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The Anatomy of Global Financial Crisis: A Comprehensive Analysis

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Abstract: The topic of this article is an analysis of the 2008 Financial Crisis and its inspiration for the complicated economy under COVID-19 and the Russia-Ukraine conflict. The background of this article is that uncertainty and fluctuation occur frequently in the global macroeconomic and 2022's economic Nobel Prize draws attention to the research of financial crisis. The article will introduce the cause of the 2008 Financial Crisis in 3 aspects: Fed's monetary policy, subprime mortgages, and credit default swaps. Then it will come to the consequence of the 2008 Financial Crisis with several exact examples. After that, changes due to the 2008 Financial Crisis will be introduced from 2 dimensions, which are Dodd-Frank Act and Basel III. That section also discusses the application of certain regulation or rules and their influence on the post-crisis era. In conclusion part, this article will show the significance of the 2008 Financial Crisis and its application to today's economic problems under a complex external environment.

Keywords: mortgage-backed securities, risk management, financial regulation

1. Introduction

From the era that people realize economic and financial rules, the crisis in finance and its consequence and potential influence is also discussed by economics. Until today, the analysis of financial crisis and prediction are quite important as well. The 2022 Nobel Prize in Economic Sciences was about the financial crisis, which gives us clear and orientating inspiration. Rudd claims that almost every 10 years there will be a financial crisis break out in the world [1]. There might be several complicated reasons for a financial crisis. Increasing in bad assets, credit crises, or even war can be the cause of a financial crisis [2]. Therefore, the situation that the Ukraine-Russian war consists of for the whole year while the COVID-19 pandemic has not yet ended, and the global financial market is the face of severe challenges. Thus, intensive research and analysis of the financial crisis are necessary and instructive.

This paper will select one of the most representative events, the 2008 financial crisis to be our object of study. Here are three main reasons. Firstly, its break-out time is the closest. Secondly, the 2008 financial crisis is one of the largest in scale, which affected most countries and regions in the world. Thirdly, the consequence is one of the most serious and cause great influence in the academic world. To have a scope of the 2008 financial crisis, also called the subprime crisis, this paper first discusses the background. In the spring of 2006, the U.S. subprime mortgage market usually adopted a combination of fixed interest rate and floating interest rate repayment methods [2]. This means that

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the home buyer repaid the loan at the fixed interest rate in the first few years after purchasing the house, and then repaid the loan at the floating interest rate. In the five years before 2006, due to the continued prosperity of the U.S. housing market and the low-interest rate in the United States in previous years, the U.S. subprime mortgage market developed rapidly [1]. Then comes the 2008 financial crisis. During the 2007-2008 global financial crisis, an unprecedentedly large number of financial institutions failed or required government bailouts [3]. The operating logic of major assets at this stage is primarily panic and recession expectations. Early on, the stock market turned bearish, but the bond market and gold performed well, and later inflation drove the yield up. The second stage is during 2008-2009. The collapse of Lehman Brothers marked the full outbreak of the financial crisis, the credit crunch, and the free fall of the American economy; During the period, the logic of the operation of major assets was switched from "liquidity crisis" to "economic recession" [3]. When the early liquidity crisis broke out, all kinds of assets were under pressure, and the dollar benefited significantly. Later, with the creation of a plethora of Federal Reserve rescue tools and the launch of QE, the liquidity crisis subsided, but the economic recession was confirmed, the stock market fell, and bond yields fell [3].

2. Cause

The government's policy with the motivation of stimulating the economy increases the price of houses, leading to the bubble of the real estate market. Ultra-low loan standards have contributed to the generation of subprime loans. At the same time, the popularity of CDS has further increased the accumulation of non-performing assets. Finally, it comes to a crush.

