

2008 Financial Crisis: Cause, Consequence & Response

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Abstract. The US real estate bubble's deflation marked the beginning of the financial crisis in 2008. On September 15, 2008, the investment bank Lehman Brothers went bankrupt, sparking a widespread global banking crisis. With several financial institutions failing and financial assets sharply declining, the crisis swiftly extended to the whole financial system. The US financial crisis quickly turned into a global economic disaster that affected Europe and the rest of the globe. The global financial crisis was directly brought on by the American subprime crisis. Beneath the credit crisis, the US financial crisis was brought on by a buildup of long-term excessive spending, an abundance of loans without an economic foundation, exorbitant salaries paid to bank white-collar staff, a severe shortage of developing businesses, an imbalance in fintech, the absence of financial regulation, and other ingrained causes. By analyzing the causes of the financial crisis, people can prepare for a rainy day. However, the investors should not be too optimistic. It also realizes that there are still a lot of unfinished business. Investors need to seize the favorable opportunity, in the favorable time is easier to solve these problems.

Keywords: Financial crisis; cause and consequence; regulatory response.

1. Introduction

Ben S. Bernanke, Douglas W. Diamond, and Philip H. Dybvig received the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 2022 for their studies on banks and financial crises. The 1930s Great Depression had a profound impact on society and paralyzed the economy of the world for many years. But, owing to the scientific findings of this year's laureates, we have better handled successive financial crises. They have shown how crucial it is to stop widespread bank failures [1]. Since the end of 2019, global financial markets have been rocked by the COVID-19 pandemic. From March 9 to 13, 2020, global stock markets had their most dramatic week since the financial crisis of 2008. From September 9 to September 12, the three main U.S. stock indices experienced two circuit breaks, the second and third in the market's history. The equal-weighted Standard & Poor's index dropped 18% in just four days. Circuit breakers occurred on Monday on stock exchanges in more than ten different nations. The FTSE 100 in London, the DAX in Germany, the Nikkei 225 index, and the U.S. stock market all saw declines of more than 10%. It is clear that the stock market has crashed globally.

The US Federal Reserve said in December 2022 that it would increase the federal funds rate target range by 50 basis points to 4.25% to 4.50% due to the development of the worldwide pandemic and a number of other factors. Since the conclusion of the Cold War, interest rates in the US have increased seven times in a row in 2022, making it the year with the most rate increases overall. Going back in time, the subprime mortgage crisis that resulted from the Federal Reserve raising interest rates 17 times in a row from 2004 to 2006 was the immediate cause of the financial crisis in 2007, which later gave rise to a systemic financial crisis in the US and, ultimately, an economic disaster.

The instability in the capital markets is another sign of how the conflict is affecting the international economy. The Shanghai and Shenzhen stock indices in China, the NASDAQ and Dow Jones stock indices in the US, the UK, Germany, and the UK all saw significant drops in value after the Russia-Ukraine conflict in February 2022. The value of the Chinese stock market that is listed in the United States was once reduced by more than \$1 trillion. Furthermore, after the Western oil embargo on Russia and the freeze of foreign exchange reserves to the Russian Central Bank, it immediately triggered a series of difficulties such as the collapse of the Russian stock market, currency devaluation, capital flight, and the possibility of default on the government's foreign debt,

leading the Russian central bank to raise interest rates from 9.5% to 20% in an unprecedented manner. The soaring global commodity prices, especially the rising prices of energy and food, further pushed up the inflation level of the largest economy, including the United States, the second largest economy China and the European Union countries, leading to the further deepening of the global economic recession.

The subprime mortgage crisis triggered, rather than caused, the financial catastrophe [2]. In the early 2000s, the United States' real estate business saw a surge in home prices as borrowing rates fell, and people's desire for housing progressively climbed. The bank made the decision to provide subprime loans. Furthermore, they sold the loan bonds to investment banks, who then sold the bonds to investors, and they broke the recovered debts into little chunks to minimize risk. To entice more investors, banks are collaborating with risk-rating organizations to almost eliminate the risk associated with their products. But, starting on June 30, 2004, interest rates started to rise, making these mortgages unaffordable and eventually subprime. This second stage of their transformation into the subprime category, which was characterized by increasing foreclosures, increased from 2005 to 2007 [3].

The danger associated with subprime mortgage bonds was made public by New Century Financial Company's bankruptcy in April 2007, which was the second-largest subprime mortgage firm in the United States. U.S. equities were able to maintain their high levels because to the Federal Reserve's response, which began in August 2007 and involved adding liquidity to the banking markets to boost confidence. The mortgage industry behemoths Fannie Mae and Freddie MAC saw their share values plummet in August 2008, causing significant losses for the financial institutions that owned their bonds. To show the government's determination to address the issue, the US Treasury and Federal Reserve were compelled to assume control of Fannie and Freddie. The domestic debt issue in the United States caused the country to start withdrawing funds from other nations, and as a result, nations all over the world started buying real estate bonds, quickly turning the domestic financial crisis into a worldwide one.

