Revista ECORFAN,Vol.3,núm.6,2012,pp. 125-139

NEGOCIOS

Financial innovations: Role of CDOs, CDS and securitization during the US financial crisis 2007-2009

Bilal Aziz Poswal*

Fecha de Envió: 11 de Octubre 2011 **Fecha de Aceptación:** 28 de Marzo 2012

Resumen.

Este artículo tiene como objetivo explicar papel de los Innovacions financieras detrás de la crisis financiera 2007-2009, con especial atención en la CDOs, CDS y Securitization, su papel en el sistema financiero de Estados Unidos y cómo esos factores generan y empeoran la crisis. La crisis financiera 2007-2009 que se inicia desde el mercado de hipotecas de los Estados Unidos se extendió al sector financiero de EE.UU y más tarde se expandió al resto del mundo. Se dice que fue una crisis aún mayor que la Gran Depresión de 1929. Esta crisis es única, esto significa que en la historia del mundo no se ha visto una crisis de esta índole. En este documento se analizan las principales causas que están en el corazón de la crisis y por lo menos discutido.

Palabras clave: Permuta de incumplimiento crediticio, titulizacion ,obligación de deuda colateralizada ,derivados, títulos hipotecarios

Abstract.

This Paper seeks to explain the role of Financial Innovations behind the Financial Crisis 2007-2009 with a special focus on the Collateralized Debt Obligations, Credit Default Swaps and Securitization, there role in US Financial System and how these factors generated and worsen the crisis. Financial Crisis 2007-2009 which starts from the United States sub-prime Mortgage market and spread to US financial sector and later on spread to the rest of world is said to be the even bigger crisis than the Great Depression of 1929. This crisis is unique in this way that in history we haven't seen such a bigger impact world wide from any crisis. This paper would analyze the main causes which are right in the heart of the crisis and least discussed.

Keywords: Credit default swaps, securitization ,collateralized debt obligation, derivatives ,mortgage Back Securities (MBS).

Classification JEL: F37, F34, F33.

The Author has allegiance in the Polytechnical Institute Nacional *bilalazizposwal@hotmail.com

1.Introduction.

Innovation is said tobe blessing for the mankind but sometimes this blessing convert into curse when there is a misuse of the innovation. Financial innovations played an important role in this crisis. Introduction of so much financial innovations without ample time to judge their reliability was one of the reasons of this crisis. Although innovations always appreciated round the corner but these innovations require lot of time to implement them so that complexity of issues should be resolved.

This also happened in Financial Crisis of 2007-2009 when these innovations played a negative part. The term 'financial crisis' is used too loosely, often to denote either a banking crisis, or a debt crisis, or a foreign exchange market crisis. It is perhaps preferable to invoke it only for the 'big one': a generalized, international financial crisis. This is a nexus of foreign exchange market disturbances, debt defaults (sovereign or private), and banking system failures: a triple crisis, in which the interactions are the key to causality, depth, and persistence (Eichengreen and Portes, 1987). Financial Crises could involve either bank or currency crises or indeed, both of them could take place at the same time (Daianu & Lungu, 2008). Delargy and Goodhart (1999) argue that both the late 19th century crises and those in the late 20th were more likely when loose credit conditions in the lending countries were in place. Subsequently, when credit conditions suddenly adversely changed it generated a boom and bust economic cycle.

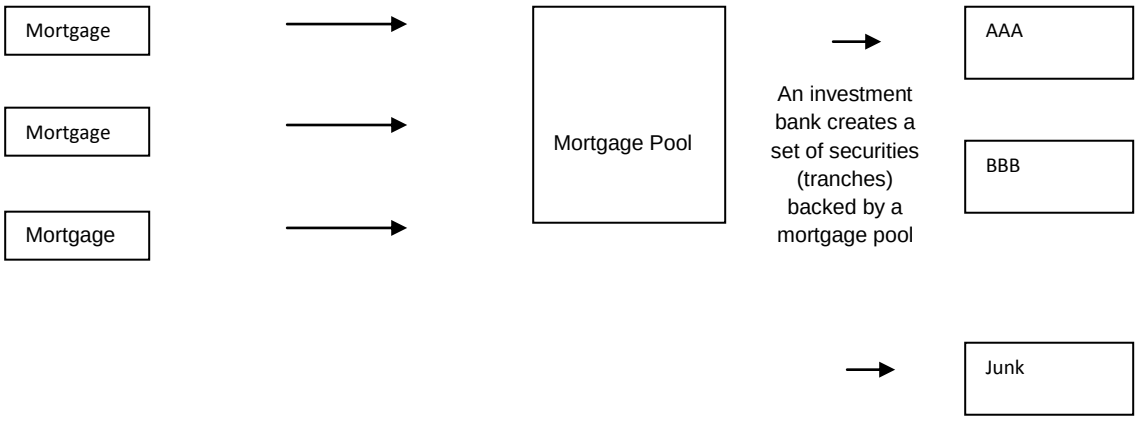
Financial Innovations especially which were introduced in 90's played a significant role in the Financial Crisis of 2007-2009. Innovations were introduced without proper verifying there results or giving them ample time to check their viability. Some of them were so complex that it creates mess in the market. Greed of profit and will to expand the market over come the general procedures.

