AN ANALYSIS OF NON PERFORMING ASSETS AND PROFITABILITY OF SCHEDULE COMMERCIAL BANKS IN INDIA

Prof. Arvind Kumar* Usman Ghani**
*Dean, Faculty of Commerce, University of Lucknow, Lucknow.
**Research Scholar, Department of Commerce, University of Lucknow, Lucknow.

Abstract
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. The Indian banking system has undergone significant transformation following financial sector reforms. Several prudential and provisioning norms have been introduced, and these are expecting the banks to usher overall efficiency, bring down Non Performing Assets (NPA), to improve the profitability and overall financial health in the banks, in general. In the background of these developments, present paper attempts to analyze the trend of the NPA of the schedule commercial banks in recent decade. Results of the study indicate that there is a diminishing trend in the ratios of non-performing assets as GNPAs and NNPAs. There is a high degree of negative correlation between NPA Ratios with ROA. 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.

Keywords: Asset classification, Provisioning for Non-Performing assets (NPAs) ROE, ROA, GNPA, NNPA.

INTRODUCTION
Banking is an important segment of the tertiary sector and acts as a back bone of economic progress. Banks act as a development agency and are the source of hope and aspirations of the masses. A major threat to banking sector is prevalence of Non-Performing Assets (NPAs).

Assets mean valuable resources or properties owned by an organization. The organization utilized this assets in an efficient manner to their full capacity to attain the main goals of the organization i.e. income yield, improving productivity and profitability. For the banking sector, efficient management of its assets is of principal importance because banks are the custodians of public funds and they lend other people's money. To protect the interest of the public as well as the banks itself, deliberate efforts are needed for efficient asset management. If the assets and liabilities of the banks are not managed in well manner, it can cause a serious problem for bank as well as for the society as a whole. In order to increase profitability of the banks, serious efforts are required for managing the assets and liabilities of the banks. If the assets are not managed in an appropriate manner, they turned to non-performing state. Such assets are generally termed as 'Non-Performing Assets'.

NPAs reflect the performance of banks. A high level of NPAs suggests high probability of a large number of credit defaults that affect the profitability and net-worth of banks and also erodes the value of the asset. The NPA growth involves the necessity of provisions, which reduces the overall profits and shareholders' value (Khanna, 2012). 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 origin of the problem of rising NPAs lies in the quality of managing credit risk by the banks. The banking sector has been facing severe problems of rising NPAs. The NPAs in Indian commercial banks are growing due to external as well as internal factors. The major external factors which lead to increase/rise in NPAs and non-controllable by Banks are Ineffective Statutory Recovery Procedures, Willful Defaults, Natural Calamities, Industrial Sickness, Lack of Demand. Change in Government Policies etc. The major internal factors which lead to increase/rise in NPAs and being internal in nature and controllable by the Banks are Defective Lending Process or Poor Lending Decision, Inappropriate Technology, Improper SWOT analysis, Poor credit appraisal system, Managerial deficiencies, Absence of regular industrial visits, Reloaning process, Monitoring and follow-up; Delay in release of limits etc. (GOI, 2005).

Researc Bank of India (1999) commented that 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. Muniappan (2003) suggested that 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.
REVIEW OF LITERATURE
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, 2000; The Price water house Coopers Limited, 2002; Pradeep, 2007).

The lending and credit policies have crucial influence on nonperforming loans (Reddy, 2002; Karunakar et al., 2008). Many studies (Chaudhuri, 2002; Munippan, 2003; Gupta & Kumar, 2004; Ghosh, 2005; David, 2007; Rakhe, 2010, Rajput, Gupta and Chauhan, 2012 etc.) observed that the problem of NPAs is related to several internal and external factors, which affected the performance of the banks. Some studies (Indira & Vasishtha, 2002; Nachiket & Bhavna, 2002; Gujral, 2003; Kumbhakar & Sarkar, 2003; Davis & Stone, 2004; Das & Ghosh, 2006; Mahesh & Rajeev, 2006; Vallabh et al. 2007; Rao & Tiwari, 2008; Nandy, 2010, and Rajput & Gupta, 2011 etc.) found the contradictory relationship between the efficiency and NPAs among all the bank groups. Many studies (Naik, 2002; Bhide et al., 2001; Bhaurik et al., 2004; Banerjee et al., 2005; Arpita, 2010; Mishra, 2011) have assessed and confirmed the negative impact of NPAs on the performance of banking sector.

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 (Ranjan. & Dhal, 2003; Prasad et al., 2004; Mohan, 2005; Bodla & Verma, 2006; Mishra, 2007; Misra & Dhal, 2009; Tandon et al., 2009; Acharya et al., 2010). Most of these studies support to the usage of Panel Regression Model to the confirm relation between profitability and echelon of non-performing assets.

