Proceedings of the 7th International Conference on Economic Management and Green Development
DOI: 10.54254/2754-1169/37/20231832

A Macroprudential Analysis of the 2008 Financial Crisis

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Abstract: The subprime crisis of the late 2000s had a profound impact on the global financial system, triggering an economic downturn of unprecedented magnitude. This paper provides a comprehensive analysis of the causes, consequences, and lessons learned from the subprime crisis. The crisis emerged from a combination of factors, including the expansion of subprime mortgage lending, relaxed underwriting standards, and the bursting of the housing bubble. Financial institutions eagerly pursued higher profits by issuing mortgage loans to borrowers with questionable creditworthiness, leading to a surge in loan defaults and foreclosures when the housing market collapsed. The consequences of the crisis were far-reaching. It resulted in widespread financial turmoil, with significant losses incurred by interconnected institutions worldwide. The global economy experienced a severe recession, characterized by high unemployment, declining consumer and investor confidence, and disruptions across various industries. The subprime crisis highlighted critical weaknesses in risk management practices, regulatory oversight, and financial market mechanisms. However, it also served as a catalyst for reform. Policymakers implemented measures to strengthen financial systems, enhance transparency, and improve risk assessment and management. Revisions to regulatory frameworks, stricter stress testing, and reinforced consumer protection measures were among the responses.

Keywords: subprime mortgages, risk assessment, interconnected financial institutions

1. Introduction

On March 8 of this year, Silicon Valley Bank, the 16th largest bank in the United States, went into substantial bankruptcy. Such a serious crisis in a bank with more than $200 billion in assets under management also means that this also brings a series of related problems. First, in order to control high inflation, the Federal Reserve had to continue the process of interest rate hikes and implement monetary tightening and other related policies, but monetary tightening can lead to many problems, including debt crises, such as loan devaluation, long-term arrears tend to cause bank liquidity problems, some people will sell depreciated assets, or even trigger a recession. At the same time, due to the bankruptcy of Silicon Valley Bank, many shareholders will seize the time to dump their shares, which also means that the corresponding shares of the bank will also fall sharply. The bankruptcy of Silicon Valley Bank is the largest failure in the U.S. banking industry since the 2008 financial crisis and therefore has raised concerns in various markets about global financial risks. Especially in today's complex economic situation of COVID-19 and the Ukraine conflict [1]. Therefore, I choose the most influential 2008 Financial Crisis as the object of study.

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A significant economic downturn that had an impact on the entire world economy was the financial crisis of 2008. It first appeared in the US in 2007, and it then spread gradually to other nations. The U.S. real estate market's demise, after experiencing a boom at the turn of the century, served as the catalyst for the catastrophe. The crisis had a ripple effect on the global economy, leading to widespread unemployment, a decline in consumer spending, and a slowdown in economic growth. Many banks were in serious problems when the subprime mortgage market collapsed because a sizable amount of their assets were subprime loans or bonds made from subprime loans and less hazardous consumer debt. 2007 saw the first CDO debt mature and the debt defaulted as planned. The American people began to lose confidence in the banks, and the lack of confidence led to a collapse in securities and forced the real industry. This was all done almost instantly. A large number of American companies went bankrupt, went bankrupt, stocks plummeted and were delisted, and countless investors in the futures market had zero wealth. Consumers could not afford the monthly payments and interest on their loans. More and more commercial banks couldn't make loans, investment banks couldn't sell new CDOs, and the entire food chain began to break. More and more people had their homes taken away from them by the banks, and entrepreneurs were urged by commercial banks to refuse to make new loans. Businesses could only lay off employees and take pay cuts if they couldn't get a loan, and the laid-off and retrenched employees had even less money to pay back their mortgages. The entire U.S. economy began to fall into a death spiral [2]. After August 2008, the overall U.S. financial system was frozen. In October 2008, the U.S. injected $850 billion into the market to rescue the financial sector. This money was first allocated to the banking and financial sector, of which $150 billion went to the unfortunate AIG insurance company, enabling him to compensate Morgan Stanley and Goldman Sachs for CDO reverse insurance. Unemployment in Europe and the United States exceeded 10%, thousands lost their jobs or saw their incomes drop, banks repossessed more properties and nearly 10 million people became homeless. Governments around the world took a variety of measures to try to mitigate the effects of the crisis, including bailouts of troubled financial institutions and packages to stimulate economic activity. All in all, the 2008 financial crisis was a major event in global economic history, the effects of which are still being felt today. By understanding the causes and consequences of the crisis, we can learn from the mistakes made and take steps to prevent similar events from occurring in the future.

