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"From financial crises to regulation: the evolution of U.S. financial oversight"

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1. INTRODUCTION

The importance of robust financial regulation cannot be overstated, especially considering the profound impact that financial crises have had on the global economy. Financial regulation plays a crucial role in upholding stability, transparency, and integrity within a country's financial system, which are essential for its economic well-being. This thesis delves into the evolution of financial regulation in the United States, taking into account the impact of major financial crises on the regulatory landscape. Understanding these historical developments offers constructive insights into the successes and failures of past regulatory measures, emphasizing the importance of flexible and proactive regulatory frameworks to protect against potential financial instability in the future.

The study presents a thorough analysis of significant financial crises and the corresponding governmental actions. It spans from the early 20th century to the modern era, illustrating the continuous evolution of regulatory oversight.

The landscape of financial regulation in the United States has undergone significant transformations due to the occurrence of financial crises that revealed serious systemic weaknesses and prompted legislative measures and regulatory adjustments. One pivotal moment in American financial history was the Panic of 1907, which exposed vulnerabilities within the US banking system. This crisis led to the creation of the Federal Reserve System in 1913, serving as a lender of last resort for banks and financial institutions facing liquidity or insolvency issues. The Panic of 1907 exemplified the crucial role of a central bank in providing stability and liquidity to commercial banks. The section discussing the Panic of 1907 examines the origins and outcomes of this financial crisis, outlining the vulnerabilities within the banking system, the risky behaviors that triggered the panic, and the short-term and lasting measures that paved the way for the creation of the Federal Reserve.

The Great Depression era exposed significant weaknesses in the financial system, prompting the implementation of comprehensive regulations. The stock market crash of 1929 and subsequent bank failures revealed vulnerabilities that were more widespread than previously believed. In response, legislative measures like the Glass-Steagall Act of 1933 were introduced to separate investment and commercial banking, and the Securities Exchange Commission was established to supervise and regulate equity markets. These initiatives were designed to restore public confidence in the financial system and prevent future economic catastrophes of similar magnitude. This section also investigates the monetary and fiscal policies of the time, the role of the gold standard, and the institutional changes that reshaped the financial landscape.

The Savings and Loan Crisis of the 1980s offers an additional significant example to examine when analyzing the development of financial regulation. The deregulation of the 1970s and early 1980s, together with high interest rates and economic instability, led to the insolvency of numerous savings and loan institutions. To address the crisis, the Resolution Trust Corporation was established to liquidate assets from failed savings institutions, and the Financial Institutions Reform, Recovery, and Enforcement Act was passed in 1989, introducing stricter regulatory requirements for the banking sector. This chapter explores the factors that led to the crisis, the legislative and regulatory responses, and the long-term implications for the financial industry.

The Global Financial Crisis of 2008, which is considered the most recent and potentially the most influential financial crisis of our era, serves as a central focus for this thesis. The downfall of Lehman Brothers triggered a global economic recession that uncovered the interconnectedness of global financial markets and exposed flaws in existing regulatory structures. This crisis prompted an imperative rebuild of financial regulation, both in the United States and internationally. The Dodd-Frank Wall Street Reform and Consumer Protection Act implemented far-reaching changes such as the establishment of the Consumer Financial Protection Bureau, the Volcker Rule prohibiting banks from engaging in proprietary trading, and enhanced supervisory powers for Systemically Important Financial Institutions. On a global scale, the Basel III framework introduced stricter capital requirements, leverage ratios, and liquidity standards to strengthen the resilience of banks. In examining the Global Financial Crisis, the research involves an in-depth exploration of interplay of factors that led to the crisis, including the role of mortgage-backed securities, the failure of rating agencies, and the excessive risk-taking by financial institutions. The analysis also covers the immediate policy responses, such as the Troubled Asset Relief Program and the Federal Reserve's unconventional monetary policies, as well as the long-term regulatory reforms aimed at preventing future crises.

This thesis aims to provide insights into the evolution of financial regulation in the U.S. and its ability to adapt to the dynamics of a globally connected economy by examining different episodes of financial crises and their corresponding regulatory responses. It highlights the constant challenges faced in regulation, such as the need for international coordination, managing systemic risks, and striking a balance between innovation and regulation within the finance sector. Ultimately, it demonstrates how policymakers can utilize past experiences to encourage a more sustainable future for the financial system.

2. THE ROAD TO REGULATION: THE IMPACT OF THE PANIC OF 1907 AND THE GREAT DEPRESSION ON U.S. FINANCIAL POLICY

INTRODUCTION

This chapter of the thesis delves deeply into two major financial crises that occurred in the United States: the Panic of 1907 and the Great Depression. The chapter is divided into two main sections, with each section dedicated to analyzing one of these significant events.

The first part of the chapter focuses on the Panic of 1907 and explains the different reasons that caused this financial crisis. It starts by analyzing the speculative environment and the weaknesses in the U.S. financial system during the late Gilded Age. Notable aspects include the lack of a central bank, the inflexibility of the gold standard, and a rigid money supply that were not well-suited to address liquidity problems. The chapter then goes on to explore how the financial contagion spread after Augustus Heinze and Charles Morse tried to control the copper market, leading to a series of bank runs and financial difficulties. This portion of the chapter utilizes specific case studies and contemporary reports to showcase the roles played by prominent financial figures and institutions, like J.P. Morgan, in stabilizing the system through private initiatives, emphasizing the necessity for more formal regulatory frameworks. Later in the chapter, the creation of the Federal Reserve is analyzed, as a direct consequence of the Panic of 1907.

The next section moves on to a thorough examination of the Great Depression, starting with the economic prosperity experienced in the 1920s and culminating in the stock market crash of October 1929. It delves into the subsequent profound economic downturn that commenced in 1930, characterized by widespread unemployment and significant deflation, which persisted throughout the entire decade. This section examines how sticking to the gold standard limited monetary policy and made deflation worse on a global scale. The story ties together the economic decisions made at the time, including those by the Federal Reserve, and how they failed to help with bank failures and shrinking credit. Furthermore, it examines the long-term ramifications of the Depression, such as alterations in federal economic policy and the establishment of institutions like the Federal Reserve System, designed to prevent similar catastrophes in the future.

2.1 THE PANIC OF 1907

2.1.1 STRUCTURAL WEAKNESSES AND SPECULATION: CAUSES OF THE PANIC

The fragile financial situation in the United States before the Panic of 1907 was the result of a combination of structural weaknesses, regulatory failings, and excessive speculation, all occurring during a period of remarkable economic growth referred to as the Gilded Age. This period was marked by a rapid growth in industrialization, due to major technological advancements and a large amount of gold flowing into the global economy. The economic boom resulted in an expansion of both the credit system and banking activities, with banks and trust companies witnessing a marked rise in deposits. The availability of capital led to risky and speculative investments, particularly in the sectors of railway construction and urban development, thereby extending the financial system's risk parameters beyond their usual limits.

The primary cause of vulnerability within the financial system of the United States was its fundamental fragility. Unlike the monetary frameworks of modern European nations, the US financial system lacked a central banking authority. The United States, like most European countries, adhered to a gold standard. This organizational structure produced an inelastic money supply, struggling to adjust to either sudden or recurrent demands for liquidity. Additionally, the layered structure of the banking system, known for its "inverted pyramid" approach to reserve management, worsened these issues. Smaller, regional banks placed their reserves into larger urban banks, which in turn channeled these funds into a limited number of elite banks in New York. This concentration of reserves constructed a weak foundation, easily unsettled during periods of liquidity crisis situations.

In this period, trust companies played a dual role as innovators and sources of risk. These entities emerged as significant players within the financial sector, engaging in high-risk investment strategies without the stringent reserve requirements imposed on traditional banks. Their rapid growth, driven

by a lack of strict regulations and an active participation in high-risk ventures, established them as critical sources of systemic risk.[1] Notably, their exclusion from the New York Clearing House

Association,[2] which provided emergency liquidity support to its members, underscored a critical oversight in the regulatory framework governing financial institutions.

The speculative bubble that formed in the stock market, driven by the booming economy and the attraction of new technological advancements, made the financial system particularly vulnerable to shocks. The speculative attempt by Augustus Heinze and Charles Morse[3] to corner the copper market went beyond being a singular event; it became a pivotal moment that revealed existing stresses in the financial system. This action triggered a confidence crisis, revealing the inadequacies of the banking system's reserve management and the widespread speculative practices in the market.

High interest rates further aggravated the existing issues, encouraging banks to undertake riskier investments, especially in New York City, the core of the nation's financial sector. The result was a banking system heavily invested in long-term, speculative projects, which significantly restricted its ability to manage liquidity. This precarious financial landscape was destabilized by a series of socio-economic triggers, including the aftereffects of the San Francisco earthquake and restrictive monetary policies from European central banks, culminating in the Panic of 1907.

2.1.2 THE COLLAPSE UNFOLDS: KEY EVENTS OF THE PANIC OF 1907

F. Augustus Heinze's ambitious attempt to control the stock of the United Copper Company ended in failure, triggering a series of events that resulted in one of the most severe bank panics of the era.

[1] On the website of the European Central Bank (ECB), it is pointed out that systemic risk, lacking a universal definition, refers to the danger of significant events that could negatively impact the financial system, originating either externally or internally.

[2] Established in 1853 and known today as the Clearing House Payments Company, this private organization was initially set up to facilitate the settlement of interbank transactions within New York State.

[3] Augustus Heinze and Charles Morse served together on the boards of at least six national banks, ten state banks, five trust companies, and four insurance companies. They were charged with breaking banking laws in the attempted corner of United Copper stock.

Despite the relatively small impact of United Copper on the overall market, the collapse of Heinze's plan, combined with a slowing economy, a declining stock market, and a tight money market, caused widespread panic. This event revealed an "intricate network of interlocking directorates across banks, brokerage houses, and trust companies in New York City" (Sprague, 1910), intensifying concerns among depositors. The extensive banking involvements of Heinze and Morse, coupled with concerns about insolvency, prompted bank runs on institutions where they held prominent positions.

On October 16, 1907, a significant event occurred that highlighted the risky nature of speculative investments and the vulnerability of the banking system during the National Banking Era.[4] On this day, a run began on Mercantile National, the bank most prominently associated with Morse, which quickly appealed to the New York Clearing House (NYCH) for aid. The NYCH provided a loan to Mercantile and publicly pledged to support the other member banks connected to Morse and his associates.

On October 20, the New York Clearing House (NYCH) made an announcement confirming the solvency of all its member banks linked to the speculators, alongside the establishment of a fund designed to support these institutions. A requirement for assistance was the resignation of Mercantile's entire board, as well as individuals involved in the scandal from other member banks' boards. Although this measure prevented bank runs, the dismissal of directors led to suspicions of fraud among the public, significantly unsettling investors.

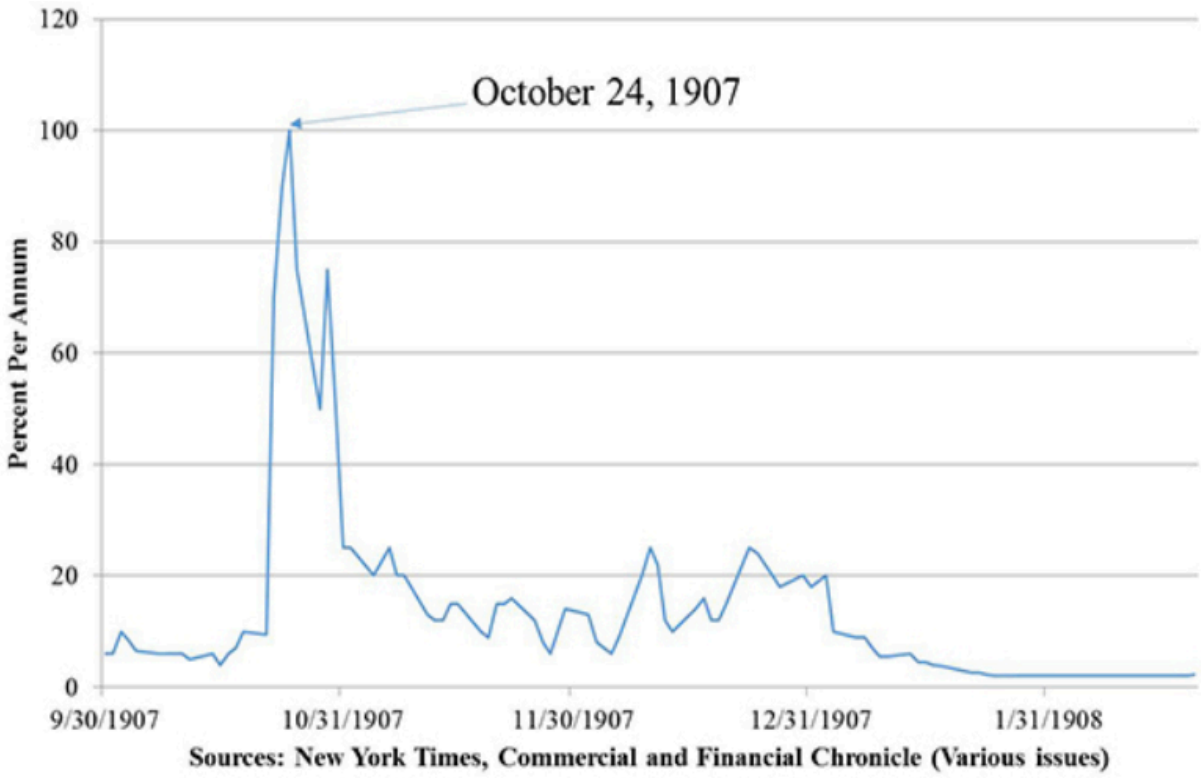
On October 21, a depositor panic began at Knickerbocker Trust following two critical announcements: the firing of its president Charles T. Barney due to ties with Mr. Morse and speculation activities, and the National Bank of Commerce's decision to cease acting as Knickerbocker's clearing agent. These developments led depositors to believe that Knickerbocker would not receive NYCH support ("The Panic of 1907, Federal Reserve History," 2015), confirmed when a loan request was denied on the night of October 21. Despite assurances of the trust's stability, Barney's dismissal raised suspicions of misconduct, triggering a run on the bank. Without external support, Knickerbocker was compelled to shut down on October 22.

[4] Financial historians refer to the national banking era as the period between the creation of nationally chartered banks and the creation of the Federal Reserve. The opportunity to obtain national bank charters came with the passage of the 1863 National Currency Act and its subsequent revision as the National Bank Act of 1864. The Federal Reserve Act was codified in December of 1913. Thus, the national bank era refers to a period of approximately 51 years in American banking history (Hendrickson, 2011).

By October 23, the panic had extended to multiple trust companies, including the Trust Company of America, where Barney also served as a director. In response to the crisis, it publicly declared that the "company had no business relations, directly or indirectly, with Charles W. Morse, as the rumors had intimated" (New York Times, 1907).

On October 24, 1907, the New York Stock Exchange was hit by a severe shortage of call money,[5] leading to a dramatic increase in interest rates from an initial 6 percent to bids of up to 100 percent (Tallman & Moen, 1990), as shown in Figure 1. However, despite these high rates, no funds were available, signaling a deep financial crisis ("The Panic of 1907, Federal Reserve History," 2015).

Figure 1: 1907 Financial Crisis, the Interest Rate Shock



The image shows a graph with a peak in interest rates above 100 percent on Oct. 24, 1907. The data spans from Sept. 30, 1907, to Jan. 31, 1908.

[5] Call money is any type of short-term, interest-earning financial loan that the borrower has to pay back immediately whenever the lender demands it.

2.1.3 IMMEDIATE RESPONSES: SHORT-TERM MEASURES TO ALLEVIATE THE PANIC

During the financial crisis of 1907, a series of calculated and crucial actions were taken to control the intensifying panic and reinstate stability in the short term. J.P. Morgan[6] was a key player in providing the financial assistance needed to address the liquidity crisis in the market.

One of the key interventions arranged by Morgan was the mobilization of $25 million to stabilize the stock market, an initiative supported by a group of national banks. The implementation of this measure effectively infused nearly $19 million into the market, utilizing a blend of direct financial aid and strategic allocation of Treasury resources.

In response to continued financial pressure an additional funding effort on October 25 raised approximately $12.5 million. The interest rate for borrowing money was fixed at approximately 50 percent for the day, aiming to mitigate speculation and encouraging genuine investment. This plan was created to find a middle ground between giving quick money help and making sure the market would stay stable in the long run. When banks did not have enough cash and reserves, the clearinghouse gave out loan certificates on October 26. This new idea helped increase the amount of money available by letting banks turn their non-cash assets into money during the crisis. At first, this move made $11 million more money available, and in the next three weeks, over $110 million in certificates were given out in New York City.

At the same time, the clearinghouse enforced a temporary halt on cash transactions. Despite the rise in transaction expenses, this action allowed banks to carry out vital functions like accepting deposits and processing checks. The suspension played a vital part in managing the liquidity crisis and gradually returned to normalcy by January.

The City of New York, facing its hard financial situation, turned to Morgan for assistance. On October 29, Morgan consented to back a $30 million bond issuance at 6 percent interest for New York City (Tallman & Moen, 1990). The strategy involved prominent banks purchasing shares of the bond

[6] J.P. Morgan was an American financier and investment banker who dominated corporate finance on Wall Street throughout the Gilded Age and Progressive Era. Leading the banking firm that would eventually be recognized as J.P. Morgan and Co., he played a pivotal role in initiating the era of industrial consolidations across the United States in the 20th century.

issuance and depositing them with the clearinghouse. Subsequently, the clearinghouse issued loan certificates that were credited to the city's accounts, effectively preventing a potential default.

During the crisis, specific trust companies, notably the Trust Company of America and Lincoln Trust, needed additional support. Morgan led a group effort that arranged a $25 million loan for these entities, a deal that was completed on November 4 following discussions and with the endorsement of President Roosevelt regarding antitrust considerations (Frydman, Hilt, & Zhou, 2015). This crucial intervention helped to alleviate the panic, signifying a pivotal moment in the resolution of the crisis.

The actions taken in the short term show the complex array of tactics used to address the financial crisis of 1907. Utilizing loan certificates and the strategic financial initiatives spearheaded by J.P. Morgan were key in addressing the pressing issues. This method highlighted the importance of keeping cash flow and boosting trust to uphold the financial system's stability and avoid a total breakdown (Tallman & Moen, 1990).

2.1.4 LONG-TERM SOLUTIONS: THE CREATION OF THE FEDERAL RESERVE SYSTEM

The establishment of the Federal Reserve System was strongly influenced by the frequent banking panics that plagued the United States, particularly during the National Banking Era. These panics revealed a significant weakness in the national banking system: its inability to adjust the currency supply to meet the demands of bank runs or seasonal changes in liquidity. The lack of this not only caused financial crises but also greatly impeded the banking system's capacity to adequately address them. Consequently, the birth of the Federal Reserve was viewed as a solution to this core problem, aiming to introduce a fresh combination of flexibility and swift reaction that was previously absent in the system.

The passing of the Aldrich-Vreeland Act in 1908 played a vital role in setting the groundwork for the creation of the Federal Reserve. Following the 1907 Panic, this law marked a significant turning point in the government's response to financial crises (Gorton & Metrick, 2013). By granting national banks the authority to issue emergency currency, the legislation effectively addressed the urgent need for liquidity during times of panic. Additionally, it established the National Monetary Commission, which was responsible for examining the root causes of economic crises and proposing comprehensive reforms. The valuable insights and recommendations presented by this commission

played a crucial role in shaping the Federal Reserve Act of 1913. This act proposed the establishment of a centralized banking authority that would oversee the circulation of currency and ensure the stability of the banking system.

The Aldrich-Vreeland Act made a big difference by not only helping during banking emergencies but also showing the need for a flexible currency supply to ensure stability. However, it also showed that depending only on national banks and private bank clearinghouses was not enough to handle crises. This Act stressed the importance of having a better way to stop banking panics, which eventually led to the creation of the Federal Reserve System.

In contrast to the temporary measures taken by private bank clearinghouses, such as issuing loan certificates and emergency currency during crises, the Federal Reserve was established to act as both a preventative measure and a lender of last resort. The primary objective of this dual role was to uphold the faith of depositors in the financial soundness of the banking system, eliminating the need for sudden withdrawals that often lead to bank runs. The Federal Reserve's core objective was to maintain stability in the banking system by ensuring there was always enough money available and that banks were financially secure, which helped prevent financial crises.

The primary purpose of the Federal Reserve Act, as highlighted by legislators and advocates, was to address the issue of seasonal interest rate fluctuations and, significantly, prevent future banking panics. The goal of the Act was to set up a way for banks to trade private debts for currency, with the aim of having a currency that could easily adapt to the needs of the banking system. This approach aimed to eliminate the circumstances that had previously led to panics (Gorton & Metrick, 2013).

To sum up, the establishment of the Federal Reserve System was a crucial event in American financial history, shaped by the Aldrich-Vreeland Act and the aftermath of the Panic of 1907. This signaled a move towards a controlled banking system overseen by the government, focused on ensuring there was enough money available, increasing confidence from depositors, and protecting the overall economic stability. It was a significant shift in how monetary policy and banking rules were handled, all in an effort to shield the American economy from the harmful effects of banking crises and establish a better way to manage financial emergencies.

