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The Measures to Solve the US Subprime Crisis and Inspirations

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Abstract: This paper focuses on the subprime mortgage crisis in the United States at the beginning of the 21st century, and analyzes how this crisis was formed through chain transmission from the perspective of financial bonds in the real estate industry. The paper focuses on the Federal Reserve's policy adjustments and the collapse of the banking system, in order to elucidate the severe impacts of the subprime crisis on the US financial system. Through data collection and attribution analysis, it intends to provide methods for preventing similar crises from happening again, including diversifying policy tools, strengthening supervision, foreign exchange risk management, etc., and provide certain suggestions for the stable operation and resilience of the national financial system.

Keywords: Subprime crisis, Housing mortgage loans, Federal Reserve, Macroeconomic regulation, Exchange risk

1. Introduction

As an unprecedented and enormous shocks experienced by the most powerful economy, research on the subprime mortgage crisis can provide a wealth of effective information for economic policies and regulatory approaches in multiple countries. Starting from the economic background of the United States in the 21st century and previous policy, this paper elaborates on how the subprime mortgage crisis gradually affects the entire financial system through the real estate market, points out the institutions responsible for multiple parties in the real estate industry chain, and presents the huge impact of the subprime mortgage crisis more realistically by listing data. By summarizing the measures taken by the US government to solve the crisis, it provides inspiration for other countries to prevent financial crises in the future.

2. The formation of the subprime mortgage crisis

After the 21st century, affected by the stagflation of the 1970s, the bursting of the network economy foam and the terrorist attacks of September 11th, the US economy fell into a vortex of overall depression, and the market economy was in a depression [1]. In order to stimulate the market economy, the Federal Reserve of the United States lowered the bank interest rate to 1% to attract a large number of domestic and foreign capital to invest in the United States, such as buying US treasury bonds. At the same time, depositors also withdrew funds to prepare for other investments in order to obtain higher profits due to low interest rates. So the number of investors and idle funds increased significantly, and they all focused on the same investment channel: the real estate market. Due to the refinancing method and a prosperous economy,everyone held the same judgment that housing prices would not fall in the short term. So a large amount of funds were beginning to flow into the real estate market. Banks had also significantly increased their leverage due to low interest rates, borrowing large amounts of funds. In addition, Fannie Mae and Freddie Mac have started purchasing bank housing loans, allowing banks to quickly recover funds. Banks have started using brokers as intermediaries to issue housing loans to a large number of homebuyers.With more and more loans, many banks, led by Ginnie Mae, had started to grade loans and issue home mortgage loans (CDOs) to investors with different risk preferences around the world. The seemingly thriving real estate market was also spreading potential moral risks layer by layer with loans. Housing mortgage loans were very popular, and banks required brokers to contact more homebuyers in hopes of issuing loans to them. Prior to this, the bank would conduct a complete credit assessment on borrowers to ensure that they were able to repay; otherwise, they would reclaim their property. But in order to issue more CDOs, banks began to lend to people with less than good credit records. Between 1997 and 2005, the housing ownership rate in the United States skyrocketed, covering all regions, age groups, and racial groups, as well as all income levels, rising from 65.7% to 68.9% [2].

In 2006, U.S. public debt (excluding the government's inter-government debt of another $3.8 trillion) stood at $5 trillion, of which $2.2 trillion (44%) was held by foreigners. Foreign central banks with huge reserves owned 64% of this $2.2 trillion. This does not include the private debt of households in the United States, which totaled $12.8 trillion ($9.7 trillion in housing loans and $2.4 trillion in credit card loans) [3]. Consequentially, more and more buyers with low credit ratings had their homes confiscated by banks due to inability to pay off loans, forcing banks to auction their homes to reduce default losses. But as more and more houses were sold on the market, housing prices have plummeted. For those homebuyers who had the ability to repay, the value of the loan they needed to repay has exceeded the price of the house, leading to defaults. In this way, the real estate market had become worthless, and CDOs had become a time bomb that no one wanted, circulating around various banks. With a loud noise, the economic foam had been punctured, and the economic market had come to an extremely cold winter.

