

THE CAUSE OF SUBPRIME MORTGAGE CRISIS AND ITS IMPACT ON THE INDIAN ECONOMY

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Abstract:

This paper explores the impact of subprime crisis on the Indian economy. GDP of India and USA has been analyzed and the movements of indices for the particular period is also analyzed. It also discusses the primary causes of the subprime crisis in United States and also the primary factors responsible for the impact on Indian economy by performing correlation.

Keywords: *Subprime Crisis, Indian Economy, GDP, India, USA*

Introduction:

Subprime crisis first started in 2008 when borrowers who were approved of loan could not afford to repay. This mainly affected the mortgage industry. This also affected the global credit market resulting in higher interest rates and availability of credit. It also shows how important credit and risk management are to the economic growth. The two main reasons for the cause of this crisis is lending and increase in housing speculation.

Review of Literature:

- **According to (Gerardi, Lehnert, Sherland, & Willen, 2008) (Making sense of subprime crisis):** This study ascertains the extent to which the market participants have underestimated the credit risk of mortgages. The subprime lending added risk and under leverage was obscure.
- **(Phillips & Yu, 2011) Dating the time of financial bubbles during the subprime crisis:** This review reveals that the housing bubble raised even before the subprime crisis. The bubble moved from housing market to commodity market and then to bond market and collapsed as financial crisis hit the economic activity.
- **(Jeff, 2009) A sum of primary causes of housing bubble:** This study summarizes the primary causes that include low mortgage interest rates, low short terms interest rates and mortgage lending, of housing bubble and credit crisis. Thus, tightened standards for mortgage loans have led to large increase in subprime mortgage without vigorous irrationality.
- **(Pajarshas & Jociene, 2014) Subprime mortgage crisis in the United States 2007-20008, causes and consequences:** This paper reveals to introduce tighter capital adequacy frameworks, direct and indirect control of banking and increase transparency and clarity of derivative instruments. Further, if Government support programmes would not have been applied the number of housing loans would not have increased and later reduced.
- **(Naude, 2009) The financial crisis of 2008 and the developed countries:** It states that in developing countries, financial development should aim at enriching both domestic and international financial architecture. It is possible for the developing countries to manage the impact of this crisis by formulating appropriate policy responses. To build robust financial system and to work towards reforming international financial system, the developing countries should limit the potential of occurrence of this crisis.

Research Design:

Statement of Problem:

Sub-prime loans are those given to borrowers whose creditworthiness is below prime and hence are of low quality. In India, sub-prime lending refers to loans carrying rates below the prime lending rate normally offered to high quality borrowers. Sub-prime or low quality loans are mainly of three kinds: car loans, credit card loans and house mortgage loans. Of these, the biggest and the ones that can endanger the entire financial system are the house mortgage loans.

The sub-prime loans were given to borrowers who did not have the capacity to service them (pay interest and repay principal). At the height of such lending, it was said, the borrowers were in the NINJA (no income, no jobs also) category. To lure such borrowers, some lenders adopted 'predatory' practices. They lent deliberately knowing that there will be default and, when it occurred, seized the houses mortgaged and sold them off to make a profit. This study aims at understanding the impact on economy if subprime crisis occurs in India.

Objectives of Study:

1. To analyze the impact of subprime crisis in Indian economy
2. To understand the risk and causes of subprime crisis
3. To find the change in housing loan structure after the occurrence of the subprime crisis.
4. To look into the changes brought about by the banks to prevent subprime crisis on India.

Research Questions:

1. How subprime crisis has affected the housing loan structure of the Indian economy?
2. How higher interest rates and lower availability of credit would affect easy loan availability?
3. How a crisis that happened in USA did had a significant impact on India?

Expected Outcome:

The main motive of our research is to find,

- How subprime crisis affected the Indian economy
- Study on the impact of crisis on housing finance market.

