

The Price of Risk: Exploring the Impact of the 2008 Global Financial Crisis

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Abstract. This research article delves into the 2008 global financial crisis, analyzing its causes, consequences, and effects. The study highlights the role of the Federal Reserve's monetary policy and subprime mortgage lending in triggering the crisis, which eventually led to the collapse of the credit default swap market. The study also examines the aftermath of the crisis, including the breakdown of Lehman Brothers and the high unemployment rates that ensued. The paper further explores the regulatory changes brought about by the Dodd-Frank Act and Basel III, aimed at preventing similar crises in the future. Overall, the research emphasizes the importance of studying financial crises to be better equipped to tackle future challenges. The paper serves as a reminder that the consequences of financial crises can have far-reaching impacts on the global economy and highlights the need for effective crisis management strategies to mitigate their effects. The findings of this study may help inform policymakers, academics, and investors on the importance of understanding the causes, consequences, and effects of financial crises.

Keywords: Subprime mortgage; mispricing; deregulation; responses.

1. Introduction

One of the most catastrophic worldwide economic crises from 2007 to 2009 was the 2008 financial crisis, commonly known as the subprime crisis. This crisis was caused by many factors. Hence it is important for us to research this event. The 2022 Nobel Memorial Prize in Economic Sciences was awarded to American economists Ben S. Bernanke, Douglas W. Diamond, and Philip H. Dybvig on October 10, specifically "for research on banks and financial crises. Their research explains the value of banks, how to increase their crisis resistance, and how bank failures exacerbate financial crises [1]. This shows that research on the financial crisis has an important meaning, especially in today's complex economic situation of COVID-19 and the Ukraine conflict. Both the pandemic and the conflict in Ukraine have brought new challenges to the global financial system. For example, the pandemic has led to a sudden stop in economic activity, forcing businesses to shut down and leading to widespread job losses. The conflict in Ukraine has led to political instability and economic sanctions that have disrupted trade and investment. By studying financial crises in these contexts, we can better understand the unique challenges that they pose to the financial system and develop strategies for mitigating their impact. The economic impacts of both the pandemic and the conflict in Ukraine are wide and deep. Both have led to a significant contraction in global trade, disrupted supply chains, and caused significant job losses. People can better understand the causes of economic instability and create plans for fostering economic recovery and growth by researching financial crises in these circumstances. As the trend of economic globalization is deepening, we must study this crisis from history to be prepared for future crises. This article chooses the most influential 2008 Financial Crisis as the research object. The 2007 financial crisis was caused by a breakdown in bank trust that occurred the year before the 2008 financial crisis. It was caused by the unregulated use of derivatives, which led to the subprime mortgage crisis. This timeline includes the breakdown reasons, early warning indicators, and symptoms. It also covers the steps taken by the US Treasury and Federal Reserve to avert a financial disaster. The banking crisis was ultimately responsible for the Great Recession despite these efforts [2].

Home price declines in early 2006 were the beginning of the financial crisis of 2007–2008. The problem was made worse by the early 2007 bankruptcy filings of subprime lenders and the loss of

two sizable hedge funds in June of that same year due to investments in subprime loans. In August 2007, fear brought on the losses on subprime loan investments prompted the global lending industry to collapse. The crisis came to an end with Lehman Brothers' bankruptcy in September 2008, which was the biggest U.S. bankruptcy history. When the subprime mortgage bubble eventually burst, financial institutions had essentially worthless investments in the amount of trillions of dollars. These important conclusions emphasize how the crisis developed gradually and how subprime lending defaults had a cascading impact throughout the financial system, finally causing Lehman Brothers to fail and the collapse of the whole global financial system [3]. The global economy and financial systems were significantly impacted by the 2008 financial crisis, which resulted in an extended period of financial instability and widespread recession. Include a recessionary economy marked by a wave of business closures and rising unemployment. Housing market collapse which leads to foreclosures and a significant decline in the value of mortgage-backed securities. What's more, this also leads to stock market volatility, stock market volatility, and sovereign debt crisis.

2. Causes

The main causes of the 2008 financial crisis are the Fed's monetary policy which was 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. Also, subprime mortgages promote the crisis. Moreover, the other factor is credit default swaps.

