

Impact of macroeconomic indicators on stressed assets: Empirical study of loan portfolio of Indian PSU banks and private banks

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Abstract

After financial sector reforms, Indian banking system has undergone through severe changes. Post reforms era has drastically changed the entire configuration of banking sector of India. The rising antagonism has given new-fangled confronts for the Indian banks. Therefore, constraints for examining bank's performance has also been changed. Global economic slowdown and slower economic growth after that global meltdown, the brunt of crisis period has resulted into tuff situation in front of the banks in India. Problem of stressed assets has been seen in the positional statement of the banks with a noteworthy rise year by year. PSU banks have suffered a lot because of the bad loan problem and private banks have not remained untouched with this problem. An effort has been made in the present study to examine the impact of selected macro-economic indicators on stressed assets popularly known as NPA in PSU banks and private banks in India. Study also exhibits the comparative position of gross and net NPA of Indian PSU banks and private banks during 2007-2016. It has been observed that private banks are much better in management of stressed assets than PSU banks.

Key Words- Stressed assets, NPA, Banking system, Gross NPA, Net NPA, PSU banks, Macroeconomic indicators, private banks.

Introduction

Banking system of a nation plays very crucial role in the overall economic development. It mobilizes savings into profit generating and productive assets. Banking sector provides various financial services which support the development by mobilizing financial resources from the surplus side to the needy units. Banks accepts deposits and extends credit for economic growth. A sound and stable banking system significantly contributes in the development of the economy of a nation. It is a important financial intermediary through which facilities of payments and extension of credit takes places. Banks primarily deals in lending activities through which credit is to be extended by the banks and financial institutions to the different sectors of the economy popularly known as priority sector and non-priority sectors. Lending always carries risk, when borrower of the loan is unable to fulfill repayment obligation the loan account turns as NPA. Also called stressed assets or bad loan.

Non performing asset is a serious cause of concern. It badly affects the profitability and operational efficiency of the banks. As per the guidelines provided by RBI, loan/advance is acknowledged as NPA if the installment or interest or principal remains unpaid for more than 90 days. NPA ceases to generate income for the banks. In order to fulfill the provisioning requirements the banks are bounded to keep aside prescribed amount which leads to reduction in the profit of the banks. When an account is classified as NPA account it requires administrative, legal and recovery costs which overall renders additional burden on the banks.

The bad loan also called stressed assets problem is associated with entire banking system of India but the extent of the problem is more significant in Public Sector Banks (PSU banks). The total Gross NPA PSU banks was stood at 5608 billion Rupees as end of march 2016. On the other hand gross NPA of private banks as on march 2016 was found to be 538 billion rupees. The condition of PSU banks is more difficult in stressed assets management as compare to private banks.

Gross and Net NPA:

Gross NPA: Gross Non Performing assets are the total outstanding of all the borrowers classified as substandard, doubtful and loss asset. Gross NPA is an advance which is considered irrecoverable, for bank has made provisions, and which is still held in banks' books of account. Gross NPAs are the sum total of all loan assets that are classified as NPAs as per RBI Guidelines as on Balance Sheet date. Gross NPA reflects the quality of the loans made by banks. It consists of all the nonstandard assets like as sub-standard, doubtful, and loss assets. It can be calculated with the help of following ratio: $\text{Gross NPAs Ratio} = \frac{\text{Gross NPAs}}{\text{Gross Advances}}$.

Net NPA: Net Non performing assets are computed by deducting the provisions from Gross Non Performing Assets. Net NPAs are calculated as; $\text{Gross NPA} - (\text{Balance in interest suspense account} + \text{claims received from DICGC/ECGC and pending for adjustment} + \text{Part payment received and kept in suspense account} + \text{Total provisions held})$.

Literature review:

Ekta Sikarwarand Roopak Kumara Gupta (2010) examined in their study that the Commercial banks, particularly the dominant public sector banks, have been facing tuff competition from the private sector banks. They stated that Asset Quality is one of the components of performance of banks which can be assessed by Net NPA to Net Advances (NNPA/NA). Quality of loan assets describes the existing and possible credit risk associated with loan accounts and investment portfolios and other off balance sheet transactions. Higher the ratio, lower is the asset quality of the bank.

