Subprime Crisis: Cause, Effect and Response

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Abstract. After the dot-com bust, the U.S. experienced growth in the housing industry: oversupply of capital, low-interest rates, and deregulated financial system. Financial firms, led by banks, rode on a robust macroeconomic atmosphere. The freedom brought by financial deregulation was taken out of context among the firms in the financial system, resulting in the establishment and widespread use of collateralized debt obligations (CDOs) and mortgage-backed securities (MBS) (CDO); these were unconventional investments for the general populace. In retrospect, the U.S. government limited banks' participation in private-labeled asset-backed securities to tame interest rates, liquidity, and credit risks only to be loosened the following years by Congress through amendments to the existing laws. Deregulation of the banking system encouraged banks and thrift banks to engage in real estate businesses, which paved the way for the rise of the subprime market. The subprime market grew alongside the prime market due to banks' circumvention of borrowers' creditworthiness. The domino effect began from the failure of the subprime borrowers to repay. Vertically integrated banking giants felt the heavy blow of loan default, which caused their insolvency. Since then, the whole financial system has collapsed entirely. An increase in job losses, a rise in homelessness, business closures, and U.S. negative growth ensued. Through the TARP program, the Dodd-Frank Wall Street Reform and Consumer Protection Act, and quantitative easing.

Keywords: Housing bubble; Lehman Brothers; the subprime market; 2008 Financial Crisis.

1. Introduction

The U.S. upset the global financial equilibrium beginning in 2007 and continuing through the onset of the financial crisis in 2008. At home, the country's gains after the dot-com bubble burst were wasted. Several years before the fateful years of 2007-2009, the U.S. housing market experienced high growth due to an excess in available funds worldwide, which fueled subprime mortgages and asset securitization [1]. The U.S. found itself again on a path of struggle due to a matrix of causes that gave birth to the fearful monster that brought the country to its knees. Many financial institutions that were beyond redemption, including Lehman Brothers and Bear Stearns, were allowed to cease operations to prevent moral hazards from taking ground. The enormous volume of untradeable mortgage-backed securities (MBS) and collateralized debt obligations (CDO) asset types trapped in their balance sheets was the reason for their premature collapse. No one wanted to buy illiquid assets, and no banks extended loans. Short of cash and capital, and the government's objection to bailing them out, a bankruptcy filing was their last recourse. But to ordinary American citizens, the whole scenario caught them off guard. With companies closing down, Americans wrestled with their everyday lives to survive; unemployment rose sharply, and asset values plunged massively. To understand this crisis deeply, this paper will explore its causes and effects, and the government's actions to thwart the crisis from wreaking further havoc on the financial sector and the U.S. economy.

2. Causes

Three causes that stand out and are worth exploring are: (1) the housing market bubble, which is influenced by a low-interest rate environment and a loose loan application procedure; (2) the deregulation of the financial industry, allowing banks to purchase MBS other than government-backed securities; (3) the acceleration of the securitization and speculation.

2.1 Housing Market Bubble

The overall atmosphere prevalent during the years 2006-2007 was one that allowed lenders to extend loans to subprime borrowers. It opens the floodgate of the subprime market, concentrating on home mortgage loans. Compared to a prime borrower, a subprime borrower is likely to default on a loan because of a low credit score or poor credit history. However, because of the high interest imposed on subprime borrowers commensurate to high default risk, banks and other lending institutions still extend loan products to the subprime market regardless. And because the interest rates were lower during those times, subprime borrowers were enticed to avail of home mortgage loans.

Financial institutions, the bulk of which were banks, were involved in loan origination to underwrite mortgage-backed and collateralized debt obligations because they wanted to enhance their profits in the midst of the rising optimism in the housing market (CDO). Subprime borrowers were enticed to apply for mortgage loans by them. The worst part was that "mortgage originators misled borrowers about the loan conditions and eligibility restrictions and offered loans they knew were likely to default." [2]. This event caused a rapid increase in private-labeled asset-backed securities from 2001 to 2006 [3]. Private MBS overshadowed the ones offered by Fannie Mae and Freddie Mac, starting in 2004 until 2006 [4]. To realize the huge benefits of unconventional mortgage securitization, involved banks had vertically integrated their operations to accommodate every step of the securitization process from which they earn loan application fees (loan origination fees) to investment from clients, as well as their own investments in these assets; such was the case of Lehman Brothers and Bear Stearns. Banks packaged these mortgages into securities and sold them to trusted clients, concealing the true quality of these loans, from which they would receive cash from mortgage payments [4]. As a result, the housing industry created a bubble of mortgage loans comprised largely of subprime borrowers. Large amounts of asset-backed securities piled up in the banks' balance sheets were unmoved. By the summer of 2007, Citigroup had $43 billion, Merrill Lynch had $32 billion, and Morgan Stanley had $11 billion of high-risk MBS and CDO securities held by them. [5]. Since due diligence had been evaded for the sake of high profits, servicing of loans started to cause unease. Remember that the underlying assets for the MBS and CDO were the home mortgages. By the time a large percentage of subprime borrowers cannot service debts, the banks cannot collect mortgage payments. Consequently, MBS and CDO holders were not able to receive returns that were supposedly from mortgage payments. These mortgage-backed securities overly saturated the financial market, causing these assets to be illiquid. The once optimistic story turned into greed—then catalyzed by fraud—eventually, the housing bubble burst unexpectedly.

