

Determinants of Profitability of Banks in India: A Panel Data Analysis

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Abstract: Banks in India have been undergoing major challenges in the dynamic environment over the past few years. In order to resist negative shock and maintain financial stability, it is important to trace the determinants that most influence the overall performance of the banks in India. This present study aims to find the determinants of five major bank groups in India namely, State Bank of India & its Associates, Nationalised Banks, New Private Sector Banks, Old Private Sector Banks and Foreign Banks, consisting a total of 75 banks. This paper uses panel data regression method to investigate the impact of various internal factors on profitability of banks. The empirical results have found strong evidence that profit per employee, net interest margin, net non-performing assets ratio and non-interest income have a significant impacts on the profitability for all bank groups.

Keywords: Banks, profitability, ROA, ROE, Panel regression, JEL Classification:G21

INTRODUCTION

Bank plays a very vital role in the economy of a country. Healthy banking system is the foundation of any economy. The growth of an economy depends on the banking performance. In the finance literature performance of bank generally is measured by its profitability. Increasing profitability of the banks denotes better performance. The quality in the working of financial sector truly impacts the profitability of the banks which as a whole impact the economy and GDP of a country [1]. Profit of an enterprise refers to the total income earned by it during the specified period of time, while the profitability refers to the operating efficiency of the enterprise. The profitability of bank means the ability of banks to get sufficient return on the capital (basically advances) and employees used in the business operation [2]. Reserve bank of India and other regulatory bodies have framed many rules and policies for the smooth functioning of the banks. In the recent years the profitability of Indian scheduled commercial bank are gradually decreasing (RBI, 2016). Banks in India have been undergoing major challenges in the dynamic environment over the past few years. In order to resist negative shocks and maintain financial stability, it is important to identify the determinants that mostly influence the overall performance of banks in India. This study aims to find the determinants of profitability of banks in India over the period 2008-09 to 2012-13. The focus is on the internal factor analysis. In this study we try to define the effective determinates of profitability of Indian scheduled commercial banks.

There is a number of studies on the profitability of banks. Some studies are country specific and few of them have considered panel of countries for reviewing the determinants of profitability. Some studies specify return on assets (ROA) and return on equity (ROE) as profitability indicators and to find their determinants the internal and external factor variables have been considered. Basic measure of bank profitability is the return on asset (ROA) which corrects for the size of the bank. ROA provides useful and necessary information on bank profitability but this is not on the major interest of the bank's owners (equity holders). They are more concerned about how much the bank is earning on their equity investment, an amount that is measured by the return on equity (ROE), the net income per currency of equity capital [26]. Uppal [14] examined the profitability which is an important criterion to evaluate the overall efficiency of a bank group. The paper offers suggestion on the basis of empirical results to increase the profitability and measures should be taken to increase the level of spread and curtail the burden. Chopra [6] studied the emerging trends in profits and profitability of some selected public sector banks. She recommended that proper management of both costs and as well as earnings. Bolda & Verma [9] indicate that the variables such as non-interest income, operating expenses, provision and contingencies and spread have significant relationship with net profits. Ebenezer & Omar [3] said that Poor risk management reduced profitability and it results to low profit margin of the bank. Ahmad *et al.* [24] suggest that suggests that bank profitability in East Asia

is determined by more bank-specific variables than macroeconomic variables; the reverse, however, applies to Latin America. Makkar and Singh [23] concluded that on an average, there is no statistically significant difference in the financial performance of the public and private sector banks in India, but still, there is a need for overall improvement in the public sector banks to make their position strong in the competitive market. Uppal & Juneja [28] concluded that foreign banks are performing much better than the other bank groups. According to Amandeep [15], the profitability of banks is determined mainly by two factors: spread and burden. She concludes that priority sector lending was not a drag on banks profitability. She recommended the banks to focus attention on the management of spreads, burden, establishment expenses, non-fund income and deposit composition. Cadet [27] examined that foreign banks significantly impact both the frontier and the inefficiency effects. Although they enjoy technological progress, compared with domestic banks, foreign banks are less profit efficient. Pandia and Vellingirib [25] observed that Indian banking sector has responded very positively in the field of enhancing the role of market forces regarding measures of prudential regulations of accounting, income recognition, provisioning and exposure and introduction of CRAMELS supervisory rating system. All the banks have to take necessary steps to improve the overall performance of the banking sector. Gaganis [30] show that the size of the Micro Finance Institutions has a robust non-linear, inverted U-shaped impact on overall performance. GDP growth has a robust positive impact on overall performance. Regional differences also appear to matter. Rao & Lakew [16] found that the internal factors are the most determinant factors of bank profitability in Ethiopia. Capital adequacy (equity to asset ratio), diversification (non-interest income to total income) and bank size (log of total assets) are among the internal factors that have positive and significant impact on the profitability of Ethiopian commercial banks. The loan loss reserve to total loans is also found to have negative impact on profitability though it is statistically insignificant. Sing [22] examine that 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. Chaudhuri [21] found that NPAs directly erode profitability of Indian public sector banks. Shah [13] in his various papers discuss bank profitability and productivity. He says that higher profitability can result from increased spread and that innovation have a limited role. He favoured written job descriptions for improvement of staff productivity. Nandy [5] observed that Interest Expenses is the only good predictor for Net Profit of all different bank groups. Panday & Parmar [11] observed that explanatory power of some variables

