PROFITABILITY AND CREDIT CULTURE OF NPAS:
AN EMPIRICAL ANALYSIS OF PSBs

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ABSTRACT

Post reform era has changed the whole structure of banking sector of India. The emerging competition has resulted in new challenges for the Indian banks. Hence, parameters for evaluating the performance of banks have also changed. This paper provides an empirical approach to the analysis of profitability indicators with a focal point on non-performing assets (NPAs) of commercial banks in the Indian context. The paper discusses NPA, Factors contributing to NPA, Magnitude and Consequences. By using analytical perspective, the paper observed that NPAs affected significantly to the performance of the banks in the present scenario. On the other hand, factors like better credit culture, managing the risk and business conditions which lead to lowering of NPAs. The empirical findings using observation method and statistical tools like DEA, correlation, regression and data representation techniques, identified that there is a negative relationship between profitability measure and NPAs.

KEYWORDS: Correlation, Emerging Competition, Gross NPAs and Net NPAs, Regression.

INTRODUCTION

There is a bank-based financial system in India where banks and financial institutions are the financial intermediaries for commercial sector credit. Slack appraisal of projects, wrong projection of the demand of industrial sector, diversion of funds, willful default, political favours, nepotism, etc, have resulted in “Non Performing Assets” (NPAs). The legal system in India used to be mostly debtor friendly. Ever since the introduction of financial sector reforms in India, the Non Performing Assets of the banking system is an off shoot and has hampered the growth of the Indian banking system. The cost of the intermediation by the banks has raised brows for controlling the interest rates and identification of benchmarks for the identification and resolution of NPAs. Recently with enhancement of technology and customer services, innovations of various products, implementation of Basel II, better risk management systems and implementation of new accounting standards, US sub-prime crisis and volatile market has made it essential to maintain the NPA with lower level and effective monitoring before they become bad debts. Non Performing Assets are a serious strain on the profitability, as banks cannot book income on such accounts, while their funding cost and
provision requirements are charged on their profits. In order to have a proper understanding of the NPA menace, it is necessary to have an idea of the growth and structural changes that have taken place in the banking sector. “The financial strength and operational efficiency of the Indian banks and financial institutions which were working in a highly protected and regulated environment were not measuring up to international standards” (RBI, 1999). “Every aspect of the functioning of the banking industry, be it profitability, Non-Performing Asset (NPA) management, customer service, risk management, human resource development, etc., has to undergo the process of transformation to align with international best practices” (Muniappan, 2003).

This research paper is broadly divided into six sections. Section 1 is the present section gives a backdrop of NPA menace, magnitude and its impact on the profitability of Indian banking sector, Section 2 reviews the existing literature on the subject, Section 3 identifies the research objectives, Section 4 outlines the details of data and methodology used, Section 5 summarizes the results of this paper. The paper concludes with Section 6 highlighting the conclusions and recommendations, giving insights to the policy makers. The focus of this paper is to give a comprehensive view of NPAs and its impact on the profitability of PSBs operating in India.

REVIEW OF LITERATURE

Non performing assets are an unavoidable burden for each banking industry. The success of banks depends upon methods of managing NPAs and keeping them within tolerance level. Hence, to change the curve of NPAs, there is only one technique that an effective monitoring and control policy should be planned and executed which is aided by proper legal reforms. The problem of NPAs has been studied over the years to bring insight into the problem of NPAs, its cause and solution. Main focus of the study is NPA incidence and its management in India (Kumar R., 2000; The Price water house Coopers Limited, 2002 and Pradeep, 2007).