2.2 Financial Industry Deregulation

The prior U.S. banking legislation limited banks' capacity to extend real estate loans, buy real estate-related securities, or underwrite mortgage-related securities, citing concerns about "credit, liquidity, and interest rates risk." [6]. The National Bank Act generally prohibits national banks from investing in real estate; however, the same law stipulated four exceptions, one of which allows them to acquire real property from foreclosure. Also, federal law gives them leeway in extending loans provided that they are secured by real property [6]. By the 1980s, the decade when mortgage-related securities gained popularity, these laws were relaxed, allowing national banks to deal with government-sponsored mortgage-backed securities offered through Fannie Mae, GNMA, and Freddie Mac. To institutionalize these changes, Congress amended 12 U.S.C. § 24 (Seventh), paving the way for bank and thrift investments in real estate [6]. The Secondary Mortgage Market Enhancement Act of 1984 (SMMEA), which loosened Glass Steagall's restrictions on national banks' participation in privately generated mortgage-backed securities, was one of the subsequent modifications.

In short, the new law and the amendments lifted the previously held restrictions provided that the asset-backed securities were investment grade. Aside from national banks, thrifts and credit unions were also permitted to invest in MBS. So, in principle, SMMEA did not compel banks and other

financial institutions to register their originated MBS investments, further loosening the government's oversight of the financial industry [6].

2.3 Growth of Securitization and Speculation

Low-interest rates, financial sector deregulation, and excess available capital helped financial institutions to grow asset-backed securities, which at that time were in the regime of high-risk, high return. Lending only could provide them with limited revenues—thus, profit, which is the difference between the lending rate and the deposit rate. Upon realizing the full potential of mortgage securitization, large banks vertically integrated their operations to include "lending, underwriting, servicing, and securitizing". Previously, dealing with these four roles by a single institution was uncommon. Usually, a specialized firm would do only one of these. Everything changed when banks realized that they can maximize profits by collecting huge fees at every step of the securitization process. Banks including Bear Stearns, Lehman Brothers, Merrill Lynch, and Morgan Stanley participated in this process as mortgage lenders, MBS and CDO developers, underwriters of their own MBS and CDO, and mortgage servicers. These banks came to a point where, counterintuitively, have borrowed money to service home mortgages, which they made to borrowers [5]. One could surmise that they were not after the interest income but non-interest income through the collection of fees at every stage of securitization and the proceeds from selling MBS and CDO to clients.

Onto the path of maximizing profits, Fligstein and Goldstein found out that the large financial firms, with their collective control of the industry, tacitly crafted an industrial model of vertical integration that resulted in the mass production of MBS and CDO to reap money along the securitization phases [7]. Such a model is deemed profitable if and only if house prices remain elevated and the "supply of mortgages was sufficient to feed the pipeline.". Due to the interdependence of the revenue streams within a vertically integrated financial firm, the urge to sell more mortgages to as many people as possible was high. To an appreciable extent, it is for this reason that financial firms highly involved in mortgage securitization unconscientiously offered mortgage loans to subprime borrowers. Meanwhile, private loan originators also sold mortgages to large banks, even accelerating the overall growth of securitization. Although housing prices began to decline by the middle of 2006, some large banks sustained their momentum by originating more subprime loans in speculation.

3. Effects

Profound and catastrophic were the effects of the crisis that unfolded thereafter. It puts the whole country to a halt and even spills overseas, creating a contagion. The financial sector was the most affected and pulled virtually the entire U.S. economy, resulting in the loss of jobs, the shutting down of businesses, including large investment banks, severe recession, and the U.S.'s negative economic growth in the following years.