2.1. Fed's Monetary Policy

The Glass-Steagall Act of 1933 was abolished in 1999 by the Gramm-Leach-Bliley Act. This repeal gave banks the ability to buy derivatives using deposits. According to arguments made by bank lobbyists, the purpose of this ruling was to provide banks the ability to compete with multinational corporations. To safeguard their clients, they promised to make only low-risk investments [4]. The Fed started lowering interest rates in the early 2000s in reaction to the dot-com crash with the intention of promoting economic expansion. This resulted in a flood of cheap credit available to consumers and businesses, which led to a boom in the housing market. In an effort to capitalize on the expanding market, lenders started to loosen their lending criteria, making it simpler for those with bad credit and low income to get mortgages. As a result, many people who could not afford to repay their loans were able to obtain mortgages, and many others were able to take out mortgages that were much larger than they could realistically repay. This led to a housing bubble, as demand for housing continued to rise while supply remained limited, driving up prices. Hence as the bubble grew, it became one of the most main reasons to cause the financial crisis. And also contributed to the creation of subprime mortgages which will discuss in the next paragraph.

2.2. Subprime Mortgage

A loan that is typically given to borrowers with bad credit is a subprime mortgage. Prime conventional mortgages are not available because the lender believes the borrower is more likely to default on the loan. To make up for taking on additional risk, lending institutions frequently charge lending rates on subprime loans that are significantly higher than those on prime mortgages. The interest rate on these loans may increase periodically because they are often adjustable-rate mortgages (ARMs) [5]. A conventional mortgage varies from a subprime mortgage loan in that it lays less attention on the borrower's financial stability and credit history. The loan's interest rate is significantly higher than the usual mortgage because the conditions are not strict. People who have applied for subprime mortgages to purchase homes after being turned down by banks for decent mortgages due to poor credit or inadequate repayment capabilities. Prior to 2006, the top housing market in the United States. Due to the continuous boom and low mortgage rates in the US, the market for subprime mortgages saw growth [6]. The cost of borrowing to repay subprime loans has increased greatly along

with the decline in the US housing market, particularly with the rise in short-term borrowing costs, and the strain on homeowners to make these repayments has grown significantly.

Meanwhile, the housing market continues to cool, prompting buyers to sell or mortgage their homes. Refinancing becomes difficult. This circumstance directly contributed to a significant number of poor borrowers being unable to repay the loan on time, the bank seizing the home but being unable to sell it for a profit, a substantial area of losses, and the beginning of the loan crisis. The risks are that, higher interest rates. Hence it is easy to see that one of the main risks of subprime is that the probability of borrowers defaulting is high. Cause subprime borrowers often do not have a higher financial level and are more likely to experience financial difficulties, such as job loss which make them more difficult to repay their loans. The subprime mortgage also takes an important role in financial crises. Because it is a risk that financial institutions have to take to pursue higher profit. These subprime mortgages were packaged by banks and other lenders into intricate financial products, which they then marketed to investors all over the world, dispersing the default risk across the financial system. These investments lost a lot of value as the housing market started to tank, which resulted in large losses for investors and added to the general financial instability that sparked the crisis. Credit default swaps were the result later.

2.3. Mispricing and Deregulation

A credit default swap (CDS) is a financial contract that allows investors to transfer their credit risk to another party. It is a type of derivative that enables the lender to swap the risk of default by purchasing a CDS from a third party who undertakes to pay the lender in the event of a default. The majority of CDS agreements involve monthly payments, similar to insurance premium payments. CDS contracts are often used to mitigate the risk of default by a borrower on a loan. Credit default swaps were heavily utilized before the 2008 financial crisis, with a total value of \$45 trillion, surpassing the amounts invested in other assets such as stocks, mortgages, and US Treasury bonds. Lehman Brothers was the biggest loser due to its \$600 billion debt, of which \$400 billion was covered by CDS, and the \$26.3 trillion in outstanding CDS as of mid-2010. The Federal Reserve had to step in to save the bank's insurer, American Insurance Group, because it lacked the resources to pay back the loan [7].