Limitations:

- The research is limited to studying of subprime crisis that has happened in US
- It is limited to its impact on Indian economy
- Study of primary factors causing subprime crisis.
- Approximate increase in interest rates.
- Data collected is limited to the year 2005-2015.

Type of research: The research that has been used in this paper to study about the research title is qualitative research.

Type of data: Secondary source of data

Secondary data is the data that has been already collected and readily available from other sources. Such data is cheaper, economical and time saving. It can be obtained from government statistics, industry associations, trade publications and company websites.

We are taking the GDP growth of both USA and India for a period of 2005 to 2015 which have been calculated and recorded till now.

We took the indices of United States and Indian BSE from 2007 to 2009.

Hypothesis:

- **H₀ : There is no significant change in housing loan structure after the crisis.**
- **H₁ : There is significant change in housing loan structure after the crisis.**

Data analysis:

- Correlation and Regression

They are used to determine the extent to which two or more variables are related among a single group of people. In other words, it is mainly used to see whether two variables are related.

Correlation helps in ascertaining the degree of the relationship between the variables. It helps in understanding the nature and degree of the relationship which can be used for future planning and forecasting. It assist in decision making for the future.

Regression is used in predicting and forecasting. It is performed to understand which among the independent are related to dependent variables. It estimates the conditional expectation of the dependent variable given the independent variable.

CORRELATION AND REGRESSION ANALYSIS OF USA AND INDIA GDP FROM 2005 TO 2015

YR & MONTH		USA	INDIA	YR & MONTH		USA	INDIA
2005	JULY	3.4	9.22	2010	JULY	2.72	10.29
	OCT	3.33	8.44		OCT	3.08	9.68
2006	JAN	3.03	8.97	2011	JAN	2.73	10.69
	APR	3.17	10.36		APR	1.89	10.33
	JULY	2.94	7.41		JULY	1.65	8.32
	OCT	2.18	10.24		OCT	1.18	6.68
2007	JAN	2.39	9.48	2012	JAN	1.68	6.18
	APR	1.24	9.8		APR	2.75	5.63
	JULY	1.71	10.81		JULY	2.49	4.87
	OCT	2.3	9.14		OCT	2.39	7.49
2008	JAN	1.87	10.55	2013	JAN	1.28	5.38
	APR	1.11	8.83		APR	1.31	4.3
	JULY	0.84	8.08		JULY	1.04	6.45
	OCT	-0.31	6.74		OCT	1.69	7.34
2009	JAN	-2.77	1.53	2014	JAN	2.66	6.53
	APR	-3.46	0.24		APR	1.72	5.34
	JULY	-4.06	4.99		JULY	2.67	8.02
	OCT	-3.28	6.96		OCT	3.19	8.7
2010	JAN	-0.24	8.21	2015	JAN	2.7	5.92
	APR	1.6	13.26		APR	3.76	7.11