3. The impact and solutions of the subprime mortgage crisis

3.1. Impact

In this crisis, housing prices in the United States had plummeted significantly, with the S&P/CS housing price index in the top ten cities falling by 18% within a year of the crisis. In heavily affected areas such as Cleveland, housing prices had even fallen by 35%. Three of the top five investment banks on Wall Street had gone bankrupt, and giant companies such as General Motors and Chrysler were also facing a looming bankruptcy crisis. The global stock market had plummeted by as much as $7 trillion in a single week [4]. The crisis was not limited to the real estate market. The default rates of loans in the automotive and energy industries were also continuously increasing, and the credit ratings of municipal bond underwriters were also declining, leading to an increase in financing risks for state and local governments. In addition, the subprime mortgage crisis to some extent promoted the depreciation of the US dollar and a sudden surge in international crude oil prices. The subprime crisis shifted the Federal Reserve from a monetary policy aimed at controlling inflation to a monetary policy aimed at preventing economic downturns. Since September 2007, it has continuously lowered interest rates, lowering the overnight lending rate for commercial banks from 25% in September 2007 to the current 1%. The increase in the interest rate spread between the US dollar and the euro, as well as the selling of the US dollar by banks in other countries, had added to the downward pressure on the US dollar.

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The continuous depreciation of the US dollar, coupled with speculative speculation, led to a sudden surge in crude oil prices. The crisis spread to Europe and even the world, triggering a significant decline in the euro exchange rate and a global energy and food crisis [4]. The subprime crisis had become a global financial crisis, and one of its important channels of dissemination is international trade. The economic recession in the United States will also affect the global economy through this important means. The United States is an important importing country globally, and with the economic recession, it is inevitable that the income of American residents will decrease and consumer demand will decrease. This will inevitably slow down exports to countries and regions that rely on exports to drive economic growth. Meanwhile, with the depreciation of the US dollar, the competitiveness of exporting countries' goods has decreased, and both of these reasons will affect countries that rely on exports to drive economic growth. Meanwhile, the depreciation of the US dollar has led to a significant reduction in the foreign exchange reserve assets and international purchasing power of these countries. Unlike traditional financial crises, the risk bearers in the subprime crisis are globalized, and the losses caused are uncertain. The securitization distribution of subprime loans and the liquidity issues during the securitization process have led to the concentration of uncertainty in economic and financial development through the subprime crisis. It is precisely because of this uncertainty that subprime losses are difficult to measure and have a huge impact on the market. The subprime crisis was like a massive tsunami, and every country it went to was swept up without exception.

3.2. Solutions

The measures taken by the US government to solve the subprime mortgage crisis were multifaceted, combining monetary and fiscal policies, and considering the impact of the international market. Although the impact of the crisis was not effectively mitigated due to insufficient policy efforts in the early stages, most of the policies had still achieved relatively successful results, which has broad reference significance for other countries.

3.2.1. Lowering interest rates

In the 1970s, when the United States experienced a stagflation crisis, the Federal Reserve raised interest rates as high as 22.36% along the way. This directly led to a significant decrease in market liquidity, with bonds being packaged and sold to form MBS, laying hidden dangers for future subprime crises. Since the outbreak of the crisis, the Federal Reserve has continuously lowered interest rates multiple times, with a cumulative decrease of up to 3.75% in 2009, in order to reduce the burden on borrowers, promote investment and GDP growth, and so on [5].

3.2.2. Provide assistance to bank funding sources

Under the financial crisis,the government can only fill the economic loopholes caused by the decline in loans and stocks by allocating a large amount of funds. In the second half of 2007, shortly after the subprime crisis, the Federal Reserve injected $58 billion into the banking system. As of the end of December 2008, the US government had urgently injected $160 billion into 30 banks, effectively reducing liquidity risk, increasing market liquidity, promoting investment activities, and playing an extremely important role in restoring market confidence [6]. Other countries also financed the bank to counter the crisis: the German government has allocated 500 billion euros to rescue the market, the British government has announced a £ 37 billion injection into Royal Bank of Scotland, Halifax Bank, and Leicester Bank; and France has allocated 360 billion euros for financial assistance.

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3.2.3. Lowering the US dollar exchange rate

The United States attracted foreign capital inflows by lowering the exchange rate of the US dollar against other currencies, and increased its exports to stimulate domestic economic growth [7]. The target audience for subprime loans were mostly middle and low-income groups, and the job opportunities created by domestic economic growth could effectively help them improve their lives [8].