2.2 GREAT DEPRESSION OF THE 1930s

2.2.1 UNDERLYING CAUSES AND UNFOLDING EVENTS

The Great Depression, a profound economic crisis of the 1930s, resulted from a complex interplay of factors rather than a single cause. It was characterized by a significant decline in industrial production, price, and real GDP, alongside rising unemployment rates that remained high throughout the decade.[7]

The origins of this crisis can be traced back to the aftermath of World War I, which led to substantial shifts in the international financial landscape. The United States emerged from the conflict as the world's leading creditor, marking a dramatic shift from its previous status as a net debtor. Between 1924 and 1931, the US dominated international lending, accounting for approximately 60 percent of it, with a considerable portion directed towards Germany. Through its expenditure on imports and overseas ventures, the US facilitated the outflow of dollars, thereby assisting other nations in reinforcing their imports and managing their international debts, despite the majority of the borrowed funds being of a short-term nature. This transformation had profound implications for the global economic order and the stability of international financial systems (Bernanke, 2023).

2.2.1.1 THE ROLE OF THE GOLD STANDARD

The Great Depression's connection to the gold standard is critically examined, with a focus on its contribution to global deflationary pressures, in Bernanke's comprehensive study of 1990. The interwar gold standard, reinstated after World War I, possessed natural weaknesses that made economic vulnerabilities worse. Under this system, countries adhering to the gold standard were obliged to maintain fixed exchange rates, thereby necessitating domestic monetary policies to align with their gold reserves. Despite its aim to provide stability, this system paradoxically resulted in significant economic rigidity.

[7] From 1929 to 1933, industrial production declined 47 percent; consumer prices fell 25 percent and wholesale prices plummeted 32 percent; real GDP fell 29 percent; the unemployment rate reached a peak of 25 percent.

Bernanke[8], along with other scholars like Eichengreen and Sachs, concludes that the gold standard fundamentally constrained monetary policy flexibility. For instance, countries facing gold outflows were required to raise interest rates or reduce the money supply in order to protect their gold reserves, which unintentionally led to deflationary pressures. In the mid-1920s, the strong international demand for American assets such as stocks and bonds caused significant gold inflows into the United States, which inadvertently spread deflation to other countries. When subsequently prices dropped in the United States, countries tied to the gold standard were forced to lower their prices as well, implementing contractionary policies to preserve the gold parity of their currency. This international monetary system encourages the development of a deflationary spiral, undermining economic growth and elevating unemployment rates.

Deflation[9], a prominent feature of the Great Depression, served as both a trigger and an effect of the economic hardship experienced during that time. The gold standard contributed to deflation in several ways. Firstly, the impact of deflation was the amplification of real debt obligations, which severely affected both individuals and companies by imposing greater real payments on their current loans. As a result, the increase in defaults exacerbated the banking crises, leading banks to tighten credit even further, thereby aggravating the economic downturn.

Furthermore, deflation had a detrimental impact on the expectations of both consumers and businesses, leading to the development of a widespread attitude of caution and hesitation. As prices were expected to decline even more, there was little encouragement to make investments or engage in spending, ultimately suppressing the overall demand. This continuous cycle of postponed consumption and investment further exacerbated the economic decline.

Bernanke also highlights the banking system's vulnerability, pointing out that a combination of deflation and inadequate regulation led to numerous bank collapses. This in turn caused a credit crunch that hampered economic growth, with businesses and individuals experiencing increased borrowing expenses or difficulty obtaining loans (Bernanke & James, 1991).

Eichengreen and Sachs present empirical evidence supporting the harmful consequences of the gold standard. They note that nations that opted out of the gold standard and its deflationary measures were

[8] Ben Bernanke is American economist who served as chairman of the Board of Governors of the Federal Reserve System from 2006 to 2014. In 2022 he and two other economists, Douglas Diamond, and Philip Dybvig, were awarded the Nobel Prize for economics for "research on banks and financial crises."

[9] The Fed explains deflation as a sustained decrease in the price level of goods and services.

able to recover from the Depression more rapidly than those that remained tied to it (Eichengreen & Sachs, 1984). This finding emphasizes the direct connection between the gold standard and the prolonged economic distress.

2.2.1.2 STOCK MARKET CRASH AND FEDERAL RESERVE ACTIONS

In the late 1920s, the U.S. experienced a significant downturn, initially triggered by the Federal Reserve's decision to raise interest rates with the intention of restraining the skyrocketing stock market prices. Despite the economic prosperity of the 1920s, this period was not marked by exceptional growth, as price levels remained stable and minor recessions occurred in 1924 and 1927. However, the stock market was an exception, experiencing a significant rise in prices. In response, the Federal Reserve decided to raise interest rates in 1928 and 1929, resulting in reduced spending on construction and automobiles, ultimately leading to a decline in production. Additionally, certain analysts attribute the decrease in construction activity towards the end of the decade to an oversupply caused by a housing boom in the mid-1920s.

By the fall of 1929, stock prices, which had surged to unsustainable levels based on future earnings projections, began to weaken. This led to a loss of investor confidence and culminated in a market crash on October 24, 1929, famously referred to as “Black Thursday”. The widespread practice of buying stocks on margin, with borrowed funds covering only a small portion of the stock’s value, resulted in many being forced to sell their stocks as prices fell, further deepening the market decline. Between September and November, stock prices, as indicated by the Cowles Index, dropped by 33 percent, an event now remembered as the Great Crash of 1929 (White, 1990).

This crash had a profound impact on the U.S. economy, significantly reducing consumer spending on durable goods and business investment due to the uncertainty about future incomes and the perceived decrease in wealth, despite the actual wealth loss being relatively minor. Hence, although the Great Crash of the stock market and the Great Depression are distinct occurrences, the decrease in stock prices played a role in the decline of production and employment in the United States.

2.2.1.3 BANKING PANICS AND MONETARY POLICY CONTRACTION

The next blow to aggregate demand occurred in the fall of 1930, when the United States experienced the first of four waves of banking panics. A banking panic occurs when numerous depositors simultaneously doubt the financial stability of banks and request their deposits in cash. Given that banks kept only a small portion of deposits as cash, they were forced to quickly sell off loans to meet these demands, leading to the failure of even solvent banks. During the late 1930s, early and late 1931, and late 1932, the United States faced a series of banking crises. These crises continued until early 1933, when President Franklin D. Roosevelt took action and declared a national bank holiday on March 6, 1933, effectively putting an end to the crises. The purpose of this closure was to evaluate and guarantee the financial stability of the banks prior to their reopening. Consequently, by 1933, a total of twenty percent of the banks that were functioning in 1930 had experienced failure.

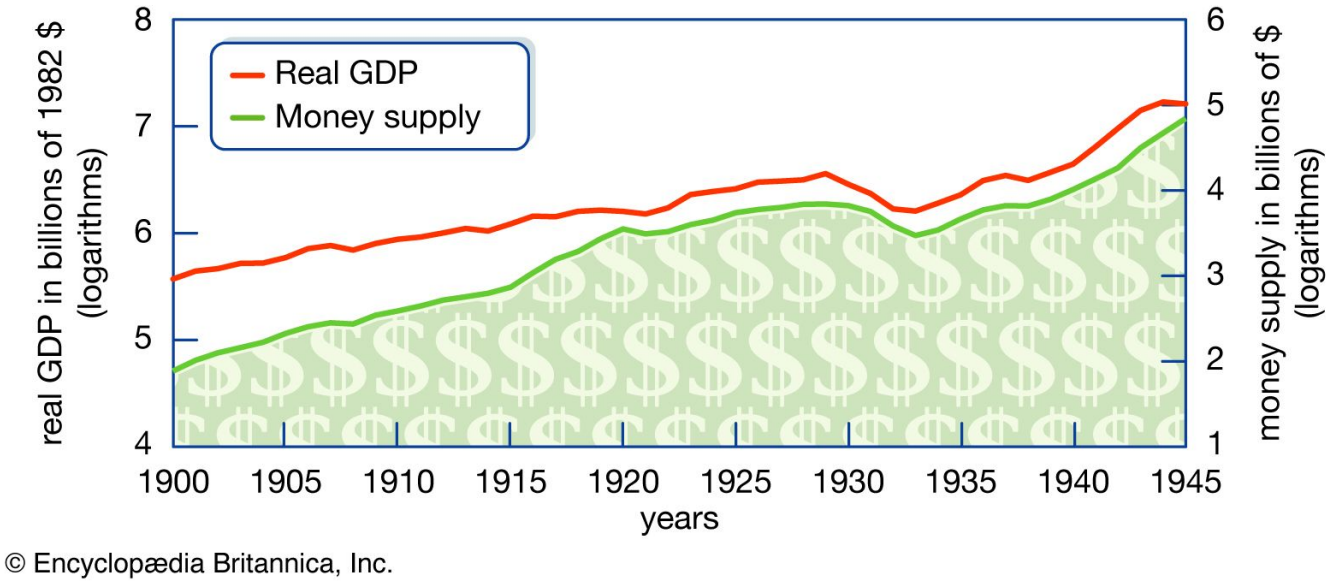
Banking crises, often perceived as sudden and irrational, were fueled by a combination of factors. These factors included the substantial increase in farm debt during the 1920s and the promotion of small, undiversified banks through certain policies. This combination of factors created an environment that was highly susceptible to panics. The rise in farm debt was partly a consequence of the high prices of agricultural products during World War I, which encouraged farmers to borrow heavily for expansion purposes. However, the subsequent drop in prices after the war made it challenging for them to repay their loans. Unfortunately, the Federal Reserve's response to these panics was minimal. According to economists Milton Friedman and Anna J. Schwartz, the lack of action against the panics can be attributed to the death of Benjamin Strong, the influential governor of the Federal Reserve Bank of New York, in 1928. Strong's absence created a leadership void, that prevented efficient crisis management.

The series of banking panics led to a significant shift in the public's preference towards holding cash rather than bank deposits, resulting in a 31 percent decrease in the U.S. money supply between 1929 and 1933, as highlighted by Figure 2 (series in logarithms). The situation deteriorated further when the Federal Reserve decided to contract the money supply and increase interest rates in 1931, amid worries that the U.S. might leave the gold standard. This action significantly deepened the economic downturn.

This decrease in the money supply had a negative impact on spending in various ways. One of the most significant effects was the expectation of deflation among consumers and businesspeople due to actual price declines and the rapid decrease in the money supply. This decrease in the money supply

had a negative impact on spending in various ways. One of the most significant effects was the expectation of deflation among consumers and businesspeople due to actual price declines and the rapid decrease in the money supply. Consequently, even though nominal interest rates were low, people were reluctant to borrow as they feared that future wages and profits would not be sufficient to cover their loan payments. This hesitation resulted in significant reductions in both consumer spending and business investment. The panics that occurred during this period further worsened the decline in spending by creating pessimism and eroding confidence. Additionally, the failure of several banks disrupted lending, thereby reducing the available funds for investment ("Great Depression, Definition, History, Dates, Causes, Effects, & Facts, Britannica," 2024).

Figure 2: Money and output in the United States



The graph illustrates the changes in the money supply and real output from 1900 to 1945. During normal periods, like the 1920s, both the money supply and output experienced steady growth. However, in the early 1930s, both sharply declined.

2.2.1.4 INTERNATIONAL LENDING AND TRADE POLICIES

The Smoot-Hawley Tariff Act, enacted in 1930, and the subsequent adoption of protectionist trade policies played a crucial role within the United States. The primary objective of the Smoot-Hawley tariff was to boost farm incomes by limiting foreign competition in agricultural products, but it

triggered a series of retaliatory actions from other nations. While experts acknowledge that these policies had a minor impact on trade, they do not consider them to be a major cause of the Great Depression for the major industrial producers in the U.S. However, these measures did contribute to a significant decline in the global price of raw materials, indirectly affecting the U.S. economy through trade imbalances and necessitating tighter monetary and fiscal policies ("Great Depression, Definition, History, Dates, Causes, Effects, & Facts, Britannica," 2024).

2.2.2 CONSEQUENCES ON THE CRISIS

During the era of the Great Depression, the 1930s witnessed a series of institutional changes that had a significant impact on U.S. monetary policy. The year 1932 marked the commencement of these reforms, which included the Glass-Steagall Act enabling the Federal Reserve to use government securities to support its note issuance, and the suspension of the international gold standard in 1933. These modifications were aimed at stabilizing the financial system and enhancing the adaptability of monetary policy. Following the Depression, there was a period of relative inactivity in monetary policy until the implementation of the Banking Act of 1935. However, starting from 1933, concerns regarding excess reserves and potential inflation led the Federal Reserve to introduce new measures, such as adjustments to reserve requirements in 1936 and 1937. The Free Reserve Policy Framework, which focused on the equilibrium between excess and borrowed reserves, also played a crucial role in shaping monetary conditions. Throughout this period, the Federal Reserve encountered conflicting viewpoints on its strategies, with the "liquidationist" and "accommodationist" perspectives influencing policy choices. The recession of 1937-1938 further tested the Fed's tactics, underscoring the intricate relationship between monetary policy, economic recovery, and external influences.

2.2.2.1 INSTITUTIONAL REFORMS OF THE 1930s

The year 1932 marked the beginning of a series of institutional reforms, which had the potential to greatly impact monetary policy. Notable among these reforms were the Glass-Steagall Act of 1932, allowing the Federal Reserve to use government securities to support its note issues. Additionally, the international gold standard was suspended by executive order on March 6, 1933. The Thomas amendment to the Agricultural Adjustment Act of 1933 granted the Federal Reserve the ability to

adjust commercial bank reserve requirements. The Gold Reserve Act of 1934 empowered the president to determine the dollar price of gold and established the Treasury's Exchange Stabilization Fund[10]. Lastly, the Banking Act of 1935 brought significant changes to the structure of the Federal Reserve System and expanded its authority to modify reserve requirements.

The Glass-Steagall Act of 1932, by allowing Federal Reserve note issues to be backed by U.S. government securities, eliminated a significant restriction on discretionary monetary policy. Prior to this, the Federal Reserve Act of 1917 required Reserve Banks to hold gold reserves equivalent to 40 percent of their note issues, with the remaining 60 percent in gold or "eligible paper," such as commercial loans that banks could sell to the Reserve Banks. Although the Federal Reserve Act permitted Reserve Banks to buy government securities, it did not allow these securities to be used as collateral for Fed liabilities. The Glass-Steagall Act broadened the definition of "eligible paper" to include U.S. government securities in the Fed's portfolio, thereby strengthening the Federal Reserve's capacity to engage in transactions that involved monetizing government debt.

The elimination of the gold standard as a constraint allowed for more flexibility in monetary policy. Though the Gold Reserve Act of January 1934 reinstated gold convertibility for international payments at a higher dollar price, it did not restrain the growth of the domestic money supply. Nations such as France, which adhered to their pre-depression gold valuations, experienced a significant outflow of gold to the United States and other nations. This compelled them to either devalue their currencies or abandon the gold standard altogether. Moreover, the prospect of conflict in Europe redirected the inflow of gold towards the United States, enabling the country to maintain a more relaxed monetary policy without the need to protect its reserves after 1933. Before this time, the Federal Reserve occasionally raised interest rates to protect its gold reserves, particularly during critical periods in 1920 and in 1931, demonstrating a commitment to maintaining the gold standard despite its deflationary consequences.

The Roosevelt administration demonstrated a readiness to modify the gold standard in order to aid in the economic recovery from the Great Depression. In 1933, Roosevelt implemented decisive measures such as suspending gold payments and banning private gold and foreign exchange transactions. These actions ultimately led to the requirement of surrendering gold to the Federal Reserve, eliminating gold from domestic transactions and private ownership. The enactment of the

[10] The Treasury's Exchange Stabilization Fund is an emergency reserve fund of the United States Treasury Department, normally used for foreign exchange intervention. This layout (in contrast to the central bank taking direct action) allows the US government to manipulate currency exchange rates without directly impacting domestic money supply.

1934 Gold Reserve Act granted the government with significant authority over the international gold price and the broader money supply, marking a shift away from gold as a strict external constraint on monetary policy. This act also allowed the Treasury to profit from the revaluation of gold, using $2 billion to establish the Exchange Stabilization Fund aimed at stabilizing the dollar's exchange value.

Additionally, the government's efforts to boost bank reserves by means of Federal Reserve open market purchases, along with reforms aimed at consolidating financial authority and enhancing the professionalism of monetary policy decision-making in line with national interests, unintentionally intensified political influences on the Federal Reserve. This consolidation of financial authority towards the Treasury, and the establishment of mechanisms like the Exchange Stabilization Fund, implied a potential shift towards a more inflationary inclination in monetary policy. The changes signified a major shift in financial power within the United States, transitioning away from a structure limited by gold reserves to a framework that prioritizes government oversight and adaptability in monetary strategies (Calomiris & Wheelock, 1997).

2.2.2.2 POST-DEPRESSION MONETARY POLICY

Between April 1933 and February 1936, the Federal Reserve was basically inactive, waiting for the Banking Act of 1935 to take effect. However, in 1933, it acquired $600 million in government securities, thereby increasing bank reserves by approximately $700 million. No significant changes occurred in its operations until 1937.

In the years 1934 and 1935, the Federal Reserve started to worry about the quick growth in bank reserves, driven by $3 billion in gold inflows. The fear was that excess reserves could result in speculative investments and inflation. The traditional methods of reserve management, such as selling securities or raising the discount rate, proved to be ineffective due to the low level of borrowing from the Fed and the significant number of excess reserves.

With the inclusion of the Thomas amendment to the Agricultural Adjustment Act of 1933 and the Banking Act of 1935, the Federal Reserve gained an additional tool. This tool enabled the Fed to modify reserve requirements, thereby exerting control over the expansion of credit. Consequently, reserve requirements were increased in 1936 and 1937 as a primary measure to manage the money supply and reduce the possibility of inflation (Calomiris & Wheelock, 1997).

2.2.2.3 RESERVE REQUIREMENT ADJUSTMENTS IN 1936 AND 1937

Due to the rising concern about the sharp increase in excess reserves that had taken place since 1933, viewed as potentially inflationary, the Board of Governors increased required reserve ratios in August 1936, and again in March and May 1937. The reserve requirements for time deposits have been increased from 3 percent to 6 percent in general. As for demand deposits, the requirements have been raised from 7, 10, and 13 percent to 14, 20, and 26 percent for country, reserve city, and central reserve city banks, respectively. They were meant to remove the extra reserves that the board considered "superfluous for prospective needs of commerce, industry, and agriculture, and, if permitted to become the basis of a multiple expansion of bank credit, might have resulted in an injurious credit expansion" ("Full Text of Annual Report of the Board of Governors of the Federal Reserve System: 1936, FRASER, St. Louis Fed," 2024).

From 1936 to 1938, certain aspects of monetary policy were quite remarkable. These elements showed both significant changes and consistent practices in policy since 1933. The old tools of monetary policy, like the discount rate and open market operations, were no longer working because of gold inflows. As a result, the Fed implemented reserve requirements as a new tool.

By decreasing the extra reserves and increasing the Fed's security holdings relative to these reserves, the intention was to enhance the effectiveness of its conventional tools, namely open market operations and the discount rate, for potential contractionary measures in the future. The reserve requirement increases of 1936 and 1937 also aimed to limit the banking system's ability to expand loans and deposits without Fed approval. The Fed interpreted commercial banks' excess reserves as unnecessary balances that could potentially cause inflation (Calomiris & Wheelock, 1997).

The Federal Reserve's objective in reducing surplus reserves was to shift from a policy that it considered overly permissive to one that promotes sustainable economic growth without causing inflationary pressures. From this point of view, the reserve requirement hikes of the 1930s can be seen as an attempt by the Fed to prevent banks from being the engine of inflation.

2.2.2.4 THE FREE RESERVE POLICY FRAMEWORK

In the 1920s and 1930s, the Federal Reserve primarily looked at monetary conditions through free reserves, which are the difference between excess and borrowed reserves. Initially, the focus was largely on borrowed reserves due to the scarcity of excess reserves prior to the Great Depression. However, the approach changed significantly after the depression hit. From 1929 to 1933, the Federal Reserve's response to the economic downturn was passive, in line with earlier policy frameworks, as borrowed reserves by member banks decreased substantially, especially during 1930 and 1931, and after the banking panic and gold outflows in late 1931. For the first time, banks started accumulating significant excess reserves, leading some officials to argue that the monetary policy had become too relaxed. They contended that the Federal Reserve was injecting an excessive number of reserves into an already saturated market, delaying necessary economic adjustments.

In the mid-to-late 1930s, free reserves remained a key factor in determining monetary conditions for the Federal Reserve. However, as banks significantly reduced their borrowing after 1933, the focus shifted towards excess reserves. By 1937, the Federal Reserve had redefined its definition of a neutral monetary policy stance. It was now considered neutral when New York City banks maintained $250 million of excess reserves, and all banks collectively held between $700 and $800 million of excess reserves. The Federal Reserve's new strategy for evaluating monetary stability was shaped by the understanding that banks were retaining extra reserves in response to reduced bank capital (Calomiris & Wheelock, 1997).

