Impact Analysis Of Basel Iii Parameters On The Performance Of Sbi, A Leading Public Sector Bank In India

Ujjal Sut

Abstract: Banking sector provides the backbone to a fledging economy. It is the pivot around which the entire money market of the country evolves. In the promotion of economic development role of banking sector can not be overlooked. No doubt , the banking sector has to take the major responsibility in pioneering the path of development and stabilizing the financial health of the country. The Basel Committee on Banking Supervision (BCBS) was formed by a group of governors of G-10 countries in 1974. BCBS in 1988 released Basel-I record and in 2004 Basel-II record was released. This paper relates to the impact analysis of the various parameters mentioned under Basel III accord on the profitability of the bank. For this study we have taken SBI (State Bank of India) an Indian Multinational public sector bank. Multiple regression analysis has been used to analyze the impact of the specified parameters on the performance of the bank.

Key Words: Banking , BCBS, Basel ,SBI ,Multiple regression ,Fledging , Economy.

1. INTRODUCTION:
Banking sector is one of the most important sectors of an economy. The banking sector in India is broadly classified into two types-scheduled banks and non scheduled banks. Schedule commercial banks are further classified into public banks , private banks , foreign banks and RRBs ( Regional Rural Banks ). Currently there are 12 public sector banks.SBI is one of the leading public sector banks. It is an Indian public sector multinational financial and banking body. Basel Committee on Banking supervision is a committee established in 1930 under the Bank for International Settlements. In response to the financial crisis in 2007-08 the BCBS ( Basel Committee on Banking Supervision ) developed an internationally agreed set of measures known as Basel III accord. In our study we have taken into account three major parameters specified under Basel III accord. They are

- **Capital Adequacy Ratio (CAR)**: Capital adequacy ratio is the ratio of capital of the bank to its risk. CAR can be calculated as

  \[ \text{CAR} = \frac{\text{Tier 1 Capital + Tier 2 capital}}{\text{Risk Weighted assets}} \]

  Tier 1 capital is the loss absorbing capital. It can be used to absorb losses without a institution having to stop its operations. Tier 2 capital can be assessed by shutting down and selling the assets of the financial institutions.

- **Leverage Ratio (LR)**: The BCBS introduced leverage ratio in Basel III accord in 2010. It is the ratio of tier 1 capital to the total consolidated asset of the bank.

  \[ \text{LR} = \frac{\text{Tier 1 capital}}{\text{Total Consolidated Asset}} \]

  The ratio uses tier 1 capital of the bank to judge how leveraged a bank in relation to the consolidated asset of the bank.

- **Liquidity Coverage Ratio (LCR)**: The Liquidity Coverage Ratio is calculated as a ratio of a bank’s High Quality Liquid Asset (HQLA) by its total net cash flows.

  \[ \text{LCR} = \frac{\text{HQLA}}{\text{Total Cash Flows}} \]

Objectives :
1. To study the impact of Basel III parameters on the performance of the selected bank.
2. To analyze the indicators affecting the financial performance of the bank.

Research Methodology:
The present study has used multiple regression approach in analyzing the financial performance of the banks. For this State Bank of India (SBI), a leading public sector bank in India was selected. The data collected were mainly secondary in nature. Various secondary sources line annual reports of the selected banks, website of RBI ,Journals were used for gathering the data. Data collected from the mentioned sources were analyzed with the help of multiple regression.

*Ujjal Sut , Dept. of Economics, Darrang College, Tezpur , India ,PH-8474863405 .Email:ujjalsut@gmail.com*
Analysis:
1. Analysis of Net NPA of SBI in the last decade using line diagram.