However, the lack of supervision of CDS is also a key factor in the 2008 financial crisis. At that time, CDS were largely traded over-the-counter (OTC), It indicated that they did not trade on a centralized exchange but rather directly between buyers and sellers. It was easy to find that it is difficult to identify potential risks. There were many reasons that led to the lack of supervision of CDS [8]. First of all, the regulatory gaps. Does not like other financial instruments, like stocks or bonds, CDS is not regulated in the same way. Because CDS were not clearly defined as either an equity or a commodity, they fell through the regulatory cracks. Secondary, lack of transparency. Due to that CDS was not a centralized exchange, and no trades could be controlled. Hence, it is hard to know the size and complexity of CDS. The lack of control of CDS lets financial institutions engage in risky behavior and take many high-risk events without proper oversight. This contributed to the overall instability of the financial system and led to the 2008 financial crisis.

3. Consequences

The consequences of the issues discussed earlier led to the collapse of several banks, with Lehman Brothers being the most notable example. Established in the United States in 1847, Lehman Brothers Inc. offered worldwide financial services and was the fourth-largest investment bank in the U.S., employing around 25,000 individuals globally, before declaring bankruptcy in 2008. The bank's activities encompassed investment banking, the sale and trading of stocks, fixed-income products, and derivatives, as well as investment management, research, private equity, and private banking. Lehman had been in operation for 158 years, from its founding in 1850 to its closure in 2008 [9]. Lehman Brothers' bankruptcy on September 15, 2008, marked the peak of the subprime mortgage

crisis. After informing the financial services company of an impending rating drop due to its substantial exposure to subprime mortgages, the Fed contacted a number of banks to seek finance for the reorganization. As these negotiations broke down, Lehman filed for bankruptcy with the most assets—over US\$600 billion—ever. The bankruptcy caused the Dow Jones Industrial Average to drop 4.5% in a single day, which was the greatest drop since the terrorist attacks on September 11, 2001 [10].

This indicates that the government had little influence over the crisis. And such a sizable bank collapsed as a result of individuals withdrawing their money from banks and having less faith in banks. Hence more and more banks received a harmful hit at that time. Moreover, there were many other consequences such as high unemployment. At that time many companies reduced production as the economic crisis had reduced people's ability to buy. Therefore the company had to reduce the staff and causing high unemployment. Also, the financial crisis led to an increase in government debt, especially now that globalization is being perfected. Governments around the world intervened to stabilize the financial system and support their economies, leading to increased levels of public debt. This has raised concerns about the sustainability of public finances and the potential for future economic crises.

The proportion of outstanding domestic debt in relation to GDP is presented in Figure 1, encompassing both financial and non-financial sector debt, including that of households and the public sector. The graph indicates a significant increase in total debt leading up to the Great Recession, with a peak of 370 percent of GDP shortly after Lehman Brothers' collapse. Although this ratio remains relatively high at around 330 percent of GDP, it has stabilized since 2008 and is similar to pre-recession levels.

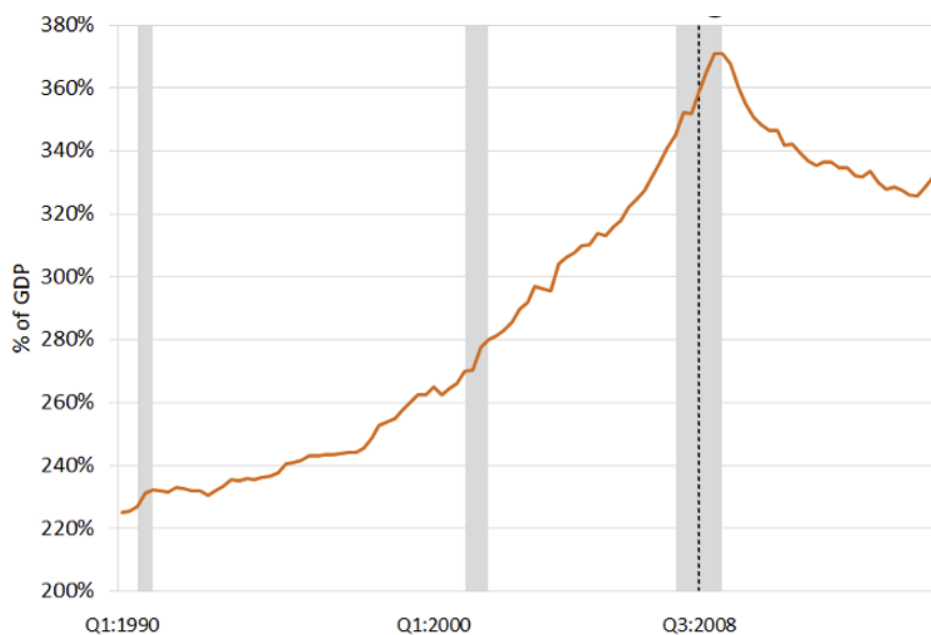


Fig 1. Total domestic debt outstanding as a percentage of GDP [10].

