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Abstract

The Global Financial Crisis of 2008 brought the whole world economy to its knees. There were many causes and market conditions that were recipes for disaster which ultimately led to US government bailing out the big banks. In this paper we discuss the primary causes that were behind the crisis and their roles in the years leading upto 2008. We also throw some light on incompetency of regulations that existed and radical changes that were brought in post 2008. We particularly analyze the Dodd Frank Wall Street Reform and Consumer Protection Act, while throwing some light on importance of regulations. We also discuss the upsides and possible downsides of market regulation. Finally, we cover the role that Mortgage Backed Securities (MBS) played in the crisis.

Keywords

Subprime Lending, Mortgage Backed Securities, Collateralized debt obligations, Housing Bubble, Dodd-Frank Reform, Market Regulations, Risk, Credit Ratings.

Introduction

The Global Financial Crisis of 2008, the worst financial crisis since the Great Depression of 1929 sent shockwaves to the entire world economy leaving millions of people jobless and homeless. Excessive risk taking and poor regulations led to the creation of a housing bubble which when burst led to the worst recession in US since 1929. The whole banking system collapsed leading to a very costly government bailout. Let's see how the crisis came about and what was the regulators' response.

Global Financial Crisis

The primary causes of the financial crisis of 2007-2008, also known as the Global Financial Crisis

Financial Innovation: The pace of financial innovation has been such that regulatory bodies have seldom kept pace with them. This has also meant that not many people understand them fully and have failed to use these innovations prudently. Securitization which helped in promoting risk sharing actually led to people taking excessive risks. New loan products like Adjusted Rate Mortgages, Interest only loans, Alt A loans which were meant to promote home ownership actually led to lenders making riskier loans. (Jickling, 2009)

Rise in Subprime Lending: In 2006, 20% of the US home loan market was made up of subprime mortgages, up from just 9% in 1996 (Bianco, 2008). With huge demand for Mortgage backed securities, Investment banks were ready to buy any number of mortgages, which in turn pushed mortgage lenders to make riskier loans. This meant that people who couldn't afford to pay their mortgages were given loans. The belief was that since the home prices were rising, in an event of default, homes could be sold in a hot market to offset any losses. This was only true until home prices kept rising.

Flawed Ratings: The credit ratings agencies had a questionable business model. They generated the majority of their revenue from the Big 5 Investment banks by rating credit worthiness of structured finance offerings (MBS, CDOs etc.). These banks hence had power over these agencies which led to compromised credit ratings (Jr, 2009). Investors, not able to gauge value of these complex instruments were dependent on ratings provided by credit rating agency and were grossly misled.

Moral Hazard: All the parties in the securitization chain could take on excessive risks since they believed that they were passing on the risk to the next entity. Lenders didn't care if borrowers could pay back since Investment banks were going to buy them anyway. IBs could package these as MBS and CDOs which were in great demand among the investors. Investors in turn could buy Credit default swaps to protect their investments and further pass on the risk. Hence there was an environment of excessive risk taking.

The market features and conditions that constitute the Global Financial Crisis in general

MBS (mortgage-backed securities) Bubble: Lenders didn't expect to bear losses and thus went for MBS incentive which was regarded safe by external agencies, as even if some loans are not repaid it still assumes that most loans will be paid and generate profit, but with the reduction in house prices most of the mortgage loans remained unpaid. Thus, contributing to the crisis.

Incompetent Regulations: Insufficient regulations for subprime borrowers and MBS allowed selling complex and unclear MBS to investors, without knowing the repayment capacity. This led to fraud of overstating a borrower's income and promising investors about the safety of MBS, giving rise to excessive bad loans. In addition to this the SEC initiated Consolidated Supervised Entity program in 2004. It gave regulatory oversight to the SEC over 5 major investment banks but in turn, removed the ceiling on debt to capital ratio. SEC with its low personnel and know-how of these new markets were simply not competent enough (Jr, 2009). While investment banks in the years after 2004, borrowed crazily in order to grab market share in these new markets having no intention to maintain a respectable debt to equity ratio.