2.2.2.5 THE "LIQUIDATIONIST" VERSUS "ACCOMODATIONIST" VIEWS

In the 1930s, the Federal Reserve had to deal with conflicting views on its monetary policy. The "accommodationists" supported using monetary policies to alleviate economic conditions and help recovery during recessions, while the "liquidationists" disagreed, saying that these policies were actually harmful because they prevented necessary adjustments in prices, wages, and resource utilization that were crucial for a sustainable economic recovery. The latter group attributed the depression to financial speculation resulting from the Fed's past policies of monetary ease in 1924 and 1927, suggesting a hands-off approach to allow for essential economic corrections.

Despite differing perspectives, the Federal Reserve's actions in the mid-1930s, particularly the decision to raise reserve requirements in 1936 and 1937, reflected a careful attempt to combat inflation and speculation while still supporting recovery. This approach was influenced by the aftermath of the 1929 stock market crash, which policymakers linked to excessive financial speculation encouraged by loose monetary policies. The liquidationist perspective emphasized the necessity of gradual adjustments, such as reduced production, inventory management, and debt repayment.

The warning was based on a wider concern that loose monetary policies could result in negative economic behaviors, such as speculative bubbles that the economy was still susceptible to following the depression. So, despite the efforts of the Federal Reserve to restrict access to money by adjusting the regulations on the amount of money banks were required to keep, its main goal was still to have a balanced monetary environment. This environment was designed to promote economic growth while mitigating the risks of speculation and inflation, promoting a consistent approach in the Fed's policy framework among the challenging economic landscape of the 1930s. This shows that the Federal Reserve had a consistent plan, even though the 1930s were a tough time for the economy, reflecting the "liquidationist" policy view that prioritized long term economic stability over short term interventions.

2.2.2.6 THE RECESSION OF 1937-1938: CAUSES AND RESPONSES

The recession of 1937 and 1938 took place while the country was trying to recover from the Great Depression. It lasted from May 1937 to June 1938 and had a significant impact on the economy. During this time, the real GDP dropped by 10 percent, unemployment rates rose to 20 percent, and industrial production declined by 32 percent. This recession was one of the worst in the twentieth century for the United States (Waiwood, 2024).

The recession was not directly precipitated by an inflation bias[11] in Federal Reserve monetary policy. The Fed's decision to double reserve requirements in 1936 and 1937 was aimed at preventing inflation and speculation, rather than reducing credit. This policy action was taken despite the unemployment rate being over 10 percent and both the price level and real output significantly below their 1929

[11] Inflationary bias is the outcome of discretionary monetary policy that leads to a higher than optimal level of inflation.

levels. The Fed aimed to control future credit expansion that could derail economic recovery, believing that even after reducing excess reserves by about $2 billion, monetary conditions would remain sufficiently easy to support continued growth. However, a recession followed the increase in reserve requirements, leading to significant criticism of the Fed from contemporaries and later analyses. The Fed's intentions and perceptions of its policy stance during this period are crucial to understanding its actions, which were not seen by the Fed as aiming to initiate a credit contraction.

In response to the pressures and challenges faced during 1937 and 1938, the Federal Reserve found its policy decisions influenced by the New Deal[12] reforms and Treasury pressures. The Banking Act of 1935, which restructured the Federal Reserve System, removed the Secretary of the Treasury from the Federal Reserve Board but gave the newly formed Board of Governors majority control of the Federal Open Market Committee,[13] effectively centralizing control and possibly increasing the administration's influence on monetary policy. These changes, along with Treasury pressures, led the Fed to undertake offsetting open market operations and ultimately reverse a portion of the reserve requirement increase to ease policy in response to the recession.

Throughout this period, the Treasury exerted significant influence on Federal Reserve policies, advocating for measures that would support the price of government securities. This influence was evident in the Fed's subsequent actions to support bond prices following criticism from Treasury Secretary Morgenthau and the administration's dissatisfaction with the impact of reserve requirement increases on the government securities market. The administration's new monetary influence, shaped by both the restructuring of the Federal Reserve System and the administration's ability to influence monetary policy, set the stage for Treasury dominance in monetary policy and a focus on maintaining the stability of government securities prices.

This examination reveals that the Federal Reserve's implementation of monetary policy during the recession of 1937 and 1938, and its subsequent easing, were significantly influenced by external

[12] The New Deal, initiated by President Franklin D. Roosevelt between 1933 and 1939, aimed to address the Great Depression's impacts through economic relief and sector reforms, expanding federal government roles. Introduced in a 1932 speech by Roosevelt, this program signaled a transition towards governmental regulation of the economy to ensure equilibrium among diverse economic concerns.

[13] The Federal Open Market Committee is a branch of the Federal Reserve System. The FOMC determines the direction of monetary policy by directing open market operations.

pressures and the evolving structure of the Federal Reserve System, rather than a straightforward reaction to economic indicators alone (Roose, 1948).

CONCLUSION

To sum up, the analysis of the Panic of 1907 and the Great Depression shows important takeaways and key shifts in the U.S. financial regulatory system. These two crises revealed major weaknesses caused by insufficient regulations, a rigid monetary system, and risky financial behaviors, resulting in severe economic struggles.

The Federal Reserve was created in 1913 as a response to the Panic of 1907, which highlighted the need for a central bank to prevent future financial crises. This new institution aimed to regulate the money supply, act as a lender of last resort, and reshape the way the U.S. approached monetary policy and financial stability.

The Great Depression showed that the gold standard had its flaws and highlighted the importance of increased government involvement in the economy. Afterwards, significant changes were made, like the introduction of New Deal programs, which are banking regulations as, for example, the Glass-Steagall Act. These actions were taken to create a stronger financial safety net and avoid future economic crises.

These historical financial crises profoundly influenced the development of more sophisticated and responsive financial regulations. They highlighted the importance of federal oversight in maintaining economic stability and promoting a safe banking atmosphere, establishing guidelines for addressing upcoming financial crises.

3. FROM DEREGULATION TO COLLAPSE: THE EVOLUTION OF THE SAVINGS AND LOAN CRISIS

INTRODUCTION

The second chapter of the thesis focuses on the Savings and Loan Crisis, tracing its origins, development, and eventual resolution. This chapter is designed to offer a thorough examination of the crisis from different perspectives. It begins by detailing the historical context of savings and loan associations, emphasizing their significance in the housing market expansion following World War II, as well as the regulatory and economic factors that played a part in their expansion and weaknesses.

The chapter's main body is partitioned into multiple sections. The initial part examines the economic and policy changes during the 1970s and 1980s that paved the way for the crisis. This includes the efforts to deregulate and the effects of shifts in monetary policy. It explores the details of how these institutions, initially established to facilitate home ownership through mortgage lending, gradually engaged in risky investment practices.

The following sections delve into the progression of the crisis, providing a comprehensive analysis of the major regulatory shortcomings, the rapid advancements in financial practices that surpassed governmental supervision, and the market circumstances that worsened the instability of institutions. Additionally, this chapter scrutinizes the actions taken by the federal government in response to the crisis, encompassing the implementation of substantial legislative reforms with the objective of restructuring the regulatory framework and restoring stability to the financial system.

The last parts of the chapter discuss the takeaways from the Savings and Loan Crisis, evaluating how it influenced U.S. financial regulations and the banking and housing finance system in the long run.

3.1 FROM GREAT DEPRESSION TO SAVINGS AND LOAN CRISIS

3.1.1 FOUNDATIONS AND CHALLENGES: THE EARLY YEARS

The first savings and loan institution in the United States was founded in 1831 to help people purchase homes, a service that commercial banks typically avoided at the time as they concentrated on financing the nation's industrialization. As cities grew due to industrialization, more houses were needed, and savings and loan associations stepped in to help. This growth in savings institutions led to a building boom, which played a big part in the economic success of the 1920s.

Initially chartered by states, these institutions led to a highly varied regulatory environment across the country. Many states did not have requirements for establishing reserves against loan losses, allowing these institutions to distribute most profits as dividends, leaving them financially exposed. Mortgage practices were risky too, with lots of layers of mortgages that had to be paid off in just 10 to 15 years, which only worked if property values stayed steady or went up. However, when the stock market crashed in 1929, real estate values dropped fast.

In the 1930s, the savings and loan industry was in trouble with lots of loans not being paid back, homes being taken away, and lots of real estate being repossessed. This situation was worsened by a general lack of trust in the real estate market, compounded by thrifts' previous actions of depleting reserves through dividends. To fix this, Congress made new laws to help the housing market and thrift industry feel stable and trustworthy again.

The Federal Home Loan Bank Act of 1932 created the Federal Home Loan Bank System, which was watched over by the Federal Home Loan Bank Board (FHLBB). The primary purpose of this system was to provide mortgage funding to homeowners who were unable to obtain financing from traditional banks. The FHLBB also made rules for member institutions and spoke up for the thrift industry in laws being made.

The Homeowners' Loan Act of 1933 gave money to homeowners in trouble with long-term, fixed-interest mortgages. This act also imposed restrictions on Federal savings and loans, limiting them to issuing loans only for residential or mixed-use properties within a 50-mile radius of their home

offices. Furthermore, these institutions were exempted from federal and state taxes in order to assist them in rebuilding their reserves.

During the challenging times of the Great Depression, the National Housing Act of 1934 played a vital role in strengthening the support for the savings and loan industry. It achieved this by establishing the Federal Savings and Loan Insurance Corporation (FSLIC) to protect depositors at savings and loan associations. Additionally, the act created the Federal Housing Administration (FHA) to safeguard these associations from losses on mortgages. Another significant outcome was the establishment of the Federal National Mortgage Association (FNMA or Fannie Mae),[14] which facilitated a secondary market for mortgages. Furthermore, the act mandated that institutions maintain a reserve of 5 percent of deposits.[15] These legislative measures not only stabilized the industry but also laid the groundwork for the future operation of federally chartered savings and loan institutions, recognizing their crucial role in promoting home ownership (McDonald, 2009).

3.1.2 POST-DEPRESSION RECOVERY

The savings and loan industry had a comeback in the late 1930s due to the regulations in place. This resurgence lasted until the late 1960s, during which the institutions saw a consistent increase in their profits. There were several reasons behind this success. Firstly, World War II caused long-term mortgage rates to rise and short-term interest payments for depositors to decrease, which remained stable from the 1940s to the early 1960s. Secondly, the country experienced a remarkable economic boom after the war. Thirdly, the middle class grew,[16] leading to more people moving to the suburbs. Moreover, real estate prices skyrocketed, and the Federal government showed continuous interest in housing development. While this focus on housing from the government contributed to the prosperity

[14] Fannie Mae, officially the Federal National Mortgage Association (FNMA), is a government-sponsored enterprise (GSE) and a publicly traded company created by Congress to provide liquidity and stability to the housing market.

[15] The 5 percent reserve requirement was instituted to ensure that these institutions had a financial cushion to weather future economic stresses.

[16] The growth of the middle class and the suburbanization of America increased the demand for residential mortgages, which were the primary product of savings and loan associations.

of savings and loans institutions after the Great Depression, it also set the stage for the challenges the industry would face in the 1970s and ultimately the 1980s (McDonald, 2009).

3.1.3 GOVERNMENT'S EXPANDING ROLE IN MORTGAGE MARKETS

Following the Great Depression, the establishment of Fannie Mae had a significant impact on mortgage lending dynamics in the secondary mortgage market in the United States. During this time, mortgage terms were standardized to comply with Federal Housing Administration (FHA) requirements, which were crucial for institutions looking to sell mortgages through Fannie Mae. These criteria included details about the length of loan repayment periods (initially set between 15 to 20 years) and loan-to-value ratios (starting at 80 percent). These standards changed almost every year through various Housing Acts in the 1940s and 1950s. The Servicemen's Readjustment Act of 1944[17] expanded government-supported home financing by introducing VA loans, managed by the Veterans Administration and resembling FHA loan provisions in many ways.

Over time, the government decided to extend FHA and VA loan terms to 40 years and allow loan-to-value ratios as high as 97 percent. This change was made to boost the housing sector, which was seen as crucial for the economy. This approach proved successful in attracting capital into the mortgage market, primarily through the expansion of mortgage bankers. These bankers actively promoted FHA and VA insured loans with extended maturities and low interest rates, and subsequently sold these loans to Fannie Mae. The competition from mortgage bankers put pressure on savings and loan institutions to either offer FHA and VA qualified loans or structure conventional loans with similar terms, such as long repayment periods, low interest rates, and generous loan-to-value ratios. As a result, FHA loan terms became the standard in the industry.

In the 1950s and 1960s, as a result of good FHA and VA loan terms and FSLIC insurance guarantees, housing construction hit record highs. This helped the savings and loan industry thrive. The success of this industry led to the creation of new savings and loan institutions, which were given a 20-year period to meet the 5 percent reserve requirement outlined in the National Housing Act. While these institutions grew rapidly, commercial banks only saw small growth and believed savings and loans

[17] The Servicemen's Readjustment Act of 1944, commonly known as the G.I. Bill, provided veterans with benefits that included loans for purchasing homes, which further stimulated the housing market.

institutions did well because of their tax advantages. Unlike commercial banks, savings and loan associations were exempt from federal income taxation during World War II and the post-war era, a policy justified by their vital role in financing residential housing — a key national priority. This tax advantage, along with the mutual ownership structure of savings and loans organizations, which treated them as tax pass-throughs for their depositors, bothered commercial banks, who felt they were being treated unfairly.

3.1.4 THE 1951 REVENUE ACT: A SHIFT IN TAX POLICY

Commercial banking arguments centered around the fact that savings and loans institutions were in direct competition with commercial banks for savings deposits; and that if savings and loans institutions were to be allowed to compete with banks for deposits, they should be subject to equal taxation. The Revenue Act of 1951 made changes to the Internal Revenue Code of 1939 in response to persuasive arguments put forth by commercial banks. These arguments led to savings and loans associations being treated as regular corporations. This act was important because it indicated a change in tax policy, shifting away from solely protecting savings and loans institutions due to their involvement in housing finance. This shift marked a divergence in both tax policy and regulatory policy by the Federal Home Loan Bank Board (FHLBB). However, despite the significance of this tax policy shift, its actual impact on taxation was minimal for the following reason.

The Revenue Act of 1951 not only brought savings and loans associations under taxation for the first time, but also offered them a choice in determining their allowance for bad debts. This allowance then dictated the bad debt deduction for tax purposes. These institutions could base their allowance on actual bad debt experience over a certain number of years or choose a percentage of taxable income bad debt deduction. This allowed them to write off up to 100 percent of their taxable income to a reserve for bad debts. The total of this reserve, along with earned surplus and undivided profits, could not exceed 12 percent of total deposits. This limitation was rarely a restriction in practice. Despite being taxable entities, savings and loans institutions rarely paid income tax until the Revenue Act of 1962 was passed.

3.1.5 ADJUSTING TO NEW TAX FORMS: THE REVENUE ACT OF 1962

In 1962, the focus of Congress once again shifted towards the matter of savings and loan taxation. This reconsideration was prompted by President Kennedy's request to examine the taxes imposed on private savings and lending institutions. These institutions were benefiting from tax deductible reserve provisions, which significantly decreased or even eliminated their federal income tax obligations. Following a thorough review by Congress, the Revenue Act of 1962 was passed, which lowered the bad debt deduction rate to 60 percent of taxable income.[18] Consequently, the effective tax rates for savings and loans increased. Additionally, the Act introduced a requirement that savings and loans organizations utilizing this deduction must maintain at least 72 percent of their assets in "qualified assets."

"Qualified assets" consisted of loans for residential real estate; loans backed by deposits from members or church properties; cash and U.S. government securities; and property utilized for the institution's operations. This marked the initial direct connection in tax legislation between the percentage of taxable income deduction for bad debts and an institution's mortgage investments. It also established the tax law as determining the particular investments permitted for savings and loans institutions. This created a discrepancy in permissible investments for tax and regulatory objectives.

During this period, savings and loans institutions were left with no other option but to agree to the tax increase because the rules set by regulators were even stricter than the 72 percent investment requirement in qualified assets for tax purposes. The remaining 28 percent of assets had to be invested according to regulatory rules, which only allowed investments in specific categories such as residential mortgage loans, loans secured by deposits, cash, government securities, property used for business purposes, residential property improvement loans, and loans secured by real estate other than one to four-family home types. Therefore, in reality, regulatory investments, excluding cash, government bonds, business property, and loans backed by members' deposits, were dedicated to residential mortgages and enhancements to residential property.

In essence, merely 20 percent of an institution's assets were permitted to be invested in assets other than residential property and its associated loans. As a result of these limitations, savings and loans

[18] This modification in legislation aimed to synchronize the tax policies with economic circumstances by guaranteeing that savings and loan institutions assumed a more equitable portion of tax obligations.

associations were obligated to uphold around 80 percent of their assets invested in qualified assets to comply with regulatory mandates (McDonald, 2009).

During this particular period, the institutions did not face any difficulties in making such investments. As mentioned earlier, the profit margins remained relatively stable, the demand was consistent, and the prices of real estate were on the rise. However, this stability did not last long. After 1961, conflicts arose regarding allowable assets for tax and regulatory purposes, causing confusion about the industry's role in home financing. Tax burdens increased, and Regulation Q was imposed, leading to further complications in the industry.

3.1.6 REGULATION Q

Starting in the mid-1960s, inflation emerged as a significant issue. The Vietnam War played a role in this, as the government tried to fund it without raising taxes too much. As a result, inflation rates went up and became more unpredictable than before. This high inflation caused interest rates in the market to rise as well. At the same time, competition between savings and loans institutions in different parts of the country, as well as between banks and savings and loans organizations, also pushed interest rates higher.

By 1966, interest rates reached the highest point they had been at in 100 years. The Federal government grew concerns about the ability of savings and loans institutions to meet these high interest rates for depositors. Since the associations had most of their money tied up in long-term mortgages with fixed interest rates, they could not quickly adjust their income to cover the increasing cost of borrowing money in the short-term. Consequently, they found themselves trapped with enduring investments that offered predetermined yields, while having to secure loans at variable interest rates.

To protect the savings and loan industry, the government introduced Regulation Q in 1966.[19] This regulation set limits on the interest rates that savings and loans organizations could offer to depositors. This move was seen as an effective strategy to control the cost of funds for savings and loans institutions and shield the industry from competitive pressures. After Regulation Q was put in place,

[19] Regulation Q was a key regulatory response aimed at mitigating the adverse effects of high inflation and interest rate volatility during the 1960s, particularly due to the economic pressures of the Vietnam War.

market interest rates went down, and some people thought that the savings and loan industry was no longer in trouble. This belief might have been one of the reasons why the government imposed additional taxes on savings and loans associations in the Revenue Act of 1969 (Gilbert, 1986).

3.1.7 THE IMPACT OF THE 1969 REVENUE ACT

The bad debt deduction limit for savings and loan taxes was reduced through the Revenue Act of 1969. Prior to this act, the savings and loan industry had requested an expansion of the definition of qualified assets to include new regulatory powers. As a result, regulators allowed certain education loans (up to five percent of total assets), housing for the aging (up to five percent of total assets), loans on improved real estate other than residential property, and loans for the acquisition and development of land (raised from 15 to 20 percent of total assets) to be considered as allowable assets for savings and loans institutions. However, despite these expansions, the industry faced challenges in pursuing these investments due to the strict asset restrictions outlined in Section 7701(a)(19) of the Internal Revenue Code. This created a conflict between the tax law and operating regulations.

In response to the industry's requests, the 1969 Act made some changes. It expanded the types of assets that could be considered qualified, such as loans secured by certain urban renewal areas, school, health, or welfare facilities, and student loans. However, there were some adjustments made. The percentage of qualified assets required was increased to 82 percent, and there was a sliding scale for investment levels between 82 and 60 percent. If an institution's portfolio fell below 82 percent, the deduction for bad debt was reduced by three-fourths of one percent for every one percent decrease. Once the investment in qualified assets dropped below 60 percent, the institution could no longer use the bad debt deduction based on taxable income. This created a significant difference in tax and regulatory policies. While regulators were allowing some limited diversification away from residential mortgages (up to 30 percent of the portfolio), the tax law imposed a penalty for diversification exceeding 18 percent. Additionally, the Act gradually reduced the deduction rate from 60 to 40 percent over a period of 10 years. This meant that even institutions that did not diversify faced a tax increase. This tax increase contributed to the financial crisis that affected the industry in the 1970s.

3.1.8 ECONOMIC CHALLENGES OF THE 1970S

In the 1970s, there was a big increase in inflation in the country. As explained earlier, the management of the Vietnam War played a central role in this circumstance. Also, the Organization of Petroleum Exporting Countries (OPEC) decided to make the price of oil twice as expensive. In order to fight inflation, the Federal Reserve Bank increased its discount rate and reserve requirements to record levels. They also implemented a new monetary policy that concentrates on controlling total bank reserves rather than short-term interest rates. Consequently, short-term interest rates rose rapidly, leading to chaos in the savings and loan sector.

In the 1970s and early 1980s, savings and loans institutions were restricted by Regulation Q, which stopped them from passing on high short-term market interest rates to their depositors. This caused depositors to take out their money and invest in other options like money market mutual funds. As a result, savings and loans organizations had to borrow at high interest rates while their income-generating portfolios were stuck in low-interest mortgages. This problem was due to the industry following FHA and VA mortgage trends and Congress-imposed portfolio restrictions.