OBJECTIVES OF THE STUDY
The main objective of present study is to analyze the nature, extent and magnitude of NPAs and its impact on profitability of SCBs. The specific objectives of the study are:

1. To analyze the nature, extent and magnitude of NPA within the SCB group.
2. To examine the relationship between NPAs and profitability of SCBs.

CONCEPTUAL FRAMEWORK
Non Performing Assets (NPA) : 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. RBI defines NPA as an asset, including a leased asset, becomes non-performing when it ceases to generate income for the bank.

According to norms brought in with effect from March 31, 2004, a non-performing asset (NPA) shall be a loan or an advance, where:

1. Interest and/or installment of principal remain overdue for a period of more than 90 days in respect of a term loan,
2. The account remains ‘out of order’ in respect of an Overdraft/Cash Credit,
3. The bill remains overdue for a period of more than 90 days in the case of bills purchased and discounted,
4. The installment of principal or interest thereon remains overdue for two crop seasons for short duration crops,
5. Any amount to be received remains overdue for a period of more than 90 days in respect of other accounts.

Gross NPA: 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:

\[ \text{Gross NPA} = \frac{\text{Gross NPAs}}{\text{Gross Advances}} \]

Net NPA: Net NPAs are those type of NPAs in which the bank has deducted the provision regarding NPAs. Net NPA shows the actual burden of banks. Since in India, bank balance sheets contain a huge amount of NPAs and the process of recovery and write off of loans is very time consuming, the provisions the banks have to make against the NPAs according to the central bank guidelines, are quite significant. That is why the difference between gross and net NPA is quite high. It can be calculated by following:

\[ \text{Net NPA} = \frac{\text{Gross NPAs} - \text{Provisions}}{\text{Gross Advances} - \text{Provisions}} \]
Profitability: There are three widely used measures of bank profitability in the banking literature: Profit Margin (PM), Return on Assets (ROA), and Return on Equity (ROE). Profit margin is defined as net income available to common stockholders divided by total operating income.

Profit Margin reflects the percentage of each rupee of operating income remaining after all costs and expenses (interest and non-interest expenses) are paid. This ratio is also used as a measure of expense control.

Return on Assets (ROA) is defined as the ratio of net income to total assets. This ratio shows the rupee amount of net income generated per rupee of assets, and indicates how well the assets of a bank are utilized in generating net income. Therefore, more efficient banks are expected to generate higher net income per rupee of assets.

The link between the above two profitability ratios (PM and ROA) is the asset utilization (AU) ratio, which is the ratio of total operating income to total assets. This ratio is an indication of managerial efficiency, and provides information on the success of management in generating income per rupee of assets.

The relationships among PM, AU, and ROA can be summarized as follows:

\[ PM = \frac{Net\ Income}{Total\ Operating\ Income} \]

\[ AU = \frac{Total\ Operating\ Income}{Total\ Assets} \]

\[ ROA = PM \times AU = \frac{Net\ Income}{Total\ Assets}. \]

Return on Equity (ROE) is defined as the ratio of net income to book value of common equity. ROE is considered the most comprehensive indicator of profitability because it is the final outcome of all the bank's activities and decisions made during the year. ROE reflects a bank's operating and investing decisions as well as the bank's financing and tax-related decisions. ROE conveys information on how equity capital is used to generate net income.

\[ ROE = \frac{Net\ Income}{Common\ Equity}. \]

HYPOTHESIS

\[ H_1: \] There is a declining trend in the Gross and the Net NPAs of scheduled commercial banks and its magnitude.

\[ H_2: \] There is a negative correlation between NPAs and determinants of profitability of public sector banks in India.

Source of Data

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 RBI website. In this study, the reference period is 12 years from 2002-03 to 2013-14.

DATE ANALYSIS

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:

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

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

Where, \( Y \) = ROA (Return on Assets),
\( a \) = constant term; \( b_1 \) & \( b_2 \) = Regression coefficients for the respective variables,
\( x_1 \) = GNPA Ratio and \( x_2 \) = NNPA Ratio; \( \mu \) = Error Term

Here, \( Y \) (i.e. ROA) is the dependent variable, while \( x_1 \) & \( x_2 \) 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 (\( R^2 \)) and Adjusted Multiple Coefficient of Determination (Adjusted \( R^2 \)) 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, 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.
ANALYSIS AND RESULT

HYPOTHESIS-I: There is a declining trend in the Gross and the Net NPAs of scheduled commercial banks and its magnitude.

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.

