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Crisis and Structural Changes in Banking

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Abstract: Financial issues have always been an important issue of concern to the whole world. This year's Nobel Prize in Economic Sciences was also awarded to three scientists who studied the financial crisis in the 19th century. This article will take the 2008 financial crisis as the research object, and analyze the causes, Consequences and Changes of the financial crisis. In terms of causes, it focuses on the impact of financial credit products such as subprime mortgage loans and CDS brought about by the loose loan policy of the United States on the stability of the US financial market. Secondly, in terms of consequences, it will focus on the bankruptcy of Lehman Brothers, the fourth largest investment bank in the United States at that time, the bankruptcy of many other companies, and the high unemployment rate brought about by the company's bankruptcy. Finally, in terms of changes, the government introduced the bills led by the Dodd-Frank Act and Basel III to deal with the financial crisis and prevent future financial market problems.

Keywords: banking crisis, subprime mortgage, risk management

1. Introduction

In recognition of their work "on banking and financial crises," Ben S. Bernanke, Douglas W. Diamond, and Philip H. Dybvig are jointly given the 2022 Nobel Prize in Economics [1]. This shows that the world attaches great importance to the financial crisis. Therefore, it is particularly important to study the causes and solutions of the financial crisis. Under the complex economic situation of the current COVID-19 epidemic and the conflict in Ukraine, the world's financial environment has also been greatly affected, and the research on dealing with the financial crisis is more urgent at present. The 2007-2008 financial crisis is one of the most classic and most influential financial crises, and its impact almost covers the entire world. This paper will choose the financial crisis as the research object.

Early in the new millennium, the dot-com bubble burst and 9/11 contributed to the recession that hit the US economy. The American Down Payment Act, which significantly lowered the down payment requirement and mortgage interest rates for low- and middle-income households, was one of many laws and programs the U.S. government introduced in an effort to boost the economy. As well as requiring government-affiliated financial organizations like Freddie Mac and Fannie Mae to acquire more mortgage loans for homes for low- and middle-class borrowers. With policy support and a stronger economy, U.S. housing prices have begun to rise, and housing price expectations are also rising rapidly. Therefore, people from the middle class to the poor are taking loans from financial institutions or banks to buy houses. More and more people use mortgages to buy houses, which will

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stimulate further rises in house prices, leading to a bubble in the real estate market. Due to extremely low down payments and loose loan policies, people who cannot afford a house have turned to banks and financial institutions for mortgage loans. This kind of behavior makes financial institutions bear a lot of risk, because under normal circumstances, these people who cannot afford houses are unable to repay these loans at all, so they are very likely to become bad debts output by financial institutions. The accumulation of these bad debts formed bubbles in the real estate industry and the financial industry, and the bursting of these bubbles brought about the unprecedented financial crisis in 2008.

The United States is the "locomotive" of the global economy in the framework of economic globalization, and the subprime mortgage crisis will inevitably have an impact on the economies of various nations to varying degrees. The International Monetary Fund predicts that due to factors such as the subprime mortgage crisis, the global economic growth rate in 2008 and 2009 will be 3.7% and 3.8%, respectively, significantly lower than the 4.9% in 2007. In 2007, the sales volume of new homes in the United States was 774,000 units, a sharp drop of 26.4% compared with 2006, the largest decline in history. In the United States, consumption accounts for about 70% of GDP, and the decline in consumption growth will inevitably be reflected in the overall economy, thereby seriously restricting the development of construction, trade and circulation and other related industries. The share prices of many businesses, especially real estate companies and financial institutions, fell sharply. From October to December 2007, global stock markets lost $7.7 trillion, according to a Bank of America report. In January 2008, global stock markets lost another $5.2 trillion, according to Standard & Poor's report [2].

2. Causes

2.1. The Fed's Monetary Policy

Due to the passage of legislation such as the Federal Housing Enterprise Safety and Soundness Act in the 1990s, US government-backed companies headed by Freddie Mac and Fannie Mae started to lend to more low- and middle-income borrowers. Ultra-low down payment loans also became increasingly more popular. The credit history and credit score of the customer, the borrower's debt to income ratio (DTI), and the mortgage loan value applied by the borrower to the real estate value ratio are the three criteria used by US real estate finance institutions to determine the quality of a client (LTV). Generally speaking, subprime mortgage applicants are those with credit scores of less than 620, a DTI of greater than 55%, and an LTV of greater than 85%. Documents proving income are issued by financial institutions. In contrast, applicants for Prime Loans must have a credit score of at least 660 and submit a complete set of income documentation [3]. The risk of subprime loans is substantially higher than that of high-quality loans since lenders of subprime loans have a higher default rate, making it quite likely that banks or other financial institutions won't be able to recover the money they leased out. However, since subprime loan interest rates are typically higher than those of high-quality loan interest rates, banks and financial institutions, after primarily meeting the needs of high-quality customers, turned their attention to those who were not qualified for loans, which resulted in a sharp rise in the issuance of subprime loans.

