



Subprime Lending, Lehman Brothers and the Global Financial Crisis of 2008: Causes, Regulatory Responses and Persistent Vulnerabilities

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Research Question: To what extent did subprime lending and the collapse of Lehman Brothers contribute to the global financial crisis of 2008, and how have subsequent regulatory and risk management reforms addressed vulnerabilities in financial and real estate markets?

Abstract

The global financial crisis of 2008 emerged from the convergence of systemic fragilities, with subprime mortgage lending and the collapse of Lehman Brothers serving as pivotal catalysts. The proliferation of mortgage-backed securities, reliance on flawed credit ratings and excessive leverage created a fragile financial system that unraveled when U.S. housing prices declined. Lehman Brothers' bankruptcy amplified these vulnerabilities by triggering a collapse of investor confidence and freezing interbank lending, transforming a housing downturn into a global shock. In response, sweeping reforms such as the Dodd-Frank Act in the United States and Basel III internationally sought to strengthen capital buffers, improve oversight and curb speculative practices, particularly in real estate and banking. While these reforms restored stability and reduced the likelihood of an identical crisis, recovery remained uneven and structural risks persist in shadow banking, leverage and "too big to fail" institutions. Ongoing vigilance and global coordination remain critical.

Keywords: Global financial crisis, subprime lending, Lehman Brothers, financial regulation, Basel III, Dodd-Frank Act

Introduction

A financial crisis occurs when the value of financial institutions and assets declines sharply, leading to a widespread loss of confidence in the financial system. The 2008 global financial crisis, though it reached its peak later, began to unfold as early as 2006-2007 when housing prices started to fall. In June 2007, the collapse of two Bear Stearns hedge funds triggered a domino effect that eventually culminated in the failure of Lehman Brothers. The repercussions of the crisis continued until mid-2009. Widely regarded as one of the most severe financial crises in modern history, it was driven primarily by the subprime mortgage crisis and the resulting collapse of confidence in global financial markets (Weinberg, 2013).

The primary cause of the financial crisis was rooted in the US; however, because the US was such a super economy with global ties, the impacts and effects were felt worldwide. Specific industries at the centre of the financial crisis, like the real estate and financial markets, were particularly hit and took a very long time to recover. This financial crisis stalled the world and highlighted the importance of understanding the root causes, cascading impacts and regulatory responses to mitigate future risks. Accordingly, this research paper aims to answer the following question: **To what extent did subprime lending and the collapse of Lehman Brothers contribute to the global financial crisis of 2008, and how have subsequent regulatory and risk management reforms addressed vulnerabilities in financial and real estate markets?**

This research paper argues that the 2008 financial crisis, which was sparked by risky subprime lending and failures within major institutions, exposed significant vulnerabilities in both global financial and real estate markets. This event highlighted the need for stronger regulatory changes. However, despite these lessons, current systems still show significant flaws, leaving them vulnerable to risks that could jeopardize the stability of these markets.

Background: Theoretical Exploration of the Crisis

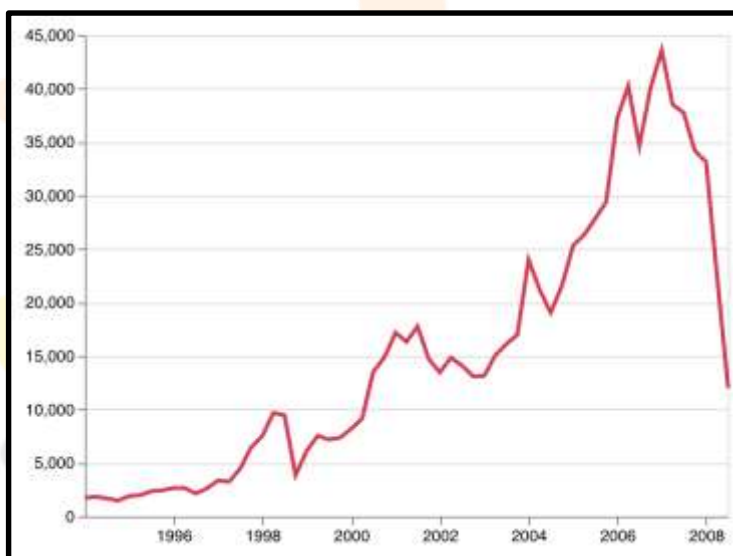
In recent history, the 2008 financial crisis is considered to have been one of the most critical worldwide economic events that has ever occurred. It was characterized by a global recession, a sharp decline in the US economy, government interventions to support banks and the collapse of major financial institutions. The crisis stemmed from the interplay of highly interconnected global markets, the US housing bubble, risky lending tendencies and complex financial instruments, which together funnelled risks that eventually crystallized into a systemic collapse and its aftermath.