The institutions responded to these regulations by finding ways to work around them as much as possible. Due to restrictions on investment opportunities by FHLBB and tax regulations, savings and loans institutions began to improve their services. They expanded by opening more branches and offering additional customer benefits, which led to higher operating costs. The hoped that these improvements would attract more customer deposits. To entice depositors even more, they introduced Negotiable Orders of Withdrawal (NOW accounts), which were essentially interest-bearing checking accounts. However, this approach ended up raising operating costs even further and caused a significant decrease in profits for the industry.

The profit squeeze that occurred in the 1980s marked the start of the savings and loan crisis.[20] This decline in profits led to a decrease in the industry's net worth and capital position, making it increasingly challenging to maintain reserve requirements. This situation led the industry to urge the Bank Board to extend the deadline for meeting the 5 percent reserve requirements. In response, the Board authorized institutions in 1972 to calculate their reserves based on a percentage of savings deposits averaged over a five-year period. As the financial health of these institutions continued to

[20] This period marked the beginning of a broader structural crisis for savings and loans, with increased competition and rising costs contributing to a sector-wide decline in financial health.

weaken, the U.S. League of Savings Institutions, the industry's trade organization, appealed to Congress to lower the reserve requirements. Eventually, Congress addressed this issue through the Depository Institutions Deregulation Act of 1980 (Margavio, 1993).

3.2 THE REGULATORY LANDSCAPE OF THE 1980s

The Depository Institutions Deregulation and Monetary Control Act (DIDMCA) of 1980 was the first attempt to fix the problems faced by the savings and loan industry in the 1970s. However, this regulation was not well thought out for a few reasons. Firstly, the deregulation of savings and loan institutions' liabilities happened before the deregulation of investment banks' liabilities, which made the already unstable earnings situation even worse. Secondly, regulators allowed the use of different accounting methods that made it difficult to understand the true financial condition of the industry. Lastly, there was a lack of communication and coordination among government regulators, leading to uncertainty and confusion about the role of these institutions as financial intermediaries. Further elaboration on the development of this confusion is provided in the discussion of regulatory events from the 1980s.

3.2.1 LEGISLATIVE CHANGES: DIDMCA AND GARN-ST. GERMAIN

In the 1980s, the first regulatory change, DIDMCA, allowed savings and loans organizations to increase the rates paid on deposits by phasing out Regulation Q deposit rate ceilings. This change also made NOW accounts legal nationwide. As a result, institutions had to deal with higher costs of funds. Additionally, the Act empowered the Federal Home Loan Bank Board to adjust reserves (or capital) requirements for individual institutions within a range of 3 to 6 percent of deposits. Savings and loans institutions were also given some freedom to diversify asset holdings, including the ability to invest up to 3 percent of assets in service corporations. These asset diversification powers were further expanded in 1982.

The Garn-St. Germain Depository Institutions Act of 1982 brought about significant changes for savings and loans associations. Under this act, these institutions were allowed to allocate up to 30 percent of their assets towards consumer loans and corporate debt. They could also invest up to 40

percent in nonresidential real estate and up to 10 percent in commercial loans. Alongside these newfound investment capabilities, the act abolished loan-to-value ratios for all loans, thereby allowing 100 percent financing for real estate projects. Also, adjustable-rate mortgages were first introduced, giving borrowers greater flexibility. Regulators thought that these modifications, along with the changes implemented in 1980, would allow savings and loans organizations to diversify their long-term lending and short-term borrowing setups. This diversification would assist them in adapting to future economic changes more effectively.

The expectation could have been met if the DIDMCA and Garn-St. Germain asset reforms had been implemented earlier, preventing the interest rate spread losses in the 1970s. However, as it turned out, when the 1980s began, savings and loan profits were at an all-time low, and many institutions did not have enough capital to gain expertise in the newly accessible investment areas. Additionally, some institutions had reserves below the minimum requirement of 3 percent set by Congress in DIDMCA. Fortunately, Garn-St. Germain offered a solution to this problem through net worth certificates. However, it is important to note that these net worth certificates were not considered as capital according to generally accepted accounting principles (GAAP).

This marked the beginning of a series of differences between GAAP (generally accepted accounting principles) and RAP (regulatory accounting principles), which made it difficult to analyze the financial condition of savings and loans organizations.[21] Other differences included the deferral of loan losses and the evaluation of equity capital, which will be discussed further (Margavio, 1993).

3.2.2 DISCREPANCIES IN ACCOUNTING: GAAP VERSUS RAP

In the early 1980s, the Federal Home Loan Bank Board (FHLBB) put into place some new accounting rules to assist savings and loan institutions in adjusting to the changes brought about by the Depository Institutions Deregulation and Monetary Control Act (DIDMCA) and the Garn-St. Germain Depository Institutions Act. These rules involved appraised equity capital provisions and delaying losses from loan sales, which were quite different from Generally Accepted Accounting Principles (GAAP).

[21] The divergence between GAP and RAP highlighted a growing concern over the accurate representation of financial health within the savings and loan industry.

During the period from November 1982 to December 1986, the equity capital rule allowed institutions to show gains in the value of office buildings they owned without having to sell them. This method, not in line with GAAP standards, let institutions boost their net worth artificially. Another rule, in effect from October 1981 to October 1984, let institutions delay recognizing losses from selling low-interest loans over the remaining life of the loan, going against GAAP's requirement for immediate recognition of such losses.

The regulatory accounting practices (RAP) involved differences from GAAP, like acknowledging gains and losses on "wash sales" of securities, instant income recognition from loan origination fees, and utilizing real estate appraisals to satisfy GAAP net present value criteria. Moreover, RAP permitted longer amortization periods for goodwill in specific mergers and considered cash assistance from the FSLIC in mergers as a capital contribution, contrasting with GAAP which viewed it as deferred revenue or an asset discount.

The AICPA and the FASB, which represent the accounting profession, were against these differences because they were worried that RAP rules were giving inaccurate information about the financial status of institutions and could be misleading stakeholders. Even with these worries, regulators allowed institutions to pick between GAAP and RAP for financial reporting. Many institutions with lower capital ratios, meaning they were closer to breaking net worth rules, chose RAP to avoid getting in trouble with regulators. This leniency from the FHLBB, which was also seen in past crises, was said to have played a part in the savings and loan crisis of the 1980s.

During this period, the FHLBB's actions matched what the government wanted back in the 1930s. The main goal was to make sure that the savings and loan industry always had enough money, even though they were given more freedom with the DIDMCA and Garn-St. Germain laws. Nevertheless, this led to significant conflicts between Congress' intentions and the tax laws impacting the industry.

3.2.3 THE CRISIS INTENSIFIES: DEREGULATION AND RISK

During the 1980s, there were some important changes in the regulations that affected the savings and loan industry. One of these changes was the passing of the Depository Institutions Deregulation and Monetary Control Act (DIDMCA) and the Garn-St. Germain Depository Institutions Act. These acts gave savings and loan institutions new powers to invest in different ways, not just in residential mortgages. This meant that they could diversify their investment portfolios. However, at the same time, there were also many problems with the net worth of these institutions. This made the risk even greater for them. To bring more money into the struggling sector, the Federal Home Loan Bank Board (FHLBB) made a decision to change an important rule. In July 1982, the FHLBB got rid of the requirement that savings and loan institutions must have at least 400 shareholders, with no one person owning more than 25 percent of the institution. This change allowed one person or entity to own the entire institution. This led to a new group of owners coming in, like mortgage brokers and land developers, who saw the opportunity to get financing more easily and at a lower cost through savings and loans institutions compared to regular bank loans. These new owners used the institutions to fund big real estate projects, sometimes treating the institutions like partners in the process.

Portfolio restrictions being relaxed caused many savings and loan institutions to take on risky investment strategies, such as putting a lot of money into junk bonds and making bold moves to manage interest rates. On top of that, institutions were heavily involved in ADC loans for acquisition, development, and construction. These loans were especially risky because they were closely linked to the real estate market, which could change based on economic conditions and demand. Even though ADC loans were risky, they were labeled as standard loans instead of direct investments, hiding the actual financial risk for the institutions.

To gather funds for these risky investments, savings and loans institutions decided to offer higher interest rates on deposits. They wanted to attract more money, even from brokers who were not from their usual areas. At first, they were only allowed to get 5 percent of their deposits from these external brokers. However, in March 1982, the FHLBB removed this restriction. As a result, billions of dollars from money market funds poured into thrifts. The deregulation of brokered deposits helped the savings and loan industry grow rapidly. This, in turn, added more fuel to an already overheated real estate development market.

The bold expansion and dangerous financial strategies were supported by the federal insurance of depositor accounts from the Federal Savings and Loan Insurance Corporation (FSLIC), which

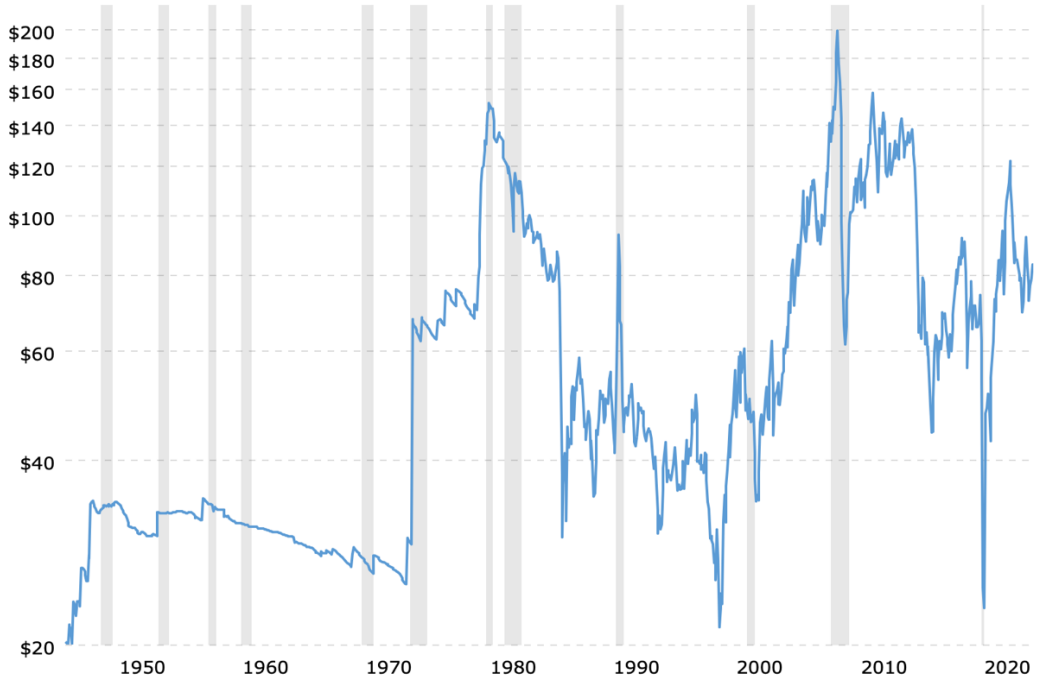
unintentionally promoted these risky actions. Successful investments resulted in significant profits for the institution and its shareholders; but if they failed, the FSLIC had to deal with the consequences, bearing the financial burden of any institution collapse.

The situation reached a critical point when oil prices plummeted in the mid-1980s, as shown in Figure 3, causing a severe economic downturn that began in the Southwest and quickly spread across the country. This recession resulted in a notable decrease in property values, making the savings and loan industry even more susceptible to financial instability. The challenges were further intensified by the Tax Reform Act of 1986, which removed numerous tax advantages linked to real estate ventures, resulting in excessive construction and an oversupply of vacant office spaces.

Even though there were obvious signs of trouble in the sector, the FHLBB and the FSLIC were held back by an old-fashioned regulatory system that did not give them enough power to step in effectively. The examiners from the regulatory body, who were usually lower-level government workers, did not have the right training or authority to enforce important regulations or make institutions set aside money for possible loan losses. Dealing with issues through the bureaucratic process was slow and ineffective, with consent decrees and "cease and desist" orders that were hard to enforce and could be legally challenged, causing delays in taking necessary actions.

In the end, the mix of deregulation, bold new investment tactics from fresh owners, lack of proper regulation, and the overall economic decline all led to a big increase in failing institutions, making it a chaotic time for the savings and loan industry. In particular, according to data from the Federal Deposit Insurance Corporation's (FDIC) Division of Research and Statistics, 1,617 commercial and savings banks failed, and 1,043 thrift banks failed or were otherwise resolved (Summa, 2021).

Figure 3: Crude oil price, a historical chart



Source: Macrotrends

The chart depicts the trajectory of crude oil prices, with a notable price drop occurring in the 1980s. The shaded areas of the graph represent periods of recession.

3.3 THE PATH TO RE-REGULATION

Congress reacted by passing three significant laws: the Competitive Equality Banking Act (CEBA) of 1987, the Financial Institutions Reform Recovery and Enforcement Act (FIRREA) of 1989, and the Federal Deposit Insurance Corporation Improvement Act (FDICIA) of 1991.[22] These laws were designed to tackle problems in the banking industry. Around $177 billion was set aside for the FSLIC and the Resolution Trust Corporation was created to manage the assets of failed institutions. Additionally, the Acts revamped the savings and loan regulatory system by getting rid of the FHLBB system. The supervisory and examination duties of the FHLBB were moved to the Office of Thrift

[22] These legislative measures represent Congress's response to the financial crises of the 1980s, aimed at restoring confidence and stability in the U.S. financial system.

Supervision (OTS), which concentrated on assessing the financial well-being and asset quality of institutions. This change made the OTS's responsibilities more similar to those of the Office of the Comptroller of the Currency, the regulatory body for the banking sector. The OTS was also granted more independence in implementing operational changes and, if necessary, closing down institutions with excessive risky investments. To ensure the OTS could effectively carry out its function, it was necessary to establish objective measures of risk. A risk determination system was developed for both individual assets and an institution's entire portfolio of assets. The system recognized how the quality of an institution's assets, whether on their own or together, affected the institution's capital position. Risk definitions were based on the minimum capital standards required to back up the institution's investments in different types of assets. These definitions and capital requirements were mostly taken from the three-tier capital standards system used by the Office of the Comptroller of the Currency. Here is a quick overview of what made up these tiers.

Tier one, also known as core capital or leverage capital, was calculated by adding the common stockholders' equity and noncumulative preferred stockholders' equity. It also included identifiable intangibles, excluding goodwill (limited to 25 percent of total core capital), and purchased mortgage servicing rights. Savings and loans institutions were required to maintain this core capital at a level of 3 percent of their total assets. Additionally, there was a second tier called tangible capital, which must be maintained at a level of 1.5 percent of total assets. Tangible capital was determined by subtracting all intangible assets from the core capital (tier one). Lastly, there was a third tier known as risk-based capital standards. Institutions were required to maintain reserves of 6 percent of risk-weighted assets, and this percentage could increase in response to interest rate fluctuations that negatively impacted earnings. Each major category of assets was assigned a risk weighting factor, which was then multiplied by the dollar amount of assets in that category. These risk factors could be adjusted based on market conditions. It is important to note that there was a gradual phase-in period for the risk-based standards until January 1, 1993. During this period, savings and loans organizations must meet the minimum capital criteria in each of the three tiers.

The OTS oversaw the adherence to these standards as savings and loans institutions submitted their required financial statements on a quarterly basis. Starting from January 1, 1994, these statements must be prepared in accordance with GAAP. Along with the return to GAAP accounting, independent auditors played a more significant role in evaluating the safety and stability of these institutions through the following measures. Firstly, institutions with assets exceeding $150 million must undergo annual audits. Secondly, in addition to their traditional responsibilities under GAAP and GAAS (generally accepted auditing standards), auditors must also comply with any additional disclosure

requirements imposed by regulations. For instance, a separate report must be prepared to confirm management's assertions regarding compliance with safety and soundness regulations. Thirdly, external auditors must agree to provide workpapers to regulators upon request and inform the Federal Deposit Insurance Corporation (FDIC) if their services were terminated. Lastly, the FDIC had the authority to request that an institution's quarterly financial statements underwent review procedures by a Certified Public Accountant (CPA). This authority was derived from the FDIC's new role as the insuring agency for savings and loans associations.

As part of a significant restructuring of the insurance system, the FSLIC was integrated into the FDIC, which served as the insuring agency for commercial banks. This merger allowed for better alignment of insurance objectives, rates, and supervisory principles between the thrift and banking sectors. Through the transfer of responsibility for insuring savings and loans organizations and the establishment of the Office of Thrift Supervision, Congress successfully implemented a policy of regulatory parity for both savings and loans institutions and commercial banks.

The reorganization of savings and loans institutions showed that the banking industry had successfully pushed for fairness between banks and thrift institutions. Since 1951, commercial banks had been advocating for equal taxation for both banks and savings institutions. These arguments were repeated during hearings about changes made to the deduction of bad debt from taxable income in the Tax Reform Act of 1986. Bankers saw these changes as a step towards tax equality. Furthermore, the tax hearings recognized that the deregulation Acts of 1980 and 1982 (DIDMCA and Garn-St. Germain) were seen by both industries as regulatory measures to establish investment fairness. As a result, a trend emerged towards increasing equality between banks and savings and loans institutions. The regulatory equalities introduced in CEBA, FIRREA, and FDICIA can be seen as the culmination of this movement towards equality, with one major exception: savings and loans associations were now subjected to investment restrictions that banks were not required to follow. The more recent law introduced a new test for qualified thrift lenders (QTL), which required savings and loans institutions to invest no more than 70 percent of their portfolio assets in qualified assets. Qualified assets are defined as mortgages, home equity loans, mortgage-backed securities, and construction loans. Additionally, up to 15 percent of these qualified assets could include investments in service corporations, loans to churches, schools, nursing homes, and hospitals, as well as consumer and education loans (limited to 5 percent of portfolio assets). Portfolio assets were calculated as total tangible assets minus fixed assets and liquid assets. These definitions placed restrictions on the investment choices of savings and loans, which were seen as more stringent than the limitations before 1980.

The QTL test brought about a major shift in laws, moving away from equality among financial institutions. It required savings and loans institutions to focus on mortgages and limited their other investment activities. Additionally, from that moment on, banks and credit unions could join FHLB, and commercial banks could acquire savings institutions. These changes gave banks and credit unions more access to housing funds, allowing them to compete for mortgages and build diversified portfolios (Margavio, 1993).

CONCLUSION

The Savings and Loan Crisis, extensively covered in the second chapter, taught critical lessons about the dangers of inadequate regulatory oversight combined with aggressive financial strategies. One important lesson learned was the recognition that deficiencies in regulatory frameworks could result in significant financial instability, with far-reaching consequences for the overall economy. As a result, substantial policy reforms were introduced, with a particular focus on monetary policy and financial regulation.

One of the key changes in monetary policy was the implementation of stricter rules regarding the amount of capital that savings and loan associations needed to have. The goal was to make sure that these institutions had enough money set aside to handle any unexpected financial problems. Furthermore, the creation of the Office of Thrift Supervision (OTS) signaled a shift towards more rigorous supervision of thrift institutions, specifically emphasizing adherence to these new capital requirements. These changes were part of a larger effort to make monetary policy more stringent and prevent financial institutions from taking on too much risk.

Moreover, the Financial Institutions Reform, Recovery, and Enforcement Act (FIRREA) of 1989 had a crucial impact on reshaping the regulatory framework. FIRREA not only boosted supervision but also focused on enhancing the stability of financial institutions by granting them stronger supervisory authorities and establishing the Resolution Trust Corporation (RTC) to manage the aftermath of the crisis. These modifications marked a major change in monetary policy approach, transitioning from a less regulated setting to a more tightly controlled one, with the objective of avoiding future crises of comparable scale.

4. THE GLOBAL FINANCIAL CRISIS: CAUSES, CONSEQUENCES, AND REFORMS

INTRODUCTION

This section offers a detailed analysis of the Global Financial Crisis (GFC) that occurred in 2008, delving into its origins, progression, and the subsequent regulatory frameworks that reshaped the worldwide financial environment. The objective of this analysis is to unravel the complex factors contributing to the crisis, track the evolution leading to the near-total breakdown of the financial system, and ultimately outline significant alterations in financial regulation.

The initial segment provides an overview of the background and factors that precipitated the 2008 financial crisis. It begins by exploring the underlying circumstances and actions that laid the groundwork for this economic catastrophe. This encompasses the utilization of intricate credit derivatives, the role of rating industries, and the unsustainable growth of the housing bubble. Furthermore, Federal Reserve Chairman Ben Bernanke's assessment of the monetary policies implemented in the early 2000s, which contributed to this situation, is also examined. By comprehending these elements, we can gain a better understanding of the systemic weaknesses that resulted in the global economic downturn.

Subsequently, the narrative delves into a detailed account of the crisis itself. This segment provides a chronological overview of key events such as the bailout of Bear Stearns, the bankruptcy filing of Lehman Brothers, and the ensuing panic that gripped international financial markets. It examines the Federal Reserve's strategic responses during this period, including both traditional interventions like open market operations and more innovative measures such as the Term Auction Facility and Primary Dealer Credit Facility. These actions played a crucial role in averting further deterioration of an already fragile US financial system.

Following the review of immediate crisis responses, the focus shifts to long-term regulatory measures that have been implemented to prevent future financial catastrophes. A significant portion of this discussion is dedicated to the Dodd-Frank Wall Street Reform and Consumer Protection Act, which is considered one of the most comprehensive overhauls of financial regulation in the United States. This act aimed to enhance transparency, reduce risks, and protect consumers. The analysis examines the objectives, accomplishments, and shortcomings of the act in the context of U.S. financial regulation.

