

# A Study of Financial Performance of Nationalized Commercial Banks in India by CAMEL Model

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## ABSTRACT

The study aims to evaluate the financial performance of commercial banks in India. Sample of six Commercial Banks (three Public and three Private sectors) are taken and the data for the study is from 2008-09 to 2017-18. The banks include Axis Bank, Bank of Baroda, Corporation bank, HDFC Bank, ICICI Bank and State Bank of India. The data is collected from published annual reports, websites of the respective banks, and from Reserve Bank of India. Calculations are done for measuring the aspects of financial performance of banks by applying CAMEL Model which includes capital adequacy, asset quality, management efficiency, earning quality and liquidity. The significance of the parameters of the CAMEL model were tested by using ANOVA, it is found that State Bank of India in public sector and HDFC bank in private sector performed significantly well in nearly all the aspects of CAMEL. However, the performance of Bank of Baroda in public sector and Axis bank in private sector witnessed the maximum growth of their prices and returns at the BSE.

**Key Words:** Banking, CAMEL Model, Financial Performance, Capital Adequacy, NPA.

## I INTRODUCTION

As per the Reserve Bank of India (RBI), India's banking sector is sufficiently capitalized and well-regulated. The financial and economic conditions in the country are far superior to any other country in the world. Indian banking industry has recently witnessed the roll out of innovative banking models like payments and small finance banks. The digital payments system in India has evolved the most among 25 countries with India's Immediate Payment Service (IMPS) being the only system at level 5 in the Faster Payments Innovation Index (FPPII). RBI's new measures may go a long way in helping the restructuring of the domestic banking industry.

Enhanced spending on infrastructure, speedy implementation of projects and continuation of reforms are expected to provide further impetus to

growth. All these factors suggest that India's banking sector is also poised for robust growth as the rapidly growing business would turn to banks for their credit needs.

Also, the advancements in technology have brought the mobile and internet banking services to the fore. The banking sector is laying greater emphasis on providing improved services to their clients and also upgrading their technology infrastructure, in order to enhance the customer's overall experience as well as give banks a competitive edge. As the figure below shows the advantages of Banking sector in India, this Research Paper is therefore an attempt to evaluate the financial performance of the selected Public and private sector Banks in the sample period of 10 Years.



Fig.1 Advancement in Banking

Source: [www.ibef.org](http://www.ibef.org)

## II LITERATURE REVIEW

**Antoun, Coskun, & Georgievski, 2018** The Bank Specific, industry specific and macroeconomic determinants of the financial performance of the Banks in the Central and Eastern European countries were investigated in this study. To analyze these determinants the author constructed a financial performance Index (FPI) based on the CAMEL ratios. The data for 2009-14 was collected from Bank scope database, World development indicators and financial structure and development database. The empirical analysis using the fixed-effect panel regression concluded that the asset quality, earnings, capital adequacy and liquidity are negatively affected by size and positively affected by business mix and economic growth.

**Roy, Paul, Quazi & Nguyen, 2018** conducted this study to develop and validate a scale for measuring the consumers perceived service value in the Indian retail banking services. The author compiled a list of possible measurement items based on literature review and expert opinion through focus groups. Data for the study was collected from a sample of 442 respondents representing the Indian retail banking sector using survey instrument and were analyzed using the structural equation modeling. The study discovered a seven-dimensional scale for measuring service which includes service equity, service quality, customer intimacy, product leadership, operational effectiveness, customer communication, and perceived sacrifice.

**Srinivasan, P. and Britto, J. (2017)** evaluated the financial performance of 16 commercial banks from the period of 201-2017. The Liquidity, solvency and profitability ratios were calculated and one-way ANOVA was applied to determine whether there is a significant difference in the means of the financial ratios of the private and the public sector banks. The impact of liquidity, solvency and efficiency on the profitability of the public and private sector banks was studied by employing the panel data estimation fixed and random effects models. The empirical results revealed a positive and a significant impact on the profitability.

**Pinto, Hawaldar, Rahiman, T.M, & Sarea, 2017** financial performance of 8 commercial banks of Bahrain was evaluated in this study from the year 2005-2015. To determine the relationship between the financial parameters of these banks Regression, correlation and t-test was applied. The study concludes that profitability of the banks has an impact on the capital adequacy and the financial leverage but did not confirm the relation between profitability and the efficiency of the banks.

**Alemu & Aweke, 2017** analyses the overall performance of the private commercial banks in Ethiopia for a period of 10 years from 2007-2016 by using the CAMEL rating approach. The collected

data from the audited annual reports was analyzed by descriptive statistics and the panel regression model was applied to find the impact of the CAMEL ELEMENTS on the bank performance i.e. ROA and ROE. The results of the study concluded that NIB bank stood on the top and the panel model estimations indicated that the explanatory variables were significant in determining the profitability indicators.

**Gudata Abara, 2015** analyzed the financial performance in the Ethiopian Commercial Banking Sector for a period of five years from 2007-2011. The Banks selected for the study was Commercial Banks of Ethiopia, Construction and Business Bank, Bank of Abyssinia, Awash International Bank and United Bank. Ratio analysis was applied to study the financial performance and t-test was used to see whether there is a significant difference in the profitability, operational efficiency, liquidity management, solvency & risk of the selected commercial banks.

**Kaur, Kaur, & Singh, 2015** measured and compared the financial performance of the leading five public sector banks SBI, Bank of Baroda, Punjab National Bank, Bank of India and Canara Bank for the year 2009-14. The study applied the CAMEL Model i.e. Capital Adequacy, Asset quality, Management efficiency, earning quality and liquidity to analyze the performance and concluded that Bank of Baroda leads in all the aspects of the CAMEL Model.

**Repkova, 2015** applied data envelopment analysis to determine the efficiency in the Czech banking sector from 2001-12. The author applied panel data analysis to estimate the determinants of the banking efficiency and concluded that the level of capitalization, liquidity risk and riskiness portfolio have a positive impact on the banking efficiency. The CCR model shows a negative impact of ROA, Interest rate and GDP on efficiency but BCC model CCR model shows a positive impact of liquidity risk and portfolio on efficiency.

**Tzeremes, 2015** analyzed the banking efficiency in Indian Banking Industry from 2004-12. In order to analyze the dynamic effects on the industry's performance level the author applied the conditional directional distance estimator. The results of the study indicate that foreign banks perform better compared to national and domestic private banks. The findings support the view that ownership structure affects bank technical efficiency levels.

**Fahad, N. (2014)** empirically analyzed and compared the financial performance of the conventional and Islamic banking in Bangladesh. The analysis was done from the year 2008-12 and the panel data of 10 conventional banks and 6 Islamic banks was collected from the audited annual reports. The author calculated the relevant financial ratios and regression model in which Return on Assets (ROA)

and Return on Equity (ROE) were used as dependent variables along with various internal and external independent variables. The results of the study indicated that credit risk, concentration, size and economic conditions are most significant in the conventional banks and the financial development is the most significant in the Islamic bank performance.

**Bansal & Mohanty, 2013** the financial performance of the Banks was evaluated by applying the CAMEL Model i.e. Capital Adequacy, Assets quality, Management, Earnings and liquidity. On the basis of Market Capitalization five major Banks SBI, HDFC Bank, ICICI Bank, Axis Bank and Kotak Mahindra Bank were selected for the study from the period of 2007-11. The Banks were ranked on the basis of the overall weighted results of ratios in which HDFC stood first.

**Karim & Alam, 2013** measures the financial performance of five private sector banks of Bangladesh from the period of 2008-12. The author used the secondary data collected from the various audited annual reports and financial ratios like NIM, ROA, ROE, NPA were applied. The Internal based performance was measured by Return on Assets, Market based performance was measured by Tobin's (price/book ratio) and the economic based performance was measured by the Economic Value. By applying multiple regression analysis the study showed a positive impact of the three indicators on the financial performance of the Bangladeshi banks.

**Goel & Rekhi, 2013** investigated the profit earning capacity and the factors affecting the profit earning of the selected private and public sectors banks from the year 2009-12. On the basis of the data collected from the audited annual reports of the banks the ROA, ROE, demand deposit, saving deposit ratio, debt equity ratio, credit deposit ratio and NIM were calculated. On the basis of the correlation matrix the author concluded that efficiency and profitability are interrelated and the private sector banks are more efficient than the public sector.

**Miencha & Selvam, 2013** examined and compared the performance of the Kenyan commercial banks after the global financial crisis era. The data was collected from the Central Bank of Kenya Annual report, Banks in Kenya, published reports and journals from the period of 2007-11. By the data Envelopment Analysis (DEA) it was found that private banks performed well relatively compared to public banks sector and foreign sector banks in Kenya.

**Paradi, Rouat & Zhu, 2011** analysed a major Canadian bank with 816 branches on the basis of a two stage data Envelopment analysis approach, developed for simultaneously benchmarking the performance of operating units along different dimensions (for line managers) and a modified Slacks-Based Measure model. This was applied for the first time to aggregate the obtained efficiency scores from stage one and generate a composite

performance index for each unit. The performance dimensions were evaluated on the basis of production, profitability and intermediation. This three-dimensional efficiency analysis shows a significantly more comprehensive evaluation of bank branch performance that is also likely to be better accepted by branch level management. The study concluded that poor performance in one aspect does not predict similar poor results in the other two aspects.

### III OBJECTIVES OF THE STUDY

- (a) To evaluate the financial performance of the selected public and private sector Banks using the CAMEL Model Approach.
- (b) To evaluate that whether there is a significant difference in the Capital Adequacy, Asset Quality, Management Efficiency, Earnings & Profitability and the liquidity of the sample banks.