Apart from the introduction the paper has been divided into four main parts. First we would discuss the Collateralized Debt Obligation (CDO) their structure, functions and how they participated in the Financial Crises. Secondly the Credit Default Swaps (CDS), their structure, market and how this created mess in the market. Thirdly Securitization, how it works and what's its size and how it generated and worsens the crisis. Finally we would draw some conclusions.

2. Collateralized debt obligation (CDO).

Collateralized Debt Obligations (CDOs) were created in 1987 by Drexel Burnham Lambert Inc. Within 10 years, the CDOs had become a major force in the so-called Derivates Market. CDO is created when a financial institution, such as a bank, takes the debts owed by lots of borrowers, puts them together into a pool, divides that pool into different categories based on risk called "Tranches" and then sells off those tranches to investors such as hedge funds (Kennon, 2009). By combining similar loans into pools, the lender was able to pass the mortgage payment through to the certificate holders or investors (Cameron, 2003).

According to (Wright, 2009) CDO is an asset-backed security which uses a portfolio of bonds or loans as collateral, or security. A sponsor uses the portfolio to set up a special purpose investment vehicle which issues securities or CDOs, sometimes with a higher credit rating than any of the individual underlying assets. There may be reduced transparency in assessing the underlying risks.CDO structure is bit complicated. Let's have an example of how CDO works. Mortgage brokers write loans to people with bad credit histories (or no credit histories or no verifiable income). Then the mortgage brokers sell these subprime mortgages to investment banks. The investment banks take thousands of subprime mortgages and repackage them into CDOs called mortgage backed securities.



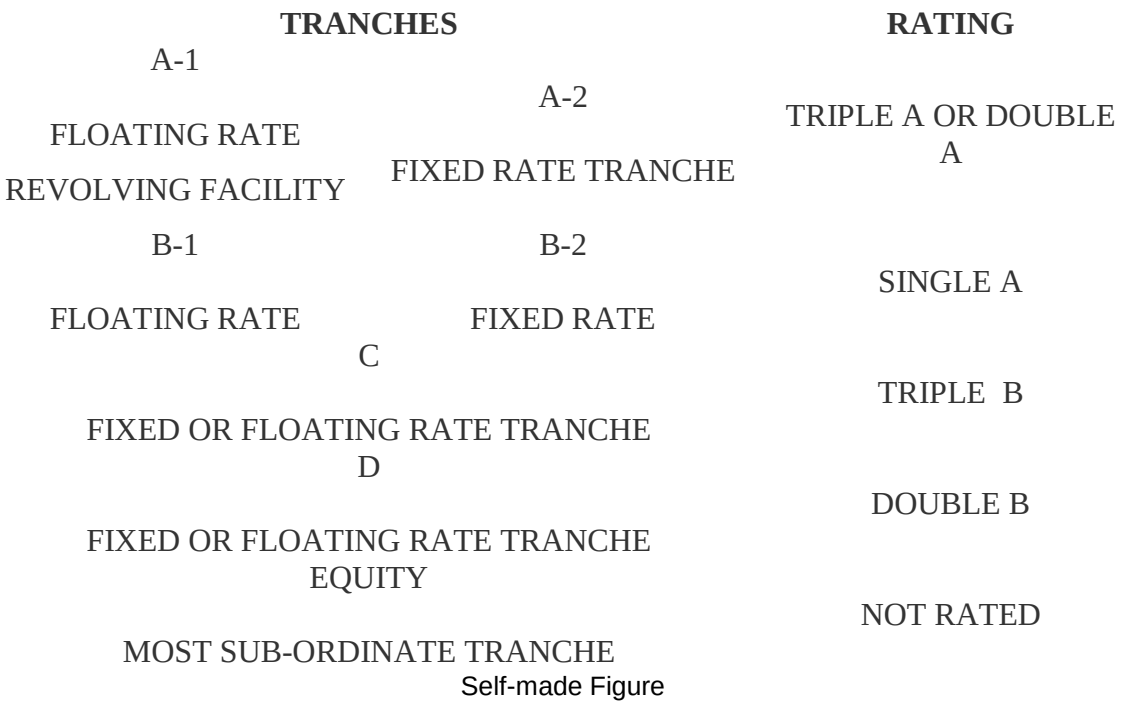
The investment banks sell these newly created securities to banks, pension funds, college saving funds, universities, cities, etc. As the mortgage holders (in most cases home owners) in this pool make their monthly payments, the AAA-security holders start receiving their payments. Once these AAA-security holders get their investment plus interest back, then the BBB-security holders start receiving payments. Assuming that the mortgage holders continue making payments, once the BBB-security holders get their promised payments, the junk bond holders start receiving payment.