At the epicenter of the financial crisis in 2008, the primary contributing factor was the banking and housing bubble in America. In the years preceding the recession, the cost of purchasing homes in America undoubtedly surged. However, the economic surge was based on inequitable prepositions. Lenders started offering mortgages to

borrowers who were labeled as subprime, i.e., borrowers who had poor credit records and defaulted on loans more often compared to other individuals (Hayes, 2019). To add injury to insult, lenders would recklessly provide loans without verifying if the borrowers possessed the ability to repay the debts.

These subprime loans, in the long run, were wrapped up in more sophisticated financial products called mortgage-backed securities (MBS). MBS were, in simple terms, bundled arms of housing loans ready to be sold to other investors (Henricks and Conde, 2025). MBS evolved into more complex financial products, repackaged into multi-layered instruments known as collateralized debt obligations (CDOs). CDOs were then sold to multiple classes of investors globally, which helped spread the risk linked with these mortgages (Tardi, 2024). Although the goal was, in theory, to redistribute the risk, in practice, these products ceded harmful debt to the global economy, which made it more vulnerable to future catastrophe. They falsely believed that the securities were riskless because they were ‘backed’ by real estate, but when the real estate sector collapsed, their value was brought down to nothing.

The collapse of Lehman Brothers, a prominent investment bank, marked the pinnacle of the crisis in September 2008 (Bakkar, 2023). The collapse of Lehman was directly connected to the bank’s exposure to MBS, CDO and its overall debt position. The bank had incurred massive debt by financing its investments in these securities. The collapse of MBS and CDO values led to Lehman's inability to fulfill its commitments, ultimately resulting in bankruptcy (Reller, 2022). Below is an image showing Lehman’s market capitalisation from 1994Q1 to the eventual crash in 2008Q3 (taken from Bakkar (2023)).



The desperation in Lehman’s led to an outcry within the global markets, revealing how fragile the entire system was. Because of these toxic assets, additional firms were sucked into the chaos, suffering significant losses, including Bear Stearns and AIG. In order to regain control of the finances, the U.S. government was forced to intervene by

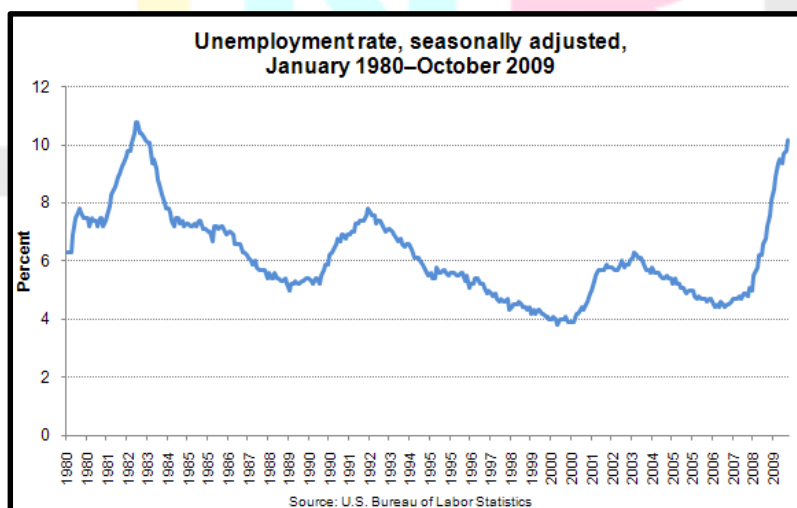
offering a bailout strategy termed the Troubled Asset Relief Program (TARP) costing up to \$700 billion (Bennett, 2023).

Theoretical concepts can also be used to explain the crisis. One important concept is moral hazard, which happens when a party can take risks and does not have to bear the full consequences of their actions (Kenton, 2020). There was too much reliance on government support, which fostered a lack of accountability, which led to excessive risk by financial institutions. Agency theory partially accounts for the crisis. Often, the person's interests that made the financial decisions were different from the institution they worked for. Bankers and executives, taking high short-term profits due to risky lending and investments, disregarded the survivability of the institutions.

Deregulation contributed to the crisis in a significant way. The repeal of the Glass-Steagall Act in 1999 enabled commercial banks to engage in investment banking, thereby deepening their exposure to high-risk financial securities (Heakal, 2023). A majority of these intermediation institutions were granted freedom from strict regulation, which many took advantage of with a lack of adequate analysis of the risks tied to their investment. The institutions responsible for determining the worth of financial instruments also laid to waste their responsibility. They rated MBS and CDOs as having high creditworthiness when, in fact, they were subprime.