### IV RESEARCH METHODOLOGY

For conducting the research Sample of six Commercial Banks (three Public and three Private sectors) are taken and the data for the study is from 2008-09 to 2017-18. The banks include Axis Bank, Bank of Baroda, Corporation bank, HDFC Bank, ICICI Bank and State Bank of India. The data is collected from published annual reports, websites of the respective banks, and from Reserve Bank of India. Calculations are done for measuring the aspects of financial performance of banks by applying CAMEL Model which includes capital adequacy, asset quality, management efficiency, earning quality and liquidity. The significance of the parameters of the CAMEL model was tested by using ANOVA. The following ratios were calculated to evaluate the financial performance of the sample Banks:

### V CAPITAL ADEQUACY

- (a) **Capital Adequacy Ratio (CAR):** CAR is critical to ensure that banks have enough cushions to absorb reasonable amount of losses before they become insolvent. Banks with a higher capital Adequacy Ratio is considered safe and meets its financial obligations. The minimum ratio to be maintained by Banks is 8% under Basel II and 10.5% under Basel III.
- (b) **Debt Equity Ratio:** This ratio is considered as the key financial metric as it indicates positional financial risk. A high Debt equity ratio indicates aggressive growth strategy by the company as it is dependent on debt. A D/E ratio of 1.5 or lower is considered desirable and the ratios higher than 2 are less favorable.

- (c) **Credit Deposits Ratio:** This ratio will indicate how much a Bank lends out of the deposits it has mobilized. The credit deposits ratios of the bank is 75%.
- (d) **Cash Deposits Ratio:** The Cash Deposits ratio of the Banks is the ratio of cash in hand and the balances with RBI as a percentage of the aggregate deposits. This ratio is maintained above CRR given by the Bank.
- (e) **Investment Deposits Ratio:** This ratio indicates how much of the Banks deposits are invested in the government securities. This ratio is normally the higher value of SLR.
- (i) **Asset Quality:** The loan portfolio and the credit administration program will determine the Asset quality of the Bank. It indicates the efficiency of the Bank in controlling and the managing of the credit risk and the credit rating to be achieved. The percentage of Gross and Net NPA have been analyzed for determining the asset quality of the sample banks.
- (ii) **Management Efficiency:** The efficiency ratio of the Banks will measure the Banks overhead as a percentage of its revenue. This ratio will indicate the ability of the Banks to convert assets into revenue. This ratio will be calculated as the ratio of expenses to revenues. A lower efficiency ratio means that the banks are operating better, and a ratio under 50% is considered to be optimal. An increase in the efficiency ratio it means that a bank expenses are increasing or its revenues are decreasing. The ratios like Total income /total assets, Total Income /Compensation to employees, Interest Income of Bank as a % of working funds , Operating profit of bank as % to working funds, Net Interest Income /Interest earned were calculated for the study.

**(iii) Earning and Profitability:**

- **Operating Profit Margin:** This ratio indicates the proportion of the revenue which is available to cover the Non operating Costs like Interest. A High Operating profit Margin indicates a lower risk.
  - **Net Profit Margin:** It indicated how much Net Profit is generated as a percentage of revenue. A High Net profit Margin indicates profitability.
  - **Return on Net Worth:** This indicates the efficiency of the shareholders capital to generate profits. A high ratio will indicate the prudent use of the shareholders money.
  - **Return on the Total Assets:** This ratio indicates how effectively the company is using its assets to generate earnings. A high Return on total assets will help investors in recognizing the good stock opportunities.
  - **Return on Capital Employed:** It indicates the company profitability and the efficiency with which the capital is employed. A high Return on the capital employees is the indicator of success of the company as it indicates a large amount of profits can be reinvested for the benefits of the shareholders.
- (f) **Liquidity:** Current Ratio and quick Ratio measures the short term liquidity of the Banks. It measures the ability of the company to meet its short term obligations. The Dividend payout ratio indicates how much money the banks returns to its shareholders and the Retention Ratio indicates the net income which can be retained by the company after payment of dividends.

## VI KEY PARAMETERS OF THE SAMPLE BANKS

Table 1

| <b>Key Parameters of Public and Private Banks (all values in crores)</b> |       |            |            |            |             |              |              |              |              |              |              |               |
|--|-------|------------|------------|------------|-------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
|  | Years | 08-09      | 09-10      | 10-11      | 11-12       | 12-13        | 13-14        | 14-15        | 15-16        | 16-17        | 17-18        | CAGR          |
|  | Banks |            |            |            |             |              |              |              |              |              |              |               |
| <b>Net Worth</b>   | SBI   | 57,947.70  | 65,949.20  | 64,986.04  | 83,951.20   | 98,883.68    | 118,282.25   | 128,438.22   | 144,274.44   | 156,700.41   | 194,280.58   | <b>14.39%</b> |
|  | BOB   | 12,835.54  | 15,106.39  | 21,043.54  | 27,476.85   | 31,969.44    | 35,985.68    | 39,835.35    | 40,198.98    | 40,303.25    | 43,394.77    | <b>14.49%</b> |
|  | Corp. | 4,896.51   | 5,774.87   | 7,137.81   | 8,275.93    | 9,565.69     | 10,085.10    | 10,484.48    | 10,686.14    | 12,048.67    | 10,182.57    | <b>8.48%</b>  |
|  | HDFC  | 15,052.73  | 21,522.49  | 25,379.27  | 29,924.68   | 36,214.14    | 43,478.63    | 62,009.42    | 72,677.77    | 89,462.35    | 106,295.00   | <b>24.26%</b> |
|  | ICICI | 49,883.02  | 51,618.37  | 55,090.93  | 60,405.25   | 66,705.96    | 73,213.32    | 80,429.36    | 86,918.11    | 96,908.94    | 102,155.75   | <b>8.29%</b>  |
|  | Axis  | 10,214.80  | 16,044.61  | 18,998.83  | 22,808.54   | 33,107.86    | 38,220.48    | 44,676.51    | 53,164.91    | 55,762.54    | 63,445.26    | <b>22.50%</b> |
| <b>Deposits</b>  | SBI   | 742,073.13 | 804,116.23 | 933,932.81 | 1,043,647.4 | 1,202,739.6  | 1,394,408.5  | 1,576,793.3  | 1,730,722.4  | 2,044,751.4  | 2,706,343.3  | <b>15.46%</b> |
|  | BOB   | 192,396.95 | 241,044.26 | 305,439.48 | 384,871.11  | 473,883.34   | 568,894.39   | 617,559.52   | 574,037.87   | 601,675.17   | 591,314.82   | <b>13.29%</b> |
|  | Corp. | 73,983.91  | 92,733.67  | 116,747.50 | 136,142.20  | 166,005.45   | 193,393.01   | 199,345.82   | 205,170.84   | 220,559.62   | 183,315.95   | <b>10.61%</b> |
|  | HDFC  | 142,811.58 | 167,404.44 | 208,586.41 | 246,706.45  | 296,246.98   | 367,337.48   | 450,795.64   | 546,424.19   | 643,639.66   | 788,770.64   | <b>20.91%</b> |
|  | ICICI | 218,347.82 | 202,016.60 | 225,602.11 | 255,499.96  | 292,613.63   | 331,913.66   | 361,562.73   | 421,425.71   | 490,039.06   | 560,975.21   | <b>11.05%</b> |
|  | Axis  | 117,374.11 | 141,300.22 | 189,237.80 | 220,104.30  | 252,613.59   | 280,944.56   | 322,441.94   | 357,967.56   | 414,378.79   | 453,622.72   | <b>16.21%</b> |
| <b>Borrowings</b>  | SBI   | 53,713.68  | 103,011.60 | 119,568.96 | 127,005.57  | 169,182.71   | 183,130.88   | 205,150.29   | 323,344.59   | 317,693.66   | 362,142.07   | <b>23.62%</b> |
|  | BOB   | 5,636.09   | 13,350.09  | 305,439.48 | 23,573.05   | 26,579.28    | 36,812.97    | 35,264.28    | 33,471.70    | 30,611.44    | 62,571.97    | <b>30.66%</b> |
|  | Corp. | 2,072.40   | 9,077.53   | 15,965.38  | 14,248.10   | 12,898.85    | 13,021.45    | 10,414.90    | 13,112.19    | 6,468.17     | 22,171.08    | <b>30.13%</b> |
|  | HDFC  | 2,685.84   | 12,915.69  | 14,394.06  | 23,846.51   | 33,006.60    | 39,438.99    | 45,213.56    | 53,018.47    | 74,028.87    | 123,104.97   | <b>52.96%</b> |
|  | ICICI | 67,323.69  | 94,263.57  | 109,554.28 | 140,164.91  | 145,341.49   | 154,759.05   | 172,417.35   | 174,807.38   | 147,556.15   | 182,858.62   | <b>11.74%</b> |
|  | Axis  | 10,185.48  | 17,169.55  | 26,267.88  | 34,071.67   | 43,951.10    | 50,290.94    | 79,758.27    | 99,226.38    | 105,030.87   | 148,016.14   | <b>34.63%</b> |
| <b>Advances</b>  | SBI   | 542,503.20 | 631,914.15 | 756,719.45 | 867,578.89  | 1,045,616.55 | 1,209,828.72 | 1,300,026.39 | 1,463,700.42 | 1,571,078.38 | 1,934,880.19 | <b>15.18%</b> |
|  | BOB   | 143,985.90 | 175,035.29 | 228,676.36 | 287,377.29  | 328,185.76   | 397,005.81   | 428,065.14   | 383,770.18   | 383,259.22   | 427,431.83   | <b>12.85%</b> |
|  | Corp. | 48,512.16  | 63,202.56  | 86,850.40  | 100,469.02  | 118,716.65   | 137,086.30   | 145,066.04   | 140,322.24   | 140,356.79   | 119,868.84   | <b>10.57%</b> |
|  | HDFC  | 98,883.05  | 125,830.59 | 159,982.67 | 195,420.03  | 239,720.64   | 303,000.27   | 365,495.03   | 464,593.96   | 554,568.20   | 658,333.09   | <b>23.45%</b> |
|  | ICICI | 218,310.85 | 181,205.60 | 216,365.90 | 253,727.66  | 290,249.44   | 338,702.65   | 387,522.07   | 435,263.94   | 464,232.08   | 512,395.29   | <b>9.94%</b>  |
|  | Axis  | 81,556.77  | 104,343.12 | 142,407.83 | 169,759.54  | 196,965.96   | 230,066.76   | 281,083.03   | 338,773.72   | 373,069.35   | 439,650.30   | <b>20.59%</b> |
| <b>Investments</b>   | SBI   | 275,953.96 | 285,790.07 | 295,600.57 | 312,197.61  | 350,927.27   | 398,799.57   | 481,758.75   | 575,651.78   | 765,989.63   | 1,060,986.72 | <b>16.14%</b> |
|  | BOB   | 52,445.88  | 61,182.38  | 71,396.59  | 83,209.40   | 121,393.72   | 116,112.66   | 122,319.72   | 120,450.52   | 129,630.54   | 163,184.53   | <b>13.44%</b> |
|  | Corp. | 24,937.77  | 34,522.63  | 43,452.74  | 47,474.63   | 58,164.49    | 66,191.21    | 63,412.28    | 63,280.63    | 64,072.98    | 70,349.76    | <b>12.21%</b> |
|  | HDFC  | 58,817.55  | 58,607.62  | 159,982.67 | 97,482.91   | 111,613.60   | 120,951.07   | 166,459.95   | 163,885.77   | 214,463.34   | 242,200.24   | <b>17.03%</b> |
|  | ICICI | 103,058.31 | 120,892.80 | 134,685.96 | 159,560.04  | 171,393.60   | 177,021.82   | 186,580.03   | 160,411.80   | 161,506.55   | 202,994.18   | <b>7.82%</b>  |
|  | Axis  | 46,330.35  | 55,974.82  | 71,991.62  | 93,192.09   | 113,737.54   | 113,548.43   | 132,342.83   | 122,006.20   | 128,793.37   | 153,876.08   | <b>14.27%</b> |