In a CDO structure, there are different tranches from which debt obligations are issued to fund the purchase of the collateral assets such as MBS. Typically there are three different tranches (Josef, 2009). Understanding how those tranches work is crucial for grasping the whole concept of CDOs. The most senior tranche, often given AAA rating, is also the least risky one. The senior tranche could be for example decomposed of the 20% best assets of the CDO, meaning that those investors buying the senior tranche will only have to bear losses if more than 80% of the whole assets in the CDO default. The middle tranche (Mezzanine) comprises e.g. the next 40% of the CDO, that is to say, money is lost in case more than 40% of the whole CDO default. The third tranche, the equity tranche, has to bear any default that occurs within the CDO and is the riskiest tranche of the construction. Naturally, interest rates differ across the tranches and are highest in the equity tranche and lowest in the most senior tranche.

Each tranche except for the equity tranche carries a credit rating. For example, AAA or AA rating is typically sought for the senior tranches, whereas no less than B is for the mezzanine tranches. The equity tranches receive only the residual cash flow and hence have no credit rating assigned. Typically, each tranche includes both floating and fixed rates.

(Prince, 2005) described the relation between asset-backed securities (ABS), MBS and CDOs in which the latter two are part of the first one. He argues hat CDOs constitutes approximately 14% of outstanding debt in the ABS market. However credit card receivables, auto and home equity loans make up about 60% of all ABS (Cameron, 2003). Figure-1 below shows the basic CDO security Structure.

Figure 1. Basic CDO Security Structure.



Self-made Figure

There are two major types of CDOs – cash-flow CDOs and synthetic CDOs. In a cash-flow CDO, the issuer purchases a portfolio of underlying assets and finances its purchase by selling its own debt instruments. This legal transfer of ownership is accompanied by a transfer of the economic risks associated with the assets. Therefore, the CDO issuer creates direct exposure to the specific risks through owning the assets. In practice, cash-flow CDOs release a proportion of the regulatory capital held by financial institutions and remove illiquid bank loans from the balance sheet (Duffie and Garleanu, 2001). While synthetic CDO is a collateralized debt obligation that is based on credit default swaps rather than physical debt securities (KOHLER & ALAN, 2009). A CDS can be seen as an insurance policy which offers the buyer credit protection against default losses associated with the underlying assets. In exchange for the credit protection, the buyer in a credit default swap pays a regular premium to the seller.

Construction of CDOs is the result of a process of bargaining between the investment bank which puts them together, and the ratings agency which provides the ratings for the different tranches. The investment bank is interested in creating as large an AAA tranches as possible, while the ratings agency is concerned to ensure that certain standards are maintained. However, the agencies are subject to a serious conflict of interest as the fees for rating CDOs are about twice as high as those for rating traditional corporate bonds, and in recent years this work has generated a substantial part of rating agencies' income (Crouhy, Jarrow et al. 2009)

Annual CDO issuances went from nearly zero in 1995 to over $500 billion in 2006. As CDO issuances grew, so did the share of them that was de¬voted to mortgages. (Mason and Rosner, 2007) tell us that 81 percent of the collateral of CDO's issued in 2005 was made up of MBS, or about $200 bil¬lion. Total issues increased from $157 billion in 2004 to $551 billion in 2006. Because CDOs appeared to offer higher rates of return than other assets with comparable ratings, they were quickly bought up by investors, including insurance companies, pension funds, banks and especially hedge funds.

Table 1: Global CDO Market

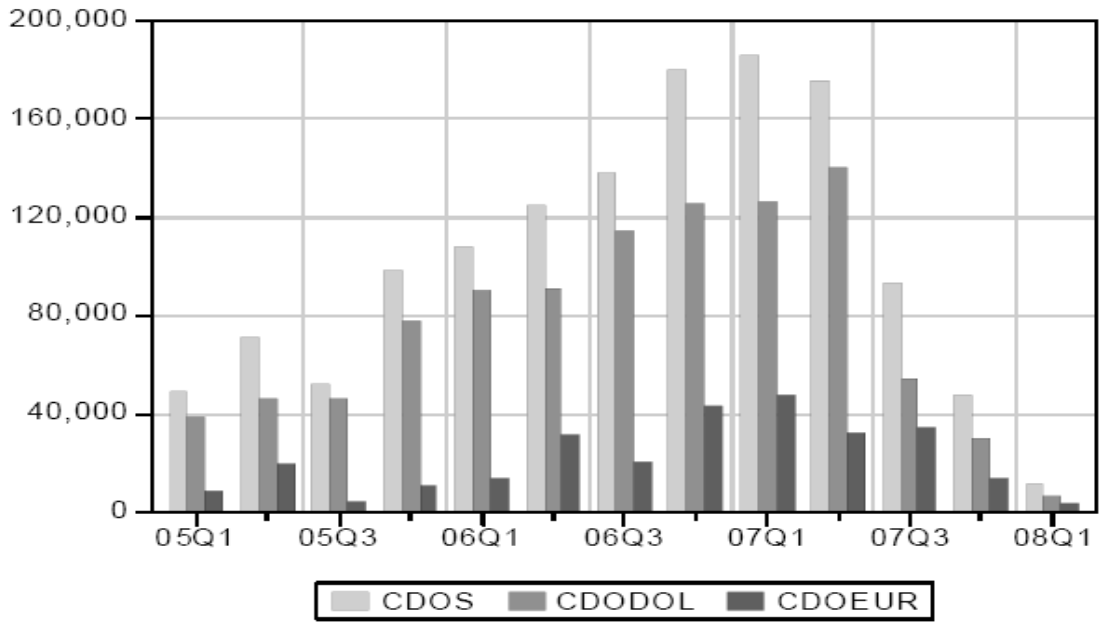
Years	Global CDO Market Total Issuance ($Millions)
2004	**157, 418.5**
2005	**271, 303.3**
2006	**551,700.6**
2007	**485,726.3**