Borrowing by banks and lenders: As banks and lenders wanted to make more profits with an attitude that large investment in assets will increase profit and no consideration for loss. Due to low interest rates in USA during early 2000s, lot of cheap credit was available and with capital adequacy not an issue anymore, banks became highly leveraged. With house price falling banks and lenders incurred loss due to huge borrowings.

Linkage in global financial systems: The downfall of housing prices in the US led to crises in other countries as well due to linkage of the US and other countries in Global Financial Systems. Surplus global savings from around the world had made its way to US housing market and made whole financial world interdependent. Many banks around the world incurred losses and thus were dependent on the government to avoid bankruptcy.

How the primary causes of the Global Financial Crisis led to the conditions of a financial crisis

Growth of housing bubble: Lax underwriting standards and high mortgage approval rates suddenly brought new buyers in the home loan market leading to sharp rise in home prices. Investment banks with their infinite appetite kept buying, even subprime mortgages just to repackage them as MBS or CDO and sell them to investors. Investors too didn’t shy away since credit rating agencies had given its blessings and best possible rating. This led to a housing bubble in USA that started in 2001 and lasted till 2005-2006 as housing prices skyrocketed from their fundamental values

Delayed Market Correction: Even as the mortgage default rates were increasing, credit rating agencies refused to downgrade the CDOs that were made from the same mortgage loans that were defaulting. So, transactions involving these instruments kept on happening and the bubble kept on festering.

Bursting of bubble and Credit Crunch: As the mortgage default rates reached its peak, the demand for houses finally fell. The bubble burst and housing prices plummeted. This disrupted the whole securitization chain. Investment banks could not sell their CDOs to investors for which they had borrowed crazily in the first place. Investors cannot sell the CDOs they are holding already whose value was declining rapidly. Even the mortgage lenders could not find any buyers for risky mortgages they had approved. Whole financial system froze which sent shockwaves to the entire economy. Bear Stearns and Merrill Lynch were sold off and Lehman Brothers declared bankruptcy triggering a Global Financial Crisis.

Immediate Regulatory Response to the 2008 Financial Crisis: Focus on US

The global financial crisis exposed the fragility of the banking sector and of the wider financial system. To avert the immediate panic, the US, which was one of the most severely affected nations, swiftly rolled out monetary and fiscal stimulus measures as emergency responses.

Monetary Response

The largest portion of government intervention was represented by the programmes implemented by the Federal Reserve, because of which its balance sheet doubled between August 2007 and December 2008. It employed several lending programmes to revive the credit markets (particularly the ABS market) and money markets.

In spring 2008, the Fed dealt with frozen credit markets by facilitating lending for and providing liquidity to primary dealers (especially in the MBS market) via the Term Securities Lending Facility (TSLF) and Primary Dealer Credit Facility (PDCF) respectively. To revive the Asset-backed Securities (ABS) markets, the Fed created the Term Asset-backed Securities Loan Facility (TALF) through which it provided non-recourse loans to borrowers secured by non-mortgage-backed ABS and CMBS. Lastly, to prevent a strain on back-up credit lines extended by banks due to a lack of buyers in the commercial paper market, the Fed created the Asset-backed Commercial Paper Money Market Mutual Fund Liquidity Facility (AMLF) to finance purchases of high-quality commercial paper.

Fiscal Response

The Fed's emergency crisis response was complemented by the US Treasury's Troubled Asset Relief Programme (TARP) which earmarked US$700 billion to acquire troubled assets from financial institutions.