Furthermore, this section delves into the comprehensive examination of regulatory responses on an international scale, with a specific focus on the Basel Accords. Notably, Basel III is given particular emphasis as it brought about substantial alterations in the regulation of global banking. The intricate details of Basel III's heightened capital requirements, leverage ratios, and liquidity standards are thoroughly discussed to demonstrate how these reforms strive to strengthen the stability of the banking industry. Through the implementation of these measures, the Basel Committee on Banking Supervision (BCBS) aimed to rectify the vulnerabilities exposed by the crisis and establish a more resilient global financial system.

To summarize, this segment delves deeply into the global financial crisis, examining its underlying reasons, the series of occurrences that transpired, and the extensive regulatory changes that ensued. This evaluation not only sheds light on the shortcomings and weaknesses of the pre-crisis financial structure but also emphasizes the crucial steps taken to strengthen the global banking system against potential disruptions.

4.1 BACKGROUND AND CAUSES OF THE 2008 FINANCIAL CRISIS

4.1.1 THE PRELUDE TO THE CRISIS

The 2008 financial crisis, commonly referred to as the "Great Recession," can be attributed to a intricate combination of systemic vulnerabilities within the global financial system, notable policy errors, and persistent economic imbalances.

The seeds of the 2008 crisis were sown through a combination of macroeconomic policies and specific financial practices that began in the early 2000s. A critical element was the Federal Reserve's monetary policy, particularly its decision to maintain historically low interest rates. The Fed lowered the federal funds rate to 1 percent in 2003 and kept it there until mid-2004, in response to the economic consequences of the 2001 dot-com bust[23] and the subsequent recession. These rates were the lowest in several decades and were maintained to prevent the economy from entering into deflation.

The low interest rates were meant to boost the economy temporarily, but they ended up causing financial institutions and households to borrow too much and take on too much risk. An example of this is the significant rise in housing prices due to cheap credit, leading to a 188 percent increase in the nominal U.S. housing price index between 1997 and 2006, as shown in Figure 4. This environment became favorable for speculative investments, especially in the real estate sector, where everyone was taking advantage of the cheap credit to try and make big profits.

Furthermore, these circumstances were worsened by significant worldwide economic imbalances. Countries such as China and Germany, with their high rates of savings, accumulated enormous quantities of U.S. debt. This, in turn, played a crucial role in maintaining exceptionally low interest rates in the United States and fostering an abundance of available funds. This influx of foreign capital into U.S. financial markets sustained the low interest rate environment, which ultimately supported

[23] The dot-com bubble was a period during which rampant speculation and bullish investment led to the overvaluation of the young internet technology industry on Wall Street. Two main factors seem to have played a part in the industry's rapid decline, which began after the tech-heavy Nasdaq composite peaked on March 10th, 2000. The first factor was rising interest rates. The Federal Reserve raised the fed funds rate several times over the course of the years 1999 and 2000. The second factor was the onset of a recession in Japan in March of 2000 (Salvucci, 2022).

the housing bubble and facilitated high levels of debt-financed consumption and investment in the U.S. economy.

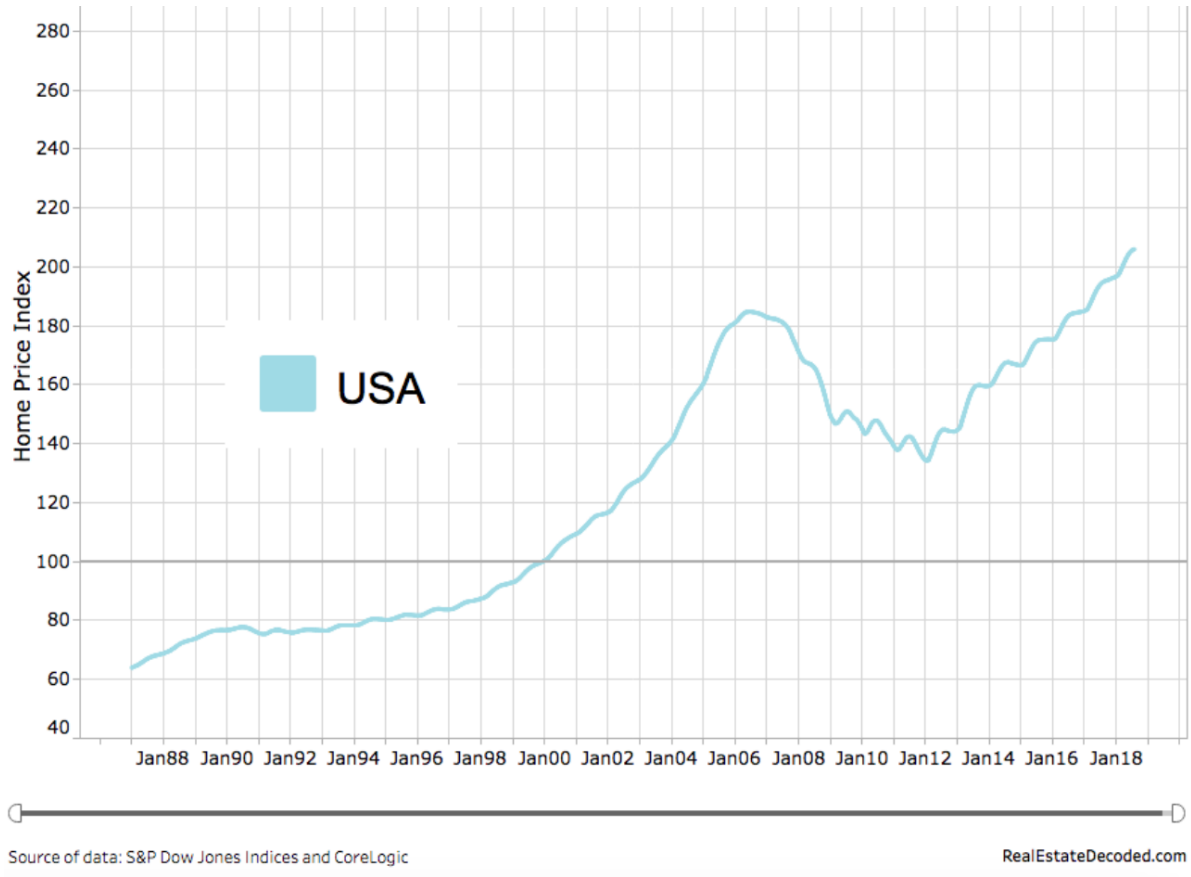
Financial innovation also played a substantial role in the buildup to the crisis, in particular through the mechanisms of securitization and the growth of complex derivative products like mortgage-backed securities (MBS)[24] and collateralized debt obligations (CDOs).[25] These financial tools, although intended to spread out risk more efficiently, hid the true risks involved and gave investors and regulators a false and misleading feeling of safety. The financial industry's move towards securitization was made easier by the removal of important regulations in the late 1990s, such as the Glass-Steagall Act, which had previously kept commercial and investment banking activities separate.

Credit rating agencies worsened the situation by assigning overly optimistic ratings to complex securities. Despite the declining quality of the mortgages backing them, a majority of MBS and CDOs were granted AAA ratings, the highest rating for financial security. These ratings were crucial in misguiding a wide range of financial participants, including institutional investors and pension funds, who trusted these assessments and were thus misled into investing in high-risk securities that they poorly understood (Verick & Islam, 2010). This topic will be explored in greater detail in the following section.

[24] A Mortgage-backed Security (MBS) is a debt security that is collateralized by a mortgage or a collection of mortgages. An MBS is an asset-backed security that is traded on the secondary market, and that enables investors to profit from the mortgage business without the need to directly buy or sell home loans (Vipond, 2024).

[25] A collateralized debt obligation (CDO) is a complex structured financial product that is backed by a pool of loans and other assets and sold to institutional investors. Essentially, they represent bundled debt resold to investors ("Research Guides: Fixed Income Securities (Bonds): Collateralized Debt Obligations," 2023).

Figure 4: Case-Shiller Home Price Index



The chart shows the U.S. Home Price Index from 1988 to 2018, highlighting a sharp rise in home prices starting in the early 2000s, peaking in 2006, and then declining sharply prior to the 2007 financial crisis.

4.1.2 THE ROLE OF DERIVATIVES AND RATING AGENCIES IN THE ONSET OF THE CRISIS

The financial crisis was significantly influenced by derivatives, specifically Collateralized Debt Obligations (CDOs) and Credit Default Swaps[26] (CDSs), as well as the failures of credit rating agencies. During the time leading up to the financial crisis, these derivatives were initially created to distribute and handle risks among a wider group of investors. However, their use during this period

[26] A credit default swap (CDS) is a type of credit derivative that provides the buyer with protection against default and other risks. The buyer of a CDS makes periodic payments to the seller until the credit maturity date (Vipond, 2024).

resulted in a major miscalculation and undervaluation of the risks involved. The improper use of these derivatives, due to a lack of knowledge and a lack of understanding of their complexity, significantly contributed to the crisis.

The derivatives market helped increase borrowing in the housing market by allowing subprime mortgages to be bundled into CDOs, which were then sold to investors worldwide. The utilization of CDSs, designed to protect against defaults on these CDOs, worsened the situation by establishing a delicate financial system dependent on perpetually increasing housing prices and minimal default rates.

The credit rating agencies, responsible for evaluating the risks linked to these financial products, dramatically failed in their duties. Most of the subprime mortgage-related securities, even the ones concealed within CDOs, were given the highest AAA ratings. This false perception further increased investments and contributed to the inflation of the housing bubble.

In conclusion, the convergence of loose monetary policy, global imbalances, financial deregulation, misguided credit ratings, and aggressive risk-taking set the stage for the financial meltdown. The housing bubble's collapse was not solely a market correction, but rather a systemic breakdown that highlighted significant deficiencies in financial regulation, risk management, and market conduct, resulting in extensive financial instability (Sammut, 2012).

4.1.3 TRIGGERING EVENT: BURSTING THE HOUSING BUBBLE

The triggering event for the crisis was the bursting of the housing bubble, which began in 2006 with a significant decline in housing prices, leading to a sharp increase in loan defaults, especially among subprime borrowers.

The housing bubble began in the mid-1990s, around the same time as the dot-com boom. The stock market was booming, leading to more spending and a higher demand for housing. Economist Robert Shiller called it "irrational exuberance," as stock and house prices skyrocketed. Real house prices had been steady for decades, but by 2002, they had jumped by almost 30 percent when, breaking the trend of stability seen over the past century (Verick & Islam, 2010).

This sharp rise in house prices was not followed by a corresponding increase in rents. In fact, rents only rose less than 10 percent in real terms during the same period. This difference between house prices and rents should have been a clear indicator of the speculation dominating in the market. This created a false expectation that house prices would keep increasing forever.

As the housing bubble grew, the financial sector played a role in its expansion through various innovations and a lack of proper regulation. New mortgage products like adjustable-rate mortgages (ARMs)[27] and interest-only loans became popular and contributed to the bubble. These products seemed attractive at first because they offered lower initial payments, allowing more people to afford homes or buy more expensive ones than they could normally afford. This was especially true after Federal Reserve Board Chairman Alan Greenspan supported these types of loans, focusing on their short-term affordability without fully considering the long-term risks involved.

The Federal Reserve's actions during this time had a big impact on the housing market. In response to the 2001 recession, the Federal Reserve significantly lowered interest rates, hitting a 50-year low by the summer of 2003 (Baker, 2008). These low rates made it cheaper to borrow money and were meant to prevent an economic slowdown. However, instead of just helping the economy grow, these low rates also led to people borrowing recklessly and taking risky financial risks, which made the housing bubble even bigger. Additionally, money from foreign investors poured into the U.S. housing market due to global economic imbalances and the desire for safe investments in U.S. assets. This helped keep interest rates low and provided lots of money for mortgages. Additionally, there were regulatory failures where the rapid growth of complex financial products like mortgage-backed securities (MBS) and collateralized debt obligations (CDOs) was not properly monitored. Financial institutions, eager for the profits from selling these securities, relaxed their lending rules, further exacerbating the situation. Credit rating agencies, which were paid by the same institutions selling the securities, often gave these products higher ratings than they deserved, which misled investors about the risks involved.

In 2006, as the prices of houses started to go down, the weak financial structures that were supporting the housing bubble began to weaken. The market was also affected by the increase in the number of newly constructed houses and the high rates of foreclosures, which put more pressure on the market and caused prices to decline rapidly. The situation worsened as financial institutions faced significant losses and had to tighten their lending conditions, resulting in more people defaulting on their mortgages (Baker, 2008). The combination of all these factors not only caused the housing bubble to

[27] An Adjustable-rate Mortgage (ARM) has a variable interest rate that can change over time (Rodriguez, 2024).

burst but also triggered a financial crisis. This event highlighted how interconnected modern financial systems are and how devastating speculative bubbles can be when there is insufficient regulatory oversight and a focus on short-term gains rather than long-term stability.

4.1.4 BERNANKE'S EVALUATION OF MONETARY POLICY DURING THE EARLY 2000s

As anticipated in the previous section, during the years from 2002 to 2005, the U.S. Federal Reserve made a deliberate decision to keep the federal funds rates at historically low levels. This was mainly done by maintaining a rate of 1 percent from June 2003 to June 2004. The reason behind this monetary strategy, according to former Federal Reserve Chairman Ben Bernanke, was to address a series of economic difficulties. These challenges included the aftermath of the dot-com bubble burst and the September 11, 2001, terrorist attacks, both of which had a significant negative impact on the economy.

In January 2010, Bernanke presented his retrospective evaluation of the monetary policy during that period in a speech at the Annual Meeting of the American Economic Association. He aimed to counter the criticisms of the decisions made by the Federal Reserve and defend their actions during this time. Bernanke's analysis was based on the economic conditions of the early 2000s, which were characterized by slow growth, increasing unemployment, and a fear of deflation similar to what Japan experienced in the 1990s. To stimulate economic activity and prevent potential deflation, the federal funds rate was aggressively lowered as a precautionary measure. Bernanke supported these actions by referring to the Federal Reserve's own models and econometric studies that proved that such preemptive measures were right, when considering the risk of reaching the zero lower bound of interest rates.

In his defense of the monetary policy, Bernanke tried to prove that these policies were not too much correct. He mentioned the Taylor rule, which is a formulaic approach that suggests appropriate interest rates based on current economic conditions such as inflation and output gap. Bernanke argued that although the actual policy rates were lower than those recommended by the Taylor rule, they were justified because of the unique economic challenges of that time.

Moreover, Bernanke addressed criticisms suggesting that low interest rates contributed to the housing bubble by analyzing the relationship between the Federal Reserve's monetary policy and housing

prices. He presented statistical analyses indicating that only a small portion of the increase in house prices could be directly attributed to the monetary policy stance. This conclusion was supported by vector autoregression models that included economic growth, inflation, unemployment, residential investment, house prices, and the federal funds rate, using data from 1977 to 2002 to establish historical relationships.

Bernanke also discussed the global aspect of the housing price increases, noting that significant rises in house prices were not unique to the United States but were a common feature in many industrialized nations during this period. This international perspective suggested that other factors such as global capital flows and varying practices in housing finance across countries played a more significant role than U.S. monetary policy alone.

Conclusively, Bernanke advocated for a nuanced approach to monetary policy that goes beyond simple rules like the Taylor rule. He emphasized the importance of considering forecasted, rather than just current, economic conditions due to the delayed effects of monetary policy. His insights stressed the complexities of economic forecasting and policymaking, especially under conditions of uncertainty and unusual economic stress. This comprehensive review and analysis highlight the challenges faced by policymakers in balancing between stimulating economic growth and avoiding the creation of economic bubbles, underscoring the importance of flexibility and adaptability in monetary policy frameworks (Bernanke, 2010).

4.2 THE PROGRESSION OF THE CRISIS

In examining the events of 2008 that led to the financial crisis, it becomes evident that the collapse of Lehman Brothers and the bailout of Bear Stearns were significantly influenced by systemic issues within the housing market and the operational vulnerabilities of major financial institutions. The crisis, originating from instabilities within the housing sector, underscored the impact of rapid deterioration in mortgage-related investments that became increasingly apparent in the latter half of 2007. This deterioration was part of a broader economic tremor that saw banks and financial institutions pulling back on lending to high-risk borrowers and reducing their trading activities, which in turn precipitated a cascade of failures across pivotal financial entities.

At the heart of these failures were the five central investment banks — Goldman Sachs, Morgan Stanley, Merrill Lynch, Lehman Brothers, and Bear Stearns. In the early 2000s, these institutions had heavily expanded into the real estate sector, drawn by the lucrative profits of a booming market. However, their significant exposure to the subprime mortgage market became a critical vulnerability. Subprime and adjustable-rate mortgages, which constituted a substantial portion of total mortgages during this period, became particularly risky when the Federal Reserve increased interest rates in 2005. This rate hike led to higher mortgage interest rates, escalating default rates that peaked at 5.2 percent by the third quarter of 2008, just as the real estate bubble burst and housing prices plummeted by as much as 25 percent from their peak (U.S. Bureau of Labor Statistics, 2012). The consequent losses on real estate assets were further exacerbated by the high degrees of leverage employed by these banks, as highlighted in Table 1.

Such leverage was a common practice, but it became perilously unsustainable as economic conditions worsened. Bear Stearns and Lehman Brothers, for instance, heavily relied on repurchase (repo) agreements to finance a significant portion of their liabilities — 25.4 and 25.9 percent respectively in the first quarter of 2008 (Kensil & Margraf, 2012). This over-reliance on short-term funding became their Achilles' heel when confidence waned and counterparties began to pull back, leading to severe liquidity crises.

While Bear Stearns was somewhat more fortunate in receiving a government bailout, Lehman Brothers was not as lucky. The financial characteristics of both firms throughout the crisis were strikingly similar — they operated under high degrees of leverage, had significant exposure to risky mortgage assets relative to their equity, and depended heavily on unstable short-term repo funding. Despite these similarities, the outcomes were drastically different, illustrating the inconsistent treatment and decision-making processes in the crisis management strategies employed during that period.

Thus, the narrative of Lehman Brothers' collapse and Bear Stearns' bailout is deeply embedded within the broader context of the financial crisis. These events highlight the systemic risks posed by aggressive expansion in risky markets, high leverage, and reliance on unstable short-term funding mechanisms. They also reflect the larger story of the 2008 financial crisis, where the interplay of

deteriorating housing markets, risky financial practices, and inconsistent government interventions coalesced to trigger a global economic recession.[28]

Table 1: Leverage ratios of the 5 major investment banks, 2007 to Q2 2008

Investment Bank	2007	Q1 2008	Q2 2008
Bear Stearns	32.8	32.8	-
Lehman Brothers	30.7	31.7	24.3
Goldman Sachs	26.2	27.9	24.3
Morgan Stanley	33.4	27.4	25.1
Merrill Lynch	27.8	25.2	24.4

Source: Kensil & Margraf (2012)

The table presents a comparison of leverage ratios for five major investment banks over three time points, showing a general decrease in leverage from 2007 to the second quarter of 2008, with Lehman Brothers notably reducing its leverage from 30.7 to 24.3 during this period.

4.2.1 THE BAILOUT OF BEAR STEARNS

The collapse of Bear Stearns in March 2008 was a pivotal event in the financial crisis, illustrating the dangers of risky mortgage assets, reliance on short-term funding, high leverage, and the catastrophic effects of weak corporate governance and risk management. This investment bank, founded in 1923, had grown from a small brokerage firm to a global powerhouse, deeply embedded in the mechanisms of mortgage securitization, which formed a substantial part of its most profitable division, generating 45 percent of the firm's total revenues by 2006 (*MARCH 2008: THE FALL of BEAR STEARNS*, 2011).

Bear Stearns followed a vertically integrated model in its mortgage business, profiting at each step of the process — from loan origination to securitization and sale. This strategy led to its position as a top underwriter of private-label mortgage-backed securities from 2000 to 2007. In 2006 alone, Bear

[28] The financial crisis exposed the susceptibility of financial institutions that heavily depend on short-term funding methods such as repurchase agreements, which posed challenges as market confidence declined.

Stearns underwrote $36 billion in collateralized debt obligations (CDOs), more than double its figure from the previous year, which included $6.3 billion in CDOs comprising mortgage-backed securities.

Despite early signs of market faltering, as evidenced by $3 million in losses from mortgage defaults within 90 days of origination by May 2006 — a rarity over the previous decade — Bear Stearns expanded its mortgage operations. In February 2007, it even acquired Encore Credit, a mortgage originator, doubling its capacity to generate loans. This expansion came just as the Securities and Exchange Commission (SEC) observed significant market risk losses on Bear's Alt-A mortgage assets, highlighting a rapid and severe deterioration in collateral performance that was worse than anticipated.

Bear Stearns's extensive reliance on short-term financing, particularly through the repo market, was a critical vulnerability. The firm routinely borrowed between $50 and $70 billion overnight, secured against its securities. This strategy, though common among investment banks, exposed Bear Stearns to acute liquidity risks, especially as market conditions deteriorated. By November 2007, Bear's leverage had reached nearly 38 to 1, and by the end of the year, its Level 3 assets[29] — those hardest to value and sell — constituted 269 percent of its tangible common equity, implying that a mere 3.7 percent write-down of these assets would obliterate its tangible common equity.