4. Inspiration

4.1. Diversification of policy tools

The outbreak of the subprime crisis exposed the shortcomings of traditional monetary policy. In the past, controlling inflation rates was a top priority for the Federal Reserve, and adjusting interest rates was almost the only policy tool. Raise interest rates as inflation rates rise, and reduce investment to curb market capital flows. If the inflation rate decreases, lower interest rates to increase market liquidity. But as the crisis approached, the Federal Reserve also realized that macroeconomic policy was not so simple. After the subprime crisis, the Federal Reserve implemented a quantitative easing policy, injecting excess funds into the market through large-scale asset purchases, increasing asset demand, thereby reducing risk premiums and borrowing rates, and stimulating economic activity. It has been proven that such measures have certain effects, but they can also lead to the problem of the Federal Reserve's excessive debt scale. In addition to focusing on interest rates, other indicators, such as total credit can also be used as another type of market indicator to assist in policy formulation [9]. At the same time, the government's policy toolbox should not only have a few tools, but should be equipped with various tools to cope with different crises and work mechanisms [10].

4.2. Macro prudential supervision

The core cause of the subprime crisis is the inaction of the Federal Reserve. In 1999, Clinton passed the Financial Services Modernization Act, which allowed commercial banks to sell stocks, funds, securities, and other investment mortgage-backed bonds. More and more commercial banks are joining the real estate market,which was not supposed to be given the past lessons and the future crisis. When banks sold CDOs, they first layer them, and the risk of default was absorbed layer by layer from bottom to top. So as long as the bottom was big enough, the upper level securities would always be safe. The stratification of securities requires the participation of neutral rating agencies such as Moody's, Standard & Poor's, and Fitch International. Although rating agencies claimed to be objective third-party institutions, their competitive relationships and economic dependence on banks inevitably lead to fake judgement. In addition, bonds rated below AAA will be repackaged and repeatedly sent for rating by banks again and again, so there will still be a large number of junk bonds disguised as AAA rated bonds circulating in the market, and none of the investors recognized that. Due to the fact that banks themselves were aware of the high risks involved in these bonds, they also purchased insurance for the bonds. At this point, AIG, the largest insurance company in the United States, entered the market. It underwrites these bonds by selling credit default swaps. But the cunning AIG did not prepare corresponding compensation for these insurances, because, in their view, housing prices in the United States couldn't fall, and if someone defaults, they only need to reclaim their house and auction it off to compensate.

When banks, rating agencies, and insurance companies increased the risk of CDOs for their own benefit, the Federal Reserve did not stop it, indicating that the macroeconomic regulatory system at that time was very scarce. Looking at the present, the current financial regulatory models in various countries are mostly lagging behind the financial innovation of the current era,just like that CDOs

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came first then the method to deal with and monitor it at that time. Governments of various countries should establish official macroeconomic regulatory agencies to timely monitor and prevent excessive credit problems, act as last resort lenders to solve crises that may arise due to poor management of banks or other financial institutions, form a triangular pillar with traditional monetary and fiscal policies, and help countries achieve stable economic growth.

4.3. Preventing Foreign Exchange Risks

When asset prices fall, risk quickly spreads along the chain of interests. The US dollar, as an important currency for international transactions, has also experienced severe fluctuations in the international market due to the subprime crisis. In order to prevent market fluctuations and price losses caused by changes in foreign exchange, which may affect the cash flow or performance of enterprises and banks, the country should lock in exchange rates through debt instruments such as forward foreign exchange or foreign exchange option trading to avoid exchange rate risks. In this volatile global interest rate environment. For example, interest rate swaps is a useful method which allow companies to exchange interest rate payments between different currencies to lock in financing costs or investment returns. As long as both parties agree to exchange interest rate payments, usually including a fixed interest rates and a floating rate, it can help companies avoid the risks that may arise from interest rate fluctuations. At the same time, by paying attention to predicting market trends and international situations, the trading currency is determined to avoid the impact of exchange rate fluctuations.

5. Conclusion

The subprime crisis, as a major global crisis, still has many areas worth learning and researching. By analyzing the causes of this crisis, this paper provides some insights for economic policy makers in various countries. Lack of policy tools and timely supervision is the main cause of sub-prime crisis,so they are the two keys in controlling the balance of financial system and it is government's responsibility to diversify policy tools and activate prudential supervision in order to counter different situations. Due to its huge damage on the financial system worldwide and that previous researchers have paid less attention to foreign exchange risks, so this paper has also focused on how to prevent this risk. However, due to limitations in research methods, we hope to provide more accurate policy recommendations through quantitative methods in the future.

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