2. Cause

Regarding the 2008 financial crisis, the direct cause was caused by the U.S. subprime mortgage crisis, however, there are many other factors that triggered it. Here I have chosen three causes that I think also had a significant impact on the outbreak of the financial crisis to elaborate and analyze, they are: The Fed's monetary policy, Subprime Mortgage, and Credit Default Swaps. These were the Fed's monetary policy, Subprime Mortgage, and Credit Default Swaps, which had a huge impact on the U.S. economy, loans, and home loans, and thus contributed to the emergence of the financial crisis.

2.1. Monetary Policy

The Federal Reserve dropped interest rates seven times, totaling more than three percentage points, between the end of 2007 and the summer of 2008. Despite this, the Fed was still unable to respond directly to the precarious financial and economic situation at the time. Between 2000 and 2003, interest rates in the U.S. fell from 6.5 percent to 1 percent, and in late 2008, The Fed declared the federal funds rate would be lowered to a record-low range of zero to 0.25 percent, beginning the era of zero interest rates [3]. Due to this abrupt reduction, banks were able to offer consumer credit at

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prime rates below those of their competitors and were even encouraged to lend to "subprime" or high-risk consumers, albeit at higher rates. The government's policy with the motivation of stimulating the economy increases the price of houses, leading to the bubble of real The government's policy with the motivation of stimulating economy increases the price of houses, leading to the bubble of real estate market. This phenomenon not only illustrated the low-interest rates and lax lending standards in the United States at the time but also contributed to the creation of subprime mortgages. However, the Fed's softening measures adopted in reaction to the financial crisis were crucial in supporting the American economy and banking system.

2.2. Subprime Mortgage

Subprime mortgages are home mortgages issued by some lenders to families and individuals with poor credit, low income, low education, and little financial literacy. At that time, many Americans chose to borrow from banks in order to own their own properties early, and then try to pay back the loans. But then there were some phenomena in society: a serious imbalance in social distribution relations, with the income of the vast middle class falling instead of rising; an emphasis on promoting production and economic development through consumption and a serious lack of regulation in the financial industry, which lured the general population as well as the lower-class population to overspend through borrowing. The excessive relaxation of lending standards led to the issuance of a large number of high-risk loans, and the risks of those high-risk loans were transmitted and led to a massive collapse of the financial system, culminating in the global outbreak of the subprime mortgage crisis in 2008 [4]. The subprime mortgage crisis caused a serious impact on the global economy and financial system, which mainly affected the real estate market and financial market, especially the stock market. Generally speaking, the subprime mortgage crisis will lead to a strong squeeze or even burst of the real estate bubble, which will lead to social environment turmoil and increase people's inner insecurity. A significant amount of many banks' assets, such as subprime loans or bonds made from subprime loans and less hazardous consumer debt, were subprime loans when the subprime mortgage market collapsed during the financial crisis. Since the beginning of the U.S. recession in 2001, interest rates in the housing market were extremely low, which fueled a high level of prosperity and the rapid growth of subprime mortgages. 2007 saw the U.S. housing market begins to cool, home prices fall, loan rates rise, and subprime borrowers experienced one financial hardship after another, and along with many borrowers stopping payments, banks had to repossess their homes, but the repossessed homes found no new buyers and banks had difficulty finding However, the repossessed houses could not find new buyers and it was difficult for the banks to sell them again, which led to a huge pile of bills and forced many banks to go bankrupt as well as collapse, which was one key factor for the outbreak of this crisis The severe subprime mortgage crisis severely hit the investors and related entrepreneurs of subprime bonds, and also seriously affected the confidence of investors worldwide in the U.S. capital market.

