

How does the loosened monetary the policy led to the housing bubble

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Abstract:

in the late 1980s, to avoid the negative impact of the yen's devaluation, the Bank of Japan tried to lower interest rates, reviving the economy. Unfortunately, the closeness of monetary policy has spurred more credit expansion by financial institutions, resulting in a rise in the money supply. Plus, the stock and property markets had uncontrollably expanded according to the wrong monetary policy. Looking at other countries, high housing prices become a common phenomenon in society; how to stabilize housing prices without making the economy depressed, Japan's lessons are worth learning.

Keywords: monetary policy; housing bubble ;Japan; monetary transmission mechanism

1. Introduction

The housing market and the economy have shown different development patterns in recent years. When the housing price is significantly promoted, leading to a housing bubble, the real economy remains sluggish, and investment maintains depression. The government used different tools to balance the economy and housing bubble, such as monetary policy. However, in some crises, the loosened and incorrect monetary policy will cause the housing bubble to become more serious.

During the bubble economy, the monetary policy in Japan became an important factor. Much research regarded it as the reason for the excess liquidity, causing the asset bubble. However, blaming the Japanese government for everything is biased. During the bubble economy, economic entities experienced the alienation of things that the Bank of Japan could not control. Therefore, during this period, the Japanese bank had some responsibility for excess liquidity. In fact, after the "Plaza Accord," the Macro policies implemented by Japan further intensified the financial system's irrational behaviors. Based on the excess supply of money flowing into the market, the wrong monetary policy stimulated the depression of the economy.

To realize the housing bubble, we take Japan as an example to find out the correlation between monetary policy and the housing bubble, using the monetary transmission mechanism to elaborate the process of forming the economic bubble. Finally, I am searching for new solutions to address the issue of the housing bubble.

Real estate speculative bubble measurement

There are generally two methods to measure the real estate bubble. One is direct measurement, in which the theoretical value of real estate is defined and measured, and the bubble degree of real estate is evacuated

by comparing the theoretical value with the actual price[1]. The other is using the index method of indirect assessment. Detecting the index comparison to judge whether there is a bubble in the real estate.

We used the index method of indirect assessment to measure the real estate bubble. There are three real estate bubble measurement indicators[2]. The real estate price growth rate/ real GDP growth rate, house price income ratio/people monthly income.

Real estate price growth/ real GDP growth rate

This indicator is based on the meaning of a housing bubble. The bubble economy reflects the degree of the deviation between the virtual economy and the real economy. From a macro perspective, the degree of bubble expansion relies on the speed of economic growth and the expectation of economic growth. But real economic development is the foundation of a virtuous economy. This index can reflect the degree of real estate expansion, and it is a dynamic indicator that can measure the growth rate of the virtual economy relative to the real economy. The greater the index value, the greater the degree of real estate bubble.

house price income ratio

This indicator is based on the factor of the real estate bubble, designed for excessive speculative demand. The house price income ratio is the ratio between the house price and average annual household income, which reflects the ability of households to pay for housing; the higher the ratio, the lower the ability to pay. When this indicator continuously increases, the increase in real estate prices exceeds the increase in the actual ability of residents to pay. When the ratio of house price to income has been rising, the degree of speculative demand in the real estate market is higher, and the possibility of a real estate bubble is higher.

people monthly income

This indicator is based on the factor of the real estate bubble: investment credit support. The expansion of real estate is intimately bound up with the enough money supply, and the enough money supply must rely on finance departments, such as banks. Therefore, expanding residents' speculative demand relatively depends on promoting credit leverage. This indicator reflects the degree of credit support for residents' housing demand and the price level of housing consumption, representing

the development of the real estate bubble. The higher the degree, the higher the support from credit for residents' housing investment. As people's price level increases, the possibility of a real estate bubble is greater.

The real estate bubble measurement coefficient (k) can be calculated by taking the geometric mean of the real estate measurement index. With the K is higher, the degree of the real estate bubble is greater.