**Table 2**

| <b>Status of NPA of the sample banks (in crores)</b> |              |           |           |           |           |           |           |           |           |            |            |
|--|--------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|------------|------------|
|  | Years        | 08-09     | 09-10     | 10-11     | 11-12     | 12-13     | 13-14     | 14-15     | 15-16     | 16-17      | 17-18      |
|  | Banks        |           |           |           |           |           |           |           |           |            |            |
| <b>Gross NPA</b>                                     | <b>SBI</b>   | 15,588.60 | 19,534.89 | 25,326.29 | 39,676.46 | 51,189.39 | 61,605.35 | 56,725.34 | 98,172.80 | 112,342.99 | 223,427.46 |
|  | <b>BOB</b>   | NA        | NA        | 3,152.50  | 4,464.75  | 7,982.58  | 11,875.90 | 16,261.45 | 40,521.04 | 42,718.70  | 56,480.39  |
|  | <b>Corp.</b> | NA        | NA        | 790.23    | 1,274.21  | 2,048.23  | 4,736.79  | 7,106.68  | 14,544.25 | 17,045.22  | NA         |
|  | <b>HDFC</b>  | NA        | NA        | 1,694.34  | 1,999.39  | 2,334.64  | 2,989.28  | 3,438.38  | 4,392.83  | 5,885.66   | 8,606.97   |
|  | <b>ICICI</b> | NA        | NA        | 10,034.26 | 9,475.33  | 9,607.75  | 10,505.84 | 15,094.69 | 26,720.93 | 42,551.54  | 54,062.51  |
|  | <b>Axis</b>  | NA        | NA        | 159.94    | 1,806.30  | 2,393.42  | 3,146.41  | 4,110.19  | 6,087.51  | 21,280.48  | 34,248.64  |
| <b>Net NPA</b>                                       | <b>SBI</b>   | 9,552.00  | 10,870.17 | 12,346.89 | 15,818.85 | 21,956.48 | 31,096.07 | 27,590.58 | 55,807.02 | 58,277.38  | 110,854.70 |
|  | <b>BOB</b>   | NA        | NA        | 790.88    | 1,543.64  | 4,192.02  | 6,034.76  | 8,069.49  | 19,406.46 | 18,080.18  | 23,482.65  |
|  | <b>Corp.</b> | NA        | NA        | 397.74    | 869.39    | 1,410.88  | 3,180.56  | 4,464.98  | 9,160.14  | 11,692.18  | NA         |
|  | <b>HDFC</b>  | NA        | NA        | 296.41    | 352.33    | 468.95    | 820.03    | 896.28    | 1,320.37  | 1,843.99   | 2,601.02   |
|  | <b>ICICI</b> | NA        | NA        | 2,407.36  | 1,860.84  | 2,230.56  | 3,297.96  | 6,255.53  | 13,296.75 | 25,451.03  | 27,886.27  |
|  | <b>Axis</b>  | NA        | NA        | 41.04     | 472.64    | 704.13    | 1,024.62  | 1,316.71  | 2,522.14  | 8,626.55   | 16,591.71  |

For the evaluation of the Banks a different set of fundamentals factors are considered as they have a different operating structure than the regular industrial companies. Table -1 show that the CAGR of Net worth for the sample period of 10 years is 14.39% & 14.49% for SBI and Bank of Baroda and in private sector HDFC maintains 24.26%. Deposits growth give an indication on how much a Bank can lend. SBI and HDFC maintains a high CAGR of 15.46% and 20.91%. Advances of the Banks assess

the aggressiveness of Banks management, SBI and HDFC maintains a high CAGR of 15.18% and 23.45%. The growth in investments will indicate the amount is being invested by the Banks SBI and HDFC shows an high CAGR of 16.14% & 17.03%. Table-2 showcases the NPA positions of the Banks Lower NPA indicates better Credit Policy and able to recover the loan from the debtors than the other banks.