2. Cause

2.1 Monetary Policy

In the US subprime market, fixed or floating rates are frequently combined; initially, borrowers repay their loans at fixed rates, and later, at floating rates. According to international practice, the mortgage loan for house purchase is 20% to 30% down payment and monthly principal and interest payments. As the Internet market crashed and the economy entered a slump in 2000, the Federal Reserve lowered interest rates 27 times in a row, dropping the rate to 1%. The housing market's boom was fueled by the excessively low interest-rate policy's fast development of the credit market. More and more individuals obtained loans to buy homes, and the housing market saw a boom as a result of this trend and people's upbeat assessments of the economy's prospects. The US subprime mortgage sector, however, expanded quickly in the 5 years before to 2006 as a result of the ongoing housing market bubble in the US and the historically low interest rates in those years. When buying a property, "zero down payment" is used. There is no need to pay back the principal and interest within half a year, and only the interest is not paid back within 5 years. The buyers are even allowed to take out mortgage loans to the bank again for the appreciation of the house price.

The first ran from August 2007 through August 2008, when the primary challenge was calibrating the negative effects of the crisis on the economy and the appropriate degree to which the federal funds rate-the overnight interest rate that is the traditional policy instrument of the Fed-should respond. The second began in September 2008, when the trajectory of market disruption and recession steepened and the nominal federal funds rate fell to almost zero, so that policy was constrained by the so-called zero lower bound (ZLB), and the FOMC had to innovate to stimulate economic activity [4].

At that time, the easy mortgage system allowed Americans to consume in excess of their capacity and the poor to live in large houses, which created the glory of the American economy at that time.

But behind the glory lurked a huge property bubble and associated bad debts. The interest rate for repaying subprime mortgages has also climbed significantly in tandem with the slowdown in the US housing market, particularly with the rise in short-term interest rates, and the strain on homebuyers to make these payments has grown significantly. Buyers are finding it challenging to sell their houses or refinance their mortgages as the property market continues to weaken. The subprime crisis was started as a direct result of this circumstance, which caused a significant number of subprime borrowers to be unable to repay their loans on time, causing the bank to seize the home but be unable to sell it for a high price, resulting in a significant area of losses.

2.2 Subprime Mortgage

When a person purchases a home but is unable to pay back the mortgage, it is referred to as having a subprime mortgage. These individuals have financial difficulties. Subprime mortgages are high-risk, high-yield loans that some lenders make to borrowers with subpar credit and low incomes. In contrast to a regular mortgage loan, a subprime mortgage does not need a strong credit history or repayment capabilities on the part of the lender, and also the rate of interest is significantly higher. Individuals who have been denied a prime mortgage by a bank due to a bad credit history or a lack of repayment capacity seek for a mortgage loans to purchase a property. In most cases, a mix of fixed and variable rate repayment is employed, with the buyer repaying the loan first at a fixed rate and then later at a floating rate.

When compared to a scenario with average covariate values, the vintage years of 2003 and 2005 had lower probabilities of delinquency. As a result, we may conclude that strong home price increase between 2003 and 2005 obscured the underlying volatility of subprime mortgages during these years [5]. The US subprime mortgage market started to seem unstable in the beginning of 2007. Several financial firms involved in subprime mortgage lending have incurred massive losses as a result of client defaults, and some have gone bankrupt or filed for bankruptcy protection.

Since June 2008, the crisis has been worsening. The spate of financial failures was marked by the collapse of IndyMac, the second-largest U.S. mortgage lender, on July 12, 2008. In the largest financial rescue in history, the US government assumed conservatorship over Fannie Mae and Freddie Mac on September 7. On September 15, Lehman Brothers, the fourth-largest investment bank in the country, filed for bankruptcy; Bank of America purchased Merrill Lynch; and the government took over AIG. So far, three of Wall Street's five biggest investment banks have been wiped out, leaving only Goldman Sachs and Morgan Stanley in limbo. Eleven banks have failed since 2008, and another 117 are being closely monitored by the Federal Deposit Insurance Corporation, which itself is at risk of insolvency. As a result, the global economy went into a cold winter and bankruptcies and unemployment spread, leading to a global financial crisis.