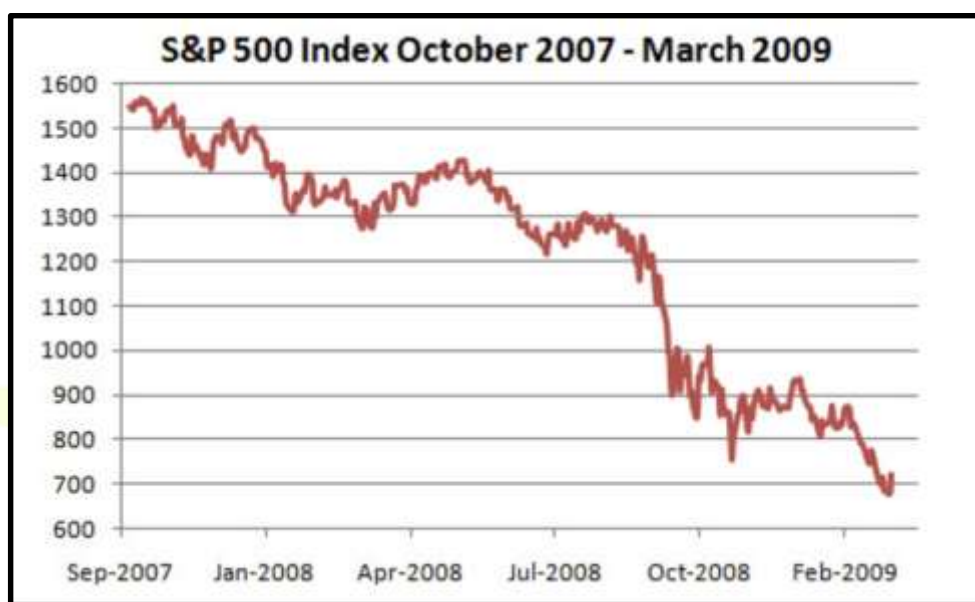
Problem Statement: Impacts of the Crisis on Financial and Real Estate Markets

The crisis had some immediate aftereffects, which were primarily marked by severe contractions in global economic activity. In the United States, the economy contracted sharply, with real GDP declining by around 4.3% from its peak in 2007Q4 to its trough in 2009Q2 (Rich, 2013). Even the unemployment rate in the country soared, peaking at 10% in October 2009, as seen in the graph below, which was the highest level witnessed since 1983 (Bureau of Labor Statistics and U.S. Department of Labor, 2009).



Outside of the US, in the European Union, the crisis most definitely exposed several underlying structural weaknesses that led to economic downturns in many member states. Greece, for instance, faced a sovereign debt crisis with the economy shrinking by more than 25% between 2008 and 2013 (Gourinchas, Philippon and Vayanos, 2016) and unemployment rates escalating to 27.5% by the last quarter of 2013 (Georgiopoulos, 2014).

The stock markets around the world also experienced an unprecedented decline. Measured by the S&P 500 index, the US stock market reportedly lost more than 50% of its value from the peak in 2007 to the trough in 2009 (Rich, 2013). This can be seen in the image below, taken from Wayne (2025).



The European market, once again, mirrored this downturn with indices, including the Euro Stoxx 50, also witnessing significant losses. The widespread market sell-offs were driven by panic, uncertainty and realisations of the systemic risks within previously trusted financial institutions.

With regard to the impact on the real estate market, this sector was at the epicentre of the crisis. In the United States, reports suggest that home prices, usually measured by the S&P/Case-Shiller US National Home Price Index, fell by approximately 31% from their peak in 2006 to the trough in 2011 (Pew Research Center, 2011). A combination of factors, including widespread mortgage defaults, foreclosures and a sharp contraction in housing demand, fuelled this dramatic decline. Even Spain's market experienced a similar collapse. Between 2007 and 2014, housing prices in Spain declined by more than 30% (Stücklin, 2018), leading to a significant increase in mortgage defaults and foreclosures. The Spanish government, in conjunction with the European Central Bank and the International Monetary Fund, had to provide a €125 billion bailout to the country's banking sector to stabilise the financial system (Ross-Thomas, Penty and Sills, 2012). The bursting of the housing bubble in the US, therefore, not only eroded household wealth globally but also led to a prolonged recovery period for the real estate market.

