.

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