In the Indian context, the lending policy and credit policy have crucial influence on non-performing loans (Reddy, 2002 and Karunakar et al., 2008). Confederation of Indian Industry, 1999, refers the changing perspective about non-performing assets for the betterment of Indian financial system. Some studies observed that the problem of NPAs is related to several internal and external factors, which affected the performance of the banks, such as, Chaudhuri S., 2002; Muniappan, 2003; Gupta S. & Kumar S., 2004; Ghosh, 2005; David, 2007 and Rakhe, 2010. A study supports the policy approach to the banking in the Indian context, i.e., Dr. R.K.Uppal, 2011. Many studies found the contradictory relationship between the efficiency and NPAs among all the bank groups, like, Berger et al., 1997; Demirguc-Kunt et al., 1998; Rajan & Zingales, 1998; Indira R. & Vasishtha G., 2002; Nachiket & Bhavna, 2002; Gujral N., 2003; Kumbhakar & Sarkar, S., 2003; Davis & Stone, 2004; Das & Ghosh, 2006; Mahesh & Rajeev, 2006; Vallabh et al, 2007; Rao & Tiwari, 2008; Debaprosanna Nandy, 2010, and Rajput N. & Gupta M., 2011. Some other studies carried out the negative impact of NPAs on the performance of banking sector are as follows, Naik, 2002; Bhide et al., 2001; Bhaumik et al., 2004; Banerjee et al., 2005; Arpita, 2010 and Mishra N., 2011.

Several studies are based on PSBs and NPA/NPL which also confirmed the conversing impact of non-performing assets (NPAs) or non-performing loans (NPLs) on the productivity of public sector banks, for example, Ranjan R. & Dhal S., 2003; Prasad et al., 2004; Mohan, 2005; Misra B. & Dhal S., 2009 and Tandon et al., 2009. These studies support to the usage
of panel regression Model to the relation between profitability and echelon of non-performing assets, like other studies as Bodla & Verma, 2006; Mishra S., 2007 and Acharya et al., 2010.

From a cross-country perspective, many studies have done on the problem of non-performing loans (NPLs) to let us know that major problems had incurred on overall performance of the banking system of all these country due to the impact of NPL, for instance, in context of Italy (Sergio M., 1996), US banks (McGoven J., 1993 and Bloem & Gorter, 2001), Argentina (Bercoff et al., 2002), East Asia (Lee et al., 2001), Taiwan (Hsihui et al., 2007), Australasia (Kurt Hess, 2007). These countries had needful corrective steps to manage the situation so that they came out from the problem with downing trend of non-performing loans. Some researchers considered some more countries like, Spain (Santiago et al., 2000), USA (Miller & Noulas, 1997 and Veronesi & Zingales, 2009), Japan (Chakraborty & Linda, 2007), China (Ma G., 2006; Allen et al., 2007; Shanker et al., 2008) and South-East Asia (Hawkins J., 1999) which were focused on NPA and resulted to have bank restructuring for better efficiency of such banking industry. A few studies compared the level of NPAs among India and other country (Sumant B., 2003 and Nitsure, 2007). Many other studies have covered the analysis internationally as whole, e.g., Charnes, Cooper & Rhodes, 1978; Joseph & Weiss, 1981; Bourke, 1989; Duca & McLaughlin, 1990; King & Levine 1993; Rajan & Zingales, 1995; Jayaratne & Strahan 1996; Demirguc et al., 1998; Beck et al., 1999 & 2000; Caprio et al., 1999; Klingebiel D., 2000; Mitchell, 2001; Dado et al., 2002; Hanson & Kathuria, 2002; Mukherjee P., 2003; Bonin et al., 2005 and World Bank, 2009.

3. CONCEPTUAL FRAMEWORK AND RESEARCH OBJECTIVES

3.1 CONCEPTUAL FRAMEWORK

THE TERM OF NPAS

Banking business is mainly that of borrowing from the public and lending it to the needy persons and business at a premium. Lending of money involves a credit risk. When the loans and advances made by banks or financial institutions turn out as non - productive, non-rewarding and non – remunerative, they become Non Performing Assets (NPA). According to SARFAESI 2002, NPA is an asset or account of a borrower, which is classified by a bank or financial institution as sub-standard asset, doubtful asset and loss asset.