The real estate of the housing bubble in Japan

	real GDP growth rate	house price income ratio	people monthly income	real estate bubble measurement coefficient	growth rate of m2
1974	-1.23%	3.6%	362.75	-0.54	14.06%
1975	3.09%	3.3%	389.5	0.73	16.96%
1976	3.97%	3.4%	433.1	0.83	15.51%
1977	4.39%	3.5%	527.9	0.93	13.73%
1978	5.27%	3.6%	735	1.17	14.41%
1979	5.48%	3.8%	758.6	2.5	11.15%
1980	2.82%	4.2%	788.6	0.97	9.65%
1981	4.26%	4.5%	866.6	1.18	1.77%
1982	3.28%	4.8%	797.9	1.07	9.29%
1983	3.63%	5.1%	868.4	1.17	8.49%
1984	4.41%	5.5%	914.8	1.24	7.87%
1985	5.16%	5.6%	964.7	1.4	8.74%
1986	3.29%	6.3%	1426.1	1.43	9.18%
1987	4.65%	7.8%	1729	1.84	9.43%
1988	6.66%	8.7%	2088.3	2.28	10.99%

This diagram clearly shows the real GDP growth rate(g1), house price income ratio(g2), and people's monthly income(g3) in Japan during the real estate bubble. By counting the geometric mean of g1,g2, and g3, we can get the bubble coefficient k. The data directly shows that after 1986, K sharply increased; in other words, with the K being higher, the degree of the housing bubble in Japan was greater. Therefore, the real estate bubble is continuously becoming a serious problem in Japan. Also, the real estate bubble measurement coefficient positively correlates with the m2. As the m2 increased, the real estate bubble measurement coefficient increased, leading to the housing bubble becoming serious.

2 The background

During the 20th century, Japan experienced the formation,

expansion, and collapse of a bubble economy, which led to the depression of Japan's economy. This event has had a significant effect on Japan, alarming lots of countries.

The factors of bubble economy formation are complicated, especially the wrong monetary policy, which is the fuse that promotes the formation and collapse of the bubble economy. For instance, after the Plaza Accord, the yen's value sharply decreased, which led to a big challenge for the government. To address this issue, the Japanese government has loosened monetary policies several times against the bad effects of the economic bubble. In 1980, the government had implemented the "low-interest rate" monetary policy for a long time. The long-term low-interest rate policy flooded the Japanese economic system, which was already abundant in liquidity, with more cheap funds, which triggered the rapid expansion of asset prices

and encouraged the formation of the bubble economy. Other economists claimed that Japan's goods price was depressed, and the overall inflation rate was absolutely low. The government attached the concern to the price of the commodities but ignored the lasting-rising asset price. Monetary policy aims to balance and stabilize the price level. Therefore, the Japanese government incorrectly believed that the economy was operating normally. As a result, the monetary was not efficiently adjusting to the problem of rising asset price

3 Transmission mechanism theory [3]

3.1 Interest rate transmission mechanism

The interest rate transmission mechanism of monetary policy was first invented by Keynes, who proposed that the interest rate plays a role in investment and affects the macroeconomy. Later, Hicks and Hansen [3] constructed an IS-LM model which describes the correlation between the product market and the money market and also puts the interest rate into the investment function, asserting that investment can be affected by interest rate. The interest rate is determinate by supply and demand of the money market. The conventional interest rate transmission can be summarized as accompanied by the closeness of monetary policy; the supply of the currency increases when the easiness of the money market appears, with the constant of the marginal efficiency of capital, the cost of capital investment in the market decreases, investment increases, and the total demand for goods increases, which in turn cause the growth of output and concubine, and vice versa.

3.2 Credit transmission mechanism

Based on the great depression in the 1930s, Bernanke proposed the theory that there are two channels of credit transmission mechanism: the bank loan channel and the balance sheet channel. The bank loan channel in the credit transmission mechanism means that monetary policy influences bank loans, affecting consumption and investment expenditure. As loose monetary policy is implemented, the money supply expands, and the amount of loans from banks can increase, which increases

household consumption and business investment, stimulating output growth. The balance sheet channel in the credit transmission mechanism means that monetary policy could influence the balance sheet of firms and individuals and then impact the macro economy. When the loosened monetary policy was implemented, the money supply increased, the interest rate shrank, and asset prices rose; the total amount of the assets in the balance sheet of the firm and consumers increased, and the asset collateral which can be utilized for loan increases, so the amount of the bank loans increases accordingly. Therefore, investment and consumption behaviorism become active.

