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Lending Money Problem: Causes and Effects of Subprime Mortgage Crisis

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ABSTRACT:
The banking industry in India, however, seems to be impervious to a global slowdown, and is not disconnected from the world economy. The economic instability and slowdown in developed countries, especially in the US, may affect the economic stability and banking industry of India to a great extent. The economic slowdown and declining banking industry in the US in the last decade, however, not much affected its counterpart in India, laid down remarkable influence in India and its sub-continental economy. The line of action, the banking industry in India is going along with might face a similar problem the US banking and economy have faced in the last decade. However, the study of key causes and their effects on the weakness and instability of the economy in the US from 1994 to 2006 might be proved a reference frame to plan a healthy economy for India. In the present paper, the underlying causes, and effects of the subprime mortgage on the economic crisis are studied.
Keywords: *Banking Sector, Lending Money, World Economy, FMCG, Subprime Mortgage Crisis*

INTRUDUCTION

The subprime mortgage market has experienced a huge growth from 1994 to 2007. Together with a steady increase in house prices, historical low interest rates, abundant liquidity, and loan incentives, borrowers were encouraged to consume mortgages, believing that they would be able to refinance it due to the favourable economic conditions. Also, borrowers and investors were willing to take on more risk, thinking that the market could absorb it. However, this situation changed at the end of 2006 when the housing bubble came to an end and interest rates began to rise. Warning signals began to emerge for a potential financial crisis when investors and lenders realized that they had been too optimistic about the economic conditions. When in the beginning of 2007 home sales continued to fall, serious concerns emerged when many borrowers turned out to be in financial difficulties and could not refinance or sell their homes to pay off mortgages when they were unable to make monthly payments [1]. In addition, in March two of the largest mortgage lenders, New Century Financial and Accredited Homes lenders, and experienced serious difficulties and in April the second biggest subprime mortgage lender in the US, New Century Financial filed for bankruptcy. Uncertainty started to increase but problems for the credit and housing market were expected to be limited. In mid-June, expectations were fading away when the weakness of the housing market became apparent in the form of loan quality problems, rising defaults on sub-prime and alternate mortgages, a sharp decline in the value of subprime mortgages and shares of financial institutions, deteriorating credit quality and increasing uncertainty [2]. Rating agencies were forced to downgrade MBS and CDO bonds backed by subprime mortgages because of rising defaults on subprime and alternate mortgages. For example, on June 15, rating agency Moody is downgraded the ratings of 131 ABSs backed by subprime home loans and placed about 250 bonds on review for downgrades.

EVENT STUDY OF SUBPRIME MORTGAGE CRISIS IN US

The assessment on risks and the increasing uncertainty in the financial market about the value and potential losses related to subprime mortgage products made investors exchange from their risky securities to relatively safe government securities. On June 20, reports suggested that two Bear and Sterns hedge funds invested in securities backed by subprime mortgage loans were about to collapse. And on July 11, the number of US foreclosures nationwide was 87% above its level the previous year. Uncertainty and worries spread rapidly across the financial system which as a result caused market liquidity for mortgages related securities and structured credit products to disappear. The crisis started to show aspect of accredit crunch, as the uncertainty about the size of losses and the duration of the crisis began to affect the ability to obtain funds. Financial institutions became more reluctant to provide liquidity to others and while liquidity in the market evaporated, major banks experienced increasing difficulties to value their own holdings, turning liquid into illiquid assets and in addition led to an increasing uncertainty in the financial system. Furthermore, on July 30, the subprime crisis expanded to Europe when the German bank IKB warned of losses related to the fallout in the US subprime mortgage market.

Also, BNP Paribas, the largest bank in France reported that three investment funds invested in ABSs needed to shut down due to difficulties in valuation of these funds. In august the ECB and FED decided to intervene and injected billions of reserves in the financial market as an attempt to restore confidence and to help decrease the pressure in the market turmoil. In September the turbulence on the credit market seemed to have spill over effects on the economy when the US government reported that the employment rate experienced a decline for the first time in four years [3]. B ad news related to the subprime mortgage crisis continued to be in the headlines throughout 2007 and the first half of 2008 and just when investors thought that the worst should be over, in July 2008, the US was shocked by the third largest bank collapse of Indi Mack and fears about the financial health of the nation's two largest mortgage firms, Freddie Mac and Finnie Mae.

