Chapter 3

RESEARCH METHODOLOGY

3.1 Background of the Study: - Indian Banking Industry is one of the booms in spite of the economic turmoil. As we know that CAMEL model is a supervisory internal rating mechanism where ratings are assigned by the internal management of the bank. As our research is focusing on CAMEL Rating system that takes into account five important parameter of the performance of banking industry, it will give us better understanding and information about the performance of the selected public and private sector banks in India.

Profit earning and increasing the customer base is the main objective of all commercial banks, keeping in view, the competitive trend of the banks, this study is mainly concentrated upon the comparison of different bank groups on their deposits, borrowing, loans and advances and investments related to different period of time. The foreign banks have never contributed to India economic growth and development. They are more interested in profits in our study we include public and private sector banks.

3.2 Statement of Research Problem: - “PERFORMANCE ANALYSIS THROUGH CAMEL RATING: A COMPARATIVE STUDY OF SELECTED PUBLIC AND PRIVATE SECTOR BANKS IN INDIA” A research problem states to some difficulty or any question whose answer is needed to find out, or any problem that a researcher or society experiences, either in a theoretical or practical situation and they wants to obtain a solution for the same.

Identification of the problem of the study: - In the present scenario, the Indian financial system especially the banks have experienced several changes in the form of reforms, regulations and norms. CAMEL framework is an effective mechanism to measure the performance of the banks. Here, for our research, several studies has been done to analyze the financial performance of selected public sector and private sector banks through CAMEL Framework and their comparison with different sector, selection of banks, different period of time.

3.3 Research Question:-The performance of any financial institutions may not reflected by the financial statement only , then the major question arises whether there have adequate funds, managerial efficiency and proper control to reflect the overall performance of any financial institution.
• What are the capital Adequacy ratios of the selected public and private sector banks?
• What are the assets qualities of the selected public and private sector banks?
• What are the management qualities of the selected public and private sector banks?
• What are the earning abilities of the selected public and private sector banks?
• What is the liquidity management of the selected public and private sector banks?

3.4 Objective of the Study: - There are various objectives behind the study are
1. To compare the financial performance of private sector banks with the public sector banks in all the five areas of CAMEL.
2. The study makes an examination on the following:
   a) Comparative analysis of Capital adequacy of selected public and private sector banks in India.
   b) Comparative analysis of Asset quality of selected public and private sector banks in India.
   c) Comparative analysis of Management ability of selected public and private sector banks in India.
   d) Comparative analysis of Earnings capacity of selected public and private sector banks in India.
   e) Comparative analysis of Liquidity of selected public and private sector banks in India.
3. To find out is there any significant difference between the performance of the public and private sector banks on the basis of CAMEL rating system.
4. To provide information to those investors or creditors, who cannot afford to gather information about the soundness of banks from any external rating system
5. To give suitable recommendations for the improvement in financial performance of the public and private sector banks.

3.5 Research Hypotheses: - The following hypothesis has been formulated to answer the research questions are as follows:

1) In case of Capital Adequacy Ratios
   Null Hypothesis \((H_0)\):-There is no significant difference among the Capital Adequacy Ratios of the selected public and private sector banks in India.
   Alternative Hypothesis \((H_1)\): There is significant difference among the Capital Adequacy Ratios of the selected public and private sector banks in India.
2) **In case of Asset Quality Ratio**

**Null Hypothesis (H0):** There is no significant difference among the Asset Quality Ratios of the selected public and private sector banks in India.

**Alternative Hypothesis (H1):** There is significant difference among the Asset Quality Ratios of the selected public and private sector banks in India.

3) **In case of Management Quality Ratios**

**Null Hypothesis (H0):** There is no significant difference among the Management Quality Ratios of the selected public and private sector banks in India.

**Alternative Hypothesis (H1):** There is significant difference among the Management Quality Ratios of the selected public and private sector banks in India.

4) **In case of Earning Ability Ratios**

**Null Hypothesis (H0):** There is no significant difference among the Earning Ability Ratios of the selected public and private sector banks in India.

**Alternative Hypothesis (H1):** There is significant difference among the Earning Ability Ratios of the selected public and private sector banks in India.