Table 1

Source of data: <https://www.ceicdata.com> > Home > Countries > India

SCATTER DIAGRAM

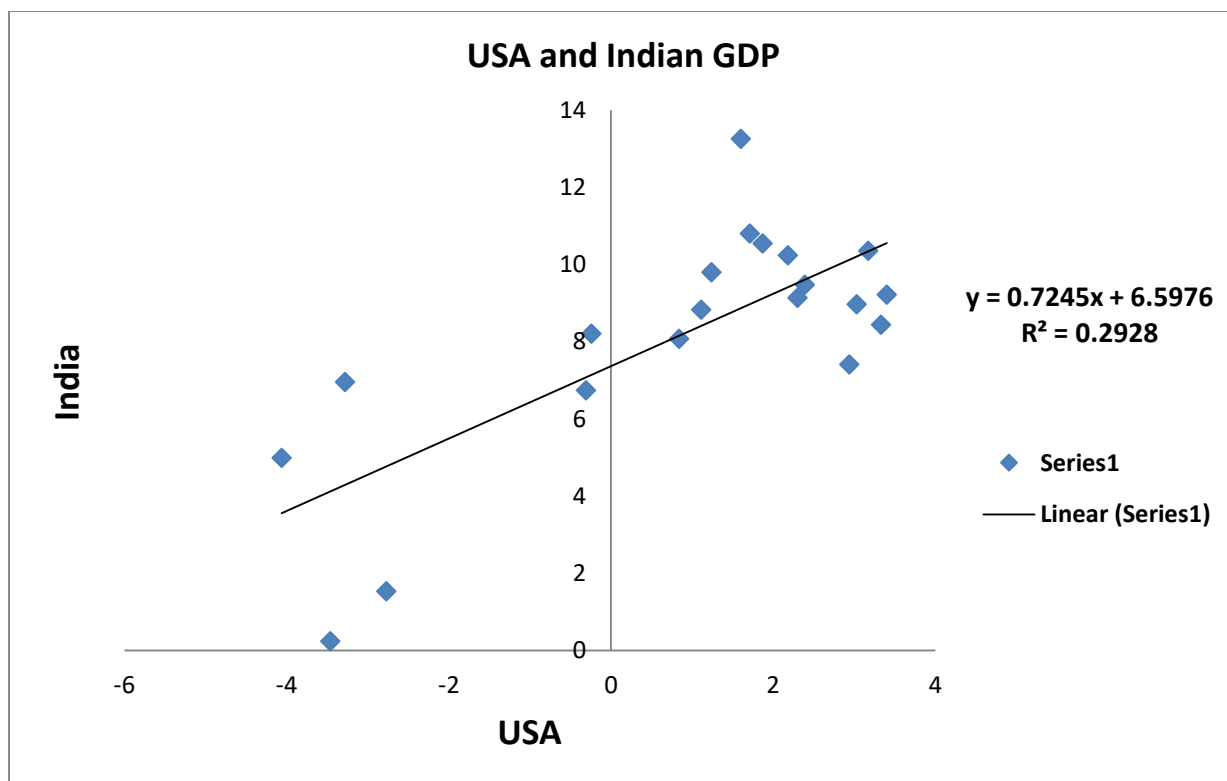


FIGURE1

The above diagram depicts the rate of GDP in USA and India during the crisis.

Regression and Correlation (r) =0.541132

<i>Regression Statistics</i>	
Multiple R	0.535132438
R Square	0.286366726
Adjusted R Square	0.26707934
Standard Error	2.200571226
Observations	39

Table 2

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	1	71.89853589	71.8985359	14.8473582	0.000448015
Residual	37	179.1730077	4.84251372		
Total	38	251.0715436			

Table 3

	CO-EFF	SE	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	6.596842	0.449809	14.6659	5.377E-17	5.6854414	7.5082421	5.6854414	7.50824208
3.4	0.722248	0.18744	3.85323	0.000448	0.342459	1.1020372	0.342459	1.10203719

Table 4

Indices of India and US, 2007-09

Descriptive Statistics

	N	Range	Minimum	Maximum	Mean
	Statistic	Statistic	Statistic	Statistic	Statistic
Closing Price-NASDAQ	723	1590.480102	1268.640015	2859.120117	2199.67961389
Closing Price-BSE	723	12712.93	8160.40	20873.33	14571.1422
Valid N (list wise)	723				

Table 5

Descriptive Statistics

	Mean	Std. Deviation	Variance	Skewness		Kurtosis
	Std. Error	Statistic	Statistic	Statistic	Std. Error	Statistic
Closing Price - NASDAQ	14.771511470	397.186139564	157756.829	-.576	.091	-.854
Closing Price - BSE	110.60904	2974.12878	8845441.975	-.309	.091	-.369
Valid N (listwise)						

Table 6

Descriptive Statistics

	Kurtosis
	Std. Error
Closing	.182
Close	.182
Valid N (listwise)	

Table 7

ANOVA^a

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	3609052864.604	1	3609052864.604	936.908	.000 ^b
Residual	2777356241.601	721	3852089.101		
Total	6386409106.205	722			