Now, almost one year later, the credit crisis that started has not only affected the financial markets but also the real economy in the US, Europe, Australia, and Asia. The uncertainty about the health of large financial institutions, the ratings and quality of structured products, and the magnitude of future write down and the duration of the crisis, caused financial institutions to become unwilling to provide liquidity to other which in turn led to liquidity crisis in the financial system. It has forced some major financial institutions to be taken over, and even others to fill for bankruptcy. Also, it has brought the assets backed commercial products. The end of the crisis is not yet in sight since the weakness and the vulnerability of the financial markets still remain visible with losses at leading financial institutions topping $500 billion as of July 2008 [4-5].

FACTORS THAT CONTRIBUTED TO THE US SUBPRIME MORTGAGE CRISIS

Economic conditions such as rising interest rates and the flattening of house price appreciation certainly played an important role in the subprime mortgage crisis. However, these economic factors emphasised the essential important underlying factors that triggered the crisis, namely, the initial weakness of the subprime mortgage market. This section will discuss the most important that contributed to US subprime mortgage crisis.

Increasing Risk Characteristics of Subprime Products

After the recession in 2001, when interest rates declined, borrowing demand increased, mortgage lenders expanded their business, and new lenders entered the market. Together with the US housing bubbles, which caused US housing prices to rise with 34%, adjusted

for inflation, between 2002 and 2005 [6], an appetite for risk, and economic recovery, an environment was created in which investors and lenders were encourages to seek instruments that offered high returns resulting in an increase in the demand for securitized subprime mortgages. Due to this rapid growth of subprime mortgagees, it became easier for borrowers to obtain loans. According to [4, 5, 7], one of the most important factors that contributed to the current crisis is the increasing risk characteristics of subprime mortgages resulting from relaxed underwriting criteria. The risk characteristics were already discussed. This problem is also referred to as risk layering where the loan is characterized, for example, with little or no documentation provided by the borrowers, with little or no down payment made, and with a low initial teaser interest that restate to a new, higher rate after a period of two or three years. Lenders developed or offered subprime mortgage loans that combines the lowest possible down payments and monthly payments with lowest underwriting criteria as a response to the rapid home price appreciation, the increasing competition among lenders and political agenda that encouraged home ownership. However, the subprime loans that were originated and suffering from poor underwriting standards were characterised by multiple weakness such as less creditworthy borrowers, high cumulative loans to value ratios, and limited or no verification of the borrower's, income. In general, prime and subprime borrowers had to provide full documentation about their income and assets which then would be verified by lenders. However, in recent years, low or no documentation loans became available to person with impaired credit histories and to first time borrowers. Furthermore, in 2005 and 2006, loans referred to as Piggybacks became more common. Hereby subprime borrower was allowed to have mortgages on their homes. In addition to a first mortgage for 80% of the total purchased price, a second mortgage for the remaining 20% was made so that the borrower would not have to make down payment. However, these types of loans were provided under the assumption that housing prices would continue to rise. Borrowers could easily refinance their homes or sell it at profit so that the delinquency rates remained low. When in 2006, house price appreciation started to slow down and interest rates began to rise many borrowers in the subprime market found it impossible to refinance on favourable terms and were unable to maintain their mortgage payments when their loans reset and as a result, default rates began to increase [6].