Other than just the immediate economic consequences, it is vital to acknowledge that the 2008 financial crisis also triggered profound psychological and social impacts that fundamentally altered public perception and behaviour in worldwide financial markets. Public trust in financial institutions significantly plummeted, with individuals and communities grappling with job losses, erosion of household savings and home foreclosures. The Bank for International Settlements (2018) captured the erosion of confidence in its report by saying, “The financial system is based on trust, and in the wake of the Lehman failure, that trust was lost. Ordinary people had placed their confidence in those who ran and monitored the financial system, only to discover that the system could fail anyway. The crisis shattered lenders’ trust that a loan previously thought to be of high quality was likely to be repaid, and it dissolved the confidence of investors in the long-term safety of their investments”. This statement evidently underscores how the collapse of major financial institutions and the vulnerabilities of complex financial instruments undermined the foundational trust required for a stable financial system.

Consumer behaviour also witnessed a fundamental and lasting shift in response to the shocks of the financial crisis. When faced with heightened economic uncertainty, households naturally became increasingly risk-averse - a behavioural tendency defined as the preference for options that minimize potential losses even at the expense of foregoing higher returns (Chen, 2024). This risk aversion manifested in many different ways. For example, individuals reduced their discretionary spending, delayed major purchases like those of vehicles and homes and increased their savings rates. Simultaneously, the world witnessed investors shifting toward safer assets, including government bonds and avoiding high-risk investment vehicles that were previously considered lucrative. This collective shift in risk perception contributed to what may be defined as a sluggish recovery because diminished consumption and investment demand slowed economic growth and reinforced deflationary pressures.

The crisis also had broader social ramifications. There was a heightened level of stress and financial insecurity amongst certain communities, further exacerbating social inequality, with lower-income households being disproportionately affected by unemployment and foreclosure. For instance, more than 6 million American households lost their homes to foreclosure during the Great Recession (Ohlrogge, 2021), with lower-income families and communities of colour bearing the brunt of these losses. Furthermore, a study by the Urban Institute found that by 2010, one in every five families in the US was deemed ‘asset poor,’ which implied that they lacked sufficient resources to live at the federal poverty level for three months without income (Ratcliffe and Zhang, 2012). This signified an increase from 16% in 2007, highlighting the deepening financial insecurity among American families.

The erosion of wealth not only disrupted individual financial plans but also damaged intergenerational wealth transfers, which further entrenched economic disparities. As per the research available, between 2007 and 2013, the median net wealth for Latinx and black households fell by approximately 44.3% and 47.6% respectively, compared

to a 26.2% decline for the white households (Carr, 2020). This disparity further underscores that the crisis disproportionately affected communities that already faced systematic economic challenges.

Analysis and Evaluation: Lessons, Reforms and Future Risks

The financial crisis of 2008 revealed some fundamental vulnerabilities in the global financial system, emphasising the consequences of excessive risk-taking, opaque financial innovations and insufficient regulation. It also underscored the dangers of increasingly interconnected markets. Furthermore, the combination of diminished trust, heightened risk aversion and altered consumer behaviour highlighted another critical lesson of the 2008 financial crisis, i.e., financial instability extends far beyond immediate economic losses. The psychological and social dimensions can amplify economic disruptions, which can then slow recovery and reshape societal attitudes towards risk, savings and investments for years after the initial shock. A proper understanding of all these effects is crucial for policymakers and financial institutions who are seeking to design interventions that not only stabilise the market but also restore public confidence and behavioral resilience. It is therefore worth questioning what actions were taken and what reforms were made by the relevant policymakers in light of the lessons from this particular financial crisis and whether they were enough.

Sweeping reforms were designed and introduced in the aftermath of the 2008 financial crisis. In the United States, the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 represented the most ambitious regulatory overhaul since the Great Depression (Walter et al., 2010). The goals of such interventions were threefold: to increase transparency in the financial market, reduce systemic risks and eliminate the implicit guarantee that some firms were 'too big to fail'. One of the core provisions of these reforms included the Volcker Rule, which restricted banks from engaging in any form of proprietary trading and speculative investments with the funds of depositors (CFI Team, 2024). The Federal Reserve also introduced mandatory stress testing frameworks to assess the resilience of banks under adverse economic scenarios (Schneider and Smalley, 2025). From an international perspective, the Basel III framework raised capital adequacy standards, implemented stricter liquidity requirements and imposed countercyclical capital buffers with the aim of reducing the buildup of systemic vulnerabilities.