Through the Capital Purchase Programme (CCP), it invested USD204.9 billion worth of preferred stock until December 2009 in 707 financial institutions, including the 9 largest systemically important ones. Moreover, to strengthen investor confidence, financial institutions were required to conduct mandatory stress tests and to issue convertible preferred stock to the Treasury under the Capital Assistance Programme, which acted as buffers to guard against worse than expected economic conditions. Lastly, the government took control of Freddie Mac and Fannie Mae as conservator in the largest government-assisted transaction in US history. Freddie Mac and Fannie Mae held or guaranteed a combined US$ 5.5 trillion of MBS at the time when they were put under conservatorship.

The features of financial markets which often need regulation

Information Symmetry:

Financial markets require a lot of information symmetry in order to work properly. For example: Investors and stockholders of a particular company require periodic disclosure of financial statements in order to make prudent decisions regarding their investments. On top of this information needs to be in a standard fashion so that it can be compared with other companies. Depositors and borrowers require standard information on deposit and credit rates in order to make their decisions. Regulations help promote information symmetry in a market

Excessive Risk Taking:

Company executives are generally rated on short term profits and growth in stock prices. Having these as objectives can lead to unmitigated disasters for shareholders as company executives can log in short term profits by taking excessive risks which can prove to be costly in the long term. Enron is one such example which took excessive risks for which shareholders had to pay the price.

Consumer Protection:

Prudential regulations such as minimum capital requirements, deposit insurance, etc. are needed for banks in order to maintain depositors' confidence and prevent events such as bank runs in times of distress. Regulations protect customers from financial fraud. These include unethical mortgages, credit cards, and other financial products.

Conflict of Interest:

Banks often find themselves in competing and potentially compromising relationships which may prevent them from full disclosures and acting against the sole interests of its clients. Selling Mortgaged Backed Securities and their default swaps to different clients by banks prior to 2008 Financial Crisis in one such example. Regulations are required to stop financial institutions from pursuing multiple objectives through separation of functions.

Evaluation of Regulatory Response

Brief Outline of the Dodd-Frank Wall Street Reform and Consumer Protection

The scale of the emergency funding in the US which ensued after the financial crisis exposed several vulnerabilities of its financial system. Consequently, the US government enacted the Dodd-Frank Wall Street Reform and Consumer Protection Act on 21 July 2010, to reduce the likelihood and magnitude of future financial panics.

To counter the systemic threats to the financial system created by too-big-to-fail financial institutions, the Act expanded the power of the Fed over systemically important banks and led to the creation of the Financial Stability Oversight Council to bring non-bank finance companies under the purview of the Fed's regulation.

The years following the Dodd-Frank Act saw heightened prudential standards for systemically important bank holding companies through measures such as controlled credit exposure of such entities via concentration limits of 25% of capital stock or surplus, risk-based capital requirements, leverage and liquidity requirements, mandatory risk committees and resolution plans (living wills), and annual stress tests to be conducted by the Fed.

The act also required bank holding companies to divest their typically higher risk proprietary trading, hedge fund and private equity businesses under the Volcker Rule. Besides, it required securitisers to retain a portion of the credit risk with regard to the ABS they sell.

In addition to systemic risk regulation, the Act places several requirements to regulate credit rating agencies, notably a replacement of the issuer-pay business model, removal of credit ratings in regulatory processes setting capital requirements and makes agencies legally liable for their ratings. Lastly, it has granted more powers to the SEC to regulate these. However, several of the Act's reforms have still not been followed through with by regulators.

Lastly, the financial crisis led to a huge backlash against banker compensation. That said, the Act proposed provisions such as independent compensation committees and mandatory non-binding say on pay vote, as a response to public anger.

Intended effect of the regulation and some context for why it was deemed necessary

The Act aimed to achieve financial stability, to protect consumers from excessive and overarching behavior of corporates, increase accountability and improve transparency of US financial system.