4. Responses

4.1. Government Intervention

The US government intervened in the housing market in reaction to this crisis. The Wall Street Reform and Consumer Protection Act, popularly known as the Dodd-Frank Act, was one of these measures [11]. With the implementation of several measures, this act sought to strengthen the safety of the US financial system for taxpayers and consumers. The Orderly Liquidation Authority was one of the components of the Dodd-Frank Act, which monitored the financial stability of significant financial firms. Additionally, the Act created the Orderly Liquidation Fund to assist with the

liquidation and restructuring of financial firms without resorting to tax funds. Another component of the Dodd-Frank Act was CFPB, which focused on preventing predatory mortgage lending and ensuring that consumers understood the terms of their mortgage before signing it. The CFPB also regulated consumer lending and handled consumer complaints. The Volcker rule was another measure introduced by the Dodd-Frank Act. It restricted bank investment options, prohibited proprietary trading, and limited speculative trading. The rule also aimed to regulate how financial institutions use derivatives to prevent large corporations from taking excessive risks that could harm the economy.

The SEC Office must make sure that credit rating agencies give the organizations they assess—businesses, governments, and other entities—accurate and relevant credit ratings. Last but not least, the Sarbanes-Oxley Act of 2002's whistleblower provisions were broadened and improved by the Dodd-Frank Act. This included the establishment of a mandated compensation program for informants, who were eligible to collect 10% to 30% of the proceeds from a legal settlement. Another critical component of the Act was the establishment of FSOC. Its primary role is to monitor and assess the overall health and stability of the US financial system and to identify potential risks and vulnerabilities that could threaten financial stability. Additionally, the FSOC is in charge of identifying certain financial institutions as systemically important, which makes them subject to more stringent regulatory control. The FSOC also has the power to coordinate the resolution of any potential financial system problems and to advise financial regulators on particular steps to be taken to address emerging risks or vulnerabilities. Ultimately, the FSOC's formation was a crucial step in enhancing the US financial system's resilience and stability in the wake of the 2007–2008 financial crisis.

4.2. Banking Regulation

Following the global banking crisis of 2008, regulators have reviewed their regulations to prevent similar financial crises in the future. In response to this crisis, the Basel Committee developed a set of universally recognized rules called Basel III. These measures aim to improve the governance, regulation, and risk management of banks. To ensure that internationally operating banks are operating within a predictable and transparent regulatory environment, the Basel Committee initiated a detailed RCAP in 2012. The program's purpose is to monitor and evaluate the adoption and implementation of Basel III standards [12]. Monitoring is the first. Based on available data, the implementation of Basel III regulatory criteria into national rules is routinely assessed. Assessment is the second. The Basel III regulatory system is taken into consideration when the Committee assesses the consistency and completeness of the set standards as well as the significance of any deviations. On the basis of jurisdictions and themes, these consistency evaluations are conducted [13].

Tier 1 capital is the primary core equity assets retained by banks or other financial organizations that are used to fund commercial activities for clients. This type of capital includes reported reserves, common stock, and a few other assets. Together with Tier 2 capital, Tier 1 capital levels are used to assess the strength of a financial institution's finances. Common stock and retained earnings are the main components of Tier 1 capital. Noncumulative, nonredeemable preferred stock is another form of Tier 1 capital. Under the Basel III criteria, Tier 1 capital is divided into two categories: Additional Tier 1 capital and Common Equity Tier 1 (CET1). CET1 is the highest level of capital and has the ability to absorb losses quickly. Another key aspect of Basel III is the introduction of new liquidity standards aimed at ensuring that banks maintain a sufficient level of liquid assets to withstand short-term funding pressures. Two of the important liquidity measures adopted by Basel III are LCR and NSFR. In order to comply with the LCR, banks must maintain a minimum level of high-quality, liquid assets that can be promptly converted into cash. In contrast, the NSFR mandates that banks maintain a consistent funding profile over a one-year time horizon by matching their long-term assets with stable funding sources. By taking these steps, banks will be more likely to avoid bank runs and have enough liquidity to fulfill their obligations even during difficult financial times. The Basel III framework also includes a leverage ratio that compares a bank's Tier 1 capital to its overall exposure

