

# A brief overview of the subprime crisis essay



**ASSIGN  
BUSTER**

Group Assignment: Understanding Cause of the Subprime Crisis Prepared by Kumi Takeda Jocelyn Hao Hasanov (Dima) Dilshodbek Arvin Leow 1.

Introduction The Global Financial Crisis of the late 2000s, triggered by the US subprime mortgage fiasco, severely hit the world economy. It has cost countries and companies billions of dollars and has forced thousands of people out of job around the world. Five years since the burst of the US housing market, butterfly effect of the subprime crisis is still salient and profound as European countries struggle to resolve their sovereign debt crisis.

This paper will examine how the US housing market had come to play a role as the epicenter of the global financial crisis. It will illustrate state of the US housing market before the subprime crisis followed by detailed analysis on cause of the crisis. 2. US Housing Market before the Subprime Crisis Home Price Trend The S&P/Case-Shiller US Home Price index, the country's leading home price index, shows that before the housing market burst with the subprime crisis, US home prices had only briefly declined in the late 1990 when the country was suffering from a mild recession.

The dip was short-lived however, and another upward trend of housing price began in 1991 at an increasing pace over more than a decade until it recorded a 15.68% year-on-year rise in the first quarter of 2005. In fact, the US had never seen any annual decline of more than 5% in the housing market since the Great Depression (L. G. McDonald & P. Robinson, 2009, 'A Colossal Failure of Common Sense', p. 112). Since 1995, the real home prices ran up by over 35% in a little less than 10 years (J. McCarthy & R. W. Peach, 2004, 'Are Home Prices the Next "Bubble"?', Federal Reserve Bank of New

York, p. 1). To many people, the run of the housing market looked to continue for a while. S&P/Case-Shiller Home Price Index (Source: Bloomberg) [pic] Growth in US Homeownership In the early 2000s, the US consumers were enjoying easy credit due to the then lowest level of Federal funds target rate guided at 1% and huge inflows of capital from overseas. The US outstanding household debt which was \$4.85 trillion in 1995 (65.5% of GDP), amounted to \$12.4 trillion (93% of GDP) by the mid 2006 when the housing market was at its peak (Source: Bloomberg).

During a similar period (1994-3Q2005), the US household debt as a percentage of annual personal disposable income climbed to 126% from 88% (M. Bush & J. Katz, 2006, 'Reinvestment Alert', Woodstock Institute, p. 1). A substantial portion of the household debts went to finance home purchases. In a little over a decade between 1995 and 2005, total amount of mortgage originations saw more than a 350% increase from \$640 billion to \$2.9 trillion (Source: Mortgage Bankers Association of America, Washington, DC, '1-4 Family Mortgage Originations 1990-2005').

Total outstanding mortgage debts for 1-to-4 family houses increased from \$3.5 trillion (72% of the household debts) to in 1995 to \$9.3 trillion (75%) in 2005 (Source: The US Census Bureau, [www.census.gov/compendia/statab/2011/tables/11s1191.pdf](http://www.census.gov/compendia/statab/2011/tables/11s1191.pdf)). As a result of the mortgage market expansion, the US housing ownership rate, which had been stagnated at around 64% for decades, started rising in the mid 1995 and reached 69% in 2004 (Source: Bloomberg). Considering the US household numbers increased from 98.99 million to 112 million between the same period (U. S.

Census Bureau, Current Population Reports. From Statistical Abstract of the United States, 2008), the figures are read that US homeownership increased by 13.9 million. Housing market speculation Some argue that speculative demands also fueled the home price rise. While the housing market continued to rise at the average of 11.34% each year in the early 2000s, the US stock market was stagnant following the end of the dot.com bubble in 2000. The bond market was also not offering attractive coupons/yields to investors as the federal fund rate was kept at a very low level for much of the early 2000s.

These facts helped investors look into the housing market for better return on investment. In 2005, more than 40% of houses purchased were not for primary residence (28% for investment and 12% for vacation home). The figure for investment increased to nearly 35% in the following year. The Economist reported in its 16th June 2005 issue that investors were buying properties that would not generate enough rent income to cover monthly mortgage repayments because they betted the price of their investment properties would go up. 'Flippers' buy and sell new properties even before they are built in the hope of a large gain. In Miami, as many as half of the original buyers resell new apartments in this way. Many properties change hands two or three times before somebody finally moves in. " ('In Come the Wave', the Economist, 16 June 2005, <http://www.economist.com/node/4079027>) Could the Home Prices Fall? In the early 2000s, two renowned economists, Karl E. Case and Robert J.