The Weakness in Risk Management and Risk Measurement

Another contributing factor according to [2, 6, 8] is the weakness in the risk management and risk monitoring across financial institutions. According to many analysts the current crisis has emphasized one more the importance of adequate risk management and risk measurement. Financial institutions were affected by this crisis in numerous ways because for a small part they had invested in subprime market securities directly but more importantly they had provided backup credit lines for special purpose vehicle that held those securities. When some of them started to suffer from severe losses, financial institutions became very concerned about the liquidity and capital implications. Hence, adequate risk management and risk measurement of securitization business is important because it seeks to ensure the investors ability to fund increase in assets and meet obligations as they come due. Typical financial features of risk management are maturity transformation, leveraging of balance sheets, and market to market evaluations. The risk management by banks will need to be able to deal with complex interactions between changes in asset values, leverages, and liquidity risk. This requires the ability to draw information's from various operations of the banks and assess the impact of external events by banks for example performing value at risk analyses (VAR), stress tests, scenario analysis, and other risk measures. Most quantitative models are backward looking which means that they analyse historical data. The historical data used was not suitable to respond

to the market developments. Maintaining volumes and compensation for expected losses have been the focus in the financial sector. However, the real threats and risk costs arose from the potential for unexpected losses arising from the combination of the risk factor associated with the subprime and other originate and distribute business models. According to Basel Committee on Banking Supervision [9], the risk measures had focused too much on firm specific shocks instead of firm specific and market wide shocks. As a result, default risk, market risk and liquidity risk were underestimated and the nature, magnitude and duration of the current crisis across the global financial system were not fully anticipated by the financial sector. In addition, several financial institutions were not aware of the large exposures they had to their off balance sheets assets simply due to the complexity of the securitized products, the inadequate internal communication and weak controls over the risk of products.

The Role of Rating Agencies

A third factor, mentioned by Blommestein [8], Borio [2], IIF [4] and Financial Stability Forum [5] is the role of rating agencies and the extent to which they have misjudged the risk associated with subprime loans and misunderstanding between investors and rating agencies due to unexpected rating agency downgrades. Investors started to lose faith in the ratings of these structured securities which as a result raised concerns about the valuation of such securities. Questions were raised about the effectiveness of the methodologies used by the agencies to model the probability of default and the loss given default when the number of delinquencies, defaults and foreclosures rapidly increased. In 2007, many blamed rating agencies for failing to downgrade subprime securities in a timely manner. The crisis has showed that market participants and rating agencies underestimated the risks since there have been several examples where subprime securities were downgraded from "triple A" to junk. Furthermore, there was a misunderstanding between investors and rating agencies about the scope of ratings. Noyer [10], mentioned two reasons for this misunderstanding. The first reason is the confusion about the actual scope of ratings. Rating agencies only estimate the credit risks while many investors expected that the ratings would cover all the risk, especially liquidity risk. The other reason is the concerned with the methodologies used by the agencies to model the ratings. Rating agencies have a long history of providing ratings for corporate bonds. However, this is not the case for structured products which also mentioned by Aschcraft and Schermamm [11], where ratings for structured products rely heavily on the quantitative models, forecasts of economic conditions since structured products represent claims on cash flow from portfolio of underlying assets, whereas corporate debt rating rely essentially on analyst judgments, and are based on neutral economic conditions and firm specific risk characteristics. This means that consequences of assigning ratings to structured security and a corporate bond are not the same because their risk profile differ significantly. The potential volatility for a structured security is far greater than for a corporate bond. In addition, just like the risk measurements of banks, the risk models of rating agencies did not include the so-called trail risk events (the risk of extreme events that can cause large losses). Furthermore, the securitization of non-confirming mortgage is a relatively recent innovation which means that there is a limited ability to measure historical performance to determine the correlation between credit scores of borrowers and the probability of their ability to meet the commitment. These factors greatly affected the reliability of the rating agencies, Kregel [12].

Also, the model and methodologies used by the rating agencies contain several weakness and did not cover all the risk associated with the structured products. Finally, more attention should have been paid to the conflict of interest during the rating process.