3.1 Failure of Several Major Banks and Financial Institutions

Lehman Brothers and Bear Stearns' tales best exemplify the "too big to fail" concept. The fourth-largest investment bank in the world was Lehman Brothers Holdings, Inc. The firm originally had three main businesses: capital markets, investment banking, and investment management. In the first quarter of 2008, Lehman had $107.17 billion of MBS and asset-backed securities and real estate (up 175% compared to 4Q2003), $368.68 billion in collateralized lending (up 166%), and a gross leverage ratio of 31.7x (from 23.7x). Lehman's and Bear Stearns's exposure to mortgages before their collapse was 60% and 71%, respectively [8]. To turn the tide in their favor, Lehman, for one, tried to sell its mortgage-related assets to other banks at a higher price in order to deleverage. Sadly, the banking giant was unsuccessful; Lehman refused to sell at a discount for the fear that similar assets would have to be priced as such, recognizing further asset losses [1]. Since then, it has faced liquidity issues. Bear Stearns filed bankruptcy earlier, in March 2008, while Lehman on September 2008. Other giant

investment banks were also highly leveraged. But, their exposure to real estate was controlled. Given the mired scenario of the financial system, surviving banks were hesitant to lend money due to liquidity problems and capital shortages.

3.2 Skyrocketing Unemployment

The unemployment rate increased from 5.0% in December 2007 to a peak of 10.0% in October 2009 as a result of the downturn in economic activity in the United States. Prior to this, the unemployment rate peaked at 10.8% from September 1982 to June 1983. The Black or African Americans recorded the highest unemployment, followed by the Hispanics and Latinos, and the far third were the Whites. The construction industry (-13.7%) experienced the highest decline in employment during the crisis, followed by manufacturing (-10.0%). The financial sector, nevertheless, only shed 3.9% in employment. Since 1995, both the mass layoffs events and initial claimants of unemployment benefits peaked at 3,059 and 326,392, respectively, a sign of massive job losses [9].

3.3 Decrease in Economic Growth

Due to a delayed recovery and being the longest recession since World War II, the 2008 Financial Crisis, often known as the Great Recession, started in December 2007 and lasted until June 2009. Real gross domestic product (GDP) fell 4.3% from its peak in the second quarter of 2007 (Q2 2009). In comparison to their level between the middle of 2006 and the middle of 2009, housing prices decreased by an average of 30%. The broad S&P 500 index fell by 57% in March 2009 compared to its level in October 2007. [10].

3.4 Increase in Foreclosures

The severe impact of the financial crisis was on the homeowners who failed to service their mortgage loans. Approximately 3.8 million foreclosures were observed between 2007 and 2010. The increase in foreclosure starts began in 2006 and peaked in 2009; based on records, prime foreclosure starts were higher than subprime foreclosures [11]. Then, eviction from home followed shortly: In New York, families who entered homeless shelters between July to November 2008 rose by 40% compared to the same period in 2007; Massachusetts logged a 32% increase between November 2007 and November 2008; Connecticut closed doors to about 30% more homeless families due to shortage of bed spaces; Hennepin County, Minnesota had 20% increase in January to October 2008 relative to the same period in 2007; Los Angeles County reported a 12% increase in welfare assistance who were homeless between September 2007 and September 2008; and the list went on. Former homeowners and renters bore the brunt of the steep rent increase driven by the sudden climb in the demand for home rentals despite income fall and unemployment rise. Even though the number of homeless families continued to soar, “a number of states and localities cut back homelessness prevention programs due to large state and local budget shortfalls [….].” [12].

3.5 Severe Recession and Contagion

Considered a safe investment haven, the U.S. market remains a first-choice investment destination. Even foreign banks participated actively in the housing boom by purchasing MBS using short-term U.S. dollar funds. Large American banks’ offshore subsidiaries served as a conduit for the crisis overseas, affecting their host country’s financial system [13]. One, Asia’s growth slowed down, resulting in an economic contraction vividly seen in 4Q2008. Taiwan, Thailand, and South Korea were the most affected. Fortunately, in the early part of 2009, Asia led the global recovery by collectively expanding by 9% [14]. Two, the crisis induced a European sovereign debt crisis. Member States of the Eurozone faced budgetary pressure, which drew some of them to take out more loans beyond their capability. When default has happened by a country due to soaring public debt, sovereign bondholders demand higher interest rates. While the U.S. managed to get out of the woods in two painful years, European Union required several years more [15].

4. Responses

The U.S. Federal government did not take the crisis sitting down, or else, more Americans will suffer and businesses will be closing down, further weakening the country's economic output. The government: The Executive, The Congress, and the Federal Reserve, handed down various economic relief packages and legislation to get the country back to the pre-crisis level. The Troubled Asset Relief Program, the Dodd-Frank Wall Street Reform and Consumer Protection Act, and the Emergency Economic Stabilization Act of 2008 were among the initiatives the government launched.