Shiller noticed that an increasing number of speculative articles on conditions of the US housing market were published by popular media in <https://assignbuster.com/a-brief-overview-of-the-subprime-crisis-essay/>

2002-2003 - some of which claimed that the market was in a huge bubble and about to burst. However, these media coverage seemed to have raised little concern among the general public. A survey done by Case and Shiller in 2003 showed the majority of the 700 homebuyers who bought their residential properties in 2002 were not feeling that the housing market was in a bubble. (K. E. Case & R. J.

Shiller, 2004, ' Is There a Bubble in the Housing Market? ', Cowles Foundation Paper No. 1089, p. 341) In its economic policy review published in December 2004, the Federal Reserve Bank of New York, too, dismissed concerns that the US housing market was in a bubble and that the market would see a steep correction in a weak economic condition. They argued that the rise of home prices coincided with the rise of personal income and the fall in interest rate. Between 1990 and 2003, the country saw approximately 50% rise in the median household income.

In addition, the average nominal interest rate on 30-year fixed-rate conventional mortgages declined from a little over 10% in 1990 to 5.75% in 2003. These factors contributed to a nearly 130% increase in the maximum mortgage amount that a household with the median income could borrow. (McCarthy & Peach, 2004, p. 6). Even Case and Shiller who saw a bubble in the housing market and who anticipated severe damage to some homeowners in coast areas of the US in the event of a market correction, did not agree with nationwide steep price decline. They expected that some areas might not even see declines for many years. Case & Shiller, 2004, pp. 341-342). Home prices would only have a moderate decrease if not rising at all - this seemed to have been a consensus among many government

officials and academics as well as the general public in the US. 3. Causes of the Subprime Mortgage Crisis As mentioned earlier, the low interest rate and large foreign fund inflows attributed to the increase in the number of mortgage originations and of outstanding household debts, both of which resulted in the US housing bubble and subsequent burst of the bubble. And the housing speculation fueled the rise.

However, these factors are just necessary but not sufficient to explain the expansion of the household lending/mortgage market. In fact, the almost-abnormal growth rate of the housing market was a product of numerous factors intertwined with each other - such as lending/borrowing practices, the government policy (not just financial but also social/economic policies), financial innovation, and business practice in Wall Street etc. **Mortgages and Lending/Borrowing Practices** The number of mortgage originations surged by 350% between 1995 and 2005, and total outstanding mortgage debts for 1-to-4 family houses increased by 165. % from \$3. 5 trillion (72% of the household debts) in 1995 to \$9. 3 trillion (75%) in 2005 while the number of US households grew only by 14. 5% during the same period as illustrated above. What happened there was that due to the credit easing mentioned earlier, more credit became available to the so-called “ subprime” borrowers, who have lower credit score, i. e. likely to face difficulty making the monthly repayment in time. The mortgages extended to people in this category are characterised by higher interest rates and less favorable terms in order to compensate for higher credit risk.

There are a few factors, in relation to lending/borrowing practices, that contributed to growing subprime mortgage originations. Firstly, as the <https://assignbuster.com/a-brief-overview-of-the-subprime-crisis-essay/>

housing market heated up, the mortgage qualification guidelines began to be softened. New types of mortgage loans for subprime borrowers were created, such as Stated Income Verified Asset Loans (SIVA), No Income Verified Asset Loan (NIVA) and No Income No Asset Loan (NINA) with lesser and lesser requirements. NINA was the easiest of all and was offered without verifying incomes or owned assets. All that lenders required was credit score.

Second, coupled with the softened guidelines, development of new financial technology, enabled mortgage lenders to review a number of applications in a few seconds through the Internet without assessing appropriate documents. First Franklin Financial, one of the largest subprime mortgage lenders in the US, was the first to introduce such software developed by a former NASA engineer. By 2005, at the peak of the housing market boom, the number of subprime loan applications First Franklin processed had increased seven-fold to 50, 000/month.

Since the software was first marketed in 1999, it helped \$450 billion worth loans be extended to subprime borrowers (L. Browning, (23/03/2007) ' the Subprime Loan Machine', New York Times). Third, low down payment loans made a house look affordable to those who could not afford a size down payment. In 2005, the median down payment on first-time homebuyers was 2%. 43% of those buyers are said to have not even put any down payment at all. (N. Knox, (1/17/2006) ' 43% of first-time homebuyers put no money down', USA Today).