2.1. Loose Monetary Policy

In September 2008, the Federal Reserve began to expand its balance sheet [4]. Financial institutions were drawn to sub-prime loan-related products due to the extremely low financing costs experienced before the financial crisis. To increase their chances of making money, they increased financial leverage while fervently promoting OTC derivatives transactions. Due to the excessive size and leverage of the derivatives market during the economic recovery, when the Federal Reserve increased interest rates, asset prices fell sharply [4]. The positive monetary policy and housing finance policy have a direct impact on the subprime crisis. The long-term low-interest rate and low down payment have buried hidden dangers for the excessive prosperity of the real estate market, and the collapse of the real estate foam is the direct cause of the subprime crisis. With the Federal Reserve's continuous reduction of interest rates and the continuous rise in house prices, lending institutions have seen enormous business opportunities among them [1]. On the one hand, they provide loans to real estate developers to help with development; on the other hand, they lower the terms of housing loans and increase demand for loans. Some lending institutions have even adopted the zero down payment and zero documentation loan method. Many people who do not have the ability to repay have obtained subprime loans by providing false information.

2.2. Subprime Mortgage

Subprime lending is loans given to borrowers with bad credit who are unable to borrow from traditional ways [5]. Borrowers are at greater risk with subprime lending because they typically have higher interest rates than standard loans and are frequently subject to rapid increases in floating interest rates over time. There is also a higher credit risk for lenders than there is for regular loans because of the high default rate of Subprime lending. However, in the 2008 financial crisis, the risk of subprime lending, especially subprime mortgages come to a peak. As interest rates in the U.S.A increased from 1% to 5.25%, the real estate-related industries contracted. It follows a sharp decline

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in real estate and a shrinking asset, and the default rate on subprime mortgages soared, raising the risk of bankruptcy of Bearston's hedge fund [5]. Interest risk caused by interest rate drops to 1% and then increases to 5.25%, resulting in massive selling of related bond investment commodities in the credit market. The visual consequence is that a large number of people are bankrupt and homeless, just like in the scene in the film The Big Short. A subprime mortgage is not the end of the story, another financial product called CDS counts in the crisis as well.

2.3. Credit Default Swap

CDSs are more usually called CDS is another needle that punctures the bubble. Stulz states that CDS is a subject of considerable ambivalence [6]. A CDS enables the participants in the contract to exchange or hedge the risk of a default by the underlying entity, which could be a corporate or sovereign borrower [7]. On the eve of the subprime crisis in 2007, the size of the CDS market reached $60 trillion, which is 50 times the underlying assets of MBS [1]. In 2007, the US GDP was only $14.45 trillion. Around 80% of the 60 trillion CDS transactions are traded between financial institutions. The main banks not only bought but also issued CDS, all of which are over-the-counter transactions. Lehman Brothers and AIG are the leading deep participants, respectively holding roughly $440 billion of CDS and roughly $500 billion of CDS. What’s more, Lehman Brothers were 31 times leveraged at that time, which is quite risky and turned out to be a disaster in the 2008 financial crisis. Due to legal loopholes, CDS issuance is not regulated by insurance regulatory authorities and can be issued by many financial institutions other than insurance companies [7]. Hence, CDSs have a basis for abuse. Then it results in a quite risky situation at that time--You can buy insurance for bonds you don't own, and in many cases, there is almost no upper limit. For instance, someone can purchase CDS with a $1 million bond that is not related to him/her and has a security amount of more than $5 million. Whenever there's a problem with this bond, the bank or insurance company might have to pay up to $5 million.

3. Consequence

Many serious consequences occur during and after the 2008 financial crisis. First, many financial institutions suffered huge losses and even went bankrupt due to the crisis, leading to turmoil in the financial system. Secondly, the crisis has led to a worldwide decline in stories and a collapse in the real estate market, with a large number of businesses closing down and unemployment soaring. In addition, in response to the crisis, central banks around the world have adopted a large number of monetary stimulus policies, resulting in inflationary pressure and instability. This section mainly discusses two of those consequences.