4.1 Troubled Asset Relief Program

As its traditional policy to curb inflation and address economic slowdown, the Fed cut down the policy rate from 5.25% in September 2007 to a range of 0-0.25% in December 2008 to encourage borrowing; however, the gravity of the crisis required a set of policies working together to restart economic growth and restore market liquidity as soon as possible. So, the government launched the Troubled Asset Relief Program or TARP. Under TARP, Congress allowed the Treasury Department to provide funding and capital to struggling banking institutions, support credit markets, stabilize the auto industry, help American International Group (AIG), and rescue families to prevent foreclosures. Congress's initial allotment for the program was $700 billion, but the agency utilized far less than this amount. TARP's operations ended on October 3, 2010 [16].

4.2 Dodd-Frank Wall Street Reform and Consumer Protection Act

To protect the consumers and make the U.S. financial system safer for both the consumers and taxpayers, President Obama signed the Dodd-Frank Act on July 21, 2010. The law set out numerous reforms in the financial system and the Federal Reserve, with a hard focus on financial firms, and created a number of new government agencies and attached agencies with oversight roles. Restoration of responsibility and accountability among financial firms is what the law wanted to achieve. One of the major highlights of the law is to "end the too big to fail bailouts", which had been the largest nightmare of the crisis. It endeavors to end bailing out failing financial firms using taxpayers' money by: (1) imposing strict rules for "capital, leverage, liquidity, risk management and other requirements as companies grow in size and complexity […]" based on the guidance of Financial Stability Oversight Council, a newly created agency under the Federal Reserve, (2) applying Volcker Rule, (3) creating a liquidation mechanism should a firm fail to avoid further disturbance to the financial system, etc [17].

4.3 Emergency Economic Stabilization Act of 2008

The creation of the TARP mentioned above was the law's main provision. It gave the Treasury Secretary permission to purchase distressed assets worth up to $700 billion, including mortgage-backed securities, in order to inject plenty of liquidity into the financial system for use in loans and investments; later on, Congress brought the allotment to $400 billion. AIG was the single largest beneficiary of TARP, wherein the Treasury provided the insurance giant with capital worth $125 billion, equivalent to around 1.655 billion shares when converted.

4.4 Quantitative Easing

In a concerted effort to arrest the crisis, the Fed stepped in to accelerate the U.S. recovery. To do that, they launched an unconventional policy of large-asset purchases called Quantitative Easing (QE). From 2008 to 2014, the agency regularly purchased long-term Treasury securities and mortgage-backed securities from private firms. Consequently, the Fed's balance sheet bloated from $882 billion in 2007 to $4.473 trillion in 2014 [18]. This action by the Fed supported the financial system to take in an interest rate as low as 0% without putting downward pressure on liquidity.

5. Conclusion

The 2008 Financial Crisis taught everyone not to be complacent with unconventional investments that depend on the underlying assets. Secondly, the government's biased toward macroeconomic indicators to define U.S. economic growth led them to ignore the micro indicators before their eyes, which can be likened to a small flame burning the whole forest. To flesh this claim out, before the series of amendments to statutes restricting banks from purchasing asset-backed securities, or any form of participation thereof, citing liquidity, credit, and interest rate risks, Congress alibied that having banks' hands tied, the real estate could not expand and contribute to the country's growth. So, the progression prior to the burst is letting national banks purchase government MBS, letting banks engage in private-labeled MBS, and opening the financial system for mass-production of MBS and CDO with minimal to the absence of government oversight. Third, the excessive freedom provided to the financial industry was abused to the point that growing more complex has been the desired state among investment banks. Several banking giants expanded operations up to the point of vertically integrating all MBS-related processes into the system. On that path, Lehman Brothers and Bear Stearns, among others, indulged themselves in acquiring small banks and financial firms, drying up their cash assets and accumulating more debts.

The ensuing effects were far-reaching and catastrophic. People lost jobs and homes, businesses closed down, the U.S. output nosedived, and global contagion shortly followed. Gladly, coordinated efforts of the Executive, Congress, and the Fed swiftly arrested the crisis. The TARP, the Dodd-Frank Street Wall Reform and Consumer Protection Act, and the Fed's QE were instrumental in the return to the pre-crisis level. While the government, through the Treasury, and the Fed massively bought government bonds, provided debt relief, and purchased MBS and CDO assets to increase liquidity in the financial system, Lehman and Bear Stearns were allowed to fail to prevent further moral hazard that could slow down the recovery. Moving forward, may the policymakers now and in the future protect the taxpayers' money by preventing the same from happening again.

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