The crisis escalated in March 2008 when Bear Stearns's repo lenders, hedge fund customers, and derivatives counterparties rapidly withdrew their support, precipitating a run on the bank. Within one week, Bear Stearns was forced into a government-backed acquisition by J.P. Morgan Chase for a mere $2 per share — a price later adjusted to $10 per share to facilitate shareholder approval. This sale price was a steep decline from its 52-week high of $133.20 per share.

This acquisition was not just a bailout but a reflection of Bear Stearns's critical role in the repo market, a $2.8 trillion market by early 2008. The firm's collapse would have likely led to a severe contraction in liquidity for many other financial institutions, potentially leading to a broader financial meltdown. The Federal Reserve facilitated this acquisition by creating a special purpose vehicle, Maiden Lane LLC, to purchase $29.97 billions of Bear's troubled assets to stabilize the financial system (*MARCH 2008: THE FALL of BEAR STEARNS*, 2011).

[29] Level 3 assets are assets whose fair value cannot be determined from market prices or observable inputs, which makes their valuation highly subjective, and are also highly illiquid.

4.2.2 THE COLLAPSE OF LEHMAN BROTHERS

The collapse of Lehman Brothers on September 15, 2008, marked one of the most significant events in the annals of financial history, epitomizing the vulnerabilities within the global financial system and precipitating the Great Recession. Lehman's fall from a storied Wall Street titan to bankruptcy underscores a saga of strategic missteps and systemic miscalculations that resonated across the global economy.

Lehman Brothers had its beginnings in 1844 in Montgomery, Alabama, founded by Henry Lehman, a German immigrant. Initially a simple dry goods store, it evolved into a major broker of cotton, a key commodity of the time. This humble venture laid the groundwork for its transformation into a significant financial institution. By the 1850s, Lehman had moved its operations to New York City, the new hub for cotton trading, which facilitated its transition into broader financial services, including commodities brokering and investment banking. By the 20th century, Lehman Brothers had diversified further, engaging in underwriting where it helped companies to go public, thus solidifying its standing on Wall Street.

However, Lehman's aggressive expansion into subprime mortgages and real estate investments in the late 20th and early 21st centuries set the stage for its downfall. Deregulation of financial services through the 1980s and 1990s allowed Lehman to operate in the shadow banking system — a realm with banking-like activities but without the same regulatory oversight. This era saw Lehman Brothers delve into the mortgage market, converting risky subprime loans into complex securities like collateralized debt obligations (CDOs).

By 2007, Lehman was heavily exposed to the mortgage market. It had amassed assets worth $639 billion but was also burdened with $613 billion in debt (Baitshepi Tebogo, 2012).[30] The firm's strategy included using short-term repo loans to fund long-term obligations — a precarious approach considering the volatility of market interest rates. This funding strategy was Lehman's Achilles' heel, which became evident when the subprime mortgage market collapsed, eroding the value of securities tied to real estate.

[30] By 2007, Lehman's vast accumulation of assets and debt highlighted the immense risks it had undertaken in the mortgage market.

The liquidity crunch that ensued made it increasingly difficult for Lehman to secure the short-term funding it critically needed. Despite the market showing signs of distress, evidenced by the collapse of Bear Stearns in March 2008, Lehman continued its high-risk strategies without adequate risk management or hedging against potential downturns. By mid-2008, the situation had deteriorated beyond repair. Efforts to secure additional capital or find a buyer failed, with potential rescuers like Barclays and Bank of America withdrawing their interest due to the absence of government guarantees.

The U.S. government, cautious of moral hazard[31] and public backlash against financial bailouts, opted not to intervene financially to rescue Lehman. This decision was a departure from earlier bailouts, such as that of Bear Stearns, signaling a significant policy shift. Lehman's bankruptcy filing, the largest in U.S. history at that time, immediately sent shockwaves through the global financial system, dramatically exacerbating the financial crisis.

4.2.2.1 WHY WAS LEHMAN BROTHERS ALLOWED TO FAIL?

This section explores the factors leading to the decision to allow Lehman Brothers to fail, particularly focusing on its relative isolation in terms of systemic risk compared to other institutions that were bailed out, such as AIG[32] and Bear Stearns.

[31] Moral hazard refers to the risk that entities will take on excessive risk, believing they will be bailed out by the government if things go wrong.

[32] In 2008, AIG (American International Group) faced significant financial difficulties due to its involvement in the derivatives market. The company had made heavy investments in credit default swaps (CDS), a type of derivative linked to mortgage-backed securities, which suffered losses when the housing market collapsed. As a result, AIG encountered severe liquidity problems and was unable to meet the collateral demands from its counterparties. Recognizing the imminent failure of AIG, the Federal Reserve and the Treasury Department intervened by providing a loan of $85 billion, which later increased to $182 billion. The purpose of this intervention was to stabilize both the company and the broader financial system, as the collapse of AIG would have had disastrous consequences for the global economy (Greider, 2010).

4.2.2.1.1 LEHMAN WAS NEITHER "TOO BIG TO FAIL" NOR "TOO CONNECTED TO FAIL"

As stated in the previous section, Lehman Brothers, at the onset of 2008, was ranked among the five central investment banks by assets, alongside giants like Goldman Sachs and Morgan Stanley. This classification highlighted its significant role within the financial sector. However, unlike AIG, whose collapse posed direct threats to average Americans due to its extensive dealings in the retail insurance market, Lehman's operations were predominantly tied to institutional investments and securities (Indiviglio, 2010). This distinction is crucial in understanding why Lehman's failure was seen as less of a systemic risk compared to AIG.

The narrative that Lehman was neither "too big to fail" nor "too connected to fail" stems from its financial characteristics and the nature of its stakeholders. Lehman's bankruptcy was expected to impact mainly institutional investors and those within the firm, rather than the general public directly. This perception influenced the decision-making process during the crisis, suggesting that the fallout from Lehman's collapse could be contained more easily than that of a firm like AIG.

Furthermore, the aftermath of Lehman's collapse demonstrated that its failure did lead to discriminatory effects rather than systemic contagion. Firms with exposure to Lehman experienced increased market inefficiencies such as wider bid-ask spreads[33] and higher adverse selection costs[34]. However, these effects were largely confined to firms directly connected to Lehman, rather than permeating through the entire financial system. This localized impact supports the notion that Lehman's failure, while significant, did not warrant the same level of government intervention as the failures of other institutions like Bear Stearns, which were perceived to have broader systemic implications.

[33] The bid-ask spread shows the extent to which available bid and ask offers vary: the lower the spread, the greater the consensus between participants with respect to the value of the share in question. The bid-ask spread is a widely used measure of the efficiency of the currency and capital markets, since narrow spreads represent a high degree of market liquidity and low transaction costs ("Bid-Ask Spread," 2024).

[34] Adverse selection is a phenomenon wherein the insurer is confronted with the probability of loss due to risk not factored in at the time of sale. This occurs in the event of an asymmetrical flow of information between the insurer and the insured (The Economic Times, 2024).

Lehman’s bankruptcy also highlighted the discrepancies in the treatment of financial institutions during the crisis. The decision not to bail out Lehman Brothers was contrasted by the swift actions taken to rescue other firms deemed too systemic to fail.

4.2.2.1.2 INSUFFICIENT COLLATERAL

The narrative surrounding Lehman Brothers’ collapse often hinges on the assertion that the firm did not possess sufficient collateral to warrant emergency support from the Federal Reserve.

On August 31, 2008, Lehman Brothers reported total assets of $600 billion against total liabilities of $572 billion. This assessment might suggest a reasonable buffer; however, if one assumes that the total assets were overvalued by $30 billion Lehman would indeed appear undercollateralized. This perspective was critical in shaping the Federal Reserve’s stance, as repeatedly emphasized by then Fed Chairman Ben Bernanke, who defended the decision not to extend aid to Lehman on these grounds.

Further complicating this picture, in 2018, Ball introduces a nuanced criterion for assessing collateral adequacy, arguing that a firm’s total assets need only exceed its total liabilities minus long-term unsecured debt to qualify as having sufficient collateral. By this metric, Lehman’s short-term liquidity needs on August 31, 2008, were approximately $457 billion, after accounting for $115 billion in long-term unsecured debt. With reverse repos and borrows totaling $273 billion, cancelling these transactions would leave Lehman with $297 billion in assets against $184 billion in liquidity needs. According to Ball’s analysis, any potential liquidity support from the Fed could thus be overcollateralized by 61 percent, with Lehman needing an estimated $88 billion from September 15 to October 13.

On the eve of Lehman’s collapse, the types of collateral accepted by the Fed’s Primary Dealer Credit Facility (PDCF) were broadened, allowing Lehman to pledge up to $130.8 billion in eligible collateral. Even after a 16.7 percent haircut, this would provide Lehman with $109 billion in cash — well over the $88 billion needed. This calculation suggests that Lehman could have theoretically met the Fed’s requirements for emergency funding.

The discussions within the Federal Reserve regarding Lehman's situation are particularly telling. Documents from July and September 2008 reveal that Fed officials considered extending liquidity

support to Lehman. Specifically, a memorandum from early September, referred to as "Liquidation consortium gameplan + questions",[35] discusses providing Lehman with sufficient liquidity to prevent a fire sale of its assets while encouraging potential buyers. Notably, these discussions did not explicitly address the legality of such support or scrutinize the adequacy of Lehman's collateral in depth. It was not until October 7, well after Lehman's bankruptcy, that Bernanke first publicly cited inadequate collateral as a reason for not aiding Lehman, a shift from his earlier public rationale given on September 23 (Marvin Kyle Abreu, 2020).

4.2.2.1.3 TIMING AND CIRCUMSTANCES

The Federal Reserve's decisions during the financial crisis, including the rescue of Bear Stearns in March 2008 and AIG just two days after Lehman's collapse, provide a backdrop against which Lehman's downfall can be assessed. Some scholars posit that the decision to let Lehman fail was driven by contingencies rather than a principled reversal of policy. This perspective suggests that the Federal Reserve's actions were not consistently based on a set policy but were instead reactive to the evolving crisis and external pressures.

The political environment at the time played a crucial role in shaping these decisions. The rescue of Bear Stearns had triggered a substantial political backlash, with significant public and political opposition to government bailouts. This sentiment was strongly articulated by then Secretary of the Treasury Henry Paulson, who famously declared he "cannot be Mr. Bailout." Such statements reflected a growing reluctance among policymakers to engage in further rescues, which was influenced by public and political disapproval. An email from Jim Wilkinson, Chief of Staff to Paulson, exemplifies this attitude, expressing a reluctance to bail out Lehman due to anticipated negative press reactions (Marvin Kyle Abreu, 2020).

This political climate influenced the policymakers' decisions and heightened the "disaster threshold," a term used to describe the increased tolerance for financial institution failures unless they posed an imminent threat of widespread economic collapse. The decision-making process was further complicated by concerns over moral hazard. Hett and Schmidt (2017) observed that the rescue of

[35] This was circulated among staff of the Federal Reserve Bank of New York and Federal Reserve Board of Governors and was then sent by Patrick Parkinson to then Vice Chairman Donald Kohn (Marvin Kyle Abreu, 2020).

Bear Stearns had eroded market discipline, significantly increasing the perceived probability of a bailout. However, this perception shifted dramatically after Lehman's failure, which ironically increased expectations of government intervention in future crises, as evidenced by the actions taken to stabilize AIG and the broader financial market through programs like TARP (Hett & Schmidt, 2017).

The internal discussions among Federal Reserve officials also reveal a significant underestimation of the consequences of Lehman's bankruptcy. On the eve of Lehman's collapse, discussions focused on preparing the markets for the firm's failure rather than preventing it. Bernanke's hope that the markets had prepared for Lehman's collapse and the New York Fed's instructions for Lehman to file for bankruptcy reflect a calculated risk that backfired, leading to far greater disruption than anticipated.

The aftermath of Lehman's bankruptcy quickly illustrated the inadequacy of these preparations. The immediate market chaos and the rapid onset of a liquidity crisis at AIG prompted a swift reevaluation of the situation by policymakers. This shift underscored the reactive nature of policy decisions during the crisis, which were heavily influenced by the immediate impacts of Lehman's failure and the escalating fear of a total financial meltdown.

In summary, the decision to let Lehman Brothers fail was not solely based on the firm's financial health or lack of adequate collateral but was significantly influenced by the political, public, and economic environment at the time. The Federal Reserve's actions were contingent upon a complex interplay of market expectations, political pressures, and the immediate impacts of their decisions, highlighting the challenges of crisis management in a highly volatile and interconnected financial system.

4.3 FED'S STRATEGIC RESPONSES TO THE CRISIS

4.3.1 TRADITIONAL INTERVENTION TOOLS

In order to address the financial crisis, the Federal Reserve used a variety of tactics. They employed strategies like quantitative easing, discount window lending, open market operations, and concentrating on the federal funds rate. These tactics, which affected the entire economy and gave

banks liquidity, were crucial in managing the crisis. Through the buying and selling of U.S. Treasury securities, the Fed modified bank reserves in an effort to stabilize the banking industry and promote economic expansion during the difficult years of 2007 to 2009. During the hard times from 2007 to 2009, the Fed attempted to stabilize the banking sector and stimulate economic growth by modifying bank reserves through the purchase and sale of U.S. Treasury securities.

4.3.1.1 OPEN MARKETS OPERATIONS AND FEDERAL FUNDS RATE ADJUSTMENTS

The Federal Reserve engages in open market operations by purchasing and selling U.S. Treasury securities in the secondary market. This helps to regulate the reserves of banks, and it influences short-term interest rates, which in turn affects the overall credit conditions.[36] The Federal Reserve's goal is to manage the federal funds rate, which is the rate at which banks borrow from each other overnight. By adjusting the reserve supply through transactions involving Treasury securities, the Fed can guide the market rate towards its desired federal funds rate. This can increase liquidity in the banking system, encouraging banks to lend more and improving overall financial liquidity. When the Federal Reserve wants to boost economic activity, it enacts an expansionary policy by decreasing the federal funds target. This decrease in interest rates encourages spending that is influenced by interest rates, such as investments in physical capital by businesses, housing construction, and purchases of durable goods by households. Additionally, lower interest rates can lead to a decrease in the value of the dollar, which encourages exports and boosts the output of American businesses. Conversely, when the Federal Reserve aims to diminish economic growth, it enforces a contractionary approach through the elevation of interest rates.

During the crisis, the Fed has taken two different approaches to open market operations. Firstly, the Fed has injected unusually large amounts of money into the market multiple times since August 2007, so that banks could borrow it and lend it to each other. This was crucial because there was not enough money available for banks to engage in lending activities and to make sure that there was enough money for banks to borrow at the current interest rate set by the Fed. Additionally, during the crisis, the Federal Reserve has consistently lowered the interest rate. On September 18, 2007, the Fed made a big reduction of 0.5 percentage points, bringing the rate down to 4.75 percent. They did this to try

[36] Open market operations are the primary tool used by the Federal Reserve to influence the amount of money in the U.S. banking system.

and reduce the negative impact on the economy caused by the problems in the financial markets. After that, the Fed has continued to lower interest rates on multiple occasions. The Federal Reserve decides whether to change the interest rate target during meetings that happen every six weeks. Normally, the Fed would keep the target the same or make small changes of 0.25 percentage points. However, between September 2007 and March 2008, the Fed consistently lowered the target at each meeting, often by more than 0.25 percentage points. They also lowered the target by 0.75 percentage points during an unscheduled meeting on January 21, 2008. Even though the financial situation had not improved yet, the Federal Reserve kept the interest rate unchanged from April 30, 2008, until October 9, 2008. On that day, they lowered the interest rate again by 0.5 percentage points, bringing it down to 1.5 percent. Notably, this rate reduction was synchronized with various foreign central banks. On December 16, 2008, the Federal Reserve set a target range of 0 to 0.25 percent for the federal funds rate (Cecchetti, 2009).

4.3.1.2 IMPLEMENTING QUANTITATIVE EASING

Before December 2008, the Federal Reserve used a tactic called "quantitative easing" to flood the federal funds market with extra bank reserves. The goal was to hit the federal funds target. However, since the Fed could only focus on one thing at a time, it could not reach all its goals simultaneously. When the Fed tried to increase liquidity, the federal funds rate had trouble staying on track. As a result, when the Fed shifted its attention to meeting the financial sector's liquidity needs in September, the federal funds rate consistently fell below the Fed's intended target.

By December 2008, the Fed had injected so much liquidity that the interest rate target often stayed close to zero. In December, the Fed established a target range between 0 and 0.25 percent, which showed that interest rate targeting was not as important as providing enough liquidity to the financial system. Initially, quantitative easing involved direct lending, but when financial institutions stopped seeking liquidity from the Fed, the Fed continued quantitative easing by buying a significant amount of Treasury securities, Agency securities, and Agency mortgage-backed securities to support economic stimulus efforts. It has been estimated that the Fed acquired 22 percent of the total available stock of these assets (Krishnamurthy & Vissing-Jorgensen, 2011).

4.3.1.3 DISCOUNT WINDOW LENDING AS A LIQUIDITY SOLUTION

The Federal Reserve has the capacity to offer liquidity directly to member banks through discount window lending. This has been a practice since the early days of the Fed and was initially their main policy tool. However, the primary policy tool of the Fed shifted to open market operations several decades ago. Loans provided through the discount window are backed by collateral that surpasses the loan's value. Various assets can be used as collateral, with loans and asset-backed securities being the most commonly used. While not all collateral has a credit rating, those that do usually have the highest rating.[37] Discount window lending is mainly done on an overnight basis. Unlike the federal funds rate, the discount rate is set directly by the Fed. In normal market conditions, the Fed discouraged banks from regularly borrowing from the discount window, as they believed banks should be able to meet their reserve needs through the market. In 2003, the Fed made this policy explicit by adjusting the discount rate to be 1 percentage point above the federal funds rate, instead of 0.5 percentage points below it. In a typical year, most member banks do not utilize the discount window. As a result, the discount window has played a less important role in policymaking compared to open market operations.

In August 17, 2007, the Fed started to decrease the discount rate, which happened about a month before the first reduction in the federal funds rate. Since then, the discount rate has been lowered multiple times, usually along with changes to the federal funds rate. During this time, the Fed has decreased the difference between the federal funds rate and the discount rate, but it has always kept the difference positive. After the federal funds rate was lowered to zero in December 2008, the discount rate was set at 0.5 percent. From 1959 to 2007, the total volume of discount window lending outstanding never surpassed $8 billion, usually staying well below $1 billion. The primary credit category of discount window lending saw an increase from an average of $45 million outstanding per day in July 2007 to $1,345 million in September 2007. Afterwards, lending escalated to over $10 billion outstanding per day starting from May 2008, reaching a peak of $111 billion in October 2008. Nevertheless, the introduction of the "Term Auction Facility" in December 2007 exceeded this lending in terms of economic importance. Throughout 2009, discount window lending underwent a consistent decline, returning to pre-crisis levels by mid-2010 (Cecchetti, 2009).

[37] High credit ratings for collateral ensure that the assets backing the loans are of high quality and low risk.

4.3.2 INNOVATIVE TOOLS

The Federal Reserve's conventional tools are designed for the commercial banking system, yet the recent financial upheaval has extended beyond the banking sector. The Fed's traditional measures have proven ineffective in stabilizing financial markets since August 2007, prompting the development of new tools to bridge the gap between open market operations and the discount window. Historically, the lender of last resort role has been centered on the banking system, with the Federal Reserve Act outlining the Fed's relationship with banks in great detail. While many of the new facilities target other areas of the financial system, the Federal Reserve Act does not extensively cover the Fed's authority outside of banking. One notable exception is the broad emergency authority granted under Section 13(3) of the Federal Reserve Act, which the Fed has frequently utilized since the onset of the financial crisis.[38]

4.3.2.1 TERM AUCTION FACILITY IMPLEMENTATION

The Term Auction Facility (TAF) was a critical tool for the Federal Reserve during the financial crisis of 2007-2009, as traditional monetary policy mechanisms were insufficient in restoring stability in the interbank funding market.

By the second half of 2007, the Federal Reserve understood that the changes in the discount lending policy, started in mid-August, were failing to encourage banks to borrow from the Fed. This reluctance to borrow created liquidity problems in the interbank funding market, highlighted by the increasing spread between the three-month LIBOR and the expected federal funds rate through the fall of 2007. The TAF was designed as an innovative response to these liquidity challenges, and revisited procedures considered in the early 2000s when the federal budget surplus led to concerns about a decrease in the supply of Treasury securities. One solution, discussed in a 2002 Federal Reserve System study, was to supply reserves through an auction mechanism. By December 2007, the Fed turned this idea into reality with the TAF.

[38] Section 13(3) of the Federal Reserve Act allows the Fed to extend credit to non-bank entities in "unusual and exigent circumstances," which has been crucial during the financial crisis.