## VII RESULTS AND DISCUSSION

Table 3

| Capital Adequacy Ratios of Public and Private Banks |       |        |        |        |        |        |        |        |        |        |        |         |     |       |
|---|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|-----|-------|
| Ratio   | Years | 08-09  | 09-10  | 10-11  | 11-12  | 12-13  | 13-14  | 14-15  | 15-16  | 16-17  | 17-18  | Average | CV  | SD    |
|   | Banks |        |        |        |        |        |        |        |        |        |        |         |     |       |
| Capital Adequacy Ratio base-II                      | SBI   | 14.25% | 13.39% | 11.98% | 13.86% | 12.92% | 12.44% | 12.00% | 13.12% | 13.11% | 12.60% | 0.13    | 2%  | 0.00  |
|   | BOB   | 14.05% | 14.36% | 14.52% | 14.67% | 13.30% | 12.28% | 12.60% | 13.17% | 12.24% | 12.13% | 0.13    | 2%  | 0.00  |
|   | Corp. | 13.66% | 15.00% | 14.11% | 13.00% | 12.33% | 11.64% | 11.09% | 10.56% | 11.32% | 9.23%  | 0.12    | 5%  | 0.01  |
|   | HDFC  | 15.69% | 17.44% | 16.22% | 16.52% | 16.80% | 16.07% | 16.79% | 15.53% | 14.55% | 14.82% | 0.16    | 2%  | 0.00  |
|   | ICICI | 15.50% | 19.40% | 19.50% | 18.50% | 18.70% | 17.70% | 17.00% | 16.60% | 17.40% | 18.40% | 0.18    | 2%  | 0.00  |
|   | Axis  | 13.69% | 15.80% | 12.65% | 13.66% | 17.00% | 16.07% | 15.09% | 15.29% | 14.95% | 16.57% | 0.15    | 3%  | 0.00  |
| Advances / Loans funds %                            | SBI   | 78.34  | 74.22  | 77.19  | 78.01  | 82.25  | 82.04  | 77.39  | 76.31  | 71.15  | 71.25  | 76.82   | 2%  | 1.21  |
|   | BOB   | 81.35  | 77.38  | 78.56  | 78.07  | 72.22  | 71.78  | 68.03  | 60.9   | 61.83  | 66.47  | 71.66   | 3%  | 2.28  |
|   | Corp. | 72.61  | 71.07  | 74.07  | 70.98  | 72.1   | 71.15  | 69.71  | 65.56  | 63.04  | 55.43  | 68.57   | 3%  | 1.80  |
|   | HDFC  | 78.87  | 77.24  | 79.34  | 79.19  | 79.93  | 83.86  | 82.77  | 86.45  | 86.15  | 83.02  | 81.68   | 1%  | 1.02  |
|   | ICICI | 69.86  | 58.57  | 68.53  | 69.44  | 69.64  | 73.26  | 75.94  | 77.02  | 75.25  | 74.18  | 71.17   | 2%  | 1.70  |
|   | Axis  | 73.87  | 72.96  | 76.16  | 72.29  | 71.53  | 73.29  | 76.65  | 78.84  | 76.4   | 78.44  | 75.04   | 1%  | 0.82  |
| Credit Deposit Ratio                                | SBI   | 74.97  | 75.96  | 79.9   | 82.14  | 85.17  | 86.84  | 84.47  | 83.56  | 80.38  | 73.79  | 80.72   | 2%  | 1.44  |
|   | BOB   | 72.78  | 73.6   | 73.87  | 74.76  | 71.68  | 69.54  | 69.54  | 68.13  | 65.24  | 67.95  | 70.71   | 1%  | 0.98  |
|   | Corp. | 67.77  | 67.01  | 71.63  | 74.07  | 72.54  | 71.18  | 71.84  | 70.55  | 65.93  | 64.43  | 69.70   | 1%  | 1.01  |
|   | HDFC  | 66.64  | 72.44  | 76.02  | 78.06  | 80.14  | 84.84  | 85.5   | 87.41  | 90.22  | 89.8   | 81.11   | 3%  | 2.48  |
|   | ICICI | 91.44  | 90.04  | 90.45  | 97.71  | 99.25  | 100.71 | 104.72 | 105.08 | 98.69  | 92.92  | 97.10   | 2%  | 1.78  |
|   | Axis  | 68.89  | 71.87  | 74.65  | 76.26  | 77.58  | 80.03  | 84.71  | 91.1   | 92.17  | 93.63  | 81.09   | 3%  | 2.80  |
| Investment Deposits Ratio                           | SBI   | 36.38  | 36.33  | 33.45  | 30.73  | 29.52  | 28.87  | 29.64  | 31.97  | 35.54  | 38.45  | 33.09   | 10% | 3.42  |
|   | BOB   | 27.96  | 26.22  | 24.26  | 22.4   | 23.83  | 22.78  | 20.1   | 20.37  | 21.27  | 24.54  | 23.37   | 11% | 2.52  |
|   | Corp. | 32.03  | 35.67  | 37.22  | 35.96  | 34.96  | 34.6   | 33     | 31.32  | 29.91  | 33.28  | 33.80   | 7%  | 2.29  |
|   | HDFC  | 44.43  | 37.85  | 34.45  | 36.99  | 38.51  | 35.05  | 35.13  | 33.13  | 31.79  | 31.88  | 35.92   | 11% | 3.78  |
|   | ICICI | 46.35  | 53.28  | 59.77  | 61.16  | 60.38  | 77.6   | 76.51  | 70.34  | 61.27  | 61.6   | 62.83   | 15% | 9.70  |
|   | Axis  | 39.04  | 39.55  | 38.71  | 40.35  | 77.58  | 42.51  | 40.88  | 37.5   | 32.45  | 32.4   | 42.10   | 31% | 12.91 |
| Cash Deposits Ratio                                 | SBI   | NA     | NA     | NA     | NA     | NA     | 5.81   | 6.76   | 7.42   | 6.82   | 5.86   | 6.53    | 11% | 0.69  |
|   | BOB   | NA     | NA     | NA     | NA     | NA     | 3.08   | 3.47   | 3.71   | 3.78   | 3.81   | 3.57    | 9%  | 0.30  |
|   | Corp. | NA     | NA     | NA     | NA     | NA     | 6.29   | 6.08   | 5      | 6.48   | 7.09   | 6.19    | 12% | 0.76  |
|   | HDFC  | NA     | NA     | NA     | NA     | NA     | 6.02   | 6.46   | 5.77   | 5.71   | 9.95   | 6.78    | 26% | 1.80  |
|   | ICICI | NA     | NA     | NA     | NA     | NA     | 6.14   | 6.43   | 6.35   | 6.14   | 5.93   | 6.20    | 3%  | 0.20  |
|   | Axis  | NA     | NA     | NA     | NA     | NA     | 5.98   | 6.12   | 6.2    | 6.88   | 7.62   | 6.56    | 10% | 0.69  |
| Total Debt to owners Fund                           | SBI   | 13.73  | 13.75  | 16.21  | 13.94  | 13.87  | 13.34  | 13.87  | 14.24  | 15.08  | 15.79  | 14.38   | 7%  | 0.97  |
|   | BOB   | 15.43  | 16.84  | 15.57  | 14.87  | 15.07  | 16.83  | 16.39  | 15.11  | 15.69  | 15.07  | 15.69   | 5%  | 0.74  |
|   | Corp. | 15.53  | 17.63  | 18.59  | 18.17  | 18.7   | 20.47  | 20.01  | 20.43  | 18.84  | 20.18  | 18.86   | 8%  | 1.54  |
|   | HDFC  | 9.93   | 8.38   | 8.79   | 9.04   | 9.09   | 9.36   | 8      | 8.25   | 8.02   | 8.58   | 8.74    | 7%  | 0.62  |
|   | ICICI | 5.77   | 5.74   | 6.08   | 6.55   | 6.57   | 7.11   | 7.05   | 7.36   | 6.9    | 7.58   | 6.67    | 10% | 0.64  |
|   | Axis  | 12.49  | 9.88   | 11.34  | 11.14  | 8.96   | 8.68   | 9.05   | 8.64   | 9.35   | 9.52   | 9.91    | 13% | 1.31  |

Table-3 shows all the six Banks Namely Axis Bank, Bank of Baroda, Corporation bank, HDFC Bank, ICICI Bank and State Bank of India have an Average Capital Adequacy ratio ranging from 12% to 18%. In Public Sector SBI and BOB have an equal average of 13% and in private sectors ICICI maintains an average of 18%. This shows that these two banks have

more capacity to adjust to its losses. The Assets / Loans Fund % Average is highest for SBI 76.82% and HDFC in the private sector at 81.68%. The credit deposit ratio indicates how the bank lends out the deposits it has mobilized, SBI at 80.72 in public sector and ICICI at 97.10 in private sector indicates full utilization of resources. But credit deposit ratio

above 75% also indicates pressure on the resources. The cash deposit ratio is the ratio of cash in hand and balances with RBI as percentage of aggregate deposits; it's always maintained more than CRR given by RBI which is currently 4%. In Public Sector SBI 6.53 and in private sector HDFC 6.78 maintained highest average cash deposit ratio. Investment Deposit Ratio indicates the amount of deposits of banks invested in the government securities and is

maintained above SLR which is currently 19%. In public sector SBI and corporation bank stood at 33% and in private sector ICICI stood at 62.83. The debt equity ratio of Axis Bank is 9.91 in private sector and Corporation Bank in public sector at 18.86 is the highest, which means that the creditors and depositors of these banks are at highest risks as they are focusing more on debt than shareholders fund.

**Table 4**

| Assets Quality Ratios of Public and Private Banks |       |       |       |       |       |       |       |       |       |       |       |         |     |      |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|-----|------|
| Ratio   | Years | 08-09 | 09-10 | 10-11 | 11-12 | 12-13 | 13-14 | 14-15 | 15-16 | 16-17 | 17-18 | Average | CV  | SD   |
|   | Banks |       |       |       |       |       |       |       |       |       |       |         |     |      |
| % of Gross NPA                                    | SBI   | 2.84  | 3.05  | 3.28  | 4.44  | 4.75  | 4.95  | 4.25  | 6.5   | 6.9   | 10.91 | 5.19    | 15% | 0.77 |
|   | BOB   | NA    | NA    | 1.36  | 1.53  | 2.4   | 2.94  | 3.72  | 9.99  | 10.46 | 12.26 | 4.47    | 33% | 1.46 |
|   | Corp. | NA    | NA    | 0.91  | 1.26  | 1.72  | 3.42  | 4.81  | 9.98  | 11.7  | NA    | 3.76    | 38% | 1.44 |
|   | HDFC  | NA    | NA    | 1.05  | 1.02  | 0.97  | 1     | 0.9   | 0.94  | 1.05  | 1.3   | 0.82    | 17% | 0.14 |
|   | ICICI | NA    | NA    | 4.47  | 3.62  | 3.22  | 3.03  | 3.78  | 5.21  | 7.89  | 8.84  | 4.01    | 23% | 0.91 |
|   | Axis  | NA    | NA    | 1.01  | 0.94  | 1.06  | 1.22  | 1.34  | 1.67  | 5.04  | 6.77  | 1.91    | 37% | 0.70 |
| % of Net NPA                                      | SBI   | 2.1   | 1.82  | 1.63  | 1.82  | 2.1   | 2.57  | 2.12  | 3.81  | 3.71  | 5.73  | 2.74    | 15% | 0.41 |
|   | BOB   | NA    | NA    | 0.35  | 0.54  | 1.28  | 1.52  | 1.89  | 5.06  | 4.72  | 5.49  | 2.09    | 33% | 0.69 |
|   | Corp. | NA    | NA    | 0.46  | 0.87  | 1.19  | 2.32  | 3.08  | 6.53  | 8.33  | NA    | 2.28    | 41% | 0.93 |
|   | HDFC  | NA    | NA    | 0.2   | 0.2   | 0.2   | 0.3   | 0.2   | 0.28  | 0.33  | 0.4   | 0.21    | 19% | 0.04 |
|   | ICICI | NA    | NA    | 1.11  | 0.73  | 0.77  | 0.97  | 1.61  | 2.67  | 4.89  | 4.77  | 1.75    | 32% | 0.57 |
|   | Axis  | NA    | NA    | 0.26  | 0.25  | 0.32  | 0.4   | 0.44  | 0.7   | 2.11  | 3.4   | 0.79    | 44% | 0.35 |

Table-4 shows Bank of Baroda secures first position with the lowest NPA of 2.09 followed by corporation Bank 2.28, and State Bank of India with highest NPA 2.74 .It states that Bank of Baroda has better Credit Policy and able to recover the loan from the debtors than the other banks. They are at lower risk of increasing Non-performing assets.