Self made table (Data Source: sifma.org)

Figure-2 below shows the breakdown of new CDOs issuance by currency denomination, in U.S. dollars and Euros. It is worth noting that their issuance in Euros began declining already in the second quarter of 2007, that is, before the outbreak of the subprime mortgage crisis, while at the same time their dollar denominated issuance was still on the rise.

In the figure below CDOS = total issuance in USD million, while CDODOL = USD issues and CDOEUR = EUR issues. The short-lived success of CDOs was made possible by the expansion of global savings. International investors were eager to purchase these high-yielding structured products since yields on U.S. Treasury bonds, were considerably lower.

Figure 2. Global CDO market issuance: Quarterly series.



Self made figure (Data Source: sifma.org)

First break in investor's confidence came in 2007 when a wave of mortgage defaults hit the CDOs tranches (Fisher, 2009). From the first Half of 2007 to the second half, CDO issuance dropped by 50%. CDOs of subprime mortgages were at the heart of the current credit crisis, as a massive amount of senior tranches of these securitization products have been downgraded from AAA rating to non-investment grade. The reason for such an unprecedented drop in the rating of investment grade structured products was the significant increase in delinquency rates on subprime mortgages after mid-2005, especially on loans that were originated in 2005-06 (Crouhy, Jarrow et al. 2009).

Due to the downfall of housing market investors began to suspect the health of even highest tranches in some CDO instruments. Low confidence of the investors led to decrease in sales which ultimately made it difficult for banks and other institutions to perform "Mark to Market". These large write-offs in asset values by several major banks and investment institutions further make the situation more vulnerable. Rating Agencies played there role because it is very unlikely that the initial credit ratings on bonds were correct. If they had been rated correctly, there would have been downgrades, but not on such massive scale. Whatever the circumstances was the reality was that the sign of trouble was there in the CDO market. Unsurprisingly, as CDOs began experiencing losses or potential losses, the lawsuits have followed. Bethel et al. (2008) documented the CDOs on the path to liquidation and examined 193 CDOs (issued as far back as 2002), which have experienced events of default, acceleration, and liquidation.

A study by (Sabry, Sinha et al. 2009) found a tremendous increase in the losses of CDOs. They pointed out that signs of trouble means events of default (EOD), notices of acceleration, and liquidation. An event of default means the possibility of imperiled cash flows and losses to the note holders. A notice of acceleration is when the controlling note holders have voted to accelerate the maturity of the CDO notes outstanding. A notice of liquidation is when the controlling note holders have voted to terminate the CDO transaction and liquidate the portfolio collateral. A liquidation event is when assets in the collateral pool are in the process of being sold or have been sold.

A study by (Sabry, Sinha et al. 2009) for example shows $7.3 billion in aggregate CDO issuance experienced events of default in October 2007. Of these, $3.5 billion have been liquidated, $0.75 billion have issued notices of liquidation, and $3 billion have issued notices of acceleration (as of 30 May 2008).

The 193 CDOs represent approximately $215 billion in issuance. Of these, 20 CDOs ($23 billion at issuance) have been liquidated, another 18 CDOs ($15 billion at issuance) have given notices of liquidation, and 67 CDOs (representing $77 billion at issuance) have provided notices of acceleration (through May 2008). As of May 2008, 87 CDOs had provided notices of events of default (representing $98 billion at issuance) while one CDO had retracted the notice of default (approximately $2 billion at issuance). The study shows the increase in the number of defaults in CDOs market and tremendous losses attached to these markets.