Table 1 : Gross and Net NPAs of Schedule Commercial Banks

<table>
<thead>
<tr>
<th>Years</th>
<th>Gross NPAs</th>
<th>Net NPAs</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Amount</td>
<td>GNPA Ratio as % of Gross Advances</td>
</tr>
<tr>
<td>---------</td>
<td>------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>2002-03</td>
<td>68717</td>
<td>8.8</td>
</tr>
<tr>
<td>2003-04</td>
<td>64812</td>
<td>7.2</td>
</tr>
<tr>
<td>2004-05</td>
<td>59373</td>
<td>5.2</td>
</tr>
<tr>
<td>2005-06</td>
<td>51097</td>
<td>3.3</td>
</tr>
<tr>
<td>2006-07</td>
<td>50486</td>
<td>2.5</td>
</tr>
<tr>
<td>2007-08</td>
<td>56309</td>
<td>2.3</td>
</tr>
<tr>
<td>2008-09</td>
<td>68328</td>
<td>2.3</td>
</tr>
<tr>
<td>2009-10</td>
<td>84698</td>
<td>2.4</td>
</tr>
<tr>
<td>2010-11</td>
<td>97900</td>
<td>2.5</td>
</tr>
<tr>
<td>2011-12</td>
<td>142903</td>
<td>3.1</td>
</tr>
<tr>
<td>2012-13</td>
<td>194074</td>
<td>3.2</td>
</tr>
<tr>
<td>2013-14</td>
<td>264195</td>
<td>3.8</td>
</tr>
</tbody>
</table>


Table No. 1 indicates that Non-performing assets of Scheduled Commercial Banks gradually declined over the period between 2002-03 to 2008-09 but increases between 2008-09 and 2013-14, as, Gross NPAs (GNPAs) as percentage to Gross Advances decreases from 8.8% in 2002-03 to 2.3% in 2008-09 and again increased to 3.8% in 2013-14. The Gross NPAs as percentage of Total Assets has also decreased from 4.1% in 2002-03 to 1.3% in 2008-09 and reached to 2.4% in 2013-14. Net NPAs (NNPAs) as percentage of Net Advances has also recorded the same trend as it decreased from 4.0% in 2002-03 to 1.0% in 2007-08, but again reached to 2.1% in 2013-14, whereas, Net NPAs as percentage of Total Assets has reduced from 1.8% in 2002-03 to 0.6% in 2010-11 but again increased to 1.3% in 2013-14.

Fig. 1 shows that the both gross NPA ratio and Net NPA ratio of scheduled comercial banks as gross/net advance respectively are having declining trends, as both trendlines are having negative slope. Although Gross NPA ratio as percentage of gross advance has more declined trend than Net NPA ratio as percentage of Net advance. It leads to accept first hypothesis of study, i.e. “There is a declining trend in the Gross and the Net NPAs of scheduled commercial banks and its magnitude”.

Fig. 1: Gross and Net NPAs Ratio of Schedule Commercial Banks as Percentage of Gross/Net Advances

**Hypothesis-II:** *There is a negative correlation between NPAs and determinants of profitability of public sector banks in India.*

Managing NPAs has a lot to do with managing productive assets and ensuring effective corporate governance. NPAs in most of the nationalized banks are now 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 2.

<table>
<thead>
<tr>
<th>Function</th>
<th>ROA</th>
<th>GNPA Ratio</th>
<th>ROA</th>
<th>NNPA Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency (N)</td>
<td>12</td>
<td>12</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>Sum</td>
<td>10.30</td>
<td>46.60</td>
<td>10.30</td>
<td>20.40</td>
</tr>
<tr>
<td>Average</td>
<td>0.858</td>
<td>3.883</td>
<td>0.858</td>
<td>1.700</td>
</tr>
<tr>
<td>Square of Deviation</td>
<td>1637.762</td>
<td>49.373</td>
<td>1637.762</td>
<td>71.682</td>
</tr>
<tr>
<td>Coefficient of Deviation</td>
<td>-70.914</td>
<td>38.021</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| **Correlation Coefficient 'r'** | **-0.631*** | **-0.740**** | *(Note: * Significant at p=0.05 (r>0.576); ** Significant at p=0.01 (r>0.708)*

Table 2 indicates that there is a significant negative correlation between GNPA Ratio with ROA (-0.631) and significant negative correlation between NNPA Ratio with ROA (-0.740). This inverse relationship clearly defines that if Non Performing Assets are controlled, it increases the profitability in terms of Return on Assets.

This 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 3 reveals that 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 result 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^2 and Adjusted R^2) of the finally selected model are less then 1, 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 to accept the hypothesis that "there is a causal relationship between profitability measure and nonperforming ratios".

CONCLUSIONS

The analysis concluded that there is a diminishing trend in the ratios of non-performing assets as GNPAs and NNPAs. 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.

This 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 led 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 mis-allocate 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.

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.

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