Whereas, the NPA of other four banks is comparatively high, it means that these banks are not making efforts to decrease their NPA's as Bank of Baroda is doing. In private sector HDFC secures first position with the lowest NPA of 0.21 followed by AXIS Bank 0.79, and ICICI with highest NPA 1.75.



Table 5

| Management Efficiency Ratios of Public and Private Banks |       |       |       |       |       |       |       |       |       |       |       |         |     |      |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|-----|------|
| Ratio  | Years | 08-09 | 09-10 | 10-11 | 11-12 | 12-13 | 13-14 | 14-15 | 15-16 | 16-17 | 17-18 | Average | CV  | SD   |
|  | Banks |       |       |       |       |       |       |       |       |       |       |         |     |      |
| Total income to Total Assets                             | SBI   | 0.09  | 0.09  | 0.09  | 0.10  | 0.09  | 0.09  | 0.09  | 0.09  | 0.08  | 0.09  | 0.09    | 4%  | 0.00 |
|  | BOB   | 0.09  | 0.08  | 0.08  | 0.08  | 0.08  | 0.07  | 0.07  | 0.07  | 0.07  | 0.07  | 0.08    | 7%  | 0.01 |
|  | Corp. | 0.10  | 0.09  | 0.08  | 0.10  | 0.10  | 0.10  | 0.10  | 0.10  | 0.10  | 0.10  | 0.09    | 6%  | 0.01 |
|  | HDFC  | 0.13  | 0.10  | 0.10  | 0.11  | 0.11  | 0.11  | 0.11  | 0.11  | 0.10  | 0.10  | 0.11    | 8%  | 0.01 |
|  | ICICI | 0.10  | 0.09  | 0.09  | 0.09  | 0.10  | 0.10  | 0.10  | 0.10  | 0.10  | 0.09  | 0.09    | 6%  | 0.01 |
|  | Axis  | 0.11  | 0.10  | 0.09  | 0.10  | 0.11  | 0.11  | 0.10  | 0.10  | 0.10  | 0.09  | 0.1     | 6%  | 0.01 |
| Total Income to Compensation to Employees                | SBI   | 7.80  | 6.81  | 6.01  | 7.20  | 7.48  | 6.79  | 7.33  | 7.53  | 7.84  | 7.69  | 7.25    | 8%  | 0.57 |
|  | BOB   | 7.56  | 8.42  | 9.64  | 12.53 | 12.49 | 11.43 | 11.56 | 9.81  | 10.50 | 10.84 | 10.5    | 16% | 1.65 |
|  | Corp. | 14.04 | 13.28 | 13.25 | 18.03 | 19.26 | 18.16 | 19.84 | 15.40 | 15.62 | 12.52 | 15.9    | 17% | 2.70 |
|  | HDFC  | 8.85  | 8.80  | 8.63  | 9.85  | 10.45 | 11.59 | 11.94 | 12.31 | 12.45 | 13.89 | 10.9    | 17% | 1.82 |
|  | ICICI | 20.08 | 17.08 | 11.67 | 11.77 | 12.40 | 12.86 | 12.84 | 13.63 | 12.80 | 12.21 | 13.7    | 20% | 2.71 |
|  | Axis  | 13.69 | 12.29 | 12.06 | 13.03 | 14.13 | 13.99 | 14.05 | 14.87 | 14.40 | 13.17 | 13.6    | 7%  | 0.91 |
| Interest Income of Banks as a % of Working Funds         | SBI   | 7.30  | 6.80  | 7.00  | 8.00  | 7.80  | 7.60  | 7.60  | 7.30  | 6.90  | 6.40  | 7.27    | 7%  | 0.50 |
|  | BOB   | 7.80  | 6.90  | 7.00  | 7.60  | 7.30  | 6.80  | 6.60  | 6.30  | 6.30  | 6.30  | 6.89    | 8%  | 0.54 |
|  | Corp. | 8.40  | 7.60  | 7.80  | 9.20  | 9.40  | 9.20  | 9.30  | 8.80  | 8.10  | 7.20  | 8.5     | 9%  | 0.79 |
|  | HDFC  | 9.30  | 8.40  | 8.00  | 9.60  | 9.90  | 9.70  | 9.60  | 9.20  | 8.90  | 8.90  | 9.15    | 7%  | 0.61 |
|  | ICICI | 8.10  | 7.20  | 6.80  | 7.80  | 8.20  | 8.00  | 8.20  | 8.10  | 7.40  | 7.10  | 7.69    | 7%  | 0.52 |
|  | Axis  | 8.60  | 7.70  | 7.50  | 8.70  | 8.90  | 8.80  | 8.80  | 8.60  | 7.90  | 7.20  | 8.27    | 8%  | 0.63 |
| Operating profit of bank as % to working funds           | SBI   | 2.00  | 1.80  | 2.20  | 2.40  | 2.00  | 1.80  | 1.90  | 1.90  | 2.00  | 1.70  | 1.97    | 10% | 0.21 |
|  | BOB   | 2.20  | 2.00  | 2.20  | 2.20  | 1.90  | 1.60  | 1.50  | 1.30  | 1.60  | 1.80  | 1.83    | 18% | 0.32 |
|  | Corp. | 2.50  | 2.30  | 2.20  | 2.00  | 1.90  | 1.60  | 1.40  | 1.40  | 1.90  | 1.60  | 1.88    | 20% | 0.38 |
|  | HDFC  | 2.90  | 3.30  | 3.10  | 3.20  | 3.20  | 3.40  | 3.40  | 3.30  | 3.30  | 3.60  | 3.27    | 6%  | 0.19 |
|  | ICICI | 2.30  | 2.70  | 2.40  | 2.40  | 2.70  | 3.00  | 3.30  | 3.60  | 3.60  | 3.20  | 2.92    | 17% | 0.49 |
|  | Axis  | 3.00  | 3.50  | 3.20  | 2.90  | 3.00  | 3.30  | 3.30  | 3.40  | 3.10  | 2.40  | 3.11    | 10% | 0.31 |
| Net Interest income / Interest earned                    | SBI   | 32.72 | 33.34 | 39.96 | 40.64 | 37.05 | 36.14 | 36.10 | 34.88 | 35.24 | 33.95 | 36      | 7%  | 2.63 |
|  | BOB   | 33.95 | 35.57 | 40.22 | 34.77 | 32.15 | 30.73 | 30.69 | 28.91 | 32.02 | 35.56 | 33.5    | 10% | 3.27 |
|  | Corp. | 28.74 | 27.24 | 32.18 | 24.17 | 22.34 | 21.07 | 20.81 | 21.84 | 22.86 | 27.45 | 24.9    | 15% | 3.82 |
|  | HDFC  | 44.66 | 50.53 | 52.46 | 45.64 | 44.81 | 44.81 | 45.99 | 45.65 | 47.62 | 49.87 | 47.2    | 6%  | 2.79 |
|  | ICICI | 27.82 | 31.24 | 34.30 | 31.84 | 34.18 | 37.03 | 38.45 | 39.89 | 39.64 | 41.61 | 35.6    | 13% | 4.45 |
|  | Axis  | 34.02 | 43.00 | 43.31 | 36.45 | 35.56 | 39.01 | 40.09 | 41.07 | 40.62 | 40.67 | 39.4    | 8%  | 3.11 |

Table-5 shows the Management efficiency ratio of the Banks. The Total Income to Total assets shows that how effectively a bank uses its assets to generate earnings. In public sector SBI and corporation Bank have an equal ratio of 0.09 with BOB at 0.08. In private sector HDFC & Axis have an equal ratio of 0.1, and ICICI Bank with lowest of 0.09. Both public and private sector perform fairly close for Total Income to Total assets. In Total Income to compensation to employees SBI and ICICI Performs well at 7.25 and 13.73 respectively. The Interest

Income of Banks as a percentage of working funds is 8.50 for corporation Bank followed by 7.27 for SBI and Bank of Baroda stands last at 6.89. In private sector HDFC Bank shows a highest average of 9.15, followed by 8.27 in axis and 7.69 in ICICI. The Average Operating profit of bank as % to working funds is 1.97 in SBI and 3.27 for HDFC Bank. The Net Interest income / Interest earned are 36 for SBI with a very less coefficient of variation of 7% and in private sector HDFC maintains a high average of 47.20 with a CV of 6%.