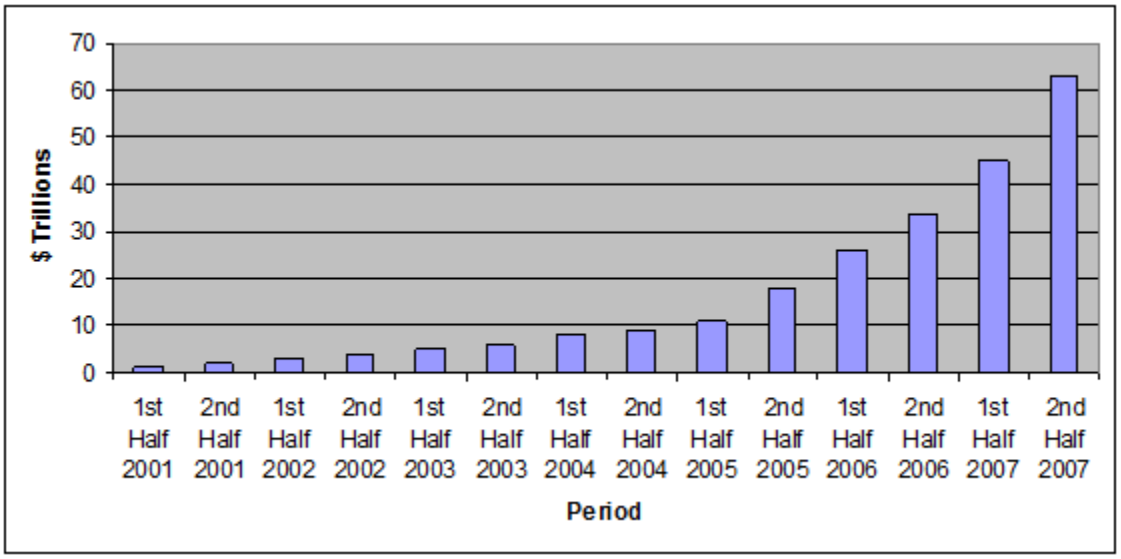
3. Credit Default Swaps (CDS).

A credit default swap (CDS) is a swap contract in which the buyer of the CDS makes a series of payments to the seller and, in exchange, receives a payoff if a credit instrument - typically a bond or loan - goes into default (fails to pay). Less commonly, the credit event that triggers the payoff can be a company undergoing restructuring, bankruptcy or even just having its credit rating downgraded.

Credit default swaps are a type of credit insurance contract in which one party pays another party to protect it from the risk of default on a particular debt instrument. If that debt instrument (a bond, a bank loan, a mortgage) defaults, the insurer compensates the insured for his loss (Lewit, 2008).

a) CDS Market: The market for the credit default swaps has been enormous. Since 2000, it has ballooned from $900 billion to more than $45.5 trillion — roughly twice the size of the entire United States stock market. The biggest player is J.P. Morgan Chase & Co., which has roughly $16 trillion to $18 trillion in CDSs while Bear Stearns Cos. has $2.5 trillion CDSs (Soros, 2008). Figure below illustrates the exponential growth in the CDS market since 2000. The size of outstanding CDS reached a stag¬gering $60 trillion in 2007. As of September 2008, AIG, a financial guarantor, had itself sold nearly $500 billion worth of CDS — most of it insuring ill-fated CDOs. This ever increasing trend reflects the interest of the investors in Credit Default Sweep (CDS).

Figure 3: Value of CDS.



Self-Made Figure (Data Source International Securities and Derivative Association)

Commercial banks are among the most active in this market, with the top 25 banks holding more than $13 trillion in credit default swaps — where they acted as either the insured or insurer — at the end of the third quarter of 2007, according to the Comptroller of the Currency, a federal banking regulator: JP Morgan Chase, Citibank, Bank of America and Wachovia were ranked among the top four most active members.

Credit default swaps were seen as easy money for banks when they were first launched more than a decade ago because the economy was booming and corporate defaults were few back then, making the swaps a low-risk way to collect premiums and earn extra cash. The swaps focused primarily on municipal bonds and corporate debt in the 1990s, not on structured finance securities. Investors flocked to the swaps in the belief that big corporations would seldom go bust in such flourishing economic times (Morrissey 2008).

The amount at stake on the Credit Default Swap market is more than the World GDP (Varcharver, 2008). According to Varcharver (2008) because CDS are contracts rather than securities or insurance, they are easy to create: Often deals are done in a one-minute phone conversation or an instant message.

Many technical aspects of CDS, such as the typical five-year term, have been standardized by the International Swaps and Derivatives Association (ISDA). That only accelerates the process. You strike your deal, fill out some forms, and you've got yourself a $5 million - or a $100 million - contract. Due to the housing boom and Federal

Reserve cut interest rates, Americans started buying homes in record numbers, mortgage-backed securities became the hot new investment.

Mortgages were pooled together, and sliced and diced into bonds that were bought by just about every financial institution imaginable: investment banks, commercial banks, hedge funds, pension funds. For many of those mortgage-backed securities, credit default swaps were taken out to protect against default. "These structures were such a great deal, everyone and their dog decided to jump in, which led to massive growth in the CDS market," says Rohan Douglas, who ran Salomon Brothers and Citigroup's global credit swaps research division through the 1990s (Philips, 2008).

According to Gilani (2008) Credit default swaps are not standardized instruments. In fact, they technically aren't true securities in the classic sense of the word in that they're not transparent, aren't traded on any exchange, aren't subject to present securities laws, and aren't regulated.

Then suddenly party becomes over when certain insurance companies such as American International Group (AIG), the world's largest insurer, MBIA and Ambac Financial Group Inc. faced rating downgrades because widespread mortgage defaults increased heir potential exposure to CDS losses. These firms had to obtain additional funds to offset this exposure.