2.3. Credit Default Swaps

A CDS is basically a contract between a buyer and a seller for a specific credit event for a specific amount of time. It resembles insurance in that the buyer receives reimbursement when a credit event for a reference entity occurs. In exchange for a payout after the occurrence of the credit event, the buyer of CDS pays the seller of CDS a charge for the credit event of a reference entity either during the contract's term or on a regular basis in advance. In practice, however, there are significant differences between the two. In terms of regulatory requirements, CDS are less regulated than the insurance industry. The buyer of credit risk protection does not have to own the reference bond in

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order to trade CDS, which can be classified by multiple dimensions, the number of reference entities, and the underlying assets. CDS can be outside the underlying reference in terms of the underlying reference, indicating that it is not necessary for the buyer to own the reference bond [5]. Although bond investors hope that they will receive interest and money back on the bond when it matures, they must still take the risk of holding the debt, as there is no guarantee that either will happen. CDS was one of the central financial instruments of the 2008 financial crisis.

3. Consequence

Bear Stearns and Lehman Brothers were among the many banks that issued CDS to mortgage-backed securities (MBS) investors, and it could be argued that they were bundled and combined into a packaged product by the mortgages, as well as other types of derivatives. So when interest rates in the U.S. rose sharply in 2007, the huge wave of mortgage defaults that triggered made huge amounts of MBS and other bundled securities worthless and also triggered banks such as Bear Stearns and Lehman Brothers to spend huge amounts of CDS. when Lehman Brothers, which has a long history, declared bankruptcy, the chain of translators it triggered just threw the credit markets into serious disarray, and also made Various insurance giants in the US at the time, such as American International Group (AIG), suffered huge losses. In those days, banks, markets, and investors were all tied together by an invisible, vast, and complex web. But when Lehman Brothers was in crisis, the government did not intervene to help. It was suggested that the systemic risks of Lehman Brothers' bankruptcy could have been avoided if the government had intervened, and although federal officials had defused a series of financial turmoil on a local scale before the collapse of Lehman Brothers, many of them had used only billions of dollars of taxpayer money to bail out what they thought was a super-sized institution [6]. They did not do the same with Lehman Brothers. Likewise, some believe that Lehman Brothers was too late in realizing the huge losses the firm was incurring before it went bankrupt and did not take steps to raise capital when it was discovered, thus allowing the firm to sink deeper and deeper into the crisis and leaving the government with no recourse, not just a "do nothing" approach.

In fact, the government bailouts were only for financial institutions on the verge of bankruptcy, not for homeowners in great distress, even as the percentage of homes being forcibly repossessed continued to rise. The United States utilized $20 trillion in public funding over a two-year period to increase the entire market value of publicly traded corporations around the world, but it also lost a ton of money due to transmission frictions. At the same time, unemployment and underemployment continued to rise in almost every region of the world. This massive infusion of new government funds also put credit markets around the world under great crisis and stress, as the number of financial institutions that desperately needed government bailouts to stay afloat was so large that sovereign debt crises were looming in many economies around the world as a result of such massive public spending. Since the start of the Great Depression, the U.S. economy has suffered a net loss of 8.2 million jobs. At the time, the unemployment rate remained high, at 9.7 percent.