Table 8

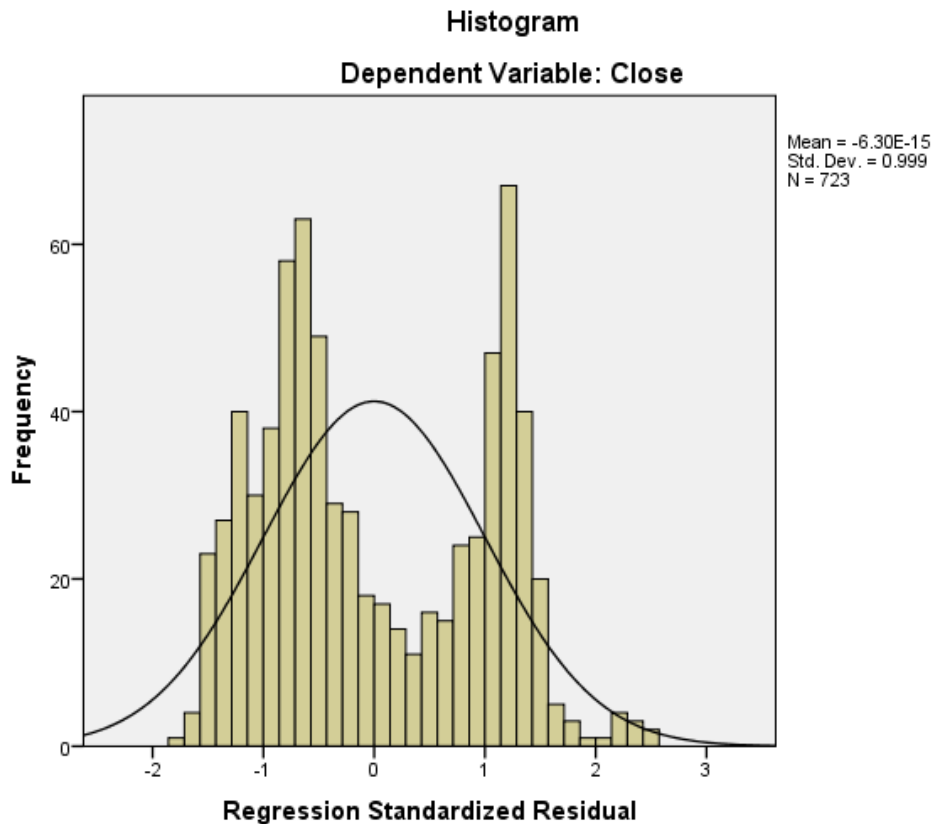


Figure 2

The above diagram depicts the shape of bell shaped curve to be symmetric.

INTERPRETATION OF DATA ANALYSIS:

- As $r=0.54$, it is positively correlated.
- In the above mentioned Table 1 represents the GDP of US and India, to show the extent of impact of the crisis.
- Table 2 represents the regression of output of GDP with respect to R square and standard error.
- Table 3 represents the regression output of GDP to determine the extent of impact of crisis.
- Table 4 represents the coefficient and the probable value.
- Table 5 represents the range and mean of the indices (BSE 500&NASDAQ) of India and US respectively.
- Table 6 represents the mean, standard deviation, variance and skewness and kurtosis of BSE and NASDAQ. As skewness is less than -1(i.e. -0.576) it is highly skewed. As Kurtosis is less than 3 (i.e. -0.854) it is platykurtic.
- Table 7 represents the descriptive statistics of the BSE and NASDAQ

- Table 8 represents the output performed through ANOVA
- We have rejected H_0 . Therefore we accept H_1 , there is significant change in housing loan structure.

CONCLUSION:

We can conclude that subprime crisis in the US has certainly affected the Indian economy, which is shown by comparing the GDP of US and India. This has resulted in devaluation of Indian currency. As per the data, we can estimate that this crisis has significantly impacted the Indian economy.

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