A rating downgrade of these companies was devastating for banks and others who bought insurance protection from them to cover their corporate bond exposure (Morrissey 2008). When investment bank Lehman Brothers went bankrupt in September 2008, there was much uncertainty as to which financial firms would be required to honor the CDS contracts on its $600 billion of bonds outstanding. Merrill Lynch's large losses in 2008 were attributed in part to the drop in value of its un-hedged portfolio of collateralized debt obligations (CDOs) after AIG ceased offering CDS on Merrill's CDOs. The loss of confidence of trading partners in Merrill Lynch's solvency and its ability to refinance its short-term debt led to its acquisition by the Bank of America. This situation triggered panic between investors and the lead to the collapse of the shadow Banking System.

"It made it a lot easier for some people to get into trouble," says Darrell Duffie, an economist at Stanford. Although he believes credit default swaps have been "dramatically misused," Duffie says he still believes they're a very effective tool and shouldn't be done away with entirely. Besides, he says, "If you outlaw them, then the financial engineers will just come up with something else that gets around the regulation."

4. Securitization Practices.

Asset securitization or Securitization refers to the process that involves the pooling and repackaging of fixed income assets(loans) and the issuance of securities backed by these assets in the secondary market (Fabozzi and Modigliani, 2003).

Mortgage securitization is a particular type of asset securitization, specialized to issue securities collateralized by mortgage loans (liu, 2007). The Term "securitization" is derived from the fact that the form of financial instruments used to obtain funds from the investors is securities. In a simple lending scenario, a lender who decides to transfer mortgages loans into the secondary market through securitization will legally sell his loans to a company called Special Purpose Vehicle (SPV). "The investment banker hires "Econometricians" or financial economists to demonstrate that the risks of default on interest and principle of some class of the securities it proposes to issue are so small that these instruments deserve to have an investment rating that implies a low interest rate" (Minsky,1987).

According to (Kuttner, 2007) securitized loans played a major role in the 1920s speculation that helped to bring on the 1930s collapse. While securitization is usually presented as a technological innovation that came out of private sector initiative to spread risk, in reality –as (Minsky, 1987) argued-it was a response to policy initiated by Chairman Volker in 1979 (Wray, 2007). Securitization allowed mortgage lenders to bypass traditional banks. Securitization pools mortgages or other debts and sells them to investors in the form of bonds rather than leaving loans of lender's balance sheets. (Getter, Jickling et al. 2007). Securitization was seen as a solution to the problems with the S&L model, as it freed mortgage lenders from the liquidity constraint of their balance sheets.

Under the S&L system□, lenders could only make a limited number of loans based on the size of their balance sheet. The new system allowed lenders to sell off loans to a third-party, take it off their books, and use that money to make even more loans. The Government Sponsored Enterprises (GSEs), notably Fannie Mae and Freddie Mac, were created by the federal government in 1938 and 1970, respectively, to perform precisely this function: the GSE's bought mortgage loans that met certain conditions (called "conforming loans") from banks in order to facilitate mortgage lending and (theoretically) lower mortgage interest rates.

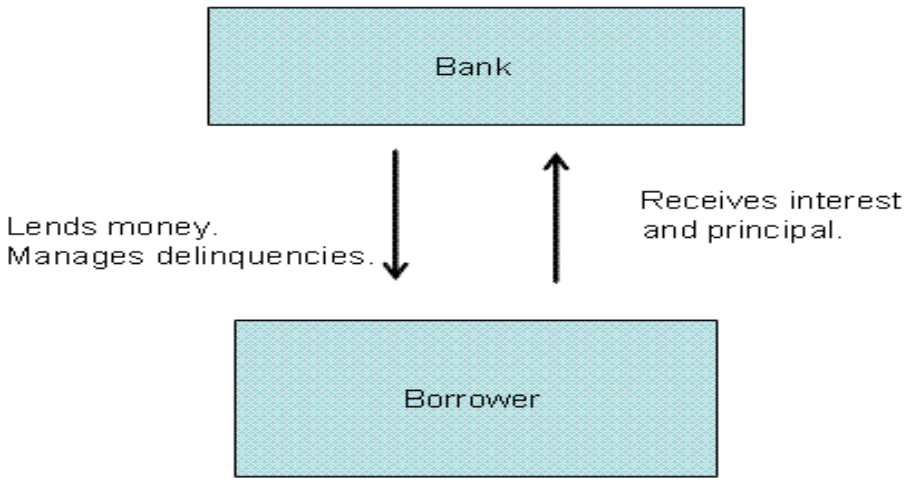
5. Securitization Structure.

Prior to the widespread use of securitization, home finance typically involved a bank or savings institution granting a loan to a borrower. The lending institution would make the decision to grant credit, fund the loan, and collect payments. In the event of borrower default, the same institution could choose to restructure the loan or foreclose on the property. The lender also might have an established relationship with the borrower, and, thus, be able to evaluate the relative long-term benefits of various alternatives. This relatively simple relationship between the borrower and lender illustrated in the diagram below has given way to a far more complicated securitization structure which includes multiple parties, each with unique and often divergent interests.

According to a study by FDIC the volume of subprime loans included in private-label securitizations grew to at least $672 billion by year-end 2006. Approximately 75 percent of the estimated $600 billion of subprime mortgages originated in 2006 were funded by securitizations.