3.1. Banks Breakdown

The collapse of Lehman Brothers was seen as one of the landmark events in the crisis. Lehman Brothers are one of the most influential investment banks in the history of the United States. Its collapse not only caused a significant decline in the financial market but also led to a crisis of trust among major banks in the United States, leading to the most serious bank collapse in history [8]. Actually, the Lehman Brothers’ bankruptcy can be anticipated to a large extent and hence prevent further severe consequences [9]. With the arrival of the wave of bank failures, the credit mechanism between banks has been severely frozen, and economic activity has plummeted, resulting in a large number of people losing their jobs and reducing their wealth, which has further affected the intensification of the global economic predicament. In this situation, central banks around the world have adopted a large number of monetary stimulus policies, leading to increased inflationary pressure and instability, while also exacerbating the pressure on foreign exchange reserves in some countries.

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3.2. High Unemployment

Another significant consequence is high unemployment. As the financial crisis deepens, more and more enterprises declare bankruptcy or downsize, and a large number of workers have lost their jobs, leading to a significant increase in the global unemployment rate [10]. In the U.S., unemployment surged to a peak of 10% with at least 8.5 million people losing their jobs. Meanwhile, the global unemployment rate from 6% in 2008 to 2010 was 6.4% [11]. From an academic perspective, behind the high unemployment rate is the imbalance and disorder of the entire economic system. Before the crisis, the financial market boomed, and strong speculation pushed up the real estate foam, which caused the economic structure of many economies to be unbalanced. In this context, after the outbreak of the financial crisis, many enterprises are facing difficulties, and the soaring unemployment rate has become an inevitable result [10]. Therefore, to address the financial crisis, it is necessary to start from the root causes and take effective policy measures to address the unhealthy development and unbalanced economic structure of the financial market. There is a need for more effective regulatory mechanisms to avoid the direct impact of risks on the real economy after exposure in the financial market. In addition, there is also an expectation to reverse economic imbalances through measures such as fiscal, monetary, and industrial policies, and to avoid the emergence of high unemployment and other social problems.

4. Regulatory Responses

After the economic crisis, the government began to strengthen its supervision of the financial industry and joined new regulatory systems, such as the Dodd-Frank Act, aimed at eliminating unethical or irresponsible behavior or transactions related to the financial industry. As people's trust in the government and financial institutions has declined, political ideology and attitudes have also changed. Many people want to see more responsible governance and more transparent information disclosure. Basel III is a meaningful example of regulation rules change. This section analyzes the mentioned aspects of changes.

4.1. Dodd-Frank Act

Government interferes with the housing market by introducing several acts. One of those, the Dodd-Frank Act, also known as the Wall Street Reform and Consumer Protection Act, is a multifaceted legislation passed by the United States in response to the 2008 financial crisis [12]. The bill includes the creation of a body called the Financial Stability Oversight Board, whose mandate is to regulate financial institutions and protect consumer interests; Providing for stricter regulatory measures, including stress testing of large financial institutions and regulation of the debt securitization market; Increased supervision of trust funds and investment banking transactions. Its guiding significance for the 2008 economic crisis is to reduce the impact of the financial crisis by regulating the behavior of financial institutions, improving regulatory standards, and preventing unforeseen risks in the future. In the process of formulating this bill, Baily et al. believe that this is an important response to the 2008 economic crisis, and they believe that this legislation will help prevent similar economic crises from occurring again [13]. As for future applications, the Dodd-Frank Act has played an important role in the banking system and financial industry ecosystem over the past decade. However, although the bill has improved the transparency and regulatory level of financial markets to some extent, there are also criticisms. Some people believe that the bill has increased the cost and regulatory burden of financial companies, bringing unnecessary pressure to the financial market, and some measures may even limit the innovation and development of the financial industry. In the future, the Dodd-Frank Act may still be a controversial issue, but it will still serve as a reference to help guide the behavior of financial institutions and protect the interests of investors and consumers when necessary.

