

# Research on the Role of Banks during the Global Financial Crisis

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**Abstract.** The purpose of this paper is going to the role of banking during in the recession. After the Nobel prize in Economic Sciences 2022 was presented, it makes people rethink the role of banks. Therefore, this paper picks up the 2008 financial crisis as an example to show it. Initially, the background of the 2008 financial crisis in treating the economy bounce back is mentioned. Deregulation and Fed's monetary policy to decrease the interest rate are analyzed. After the period of stimulating the economy, the economic developed fast. Meanwhile, real estate market reaches saturation. In order to make profits, the banking launched sub-prime loans and CDO and CDS derived from sub-prime loans. Further economic stimulus comes with a growing property bubble, as the change in the adjusting exchange rates, Subprime defaults increase, the subprime mortgage crisis and the 2008 financial crisis are born. 2008 financial crisis was resulted in the housing bubble explodes, investment banking bankruptcy and rapid increase in unemployment rate, even Influence the worldwide. To deal with the financial crisis, Dodd-Frank Act was published, Basel III and government increasing the spending and banking decline interest near to zero. The main cause of the 2008 financial crisis was the neglect of regulators and the failure of banks to consider the risks posed by unqualified lenders, therefore, studying in 2008 financial crisis is important.

**Keywords:** 2008 Financial Crisis; subprime mortgage; deregulation; regulatory responses.

## 1. Introduction

Under the globalization trend, the worse financial position of one state will create a ripple effect on other countries' financial situation. Meanwhile, with the development of international relationships and export trade, the riskier will cause a bigger global crisis than before. On October 10th, 2022, the Nobel prize in Economic Sciences 2022, Laureates are Philip Dybvig, Ben Bernanke and Douglas Diamond [1]. Their research changed and improved people's understanding of banking's role during the financial crisis. One major result of their research is the importance of avoiding bank failures. This result was put up in the 1980s and as the basic theory to prove the significance of dealing with the financial crisis and strictly regulating the market. Investing is efficient to improve economic development, however, there is a conflict between lenders and savers, lender hates cleaning their debt early was forced by the bank and saver would like to get their money back immediately when the expected spending happened. Therefore, Dybvig and Diamond provide a logical solution to the bank, Banks can allow depositors to access their money whenever they choose by acting as middlemen that take deposits from various savers, while also giving long-term loans to borrowers. Diamond mentioned another social function of banking, as the intermediaries of lender and saver, assessing the credit is crucial and promising the loan is applied to reasonable investing. Bernanke focused and analysis of the 1930s Great Depression, He demonstrated, among other things, how bank runs were a critical element in the crisis becoming so severe and persistent. Combined with the state of the World today, the impact of COVID-19 and the Russia-Ukraine conflict result in a recession in the economy and currency devaluation, banking plays an essential role in this period, in the COVID-19, How banks should stimulate interest rates, investment and the economy through monetary policy. How banks can avoid a currency war caused by the Russo-Ukrainian war by adjusting exchange rates. Therefore study in the Financial Crisis is crucial.

This article uses the example of the 2008 Financial Crisis to continue proving the importance of research into financial crises. 2008 financial is the worst crisis in nearly 80 years, the global financial system was engulfed, and Great Recession happened, which related to all aspects of society and

countries and result in a higher unemployment rate, housing, and savings in the bank. In this research essay, the author of this article will explain the causes, consequences and changes in order about the 2008 financial crisis [2].

## 2. Cause

This financial earthquake could be traced back to the low-interest rate and the standard of loose lending. As times changed, these two factors generated a housing bubble both in the United States and internationally. In order to make the economy bounce back from the 911 terrorist attacks and the damage of accounting scandals, such as the Enron Accounting Scandal, General Electric Co. Accounting Scandal and Tyco Accounting Scandal. The accounting scandal could result in an earthquake in an industry, the damage far beyond the participating people. US parties implement 3 main rescue plans.

### 2.1 Loose Monetary Policy

Since the 1980s, there is a loose atmosphere and environment of the Fed's monetary policy. But in 2000, when the technology bubble was broken, the monetary policy become expansionary. The government is equipped with the ability to decline the effect of the economic recession and The Fed takes positive monetary policies. Fed funds rate and decrease the fund rate from 6.5% in 2001 to 1% in 2003, sum or reducing 27 times (see Figure 1). In 2001, Alan Greenspan, the chairman of the Federal Reserve consider continuing to decrease the fund rate to encourage economic development as a proper method to sustain growth and not crate inflation. This also resulted in reduced interest rates on adjustable-rate mortgages [3].