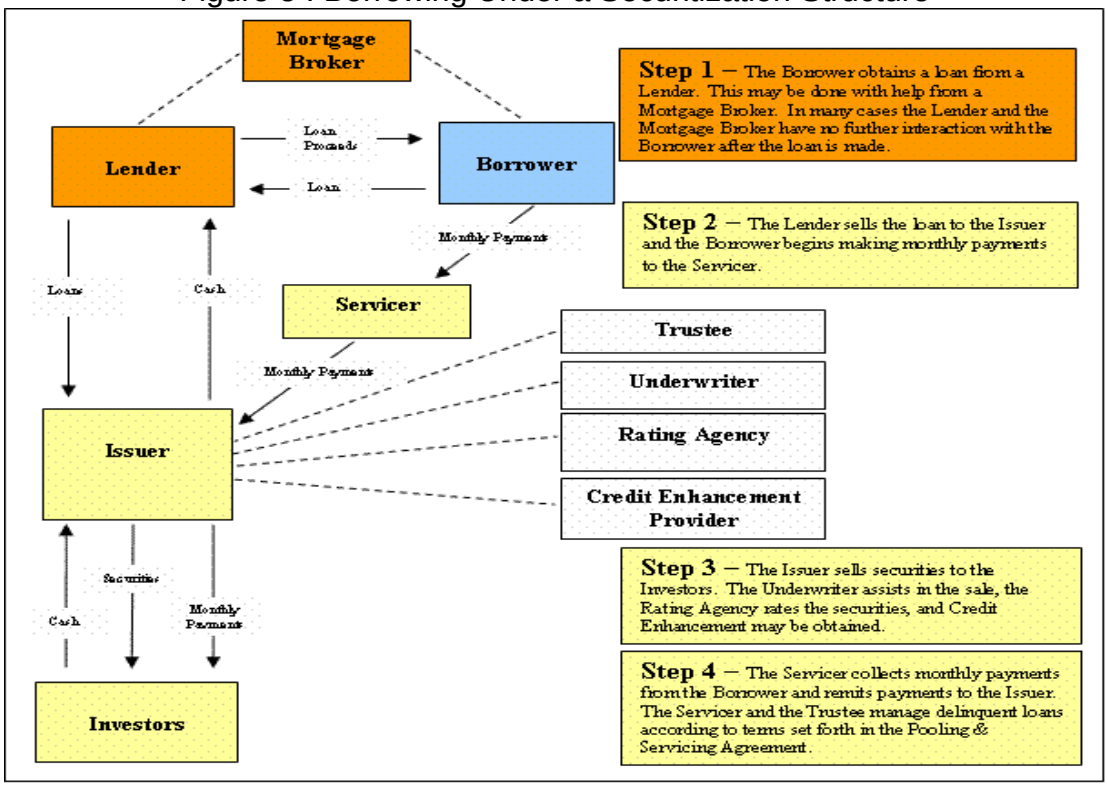
Thus a substantial portion of subprime mortgages are ultimately funded by securitizations.Figure-4 below shows the traditional Borrower/lender Relationship while Figure -5 below shows the borrowing under the securitization.

Figure 4: The Traditional Borrower/Lender Relationship



Self-made Figure

Figure 5 : Borrowing Under a Securitization Structure



Source: Federal Deposit Insurance Company (FDIC) www.fdic.gov

Securitization accelerated in Mid-1990s. The total amount of mortgage-backed securities issued almost tripled between 1996 and 2007to $7.3 trillion. The securitized share of subprime mortgages increased from 54% in 2001 to 75% in 2006. The securitization market started to close down in the spring 2007 and nearly shut-down in the fall of 2008. More than a third of the private credit markets thus became unavailable as a source of funds (Dymyanyk & Otto, 2008).

Securitization was already well established among conforming loans, as the GSEs had been securitizing them for two decades; 72 percent of conforming loans were securitized in 2001. The real boom in securitization since 2001 came from subprime, as the share of these loans that were securitized had jumped 75 percent since 2001.In light of the central role of the subprime mortgage market in the current crisis, critiques of the securitization process have gained increased prominence (Blinder & Stieglitz, 2007). Connection between securitization and subprime crisis relates to flaws on the part of underwriters, rate agencies and investors. There was inadequate disclosure and excessive reliance on untested models and ratings. While securitization was meant spread out risk away from the center of the financial system, exactly the opposite happened. When the credit crisis hit in August 2007, risk that was meant to be dispersed throughout the system was in fact heavily concentrated among leveraged institutions at the heart of the financial system (Baily et al. 2007).

In the wake of the subprime mortgage crisis, a central question confronting market participants and policymakers is whether securitization had an adverse effect on the ex-ante screening efforts of loan originators and leads to Crisis. A study by (Keys, Mukherjee et al. 2008) shows that doubling of securitization volume is on average associated with about a 10-25% increase in defaults. However, delinquencies in the heavily securitized subprime housing market increased by 50% from 2005 to 2007, forcing many mortgage lenders out of business and setting off a wave of financial crises which spread worldwide. "Any effect on default behavior in one portfolio compared to another with virtually identical risk profiles, demographic characteristics, and loan terms suggests that the ease of securitization may have a direct impact on incentives elsewhere in the subprime housing market, as well as in other securitized markets" (Keys, Mukherjee et al. 2008). Securitization of mortgage assets went beyond the point of value and created assets that were not transparent. We know from economic theory that markets with information asymmetries are trouble and the compounding layers of securitization seem to have been designed to exacerbate this problem (Baily, Litan et al. 2007).