The definition of an NPA as given by RBI and its various categories is as under:

An asset, including a leased asset, becomes non-performing when it ceases to generate income for the bank. A non performing asset (NPA) is a loan or an advance where:

i. interest and / or installment of principal remain overdue for a period of more than 90 days in respect of a term loan,

ii. the account remains 'out of order' in respect of an Overdraft / Cash Credit (OD/CC),

iii. the bill remains overdue for a period of more than 90 days in the case of bills purchased and discounted,

iv. the installment of principal or interest thereon remains overdue for two crop seasons for short duration crops,
v. the installment of principal or interest thereon remains overdue for one crop season for long duration crops,

vi. the amount of liquidity facility remains outstanding for more than 90 days, in respect of a securitisation transaction,

vii. in respect of derivative transactions, the overdue receivables representing positive mark-to-market value of a derivative contract, if these remain unpaid for a period of 90 days from the specified due date for payment.

Banks should, classify an account as NPA only if the interest due and charged during any quarter is not serviced fully within 90 days from the end of the quarter.

CATEGORIES OF NPAS

Banks are required to classify non-performing assets further into the following three categories based on the period for which the asset has remained non-performing and the realisability of the dues:

(1) SUBSTANDARD ASSETS: With effect from 31 March 2005, a substandard asset would be one, which has remained NPA for a period less than or equal to 12 months. In such cases, the current net worth of the borrower / guarantor or the current market value of the security charged is not enough to ensure recovery of the dues to the banks in full. In other words, such an asset will have well defined credit weaknesses that jeopardize the liquidation of the debt and are characterized by the distinct possibility that the banks will sustain some loss, if deficiencies are not corrected.

(2) DOUBTFUL ASSETS: With effect from March 31, 2005, an asset would be classified as doubtful if it has remained in the substandard category for a period of 12 months. A loan classified as doubtful has all the weaknesses inherent in assets that were classified as substandard, with the added characteristic that the weaknesses make collection or liquidation in full, on the basis of currently known facts, conditions and values - highly questionable and improbable.

(3) LOSS ASSETS: A loss asset is one where loss has been identified by the bank or internal or external auditors or the RBI inspection but the amount has not been written off wholly. In other words, such an asset is considered uncollectible and of such little value that its continuance as a bankable asset is not warranted although there may be some salvage or recovery value.

FACTORS CONTRIBUTING TO NPAS

- Diversification of funds for expansion/ modernization, undertaking of new projects and also for helping associate concerns. This is coupled with recessionary trends and failure to tap required funds in the capital and debt market.

- Business (Product, marketing, financial) failure, inefficient management, strained labor relations, inappropriate technology, outmoded machinery, technical problems and product obsolescence.
Recession, input and power shortage, price escalation, accidents, natural calamities, external problems in other countries leading to non-payment of overdues.

Time and cost overrun during project implementation stage.

Government policies like changes in excise duties, pollution control, poor credit decisions, and priority sector lending and outdated legal systems.

Willful default, siphoning off funds, fraud and misappropriation by promoters and directors dispute.

Deficiencies on the part of banks like delay in release of funds and delay in release of subsidies by government.

Delay in finalization of rehabilitation package.

Absence of portfolio concentration limits, poor industry analysis, cursory financial analysis of borrowers.

Excessive reliance on collateral, absence of follow-up action by banks, poor control on loan documentation.

**IMPACT OF NPAS ON BANKING OPERATIONS**

The efficiency of a bank is not reflected only by the size of its balance sheet but also by the level of return on its assets. The NPAs do not generate interest income for banks. At the same time, banks are required to provide provisions for NPAs from their current profits. The NPAs have deleterious impact on the return on assets in the following ways:

1. The interest income of banks will fall and it is to be accounted only on receipt basis.

2. Banks profitability is affected adversely because of the providing of doubtful debts and consequent to writing it off as bad debts.