2.2. Subprime Mortgage Loan

Subprime mortgages are, as the name implies, mortgages having a lower rating than prime mortgages. These mortgages are typically given to people and businesses with lower incomes or less favorable credit ratings who still require a mortgage. Because these mortgages have greater default rates due to applicants' lower qualifications, banks typically impose higher interest rates on them. In addition, most subprime mortgage loans adopt floating rate, and the mortgage rate will vary according to the market interest rate.

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According to the Mortgage Bankers Association, subprime mortgages rose from 2.4% of all mortgage loans in 2000 to 13.6% in 2006 (though the real situation may be more than 30%). When the real estate market was growing, the interest rate on this type of loan was not very high, and the enormous profits caused financial institutions to greatly increase their investment, so the danger did not appear to be particularly substantial. However, since the interest rate of this kind of loan fluctuates with the market, once the market trend changes, these loans may immediately become high-risk products. The Federal Reserve increased interest rates 17 times between June 2004 and June 2006, and the housing market, which is sensitive to interest rates, started to react. Housing prices, operating rates and sales all fell and hit new lows. Many borrowers were unable to pay these loans, As a result, the default rate in this market continues to rise. In the past, when real estate prices kept rising, borrowers could repay their loans by selling their houses. Now that house prices have been falling, while interest rates have continued to rise, more and more subprime mortgage borrowers have been overwhelmed [4]. This also established a very good precondition for the large-scale growth of the volume of credit default swaps in the later period.

2.3. Credit Default Swaps

If an investor purchases bonds in the bond market, he will be exposed to two dangers. One is a default by the entity to which the bond is linked, such as bankruptcy, rendering it unable to make timely principal and interest payments; the other is a decline in bond values as a result of an increase in market benchmark interest rates. In order to avoid risks, financial companies have proposed a new concept: credit default swap. A bilateral risk-exchange financial contract is a credit default swap. In this contract, the buyer of credit protection consistently pays a set charge to the seller. When the reference assets (loans or bonds) determined by both parties within the contract period are lost due to credit events , the credit protection seller pays a certain amount to make up for the losses suffered by the buyer. The creditor sells the debt risk through the CDS contract, and the contract price is the premium. The original purpose of designing credit default swaps is to preserve value, but when the purchased CDS contract is priced too low by investors and the loan default rate rises, the protection cost of this transaction will increase, and the value will increase accordingly [5].

As investment banks aggressively issued subprime loans, they packaged and sold huge amounts of subprime loans into ordinary bonds, and transferred credit risk to the CDS seller by buying CDS contracts. With the continuous rise of interest rates and the decline of housing prices for several years, the lenders of subprime loans could not repay their loans and could not sell their houses, so they defaulted one after another, resulting in a higher and higher subprime default rate. As of the end of 2007, the outstanding balance of the global CDS market was as high as 62.2 trillion US dollars, which even exceeded the size of the global GDP in 2007 [5].

3. Consequences

In 1850, Lehman Brothers was established. It had already had more than 150 years of glory at that point, and it was the fourth-largest investment bank in the country. Lehman Brothers, with such a large scale, finally announced its application for bankruptcy protection on September 15, 2008 because of its very serious financial crisis. Such a brilliant company could not escape the impact of the financial crisis, and finally collapsed in the financial wave. The collapse of the credit system was brought on by the deterioration of the macroeconomic environment around 2008, which also caused a sharp decline in the value of derivative financial credit products such subprime mortgages, CDOs, and CDSs. The assets of companies holding a large number of such credit products have been shrinking, and their stocks have suffered substantial losses. Lehman Brothers held a large number of financial credit products during this period, and the shrinkage of assets and large losses will cause its rating to be downgraded, which will further lead to the depreciation of other assets related to the rating.

Lehman Brothers reported a loss of US$2.87 billion in the second quarter (ending May 31), the first deficit since the business went public in 1994, in its financial report, which was made public on June 16, 2008. Lehman Brothers reported a loss of $2.87 billion, or $5.14 per share, as opposed to a profit of $1.26 billion in the same time the previous year. Their net loss was $668 million, down from $5.51 billion in the same period the prior year [6]. It shows how huge the loss value of Lehman Brothers was at that time. The final result of Lehman Brothers may be due to insolvency, or due to cash flow difficulties, it is unable to provide collateral and guarantees for its downgraded bonds, which leads to its filing for bankruptcy protection.

The bankruptcy of Lehman Brothers is not a special case of Wall Street, nor is it a special case of the whole United States, nor is it a special case of the whole world. Due to the financial crisis, there are many companies that have gone bankrupt. Company bankruptcy has many effects, the most significant of which is the sharp rise in unemployment. The average jobless rate in the US reached 5.8% in 2008, up significantly from the 4.6% in 2007, according to figures provided by the US Department of Labor on January 9, 2009, marking a new record since 2003. "In 2008, there were 524,000 fewer jobs in the United States, 11.1 million more people were jobless than in 2007, and the unemployment rate increased to 7.2%, the highest level in over 16 years," according to the Bureau of Labor Statistics [7].