6. Conclusions.

Financial institutions and credit rating agencies embraced mathematical models as reliable predictors of risks, replacing judgment in too many instances. Too often, risk management became risk justification.

Tremendous increase in CDO was possible due to the Expansion of Global Savings. First break in investor's confidence came in 2007 when a wave of mortgage defaults hit the CDOs tranches. From the first Half of 2007 to the second half, CDO issuance dropped by 50%. Significant increase in delinquency rates on subprime mortgages after mid-2005, especially on loans that were originated in 2005-06. CDOs of subprime mortgages were at the heart of the current credit crisis, as a massive amount of senior tranches of these securitization products have been downgraded from AAA rating to non-investment grade. The reason was significant increase in delinquency rates on subprime mortgages after mid-2005

According to a study by FDIC the volume of subprime loans included in private-label securitizations grew to at least $672 billion by year-end 2006. Approximately 75 percent of the estimated $600 billion of subprime mortgages originated in 2006 were funded by securitizations. Thus a substantial portion of subprime mortgages are ultimately funded by securitizations.

A study by (Keys, Mukherjee et al. 2008) shows that doubling of securitization volume is on average associated with about a 10-25% increase in defaults delinquencies in the heavily securitized subprime housing market increased by 50% from 2005 to 2007, forcing many mortgage lenders out of business and setting off a wave of financial crises which spread worldwide. Securitization of mortgage assets went beyond the point of value and created assets that were not transparent.

7.References.

A.G. Dymski (1997): Deciphering Minsky's Wall Street Paradigm. Journal of economic issues. Vol. 31 No. 2

Artzner, P., F. Delbaen, J.-M. Eber and D. Heath (1999) "Coherent measures of risk." Mathematical Finance 9 (3): 203-228.

Amanda Bahena (2008) "What role did credit rating agencies (CRAs) play in the financial Crisis?"

Andrew Leonard: (Oct 2008) "Should Mark-to-Market Asset Valuation be suspended?" The Economist

Ben S. Bernanke (April 2009), "Financial innovation and Consumer Protection"

Bernanke, B. (2007): "Global Imbalances: Recent Developments and Prospects."

Benjamin Keys, Tanmoy Mukherjee, Amit Seru and Vikrant Vig "Did Securitization leads to lax screening? Evidence from sub prime loans"

Berman, Eli; John Bound y Stephen Machin, 1997, "Implication of Skill-Biased

Technological Change: International Evidence", National Bureau of Economic

Research, working paper, núm. 6166, Cambridge, Mass., Cambridge Press, pp. 1-40.

Berg, A. and J. Sachs (1988), "The debt crisis structural explanations of country performance"

Cameron L. (November 2003) "Securitization: The Financial Instrument of the future, hearing on protecting homeowners: Preventing abusive lending while preserving access to credit".

Estévez Pablo García "Collateralized Debt Obligation (CDO)".

Firla-Cuchra, M., and Jenkinson, T. (2006) "Why are Securitization Issues Tranched? [Online]. Available from: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=676730

Fisher David, (2009) "Collateralized Debt Obligations (CDOs) - A Complicated Way to Spread Risk crisis".

Geithner, Timothy (March, 2007) "Credit Markets Innovations and their Implications"

Kregel, Jan. (2007a.) "Financial Innovation and Crises"

Matthew Yglesias (April, 2009) "financial innovation and financial compensation"

Merton, Robert (2008) “innovation will continue”

Morduch, Jonathan y Terry Sicular, 2002, “Rethinking Inequality Decomposition, with Evidence from Rural China”, Economic Journal, vol. 112, no. 476, Princeton, John Wiley-Royal Economic Society, pp. 93-106.

Shorrocks, Anthony, 1982, “Inequality Decomposition by Factor Components”, Econometrica, vol. 50, no. 1, Chicago, mit-Press, pp. 193-211

Silber, Jaques, 1989, “Factor Components, Population Subgroups and the Computation of the Gini Index of Inequality”, The Review of Economics and Statistics, 71, Chicago, mit-Press, pp. 107-115.

Shiller, Robert (July2009)”Financial Innovation VS Consumer Protection”

Siobhan Kennedy (November 2007) “Embattled bank faces SEC inquiry over SIVs”

Smith, A. (1976) The Wealth of Nations. Oxford: Oxford University Press

Wray, R. L. (2008): Financial Markets Meltdown. What can we learn from Minsky? The Levy Economics of Bard College. Public Policy Brief. No. 94

Wray, R. L., Papadimitriou, B. D.(1999): Minsky’s Analysis of Financial Capitalism. The Jerome Levy Economics Institute. Working Paper. No. 275