3. Return on investments (ROI) is reduced.

4. The capital adequacy ratio is disturbed as NPAs enter into its calculation.

5. The cost of capital will go up.

6. Asset and liability mismatch will widen.

7. It limits recycling of the funds.

**MAGNITUDE OF NPAS IN INDIA**

The liberalization regime which was launched in July 1991 opened the doors to the entrepreneurs to set up industries and business, which are largely financed by loans from the Indian banking system. There were, however, shakeouts with many businesses failing and loans becoming bad. In the global economy prevailing, the vulnerability of Indian businesses had increased. Constant follow-up action and vigil needed to be exercised by the operating
staff. There was also a trend of willful neglect and default of funds. As per a study published in the RBI bulletin in July 1999, diversion of funds and willful default were found to be the major contributing factors for NPAs in public and private sector banks.

Today, the situation looks optimistic with the industry succeeding in overcoming the hurdles faced earlier. The timely restructuring and rehabilitation measures have helped to overcome setbacks and hiccups without seriously jeopardizing their future. The credibility of corporate sector has increased manifolds with greater transparency in policies and stricter corporate governance methods. The abrasion rate in corporate sector has come down. The challenges before the banks in India today are the rising NPAs in the retail sector, propelled by high consumerism and lowering of moral standards. A glance through the statistics on the movement of non-performing assets (NPAs) in scheduled commercial banks helps to understand the extent to which they are standing.

3.2 RESEARCH OBJECTIVES

The objective of this paper is to analyze the nature, extent and magnitude of NPAs of SCBs, as a group. This study also analyses the impact of NPAs on the profitability of PSBs operating in India. Further, the study could provide useful insights to assess if the changes in efficiency of banks have been in the desirable direction and also useful in regulation and formulation of policies.

The objectives of this paper are as under:

- To analyze the nature, extent and magnitude of NPA in Indian banking sector.
- To examine the relationship between NPAs and profitability measure (ROA) of banks.

HYPOTHESIS 1: The Gross and the Net NPAs and its magnitude has shown a sharp decline in the study period (from 1997-98 to 2009-10).

HYPOTHESIS 2: The negative correlation between NPAs and determinants of profitability of government owned banks (public sector banks) operating in India.

4. DATA AND METHODOLOGY

The public sector banks dominate the banking industry in terms of branch expansion, deposits and lending to priority sector etc. (Table 1). Accordingly, the scope of the present study is limited to Public Sector Banks only, as it was not feasible to take simultaneously all the banks operating in India. Therefore, the focus of analysis and discussion in this paper is mainly on the public sector commercial banks. As we know, there are presently 27 banks in public sector in India, the analysis of all of them has been made with the objective of identifying the determinants of NPAs and its relationship with profitability.
<table>
<thead>
<tr>
<th>S. No.</th>
<th>Variables</th>
<th>1997-98</th>
<th>2001-02</th>
<th>2005-06</th>
<th>2009-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Branches</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Public Sector Banks</td>
<td>45368</td>
<td>46118</td>
<td>50168</td>
<td>61301</td>
</tr>
<tr>
<td></td>
<td>Private Sector Banks</td>
<td>4872</td>
<td>5376</td>
<td>6835</td>
<td>10387</td>
</tr>
<tr>
<td></td>
<td>Foreign Banks</td>
<td>186</td>
<td>202</td>
<td>259</td>
<td>310</td>
</tr>
<tr>
<td>2.</td>
<td>Deposits</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Public Sector Banks</td>
<td>548796</td>
<td>968624</td>
<td>1622481</td>
<td>3691802</td>
</tr>
<tr>
<td></td>
<td>Private Sector Banks</td>
<td>73642</td>
<td>169433</td>
<td>428456</td>
<td>822801</td>
</tr>
<tr>
<td></td>
<td>Foreign Banks</td>
<td>42539</td>
<td>67873</td>
<td>113745</td>
<td>237853</td>
</tr>
<tr>
<td>3.</td>
<td>Lending</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Public Sector Banks</td>
<td>98636</td>
<td>171185</td>
<td>360582</td>
<td>864564</td>
</tr>
<tr>
<td></td>
<td>Private Sector Banks</td>
<td>12761</td>
<td>21530</td>
<td>87905</td>
<td>215552</td>
</tr>
<tr>
<td></td>
<td>Foreign Banks</td>
<td>7384</td>
<td>13414</td>
<td>27045</td>
<td>60290</td>
</tr>
</tbody>
</table>

Source: RBI Publication.