And finally, much riskier mortgages than conventional fixed rate mortgages were commonly extended to subprime borrowers. Option ARMs, which allowed borrowers decide on their payment amount each month, and 3/27 ARMs, which offered a very attractive and affordable low interest rate for the first 3 years before the rate became variable semiannually or annually for 27 years. Borrowers with low credit scores found these types of ARMs attractive due to affordable monthly payment. 3/27 ARM borrowers were also refinancing their mortgages before the fixed interest rate period ended.

However, they very often seemed to have overlooked risks involved - changes in interest rate and unwisely managed monthly payment could result in steep rise in monthly repayments and/or mortgage balance, and that the home prices could go down and make refinancing difficult. These factors helped mortgage lenders originate more mortgages and quicker to earn more commissions, and also encouraged people with lower credit to take up a mortgage to own a house. Subprime mortgage accounted for 10.2% of total mortgage originations of \$640 billion in 1995. By 2005, the percentage climbed to 21. % of \$3. 12 trillion mortgage originated in the year (J. R. Barth, 2008, ' U. S. Subprime Mortgage Market Meltdown', Auburn University and Milken Institute). The subprime mortgage debt outstanding amounted to \$370 billion in 2000 more than tripled by 2005 to \$1. 14 trillion (Source: USA Today, [http://www.data360.org/dsg.aspx?Data\\_Set\\_Group\\_Id=1363](http://www.data360.org/dsg.aspx?Data_Set_Group_Id=1363)). In 2004, the Fed shifted to tighten its monetary policy by raising the federal funds target rate and in less than 2 years since, the rate went up to 5% from 1%. Slowing down of the housing market also began in 2006.



As a result, refinance cost became more expensive and the number of foreclosures steeply increased towards 2007. Mortgage Fraud Behind risky mortgage and lending practices through relaxing the mortgage qualification guidelines and documentation requirements for mortgage lending, there is a tremendous increase of mortgage fraud activities flourishing in an environment of collapsing lending standards and lax regulations. Weak underwriting standards and unsound management practices had allowed mortgage fraud operators to exploit the various lending institutions and avoid detection.

Mortgage Fraud Schemes employ some type of material misstatement, misrepresentation, or omission relating to the property or potential borrower which is relied on by an underwriter to fund, purchase, or insure a loan. Mortgage fraud perpetrators often obtain loans by misrepresenting the value of the collaterals, or their qualifications in receiving the loan, and stealing the proceeds of the loan without intention for repayments. (Source: 2009 Financial Crimes Report, The FBI. <http://www.fbi.gov/stats-services/publications/financial-crimes-report-2009/financial-crimes-report-2009#mortgage>) Some examples of the mortgage fraud include inflated appraisals, fictitious or stolen identities, nominee buyers, false loan applications, fraudulent loan documentations, and kickbacks. Mortgage frauds often caused the lender to hold the inflated collaterals and incurring significant losses. There was a tremendous increase in filing of Suspicious Activity Reports (SARS) pertaining to mortgage fraud during the build up to subprime crisis.

The number of mortgage fraud SARS filed by the federally-insured financial institutions have grown from 6, 396 in FY2003 to 67, 190 in FY2009, an exponential growth of more than ten times. There is no specific data on the total dollar loss attributed to mortgage fraud, however, based on the losses reported on depository institutions SARS accounts to about US\$1. 5 billion in FY 2008; and almost \$1. 2 billion for the first half of FY2009. (Source: The Detection and Deterrence of Mortgage Fraud Against Financial Institutions: A White Paper, Produced by the July 13 - 24, 2009 FFIEC Fraud Investigations Symposium).

Another study places the loss resulting from fraud on mortgage loan made between FY2005 and FY2007 at US\$112 billion. (Source: Subprime mortgage crisis - Wikipedia, the free encyclopedia). The chart below shows the estimated mortgage fraud losses between FY2004 to FY2009. Stats & Services, Reports & Publication, Mortgage Fraud Report 2008, FBI [pic]

Securitization Practices Securitization is a process whereby loans or other income generating assets are bundled to create bonds which can be sold to investors. The modern version of U. S. ortgage securitization started in the 1980, as Government Sponsored Enterprise (GSEs) began to pool relatively safe conventional conforming mortgages, sell bonds to investors, and guarantee those bonds against defaults on the underlying mortgages. (Source: Competition and Crisis in Mortgage Securitization, Michael Simkovic) But over the years, the US government had relaxed the regulation on mortgage securitization, allowing private banks to pool non-conforming mortgages for securitization, and not guaranteeing the bonds against defaults of the underlying mortgages.