• Watchdog for Wall Street and Insurance companies
• Restricting banks to bet on consumer's money in hedge funds
• Regulating bail outs of failing banks
• Regulate credit rating agencies

General theme and rationale of financial regulation

Consequent to the global financial turmoil there have been dramatic changes to the regulatory frameworks for financial institutions all over the world. These regulatory developments have taken place both at global and domestic levels. Adopting Basel III capital requirements, introducing special resolution regimes for financial institutions, changing regulatory architectures, improving derivative markets, reforming deposit insurance schemes, strengthening accounting standards and developing macro prudential frameworks are examples of such regulatory responses.

The economic rationale for regulation
The analysis to follow focuses upon seven components of the economic rationale for regulation and supervision in banking and financial services:
a) Potential systemic problems associated with externalities (a particular form of market failure).
b) The correction of other market imperfections and failures.
c) The need for monitoring of financial firms and the economies of scale that exist in this activity.
d) The need for consumer confidence which also has a positive externality.
e) The potential for Grid Lock, with associated adverse selection and moral hazard problems.
f) Moral hazard associated with the revealed preference of governments toc reate safety net arrangements: lender of last resort, deposit insurance, and compensation schemes.
g) Consumer demand for regulation in order to gain a degree of assurance and lower transactions costs.
Two generic types of regulation and supervision are identified:
• prudential regulation, which focuses on the solvency and safety and soundness of financial institutions, and
• conduct of business regulation which focuses on how financial firms conduct business with their customers.

A description of some of the possible downsides and/or intended consequences of the regulation

Intended Consequences:

Requirement of higher capitals by financial institutes, eleven the best of regulations is incapable at times to prevent crisis, so it is necessary for institutes to have capitals to remain unaffected during such events.
Formation of Consumer Financial Protection Bureau, major reason for the global crisis was

the housing bubble, formation of CFPB increased the majors on returning capacity of the borrower and increased the transparency for derivative transactions, thus ensuring protection for consumers.
The Federal Deposit Insurance Corporation's single point of entry approach established procedures for safely winding down a failed institution and addressing the too big to fail issue, thus increasing stability.

Downsides:
Federal reserves were asked to make emergency loans available to the entire category of firms instead of a single firm, thus forcing the FDIC to provide temporary liquidity guarantee on certain kinds of debts. Thus, reducing financial stability during time of stress.
• The Volcker Rule, bans commercial banks from engaging in proprietary trading. Critics all suggest that this rule is ambiguous and regulators find it difficult to implement it. Thus its difficult for banks to adhere to its requirements.
• Implementation of Lincoln amendment, prohibits entities engaged in swaps from receiving federal assistance, hence costly trade-offs.
• New regulations for leverage ratios, capital buffers, stress testing, liquidity, and long-term debt holdings are considered uncertain tradeoffs for financial stability and economic growth in future.

As per intended effects and general theme of financial regulations, the following similarities can be inferred

a) The Dodd Frank Act aimed to reduce effect of externalities in the system by regulating capital adequacy requirements
b) By monitoring the size of the firms, monitoring of financial firms was achieved for economic activities of scale
c) By restricting use of hedge fund and derivatives, Moral hazard was abated
d) By regulating and greater restraints on bailouts, an effort towards instilling greater confidence of consumers was made

The Role of Mortgage-backed Securities

Mortgage backed securities (MBS) are shares of home loans sold to investors, it is an investment similar to bonds as the investor gets periodic returns similar to coupons in bond markets. MBS is an asset backed security as during the meltdown it was backed by the mortgages, thus it is also known as mortgage related security or mortgage pass through. MBS works with banks as middlemen between investors and homebuyers. The bank lends borrowers money to buy house and collects through loan, a large number of such transactions forms MBS, the bank then issues shares on these securities called tranches to investors who buy them and collects dividends in form of mortgage payments. MBS is issued by a government sponsored agency or private financial company.

MBS are of two types:

1) Pass-throughs
2) Collateralized Mortgage Obligations.