such as non-interest income, credit deposit ratio, Business per employee, Profit per employee are significantly high and Interest spread, operating expenses, are found with low explanatory power. Manoj [10] suggests that enhancing the non-interest income and credit risk management, these can significantly improve the Bank profitability. Javid *et al.* [8] examined that higher total assets may not necessarily lead to higher profit due to diseconomies of scales. Equity and deposits have significant impact on profitability. Alper and Anbar [29] suggest that banks can improve their profitability through increasing non-interest income (This indicates that greater bank activity diversification positively influence returns) and bank size, decreasing credit/asset ratio. In addition, higher real interest rate can lead to higher bank profitability. In this study we analyse the profitability of various bank groups by bank internal factors.

MATERIALS AND METHODS

Objectives

The current study aims at analysing the profitability of the selected bank groups in India. The major objectives of the study are as follows,

1. To trace the changes of profitability of various bank groups in India over years.
2. To identify the factors affecting profitability of the various commercial bank groups.

Methodology

We have used multiple panel data regression model for our analysis. We run the panel regression model of the following form

$$Y = X\beta + U$$

Y is the (NT*1) matrix of dependent variable, X is the (NT*K) matrix of independent variables, β is the (K*1) matrix of coefficients and U is the (NT*1) matrix of random error term. Here N is the number of cross section T is the number of time period and K is the number of explanatory variables. For the typical case the number of individuals is large and the number of time period is small we go one step further and specify the following –

We divided error structure of the disturbances term –

$$U_{it} = a_i + n_{it}$$

Where we assume that n_{it} is uncorrelated with X_{it} , i.e. $E(X_{it}, n_{it}) = 0$. Where a_i is called individual specific effect, varies across individuals but it constant across time. This part may or may not be co-related with explanatory variables. If individual specific term is uncorrelated with explanatory variable i.e. $E(a_i, X_{it}) = 0$ then we have random effect model (REM) and when

individual specific error term is co-related with X_{it} , i.e. $E(a_i, X_{it}) \neq 0$, then we have fixed effect model (FEM).

First we test the true nature of the panel data, then we apply appropriate estimation method. The true model has been chosen in the following way. For testing the true nature of the data basically we have three tests namely, Lagrange multiplier test, restricted F-test and Hausman test. By Lagrange multiplier test basically we test whether the model is classical linear regression model (CLRM) or random effect model. By restricted F-test we test whether the model is CLRM or fixed effect model and by Hausman test we test whether the model is REM or FEM.

We choose CLRM and apply ordinary least square (OLS) method when both Restricted F-test and LM-test are insignificant. We choose REM and apply generalised least square (GLS) method when Restricted F-test is insignificant and LM test is significant. In case both Restricted F-test and LM test are significant, then we shall apply REM if Hausman test is insignificant. We choose fixed effect model when LM-test is insignificant but restricted F-test is significant. In case both Restricted F-test and LM test are significant, then we shall apply FEM if Hausman test is significant.

Profitability of banks measured by return on assets (ROA) and return on equity (ROE). ROA is defined by the net income divided by total assets and it expressed in percent. ROE is internal performance of shareholders value, it is measured by net income divided by average total equity, it also expressed in percent. Therefore in this study, we use two measures of bank profitability: ROA & ROE. ROA is one of the general measure of banks profitability which reflects the ability of banks to achieve return on its sources of fund to generate profits. The second measure ROE reflects how firms utilize its shareholder's wealth to generate revenue [4].