Bhavani Prasad G.V. and Veena D. (2011) observed that the best indicator of the health of the banking industry in a country is its level of Nonperforming assets. Indian banks have been facing a problem of NPA. It is a serious disease associated with banking sector of the country. The magnitude of such problem is comparatively higher in PSU banks. For better efficiency of asset quality and profitability of banks the NPAs needs to be reduced and controlled.

Sandeep and Parul Mital (2012) observed that level of NPA is more significant in the PSU banks while private banks are better in management of Non Performing Assets. Researchers attempted to make a comparative analysis among private and PSU banks with reference to NPA. Study emphasized that Private banks are more efficient in tackling the problem of bad loans. Research has been conducted on the secondary data of past ten years of PSU banks and private banks. Researchers suggested that there is a strong need to strengthen the credit appraisal system in Public sector banks.

Siraj. K.K and Prof. (Dr). P. Sudarsanan Pillai (2012) states that NPA is a virus affecting banking sector. It affects liquidity and profitability, in addition posing threat on quality of asset and survival of banks. The study describes trends of various NPA pointers like gross and net

NPA, additions and reductions to NPA and provisions for NPA and compares it with Total Advances and Total Deposits of banks. The recessionary pressures faced by the banking sector is an important reason for the growth of NPA indicators, it should be managed to maintain a healthy and viable banking environment. The increased level of additions to NPA remained as an area of concern as it indicates the real efficiency of credit risk management.

Debarsh and Sukanya (2012) emphasized that NPA is most important parameter to evaluate the financial performance of banking sector. Problem of bad loan is affecting badly the profitability of PSU banks. Authors suggested that for effective management of NPA accounts Public Sector Banks must strictly follow asset classification norms, recovery procedures and use to technological platform at its optimum level.

Swamy (2012) observed in his study titled “Impact of Macroeconomic and Endogenous Factors on Non-Performing Banks Assets” that NPA of banks is influenced by several macroeconomic factors. Author found that there is a significant relationship between macroeconomic indicators and NPA of banks.

Selvakumar, et. al., (2013) found that PSU banks which holds about 78 percent of the total banking assets in India is overburdened with the problem of Non Performing Assets. It was examined in the study that there is a significant deterioration in the asset quality of PSU banks in India. Several reasons were there behind the problem of bad loans like inadequacy of staff and lack of modern technology. It was emphasized in the study that the major proportion of NPA comes from industries like power, real estate, telecom and infrastructure. Study examined that there was a steep rise in the level of NPA in PSU banks during the study period due to inadequate credit assessment and adverse economic situations.

Dr Mahesh U Daru (2016) observed that Indian banking system is struggling with challenges related to NPA. He examined that behind mounting NPAs there are Internal, External and other factors. Internal factors are diversion of funds, poor credit appraisal and lack of modern technology platform. External factors according to author are recession, exchange rate fluctuations and frequent changes in government policies.

Objectives:

- 1 To study impact of selected macroeconomic variables on NPA of PSU banks and private banks during 2007-2016.
- 2 To study the movements of Gross and Net NPA of PSU banks and private banks during 2007-2016.
- 3 To make a comparative analysis of NPA level of PSU banks and private banks.
- 4 To suggest various measures for better management of the NPA problem.

Methodology, database and hypotheses:

The study is exploratory and analytical based on the secondary data. Related data of Non Performing Assets and selected macroeconomic variables have been drawn from the website of Reserve Bank of India. Further, relevant information has also been drawn from various issues of the annual publication series of RBI, particularly Report on trend and progress of banking in India. Public Sector Banks comprises SBI & associates and nationalized banks. Impact of four macroeconomic variables (GDP, Inflation, Interest rate and Exchange rate) have been analyzed on net NPA of PSU banks and private banks with the help bivariate correlation and linear regression analysis through SPSS 20.0 version. Wholesale Price Index (WPI) inflation, lending interest rates and Rupee/\$ exchange rate have been taken into consideration for the purpose of analysis. Further, a comparative analysis has also been done on the basis of level of NPA of PSU banks and private banks based on data of last ten years (2006-07 to 2015-

16). Trend analysis and bar diagrams have been used to explain the movements of Gross and Net NPA during the study period .In order examine impact of selected macroeconomic variables on NPA of PSU banks and private banks the following hypotheses have been formulated:

Hypotheses:

H01: There is no significant impact of GDP on Net NPA of PSU Banks.