The data relating to these variables have been collected from the annual reports of banks, Journal of Indian Banking Association, Reserve Bank of India’s Bulletin and Internet (www.rbi.org.in). In this study, the reference period is 13 years from 1997-98 to 2009-10. This period is selected mainly because banking sector of our country resorted to speedy reforms and liberalization. In order to identify the variables that have high explanatory powers and are therefore, more important in managing the operations of a bank, Correlation and OLS Regression Model are applied.

Mathematically the equation of regression model is as follows:

\[
Y = a + b_1x_1 + \mu \ldots \ldots \ldots \ldots \ldots \ldots (i)
\]

\[
Y = a + b_2x_2 + \mu \ldots \ldots \ldots \ldots \ldots \ldots (ii)
\]

Where, \( Y = \text{ROA (Return on Assets)} \),

\( a = \text{constant term} \),

\( b_1 \) & \( b_2 = \text{Regression coefficients for the respective variables} \),

\( x_1 = \text{GNPA Ratio and} \ x_2 = \text{NNPA Ratio} \)
\[ \mu = \text{Error Term} \]

Here, Y (i.e. ROA) is the dependent variable, while x1 & x2 are independent variables. At the outset, the test of significance of overall multiple regression models were made through F-test. This test has been used to answer the basic question: Is there a linear relationship between dependent variable and any of the independent variables under consideration? To carry out the F-test the analysis of variance (ANOVA) is performed. Further Multiple Coefficient of Determination (R Square) and Adjusted Multiple Coefficient of Determination (Adjusted R Square) were also compiled to measure the explanatory power of multiple regression model used herein. With the aim of evaluating the significance of individual regression coefficients (Beta), t-test was performed at 0.05 levels of significance. Durbin-Watson (D/W) Test has been employed to comment on the presence/absence of the problem of auto-correlation in the time series data employed herein. Moreover, to bring out the explanatory powers of each of the independent variables under study, the square of partial correlation coefficient (i.e. Partial coefficient of determination) of each variable have been worked out.

An important problem that may arise in making inferences about individual regression coefficient is ‘multicollinearity’ the problem of correlation among the independent variables themselves. Due to this the standard errors of the individual slope estimators become usually high, making the slope coefficient seem statistically not significant. The variables causing multicollinearity were dropped from the model by using ‘backward elimination’. It also needs to mention that the data collected is processed and analyzed with the help of SPSS software.

RESULT AND ANALYSIS

HYPOTHESIS 1: The Gross and the Net NPAs and its magnitude has shown a sharp decline in the study period (from 1997-98 to 2009-10).

The accumulation of huge non-performing assets and its depth in banks has assumed greater attention and importance. The depth of the problem of bad debts was first realized in early 1990s. Gross NPA reflects the quality of the loans made by banks, while Net NPA shows the actual burden of banks. The banks and financial institutions have to take the initiative to reduce NPAs in a time bound strategic approach. The soundness of a bank may be seriously impaired if its asset quality is poor. Non-performing assets require provisioning/write-off, which affects banks’ profitability and their ability to strengthen their capital position. In case the provisioning or write-off results in net losses, it could also erode bank’s capital position. Therefore, apart from sound capital position, it is necessary that banks maintain high asset quality. The level of non-performing loans is recognized as a critical indicator for assessing banks’ credit risk, asset quality and efficiency in allocation of resources to productive sectors. Reflecting the success of financial sector reforms and regulatory and supervisory process in particular, banks have made substantial progress in cleaning up the NPAs from their balance sheets.