to leverage. The leverage ratio is a straightforward, non-risk-based metric created to support risk-based capital measures and make sure banks have enough capital to finance their operations. In general, Basel III's implementation of these additional liquidity and leverage rules marks a substantial advancement in raising the stability and resilience of the world banking system.

5. Conclusion

In conclusion, the 2008 financial crisis was a result of the Fed's monetary policy, which increased subprime mortgage lending and led to the creation of CDS. The collapse of banks, especially Lehman Brothers, coupled with high unemployment, resulted in declining living standards, loss of trust in governments and banks, and increased government debt. To prevent similar crises in the future, the Dodd-Frank Act and Basel III were implemented to ensure financial stability, and consumer protection, and strengthen regulation, supervision, and risk management of banks. Studying financial crises is crucial to prepare for future challenges, especially in an era of accelerating economic globalization. The awarding of the 2022 Nobel Prize for research on financial crises emphasizes the importance of this issue. Therefore, policymakers, academics, and investors should pay close attention to research on financial crises and implement effective crisis management strategies to mitigate their effects. The 2008 financial crisis serves as a warning that financial stability is vital for economic growth and that financial crises can have severe and far-reaching consequences.

References

- [1] The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 2022. NobelPrize.org. <https://www.nobelprize.org/prizes/economic-sciences/2022/summary/>, last accessed 2023/3/20.
- [2] Amadeo, K. 2007 Financial Crisis Explanation, Causes, and Timeline. The Balance. <https://www.thebalancemoney.com/2007-financial-crisis-overview-3306138>, last accessed 2023/3/20.
- [3] Singh, M. The 2007–2008 Financial Crisis in Review. Investopedia. <https://www.investopedia.com/articles/economics/09/financial-crisis-review.asp>, last accessed 2023/3/20.
- [4] Amadeo, K. Causes of the 2008 Financial Crisis. The Balance. <https://www.thebalancemoney.com/what-caused-2008-global-financial-crisis-3306176>, last accessed 2023/3/20.
- [5] Kopp, C. M. What Is a Subprime Mortgage? Credit Scores, Interest Rates. Investopedia. https://www.investopedia.com/terms/s/subprime_mortgage.asp, last accessed 2023/3/20.
- [6] Maxwell, T. The Pros and Cons of Subprime Mortgages. Experian. <https://www.experian.com/blogs/ask-experian/the-pros-and-cons-of-subprime-mortgages/>, last accessed 2023/3/20.
- [7] Hayes, A. What Is a Credit Default Swap (CDS), and How Does It Work? Investopedia. <https://www.investopedia.com/terms/c/creditdefaultswap.asp/>, last accessed 2023/3/20.
- [8] Corporate Finance Institute. Credit Default Swap. <https://corporatefinanceinstitute.com/resources/derivatives/credit-default-swap-cds/>, last accessed 2023/3/20.
- [9] Lioudis, N. The Collapse of Lehman Brothers: A Case Study. Investopedia. <https://www.investopedia.com/articles/economics/09/lehman-brothers-collapse.asp>, last accessed 2023/3/20.
- [10] Castro, M. F. E. Domestic Debt Before and After the Great Recession. St. Louis Fed. <https://www.stlouisfed.org/on-the-economy/2018/october/domestic-debt-before-after-great-recession>, last accessed 2023/3/20.

- [11] Hayes, A. Dodd-Frank Act: What It Does, Major Components, Criticisms? Investopedia. <https://www.investopedia.com/terms/d/dodd-frank-financial-regulatory-reform-bill.asp>, last accessed 2023/3/20.
- [12] Basel III: international regulatory framework for banks. <https://www.bis.org/bcbs/basel3.htm>, last accessed 2023/3/20.
- [13] Implementation and evaluation of the Basel standards. <https://www.bis.org/bcbs/implementation.htm?m=2656>, last accessed 2023/3/20.