The Lack of Transparency and Disclosure

Another factor mentioned by Crouhy and Turnbull [13] and FSF [5] is the lack of transparency and the disclosure which affected many players in the financial markets since it worsened the uncertainty and damaged the confidence in the financial markets. For Example, many investors were surprised the magnitude of the sometimes-excessive write-downs by financial institutions and the exposure of off-balance sheet asset to losses. Another example is the level and diversity of commitments by financial institutions. As a result of severe competitions, many banks offered to extend credit and liquidity to for example SIVs, but the total magnitude of the commitments was often not fully disclosed in timely manner. The IMF [14] did also mention this in their Global Stability Report in which they refer to the crisis of confidence that can easily emerge when losses are unknown and off-balance sheet commitments are non-transparent. As a result, many investors were not able to obtain the knowledge of underlying facts and assumptions and thus relied completely on the rating agencies. Also, the investors were unable to find out the information about the types of assets, such as CDOs, subprime or prime mortgages. For investors, it is important to know because the fulfilments of the commencements can have a serious effect on the liquidity of the institutions.

The Creditworthiness of Monocline Insurers

Monocline insurance companies are service providers in the capital markets that guarantee the timely repayment of bond principal and interest when an issuer defaults. By providing credit enhancement to capital market transactions, they provide investors and issuers with financial security and liquidity. The two largest monoclines, MBIA endameba, were founded in the 1970s and provided insurance of municipal bonds and debts issued by hospitals and non-profit groups. The total amount of outstanding papers ensured by monocline companies reached dollar 3.3 trillion in 2006. In recent years much of monocline's growth has been unstructured products, such as ASBs and CDOs. According to the Association of Financial Guarantee Insurers, prior to 2007, no member company has ever failed to fulfil its payment obligations to insured bond investors when due. However, the current market conditions have caused monocline insurers significant problems. When mortgage delinquencies rose, monoclines started to suffer severe losses. The only single A-rated insurer, ACA, reported a loss of $ 1 billion. In fourth quarter MBIA added an additional $ 3.5 billion of write downs on its credit derivative portfolios and reported a loss of $ 2.3 billion. Serious concerns did arise about whether monocline insurers had sufficient resources to honour their commitments. As a result of the multiple downgrades and reported losses, credit agencies placed monocline insurers under review and concerns about the credit worthiness caused disruptions in the market.

THE EFFECTS OF SUBPRIME MORTGAGE CRISIS

Liquidity in the market for ABSs and CDOs backed by subprime mortgages has been evaporated which led to an overall liquidity crisis. Leading banks have suffered significant losses, consolidation has accelerated as large financial institutions have acquired subprime mortgage originators and servicers, and some even experienced bankruptcy. Furthermore, under writing standards have significantly been tightened in the form of greater income, employment and asset verification, higher minimum credit scores, and the elimination of 100% financing. Also, the FED and the ECB have injected billions of dollars to restore investors' confidence and to prevent the crisis to get further worsen.

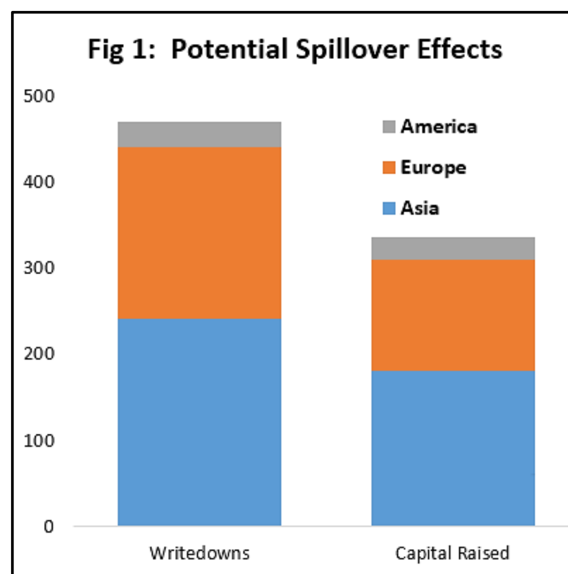
THE DIFFICULTY IN VALUATION

Many price assumptions of instruments must be revaluated because they were below their true values due to an increased level of uncertainty associated with the valuation. Because of the increased uncertainty in the financial markets caused by the credit crisis,