The rationale behind the TAF was to reduce the negative perception of banks borrowing from the discount window by providing reserves to them in a confidential way through an auction system. This process allowed several commercial banks to ask for funds, stating the interest rate they were willing to pay. The auction system resulted useful because no single bank could dominate the funds available and kept the bidding process confidential, which helped prevent banks from being addressed as financially desperate. In the initial stages, the TAF auctions distributed great amounts of reserves for terms typically spanning 28 to 35 days, starting with $20 to $30 billion per auction and increasing to $75 billion. Crucially, the Federal Reserve balanced this increase in lending by reducing its holdings of Treasury securities, maintaining the total size of its balance sheet constant.

The Federal Reserve's assets were not only redirected from securities to loans by the TAF; loans were also made against collateral that might not have had a high market value. The over-collateralization rule made sure the Fed got collateral that was at least twice as valuable as the loan, but the real market value of the collateral that was accepted was probably higher than the market price, which would have given borrowing banks a capital subsidy. The TAF's impact on the market was observed in the decline of the spread between the three-month LIBOR and Treasury bill rates from December 2007 to February 2008. However, the efficacy of the TAF in reducing this spread was temporary. Although the spread decreased significantly initially, it began to rise again in February 2008, exceeding 70 basis points by March 2008. Despite the Fed tried to increase the size of the TAF, the spread remained high until spring 2009 (Cecchetti, 2009).

In conclusion, the Term Auction Facility made it easier for money to move to where it was needed most and gave banks more time to determine the value of their assets. Despite its innovative design and initial success, the TAF's temporary impact highlights the difficulty of addressing systemic liquidity issues within an interbank funding market in which uncertainty and risk aversion dominate.

4.3.2.2 TERM SECURITIES LENDING FACILITY INTRODUCTION

In the winter of 2008, in the financial markets there was a significant shortage of U.S. Treasury securities. This led to a decrease in repurchase agreement interest rates and showed that investors were really into high-quality investments.

In this scenario, primary dealers found themselves unable to make securities transactions due to the scarcity of Treasury securities. In response, the Federal Reserve changed its securities lending program, transforming it into a stronger intervention tool, to address transactional issues.

The Term Securities Lending Facility (TSLF) was different in three ways: it extended the lending term to 28 days, it accepted a wider range of collateral including, and it increased the lending capacity up to $200 billion. The TSLF worked by using an auction system where primary dealers competed to buy Treasury securities by offering a fee for the exchange.[39]

The initial auction, conducted on March 27, 2008, offered $75 billion in Treasury securities and attracted bids totaling $86.1 billion, with the winning fee set at 33 basis points. This exchange allowed dealers to swap lower-valued mortgage-backed securities for higher-demand Treasuries, which helped increase the availability of funds and alleviate the pressures in the repo market where Treasury rates had significantly dropped. In the following weeks, the TSLF auctions were often undersubscribed, indicating a stabilization of demand for Treasuries, and reflecting the Fed's success in alleviating the pressure on securities. Federal Reserve officials interpreted the undersubscription as a positive sign, indicating that the urgent rush for Treasuries had calmed down (Cecchetti, 2009).

To sum up, the TSLF's impact on financial markets was notable. The goal was to tackle the gap between the worth of Treasury securities compared to mortgage-backed securities. After it was put into action, the TSLF played a crucial role in bringing the Treasury repo rate closer to the federal funds rate. This helped to readjust the way risk and liquidity were priced in the securities market. It is also important to note that while the TSLF adjusted the composition of the Fed's assets, it did not change the overall size of the Fed's balance sheet. Essentially, the TSLF shifted the Fed's holdings from Treasuries to mortgage-backed securities, addressing the differences in prices between these types of assets and to bring stability back to the repo markets.

4.3.2.3 PRIMARY DEALER CREDIT FACILITY ESTABLISHMENT

On March 16, 2008, the Federal Reserve utilized its Article 13(3) authority for the second time in a span of three days to establish the Primary Dealer Credit Facility. The 19 primary dealers, who were

[39] An auction system for securities lending allows market forces to determine the price, promoting transparency and efficiency.

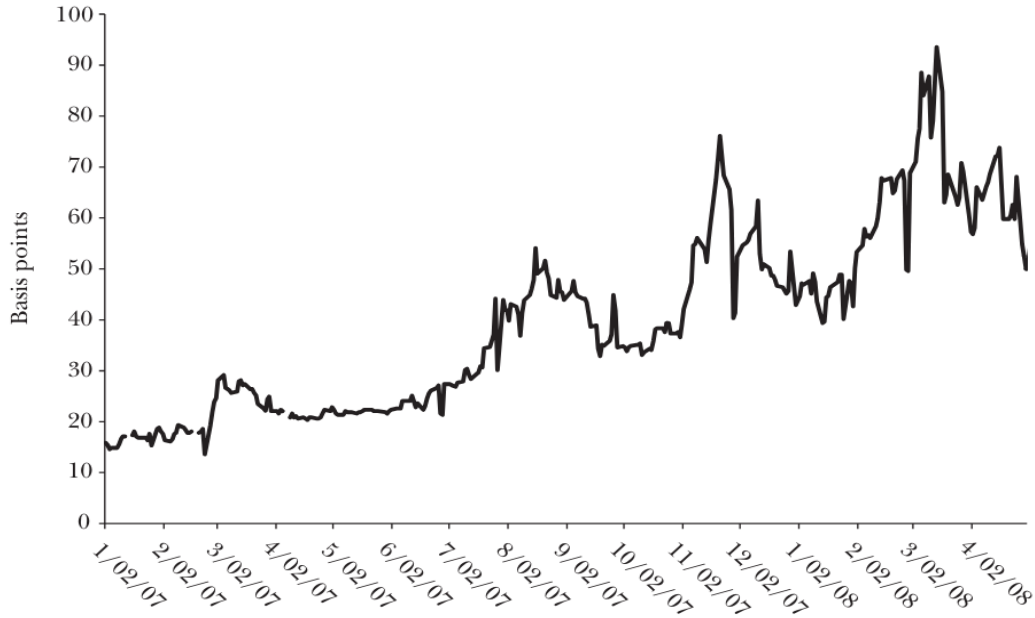
not banks but rather investment banks and brokers, were granted the ability to borrow from the Federal Reserve starting in mid-March. This facility, similar to traditional discount loans for commercial banks, permitted borrowers to offer a wide range of collateral such as investment-grade corporate securities, municipal securities, mortgage-backed securities, and asset-backed securities with available prices.

The Primary Dealer Credit Facility became widely known, with borrowing averaging over $30 billion per day during its first three weeks. However, borrowing gradually decreased to around $10 billion by the end of May 2008. The facility served two main purposes: firstly, it guaranteed short-term funding for investment banks. The experience with Bear Stearns, which faced a sudden loss of short-term funding, convinced the Federal Reserve officials to extend lender-of-last resort operations beyond commercial banks. Secondly, the Primary Dealer Credit Facility aimed to reduce interest rate spreads between asset-backed securities and U.S. Treasury securities. This, in turn, strengthened the ability of investors to buy and sell asset-backed securities in financial markets.

Thanks to this facility, primary dealers could offer a variety of bonds to the Fed and receive immediate cash, making these securities more likely to be accepted as collateral in private lending agreements. Upon reviewing Figure 5, it is evident that the interest rate gap between government agency and U.S. Treasury securities decreased rapidly on March 17, 2008, right after the establishment of the Primary Dealer Credit Facility. This decline continued, while more gradually, as the Term Securities Lending Facility became operational.

By the end of May 2008, the difference in interest rates between government agency debt (typically 15 to 25 basis points higher than the Treasury rate) was still 50 basis points — which was not exceptional, but an improvement from the 90-basis points difference in mid-March. There are various factors that could have contributed to the decline in this spread during this period. It could have been influenced by the reduction in Fannie Mae’s and Freddie Mac’s capital requirements, which were announced on March 19, or the release of quarterly earnings by Goldman Sachs and Lehman Brothers on March 18, 2008. However, it is likely that the new Federal Reserve programs also played a role in this decrease (Cecchetti, 2009).

Figure 5: Spread between U.S. Agency and Treasury Securities, January 2007 to May 2008, daily



Source: Citigroup, Inc.

This graph depicts the fluctuation of a financial metric measured in basis points over a span of nearly two years, highlighting a significant peak in volatility around mid-2008.

4.3.2.4 TERM ASSET-BACKED SECURITIES LOAN FACILITY CREATION

In November 2008, the Federal Reserve created the Term Asset-Backed Securities Loan Facility (TALF) in response to the collapse of the asset-backed securities (ABS) market. The Fed's analysis showed a sharp decrease in new ABS issuance, with interest rate spreads on AAA-rated ABS tranches hitting record levels, signaling very high-risk premiums.

The drop in non-mortgage ABS issuance from over $175 billion per quarter to just $5 billion in Q4 2008, as reported by the Securities Industry and Financial Markets Association (SIFMA), helps illustrate the impact of this action by the Fed. This sudden drop indicated that if loans could not be securitized, people would have less access to credit. This could lead to a decrease in consumer spending and make the economic downturn even worse.

TALF aimed to bring back the practice of creating securities supported by different types of consumer and business loans. This involved SBA-guaranteed small business loans[40], credit cards, vehicle loans, and student loans. Additionally, the Fed began to include older commercial mortgage-backed securities (CMBSs) in May 2009, and they suggested that more types of assets could be included in the TALF program.

TALF made it possible for private US firms to get non-recourse loans to purchase brand-new ABS with the best credit ratings by using the ABS as collateral. These organizations were able to get at least $10 million under the condition that the borrower would not bear the loss if the ABS declined in value; instead, the losses would be covered by TARP, which would be implemented by the Fed and the Treasury. The Treasury contributed to the initial $200 billion capacity of TALF by agreeing to pay the first $20 billion in collateral losses, with the Fed covering any additional losses. The Troubled Asset Relief Program served as the foundation for this risk-sharing arrangement (TARP).

Interestingly, the approach taken by TALF was similar to the original concept of TARP. Instead of directly buying assets, the Fed provided loans for their purchase. The assets backing these loans were mostly newly or recently issued as opposed to the "troubled" assets TARP initially aimed to address. The evolution of TALF was not very strong, reaching its peak at $48 billion in March 2010. While this slow growth might suggest limited interest in TALF, it more likely reflects the low state of private securitization markets. After TALF was implemented, ABS issuance rebounded to $52 billion per quarter but remained below pre-crisis levels (Matthews, 2015).

To conclude, the influence of TALF can be observed in the decrease of ABS spreads compared to Treasury bonds and the increase in ABS issuance. This suggests that TALF played a role in stabilizing the ABS market, while not restoring it to its pre-crisis state. The TALF program concluded its operations for loans against newly issued CMBS at the end of June 2010 and for loans against other assets in March 2010.

[40] SBA loans are business loans partially guaranteed by the U.S. Small Business Administration and issued by participating lenders, usually banks.

4.3.2.5 COMMERCIAL PAPER FUNDING FACILITY DEPLOYMENT

The intervention in the Commercial Paper Market by the Federal Reserve during the 2008 financial crisis marks a critical chapter in economic history where conventional boundaries of central banking were expanded to avert a deepening of the crisis.

Commercial paper, a short-term debt instrument vital for the daily operations of many large firms, was at the core of this intervention.[41] Financial and non-financial firms rely on the commercial paper market to meet liquidity needs with typical maturities of 30 days on average. During the financial crisis, particularly after Lehman Brothers' bankruptcy, the market for commercial paper shrank considerably, dropping from over $2 trillion in August 2007 to $1.6 trillion by October 1, 2008.[42] At the same time, the returns on AA-rated asset-backed commercial paper surged, showing intense pressure in the market.

After the Reserve Fund's "breaking the buck" incident,[43] the Federal Reserve took action to address the issue of run-on money market mutual funds: the Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility (AMLF) was established. This facility offered non-recourse loans to banks, allowing them to purchase asset-backed commercial paper. By October 1, 2008, the daily loans reached a peak of $152 billion. However, even with these measures in place, the market conditions continued to be challenging, which led to the Federal Reserve taking additional steps.

On October 7, 2008, the Fed established the Commercial Paper Funding Facility (CPFF), a special purpose vehicle (SPV) designed to purchase three-month, highly rated U.S. commercial paper.[44] By January 2009, the CPFF held $351 billions of commercial paper, indicating its role in market stabilization. The establishment of the CPFF resulted in marked improvements in the commercial

[41] Commercial paper is an unsecured, short-term debt instrument issued by corporations, typically used for the financing of payroll, accounts payable, and inventories.

[42] The significant contraction in the commercial paper market indicated a severe liquidity crunch affecting both financial and non-financial firms.

[43] The term "breaking the buck" refers to when a money market fund's net asset value falls below $1 per share, causing investor panic and redemptions.

[44] A special purpose vehicle (SPV) is a subsidiary created by a parent company to isolate financial risk, often used in structured finance.

paper markets. This was proven by the revival of issuance and a decrease in spreads, although they did not reach the levels seen before the crisis. The CPFF was revolutionary in its dedication to buying assets, directly aiding non-financial companies. This action had not been witnessed in fifty years, making it a significant deviation from conventional central banking practices. Specifically, the CPFF's purchase of uncollateralized debt went against the usual restrictions set by the Federal Reserve Act.

An additional layer to this intervention was the establishment of the Money Market Investor Funding Facility (MMIFF) on October 21, 2008. The MMIFF, which had a lending capacity of up to $540 billion, aimed to lend to private sector SPVs investing in commercial paper from highly rated financial institutions. The purpose of this program was to help money market funds deal with people cashing out their investments quickly, so that situations like what happened with the Reserve Fund would not happen again. Unfortunately, the program ended in October 2009 without being used, showing that money market funds were hesitant to use a system that could encourage investors to withdraw their money all at once (Matthews, 2015).

4.3.2.6 MORTGAGE-BACKED SECURITIES PURCHASE PROGRAM AND GSE OBLIGATIONS

In July 2008, the stock prices of Fannie Mae and Freddie Mac, the government-sponsored enterprises (GSEs), experienced significant downward pressure. This downturn created fears regarding their ability to roll over debt, posing risks of illiquidity. Although the Federal Reserve authorized lending to these housing GSEs in July, this power was initially unused.

On September 7, 2008, the situation intensified when the U.S. Treasury made a significant decision to place Fannie Mae and Freddie Mac under conservatorship. This action was meant to help stabilize these organizations and, in turn, the housing market.[45] Following this, on September 19, the Federal Reserve reacted by declaring its intention to buy debt obligations from these institutions as a component of its open market operations, demonstrating direct assistance for the housing finance market.

[45] Conservatorship is a legal status wherein a government entity takes control of a private company to stabilize its operations and finances.

The Fed's commitment deepened on November 25, 2008, with an announcement to purchase up to $100 billion in bonds directly issued by the GSEs and up to $500 billion in mortgage-backed securities (MBS) guaranteed by Fannie Mae, Freddie Mac, and Ginnie Mae. The program specifically excluded adjustable-rate MBS, collateralized mortgage obligations (CMOs), real estate mortgage investment conduits (REMICs), and mortgage derivatives. On March 18, 2009, the Fed made a big move by increasing the purchase program to $1.25 trillion for MBS and $200 billion for GSE obligations. This was done to lower mortgage rates and boost housing demand by improving the liquidity of mortgage markets.

However, by November 2009, the Fed adjusted its goal, reducing the target for Agency debt securities purchases to $175 billion due to the limited supply. The rationale behind the Fed's programs was to decrease the cost and boost the availability of housing credit. The plan was to raise the price of the current MBS in the secondary market, with the aim of encouraging the creation of new MBS and ultimately lowering mortgage rates.[46] Although the GSEs had managed to increase their MBS issuance in 2008, the private-label market had almost completely stopped functioning. The Fed's actions did not utilize Section 13(3) emergency authority but were authorized under other sections of the Federal Reserve Act. These measures paralleled existing Treasury programs offering unlimited financial support to GSEs through 2009 (Matthews, 2015).

4.3.2.7 INTEREST PAYMENT ON BANK RESERVES

Following the 2008 financial crisis, Congress authorized the Federal Reserve to pay interest on bank reserves to address the challenge of maintaining bank liquidity while managing the federal funds rate. This provision was included in the Emergency Economic Stabilization Act of 2008. The goal was to set a minimum level for the federal funds rate by ensuring it would not drop below the interest rate on reserves. Banks would prefer earning interest on excess reserves rather than lending at a lower rate.

Initially, the interest on excess reserves was set at 0.75 percentage points below the federal funds rate, but this did not prevent the federal funds rate from dropping under the target. In response, the Fed

[46] Raising MBS prices in the secondary market would ideally encourage more issuance of new MBS, thus improving liquidity.

decreased the spread between the interest rate on reserves and the federal funds rate, yet the actual federal funds rate continued to underperform.[47] When the federal funds target was reduced to a range of 0 to 0.25 percent in December 2008, the interest rate on reserves was set at 0.25 percent, reaching the higher limit of the desired range (Cecchetti, 2009).

Paying interest on reserves made it more attractive for banks to hold reserves, potentially preventing liquidity problems in the future. However, this policy did not actually motivate banks to increase lending overall, so it did not help stimulate the economy. After December 2008, with the target rate effectively at the floor, paying interest on reserves could no longer provide the intended floor mechanism.

4.4 LONG-TERM MEASURES

4.4.1 DODD-FRANK ACT: A NEW ERA OF FINANCIAL REGULATION IN THE UNITED STATES

The Dodd-Frank Wall Street Reform and Consumer Protection Act, commonly referred to as Dodd-Frank, was enacted in 2010 under the Obama administration. This extensive financial reform legislation aimed to regulate the financial system by creating new government agencies. Before 2007, financial regulations were relaxed, allowing U.S. financial institutions to take on risky lending practices. This led to an unsustainable growth in the housing sector, ultimately resulting in a burst bubble that caused a significant decline in the banking industry and global stock markets. As a result, the world experienced the most severe global recession in many generations. The establishment of the Dodd-Frank Act aimed to prevent the recurrence of such events in the future.

The Act established the Financial Stability Oversight Council, which consisted of current regulators, to monitor any financial institution or market conditions that could potentially threaten the overall economy. It reassigned banking supervision responsibilities among the Federal Reserve System, the Comptroller of the Currency, and the Federal Deposit Insurance Corporation. The Federal Reserve Board was tasked with overseeing nonbank financial companies that could potentially jeopardize U.S.

[47] Adjusting the spread between the interest rate on reserves and the federal funds rate aimed to better control short-term interest rates.

financial stability.[48] The legislation empowered regulators to enforce stricter capital and liquidity standards based on size and risk on institutions identified as systemically important, including the mandate for bank holding companies with assets exceeding $50 billion to incorporate convertible equity into their capital structure. It mandated that systemically important nonbank financial companies and large, interconnected bank holding companies develop “resolution plans” for their orderly resolution in case of financial distress or insolvency.[49] Furthermore, it imposed limitations on proprietary trading and investments in hedge funds and private equity funds for banks, their subsidiaries, and holding companies, in line with suggestions made by former Federal Reserve Chairman Paul Volcker.[50] Nonbank financial institutions under the Fed's supervision were also subject to these restrictions.

The Dodd-Frank Act stipulated that banks securitizing loans must retain a minimum of 5 percent of the credit risk associated with the securities they create on their balance sheet. It authorized government agencies to promptly and orderly resolve failing bank holding companies or other financial institutions, bypassing the usual corporate bankruptcy procedures. The Act also required most swap contracts, such as credit default swaps, to be settled through a centralized clearinghouse. This was done to provide information to the entire market and increase transparency. Additionally, the Act established the Bureau of Consumer Financial Protection. This bureau had the authority to set and enforce standards for anyone selling a consumer financial product or service, with a few exceptions like car dealerships that provide financing for car purchases. These measures were implemented with the aim of reducing systemic risks and strengthening consumer protection (Kim & Muldoon, 2015).

[48] Nonbank financial companies include insurance companies, hedge funds, and other financial entities that are not traditional banks but can pose significant risks to the financial system.

[49] Resolution plans, commonly referred to as “living wills”, delineate the systematic process through which a financial institution can be effectively liquidated, ensuring minimal disruption to the overall financial system.

[50] The Volcker Rule, part of Dodd-Frank, aims to minimize conflicts of interest between banks and their clients through separating the various types of business practices financial institutions engage in. The Rule separates investment banking, private equity, and proprietary trading sections of financial institutions from their consumer lending arms. According to this rule, banks are not allowed to simultaneously enter into an advisory and creditor role with clients, such as private equity firms.

4.4.1.1 OBJECTIVES AND SHORTCOMINGS OF THE DODD-FRANK ACT

Contrary to critics' charges that the Dodd–Frank Act is an incoherent mess, the Act has two clear objectives: limiting the risk of contemporary finance — what critics call the shadow banking — and mitigating the damage caused by the failure of a large financial institution. To achieve the first objective, the Act establishes new regulatory frameworks for financial instruments and institutions. A key area of focus is financial derivatives, which are contracts whose value is tied to changes in underlying assets or events. The Act mandates that these derivatives be cleared and traded on exchanges, with clearinghouses supporting the contracts and ensuring standardized terms through exchange trading. This approach serves to lower risk and enhance market transparency.