Empirical model 1

$$ROA_{it} = \beta_0 + \beta_1 BPE_{it} + \beta_2 PPE_{it} + \beta_3 NIM_{it} + \beta_4 CRAR_{it} + \beta_5 NNPAR_{it} + \beta_6 ADR_{it} + \beta_7 OER_{it} + \beta_8 NIIR_{it} + u_{it}$$

Where i denotes specific bank; t represent the examine time period; ROA_{it} stands for return on assets of bank i at time t ; $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6, \beta_7$ and β_8 are coefficients of the independents variables; BPE_{it} is business per

employee of bank i at time t ; PPE_{it} is profit per employee of bank i at time t ; NIM_{it} is net interest margin of bank i at time t ; $CRAR_{it}$ is capital to risk weighted assets ratio of bank i at time t ; $NNPAR_{it}$ is net non-performing assets ratio of bank i at time t ; ADR_{it} is advance to deposit ratio of bank i at time t ; OER_{it} is operating expenses ratio of bank i at time t ; $NIIR_{it}$ is non-interest income ratio of bank i at time t .

Empirical model 2

$$ROE_{it} = \gamma_0 + \gamma_1 BPE_{it} + \gamma_2 PPE_{it} + \gamma_3 NIM_{it} + \gamma_4 CRAR_{it} + \gamma_5 NNPAR_{it} + \gamma_6 ADR_{it} + \gamma_7 OER_{it} + \gamma_8 NIIR_{it} + e_{it}$$

ROE it stands for return on equity of bank i at time t ; $\gamma_1, \gamma_2, \gamma_3, \gamma_4, \gamma_5, \gamma_6, \gamma_7$ and γ_8 are coefficients of the independent variables.

Data

In our study we considered 75 banks (five bank groups) with time period 2008-2009 to 2012-2013. This study is based on the secondary data on the following selected five commercial bank groups: (i) SBI & its associates (6 banks in this group), (ii) Nationalised bank (20 banks in this group), (iii) Old Private sector bank (13 banks in this group), (iv) New Private sector bank (7 banks in this group) and (v) Foreign bank (29 bank in this group). Bank group wise data and individual bank specific data [20], are collected from RBI, Data Base of Indian Economy (DBIE).

Variables specification

Dependent variables

We have used return on assets (ROA) and return on equity (ROE) as profitability indicators as well as dependent variables.

Return on Assets (ROA)

A key indicators of banks profitability is the return on assets (ROA) which indicate that net profit generated on total assets it is computed by dividing net income by average total assets. Formula- (Profit after tax/Average total assets)*100. It reflects how efficiently a bank can manage its assets to produce profits during a period. It measures of the ability of the firm to generate returns on its portfolio of assets. The higher ratio depicts the better utilization of the assets thus higher the profitability.