In conclusion, the financial crisis has had a significant impact on the United States and the rest of the world, and that influence will last for the foreseeable future due to the bankruptcy of businesses and the sharp rise in the unemployment rate.

4. Changes

4.1. Dodd-Frank Act

In response to this financial crisis and to save the entire financial market from a general collapse, government interferes with the housing market by introducing several acts. On June 17, 2009, the Obama administration of the United States officially announced a comprehensive financial regulatory reform policy. On July 15, 2010, the U.S. Senate and House of Representatives passed a series of financial regulatory system reform bills. With a clear focus on reducing systemic risk, offering safe solutions for severe risks that large financial institutions might face, better oversight of hazardous non-bank firms, and changing derivatives transactions. The Glass-Steagall Act was passed in 1933, and the Dodd-Frank Act is regarded as the most significant financial regulatory act since that time. It is also the biggest and strictest banking regulatory act since the Great Depression. It will have a profound impact on the US financial industry and financial regulation [8].

The measure creates a new financial regulatory framework, which will unavoidably have an effect on how the financial market, financial regulatory system, and crisis resolution process are reshaped in the United States for a very long period. In terms of content, the bill mainly emphasizes four aspects, namely focusing on macro-prudential regulation, strict financial regulatory standards, expanding regulatory coverage, and emphasizing inter-agency coordinated regulation. The law places a strong emphasis on including all systemically significant financial institutions in the scope of the macro-prudential regulatory regime. The bill suggests greater capital adequacy ratios, leverage restrictions, and risk concentration requirements for financial institutions with systemic risks. Additionally, the measure places stronger limitations on high-risk derivatives trades and proprietary trading by banks. The measure also puts the hitherto under-regulated over-the-counter derivatives market, hedge funds, and private equity funds within the regulatory framework [9]. The bill has closed regulatory gaps in the U.S. financial system, dismantled the idea that regulators should respond to

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systemic risks and financial crises in a passive manner, made the Financial Stability Regulatory Commission the first line of defense against systemic risks, and made qualitative and quantitative research, timely monitoring, early warning, and policy recommendations so that systemic risks can be identified and dealt with; use the Federal Deposit Insurance Corporation as a regulatory check on systemic risks.

4.2. Basel III

After the 2008 global banking crisis, banking regulators re-examined their rules. This involves the agreement of the Basel Accords. The "International Agreement on Unified Capital Measurement and Capital Standards" was published by the Basel Committee in 1988. (Basel I for short). In response to the shortcomings of Basel I, the Basel Committee officially released the "International Agreement on Unified Capital Measurement and Capital Standards" (Basel II). After the introduction of Basel II, some problems were exposed during the implementation process. The Basel Committee produced Basel III in December 2010 in response to these flaws. Basel III's primary effects include the following:

4.2.1. Raise the Operating Costs of Banks

Banks will be under more pressure to restock capital as a result of the stricter definition of capital, highlighting the dominance of common stocks, and increased capital requirements, and the cost of capital will rise dramatically.

4.2.2. Urging Banks to Improve Their Management

Risk quantification encourages banks to improve their risk management practices and to build stronger risk assessment models, tools, databases, and infrastructure for information systems. It also encourages banks to improve their capital management practices.

4.2.3. Affect the Development of the Real Economy

However, in the long run, it will be beneficial to the stable operation of banks and the banking system and encourage the sustained and stable growth of the global economy. In the short term, the international banking industry needs to replenish capital, and the supply of funds will decrease, affecting the growth of the real economy [10].

The initial banking regulatory standards and processes have undergone a thorough change as a result of Basel III. Basel III not only increased the capital adequacy ratio, but it also pioneered the use of new regulatory measures like global liquidity standards. The reform's primary goal is to strengthen the banking sector's capacity to respond to unexpected shocks on the financial and economic front and absorb losses, thereby limiting the impact of financial risks on the actual economy [11].

5. Conclusion

In the final analysis, the financial crisis in 2008 was because the US government at that time believed too much in the prospect of US financial development, and introduced some unrealistic policies, which made financial companies think it was profitable, and thus issued many financial credit products for US residents to buy. As a result, American residents have a false perception of their own purchasing power or feel that they can take advantage of it, making their consumption levels far exceed their income levels.

Due to loose policies and improper supervision of the financial and banking industries, the number of financial credit products circulating in the market has increased significantly, and people are unable to repay their loans, which eventually leads to credit score downgrades, company bankruptcy, a large number of job losses, and a sharp increase in unemployment. This financial crisis not only plunged the United States into unemployment and massive financial losses, but also affected the whole world. The whole world has been hit extremely hard by this financial crisis. It is particularly crucial to study the financial crisis and issue related bills in order to stop or lessen its effects on the entire world.

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