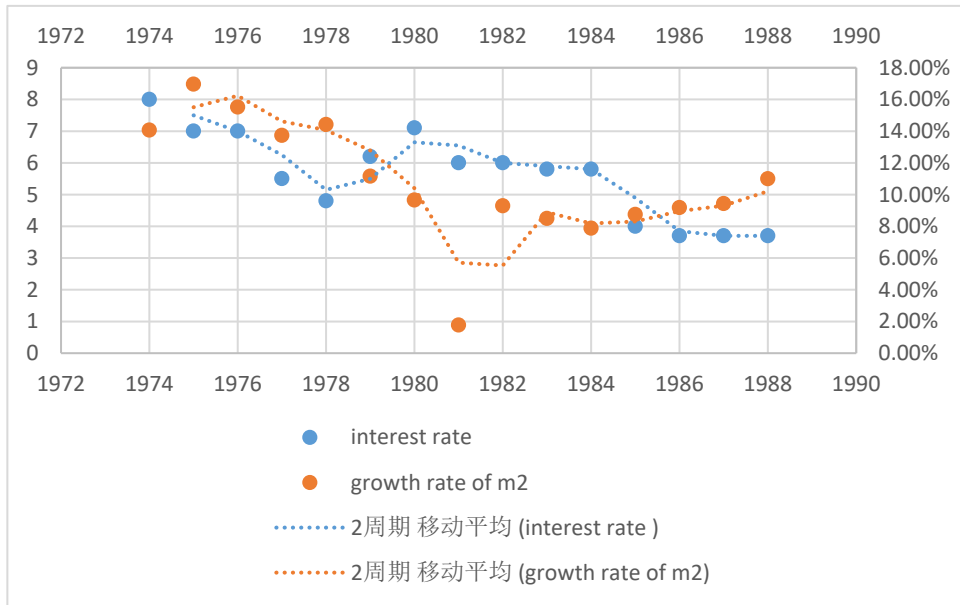
3.3 Exchange rate transmission mechanism

With the continuous internationalization of different countries and the appearance of a floating exchange rate system, people can realize how exchange rates influence imports and exports. It means that when the money supply increases, the short-term nominal interest rate of the country will fall. The price stickiness shows that the short-term real interest rate will decrease. Therefore, the demand for domestic currency is decreasing, leading its value to depreciate. Based on that case, the product price in the country is lower than in other countries, increasing net exports and, eventually, total output.

In the transmission above mechanism, monetary could affect the interest rate exchange rate and credit transmission mechanism, promoting consumption and investment.

In the interest rate transmission mechanism, monetary policy could change the interest rate to affect the enterprise investment and durable consumer goods cost.