lenders refused to extend credit causing liquidity and funding problems. The unwillingness of lenders and investors to provide funding resulted in lack of liquidity and contributed to a decline in the fair value of financial instruments. Crouhy and Turnbull [13] explains this uncertainty in valuation using the fair value accounting framework from the financial accounting standards board and the issues related to nonstandard instruments. The international financial reporting standards board also provides a framework to determine the fair value. According to this framework, quoted prices in an active market provide the best evidence of fair value and must be used when available. In the absence of such quoted market prices, an entity uses evaluation technique to determine what the transaction price would have been on the measurement date in an arm's length transaction. Furthermore, in order to use a valuation technique, all current market conditions, including current credit spreads and the relative liquidity of the market has to be included. Since an active market for ABSs and CDOs did not exist anymore, there was severe pressure on accounting institutions to develop more common guidelines for valuation and related disclosures to review valuation, accounting and risk disclosure issues associated with structured products and certain financial derivatives.

POTENTIAL SPILL OVER EFFECTS

Almost 12 months after the financial turmoil started in the US subprime mortgage market, the effects are far from over yet. In April 2008, IMF published in its global stability report that spill over effects might spread to credit markets and participants. The first effect that is mentioned is that the loser credit standard may extend beyond the subprime sector. The IMF warns that there is a risk that other high quality mortgage collateral may be subject to the same under writing weakness. The second effect is a starting deterioration for the white market of the structured product, ABSs CDOs. A third potential effect is that other consumer credit market including credit card backed ABS and CDO structured could experience significant losses. Due to the house price appreciation before 2005, homeowners were able to extract equity from their homes and pay down their higher interest rate credit card and other debts. But when house prices started to flatten in 2006, this became more difficult to house owners.



However, while the huge losses are widely acknowledged and the financial institutions have succeeded to raise additional capital, new concerns emerged. In July the IMF published a market update warning that the global financial markets continue to be fragile and that the policy trade-offs between inflation, growth and financial stability are

becoming increasingly difficult. They identified several factors that could contribute to this threat.

- The overall credit risk is still very high since delinquencies and foreclosures are still rising sharply as already mentioned in the report of April. Moreover, the third largest collapse of Indi Mack, the concerns about the healthiness of Freddie and Fanny May, and the expectation that the major banks such as City Group, Merrill Lynch and J P Morgan chase will disclose billions of dollars of write down, quarterly losses and profit declines.
- The banking sector is still under severe pressure due to a sharp decline in their share prices, high funding costs, limited liquidity, falling credit quality and loss in confidence. Because of the persistent problems of the financial markets due to exceed of their losses in write downs, it becomes more difficult to raise additional capitals.

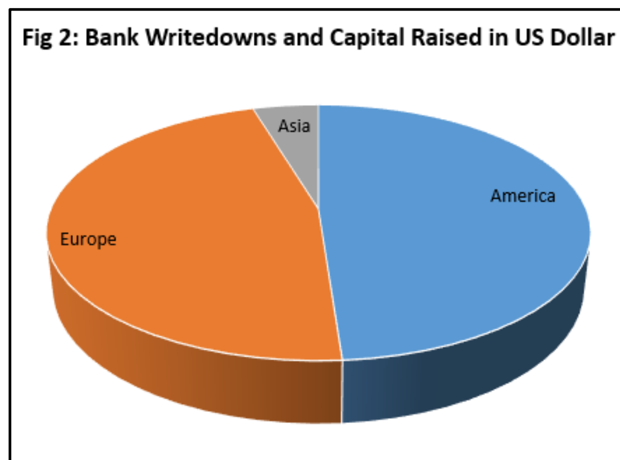


Fig 2: Bank Writedowns and Capital Raised in US Dollar

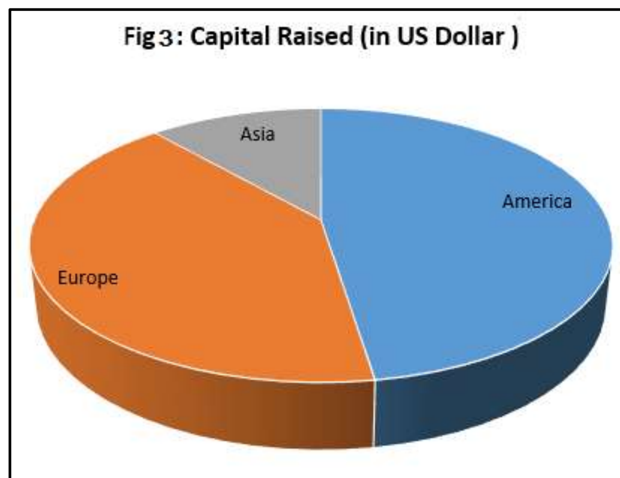


Fig 3: Capital Raised (in US Dollar)