H02: There is no significant impact of Inflation on Net NPA of PSU Banks.

H03: There is no significant impact of Interest rate on Net NPA of PSU Banks.

H04: There is no significant impact of Exchange rate on Net NPA of PSU Banks.

H05: There is no significant impact of GDP on Net NPA of Private Banks.

H06: There is no significant impact of Inflation on Net NPA of Private Banks.

H07: There is no significant impact of Interest rate on Net NPA of Private Banks.

H08: There is no significant impact of Exchange rate on Net NPA of Private Banks.

Data analysis:

In order to examine impact of selected macro economic indicators on net Non performing assets of Public sector banks and private banks during the study period, bivariate correlation and linear regression analysis have been applied through software- Statistical Package for Social Sciences (Version 20.0) and obtained results have been tabulated as under:

(I) Impact of selected macroeconomic variables on net NPA of PSBs during study period-

Table-I

(Coefficient values, test of significance and comparison)

Variables	Regression Coefficients	Test of Significance		Value of R-Square	Correlation Coefficient (r)
		P-Value	Significance		
GDP	0.30	0.001	Yes	0.737	0.859
Exchange rate	102.273	0.001	Yes	0.763	0.873
Inflation	- 279.65	0.058	No	0.380	- 0.617
Interest rate	-286.88	0.081	No	0.333	- 0.577

Source: Data analysis-Authors compilation through SPSS 20.0 version

(II) Impact of selected macroeconomic variables on net NPA of Private Banks during study period-

Table-II

(Coefficient values, test of significance and comparison)

Variables	Regression Coefficients	Test of Significance		Value of R-Square	Correlation Coefficient (r)
		P-Value	Significance		
GDP	0.002	0.015	Yes	0.547	0.739
Exchange rate	6.117	0.005	Yes	0.654	0.809
Inflation	- 17.948	0.060	No	0.375	- 0.613
Interest rate	- 11.882	0.292	No	0.137	- 0.370

GDP has significant positive correlation ($r = 0.859$, Table-I) with NPA of Public sector banks during the study period. It means when GDP increased, NPA of PSU banks has also increases. The reason is aggressive lending of PSU banks during higher GDP rate. Value of R-square shows that GDP can explain 73.70 percent variation in NPA of PSU banks during the study period. Regression coefficient found 0.30 (Table-1) with p-value 0.001 (less than 0.50) which indicates that null hypothesis is rejected and there is a significant impact of GDP on NPA of PSU banks during the study period.

Similarly, positive and significant correlation ($r = 0.739$, Table-II) has been found between GDP and NPA of private banks during the study period. Value of R-square found to be 0.547 which indicates that GDP can explain variation in NPA of private banks up to 54.70 percent during the study period. Regression coefficient observed 0.002 (Table-II) with p-value 0.015 (less than 0.05), it indicates that null hypothesis is rejected and significant impact of GDP on NPA of private banks has been observed. Comparatively impact of GDP on NPA of private banks was lower than impact of GDP on NPA of PSU banks.

Exchange rate shows positive and significant correlation with NPA of PSU banks ($r = 0.873$, Table-I) and private banks ($r = 0.809$ Table-II). when exchange rate increases, cash outflow of the borrowers in INR (in order to purchase foreign currency) also increases and because of the same potential to make repayment of loan in INR decreases, which resulted as higher NPAs in banking sector. Value of R-square (Table-I & II) shows that exchange rate is able to explain variation in NPA of PSU banks up to 76.30 percent and private banks up to 65.40 percent. P-value indicates that null hypotheses rejected and significant impact of exchange rate has been found on NPA of PSU banks and private banks. Comparatively impact of exchange rate on NPA of PSU banks is higher than private banks.