2.3 Credit Default Swap

A CDS is, to put it simply, an insurance contract that is issued for a specific amount of time on the principle (notional value) of a bond. In the event of a bond default, the insured must produce the bond and pay the insurer its face value. The insurance ends once the contract expires if the bond is not in default. Throughout the course of the contract, the insured pays recurring payments to the insurer in exchange for insurance cover [6]. In reality, CDS is a contract between a buyer and a seller that converts the risk of a certain credit event over a predetermined time frame. In exchange for reimbursement after the event of the credit event, the buyer of credit risk protection regularly pays the seller of default risk protection during the duration of the contract or before the occurrence of a credit event a charge for the debt instrument of a reference business.

When an investor purchases a bond on the bond market, he runs the risk of two things. One is a default by the entity to which the bond is linked, such as bankruptcy, debt restructuring, and so forth, which results in failing to pay the principal and interest within a predetermined time frame. The second is a decline in bond prices when the benchmark interest rate on the market increases. One way to reduce risk is to get insurance, paying a premium in advance in order to receive payment after the

incident. The magnitude of the CDS market was attained in 2003, when the US gross domestic product was around \$11 trillion. Given the magnitude of the CDS market in 2007, before to the financial crisis, the overall size of CDS really reached \$62 trillion, exceeding the US GDP by more than four times.

The United States has been encouraging economic liberalization and so-called financial integration since the Bush admin in the early 1980s by enacting and revising legislation to remove limitations on the financial industry. For instance, the Garn-St. Germain Thrift Act, approved by the US Congress in 1982, allowed thrift institutions authority comparable to that of banks without being subject to Federal Reserve regulation. According to the statute, thrifts are permitted to purchase corporate bonds, commercial paper, commercial mortgages, consumer loans, or even trash bonds. However, the US Congress has passed various laws over time, which fully repealed the fundamental provisions of the United States Banking Act of 1933. (i.e., the Glass-Steagall Act). The boundaries between the banking and investing sectors, such as those in securities and insurance, will be taken down, making it easier for the financial market to accommodate so-called capital market and financial speculation.

3. Consequence

Lehman Brothers is one of the oldest American enterprises, with a history of 158 years. It was founded by Henry Lehman, a German Jew, in Montgomery, Alabama, in 1844, and grew out of the H. Lehmann dry goods store. From dry goods stores to reselling cotton, then America's most profitable commodity, to railroad bonds in emerging markets and a move into financial advice. It eventually transitioned into an investment bank and grew through time to rank as the fourth largest investment bank in the US. With \$19.3 billion in revenue, Lehman equaled Goldman Sachs and Morgan Stanley for fourth-largest global investment bank by 2007. Lehman Brothers, previously the fourth-largest U.S. investment bank by market value, applied for bankruptcy protection in the U.S. Bankruptcy Court for the Southern District of New York after no prospective investors were willing to step forward after it sustained significant losses from disastrous bets on subprime mortgages. On Sept. 10, 2008, Lehman reported a second-quarter loss of \$3.9 billion, the biggest in its 158-year history, and its stock is down 95% from its peak in early 2007. The circumstances that followed Lehman Brothers' collapse in September 2008 contributed to the designation of the 2007–2009 financial crisis as the worst since the Great Depression. Lehman Brothers' demise signals an intensification of the financial crisis, which has wreaked havoc on not only the US economy but also the world economy.

The American economy has been slow and the jobless rate has increased to more than 8% for 43 straight months since the US subprime mortgage crisis set off the global financial and economic crisis in 2008. Unemployment is rising almost everywhere, and rising sharply in the worst-affected countries. The Chinese economy has also been impacted by the financial crisis, in addition to that of the United States. Almost every business has experienced a wave of layoffs, including those in real estate, transportation, banking, finance, and retail. The official urban unemployment rate in China was 4.2% in 2008, the top rank in the previous three years (2006-2008). The Ministry of Human Resources Protection's monitored 513 businesses saw an annual net employment loss of 8.05% at the end of 2008. Employment in China has been significantly impacted by the financial crisis.

During the financial crisis, the Federal Reserve provided the guarantee of "lender of last resort", which effectively contained the spread of the financial crisis and successfully rescued financial institutions including American International Group and Bear Stearns. Nonetheless, throughout this crisis, several financial organizations still failed. By early 2009, the economic crisis was under control, but the United States and a large portion of the world economy experienced a severe recession as a result of the crisis. More than 5% of the US GDP was destroyed, 8.5 million jobs were gone, and the unemployment rate increased to 10%.

4. Response

4.1 Government's Regulatory Response

Governments and authorities started looking for methods to avoid or make it less probable that this calamity would happen again after it happened. It came as no surprise to learn that the regulatory structure required revision; Henry Paulson, the US Treasury Secretary, had pushed for this process to start even before the full scope of the crisis. Because to the crisis, two bills from the House of Representatives and the Senate were combined to become the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 [7]. Since the Great Depression, the Dodd-Frank Act is regarded as the most extensive and severe financial reform. It will become another banking regulation cornerstone, comparable to the Glass-Steagall Act (the Banking Act of 1933), and will establish a new benchmark for worldwide financial regulatory reform. The financial system's primary concern is customer protection.