In order to achieve the second goal, the Act places stricter regulations on financial institutions that have the potential to create widespread issues if they were to fail. This group includes banks, bank holding companies, and major nonbank financial institutions with assets totaling at least $50 billion, identified as systemically important by the new established Financial Stability Oversight Council. These institutions are obligated to hold more capital reserves to lessen the chances of failure. Additionally, the Act mandates that these institutions create detailed "resolution plans" for a structured resolution process in the event of financial trouble or insolvency, with the Federal Deposit Insurance Corporation (FDIC) serving as the receiver.[51]

The Dodd-Frank Act establishes the Dodd-Frank resolution rules, which bring forth a fresh insolvency framework. In the event that regulators determine that a financial institution of systemic importance has either defaulted or is at risk of defaulting, they possess the authority to submit a petition in federal court to initiate resolution proceedings and designate the FDIC as the receiver for liquidation. The FDIC has been responsible for carrying out similar responsibilities for regular commercial banks over an extended period. To accomplish its goals, the Dodd-Frank Act establishes various new regulatory bodies, such as the Financial Stability Oversight Council and the Consumer Financial Protection Bureau.

[51] The Federal Deposit Insurance Corporation (FDIC) is an independent agency created by the Congress to maintain stability and public confidence in the nation's financial system. The FDIC insures deposits; examines and supervises financial institutions for safety, soundness, and consumer protection; makes large and complex financial institutions resolvable; and manages receiverships ("FDIC: Federal Deposit Insurance Corporation," 2024).

In addition to these fundamental changes, the Act encompasses various other noteworthy provisions. It empowers the SEC to compel companies to incorporate shareholder nominees for directors in proxy materials, necessitates nonbinding shareholder votes on executive compensation, and obliges financial regulators to decrease their dependence on credit rating agencies by revising regulations for entities such as pension funds and insurance companies.[52] The aim is to enhance the credit-rating process by alleviating the need to heavily rely on credit rating agencies. Lastly, the Act mandates hedge funds to register with the SEC and undergo regular inspections, subjecting them to regulatory supervision for the very first time.

Nevertheless, the Dodd-Frank Act does have significant shortcomings. Detractors contended that Congress disregarded or underestimated the underlying factors that led to the crisis, including the shadow banking system that was influenced by regulations, inadequate supervision by the SEC, regulatory capture through campaign donations and employment prospects, and incentives for excessive risk-taking in derivatives. Additionally, critics highlighted two primary concerns: ad hoc intervention by regulators and the government's collaboration with the major financial institutions.[53]

The initial problem of regulators intervening on an ad-hoc-basis placed a significant emphasis on the capabilities and intentions of future regulators, a scenario deemed impractical due to congressional influences and recruitment processes. This method undermined the principles of the legal system by lacking transparency and predictability, thereby granting regulators substantial margin in their decision-making. The framework established by the Act for handling troubled financial institutions also highlighted this ad hoc intervention, as it encouraged regulatory discretion even in cases involving financially stable institutions.

The government's collaboration with the biggest Wall Street banks and financial institutions is the second concern. The Act specifically targeted banks with assets of at least $50 billion and nonbank financial institutions that were deemed systematically important, granting them preferential treatment. These institutions were safeguarded from failure, granting them a competitive edge, including lower borrowing expenses in comparison to other financial institutions. According to critics, this collaboration established fresh political tools for the government, while simultaneously

[52] Nonbinding shareholder votes on executive compensation, known as "say on pay," aim to give shareholders a voice in corporate governance.

[53] Ad hoc regulatory interventions refer to responses that are made on a case-by-case basis rather than being guided by a consistent, predictable framework.

offering special privileges to Wall Street powerhouses. Consequently, it had the potential to disrupt the American financial system by introducing more political influence and deviating from fundamental rule-of-law principles (Kim & Muldoon, 2015).

To summarize, the primary goal of the Dodd-Frank Act was to strengthen the stability of the financial sector and safeguard consumers by tackling systemic risks and implementing regulatory changes. It established specific targets to minimize risks within the shadow banking system and minimize the impact of the collapse of major financial institutions. Nevertheless, its dependence on ad hoc regulatory interventions and collaborations with prominent financial institutions faced scrutiny. These shortcomings potentially weakened its efficacy and gave rise to fresh challenges, underscoring the intricacies of comprehensive financial reform.

4.4.2 BASEL ACCORDS: GLOBAL BANKING STABILITY BEYOND NATIONAL BORDERS

4.4.2.1 THE EARLY FRAMEWORKS: BASEL I AND BASEL II

The Basel Accords, developed by the Basel Committee on Banking Supervision (BCBS), consisted of a series of regulatory frameworks aimed at strengthening the stability and resilience of the global banking system. The initial framework, Basel I, was introduced in 1988 with the objective of establishing a standardized method for managing risk by setting a minimum capital requirement of 8% based on the risk-weighted assets (RWAs). This accord primarily focused on credit risk and categorized capital into Tier 1 (core) and Tier 2 (supplementary) capital. Despite being a significant step forward in banking regulation, Basel I received criticism for its simplistic approach to risk-weighting and its failure to consider other types of risks, such as market and operational risks. These limitations often resulted in regulatory arbitrage, where banks could manipulate their asset portfolios to minimize capital requirements without effectively reducing risk.

In response to these shortcomings, Basel II was introduced in 2004, aiming to create a more risk-sensitive framework through three pillars: minimum capital requirements, supervisory review process, and market discipline. Basel II introduced internal ratings-based approaches for more sophisticated risk assessments and included operational and market risks in capital calculations. Despite these improvements, the financial crisis of 2007-2008 highlighted significant flaws in Basel

II, particularly its inability to adequately capture the complexities of financial risks and its reliance on models that failed under extreme stress conditions.

4.4.2.2 BASEL III: INNOVATIONS AND RESPONSES TO THE GLOBAL FINANCIAL CRISIS

The global financial crisis emphasized the importance of a more robust regulatory framework to address the weaknesses exposed by the crisis. In November 2010, Basel III was officially endorsed by the member states of the Group of Twenty (G20), marking a significant departure from the philosophy and content of Basel I and II. Basel III aimed to enhance both the quality and quantity of capital that banks must maintain and introduced a comprehensive reassessment of risk coverage assumptions and guidelines.

4.4.2.2.1 INCREASED CAPITAL REQUIREMENTS

Basel III introduced significant changes to capital requirements for banks. One key innovation is the increase in the amount and quality of capital that banks must hold. The minimum requirement for common equity tier 1 (CET1) capital was raised to 4.5% of risk-weighted assets (RWAs), a significant increase from the 2% required under Basel II. In addition, Basel III introduced capital buffers to enhance the resilience of banks during periods of excess credit growth. The capital conservation buffer mandated banks to hold an extra 2.5% of CET1 capital to withstand financial stress, ensuring that they could continue operating without breaching minimum capital requirements. The countercyclical buffer, which ranges from 0% to 2.5%, aimed to mitigate the cyclical nature of banking activities by requiring banks to accumulate additional capital during periods of high credit growth (King & Tarbert, 2011).

Additionally, Basel III enforced stricter Tier 1 capital rules, mainly made up of common stock and profits kept by the bank. This guaranteed that financial institutions possessed a stronger and more dependable capital foundation to withstand potential losses. The overall capital demand, along with the capital conservation buffer, raised to 10.5% of Risk-Weighted Assets (RWAs) (King & Tarbert, 2011). This elevated requirement aimed to offer better protection against financial difficulties, ultimately boosting the strength of both individual banks and the entire banking system.

4.4.2.2.2 LEVERAGE RATIO: CONTROLLING EXCESSIVE LEVERAGE

Basel III introduced a leverage ratio that was not based on risk to control the increase of leverage in the banking industry. This ratio served as a safety net for the risk-based capital requirements and ensured that banks had a sufficient amount of capital in relation to their overall exposure. The minimum leverage ratio was established at 3% of Tier 1 capital to total exposure. This step was taken to prevent extreme leveraging by guaranteeing that banks possessed enough capital to cover all their exposures, not just the ones considered risky under the risk-weighted system. The purpose of the leverage ratio was to limit the growth of leverage in the banking sector and reduce the risk of destabilizing deleveraging processes in times of strain. Basel III eliminated the idea that capital requirements should be based solely on RWAs. Before the crisis, numerous banks accumulated excessive leverage, even though they displayed strong capital ratios when measured against RWAs. Consequently, the Basel Committee implemented this additional measure to strengthen the existing risk-based capital requirements.

The leverage ratio of Basel III was very much a work in progress. The key issue for the BCBS was the calculation of the denominator, i.e., total exposure. Yet, at an early stage, the Basel Committee reached a consensus on several important principles. The assets of subsidiaries that were consolidated for accounting purposes had to be excluded from the measure of total exposure if the investments in those entities were deducted from Tier 1 for regulatory purposes. In calculating total exposure, netting of loans and deposits was not allowed and collateral and other forms of credit risk mitigation were disregarded. Derivatives were to be included in exposures using the "loan equivalent" method prescribed by Basel II. Off-balance sheet items had to be included in the calculation using a "credit conversion factor" of 100%. Banks needed to do considerable work to prepare for the imposition of Basel III's leverage ratio. They effectively had to run one model to calculate their risk-based capital requirements and another to calculate their total exposure for the purposes of the leverage ratio. It was important to ensure consistency across jurisdictions, even if banks used different accounting methods. The market would doubtless find this additional information helpful and interesting. However, it was too early to say whether the additional measurement would have the desired positive effect on the lending behavior of banks. There was always a danger of unintended consequences if the leverage ratio was calibrated incorrectly, and for this reason, banks likely welcomed a lengthy implementation period (King & Tarbert, 2011).

4.4.2.2.3 LCR AND NSFR: SAFEGUARDING AGAINST LIQUIDITY CRISES

In terms of liquidity, Basel III introduced two critical standards: the Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR). The LCR ensured that banks maintained a sufficient level of high-quality liquid assets (HQLAs) to cover net cash outflows over a 30-day stress period. This requirement enhanced banks' short-term resilience to liquidity shocks. By holding a buffer of high-quality liquid assets, banks could meet their liquidity needs even in periods of severe financial stress, thereby reducing the risk of bank runs and financial contagion. The LCR was calculated as the stock of HQLAs divided by total net cash outflows over the next 30 days, which had to be at least 100%. HQLAs were divided into Level 1 and Level 2 assets. Level 1 assets, which included cash and central bank reserves, were not subject to any haircut. Level 2 assets, which included certain government and corporate bonds, were subject to a 15% haircut and could only constitute up to 40% of the total HQLA stock (King & Tarbert, 2011).

The NSFR required banks to maintain a stable funding profile relative to their on- and off-balance sheet activities over a one-year horizon. This standard aimed to reduce the risk of funding mismatches that could lead to liquidity crises. The NSFR was calculated as the available amount of stable funding (ASF) divided by the required amount of stable funding (RSF), which had to be greater than 100%. ASF included regulatory capital, preferred stock with maturities of a year or more, and portions of non-maturity and term deposits. RSF was based on the liquidity risk profiles of a bank's assets and off-balance sheet exposures. Cash and unencumbered securities with short maturities generally had a lower RSF factor, while encumbered assets and those with longer maturities had higher RSF factors.

By implementing the LCR and NSFR, Basel III significantly strengthened the liquidity positions of banks, ensuring they were better prepared to handle short-term liquidity disruptions and maintain stable funding over the long term. These measures addressed the liquidity risks highlighted by the global financial crisis and enhanced the overall resilience of the banking sector.

4.4.2.2.4 MACROPUDENTIAL MEASURES: MITIGATING SYSTEMIC RISK

Basel III incorporated macroprudential measures to address systemic risk. These measures included the countercyclical buffer, which varied according to the credit growth in the economy, and the leverage ratio, which served as a check on excessive borrowing. Enhanced risk coverage also included

better accounting for counterparty credit risk and liquidity risk, further strengthening the regulatory framework. These macroprudential tools were designed to mitigate the pro-cyclicality of the banking sector, ensuring that banks built up capital buffers in good times that could be drawn down in periods of stress. By doing so, Basel III aimed to smooth out the credit cycle and reduce the risk of systemic crises. The framework also introduced more stringent requirements for systemically important financial institutions (SIFIs). These institutions were subject to additional capital fees, reflecting their critical role in the financial system and the potential systemic impact of their distress or failure. The aim was to reduce the likelihood of a SIFI's failure and to mitigate the potential spill-over effects on the broader financial system. By imposing higher capital requirements on SIFIs, Basel III sought to ensure that these institutions could absorb larger losses without threatening the stability of the financial system.

4.4.2.2.5 IMPLEMENTATION AND IMPACT OF BASEL III

The implementation of Basel III was phased, with full adoption expected to take several years to ensure a smooth transition and minimize any negative impact on economic recovery. This gradual implementation allowed banks to adjust to the new requirements without causing significant disruptions to their operations or to the broader financial system. The BCBS designed an implementation calendar that balanced the need for increased capital and liquidity levels with the necessity to facilitate economic recovery, acknowledging that Basel III would have a modest impact on short-term growth. The staggered implementation also provided time for national regulators to translate Basel III standards into domestic regulations, ensuring consistency and compliance across different jurisdictions. This phased approach included specific timelines for the adoption of key components such as the LCR, NSFR, and the capital conservation buffer, allowing banks to progressively build up their capital and liquidity positions (King & Tarbert, 2011).

In addition to the quantitative impact, Basel III was expected to influence the qualitative aspects of banking practices. Banks were likely to enhance their risk management frameworks, improve their stress-testing capabilities, and adopt more rigorous internal controls. The emphasis on high-quality capital and comprehensive risk coverage drove banks to adopt more prudent lending practices and maintain stronger balance sheets. Over time, these improvements were expected to contribute to a more stable and resilient banking sector, better equipped to withstand future financial shocks.

Furthermore, the enhanced transparency and disclosure requirements under Basel III were anticipated to promote greater market discipline. By providing more detailed and accurate information about their risk exposures and capital positions, banks would enable market participants to make more informed decisions. This increased transparency would help to identify and address potential vulnerabilities at an early stage, thereby reducing the risk of systemic crises.

In conclusion, Basel III represented a comprehensive response to the vulnerabilities exposed by the global financial crisis. By increasing capital and liquidity requirements, introducing leverage ratios, and incorporating macroprudential measures, Basel III aimed to create a more resilient and stable banking sector. These reforms were crucial for preventing future financial crises and ensuring the robustness of the global financial system. The Basel Accords, through their successive iterations, played a critical role in shaping the regulatory landscape of the global financial system, promoting financial stability, and protecting the interests of depositors and investors worldwide. The ongoing evolution of these standards reflected the dynamic nature of financial markets and the continuous efforts of regulators to address emerging risks and challenges.

CONCLUSION

The 2008 Global Financial Crisis marked a significant turning point in financial history, revealing underlying weaknesses and widespread risks in the worldwide financial system. Triggered by risky financial behaviors, insufficient regulatory supervision, and flawed economic strategies, the crisis resulted in unparalleled economic chaos and emphasized the critical necessity for thorough reforms.

The crisis was mainly caused by complicated financial tools like mortgage-backed securities and collateralized debt obligations. These instruments were not well understood and were not regulated properly. When the housing bubble burst, along with the risky actions and excessive borrowing by financial institutions, it led to a lot of financial instability. The collapse of big financial companies like Lehman Brothers and the ensuing panic showed just how fragile the financial system was and how serious the consequences of regulatory gaps could be.

A set of immediate and long-term measures were put into effect to address the crisis, stabilize the financial system, and mitigate the risk of future crises. The Federal Reserve, along with other central banks globally, utilized a variety of emergency interventions, such as reducing interest rates, offering liquidity support through different facilities, and implementing unconventional measures like

quantitative easing. These steps played a vital role in reinstating confidence and preventing a total economic collapse.

Beyond these immediate responses, substantial regulatory reforms were introduced to address the root causes of the crisis and enhance the resilience of the financial system. In the United States, the Dodd-Frank Wall Street Reform and Consumer Protection Act marked a pivotal transformation in financial regulation. Its objective was to promote transparency, mitigate systemic risks, and safeguard consumers by establishing the Consumer Financial Protection Bureau (CFPB), implementing the Volcker Rule to restrict speculative trading conducted by banks, and enhancing supervision of major financial institutions.

The global banking regulation witnessed significant transformations with the implementation of the Basel III framework on the international stage. Basel III introduced several noteworthy advancements, such as increased capital requirements, the incorporation of leverage ratios, and the establishment of enhanced liquidity standards through the Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR). These measures were designed to ensure that banks maintain sufficient high-quality capital and stable funding to withstand financial shocks, thereby reducing the likelihood of bank failures and systemic crises. To further strengthen the regulatory framework, the countercyclical buffer and additional capital surcharges were introduced for systemically important financial institutions (SIFIs). These macroprudential measures specifically addressed the pro-cyclicality of the banking sector and the risks associated with large, interconnected banks.

In conclusion, the measures taken in the aftermath of the Global Financial Crisis represented a comprehensive and coordinated effort to address the fundamental weaknesses exposed by the crisis. The regulatory reforms introduced under frameworks like Dodd-Frank and Basel III significantly enhanced the stability and resilience of the global financial system. These reforms not only improved risk management and capital adequacy within banks but also promoted a more transparent and accountable financial environment.

5. CONCLUSION

This thesis has examined the development of financial regulation in the United States by analyzing major financial crises. Starting from the Panic of 1907 to the Global Financial Crisis of 2008, each crisis revealed significant weaknesses in the financial system, leading to important legislative and regulatory changes. These reforms were implemented to restore stability to the financial sector and reduce the risk of future crises.

The Panic of 1907 had a profound impact on the American banking history, exposing its vulnerability and highlighting the need for a central agency to oversee liquidity. This pivotal moment led to the establishment of the Federal Reserve System in 1913, serving as a crucial tool for stability and acting as a lender of last resort. The creation of the Federal Reserve represented a major step towards enhanced financial oversight, and opened the way for the development of future regulatory frameworks.

The Great Depression in the 1930s further demonstrated the necessity for profound regulatory transformations. The crash of the stock market in 1929, followed by several bank failures and a severe economic downturn, exposed inherent weaknesses within the finance industry. In order to rebuild public trust and prevent future devastating economic collapses, laws such as the Glass-Steagall Act, which separated commercial and investment banks, were enacted. Additionally, the Securities and Exchange Commission was established to encourage risk reduction, transparency, and stability in the financial markets. These measures were implemented with the goal of minimizing risks, increasing transparency, and promoting stability within the financial sector.

The Savings and Loan Crisis in the 1980s revealed the dangers of deregulation and inadequate oversight. The combination of rising interest rates and macroeconomic instability, coupled with permissive regulations, resulted in the insolvency of numerous savings institutions. To address this catastrophe, the Resolution Trust Corporation was created to manage the assets of failed firms, while the Financial Institutions Reform, Recovery, and Enforcement Act was enacted in 1989. These measures established more stringent guidelines for businesses to transparently disclose their information, and they also restored public confidence in banks.

The Global Financial Crisis of 2008 was a pivotal event that highlighted the interconnected nature of the global financial system and the shortcomings in regulations. The aftermath of Lehman Brother's collapse during the crisis underscored the necessity for comprehensive reforms in financial regulation.

This led to the enactment of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010, aimed at implementing significant changes such as the establishment of the Consumer Financial Protection Bureau, the Volcker rule to limit banks' proprietary trading, and enhanced oversight for systemically important financial institutions. On an international scale, Basel III was introduced to enforce stricter capital requirements, leverage ratios, and liquidity standards in order to enhance the resilience of banks.

The thesis emphasizes the reactive nature of financial regulation, which adjusts in response to crises that show underlying systemic weaknesses. Each regulatory measure targets particular issues brought to light by crises, eventually strengthening the whole financial system. Therefore, the key takeaway from this study is the importance of having adaptive, forward-looking regulatory structures in place able to handle and minimize emerging threats as they occur.

The Basel III endgame represents the most recent addition to a series of inventive concepts emerging from the Basel III framework, aimed at fortifying the financial system through the increase of capital ratios for prominent banks. These suggested regulations would be applicable to banks possessing total assets exceeding $100 billion, signifying the most extensive endeavor in over a decade to enhance the resilience of the financial system. Within this new approach, banks will be compelled to allocate more resources to mitigate potential losses and maintain sufficient capital to resist unexpected shocks (Smith and Gandel, 2023).

Despite the regulatory innovation is expected to cost billions of dollars to the largest U.S. banks, regulators believe this measure to be crucial since it could help prevent a recurrence of the 2008 crisis. Through the implementation of stricter risk assessment standards, the Basel III endgame seeks to diminish the likelihood of financial distress and enhance overall stability within the banking sector.

As we look ahead, the primary focus of ongoing attempts to implement regulatory frameworks should be on ensuring stability and resilience. Policymakers should pay close attention to international coordination and managing systemic risks when creating regulations in the field of financial innovation. Lessons learned from past crises show the need of a regulatory environment able to adjust to economic changes and new threats promptly.

Financial regulation has undergone constant development; it has been a progressive process focused on modifying different aspects of regulations to achieve the best possible outcomes. This shows that regulators are capable of learning from their mistakes by taking proactive steps to create a more secure

financial system. The Basel III endgame exemplifies this proactive stance with its stringent capital requirements and rigorous standards.

To summarize, this article has provided a comprehensive analysis of the evolution of U.S. financial regulation in response to major crises. The regulatory frameworks have consistently adapted to address weaknesses in the financial industry and ensure stability. Policymakers can utilize these lessons to construct a more stable and resilient financial system that will support sustainable economic growth and protect the interests of all stakeholders.

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