Inflation shows negative and insignificant correlation with NPA of PSU banks ($r = -0.617$) and private banks ($r = -0.613$). value of R-square (Table-I) indicates that inflation is able to explain variations in NPA of PSU banks only up to 38 percent which is very less. P-value (Table-I) found to be 0.058 (higher than 0.05), indicates that null hypothesis is true and there is no significant impact of inflation on NPA of PSU banks. Similarly value of R-square (Table-II) indicates that inflation can explain variations in NPA of private banks only up to 37.5 percent which is very less and p-value (0.060, Table-II) indicates that null hypothesis is true and there is no significant impact of inflation on NPA of private banks during the study period.

Similarly, interest rate has shown negative and insignificant correlation with NPA of PSU banks ($r = -0.577$) and private banks ($r = -0.370$). further, interest rate is able to explain variation in NPA of PSU banks up to 33.30 percent and in NPA of private banks up to 13.70 which is very less. P-value (Table-I & II) is 0.81 & 0.29 (Higher than 0.50) indicates that null hypotheses are true and there is no significant impact of interest rate on NPA of PSU banks and private banks during the study period.

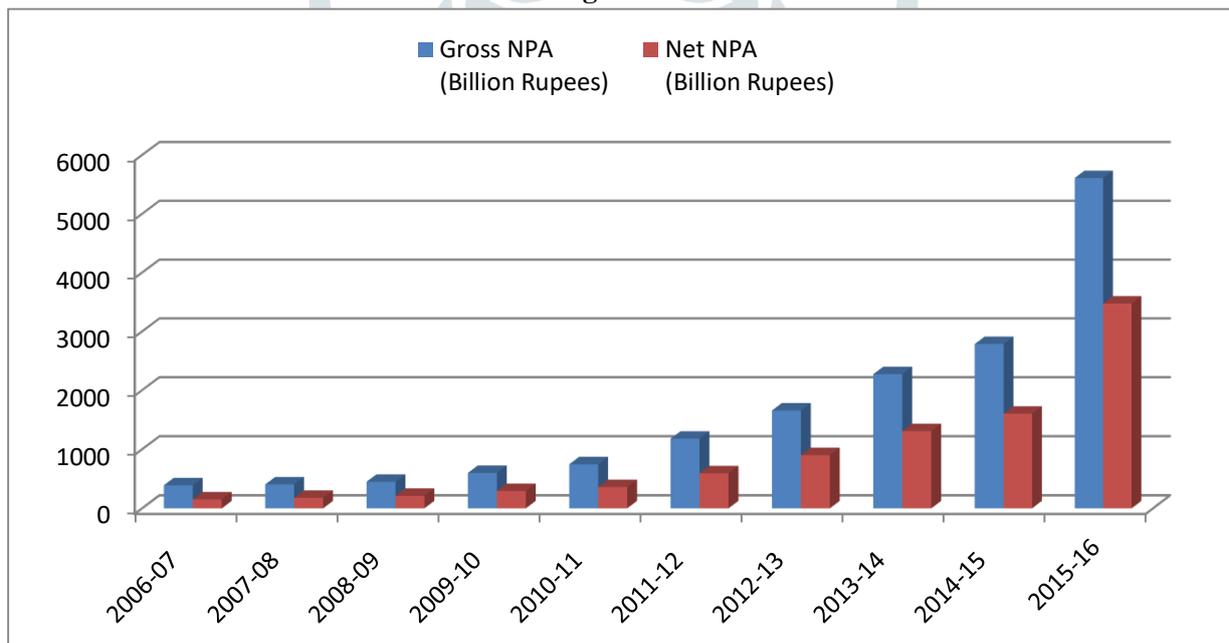
(1)Gross and Net NPA of Public sector banks during 2007-2016:

Table-III

Gross and Net NPA of Public Sector banks (End of March) (Amount in Billion)						
Year	Advances		Non-Performing Assets			
	Gross	Net	Gross NPA		Net NPA	
			Gross NPA	As % of Gross Advances	Net NPA	As % of Net Advances
2006-07	14645	14401	390	2.7	151	1.1
2007-08	18191	17974	405	2.2	178	1
2008-09	22835	22592	450	2	212	0.9
2009-10	27335	27013	599	2.2	294	1.1
2010-11	33056	30798	746	2.4	360	1.2
2011-12	38773	35504	1178	3.3	594	1.5
2012-13	45602	44728	1656	3.6	900	2
2013-14	52159	51011	2273	4.4	1306	2.6
2014-15	56167	54763	2785	5.0	1602	2.9
2015-16	58414	56954	5608	9.6	3474	6.1

Source: Handbook of statistics on Indian Economy

Figure-I



Level of NPA has been raised significantly in the public sector banks during the study period. Gross NPA reached the level of 5608 billion rupees in March 2016 as it was 390 billion as on March 2007. On the other hand Net NPA has also shown remarkable rise during the same period. Net NPA was stood at 3474 billion rupees on March 2016 as compare to 151 billion as on end of March 2007. There is a noteworthy rise in the level of gross and net NPA of PSU banks during the study period.

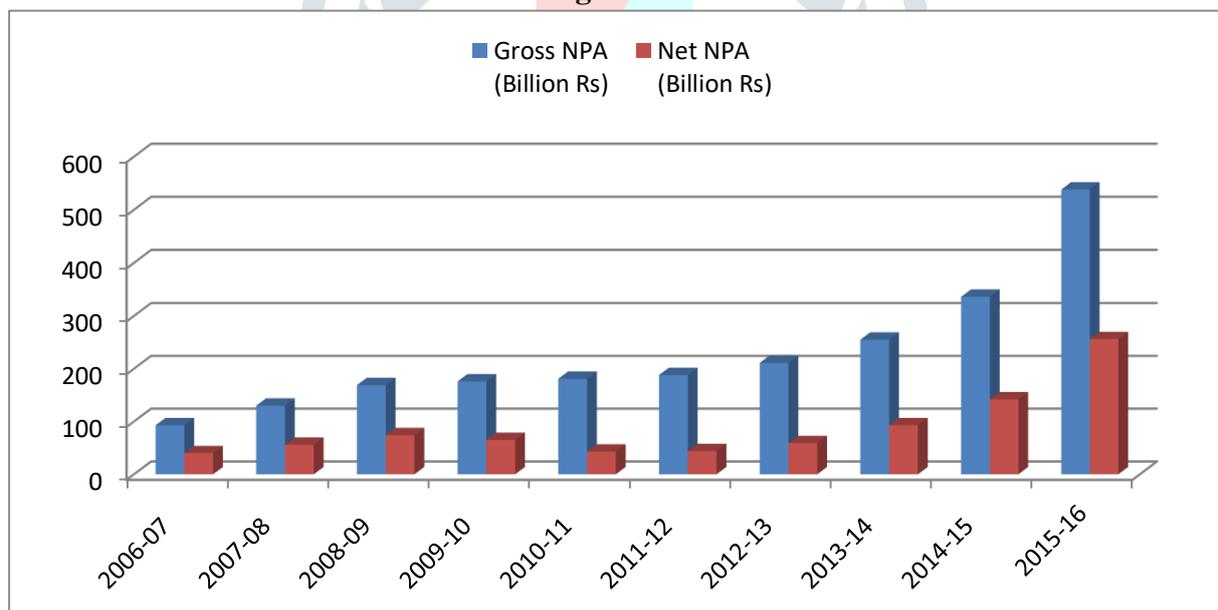
(2)Gross and Net NPA of private banks during 2007-2016:

Table-IV

Gross and Net NPA Private Sector banks (End of March) (Amount in Billion)						
Year	Advances		Non-Performing Assets			
	Gross	Net	Gross NPA		Net NPA	
			Gross NPA	As % of Gross Advances	Net NPA	As % of Net Advances
2006-07	4201	4148	93	2.2	40	1.0
2007-08	5258	5184	130	2.5	56	1.1
2008-09	5851	5753	169	2.9	74	1.3
2009-10	6441	6325	176	2.7	65	1.0
2010-11	7323	7975	181	2.5	43	0.5
2011-12	9664	8804	188	2.1	44	0.5
2012-13	11591	11432	211	1.8	59	0.5
2013-14	13446	13261	255	1.9	93	0.7
2014-15	16001	15781	336	2.1	142	0.9
2015-16	19937	19663	538	2.7	256	1.3

Source: Handbook of statistics on Indian Economy

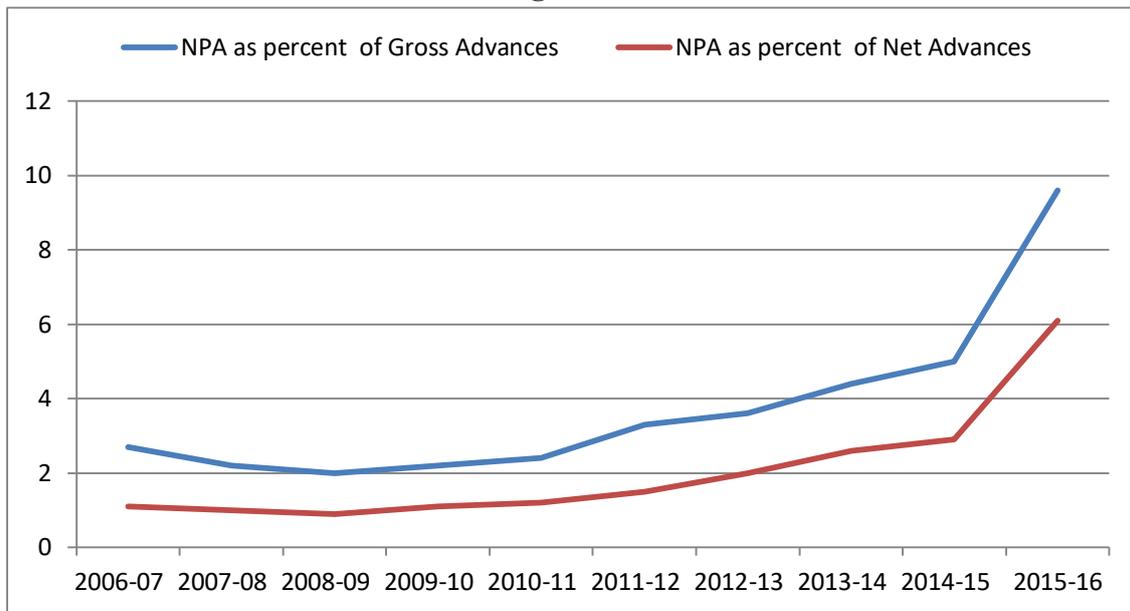
Figure-II



Gross NPA of private banks has shown an increasing trend during the study period (2007-2016). Total gross NPA of private banks reached at a level of 538 billion on March 2016 while net NPA touched level of 256 billion. Continuous rise has been found in the level of gross NPA during the study period as it was 93 billion rupees on March 2007 while net NPA of private banks was 40 billion rupees on March 2007.

(3)NPA as percentage of advance in PSU banks during 2007-2016:

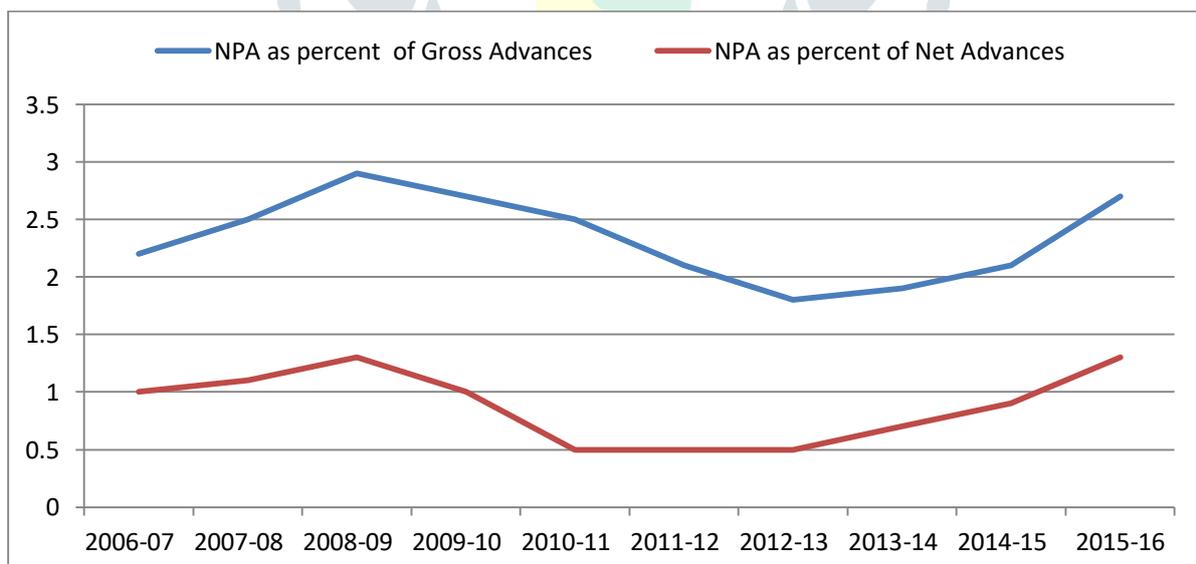
Figure-III



The primary function of banks is extension of credit in form of loan/advances. In PSU bank’ advances has been increased during the study period (Table-I) and gross and net NPA has also been increased along with the increase of advances. Figure-III exhibits that Gross NPA of PSU banks was 2.7 % of the gross advance in 2007 which has increased significantly and reached at a level of 9.6 % on March 2016. On the other hand net NPA of PSU banks was 1.1 % of the net advance on March 2007 which has increased and stood at 6.1 % of net advance as on March 2016(Figure-III).

(4)NPA as percentage of advance in private banks during 2007-2016:

Figure-IV



Private sector banks are in comfortable position with better management of stressed assets. Advances has been increased with a tremendous growth rate during the study period(Table-II) in private banks but level of gross NPA was 2.2 % of gross advances in March 2007, with a minor growth it has stood at 2.7 % of gross advances on March 2016. Net NPA has shown the same pattern of increasing, net NPA was 1.0 % of net advances as on March 2007 which has shown a little rise and stood at a level of 1.3 % of net advances as on March 2016(Figure-IV).

Findings:

Non Performing Assets is a virus badly affecting banking system of India. It not only affects profitability of the banks but it also renders negative impact on the operational efficiency of the banks. Level of NPA has been increasing year by year in the schedule commercial banks in India. The magnitude of the bad loan problem is more dangerous in PSU banks. Private Banks are in better condition as far as management of NPA is concerned. The gross NPA of PSU banks was 5608 billion on March 2016 while gross NPA of private banks 538 billion rupees as on March 2016. On the other hand PSU bank's net NPA was 3474 billion while net NPA of private banks was 256 billion at the same time.

GDP has shown positive and significant correlation ($r = 0.859$) with NPA of PSU banks during the study period. When GDP increases, each and every sector of economy performs well and banks particularly PSU banks aggressively grants loan to the production sectors and other sectors. Consequently advances made by banks increases. credit risk management practices of PSU banks are not effective, thus aggression shown by PSU banks in lending during high GDP results as high NPA in PSU banks. Contrary, credit risk management practices followed by private banks are more effective, and private banks do not show aggression in lending during high GDP thus their NPAs are low as compare to PSU banks during the same period. Although GDP is positively correlated ($r = 0.739$) with NPA of private banks but degree of correlation is low in comparison with PSU banks.