In India, non-performing assets of commercial banks gradually declined over the years, such as, Gross NPAs (GNPAs) as % to Gross Advances from 14.4% in 1997-98 to 2.2% as on 31st March 2010 and Gross NPAs as % of Total Assets become 1.2 % in 2009-10 from 6.4% in 1997-98 whereas, Net NPAs (NNPAs) as % of Net Advances from 7.3% in 1997-98 to 1.0% as on 31st March 2010 and Net NPAs as % of Total Assets has left only 0.5% in 2010 from 3.0% in 1997-98 (exhibited in table 2 with a clear picture in fig 1).
### TABLE 2: GROSS AND NET NPAS OF SCBS (AMOUNT IN RS. CRORE)

<table>
<thead>
<tr>
<th>Years</th>
<th>Gross NPAs Amount</th>
<th>GNPA Ratio % of G. Advances</th>
<th>GNPA Ratio % of Total Assets</th>
<th>Net NPAs Amount</th>
<th>NNPA Ratio % of N. Advances</th>
<th>NNPA Ratio % of Total Assets</th>
</tr>
</thead>
<tbody>
<tr>
<td>1997-98</td>
<td>50815</td>
<td>14.4</td>
<td>6.4</td>
<td>23761</td>
<td>7.3</td>
<td>3.0</td>
</tr>
<tr>
<td>1998-99</td>
<td>58722</td>
<td>14.7</td>
<td>6.2</td>
<td>28020</td>
<td>7.6</td>
<td>2.9</td>
</tr>
<tr>
<td>1999-00</td>
<td>60408</td>
<td>12.7</td>
<td>5.5</td>
<td>30073</td>
<td>6.8</td>
<td>2.7</td>
</tr>
<tr>
<td>2000-01</td>
<td>63741</td>
<td>11.4</td>
<td>4.9</td>
<td>32461</td>
<td>6.2</td>
<td>2.5</td>
</tr>
<tr>
<td>2001-02</td>
<td>70861</td>
<td>10.4</td>
<td>4.6</td>
<td>35554</td>
<td>5.5</td>
<td>2.3</td>
</tr>
<tr>
<td>2002-03</td>
<td>68717</td>
<td>8.8</td>
<td>4.1</td>
<td>29692</td>
<td>4.0</td>
<td>1.8</td>
</tr>
<tr>
<td>2003-04</td>
<td>64812</td>
<td>7.2</td>
<td>3.3</td>
<td>24396</td>
<td>2.8</td>
<td>1.2</td>
</tr>
<tr>
<td>2004-05</td>
<td>59373</td>
<td>5.2</td>
<td>2.5</td>
<td>21754</td>
<td>2.0</td>
<td>0.9</td>
</tr>
<tr>
<td>2005-06</td>
<td>51097</td>
<td>3.3</td>
<td>1.8</td>
<td>18543</td>
<td>1.2</td>
<td>0.7</td>
</tr>
<tr>
<td>2006-07</td>
<td>50486</td>
<td>2.5</td>
<td>1.5</td>
<td>20101</td>
<td>1.0</td>
<td>0.6</td>
</tr>
<tr>
<td>2007-08</td>
<td>56309</td>
<td>2.3</td>
<td>1.3</td>
<td>24730</td>
<td>1.0</td>
<td>0.6</td>
</tr>
<tr>
<td>2008-09</td>
<td>68973</td>
<td>2.3</td>
<td>1.3</td>
<td>31424</td>
<td>1.1</td>
<td>0.6</td>
</tr>
<tr>
<td>2009-10</td>
<td>84745</td>
<td>2.2</td>
<td>1.2</td>
<td>39125</td>
<td>1.0</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Source: RBI Publication.

**FIG 1: GROSS AND NET NPAS RATIO OF SCBS AS % OF GROSS AND NET ADVANCES RESPECTIVELY**
The analysis showed a declining trend in the ratio of GNPAs and NNPAs which leads us to accept our hypothesis, which is a clear indication that the measures adopted by the banks are effective in controlling the menace created by NPAs. It is very important to control the problem of NPAs as there are many problems which are magnified because of its magnification like, Owners and Depositors do not receive a market return on their capital. In worst cases they lose their assets. Non performing loans epitomize bad investment. They misallocate credit from good projects, which do not receive funding. Non performing asset may spill over the banking system and contract the money stock, which may lead to economic contraction and affect its liquidity and profitability.