Table 6

| Earnings & Profitability Ratios of Public and Private Banks |       |       |       |       |       |       |       |       |       |       |       |         |        |       |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------|--------|-------|
| Ratio   | Years | 08-09 | 09-10 | 10-11 | 11-12 | 12-13 | 13-14 | 14-15 | 15-16 | 16-17 | 17-18 | Average | CV     | SD    |
|   | Banks |       |       |       |       |       |       |       |       |       |       |         |        |       |
| Operating Profit Margin                                     | SBI   | 21.5  | 21.3  | 23.6  | 24.7  | 22.8  | 19.3  | 21.4  | 19.9  | 22    | 15.5  | 21.2    | 12%    | 2.56  |
|   | BOB   | 17.7  | 23.7  | 25.7  | 23.1  | 20.7  | 18.6  | 19.1  | 15.5  | 19.7  | 19.1  | 20.9    | 15%    | 3.07  |
|   | Corp. | 18.4  | 20    | 19.3  | 15.7  | 14.3  | 9.4   | 12    | 9.3   | 15.3  | 11    | 14.47   | 27%    | 3.97  |
|   | HDFC  | 26.1  | 31.9  | 31.5  | 26.5  | 26.4  | 28.3  | 29.3  | 29.2  | 30.8  | 33.3  | 28.89   | 8%     | 2.23  |
|   | ICICI | 20.8  | 28.1  | 26.3  | 23.6  | 26.2  | 29.7  | 31.3  | 34    | 34.6  | 31    | 28.56   | 16%    | 4.43  |
|   | Axis  | 25.9  | 33    | 30.8  | 26    | 27.2  | 29.6  | 30.1  | 31.5  | 30.6  | 27.5  | 29.22   | 8%     | 2.43  |
| Net Profit Margin   | SBI   | 11.9  | 10.5  | 7.5   | 9.5   | 10.3  | 6.1   | 5.9   | 2     | 3     | -8.5  | 5.82    | 103%   | 5.99  |
|   | BOB   | 12.4  | 14.7  | 16.1  | 13.7  | 11.5  | 10.5  | 6.5   | -15   | 1.4   | -6.8  | 6.53    | 156%   | 10.22 |
|   | Corp. | 11.1  | 12.8  | 13.5  | 9.8   | 8     | 1.2   | 2.2   | -12   | 1     | -39   | 0.84    | 1912%  | 16.06 |
|   | HDFC  | 11.1  | 14.6  | 16    | 13.4  | 14.7  | 15.6  | 16.7  | 16.3  | 16.9  | 17.3  | 15.26   | 12%    | 1.89  |
|   | ICICI | 8.5   | 11.4  | 15    | 15.4  | 16.6  | 17.5  | 17.9  | 13.8  | 12.2  | 8.9   | 13.72   | 25%    | 3.38  |
|   | Axis  | 12.2  | 15.2  | 15.8  | 14.4  | 14.6  | 15.6  | 16.2  | 14.9  | 6.2   | -1.4  | 12.37   | 46%    | 5.66  |
| Return On Net Worth   | SBI   | 16.9  | 14.8  | 11.1  | 15.6  | 15.5  | 8.7   | 8.2   | 2.7   | 4.2   | -12   | 8.53    | 104%   | 8.85  |
|   | BOB   | 18.6  | 20.9  | 23.9  | 20.9  | 16.2  | 14    | 8.5   | -19   | 1.9   | -8.9  | 9.67    | 148%   | 14.31 |
|   | Corp. | 17.6  | 20.1  | 22.5  | 19.5  | 15.6  | 2.5   | 4.6   | -24   | 2     | -71   | 1.02    | 2812%  | 28.69 |
|   | HDFC  | 16.6  | 16.1  | 16.7  | 16.3  | 18.4  | 19    | 18    | 17    | 16.9  | 16.7  | 17.17   | 6%     | 0.96  |
|   | ICICI | 7     | 7.4   | 9.3   | 11.1  | 12.6  | 13.6  | 14.2  | 11.2  | 9.7   | 6.5   | 10.26   | 27%    | 2.75  |
|   | Axis  | 17.6  | 17.8  | 17.5  | 18.7  | 17.5  | 16.6  | 17.2  | 15.3  | 6.4   | -1.4  | 14.32   | 46%    | 6.55  |
| Return on Total assets                                      | SBI   | 1.1   | 0.9   | 0.6   | 0.9   | 1     | 0.6   | 0.5   | 0.2   | 0.2   | -0.7  | 0.53    | 101%   | 0.53  |
|   | BOB   | 1.1   | 1.2   | 1.3   | 1.1   | 0.9   | 0.8   | 0.5   | -1    | 0.1   | -0.5  | 0.55    | 142%   | 0.78  |
|   | Corp. | 1     | 1.1   | 1.1   | 0.9   | 0.8   | 0.1   | 0.2   | -1.1  | 0.1   | -3.3  | 0.09    | 1525%  | 1.37  |
|   | HDFC  | 1.4   | 1.5   | 1.6   | 1.5   | 1.6   | 1.7   | 1.8   | 1.7   | 1.7   | 1.7   | 1.62    | 8%     | 0.12  |
|   | ICICI | 0.9   | 1     | 1.3   | 1.4   | 1.6   | 1.7   | 1.7   | 1.4   | 1.2   | 0.8   | 1.3     | 25%    | 0.32  |
|   | Axis  | 1.3   | 1.4   | 1.5   | 1.5   | 1.6   | 1.6   | 1.7   | 1.5   | 0.6   | -0.1  | 1.26    | 45%    | 0.57  |
| Return on Capital Employed                                  | SBI   | 6.9   | 5.9   | 4.1   | 5.9   | 5.9   | 3.3   | 3.2   | 0.9   | 1.3   | -4.2  | 3.32    | 100%   | 3.33  |
|   | BOB   | 9.7   | 10.8  | 11.6  | 10.2  | 8.5   | 7.1   | 4.3   | -10   | 1     | -4    | 4.92    | 146%   | 7.19  |
|   | Corp. | 9.5   | 8.8   | 7.5   | 6.4   | 6.1   | 1.1   | 2.2   | -11   | 1.1   | -31   | 0.06    | 20710% | 12.43 |
|   | HDFC  | 10.1  | 10    | 10.6  | 9.6   | 9.9   | 9.9   | 10    | 8.7   | 8.5   | 8.3   | 9.56    | 8%     | 0.78  |
|   | ICICI | 2.4   | 2.6   | 3.2   | 3.5   | 3.9   | 4.3   | 4.5   | 3.6   | 3.5   | 2.4   | 3.39    | 22%    | 0.75  |
|   | Axis  | 7.7   | 7.9   | 7.8   | 7.7   | 7.3   | 7.2   | 6.7   | 5.2   | 2.2   | -0.4  | 5.93    | 48%    | 2.83  |

The table-6 shows the earning and profitability ratios. A high the operating profit margin shows less financial risks as compared to a low ratio. SBI secures first position with highest operating profit margin of 21.2 followed by Bank of Baroda 20.9, and corporation Bank with lowest margin of 14.47. In private sector at Axis Bank has a high margin of 29.22. A high Net profit margin makes the company to control its costs. SBI secures first position with highest Net profit margin of Bank of Baroda 6.53 followed by SBI at 5.82, and corporation Bank with lowest margin of 0.84. In private sector HDFC Bank has a high margin of 15.26 which is very high as compared to private sector. The wise use of shareholders fund is indicated with a high return on

Net worth which is 9.67 in Bank of Baroda and in private sector HDFC shows a high return of 17.17. Low percentage indicates less efficient deployment of equity Resources Corporation Bank and ICICI shows a low return of 1.02 & 10.26 respectively. The return to total assets is considered as a sign of how well a company is using its assets to generate earning. In public sector SBI and Bank of Baroda have a high ratio of 0.55 were as corporation Bank is at 0.09. Private sector performs well than public sector with a highest average ratio of 1.62 for HDFC, 1.30 for ICICI and 1.26 for Axis Bank. Return on Capital Employed indicates that a large portion of invested back in the company for the benefits of the shareholders and is sign of a successful growth of the

company. In public sector BOB secures first position with highest Return on Capital Employed ratio of 4.92 followed by SBI 3.32, and corporation Bank with lowest margin of 0.06. In private sector HDFC

secures first position with highest Return on Capital Employed ratio of 9.56 followed by Axis 5.93, and ICICI Bank with lowest return 3.39.