- The tightening credit conditions because of the crisis makes it harder to obtain funds and credit, slowing the credit growth. In addition, the falling house prices were expected to continue showing signals for potential risk in markets. Also, aside from the new problems caused by the crisis, the latest forecast for the world economy did not give any reason to be optimistic. According to the IFM, the global growth will slow down from 5% in 2007 to 4.1% in 2008 and 3.9% in 2009 due to rising inflation, high energy, oil and food prices, a weak housing sector, a softening labour market and in addition instability in financial markets. In summary, the crisis seems far from over with the above prospects in mind.

CONCLUSIONS

To investigate whether the announcements of financial news related to the subprime crisis does affect the returns of financial and non-financial institutions, an event study is used. In the present article, the study and analysis of the underlying causes and the essential effects of mortgage crisis in US from 1994 to 2006 has been made with thorough references and facts. The present analysis can be adopted to frame transparent, productive, and fool proof economic plan for mortgage loan methodologies. The study may lead to more realistic planning of featured securities in banking sector in India by assessing the abnormality or excess of the returns earned by the security holders accompanying specific events.

REFERENCE

1. Di Mortino D., Duco J.V.; 2007. The rise and fall of subprime mortgages. *Federal Reserve Bank of Dallas Economic Letter.* 2 (11) 1-20.
2. Borio C.; 2008. The financial turmoil of 2007: a preliminary assessment and some policy consideration. *BIS Working Papers*, No 251, March 2008.
3. Bank for International Settlements. 2007. Overview: credit retrenchment triggers liquidity squeeze. *BIS Quarterly Review.* September 2007, 1-16.
4. Institute of International Finance, 2008. Final report on IIF Committee on market-based practices: Principles of conduct and best practice recommendations.
5. Financial Stability Forum, 2008. Report of the financial stability forum on enhancing market and institutional resilience. Retrieved on Jun2 2008.
6. Getter D.E, Jackling, et al., 2007. Financial crisis? The liquidity control of August 2007. *CRS report of congress*, Wasington D.C.
7. Krinsman A.N., 2007. Subprime mortgage meltdown: How did it happen and how will it end? *The Journal of Structured Finance,* 13 (2) 10-30.
8. Blommestein H.J., 2008. A prime on the ongoing credit crisis. Retrieved on March 20, 2009.
9. Basel Committee on Banking Supervision, 2008. Liquidity Risk: Management and supervisory challenges. Bank for International Settlement.
10. Noyer C., 2008. Possible ways of improving the process of rating. Retrieved on April 13, 2009.
11. Aschcraft A.B. and Schermamm T., 2007. Understanding the securitization of subprime mortgage credit. *Federal Reserve Bank of New York,* Working Paper Series No. 318.
12. Kregel J., 2008. Minsky's cushions of safety: Systemic risk and the crisis in the US subprime mortgage market. *The levy Economics Institute of Bard College,* Public Policy Brief. No. 13.
13. Crouhy M. and Turnbull S.M., 2008. The subprime credit crisis of 07. *Retrieved on April 30.*
14. IMF, 2008. Global financial stability report: Market developments and issues. *International Monetary Fund,* Washington DC.

LIST OF ABBREVIATIONS

FMCG	:	Fast-Moving Consumer Goods
IKB	:	IKB Deutsche Industriebank
BNP	:	BNP Paribas Investment Group
CED	:	Centre for Education and Documentation
FED	:	Federal Reserve Banks
VAR	:	Value at Risk
IMF	:	International Monetary Fund
ABS	:	Australian Bureau of Statistics
MBS	:	Mortgage-Backed Security
CDO	:	Collateralized Debt Obligation