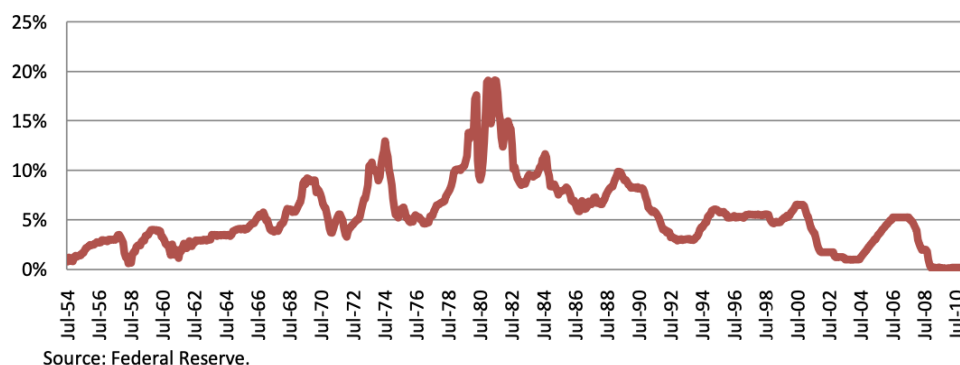


Fig. 1 Long-term effective federal funds rate [3]

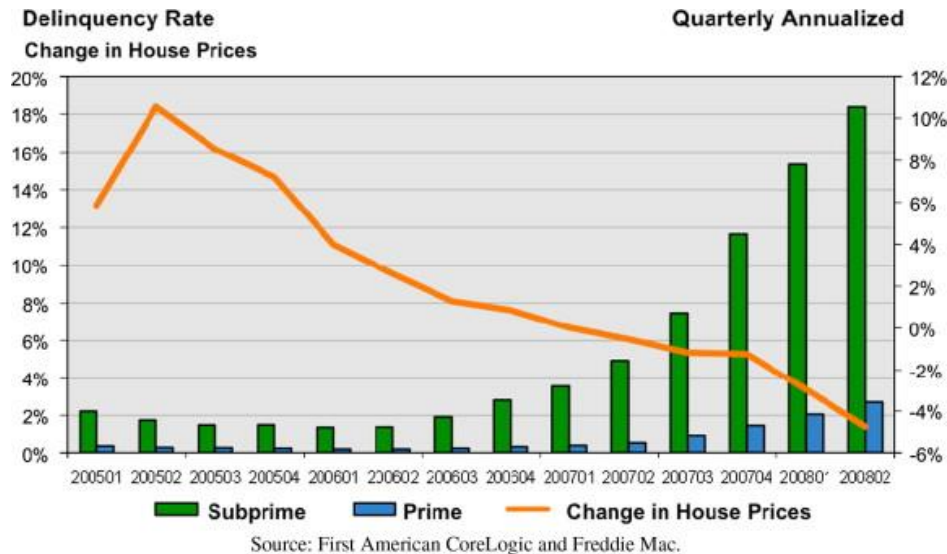
But based on the relationship between short-term Treasury bill yields and the fed funds rate, which decreases the income of banking. Therefore, the low-interest rate of the loan and loose loan provide benefits for the average person with a low-wage income. Finally, the subprime mortgages' proportion increased by nearly quadrupled and reach about 15% after 5 years [4].