Exchange rate is positively correlated with NPA of PSU banks ($r = 0.873$) and NPA of private banks ($r = 0.809$). when exchange rate increases, cash outflow of the borrowers (particularly importers) in INR also increases (in order to purchase foreign exchange). Hence the potential of the borrowers to make repayment in INR to banks is decreases and resulted as default in payment, consequently leads to higher NPA. Comparatively, private banks are in better position in management of NPA. Degree of correlation of exchange rate and NPA is lower in private banks. Further, Table-I shows that there is less impact of exchange rate on NPA of private banks during the study period. Inflation and interest rate has not rendered significant impact on NPA of PSU banks and private banks during the study period.

During the study period (2007-2016) the level of gross and net NPA has shown a noteworthy rise in PSU banks. PSU banks also called Public Sector Banks comprise SBI & Associates and Nationalized banks. PSU banks could not manage the stressed asset problem effectively. PSU banks focused on non priority sector lending much than priority sector lending. Loans have been given to big corporate houses and large industries. Although PSU banks has given loans to priority sector like agriculture, personal, education and home loans but the major lending has been done in the large industries like power, mining, aviation and steel which belongs to non priority sector

Global Economic slowdown in 2008, slow economic growth afterwards, willful default, diversion of funds and aggressive lending by PSU banks in non priority sector in the recent past are the main reasons behind mounting NPA . Further, credit risk management practices are not that much effective in PSU banks, inadequacy of staff and poor legal system have also contributed for high level of NPA. On the other hand private banks have followed better risk management practices particularly credit risk management is more superior of private banks than PSU banks of India. Private Banks focused on retail loans in the recent past and loan/advances have been disbursed after proper and effective pre sanction appraisal. Further, post sanction monitoring of loan and timely reminders to the borrowers and effective use of market intelligence and Information and communication Technology (ICT) helped out private

banks to administer their loan portfolio and manage stressed assets problem during the study period.

Suggestions:

The problem of stressed assets is more serious with PSU banks, following are the suggestions which may help the PSU banks to overcome with the bad loan problem:

1. PSU banks must focus on strengthening of credit risk management practices by effective use of market intelligence and better use of Information and communication technology to gather necessary information about the borrower before disbursement of loan/advance. Further, loans/advances must be disbursed on the basis of viability of project for which loan is taken instead of name and fame of the borrower.
2. Inadequacy of staff can be managed by outsourcing of the manpower particularly in the credit department in order to provide assistance to the credit department of PSU banks for timely and continuous reminders, follow-ups and after sanction monitoring of loans and close surveillance of the borrower's account so that diversion of funds and related activities can be traced timely.
3. Reserve Bank of India must provide directive regarding not to lend to the companies or borrowers who have been acknowledged as defaulters in repayment of loans are. Deepen efforts should be made following up the borrower and to take up legal, non-legal measures one time settlement, persuasion for repayment.
4. Early recognition of the stressed assets should be encouraged and efforts should be made towards setting up fast track legal solution system for the problems like bad loan in the PSU banks. Further, preventive measures like close pre sanction appraisal of the borrower's application, continuous visits on the plant/project for which loan has been sanctioned and periodically assessment of the performance of the project/plant by the officials of credit department to ensure regular repayment of the loan must be encouraged.
5. Rigid steps toward must be taken against willful defaulters along with stoppage of diversification of funds which otherwise could have been lent to other needy ones and thus stoppage of revolving income. However, what is needed most is better pre sanction assessment and much better monitoring after sanctioning the loan.

Conclusion:

The Level of NPA is at alarming particularly in PSU banks of India. Private banks are in better position as compare to PSU banks. There is strong need to take appropriate and stringent remedial measures to cope up with this problem. PSU banks must develop efficient and effective credit risk management system. Officials of credit department must be proper training regarding documentation procedure and charge of securities. Further they must be motivated to take necessary measures in advance to stop turning of fresh loan account into a NPA account timely and continuous follow-ups and surveillance of loan account after disbursement of loan/advance. Necessary steps must be taken on time to ensure the regular repayment from the borrower account.

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