MBS played a major role in the financial crisis, it was loaded with subprime loans and wiped out trillions of dollars of wealth. MBS is still bought and sold today, as there are people who try to pay their mortgages. Most part of MBS shares are held with Feds and are now letting out some chunk. Wall Street has learnt a lesson and will question MBS before buying it casually.

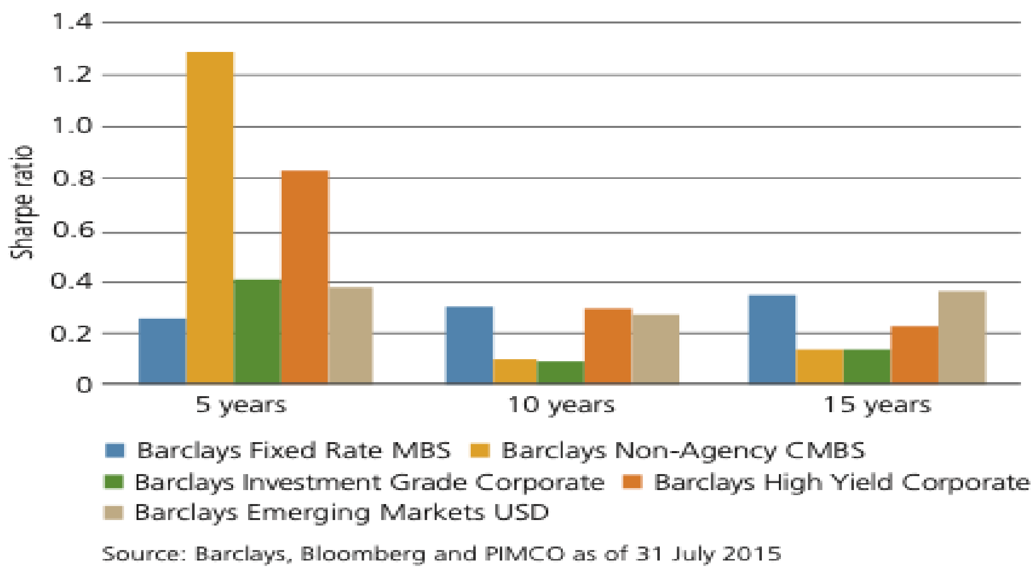
Uses of Mortgage-backed Securities (MBS)

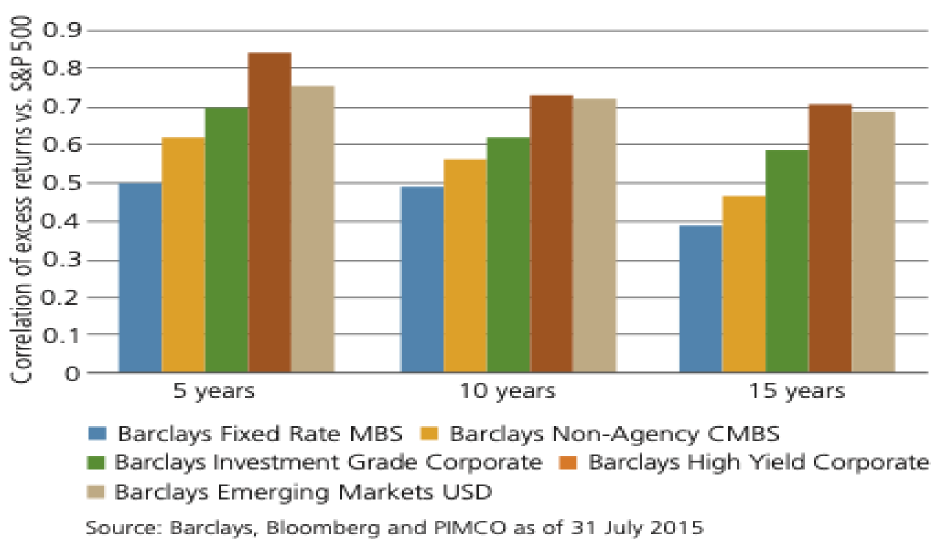
MBS offer lenders the opportunity to offload risks they are not willing to take and offer investors looking to gain exposure to those very risks' attractive investment opportunities