When analysing the effectiveness of these reforms, it is important to acknowledge that they did achieve some milestones in stabilizing the financial system. For instance, the stress testing frameworks have been credited with improving the risk culture within large banks by forcing institutions to internalise macroeconomic shocks into their capital planning. Similarly, higher capital requirements under the Basel III framework have increased bank resilience, with Tier 1 capital ratios among major banks rising significantly. Furthermore, the restrictions on speculative trading have curbed the riskiest practices of investment banking.

That being said, the reforms have not been entirely sufficient in safeguarding global economies from future crises. Shadow banking, i.e., non-bank financial institutions engaging in credit intermediation (Mansa, 2024), does remain

a major source of systemic risk. By 2022, the global shadow banking sector had grown to \$63 trillion, equivalent to 78 percent of global gross domestic product (GDP) (Roth, 2025) and largely escaped the scope of post-crisis regulation. Similarly, the derivatives market, especially the over-the-counter (OTC) derivatives, continues to pose concerns. While certain reforms introduced central clearing requirements for some products, significant volumes remain opaque, making systematic exposure difficult to monitor. Emerging markets present another vulnerability: regulatory frameworks often lag behind advanced economies, creating uneven implementation of Basel III and raising concerns about contagion risks in an interconnected global financial system.

One critical domain of reform was in the real estate market, where the vulnerabilities in subprime lending practices had acted as the initial trigger of the crisis. Post 2008 reforms tightened mortgage origination standards and required lenders to assess borrowers' repayment ability through measures including the US 'ability-to-repay' rule under the Consumer Financial Protection Bureau. Securitisation practices were also reformed, mandating that issuers retain a portion of the credit risk, thereby aligning incentives and discouraging reckless loan packaging. These measures considerably reduced the prevalence of toxic mortgage-backed securities and speculative subprime lending. Nevertheless, risks do still persist in the real estate market, particularly in overheated markets such as China's property sector or in the commercial real estate portfolios in the US and Europe, where high leverage and reliance on low interest rates could amplify vulnerabilities if monetary conditions tighten.

Conclusion

The financial crisis of 2008 did not occur as a result of a single failure but rather a convergence of systemic vulnerabilities with subprime lending and the collapse of the Lehman Brothers serving as a critical catalyst. The proliferation of subprime mortgages, which were packaged into MBS and sold globally, created a fragile financial architecture that was underpinned by excessive leverage, overreliance on credit ratings and inadequate risk assessment. When the US housing prices declined, this structure unraveled and led to widespread defaults and destabilising banks across the world. It would be correct to acknowledge that the bankruptcy of Lehman Brothers in September 2008 acted as the tipping point: by shattering investor confidence and freezing interbank lending markets, a contained housing and credit crisis was transformed into what is recognised as a global systemic shock. Therefore, while subprime lending may have built the foundations of instability, the Lehman Brothers' collapse crystallized and amplified those risks and triggered a full-scale crisis.

In analysing the responses to this financial crisis, it is evident that sweeping regulatory and risk management reforms were enacted with the Dodd-Frank Act in the United States and internationally, with the Basel III framework being the most notable. These measures aimed to ultimately strengthen capital and liquidity requirements and impose stricter oversight on systematically important financial institutions, as well as curtail speculative trading through mechanisms such as the Volcker Rule. The real estate sector also witnessed the tightening of regulations with harsher

mortgage underwriting standards, stress testing and enhanced consumer protection, which sought to mitigate the vulnerabilities exposed by the subprime meltdown.

While these reforms succeeded in restoring confidence, stabilizing the financial market and reducing the likelihood of an identical crisis, their effectiveness remains mixed. In many ways, economic recovery in a lot of the regions was still sluggish; for instance, the US didn't actually regain its pre-crisis GDP levels until 2011, while the unemployment rate only returned to pre-crisis levels in 2016. Europe fared worse with several economies enduring what was defined as a lost decade of weak growth and high unemployment exacerbated by austerity measures and sovereign debt crises. These trends suggest that while the reforms did stabilise the financial architecture, they did not fully address the real economy's vulnerabilities to prolonged downturns.

On the whole, lessons from 2008 have been partially internalized, but key risks still remain embedded within the financial system. Speculative behaviour, excessive reliance on leverage and the growth of unregulated shadow banking continue to pose significant risks. Doubts regarding the ability of certain resolutions, such as the Orderly Liquidation Authority under Dodd-Frank, to prevent contagion in another global shock come up when acknowledging the persistence of 'too big to fail' institutions. It is vital for future safeguarding that regulatory authorities enhance global coordination and strengthen the oversight of shadow banking while addressing vulnerabilities in real estate markets that still remain prone to cyclical booms and busts. It is a matter of fact that without such measures, the financial systems risk repeating past mistakes, albeit in new forms.

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