Table 7

| Liquidity Ratios/Leverage Ratios of Public and Private Banks |       |       |       |       |       |       |       |       |       |       |        |         |      |       |
|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--------|---------|------|-------|
| Ratio  | Years | 08-09 | 09-10 | 10-11 | 11-12 | 12-13 | 13-14 | 14-15 | 15-16 | 16-17 | 17-18  | Average | CV   | SD    |
|  | Banks |       |       |       |       |       |       |       |       |       |        |         |      |       |
| Current Ratio  | SBI   | 0.04  | 0.04  | 0.04  | 0.05  | 0.04  | 0.03  | 0.06  | 0.07  | 0.07  | 0.08   | 0.05    | 10%  | 0.01  |
|  | BOB   | 0.02  | 0.02  | 0.02  | 0.03  | 0.02  | 0.02  | 0.02  | 0.05  | 0.04  | 0.05   | 0.03    | 14%  | 0.00  |
|  | Corp. | 0.03  | 0.03  | 0.02  | 0.03  | 0.02  | 0.02  | 0.02  | 0.07  | 0.07  | 0.1    | 0.04    | 22%  | 0.01  |
|  | HDFC  | 0.04  | 0.03  | 0.06  | 0.08  | 0.06  | 0.06  | 0.04  | 0.07  | 0.06  | 0.04   | 0.05    | 9%   | 0.00  |
|  | ICICI | 0.13  | 0.14  | 0.07  | 0.07  | 0.09  | 0.09  | 0.06  | 0.13  | 0.12  | 0.12   | 0.1     | 9%   | 0.01  |
|  | Axis  | 0.03  | 0.03  | 0.02  | 0.03  | 0.03  | 0.03  | 0.03  | 0.07  | 0.1   | 0.1    | 0.05    | 21%  | 0.01  |
| Quick Ratio  | SBI   | 5.74  | 9.07  | 8.5   | 12.05 | 12.15 | 13.81 | 11.02 | 10.89 | 11.94 | 13.83  | 10.9    | 7%   | 0.79  |
|  | BOB   | 9.62  | 21.88 | 26.51 | 28    | 23.9  | 24.05 | 20.78 | 18.27 | 19.38 | 21.18  | 21.4    | 8%   | 1.62  |
|  | Corp. | 9.53  | 18.35 | 26.65 | 23.15 | 26.35 | 27.91 | 27.74 | 31.68 | 21.47 | 27.01  | 24      | 8%   | 2.00  |
|  | HDFC  | 5.23  | 7.14  | 6.89  | 6.2   | 7.84  | 8.55  | 12.69 | 14.51 | 11.19 | 17.48  | 9.77    | 13%  | 1.27  |
|  | ICICI | 5.94  | 14.7  | 15.86 | 16.71 | 10.53 | 11.31 | 13.81 | 14.97 | 16.31 | 20.44  | 14.1    | 9%   | 1.26  |
|  | Axis  | 9.52  | 19.19 | 19.6  | 21.63 | 20.1  | 18.57 | 20.64 | 25.74 | 17.1  | 20.02  | 19.2    | 7%   | 1.29  |
| Dividend Payout Ratio Net profit                             | SBI   | 20.18 | 20.77 | 25.84 | 20.06 | 20.12 | 20.56 | 20.21 | 20.28 | 20.11 | NA     | 18.8    | 11%  | 2.16  |
|  | BOB   | 17.22 | 17.92 | 15.23 | 13.86 | 20.21 | 20.33 | 21.42 | NA    | 24.06 | NA     | 15      | 18%  | 2.67  |
|  | Corp. | 20.08 | 20.22 | 20.96 | 20.16 | 20.25 | 20.13 | 20.07 | NA    | NA    | NA     | 14.2    | 22%  | 3.10  |
|  | HDFC  | 18.94 | 18.62 | 19.55 | 19.52 | 19.46 | 19.38 | 19.62 | 19.53 | NA    | NA     | 15.5    | 17%  | 2.58  |
|  | ICICI | 35.58 | 33.23 | 31.3  | 29.41 | 27.71 | 27.07 | 25.93 | 29.89 | NA    | 21.5   | 26.2    | 12%  | 3.16  |
|  | Axis  | 23.16 | 22.56 | 16.91 | 15.51 | 16.29 | 15.11 | 14.78 | 14.48 | 38.25 | 509.74 | 68.7    | 71%  | 49.06 |
| Earning Retention Ratio                                      | SBI   | 84.13 | 86.02 | 76.95 | 79.94 | 79.88 | 79.44 | 79.79 | 79.72 | 79.89 | 100    | 82.6    | 3%   | 2.10  |
|  | BOB   | 84.64 | 86.16 | 84.77 | 86.14 | 79.79 | 79.67 | 78.58 | 100   | 75.94 | 100    | 85.6    | 3%   | 2.64  |
|  | Corp. | 81.56 | 83.34 | 79.04 | 79.84 | 79.75 | 79.87 | 79.93 | 100   | 100   | 100    | 86.3    | 3%   | 3.01  |
|  | HDFC  | 88.95 | 88.76 | 80.45 | 80.48 | 80.54 | 80.62 | 80.38 | 80.47 | 100   | 100    | 86.1    | 3%   | 2.56  |
|  | ICICI | 83.66 | 83.79 | 68.7  | 70.59 | 72.29 | 72.93 | 74.07 | 70.11 | 100   | 78.5   | 77.5    | 4%   | 3.03  |
|  | Axis  | 83.55 | 85.36 | 83.09 | 84.49 | 83.71 | 84.89 | 85.22 | 85.52 | 61.75 | -409.7 | 32.8    | 150% | 49.22 |

Short term Liquidity of Banks is measured by Current Ratio and Quick Ratio. Table-7 shows in public sector SBI have a high ratio of 0.05 followed by corporation Bank is at 0.04 and lowest is Bank of Baroda at 0.03. Private sector performs well than public sector with a highest average ratio of 0.1 for Axis Bank and HDFC & ICICI at 0.05. In Quick Ratio public sector Corporation Bank has a high ratio of 23.28 followed by Bank of Baroda is at 21.36 and lowest is SBI at 10.90. In Private sector Axis Bank 19.21, followed by ICICI at 14.05 and the least is 9.77 of HDFC. A high dividend payout ratio means

that the company is sharing more of its earnings with the shareholders and therefore the retention ratio will be low. In Public Sector SBI maintains a high Average Dividend Payout ratio of 18.8 and in private sector ICICI has a ratio of 26.2 were axis bank in 2018 has a dividend payout of 509.74 and a negative retention ratio of -409.74 which is an unsustainable move. The retention Ratio indicates the profits retained by the Banks for future investments in which Corporation Bank is at 86.333 and in private sector HDFC is at 86.07.

Table 8

| Trends of Annual Stock Returns in % (based at BSE) |       |       |       |        |        |        |       |        |       |        |        |         |      |       |
|--|-------|-------|-------|--------|--------|--------|-------|--------|-------|--------|--------|---------|------|-------|
| Ratio  | Years | 08-09 | 09-10 | 10-11  | 11-12  | 12-13  | 13-14 | 14-15  | 15-16 | 16-17  | 17-18  | Average | CV   | SD    |
|  | Banks |       |       |        |        |        |       |        |       |        |        |         |      |       |
| Total Returns                                      | SBI   | 99.19 | 34.31 | -23.33 | 0.7    | -4.8   | 39.99 | -26.31 | 52.58 | -13.75 | 19.03  | 18      | 222% | 39.49 |
|  | BOB   | 178.3 | 53.94 | -15.99 | -12.51 | 12.03  | 14.55 | -7.89  | 17.57 | -17.18 | -17.05 | 21      | 291% | 59.80 |
|  | Corp. | 174   | 36.73 | -30.85 | -5.12  | -23.11 | -5.13 | -23.17 | 34.44 | -41.52 | -6.68  | 11      | 573% | 62.76 |
|  | HDFC  | 101   | 22    | 11.76  | 20.95  | 21     | 37.75 | 5.52   | 35.74 | 32.01  | 19.76  | 31      | 87%  | 26.65 |
|  | ICICI | 190.6 | 18.49 | -19.2  | 20.3   | 21.16  | 28.57 | -23.69 | 19.59 | 11.37  | 42.78  | 31      | 192% | 59.65 |
|  | Axis  | 186.5 | 21.26 | -17.43 | 15.35  | 13.81  | 93.87 | -20.03 | 11.42 | 4.81   | 44.42  | 35      | 176% | 62.15 |

Table-8 shows the trends of Annual stock Returns Based on BSE. In Public Sector the average of 10 years shows that Bank of Baroda gives the maximum Returns at 21% followed by SBI at 18% and corporation Bank at 11%. Corporation Banks shows a

high Coefficient of Variation of 573% and shows negative returns in some sample years, In private sector Axis Bank shows highest average returns of 35%.HDFC and ICICI shows a return of 31% but ICICI Bank has a high CV as compared to HDFC.

## VIII APPLICATION OF ANOVA ON CAMEL MODEL

| <b>Table-9 ANALYSIS OF VARIANCE (ANOVA)</b>                 |                            |                              |                        |           |                |               |
|---|----------------------------|------------------------------|------------------------|-----------|----------------|---------------|
| <b>Source of Variation</b>                                  | <b>SS (Sum Of Squares)</b> | <b>df(Degree of Freedom)</b> | <b>MS(Mean Square)</b> | <b>F</b>  | <b>P-value</b> | <b>F crit</b> |
| <b>Capital Adequacy Ratio</b>                               |                            |                              |                        |           |                |               |
| Between Groups  | 0.023063746                | 5                            | 0.004612749            | 30.543052 | 0.000          | 2.3860699     |
| Within Groups   | 0.008155323                | 54                           | 0.000151025            |           |                |               |
| Total   | 0.031219069                | 59                           |                        |           |                |               |
| <b>% of Gross NPA (Asset Quality)</b>                       |                            |                              |                        |           |                |               |
| Between Groups  | 135.065335                 | 5                            | 27.013067              | 2.7648745 | 0.0270         | 2.3860699     |
| Within Groups   | 527.58475                  | 54                           | 9.770087963            |           |                |               |
| Total   | 662.650085                 | 59                           |                        |           |                |               |
| <b>Total Income to Total Assets (Management Efficiency)</b> |                            |                              |                        |           |                |               |
| Between Groups  | 135.065335                 | 5                            | 27.013067              | 2.7648745 | 0.0270         | 2.3860699     |
| Within Groups   | 527.58475                  | 54                           | 9.770087963            |           |                |               |
| Total   | 662.650085                 | 59                           |                        |           |                |               |
| <b>Operating Profit Margin</b>                              |                            |                              |                        |           |                |               |
| Between Groups  | 1887.3175                  | 5                            | 377.4635               | 35.568069 | 0.0000         | 2.3860699     |
| Within Groups   | 573.071                    | 54                           | 10.61242593            |           |                |               |
| Total   | 2460.3885                  | 59                           |                        |           |                |               |
| <b>Current Ratio (Liquidity Ratio)</b>                      |                            |                              |                        |           |                |               |
| Between Groups  | 135.065335                 | 5                            | 27.013067              | 2.7648745 | 0.0270         | 2.3860699     |
| Within Groups   | 527.58475                  | 54                           | 9.770087963            |           |                |               |
| Total   | 662.650085                 | 59                           |                        |           |                |               |
| <b>Trends of Annual Stock Returns in % (Based at BSE)</b>   |                            |                              |                        |           |                |               |
| Between Groups  | 4441.317828                | 5                            | 888.2635657            | 0.3097471 | 0.9050         | 2.3860699     |
| Within Groups   | 154856.1042                | 54                           | 2867.705633            |           |                |               |
| Total   | 159297.422                 | 59                           |                        |           |                |               |

Table-9 shows the application of ANOVA for testing the significant difference in the Capital Adequacy, Asset Quality, Management Efficiency, Profitability and Liquidity of the Sample Banks for 10 Years.