**HYPOTHESIS 2:** The negative correlation between NPAs and determinants of profitability of government owned banks (public sector banks) operating in India.

Managing NPAs has a lot to do with managing productive assets and ensuring effective corporate governance. If performing assets are turning into NPAs, it is because there is lot that happens to change the quality of assets. As of now, NPAs in most of the nationalized banks are within the permissible limits. However, they have not been able to bring additional capital for expanding their business operations through internal generations, but have done so through the equity market. Banks have taken recourse to the debt market or by pleading their case with the government for recapitalization. In this backdrop it becomes very important to understand the relationship of Non-performing assets and profitability, whether decrease in NPAs leads to increase in profitability or not. This information is very vital in monitoring, regulating and policy formulation.

Correlation is calculated taking three ratios, two are related to NPAs as GNPA Ratio (Gross Non-Performing Asset Ratio) and NNPA Ratio (Net Non-Performing Asset Ratio) with the profitability measure as ROA (Return on Assets). Results are exhibited in table 3 and shown by figures (fig2 and fig 3).

**TABLE 3: CORRELATION OF NPA AND ROA FOR PSBS DURING THE PERIOD FROM 1996 TO 2010**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>GNPA Ratio with ROA</td>
<td>-0.60164</td>
</tr>
<tr>
<td>NNPA Ratio with ROA</td>
<td>-0.65987</td>
</tr>
</tbody>
</table>
FIG 2: CORRELATION B/W GNPAS AND ROA

FIG 3: CORRELATION B/W NNPAS AND ROA
There is a high degree of negative correlation between GNPA Ratio with ROA (-0.60264) and NNPA Ratio with ROA (-0.65987) as shown in above figures. An inverse relationship clearly defines that if non performing assets are controlled, it increases the profitability. The above graphs indicate that by decreasing the ratios, there is an increase in return on assets which is a measure of profitability. The above relationship is also supplemented and strengthened by the most popular method OLS (ORDINARY LEAST SQUARE) to have more clarity on the issue, taking ROA as dependent variable and GNPA Ratio and NNPA Ratio as independent.

**TABLE 4: MODEL SUMMARY AND ANOVA (F) RESULTS FOR PSBS DURING 1998-2010**

<table>
<thead>
<tr>
<th>Variables/Measures</th>
<th>R</th>
<th>R²</th>
<th>Adjusted R²</th>
<th>F-value</th>
<th>P-value</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>GNPA Ratio</td>
<td>0.602</td>
<td>0.362</td>
<td>0.304</td>
<td>6.241</td>
<td>0.030</td>
<td>1.229</td>
</tr>
<tr>
<td>NNPA Ratio</td>
<td>0.660</td>
<td>0.435</td>
<td>0.384</td>
<td>8.484</td>
<td>0.014</td>
<td>1.270</td>
</tr>
</tbody>
</table>

Table 4 reveals F value is significant at 0.05 level for both ratios. It is clearly indicating that the variation caused by independent variables in the value of ROA is significant and cannot be left to chance factors. It is also noteworthy that there is no problem of serial correlation in the time series data utilized for the study, as the values obtained by Durbin-Watson test, are around one. The above permits us to proceed further to analyze the results produced by the Multiple Regression Model so as to achieve the objective of analyzing the relationship of NPAs with profitability of banks. The value of Correlation Coefficient (R) and Coefficient of Determination (R square and Adjusted R square) of the finally selected model are less then one (table 4), which shows the relationship of NPA and profitability is significant at 5% level of significance (P-Value 0.030 & 0.014 respectively).