These bonds, unlike the GSE securitization, transfers both the interest rate risk and the default risks to the investors. Despite its riskier nature, these subprime, non-guaranteed securities remains popular amongst the investors. This is partly caused by the substantial growth in wealth in the emerging economies starting the 90s. This created a pool of investors worldwide who were always hunting for maximum return. That is a giant pool of money was created approximately \$70 trillion in worldwide fixed income investments which was constantly looking for a high rate of return.

This pool of money approximately doubled between 2000 and 2007.

However there were not many income generating investments to satiate this pool of money. Understanding the market requirements investment banks came up with products like the mortgage backed securities (MBS) and collateralized debt obligations (CDO), (Source: Finance Markets, Financial Crisis Of 2007-2009- Causes And Impact On Global Economy Part II) which gives higher yields than what is offered by the U. S. Treasury bonds.

As of the second quarter 2011 there is about \$13. 7 trillion in total U. S. mortgage debt outstanding (Source: Federal Reserve Statistical Release).

There are about \$8. 5 trillion in total U. S. mortgage-related securities.

(Source: Securities Industries and Financial Markets Association Statistical Release). About \$7 trillion of that is securitized or guaranteed by government sponsored enterprises (GSEs) or government agencies, the remaining \$1. 5 trillion pooled by private mortgage conduits. Source: Federal Reserve

Statistical Release) Mortgage backed securities can be considered to have been in the tens of trillions, if Credit Default Swaps are taken into account.

Critics have suggested that the complexity inherent in securitization can

<https://assignbuster.com/a-brief-overview-of-the-subprime-crisis-essay/>

limit investors ability to monitor risk, and that competitive securitization markets with multiple securitizers may be particularly prone to sharp declines in underwriting standards. Private, competitive mortgage securitization is believed to have played an important role in the U.

S. subprime mortgage crisis. (Source: Competition and Crisis in Mortgage Securitization, Michael Simkovic) In addition, off-balance sheet treatment for securitizations coupled with guarantees from the issuer are said to make the securitizing firm's leverage less transparent, thereby facilitating risky capital structures and allowing credit risk under-pricing. Off balance sheet securitizations are believed to have played a large role in the high leverage ratio of U. S. financial institutions before the financial crisis. Source: Secret Liens and the Financial Crisis of 2008, American Bankruptcy Law Journal, Vol. 83, p. 253, 2009, Michael Simkovic) Inaccurate Credit Ratings Credit rating agencies are companies that assign credit ratings for issuers of debt obligations and the debt instruments themselves. The credit rating assigned to the issuer often takes into account the credit worthiness of the issuer, and affects the interest rate applied to the debt obligation. Credit ratings are used by investors, issuers, investment banks, broker-dealers, and governments.

For investors, credit rating agencies increase the range of investment alternatives and provide independent, easy-to-use measurements of relative credit risk; this generally increases the efficiency of the market, lowering costs for both borrowers and lenders. This in turn increases the total supply of risk capital in the economy, leading to stronger growth. (Source: Credit Rating Agencies, Wikipedia, the free encyclopedia) There are 3 Big

<https://assignbuster.com/a-brief-overview-of-the-subprime-crisis-essay/>

Companies that are most known to the industry. They are Standard & Poors, Moody's Investors Services, and Fitch Ratings.

The first 2 companies each controls 40% of the market; while the later controls 14% of the market. The Financial Crisis Inquiry Commission reported in January 2011 that: " The three credit rating agencies were key enablers of the financial meltdown. The mortgage-related securities at the heart of the crisis could not have been marketed and sold without their seal of approval. Investors relied on them, often blindly. In some cases, they were obligated to use them, or regulatory capital standards were hinged on them. This crisis could not have happened without the rating agencies.

Their ratings helped the market soar and their downgrades through 2007 and 2008 wreaked havoc across markets and firms. " (Source: FCIC Final Report - Conclusions - Jan 2011) Credit Rating Agencies have been widely criticized in making errors of judgment in rating structured products, particularly in assigning AAA ratings to structured debt, which in a large number of cases has subsequently been downgraded or defaulted. The table below shows the amount and rate of downgrades on MBS, which consequently leads to the subprime crisis: Mortgage-Backed Securities (MBS) Downgrades pic] The actual method by which Moody's rates CDOs has also come under scrutiny. If default models are biased to include arbitrary default data and " Ratings Factors are biased low compared to the true level of expected defaults, the Moody's method will not generate an appropriate level of average defaults in its default distribution process. As a result, the perceived default probability of rated tranches from a high yield CDO will be incorrectly biased downward, providing a false sense of confidence to rating