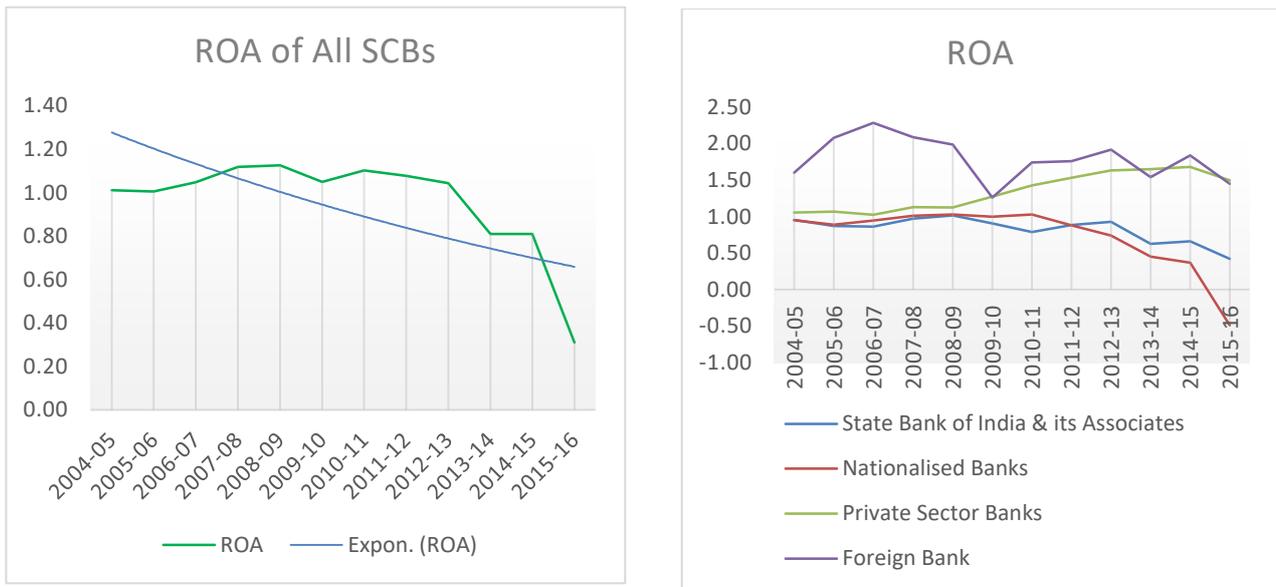


Fig-1: Return on Assets
Source: RBI, DBIE

From the figure 1 we show that decreasing trend of return on assets over the time period 2004-05 to 2015-2016. In the year 2015-2016 ROA for Nationalised Bank is negative i.e. -0.49.

Return on Equity (ROE)

Return on Equity (ROE) is a ratio relating net profit (net income) to shareholders' equity. Here the

equity refers to share capital reserves and surplus of the bank. Formula- $(\text{Profit after tax} / (\text{Total equity} + \text{Total equity at the end of previous year}) / 2) * 100$. Return on equity measures bank profitability by revealing how much profit a bank generates with the money shareholders have invested. It reflects how effectively a bank management is utilizing its shareholders' funds. Higher ratio indicates higher profitability of the banks.

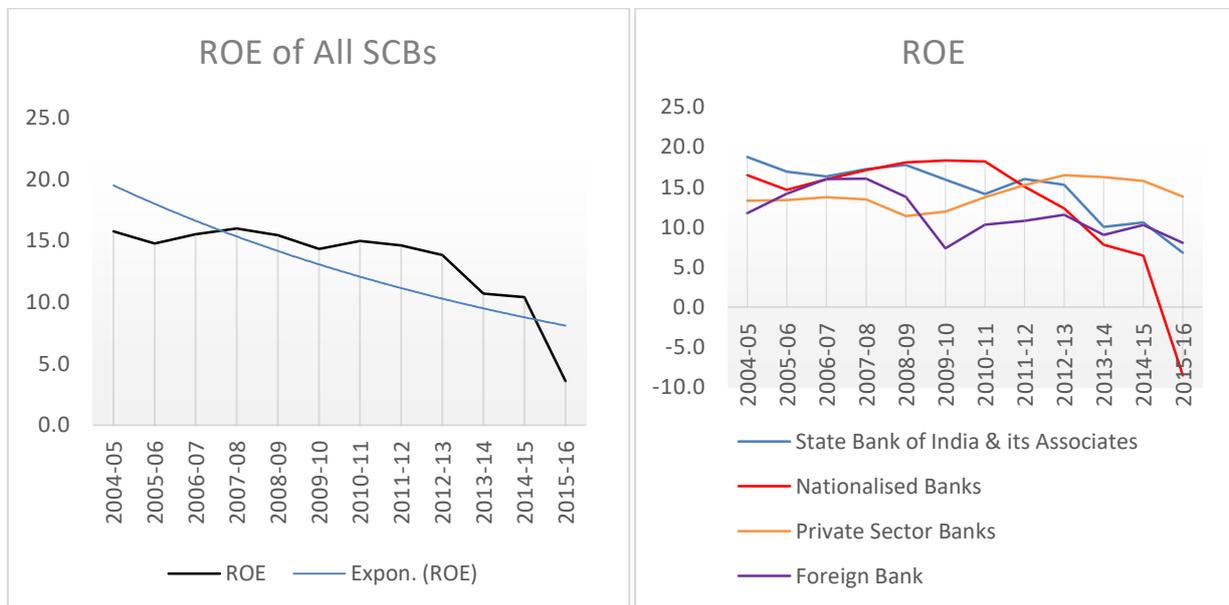


Fig-2: Return on Equity
Source: RBI, DBIE

From the figure 2 we shows that decreasing trend of return on equity over the time period 2004-05 to 2015-2016. In the year 2015-16 ROE for nationalised bank is negative I.e. -8.5.