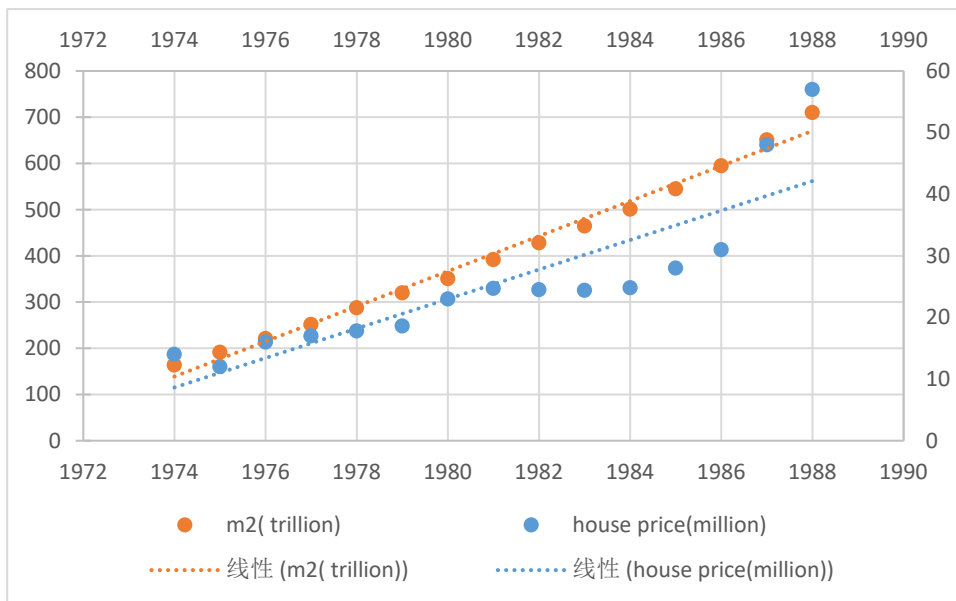
In the loan transmission mechanism, the monetary policy could influence the bank loan quantity, leading to the fluctuation of investment and consumption. When the transmission mechanism is smooth, loosening monetary policy will not cause excess liquidity, leading to stable macroeconomic growth. Under the exchange rate transmission mechanism, monetary policy affects output by influencing the exchange rate and using it for export.



The correlation between the growth rate of m2 and interest rate

This diagram illustrates that the growth rate of the money supply(m2) has a negative correlation with the interest rate. From 1980 to 1984, the Japanese government implemented the “low-interest rate” law, hoping to stimulate economic development. Unfortunately, the lower interest rate increases the currency in the market

significantly. Accompanying large amounts of money, people in Japan had more opportunities to purchase at that time. Therefore, that money flowed into the real estate market. As a result, the price of fixed assets with real estate as the core rose rapidly.



The house price in TOKYO from 1974 to 1988

This graph elaborates on the correlation between money supply(m2) and house prices in Japan. The money supply had a positive relationship with house prices. As the interest rate has decreased, the company’s investment has increased. Therefore, the money supply becomes greater. House prices spontaneously increased, so the real

estate bubble burst during that period when the Japanese government took low-interest rates as monetary policy.

4 conclusion and enlightenment

Based on the policy transmission mechanism, this paper

explores the correlation between the formation of a bubble economy in Japan and the effect of monetary policy and finds the following conclusion: In Japan, the transmission of interest rate and money supply to the exchange rate is blocked, which affects the effect of monetary policy and causes bubble economy. In 1980, Japan was challenged by the yen appreciation depression, so the government implemented a lesson monetary policy that cushioned the appreciation of the yen exchange rate. The reason is that Japan replaced the United States as a creditor and financial power in the 1980s. After the Plaza Agreement, the United States planned to manipulate the rising yen value, which can not be adjusted only by monetary policy. Because Japan relied on output. As the currency depreciated, the output in Japan decreased, leading to the depreciation of the economy.

We can get the following enlightenment from the formation of Japan's bubble economy and the lessons of monetary policy implementation.

(1) Control the currency's value in internationalization, considering both internal and external economic balance. We should focus on interest and economic development. Maintain the stability of the money exchange rate, coordinating the relationship between the exchange rate system reform and monetary policy.

(2) Monetary policy should combine the asset price.

Although monetary policy has become a useful tool that can adjust recessions or overheating of the economy, in recent cases, the excessive expansion and rapid decline of asset prices in some areas, like stock and housing prices, are often the triggers of the crisis. In forming the asset price bubble, the loose monetary policy is important in stimulating them. Therefore, monetary policy should pay attention to asset prices, take appropriate adjustment measures in combination with asset prices and economic development

(3) Focusing on coordination of monetary policy and policy aim. The monetary policy should only affect one policy objective. The effect would be lost if monetary policy was focused on more than one objective. The central bank's independence helps focus monetary policy on a specific aspect, such as inflation or unemployment, thereby helping achieve price stability and promote employment.

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