<https://assignbuster.com/a-brief-overview-of-the-subprime-crisis-essay/>

agencies and investors. Source: Wadden IV, William "Biv" (2002). "Interpreting Moody's Historical Default Rate Data") Little has been done by rating agencies to address these shortcomings indicating a lack of incentive for quality ratings of credit in the modern CRA industry. It did not help that an incestuous relationship between financial institutions and the credit agencies developed such that, banks began to leverage the credit ratings off one another and 'shop' around amongst the three big credit agencies until they found the best ratings for their CDOs.

Often they would add and remove loans of various quality until they met the minimum standards for a desired rating, usually, AAA rating. Often the fees on such ratings were \$300,000 - \$500,000, but ran up to \$1 million.

(Source: Wayne, Leslie (15 July 2009). "Calpers Sues Over Ratings of Securities". The New York Times) Many of the structured financial products that they were responsible for rating, consisted of lower quality 'BBB' rated loans, but were, when pooled together into CDOs, assigned an AAA rating.

Another contributor is the structure of the Basel II agreement, which permits the bank to use credit ratings to calculate the capital reserve requirements. For example under Basel II, a AAA rated securitization requires capital allocation of only 0.6%, a BBB requires 4.8%, a BB requires 34%, whilst a BB(-) securitization requires a 52% allocation. Given the structure of the Basel II agreements, CDOs capital requirement rose 'exponentially' when credit rating agencies created multiple downgrades on CDO and MBS portfolios, which eventually led to the capital squeeze during the subprime crisis.

Government Policy There is no denying that the current financial crisis has delivered a major seismic shock to the policy landscape. Government implemented regulation and deregulation were both equally responsible for the subprime mortgage crisis. Low-quality mortgages raised important questions about whether the mortgage meltdown would have been so destructive if those government policies had not existed. In early 1982, US Congress accepted Alternative Mortgage Transaction Parity Act which was about creating Adjustable Interest Rate Mortgages for citizens in order to increase house ownership in US.

This new system got popularity and credited replacing with fixed-rate, amortizing mortgages. Some politicians and financial industries claimed that system lead to mortgages crisis but Federal Reserve Economics and some independent academic researches advise that claim was not accurate.

Nearly, 90% of subprime mortgages issued between 2006 and 2009 and higher percentage of the loans went to lower income families. Ratio of Adjustable Rate Prime Mortgage Foreclosures to Fixed Rate Prime Mortgage Foreclosures [pic]

This chart shows from 2006, the ARPM are increasing until 2009. Fannie Mae and Freddie Mac purchased 42% of subprime mortgage load in order to issue for below than medium income families in 1990. However, this numbers increased to 50% in 2000 and 52% in 2005. Fannie Mae and Freddie Mac bought \$175 billion loan per year. Financial Crisis Inquiry Commission claimed that the financial crisis could be avoided if the private sectors had not taken to much risk like Fannie Mae. On the other hand, Fannie & Freddie was not prime reason for contributing to the crisis.

<https://assignbuster.com/a-brief-overview-of-the-subprime-crisis-essay/>

According to some research, the prime reason for contributing to the crisis is Community Reinvestment Act (CRA). Reason is the CRA encourage banking institutions to help meet the credit needs of lower-income borrowers and areas, the law pushed banking institutions to undertake high-risk mortgage lending. Policy of Central Banks Central banks protect the government banking system from failure and they manage the monetary policy. Main goal of central banks is control their currency providing stable price, in other word, protecting from inflations.

That is why Central Banks less worry about asset price bubble and housing bubble. Central Banks try to minimize the affection to the government economy after crisis occurs and they have some authority on commercial banks. Some criticizes claimed that Federal reserve`s act encourage to rise Moral Hazard which played central role for the crisis which is one party responsible for another party`s interest, but has an incentive to put his or her own interests first. Some criticizes claimed that overrated Moral Hazard lead to the crisis.

How Long Term Capital Management Failed? In September 1998, Long Term Capital Management (LCTM) avoided bankruptcy when a group of its major creditors, meeting at the Federal Reserve Bank of New York, worked out a restructuring deal that recapitalized the firm. These restructuring and federal reserves could be instructive thinking for the Federal Reserve`s role in replying to financial crisis. The Federal Reserve`s intervened because it was concerned about the possibility of dire consequences for world financial markets if it endorsed the firm to fail.