Independent variables

Business per employee (BPE):The ratio is calculated as, (Deposits + advances)/Total number of employees. The ratio bears positive impact on profitability of the bank as it highlights the efficiency of human resources in relation to the core business of banking.

Profit per employee (PPE): It is calculated as, Net profits/ Total number of employees. The ratio expected to have a positive relation with profitability and depicts employee efficiency.

Net Interest Margin (NIM) or Spread ratio: The performance of the bank is largely dependent on the NIM for the year. The difference between the interest income and interest expenses is known as net interest income. Net interest margin is the net interest income divided by the average interest earnings assets. The higher the ratio, we expect more will be the profitability. It shows how well the bank is earning income on its assets. Net interest margin = (net interest income/average total assets)*100, Net interest income = (interest received on assets–interest paid on liabilities)= interest earned on securities and loans – paid on deposits and borrowings.Net interest income depends

partly on the interest rate spread, which is the average interest rate earned on it assets minus the average interest rate paid on its liabilities.

Capital to Risk weighted Assets ratio (CRAR): Capital to risk weighted assets ratio is arrived at by dividing the capital of the bank with aggregate risk weighted assets for credit risk, market risk and operational risk. The higher the CRAR of a bank the better capitalized it is.

Non-Performing Assets (NPA): The assets of banks which don't perform (i.e. don't bring any return) are called Non-Performing Assets (NPA) or bad loans. Banks assets are the loans and advances given to customers. If customers don't pay either interest or part of principal or both, the loan turns into NPA. According to RBI, terms loan on which interest or instalment of principal remain overdue for a period of more than 90 days from the end of a particular quarter is called a Non-Performing Assets. We expected to have NPA is negatively affect the bank profitability.

Net NPA ratio = (net non-performing assets/Net advances)*100, Net advances = gross advances – provisions, Net NPA = Gross NPA – (Balance in interest suspense account + DICGC/ECGC claims received and held pending adjustment + part payment received and kept in suspense account + total provision held).

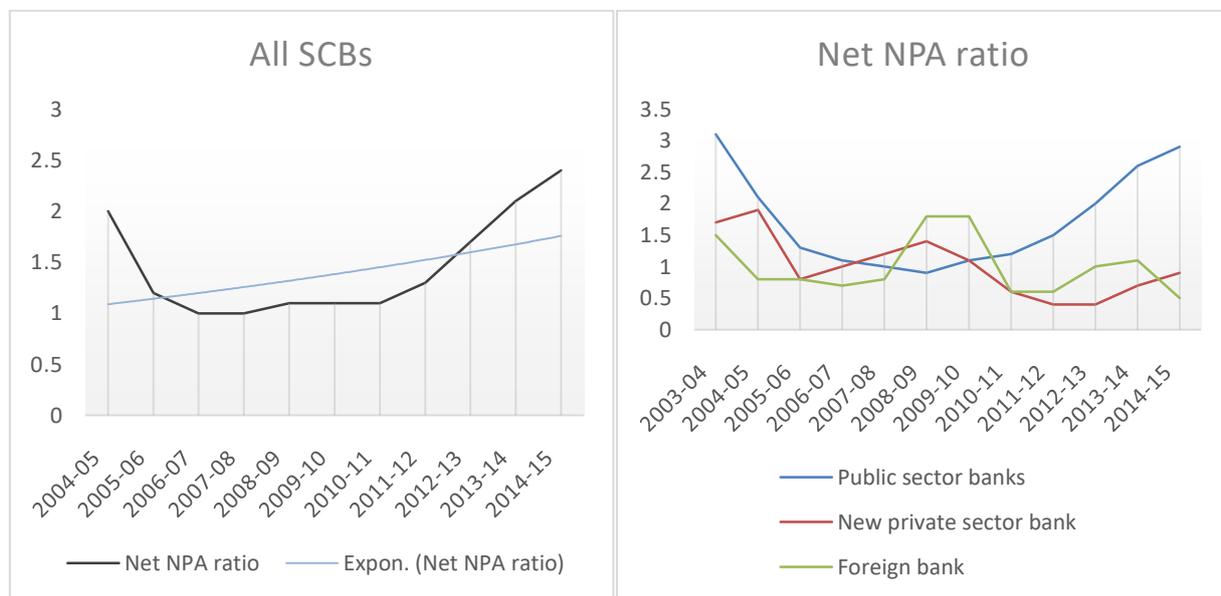


Fig-3: Net NPA ratio
Source: RBI, DBIE

From the figure 3, it says that overall trend of NPA after 2008-2009 is increases. For public sector

bank it increases from 2008-2009 to still now and arise an alarming situation.