### 2.2 Subprime Mortgage

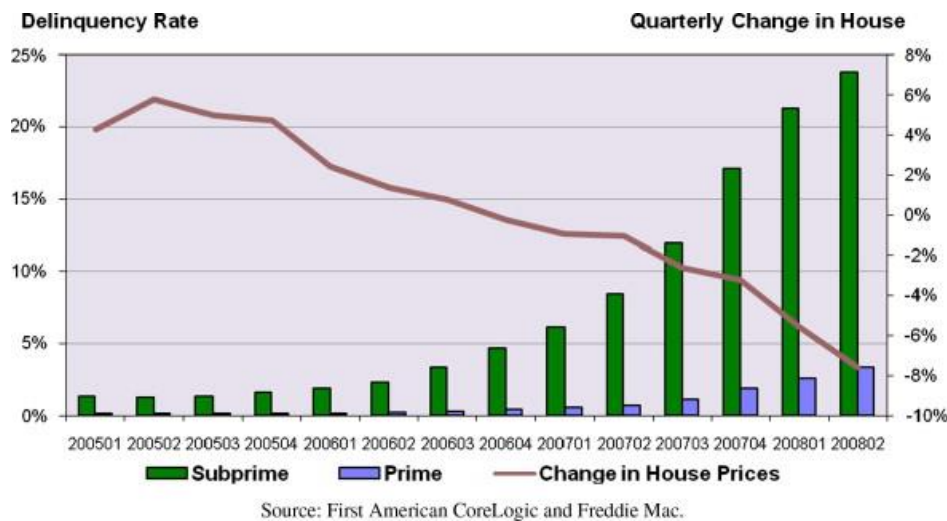
Because of the Fed's monetary policy, the development of economic increase and housing boom broke records in homeownership. This situation makes the banks and the firm of companies is difficult finding real-estate investors and homebuyers. So subprime and mortgage were birthed. The meaning of subprime mortgage is providing a loan to someone who does not has poor as well as ineligible credit. Due by the subprime borrowers was refused traditional loans, thus, the interest rates on subprime loans issued to these borrowers are often higher than those on conventional mortgages. Unfortunately, the nature of almost subprime mortgages was the adjustable-rate loans. The definition of an adjustable rate is the loan's interest rate that could be changed during the process. In the beginning, there is a fixed interest rate, but the rate can be changed and reset over the rest of the years

and months. When the adjustable rate becomes higher and increase ineligible credit lender, there will be a dangerous position happened [5].

In the state of Arizona, the Adjustable-rate mortgage is 0.65 at the start of 2003, but in 2004, the ARM increased by 126% to 2004, 0.82. and continue for three years from 2004 to 2006 above 0.8. meanwhile, the change in house prices rapidly and the house price declined. `the delinquency rates growing rapidly, as Figure 2 shown. As same as the state of California, the adjustable rate mortgage is 0.77 at beginning of 2003. But in 2004, the percentage increased 167%, 0.9. The changing trend of the house price and delinquency rates is the same as in the state of Arizona, the relationship between changes in house prices and delinquency rates is negative, as Figure 3 shown.



**Fig. 2** Delinquency rate and change in housing price in California [6]



**Fig. 3** Delinquency rate and change in housing price in Arizona [6]

### 2.3 Mispricing and Deregulation

Phil Gramm of Texas Senator, who was provided by the Enron company’s lobbyists. Enron considers the derivatives exchange of foreign provides an advantage for overseas companies, therefore, Enron wish to use online futures exchange to join in derivatives trading. In 1999, Phil Gramm argues and wrote the law of Financial Services Modernization Act, and in 2000, Commodity Futures Modernization was enacted. The meaning of these two bills, firstly, increases the competitive of banking when they competed with the company in different countries, and banking promise to protect their consumer by investing in securities with low risk. And then, immunity of the default swap of credit and deregulation of other derivatives [7].

As the lender uses the mortgage loans to make money, the lender finds packaging and securitization in subprime mortgage loans to resell them. As the function of securitization, investment banking acquisitions in the bundled loans from subprime lenders, and investment banking offered bundled loans as mortgage-backed securities to investors all around the world (MBS). After that, on the secondary market, investment banking restructuring and reselling the mortgage-backed securities. This product is called CDO. There are different levels and parts and risk levels, which could convince different investor types. The risk of CDO is low because of the variety of types of mortgages, and support by the math model was designed by Wall Street. In the real world, the qualities between different mortgages are different, some of them are low, which leads to the low efficacy returns of the entire portfolio.

To make the industry more complicated is another financial derivative, the Credit Default Swaps (CDS). The function of CDS is a way to provide insurance for the breach of CDO. The swaps of CDO were bought and sold by the bank and hedged under the position of unregulated transactions. Meanwhile, the transactions of CDS are not shown on the balance sheets of these institutions. It is hard to assess and predict the actual risks in these companies. Before, the 2008 financial crisis, the volume of CDS is big. The amount of investment in the CDS is the biggest, there are \$45 trillion, compared to other pools, U.S. Treasuries have \$4.4 trillion, the stock market has \$22 trillion [8].