Therefore, it is evidently proved that NPAs (GNPAs and NNPAs) has an inverse impact on ROA or profitability of banks, that means the bank can have an increasing trend of ROA by the effect of the declining trend of GNPAs and NNPAs ratios. This leads us to accept the hypothesis that there is a causal relationship between profitability measure and non-performing ratios. The above analysis would help in improving the quality of assets of banks. In turn the requirement for provisioning would automatically come down and it will directly add to the profit of banks.

**CONCLUSIONS AND RECOMMENDATIONS**

**CONCLUSIONS**

The analysis concluded that there is a diminishing trend in the ratios of non-performing assets as GNPAs and NNPAs, which clearly recommended that the measures adopted by the paper are valuable rudiments to affect the amount of NPAs. There is a high degree of negative correlation between NPA Ratios with ROA. Multiple Regression model has also repetitive the results that there can be an enhancement in profitability of the banks if the NPAs has decreasing trend continuously. Consequently, an inverse relationship among profitability and
non-performing assets revealed the fact, that the bank can have an increasing trend of profitability only by the effective declining trend of NPAs. The assessment would help to improve the assets quality of banks, so that, provisioning requirement would automatically come down and it added to the profits directly which leaded to increase the overall performance of the banks. Hence, it’s important to manage the level of NPAs for Owners and Depositors also, as they are faced many problems due to the magnification of non-performing assets, even they couldn’t receive their appropriate return on their capital or can be lose their assets. Non performing assets epitomize non-performing loans, which misallocate credit investments from needful projects. It may spill over the banking system and contract the money stock, which may lead to economic contraction and affect its liquidity and profitability.

It can be accomplished that as present environment is fraught with risks of various kinds and dimensions, a tested and sound credit-risk model has to be put in place to have proper perception of the risk in a proposal and decide on the acceptability or otherwise and to take mid-course correction in respect of existing accounts. Though total elimination of NPAs is not possible in banking business as elements of risk is an inseparable ingredient, especially in the present context of the externalities fraught with risk. But, by effective management, its incidence can only be minimized. The adage ‘prevention is better than cure’ or ‘a stitch in time saves nine’, hold good in the monitoring of credit portfolio and arresting fresh generation of NPAs is equally important as recovery of NPAs. In a banking system, NPA is inevitable and cannot be totally eliminated. What needs to be done is to arrest fresh accretion and contain it to the barest minimum by preventing slippage through effective proactive steps and that too at the right time.

RECOMMENDATIONS

✓ Arresting slippage of accounts through relentless monitoring and focus on the continuous viability of the borrowing concern with improved asset classification is must. At the same time all accounts in the Standard category should not be taken for granted and should be subjected to periodical and in-depth review in a systematic manner through a sound adequate loan review mechanism in place.

✓ Categorization of standard accounts into A, B, C based on actual recovery of interest and installments due, will help a focused and strengthened monitoring.

✓ Banks should ensure that they should move with speed and charged with momentum in disposing off the loss assets. This is because as uncertainty increases with the passage of time, there is all possibility that the recoverable value of asset also reduces and it cannot fetch good price. If faced with such a situation than the very purpose of getting protection under the Securitization Act, 2002 would be defeated and the hope of seeing a must have growing banking sector can easily vanish.

✓ Bank should adhere to “Know Your Customer” norms for identification of borrower, guarantor and verification of their addresses to minimize the risk of default in case of housing sector lending. In respect of agricultural advances, recovery camp should be organized during the harvest season.
Ongoing monitoring of bank’s borrowers is important to understand the primary cause of corporate decline and to be able to identify the symptoms of a potential distress situation. Loan Officers and staff should be alert and diligent for signs of borrower distress. It is essential to identify signs of distress which diminish the Borrowers capacity to repay debt. Early recognition followed by appropriate action is essential if the bank is to minimize NPAs.

Loan Workout Unit should be created which should be exclusively responsible for managing non-performing and under performing loans to maximize the recovery value from a portfolio of distressed loans, through the employment of an equitable and professional workout process.

REFERENCES


World Bank, (2009), “International bank for reconstruction and development, Program document for a proposed loan in the amount of US$2.0 billion to the Republic of India for a banking sector support loan”.