Advance to Deposit ratio (ADR)

It is calculated as $(\text{Total advances}/\text{Total deposits}) \times 100$. The ratio bears a positive relationship with profitability as it highlights effective utilisation of the deposits. However, a lower ratio may indicate that the deposits are merely serving as a burden to the banking business.

Operating Expenses ratio (OER): It is calculated as, $(\text{Operating expenses}/\text{Total expenses}) \times 100$. In this type of expenses basically considered cost of running banking business: salaries for tellers and officers, rent on banking building, purchase of equipment such as desk and vaults, and the servicing cost of equipment. It expected to have negative relation with profitability.

Non-interest income ratio (NIIR): Non-interest income is the income derived from fee based banking service such as a service charge on deposit accounts, consulting and advisory fees, rental of safe deposit boxes and other fee income, brokerage and insurance activities. This represent income of a bank from its allied and non-banking activities. This is calculated as, $(\text{non-interest income}/\text{total assets}) \times 100$. It expected to have positive relation with profitability.

To provide an overview of the variables under study, the descriptive statistics namely: mean, standard deviation, skewness, kurtosis, minimum and maximum values computed for the sample observation of 75 scheduled commercial banks in India for a 5 years period (2008-2009 to 2012-2013) are given in table 1.

Table-1: Descriptive statistics of the variables

| Descriptive Statistics | N | Minimum | Maximum | Mean | Std. Deviation | Skewness | Kurtosis |
|------------------------|-----|---------|---------|-------|----------------|----------|----------|
| BPE | 375 | 7.3 | 632.7 | 128.6 | 95.4 | 1.9 | 4.6 |
| PPE | 375 | -6.0 | 27.7 | 2.0 | 3.8 | 3.7 | 17.2 |
| NIM | 375 | -1.2 | 10.4 | 3.1 | 1.2 | 1.4 | 6.0 |
| CRAR | 375 | 9.5 | 317.5 | 22.4 | 24.6 | 6.9 | 68.1 |
| NNPAR | 375 | 0.0 | 14.3 | 1.1 | 1.4 | 4.1 | 27.4 |
| ADR | 375 | 1.0 | 1156.4 | 105.3 | 138.8 | 5.4 | 31.5 |
| OER | 375 | 11.5 | 100.0 | 34.8 | 20.1 | 1.7 | 2.3 |
| NIIR | 375 | -30.0 | 86.6 | 18.4 | 16.9 | 2.4 | 6.1 |
| ROE | 375 | -21.8 | 30.6 | 12.4 | 7.6 | -0.8 | 1.5 |
| ROA | 375 | -7.9 | 10.2 | 1.4 | 1.4 | 0.6 | 11.7 |

Source: Author's estimation

RESULTS

We have applied panel data regression technique for each bank group as outlined in section 2. Here we try to estimate the coefficients of various independent variables and also try to understand which factors are more effective for bank profitability.

Before doing panel regression model estimation, we have first done multicollinearity check. We have examined multicollinearity between the eight

variables by employing the Variance Inflation Factor (Table 2). For eliminating multicollinearity problem between predictors, we remove BPE and OER from regression of SBI & its associates (1A, 2A), BPE from regression of Nationalised bank (1B, 2B), PPE from regression of Old private sector bank (1C, 2C), PPE & OER from regression of New private sector bank (1D, 2D) and OER from regression of All SCBs (1F, 2F). No multicollinearity problem for Foreign banks.

Table-2: Variance inflation Factor (After removing variables)

| variables | SBI & its associates | Nationalised bank | Old private sector bank | New private sector bank | Foreign bank | All SCBs |
|-----------|----------------------|-------------------|-------------------------|-------------------------|--------------|----------|
| BPE | - | - | 2.6 | 2.1 | 3.4 | 2.3 |
| PPE | 1.4 | 2.0 | - | - | 2.5 | 2.7 |
| NIM | 1.9 | 2.8 | 2.0 | 1.7 | 1.9 | 1.3 |
| CRAR | 1.4 | 1.3 | 1.9 | 1.9 | 1.6 | 1.3 |
| NNPAR | 1.9 | 1.8 | 1.5 | 1.5 | 1.2 | 1.2 |
| ADR | 2.0 | 1.4 | 1.8 | 1.9 | 1.3 | 1.3 |
| OER | - | 3.4 | 2.4 | - | 4.2 | - |
| NIIR | 1.3 | 1.7 | 1.4 | 1.2 | 4.3 | 1.4 |
| Mean VIF | 1.7 | 2.1 | 1.9 | 1.7 | 2.5 | 1.6 |

Source: Author's estimation

First we choose the best fit model for respective bank groups with the help of LM test, restricted F test and Hausman test, then we apply the appropriate technique of estimation.