4. Response

4.1. Dodd-Frank Act

The Dodd-Frank Act, one of the most important financial reform acts in U.S. history, established the Financial Stability Oversight Council (FSOC), which is overseen by the Federal Reserve, the Treasury, and other agencies, and strengthened the regulation of financial institutions - not only by increasing capital adequacy requirements for financial institutions but also by increasing the regulatory authority over the dissolution and liquidation of financial institutions. It also enhances the supervisory mechanism's power to dissolve and liquidate financial institutions. In addition, the

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Act establishes the Consumer Financial Protection Bureau (CFPB), which regulates and oversees the sale and provision of financial products and services; establishes transparency requirements for all types of financial transactions, including disclosure of transaction information to the public and regulation of off-exchange transactions; and imposes stricter controls and regulations on the conduct of credit rating agencies to The Dodd-Frank Act also imposes stricter controls and regulations on the conduct of credit rating agencies to minimize the financial risks arising from errors [7]. Although there are still some problems and challenges in the implementation of the Dodd-Frank Act and some of the regulations are considered too complicated to be easily enforced and may impose burdens on financial institutions, there may even still be risks of a financial crisis in the future, it has strengthened the protection of consumers and investors through more detailed and comprehensive regulation of financial institutions and other related institutions. However, it has strengthened the protection of consumers' and investors' rights and interests through more detailed and comprehensive regulation of financial institutions and has made a significant contribution to the stability and healthy development of the U.S. financial market.

4.2. Basel III

Basel III seeks to reduce the impact of banks with potential systemic risk on the financial sector as a whole by strengthening the regulation of global financial risk, both at the individual bank and financial system levels, as well as providing clear support to long-term global financial stability and economic growth. First, in terms of micro-prudential regulation, the Basel Institute firstly re-refined the capital structure by dividing regulatory capital into three components, and after that, in order to improve the loss-absorbing capacity of capital instruments, it set up the eligibility criteria for capital instruments for this purpose, and generally improved the quality of capital [8]. Secondly, in order to improve the capital adequacy regulatory standards, and then strengthen the regulation of banks' capital quality at the same time Basel also revisited the previous regulations as well as revised them [9]. At the same time, Basel also introduced the leverage ratio as a supplement to risk-based capital as a way to compensate for the shortcomings of the monolithic capital adequacy regulation, which not only assists in preventing banks from exploiting gaps in risk-based capital requirements but also assists in preventing model risks and measurement inaccuracies [10]. The Basel Committee also issued in December 2009 A global exposure draft on liquidity risk regulation, along with a set of common tests to improve regulatory consistency across countries, including information on funding concentrations, contractual maturity mismatches, etc., as a way to help supervisory authorities identify and analyze trends in liquidity risk for individual banks and the banking system. In addition, from macroprudential regulation: first, countercyclical capital mitigation - used to compensate for downturns and to ensure that commercial banks are able to meet minimum capital requirements on a continuous basis in order to maintain normal credit supply capacity, most notably, this regulation has the important feature of being responsive to the times; in order to avoid the risk that too many banks are still buying back shares during the financial crisis. Third, the Basel Committee also proposed to increase the requirements for systemically important banks and their related regulation, including Additional capital requirements for systemically important banks, such as contingent capital and self-help obligations.

5. Conclusion

The global financial crisis that erupted in 2008 affected the global economy in a severe recession and had a ripple effect on all aspects of the global economy, the effects of which are still being presented today. The immediate cause of the financial crisis was the U.S. subprime mortgage crisis triggered by the low-interest rate loans and lax lending standards in the U.S. at the time, where the

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lack of regulation of CDS was serious, and phenomena such as the bankruptcy of Lehman Brothers and the high unemployment rate were all affected by the financial crisis and triggered the crisis. In response, people resisted the financial crisis through the Dodd-Frank Act and Basel III, and there were significant breakthroughs.

The discoveries of the 2022 Nobel laureates have improved the way society responded to the financial crisis, enhanced our understanding of the role of banks in the economy, and increased our appreciation of the important role banks played during the financial crisis. One of the winners, Ben Bernanke, also served as chairman of the Federal Reserve during the financial crisis. In today's society, rising energy prices and the spillover effects of U.S. interest rate hikes seem to have some degree of impact and challenge on the global economy, and this year's Nobel Prize in economics may be a better way to draw attention to the financial crisis. Through the analysis of the 2008 financial crisis, it can better reflect the huge impact of the financial crisis on people, so it is important to study the situation related to the financial crisis.

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