It was not the credit default swaps that led to the crisis, but rather the mispricing of credit default swaps. In the contract of CDS and insurance of bond, the part of insuring is not investing in the debt initially, thus, the credit risk premium is necessary. And credit risk premium was organized by default risk premium and systematic risk premium. There is mass epilepsy in believing in pure mathematical theories in assessing credit risk and credit risk premiums. Lack of soft information judgment, the pure mathematical will cause big forecasting errors, this is a storm in quants. Blind believe in the models of financial risk and Moody's and Standard & Poors (S&P), this model uses data to recognize the relationship between debt defaults and other variables. The Statistical models cannot account for all conceivable decision-making elements. Furthermore, statistical models are vulnerable to misleading connections between variables, which become amplified as the number of variables increases, thus attempts to integrate additional relevant factors may just exacerbate previous modeling flaws. And relevant decision factors could not be included in the models [4].

### 3. Consequence

In this area, the consequence of the 2008 financial crisis will be mentioned, there are two events that hastened the whole affair. Initially, in the early Great Recession, the number of loans would be decreased because credit dried up and liquidity declined. Secondly, the federal funds rate climb from 1.25% to 5.25% was changed by the Fed. The consequences, there are three main situations. To start with, the real estate bubble burst. This act will promote more subprime borrowers making defaults due to the increase in adjustable-rate mortgages. The minority reason is the housing market becomes the point of saturation the interest rate increase, whatever the house sales or the price. In 2005, the house price decreased and the buyer become less, there is a useless method to sell their non-current asset or refinancing to help themselves the subprime mortgage holders. As the economic development, the damage of inflation and Many homeowners owing more on their mortgages than their properties were worth. As the phenomenon of the crisis become worse, the amount of default from the subprime borrowers become bigger and the housing price continue to decrease, there is no value at all in MBS, the banking's cash flow disconnected, and the bubble burst in the end [9].

Secondly, the investment banking bankruptcy. As the result of the first reason, on 15 September 2008, the biggest bankruptcy in the history of the USA, the Lehman Brothers filed. The Lehman Brothers owed a debt of \$600 billion and about 67% was covered by CDS (credit default swaps). Its demise caused long-term turbulence in financial markets throughout the world, significantly damaged the portfolios of the banks that had given it money, and developed additional distrust among banks, prompting them to cut interbank lending even more [9]. Finally, the unemployment rate, not only the

financial giants but also ordinary people live a hardship life. As Figure 4 shows, compared to before, the unemployed rate grew rapidly to nearly triple. From November 2007, there are about a 5.5 % increase and reached the top in October 2009 with about a 10% unemployment rate. More than 15 million people lost their job and become homeless. This impact is ongoing, the trend downward was started in 2010, and in 2016, the trend become stable. In December 2017, the unemployment rate falls to about 4.2 % and reach its lowest point from 2000 [10]. Moreover, in the worldwide, affected by the 2008 financial crisis, the European debt crisis emerges, Asian monetary and financial turmoil generated, global stock market evaporation.

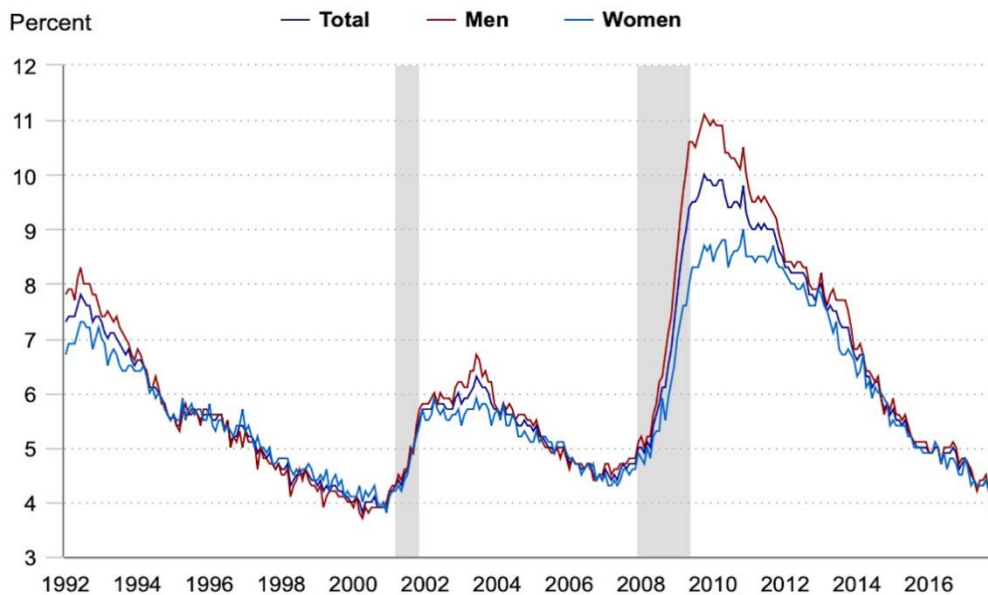


Fig. 4 Unemployment rates by gender [10]