Three essential components make up the Dodd-Frank Act: First, it prohibits the use of government money for bailouts and increases the authority of regulators to end the "too big to fail" conundrum. This may reduce the compensation of financial executives. Second, it establishes a new Consumer Financial Protection Bureau with powers that go beyond those of a regulatory body in order to completely safeguard consumers. Finally, the legislation implements the so-called Volcker Rule, which limits speculative trading by major financial institutions and, in particular, improves the supervision of financial derivatives to reduce financial risks. To securely close down banks when they fail, new resolution mechanisms were developed together with increased capital and other regulatory criteria and improved control of financial institutions. The financial system is substantially safer now than it was before the crisis because to these and other measures [8].

The majority of the issues that caused the financial crisis were addressed by the Dodd-Frank Act. The bill broadens the scope of regulation for financial institutions including insurance companies and hedge funds. These companies opposed government control before the crisis, yet after it occurred, they demanded a taxpayer-funded bailout from the government. The law also shields customers against financial institutions like as credit card issuers, consumer loan providers, and others that commit fraud.

4.2 Banking's Regulatory Response

The depth to which the possibility of a system-wide failure due to inadequate liquidity exists in the U.S. financial system was made clear by the financial crisis of 2007–2008. In an effort to supplement the current Basel Capital Accord, financial authorities from several nations across the world have proposed new, globally consistent bank liquidity rules in response to the crisis. Shortly after "Basel II" was completed, the unexpected financial crisis of 2008 had a de facto influence on it. In contrast to "Basel II," "Basel III" addressed the key issues that banks in the financial crisis had shown, such as poor quality and inadequate capital, rather than serving as a complement and enhancement to "Basel II." It is not sensible to monitor the counterparty credit risks that result from OTC derivatives transactions, and it is not strong to control the credit and liquidity risks that result from re-exposure to asset securitization. The calculation of regulatory capital, risk-weighted assets, and market trading mechanisms are all explained and enhanced in relation to specific regulatory requirements. In other words, the effect of the Basel requirements, and particularly Basel III, is to constrain the use of bank leverage as a means of producing greater bank resilience. But as demonstrated before, bank stocks compete for space in equity portfolios of high-income industrial firms that have higher ROI such that leverage restrictions due to enhanced common equity Tier1 capital could shut out banks at least partially from access to equity capital market funds [9].

Basel III's importance may be evaluated on both a local and big scale. A multilevel regulatory framework has been constructed at the micro level with the aim of increasing the quantity and quality of bank capital. It consists of the countercyclical capital buffer, capital retention buffer, extra capital of systemically significant banks, leverage ratio, liquidity coverage ratio, and net stable capital ratio

[10]. The key to determining whether banks survive or not is finding an inventive business model with lower volatility and minimal capital loss. This forces them to alter their profit model and risk measurement structure accordingly. In order to minimize regional or even worldwide financial risk exposure and the creation of large-scale crises, each financial institution is required to comply with all regulatory index standards, implement essential market restraints, and follow the information disclosure system.

5. Conclusion

The US subprime crisis resulted from too many layers of innovation and too little regulation. Around the process of financial innovation, a long chain consisting of various institutions and individuals with complex interest relations has been formed, but the risk regulation has not been well matched with it. The diversity of financial instruments and financial institutions requires adequate risk disclosure for complex structured products, and the United States has been woefully inadequate in this regard. At the same time, at the company level, the problem of incentives and constraints has not been well solved. The outbreak of financial crisis has aroused people's attention and research on financial crisis. History does not repeat itself, but it is always eerily similar. Although the tipping point of each financial crisis is different, the root cause and evolutionary logic behind it are the same, which should arouse people's attention and research on the financial crisis.

The globe is now experiencing the worst financial and economic crisis since the Great Depression in the 1930s, which began with the US subprime mortgage crisis in 2008. Since the start of the US subprime crisis, regardless of changes in the US real economy or variations in the global capital markets, this financial crisis' influence on the whole world has been enormous and will continue to grow for a very long time. A worldwide recession followed the financial crisis. After the initial shock and turbulence in a number of Asian markets, the European debt crisis and the crisis in the financial systems of nations using the euro followed. For us, this crisis has served as a wake-up call. Individuals may use it to make conclusions, synthesize their experiences, and find inspiration in a variety of areas, including financial innovation, the growth of the mortgage market, and financial regulation.

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