Table 1: Net NPA of SBI in recent 10 years

<table>
<thead>
<tr>
<th>YEAR</th>
<th>NET NPA (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008-09</td>
<td>1.79</td>
</tr>
<tr>
<td>2009-10</td>
<td>1.72</td>
</tr>
<tr>
<td>2010-11</td>
<td>1.63</td>
</tr>
<tr>
<td>2011-12</td>
<td>1.82</td>
</tr>
<tr>
<td>2012-13</td>
<td>2.1</td>
</tr>
<tr>
<td>2013-14</td>
<td>2.57</td>
</tr>
<tr>
<td>2014-15</td>
<td>2.12</td>
</tr>
<tr>
<td>2015-16</td>
<td>3.81</td>
</tr>
<tr>
<td>2016-17</td>
<td>3.71</td>
</tr>
<tr>
<td>2017-18</td>
<td>5.73</td>
</tr>
</tbody>
</table>

Source: Annual reports of SBI

![Figure 1: Net NPA to Net advances of SBI in recent ten years.](image)

From the table and the figure a gradual increasing trend is observed for Net NPA of SBI for the last ten years. However the percentage of Net NPA to Net advances came down from 2.57 in 2013-14 to 2.12 in 2014-15 and again it starts increasing from 2015-16 onwards. Continuously increasing NPA has emerged as a cause of concern for the banks.

2. Analysis of Net Profit of SBI in the last decade.

Table 2: Net Profit of SBI in recent 10 years.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>NET PROFIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008-09</td>
<td>9,121</td>
</tr>
<tr>
<td>2009-10</td>
<td></td>
</tr>
<tr>
<td>2010-11</td>
<td></td>
</tr>
<tr>
<td>2011-12</td>
<td></td>
</tr>
<tr>
<td>2012-13</td>
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<td>2013-14</td>
<td></td>
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<tr>
<td>2014-15</td>
<td></td>
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<tr>
<td>2015-16</td>
<td></td>
</tr>
<tr>
<td>2016-17</td>
<td></td>
</tr>
<tr>
<td>2017-18</td>
<td></td>
</tr>
</tbody>
</table>

Source: Annual reports of SBI

Figure 2: Net profit of SBI in recent five years.

Net profit is one of the key indicators to determine the financial performance of the bank. Data were collected from the annual reports of the mentioned bank from 2008-09 to 2017-18. In the above table and the figure the level of profit (in crores) are shown. In 2017-18 the bank faced a loss of Rs 6,547 crores.

3. Multiple regression analysis of performance of SBI (in terms of net profit) in recent five years.

Multiple regression generally explains the relationship between one dependent variable and multiple independent variables. The dependent variable is often termed as criterion variable and the independent variables are known as predictor variables. In this section we have taken net profit of SBI as dependent variable and the parameters specified under Basel III accord are taken as independent variables.

Table 3: Relationship between Net Profit, CAR, LR and LCR

<table>
<thead>
<tr>
<th>YEAR</th>
<th>NET PROFIT</th>
<th>CAR</th>
<th>LR</th>
<th>LCR</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013-14</td>
<td>10,891</td>
<td>.124</td>
<td>.061</td>
<td>.81</td>
</tr>
<tr>
<td>2014-15</td>
<td>13,102</td>
<td>.12</td>
<td>.057</td>
<td>.83</td>
</tr>
</tbody>
</table>

Source: Annual reports of SBI
The estimated regression equation is

\[ Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e \]

- \( \beta_0 \) = a constant term which represents the value of the dependent variable (\( Y \)) when the value of all independent variables is zero.
- \( \beta_1 \) = regression coefficient which indicates the value at which the dependent variable changes when the predictor variable (\( X_1 \)) changes.
- \( \beta_2 \) = regression coefficient which indicates the value at which the dependent variable (\( Y \)) changes when the predictor variable (\( X_2 \)) changes.
- \( \beta_3 \) = regression coefficient which indicates the value at which the dependent variable (\( Y \)) changes when the predictor variable (\( X_3 \)) changes.

\( e \) = random error which is the unpredictable variation in \( Y \).

In our analysis the dependent variable (\( Y \)) is net profit of the bank and independent variables are Capital adequacy ratio (\( X_1 \)), Leverage ratio (\( X_2 \)), and leverage coverage ratio (\( X_3 \)).

We have analyzed the data collected with multiple regression approach and the following summary report has been observed.