Empirical model 1: Dependent variable ROA

When dependent variable is ROA the best fit model for SBI & its associates is pooled panel data regression model, for nationalised bank, old private sector bank and new private sector bank is fixed effect model (FEM). Foreign bank and all SCBs are best fitted by random effect model (REM). The panel Regression result for each bank group are depicted in table 3.

Table-3: Estimation Results Panel Regression Models

| Model | 1A | 1B | 1C | 1D | 1E | 1F | |
|----------------------------|-------------------------------------|-------------------------------------|--------------------------------------|------------------------------------|---|---|---------|
| Dependent Variable is ROA | SBI& Its Associates | Nationalised Bank | Old private sector Bank | New private sector Bank | Foreign Bank | AllSCBs | |
| Number of banks | 6 | 20 | 13 | 7 | 29 | 75 | |
| Independent variables | BPE | - | 0.003 | 0.0007 | -0.0024 | -.002** | |
| | PPE | 0.63*** | 0.7*** | - | 0.16*** | 0.18*** | |
| | NIM | 0.17** | 0.21*** | 0.62*** | 0.35*** | 0.4*** | |
| | CRAR | 0.04* | 0.012 | 0.009 | -0.013 | 0.0002 | 0.0028 |
| | NNPAR | -0.15*** | -0.1*** | -0.1** | -0.6*** | -0.2*** | -0.2*** |
| | ADR | -0.005 | -0.005 | -0.01* | 0.007 | -0.001 | -0.001* |
| | OER | - | -0.008 | -0.04*** | - | -0.012 | - |
| | NIIR | 0.014* | 0.06*** | 0.06*** | 0.0005 | 0.04*** | 0.03*** |
| Model | Pooled | FEM | FEM | FEM | REM | REM | |
| Explanation power | 0.75 | 0.81 | 0.86 | 0.74 | 0.46 | 0.50 | |
| Significance of the Model. | F(6, 23)= 11.65 Prob. >F = 0.000 | F(7, 73)= 60.57 Prob. >F = 0.000 | F(7,45) = 16.57, Prob.> F= 0.0000 | F(6, 22) = 28.00, Prob.> F= 0.0000 | Wald chi2(8) = 126.98, Prob.> chi2 = 0.0000 | Wald chi2(7) = 357.23, Prob.> chi2 = 0.0000 | |

Source: Own estimation *** 1% level of significance ** 5% level of significance *10% level of significance

The coefficients for each of the independent variables indicates the amount of percentage change one can expect in return on assets (ROA) due to one percentage change in the value of that variable, given that all others variable in the model are held constant. Profit per employee (PPE) and net interest margin (NIM) has significant positive relation with return on assets for all bank groups. Capital to risk weighted assets ratio (CRAR) have significant relation with ROA for SBI & its associates only. Net non-performing assets ratio (NNPAR) has significant negative relation with ROA for all bank groups. Advance to deposit ratio (ADR) have negative significant relation with ROA for old private sector bank only. Operating expenses ratio (OER) has negative significant relation with ROA for old private sector bank only. Interest income ratio (NIIR) has positive significant relation with ROA for all bank groups except new private sector bank.

For all scheduled commercial banks profit per employee, net interest margin and non-interest income ratio are positively related with ROA with coefficients 0.18, 0.4 and 0.03 respectively at 1% level of significance. Net NPA ratio is negatively related with ROA with coefficients 0.2 at 1% level of significance. Business per employee and advance to deposit ratio are also negatively related with ROA at 5% and 1% level of significant respectively. Approximately 50% of the variability of return on assets is accounted for by the independent variables in this model at 1% level of significance.

Empirical model 2: Dependent variable ROE

When dependent variable is ROE, Best fitted model for respective bank groups are mentioned in table 4. The panel Regression result for each bank group are depicted in table 4.