- (i) Ho: There is No significant difference in the Capital Adequacy, Asset Quality, Management Efficiency, Profitability and Liquidity of the Sample Banks.
- (ii) Ha: There is significant difference in the Capital Adequacy, Asset Quality, Management Efficiency, Profitability and Liquidity of the Sample Banks.
- (iii) The p-value for all the selected ratios on the application of ANOVA is less than 0.05 which rejects the Null Hypotheses. Therefore there is significant difference in the Capital Adequacy, Asset Quality, Management Efficiency, Profitability and Liquidity of the Sample Banks.

## IX CONCLUSION

**The study sought to examine the financial performance of commercial banks in India.** Sample of six Commercial Banks (three Public and three Private sectors) are taken and the data for the study is from 2008-09 to 2017-18. The banks include Axis Bank, Bank of Baroda, Corporation bank, HDFC Bank, ICICI Bank and State Bank of India. The data is collected from published annual reports, websites of the respective banks, and from Reserve Bank of India. Calculations are done for measuring the aspects of financial performance of banks by applying CAMEL Model which includes capital adequacy, asset quality, management efficiency, earning quality and liquidity. The significance of the parameters of the CAMEL model was tested by using ANOVA. The results confirm the following:

- (a) In the first parameter of CAMEL Model i.e. Capital Adequacy in the public sector SBI and in the private sector HDFC Bank perform well as compared to the sample Banks. This ensures the efficiency and the stability of the banks, that they are capable of meeting its financial obligations. The application of ANOVA shows a significant difference in the capital adequacy ratio of the sample Banks.
- (b) In the second parameter of CAMEL Model i.e. Asset Quality which assesses the credit risk associated with particular assets. These assets require the interest payments such as loans and investments portfolios. In Public sector Bank of Baroda and in private sector HDFC Bank shows the lowest average in the percentage of Net NPA in the sample period of 10 years. The Banks should adopt rigorous laws of the NPA management. There should be a separate act to treat the willful defaulter's Policies and procedures to grant loans to individual borrowers or companies should be revised.
- (c) In the third parameter of CAMEL Model i.e. Management efficiency in the public sector SBI and in the private sector HDFC Bank perform well as compared to the sample Banks. The management efficiency may improve by more focus on the customer's service.
- (d) In the fourth parameter of CAMEL Model i.e. Earnings and profitability in the public sector SBI and in the private sector HDFC Bank perform well as compared to the sample Banks in Operating Profit Margin, Return on Total assets and in Net Profit Margin, Return On Net Worth, Return on Capital Employed in the public sector Bank of Baroda and in the private sector HDFC Bank perform well as compared to the sample Banks in the sample period of 10 years. In a highly competitive market and digital revolution banks need to move beyond the model of "one-size-fits-all". Sophisticated customer segmentation, Product Bundling and Relationship, Pricing Automating customer care and Multi-Channel Seamless Experience will help bank to attract and retain its customers and increase its profitability.
- (e) In the fifth parameter of CAMEL Model i.e. Liquidity in the public sector SBI and in the private sector ICICI Bank perform well as compared to the sample Banks. In Public Sector SBI and in private sector ICICI maintains a high Average Dividend Payout ratio in the sample period. A high liquid ratio will add good value to meet unforeseen contingencies and short-term obligations. Controlling Overhead Expenses, Negotiating for Longer Payment Cycles, Get Rid of Useless Assets allows having better Quick and Current ratios, and allows you to save some of your liquidity in the near term and put it to better use. SBI in public sector and ICICI in private sector maintains a stable dividend payout Ratio.

The Banking sector of India has witnessed a paradigm shift – evolving from physical banking to becoming digital anchors. The role of technology has become an integral component in the strategic framework of banks to driving, shaping and redefining the business models and the revenue streams. Enhancing customers banking experience, Credit re-engineering, digitization for customer efficiency and customer inclusion and Banking with quality are the parameters to focus on growth and face the challenges of the Banking sector. In current scenario the customers is spoilt for choices, but they want to bank with the "fittest" bank. It is inevitable for the banks to spend on digitization and customer services but maintain their profitability through cost optimization. The banks overall strategy should be towards its growth. The Banking sector should be forward looking in integrating the upcoming technology and leveraging data & Analytics to become "smarter" in identifying and servicing customers' needs.

## REFERENCES

### Books and Journals

- [1] ALEMU, M., & AWEKE, M. (2017). Financial Performance Analysis Of Private Commercial Banks Of Ethiopia: Camel Ratings. *International Journal of Scientific and Research Publications*, 7(10), 1-28.
- [2] Antoun, R., Coskun, A., & Georgievski, B. (2018). Determinants of financial performance of banks in Central and Eastern Europe. *Business and Economic Horizons*, 14(3), 513-529. doi:10.15208/beh.2018.37
- [3] Bansal, R., & Mohanty, A. (2013). An Empirical study on Financial performance of Commercial Banks in India: Application of CAMEL model." *Al-Barkaat Journal of AFilm-Banarckea&at MJoaurmaagleomfFenintance*, 5, 60-79.
- [4] Fahad, N. (2014). An Econometric Analysis on Financial Performance of Commercial Banks in Bangladesh: A Comparative Study. *The Journal of Business Studies*, 1-14
- [5] Goel, C., & Rekhi, C. (2013). A Comparative Study on the Performance of Selected Public Sector and Private Sector Banks in India. *Journal of Business Management & Social Sciences Research (JBM&SSR)*, 2(7), 46-56.
- [6] Gudata Abara, 2015. "Research on "financial performance analysis in banking sector (in selected commercial Banks in Ethiopia) *International Journal of Current Research*, 7, (10), 21883-21886.

- [7] Karim, R. A., & Alam, T. (2013). An Evaluation of Financial Performance of Private Commercial Banks in Bangladesh: Ratio Analysis. *Journal of Business Studies Quarterly*, 5, 65-77.
- [8] Kaur, J., Kaur, M., & Singh, S. (2015). Financial performance analysis of selected public sector banks: A CAMEL Model approach. *ABER*, 13, 4327-4348.
- [9] Miencha, I. O., & Selvam, M. (2013). Financial Performance in the Banking Sector: A Study with special reference to Kenyan Commercial Banks using Data Envelopment Analysis (DEA). *The Research Journal of Social Sciences and Management*, 2(9), 48-53.
- [10] Paradi, J. C., Rouat, S., & Zhu, H. (2011). Two-stage evaluation of bank branch efficiency using data envelopment analysis. *Elsevier-Omega* 39, 99-109.
- [11] Pinto, P., Hawaldar, I. T., Rahiman, H. U., T.M, R., & Sarea, A. (2017). An Evaluation of Financial Performance of Commercial Banks. *International Journal of Applied Business and Economic Research*, 15, 605-6018.
- [12] Řepková, I. (2015). Banking Efficiency Determinants in the Czech Banking Sector. *Procedia Economics and Finance*, 23, 191-196. Doi:10.1016/s2212-5671(15)00367-6
- [13] Roy, S. K., Paul, R., Quazi, A., & Nguyen, B. (2018). Developing a service value measurement scale in retail banking services. *International Journal of Bank Marketing*, 36(4), 616-633. doi:10.1108/ijbm-03-2017-0055
- [14] Srinivasan, P. and Britto, J. (2017) Analysis of Financial Performance of Selected Commercial Banks in India. *Theoretical Economics Letters*, 7, 2134-151. <https://doi.org/10.4236/tel.2017.77145>
- [15] Tzeremes, N. G. (2015). Efficiency dynamics in Indian banking: A conditional directional distance approach. *European Journal of Operational Research*, 240(3), 807-818. doi:10.1016/j.ejor.2014.07.029

## WEB RESOURCES

- [1] The ratios for understanding bank rating and creditworthiness. (n.d.). Retrieved from <https://www.modefinance.com/blog/en/2015-12-23-How-To-Evaluate-Bank-Creditworthiness>
- [2] Publications. (n.d.). Retrieved from <https://m.rbi.org.in/Scripts/PublicationsView.aspx?id=17618>
- [3] Hayes, A. (2003, November 18). What the Capital Adequacy Ratio (CAR) Measures. Retrieved from <https://www.investopedia.com/terms/c/capitaladequacyratio.asp>
- [4] Kenton, W. (2003, November 18). Efficiency Ratio. Retrieved from <https://www.investopedia.com/terms/e/efficiencyratio.asp>
- [5] Kenton, W. (2006, July 3). Asset Quality Rating. Retrieved from <https://www.investopedia.com/terms/a/assetqualityrating.asp>
- [6] Maverick, J. (2015, May 25). What Debt-To-Equity Ratio Is Common for a Bank? Retrieved from <https://www.investopedia.com/ask/answers/052515/what-debt-equity-ratio-common-bank.asp>
- [7] Motley Fool Staff. (2016, March 12). How to Calculate Profitability Ratios for Banks. Retrieved from <https://www.fool.com/knowledge-center/how-to-calculate-profitability-ratios-for-banks.aspx>