### Regression Statistics

- Multiple R: 0.782171
- R Square: 0.611791
- Adjusted R Square: -0.55283
- Standard Error: 165135
- Observations: 5

The following results have been obtained:

- \( \beta_0 \) = -145159
- \( \beta_1 \) = 548351.9
- \( \beta_2 \) = 191317
- \( \beta_3 \) = 16676.83
- \( e \) = random error

Now the estimated regression equation would be

\[ \text{Net profit} = -145159 + 548351.9 \text{CAR} + 191317 \text{LR} + 16676.83 \text{LCR} \]

### 4. Multiple regression analysis of non performing assets of SBI in recent five years.

In this section we have taken non performing asset of SBI as the dependent variable and the parameters specified under Basel III accord are taken as the independent variables. The independent variables are CAR (capital adequacy ratio), LR (liquidity ratio), and LCR (liquidity coverage ratio).

#### Table 4: Relationship between Net NPA, CAR, LR and LCR.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>NET NPA (%)</th>
<th>CAR</th>
<th>LR</th>
<th>LCR</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013-14</td>
<td>.257</td>
<td>.124</td>
<td>.061</td>
<td>.81</td>
</tr>
<tr>
<td>2014-15</td>
<td>.212</td>
<td>.12</td>
<td>.057</td>
<td>.83</td>
</tr>
<tr>
<td>2015-16</td>
<td>.381</td>
<td>.131</td>
<td>.056</td>
<td>.72</td>
</tr>
<tr>
<td>2016-17</td>
<td>.371</td>
<td>.131</td>
<td>.059</td>
<td>.135</td>
</tr>
<tr>
<td>2017-18</td>
<td>.573</td>
<td>.126</td>
<td>.056</td>
<td>.139</td>
</tr>
</tbody>
</table>

Source: Annual reports of SBI

We have analyzed the data collected with multiple regression approach and the following summary report has been observed.

### Regression Statistics

- Multiple R: 0.873164
- R Square: 0.762415
- Adjusted R Square: 0.049659
- Standard Error: 136512
- Observations: 5

The following results have been obtained:

- \( \beta_0 \) = -145159
- \( \beta_1 \) = 548351.9
- \( \beta_2 \) = 191317
- \( \beta_3 \) = 16676.83
- \( e \) = random error

\[ \text{Net profit} = -145159 + 548351.9 \text{CAR} + 191317 \text{LR} + 16676.83 \text{LCR} \]
Now the estimated regression equation would be
Net NPA=1.548049+2.965538 CAR -24.6911LR-25996LCR.

The following results have been obtained:
- **Multiple R**: It is the value of correlation coefficient. For this analysis, we got this value as .87.
- **R square**: It is the value of coefficient of determination. In our analysis, we have found this value as .762 that is 76.2%. We can say that 76.2 percent of the total variation of the dependent variable is explained by the independent variables.
- Among the three independent variables CAR has the highest impact on the non-performing asset of the bank.

Findings:
- Net NPA to Net advances showed an increasing trend for the recent 10 years.
- Although net profit of SBI in the last 10 years has a raising trend, however, in two or three years, profit fell down than the previous years.
- The multiple correlation coefficient for Net NPA, CAR, LR, and LCR was found to be 78.2%.
- The multiple correlation coefficient for Net Profit, CAR, LR, and LCR was found to be 87.3%.
- The coefficient of determination for Net NPA, CAR, LR, and LCR was found to be 61.1%.
- The coefficient of determination of net profit, CAR, LR, and LCR was found to be 76.2%.
- For both profit and net NPA of the bank, the highest influencing factor is the CAR (Capital Adequacy Ratio).

CONCLUSION:
In our study, we have observed the key parameters specified under Basel III norms and their relationship with net profit and net NPA of the bank. We have seen CAR (Capital Adequacy Ratio) as the highest influencing factor in the financial performance of the bank. A bank with higher CAR is considered to be safe and likely to meet the financial obligations of the bank. However, further study is required to analyze the topic in detail.

REFERENCES