That rescue encourage more call regulations on hedge-funds so at that time Federal Reserve's had believe which was " Too big to fail". Any fail could huge effect to financial crisis because Federal Reserve's let huge amount of fund go. Too big to fail encourages irresponsible risk taking by financial firms, which makes them weaker and financial markets more fragile. Any fail could have serious consequence for long term stability. If the economy is stable, more individual give some monetary incentive to make themselves to be financial strong.

Federal Reserve's put individual firms in difficulties, that weakens their incentive to maintain their own financial health and so makes it more likely that they will eventually get into difficulties. In 2000, after Fed lowered the federal fund rate from 6.5% to 1%, that decision effected to houses' price increase and lead to House Bubble. Federal Reserve's thought that low interest rate is safety because inflation rate is quite low. Some criticizes said Fed's interest policy was wrong, because the true inflation rate was higher than Fed's measured inflation rate.

However, Federal reserve's increased federal fund interest rate significantly during 2004-2006 than ARM interest rate became too high for home owners which became riskier to speculate in housing. Financial Sectors Debt Level From 1997 to 2007, financial institutions' debt level increase from 3 trillion to 36 trillion dollars which higher than share of gross domestic product in USA. The nature of most Wall Street firms changed. The fall on Wall Street was even steeper, with the Dow Jones Industrial Average losing 504 points, or 4.42 percent.

There is every indication that the sell-off will intensify, with the full implications of the collapse of the two Wall Street banks as yet far from clear. The profitability of the U. S. commercial banking industry remained strong again in 2005, although it was a bit below the levels of recent years. Asset quality was still sound, but pressure on net interest margins lowered the return on assets, and an increase in equity relative to assets—owing to an accumulation of goodwill from recent large mergers—pushed down the return on equity more substantially.

For instance, in 2005 10 largest US commercial banks owned 55% industrial assets. On the other side, most of the financial institutions and investment banks were issuing large amount of debt during 2004-2007 to invest for MBS (Mortgage-backed securities). MBS accepted the house price would continue rising and the debt owners would continue paying their debt. The investment proceed was borrowing with low interest rate and investing proceed was high interest rate. But when house prices start declining, private investors, investment banks and financial institution suffered from large amount of loses in 2007.

In 2004, net capital rule was decided by SEC which was about large investment banks for an exemption from an old regulation limiting the amount of debt that their brokerage units could take on. The exemption would release millions of dollars that were in reserve as a cushion against the brokerage units' investment losses. The released funds could then be used by a parent company to invest in credit derivatives, mortgage-backed securities, and other instruments. Five institutions (Lehman Brothers, Merrill Lynch, Bear Sterns, Goldman Sachs and Morgan Stanley) issued \$ 4. 1 rillion

debt in 2007 which was about 30% of GDP of US in 2007. From 2008, three largest investment banks of United State went to bankrupts which are Lehman Brothers, Bear Stearns and Merrill Lynch. Other two investment banks opted to commercial bank. Morgan Stanley and Goldman Sachs Group, the remaining independent Wall Street brokerages, threw in the towel today and converted to traditional bank holding companies, placing themselves under the regulatory supervision of numerous federal regulatory agencies. This chart clearly explained five largest investment banks increasing their leverage by holding less capital from 2005.

Leverage Ratio for Investment Banks as of FY End 2002-2008 [pic] Four largest depositor banks moved to 5.2 trillion asset and liability by proposing increase asset during boom time but during crisis time their losses during the crisis occurred. Also, Wall Street executives took \$23.9 billion for short term risk investment while ignoring long term obligations. Top risk managers from Wall Street did not understand how that investment works.

Collateralized Debt Obligations The structure of a CDO creates value for investors by constructing a product with diversified assets that serve to reduce risks.

In a typical CDO, a "tranche" of assets like loans, bonds or mortgages are packaged together and sold as a common product. The underlying logic is that it was unlikely that all the mortgage loans in the CDO assets would end up in default. It allowed investors to diversify risk by owning small segments of multiple assets with similar risk characteristics. Consequently, the ability of the CDO to spread risk is highly dependent on the nature and quality of underlying assets.

To create a mortgage CDO, an underwriter (for example an investment bank), would buy mortgages in bulk from a mortgage lender (through mortgage backed securities, typically issued in the form of bonds). It would then group the mortgages of similar risk profiles into 3 categories; senior, mezzanine and equity. The senior tranche would be rated AAA, the mezzanine tranche AA+, and the equity tranche lower than AA+. The tranches would then be sold to different investors, with the highest risk tranche drawing the highest returns in the form of monthly payouts.