## 4. Responses

### 4.1 Government’s Regulatory Response

The 2008 financial crisis caused financial panic which needs emergency public assistance. Dodd-Frank Act was published by the US and enacted on 21 July 2010 [11]. Its publication is a milestone in US financial regulation, and the biggest legislative change. There will be a more heavy regulator in the giant financial company or institutions, also the smaller institutions. The Dodd-Frank Act makes no significant changes to the US financial regulatory framework. It will limit the regulatory box, such as the OTS will be dismissed, OTS is a was the department of banking to supervise the loan of real estate. However, the shape and range of financial regulation in the US will be change rapidly, such as Enhanced Regulation of Banking Entities, Federal Reserve Governance, Orderly Liquidation Authority and so on.

Additionally, the Dodd-Frank Act created a special department, which called Financial Stability Oversight Council. The function of this one is to find and classify the risk that patient in the market and firms activities, which strengthen the regulator in the financial system and harmonies the prudential standard. About the Financial Stability Oversight Council has four views to display. To start with the membership, The Financial Stability Oversight Council will have 15 members, 10 of whom will vote and five of whom will not. For the member who has voting power, who from SEC, CFTC, NCUA and so on. The non-voting members are from FIO, OFR and so on. Secondly, Powers and responsibility, identify the risk of failure form the ongoing and interconnected companies. Then, Systemic Designation Authority, the Council has the authority to recognize systemically significant non-bank financial institutions, financial practices, services provided by the financial markets, and payment, clearance, and settlement operations. Finally, in Recommending Standards, the Council is

authorized to make recommendations to the Federal Reserve regarding the establishment and refinement of prudential standards.

#### 4.2 Banking's Regulatory Response

Basel III is an international settlement was designed by Switzerland, a series of international banking regulations that pay attention to the international financial system stability [12]. The Basel III laws are intended to prevent the harm done to the global economy by banks that take on excessive risk. There are some main changes in the structure of banking capital. Initially, while banks must continue to maintain capital reserves equal to at least 8% of risk-weighted assets, the minimum amount of equity as a proportion of assets is increased from 2% to 4.5%. And then, there is an extra 2.5% buffer to make total equity to be 7%. But, deploying capital controlled by banking will be tied up. The profitable ability will be decreased because of these policies. The minimum 7% equity requirement makes almost banking keep a higher figure to create a cushion. banking Issue debt at a lower cost in a stable position. And the lower-risk structure bank will get more P/E from the stock market. Therefore, Basel III changes banking's leverage and liquidity to avoid the crisis like 2008 financial crisis.

Government develops its spending to increase the demand of society and provide the opportunity to the unemployed people. Meanwhile, be able to support the run of the financial firm and the confidence in development, provide the bank bonds and guaranteed deposits. Join and purchase the share of the bank and financial company, to stable the market and decrease the panic of the financial market. The interest rate was declined to a bottom level of almost zero by the central bank. And provided enormous sums of money to banks and other organizations with valuable assets that were unable to borrow in financial markets. In order to save a dysfunctional market, buying an amount of activity of economic activity and stimulating economic activities when the interest rate is near 0. This act was called quantitative easing [13].

### 5. Conclusion

The information in this paper is divided into three main parts: causes, consequences and changes of the 2008 financial crisis. In the area of the causes, America aims to develop the economic development from 9/11, accounting scandals and the burst technology bubble. First of all, The government deregulation and mispricing in CDS. And then, the Fed's monetary policy decreased the fund rate to create a loose environment. Finally, in order to continue to make a profit from banking create the subprime mortgage. And provide subprime mortgages to Ineligible borrowers. As part of the consequence, because of the adjusting exchange rates, the Credit default events increase, and the cash flow of the bank is cut. And the COD and CDS break down. The real estate bubble burst, investment banking bankruptcy and the unemployment rate rapid increase. In order to treat the 2008 financial crisis, the Dodd-Frank Act was published to increase the regulator, Basel III to increase the banking leverage and liquidity, increase in government spending and decrease the interest rate to go through the recession. Therefore, the meaning of studying in 2008 financial crisis is to strengthen the regulatory mechanisms, improve lender vetting and control interest rates. Not only to avoid the financial crisis and learn the experience but also to provide inspiration in the COVID-19 inflation and currency warfare in the Russo-Ukrainian war.

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