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4.2. Basel III

In the wake of the global banking crisis of 2008, bank regulators have re-examined their rules. Basel III is an international banking regulatory standard jointly developed by the International Monetary Fund (IMF) and the Committee on Transnational Banking Supervision (BCBS), aiming to provide a more robust and durable regulatory framework for the global banking industry [14]. It is a modification and update to the second version of the Basel Accord, originally proposed in 2009, but after several revisions, it was finally implemented in 2017 [15]. The third edition of the Basel Accord aims to strengthen risk management in the banking industry and improve the capital adequacy ratio of banks. The agreement stipulates that banks must maintain sufficient capital reserves to withstand various risks, such as credit risk, market risk, and liquidity risk, to ensure that banks will not fail under economic pressure. In addition, the third edition of the Basel Accord also requires banks to implement stricter regulatory and reporting measures to avoid future financial crises. Specifically, the third edition of the Basel Agreement includes the following. Firstly, increase capital requirements: Banks must maintain higher capital reserves to address potential risks. The agreement stipulates that the capital adequacy ratio must reach 10.5% [14]. The second is Mandatory liquidity requirements: Banks must maintain appropriate liquidity reserves to respond to market liquidity crises. Thirdly, stricter regulations are carried out: The introduction of stricter regulatory regulations aims to strengthen the control and supervision of banks by regulators to avoid bank failures.

The third edition of the Basel Accord is an important revision of financial regulation after the financial crisis. Compared to the previous two versions, it tightens the capital requirements of banks, enhances the regulatory responsibilities and powers of regulators, and puts forward higher requirements for the risk management of financial institutions [14]. Therefore, it has had a profound impact on social, financial, and economic development after the economic crisis. The third edition of the Basel Accord stipulates the capital requirements of banks, changing the past regulatory approach that relied solely on financial indicators. This has enabled banks to have a more robust operating ability and higher risk prevention ability when the economic crisis comes, fundamentally avoiding the occurrence of financial crises [16]. At the same time, this has prompted banks to pay more attention to their stability, reducing the proportion of risk, which has had a positive impact on the stability of the entire financial market. What's more, the third edition of the Basel Accord has significantly improved the responsibilities and powers of regulators. Through regular reviews, regulators have strengthened their assessment of banks' risk management and forward-looking monitoring capabilities, improving their supervision and oversight capabilities. This enables regulators to identify and address financial risks promptly, playing a role in preventing financial crises. Last but not least, the third edition of the Basel Accord requires higher risk management requirements for banks, strengthening their sensitivity and resilience to changes in the external environment [16]. Banks should pay more attention to the prevention of market risk, credit risk, and liquidity risk in their business decision-making, and significantly reduce the risk of bank operation and financial crisis. This also urges banks to pay more attention to their risk management, appropriate financing, and rational and transparent economic operation, which is conducive to the stable development of finance and the long-term stability of the economic system.

5. Conclusion

During the post-crisis time, causes from many aspects are analyzed while consequences are frequently turned out. The cause of the economic crisis in 2008 was the subprime mortgage crisis in the United States. Due to excessive lending by financial institutions such as Bank of America to borrowers with low credit ratings, credit defaults in the subprime bond market have increased, triggering a crisis of confidence in global financial markets. This led to the collapse of many financial institutions and

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market imbalances, which subsequently triggered a global economic recession. After several months of resistance and response, the global economy has gradually recovered, and a steady stream of aggressive monetary and fiscal policy measures have been adopted, reversing the trend of economic recession. However, factors such as uneven global economic growth, instability in financial markets, and political turmoil continue to affect future economic and social development. The lesson of the economic crisis in terms of its impact on the future is that policymakers in major global economies have recognized the dangers and importance of financial difficulties and liquidity shorts, and have restarted their stance of advocating and expanding centralized risk management and regulation. This trend will continue to promote and promote changes in more robust, regulatory, and political power distribution methods. In addition, the impact of COVID-19 has also promoted the adjustment of global monetary policy, investment, and trade balance. The legacy of the economic crisis will continue to affect the pattern of the financial market and social-economic development for a long time in the future. People all want to figure out what can be learned or obtained from the crisis. After COVID-19 pandemic along with the Russian-Ukraine war, people shall find the key reason to anticipate, decline, and even prevent another crisis. The 2022 Nobel Price is for analyze in the financial crisis, which inspired new recognition of the 2008 financial crisis. People need to know the past at first, then now, and finally the future.

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