Table-4: Summary of Panel Regression Model

| Model | 2A | 2B | 2C | 2D | 2E | 2F | |
|---------------------------|------------------------------------|--|---|--------------------------------------|--|------------------------------------|-----------|
| Dependent variable IS ROE | SBI & Its Associates | Nationalised Bank | Old private sector Bank | New private sector Bank | Foreign Bank | AllSCBs | |
| Number of banks | 6 | 20 | 13 | 7 | 29 | 75 | |
| Independent variables | BPE | - | 0.084** | 0.005 | -0.01 | -0.014** | |
| | PPE | 12.6*** | 10.9*** | - | - | 0.54*** | 0.5*** |
| | NIM | 2.25 | 2.01** | 6.63*** | 2.64*** | 1.24*** | 1.71*** |
| | CRAR | 0.72 | -0.23 | 0.1 | -0.02 | -0.02 | -0.023 |
| | NNPAR | -4.06*** | -2.14*** | -1.2 | -6.3*** | -0.7*** | -1.38*** |
| | ADR | 0.06 | -0.22*** | -0.02** | -0.01 | -0.007** | -0.015*** |
| | OER | - | 0.04 | -0.53*** | - | -0.11** | - |
| | NIIR | 0.81* | 0.75*** | 0.83*** | -0.26 | 0.12*** | 0.14 |
| Best fit Model | FEM | REM | REM | FEM | REM | FEM | |
| Explanation power | 0.56 | 0.65 | 0.67 | 0.71 | 0.42 | 0.048 | |
| Significance of the model | F(6,18) = 10.14, Prob.> F = 0.0000 | Wald chi2(7)= 280.19, Prob.> chi2 = 0.0000 | Wald chi2(7)= 78.41, Prob.> chi2 = 0.0000 | F(8, 26) = 68.73, Prob.> F = 0.0000 | Wald chi2(8)= 117.42, Prob.> chi2 = 0.0000 | F(7,293) = 25.65, Prob.> F= 0.0000 | |

Source: Own estimation *** 1% level of significance ** 5% level of significance *10% level of significance

The coefficients for each of the independent variable indicate that the amount of change one can expect in return on equity (ROE) due to one unit change in the value of that variable, given that all others variable in the model are held constant. Profit per employee (PPE) has significant positive relation with ROE for all banks. Net interest margin (NIM) has significant positive relation with ROE for all bank groups except SBI & its associates. Capital to risk weighted assets ratio (CRAR) have no significant relation with ROE for all bank groups. Net non-performing assets ratio (NNPAR) has significant negative relation with ROE for all bank groups except old private sector banks. Advance to deposit ratio (ADR) have negative significant relation with ROE for foreign bank, Nationalised bank and old private sector bank. Operating expenses ratio (OER) have negative significant relation with ROE for old private sector bank and foreign bank. Non-interest income ratio (NIIR) has positive significant relation with ROE for all bank groups except old private sector bank.

For all scheduled commercial bank profit per employee and net interest margin ratio are positively related with ROE with coefficients 0.5 and 1.71 respectively at 1% level of significance and net NPA ratio and advance to deposit ratio are negatively related with ROE with coefficients 1.38 and 0.015 at 1% level of significance. Business per employee negatively

related with ROE with coefficient 0.014 at 5% level of significance. Approximately 4.8% of the variability of return on equity is accounted for by the independent variables in this model at 1% level of significance.

CONCLUSION

We observe from our analysis that the major determinants of profitability of selected bank groups differ for each group, but the most commonly influencing four factors have been identified i.e. Profit per employee, net interest margin, net NPA ratio and non-interest income. From regression analysis it is clear that non-performing assets have an adverse impact on profitability at high significant level, for each bank group as well as all scheduled commercial bank in India. Net interest margin and non-interest income has positive significant role on profitability of banks. We see that business per employee and advance to deposits ratio are negative effect on profitability of all scheduled commercial banks. But the expected relationship between this two variable with profitability is positive. The basic reason for this result is rapid growth of bad debt.

For enhancing the performance of the banks, the level of NPA should be reduced. The credit policy should be strict, and the debt collection policy should be strong enough to reduce the amount of bad debt. The profitability of banks will increase with the increase in

quality of loans. To improve their performance, the banks should take suitable policies to improve net interest margin. However, the extent to which these are to be enhanced needs to be done are policy issues. To increase the profitability, banks must strive to balance non-interest income.

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