As the monthly mortgage payments were made, the investors in the lowest risk tranche would receive their payment first, followed by the medium risk investors and lastly, the highest risk investors. This is known as the waterfall effect. By 2007, the CDO market in the US was estimated to be worth over USD350 billion (Deutsche Bank 2007, Global CDO Market: Overview and Outlook), with over 65% of the market composed of MBS CDOs (DBRS 2009, Rating US ABS CDO Restructuring). Two particularly infamous CDOs were the subprime CDOs and synthetic CDOs.

To overcome the lower sales of the equity tranches (which consisted mainly of subprime mortgages), the underwriters packaged subprime mortgages into CDOs. Using the same methodology, they converted parts of these tranches, which were originally rated less than AA into AAA and AA+ tranches. The flawed assumption that was utilized in creating these CDOs was that it was not possible for majority of the loans to go into default at the same time, despite them being subprime mortgages. Synthetic CDOs were created using CDS as the underlying assets.

This would be described in the next section. Credit Default Swaps A Credit Default Swap (CDS) is a derivative instrument traditionally used by lenders to hedge against default risk. In the “vanilla” form of CDS, a single reference entity (usually a loan or bond) is identified. The seller of the CDS helps the buyer hedge the risk of a loan default by agreeing to buy the reference entity at par (or paying the par equivalent in cash). In exchange the buyer will make regular premium payments to the seller for the duration of the contract.

These premium payments are usually calculated as a percentage of the notional amount, which is the face value of the reference entity. CDSs play a critical role in the market, lowering the cost of debt by reducing the risk of debt issuers. By diversifying risks, CDS also increase the willingness of credit providers to lend (Intercontinental Exchange Inc, March 2010, Global Credit Derivatives Markets Overview: Evolution, Standardization and Clearing).

There are many forms of CDSs, the most risky being naked CDSs. A naked CDS is one where the protection buyer does not own the reference entity.

In buying a naked CDS, the protection buyer is speculating on the credit worthiness of the reference entity. If the reference entity faced a credit event, then the buyer would profit from the claim, and if the opposite happened, the buyer would have lost the value of the premiums paid to the seller. These “synthetic” CDS are easily created because there is no need for the buyer or the seller to have any ownership of the reference entity. In the run-up to the credit crisis, Synthetic CDOs were created, by citing CDSs (including CDSs) as the underlying asset.

These synthetic CDOs effectively hid the risk carried by the original reference entity, by rating them in the context of the CDO. The main concerns regarding CDS centered about the lack of regulation, which exposed the entire market to systemic risk. One key concern was that in sellers of CDS were not subject to capital holding requirements. This allowed smaller institutions with limited liquidity to sell CDS even though they did not have the ability to cover the reference entity if it defaulted. This exposed the buyer of the protection to counterparty risk.

Another concern was the sheer size of the market, which by the end of 2007, had a notional value of \$62. 2 trillion (ISDA Inc, 2010, ISDA Market Survey).

**Shadow Banking System** The Shadow Banking System is defined as “ The financial intermediaries involved in facilitating the creation of credit across the global financial system, but whose members are not subject to regulatory oversight. ” (Investopedia. com). It comprises but is not limited to hedge funds, money market funds, and structured investment vehicles (SIV).

The main reason that institutions in the system are not subject to regulatory oversight is that they do not accept deposits like typical commercial banks. Instead these institutions act as intermediaries between borrowers and lenders, profiting from the fees or interest rate differences between the borrowing and lending rate. They achieve this by securitizing loans and selling them to investors in the various markets (most notably in the OTC derivatives market). During the housing boom years, entities like SIVs would borrow from commercial banks (and other members of the traditional banking system) to buy mortgage backed securities. They would then securitize them as CDOs and other derivatives and sell them to investors like hedge funds

and other institutional investors, and pay off their short-term loans, pocketing the difference. This process created liquidity in the credit market, and generally helped reduce the cost of credit (Financial Crisis Inquiry Commission, May 2010, Preliminary Staff Report, Shadow Banking and the Financial Crisis).

While this was a profitable model during the bull years, it exposed the Shadow Banks to an inordinate amount of risk in the bear years when the underlying securities failed to provide the returns. Frozen Credit Markets The credit crisis of 2007-2009 started out essentially as a bank run in the shadow banks. When the mortgage defaults started and property prices plummeted, subprime lenders like HSBC and New Century Financial started reporting massive losses due to write-offs on subprime mortgages.