Uses to Lenders

For lenders, the securitization of mortgages provides the twin benefits of increasing liquidity and reducing or eliminating the various risks which mortgages carry, viz. credit, interest rate and prepayment risks.
Once originated mortgage loans are securitized, the lender receives MBS in exchange of the mortgages in a swap transaction. From thereon, the lender can choose to keep the MBS (swap-and-hold) as an asset or to sell it (swap-and-sell).
By doing so, the lender has essentially replaced mortgages with MBS which typically benefit from relatively greater liquidity. Additionally, when these are backed by Government-sponsored Enterprises (GSEs), the credit risk of the MBS is transferred to these in exchange for a guarantee fee. If the lender decides to sell the MBS, it immediately transfers all risks to the seller in exchange for liquid cash.

Uses to Investors
For investors, MBS have a record of offering ample liquidity, high historical Sharpe ratios and low correlation to risk assets. Additionally, their complexities often create market dislocations creating alpha-generation opportunities for investors.
The consistency in agency MBS Sharpe ratios can be attributed to volatility sales. Their risk profile resembles that of a long position in a government bond and a short call option, and it is the latter provides exposure to volatility.
Further, excess returns from agency MBS have had among the lowest correlation to risk assets of any fixed income sector, since the primary risk factor in these is prepayment risk, rather than exposure to credit fundamentals.





Sharpe Ratios and Correlation to Risk Assets of Various Fixed Income Assets

The Role of Mortgage-backed Securities played in the crisis

In 1999, the Gramm-Leach-Bliley Act was passed which repealed parts of the Glass-Steagall Act of 1933. It removed the barrier which prevented a single entity to indulge in commercial banking, investment banking and insurance activities. The banks found an opportunity through this act and created complex derivative products like mortgage-backed securities (MBS) and collateralized debt obligations (CDO) based on the mortgages and other loans.

MBS are bonds backed by real estate and other home loans. A bank makes a home loan and then it sells that loan to an investment bank. The bank receives the upfront money which can be lent to new borrowers. The investment bank then pools these mortgages with similar characteristics and sells it to

potential investors. The payments/coupons from these MBS are received as and when the borrowers of the underlying home loan or real estate loan pay to their lenders. It is not easy to ascertain the credit worthiness of the underlying borrowers as MBS are formed by pooling of loans. However, the credit rating agencies were generous and gave good ratings to such MBS. This instilled investors' confidence and led to increased investments in these financial derivatives.
The banks were involved in transactions (particularly selling) of these products (MBS) to various counterparties including other banks. It also freed the money on the balance sheet of banks which could now be used for giving new home loans. The securitization of these mortgages along with the oversight of rating agencies made the appearance of subprime mortgages as investment-grade products. It concealed the actual risky nature of subprime mortgages and related derivative products.

Why the potential benefits and uses of mortgage-backed securities did not manifest in the Global Financial Crisis

Mortgage backed securities generally offer more liquidity to fixed income investors. The failure probability was wrongly used to account for failures in actual MBS. If failure rate of home loans were 80%, then it was wrongly assumed that 80 buyers will not default. These were then graded, insured and further soldas derivative instrument. Although MBS provide enhanced liquidity to lenders, MBS won't guarantee liquidity when all bonds fail at once. MBS became highly volatile as prices started fluctuating. MBS claims to eliminate intermediary risk. However that didn't manifest itself in GFC because loan borrowers stopped making loan payments due to their financial inability.

Conclusion

We have seen how corporate greed in the form of excessive risk taking and compromised ratings led to a global Financial disaster. We also saw how self-regulation in line with Basel II recommendations contributed to the crisis and consequently we witnessed strict regulations put in place post 2008 not only in US but all over the world.

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