Investor confidence fell and hedge fund clients started to redeem their investments as returns weakened and risks rose. To pay off their investors, hedge funds and other shadow banks started selling their assets, which comprised a substantial proportion of subprime-linked securities, causing a flood of such securities in the market. By this time, investor confidence in such securities had fallen dramatically, and hedge funds were forced to sell them at large discounts, causing the overall value of these securities to drop.

This caused a vicious cycle that saw more redemptions, as the value of securities fell further. Another effect of the loss in confidence in CDOs and other mortgage-backed securities was that short-term debt lenders refused to provide credit to hedge funds and other shadow banks, which they traditionally did through asset-backed commercial paper. As more lenders

refused credit to shadow banks, and more redemptions occurred, hedge funds started to lose their liquidity rapidly, and eventually, many of them like the Bear-Sterns High-Grade Structured Credit Fund, declared bankruptcy.

Hedge funds were not the only ones that suffered in the credit crisis. As many commercial banks and investment banks had been exposed to mortgage-backed securities, either through their commercial paper programs, investments in CDOs or sale of CDSs, they too feared a liquidity crisis. This resulted in banks hoarding their cash positions, which saw the inter-bank lending rate dropping dramatically. The TED spread, which measures the difference between the LIBOR and the 3-month US Treasury bills rate, measures the perceived uncertainty and credit risk of inter-bank lending.

The 3-month TED spread spiked from a historical average of 20-60 basis points to a high of 240 points in August 2008 (Financial Crisis Inquiry Commission, May 2010, Preliminary Staff Report, Shadow Banking and the Financial Crisis). 3-Month TED Spread [pic] The loss of access to credit was a major blow to investment banks and shadow banks. The banks had built up huge leverage in the boom years, borrowing heavily at low rates to purchase assets through their SIVs, and in the case of banks like Lehman Brothers, to undertake the role of mortgage originators.

Massive mortgage defaults meant that cash flow from mortgages stopped, which meant that the banks had to fund their short-term debt obligations by looking to their cash reserves, obtaining more credit, or selling their assets. By 2008, the latter two options had been effectively cut-off, leaving the



banks no choice but to pay off debt using their reserves. However, the highly leveraged nature of these banks meant that some of them could not meet their debt obligations, and had to eventually seek bail-outs from the Fed or face bankruptcy.

The crash of Lehman and Bear-Stearns had a huge ripple effect on the market as they defaulted on many short-term loans, leaving many lenders with assets of rapidly declining value, and bad-debts. This caused panic in the market and saw institutional investors rapidly pulling back their funding to financial institutions, effectively freezing the credit markets as less funds were available for lending. The effect of the mortgage crisis was amplified by CDSs. As mortgage default rates increased, and CDOs and other mortgage-linked securities lost their value, the payment obligations from CDS sales started mounting. This put evere pressure on CDS sellers like AIG and Ambac. As obligations started mounting and available credit in the market dried up, guarantors like AIG had to pay claimants using their reserves, which also dried up eventually. CDS sellers would eventually default on their payment obligations, resulting in a loss of liquidity to buyers, who were typically banks and other financial institutions. 4. Conclusion As illustrated above, the Subprime Crisis did not happen on its own or just from one simple factor. Rather it was a product of numerous economic activities that occurred simultaneously or subsequently to some others.

This paper found that 1) the government policy to promote the US homeownership through deregulation of mortgage/lending practice, 2) the degree and timing of the Federal Reserve System policy of monetary easing/tightening, 3) moral hazard that pervaded in the financial sector

<https://assignbuster.com/a-brief-overview-of-the-subprime-crisis-essay/>

characterised by greed and arrogance, 4) growing size of shadow banking system eager to provide credit, 5) the financial sector's never-ending "financial innovation" to meet investors' growing demands for products with more alpha and to maximise their own profits (which in some cases prioritised over the former), 6) conflict of interest faced by rating agencies, 7) roles played by mortgage brokers/money lenders in both promoting homeownership and expanding the MBS/CDO market, 8) lack of consumer awareness on the importance of understanding terms of mortgages and their financial situations, and 9) highly leveraged financial sectors as well as households, created a bubble in the housing market. Not a single factor mentioned above failed in contributing to expansion of the MBS/CDO markets. Should the size of the MBS/CDO market much smaller than it was in the late 2000s, the scale of the crisis could have been less severe (if not avoided at all) as the drying liquidity in the market was what accelerated the pace of the crisis. ————— UNDERWRITERS