5) **In case of Liquidity Management Ratios**

**Null Hypothesis (H0):** There is no significant difference among the Liquidity Management Ratios of the selected public and private sector banks in India.

**Alternative Hypothesis (H1):** There is significant difference among the Liquidity Management Ratios of the selected public and private sector banks in India.

6) **In case of Overall Performance**

**Null Hypothesis (H0):** There is no significant difference in CAMEL Model Ratios of the selected public and private sector banks in India.

**Alternative Hypothesis (H1):** There is significant difference in the CAMEL Model Ratios of the selected public and private sector banks in India.

3.6 **Research Methodology:** CAMEL Framework is basically a ratio based model for determining the financial soundness of the banks. It is an internal management rating tool that measures capital adequacy, asset quality, management capability, earnings capacity and liquidity management of financial institutions. The present study is an exploratory research based on deductive research approach with quantitative research strategy. The CAMEL model has been used as the most effective internal supervisory tool for also rating the performance of the financial institutions. In general application, the CAMEL rating technique defines the ratings and evaluation of the five criteria affecting to the
bank’s inspection and control on the scale of 1 or A+ the best to 5 or C the worst, grading ratings scores in ascending order.

The ratings scores are as follows:

- **Rating ‘1 or A+’** indicates the most financial sound and the safest banks in all aspects.
- **Rating ‘2 or A’** indicates the safe and sound banks at general satisfactory level.
- **Rating ‘3 or B’** indicates the risk exposure of the financial institution is significant, and requires management's ability to manage and control risk involves improvement.
- **Rating ‘4 or C’** indicates that the financial institution shows an unacceptably high exposure of risk.
- **Rating ‘5 or D’** indicates that the banks showing on excessive risk, and troubled by critical financial and managerial difficulties, and requires immediate improvements.

a) **Research Approach:** - Our research finds the characteristics of deductive reasoning as the evaluation of the banking industry is the general phenomenon and then drawn the conclusions for the particular banks rating to the general performance of the banks which indicate that our research follows the deductive research approach.

b) **Research Strategy:** - There are two separate groups of research strategies are qualitative and quantitative research. The selection of quantitative research strategy is also based upon no. of facts other than presentation of the results in numeric values and figures. Our research is basically concerned with numbers, figures and use of different ratios in comparative form. As per the nature of our research, we have selected deductive approach which is commonly related with the quantitative research strategy with keeping in mind the hypothesis and objective of the study.

c) **Research Design:** - Our research design is exploratory in nature, we conclude that our study is comparative analysis of performance of the public and private sector bank through CAMEL rating is exploratory in nature which is usually concerned with exploring the general banking industry with respect to particular bank to the general. The study is conducted to explore more clearly about the ratings of the public and private sector banks.

d) **Nature, Scope and Population of the study:** - The present study is aimed to understand the comparison between the working of public and private sector banks in India through CAMEL rating. The study has focused on each of CAMEL parameters and calculates 22 managerial and accounting ratios to analyses the profitability of public and private sector banks. The study covers 16 high assets value banks of private and public sector.
3.7 **Sampling**: Our study is based on non-probability sampling i.e. convenience and purposive sampling. Selection of the banks is based on the nature of population and the purpose of the study. The banks are selected on some characteristic (high asset value parameter). In our study we have selected 10 public and 6 private sector commercial banks on the basis of high average asset value parameter as per financial year 2014-15.

**Basis of Sampling**: The selection of the banks has been done on the basis of high asset value.

**List of Selected Public and Private Sector Banks**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>PUBLIC SECTOR BANKS</th>
<th>PRIVATE SECTOR BANKS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>State Bank of India</td>
<td>ICICI Bank</td>
</tr>
<tr>
<td>2</td>
<td>Bank of Baroda</td>
<td>HDFC Bank Ltd.</td>
</tr>
<tr>
<td>3</td>
<td>Punjab National Bank</td>
<td>Axis Bank</td>
</tr>
<tr>
<td>4</td>
<td>Bank of India</td>
<td>Yes Bank</td>
</tr>
<tr>
<td>5</td>
<td>Canara Bank</td>
<td>Kotak Mahindra Bank</td>
</tr>
<tr>
<td>6</td>
<td>IDBI Bank</td>
<td>IndusInd Bank Limited</td>
</tr>
<tr>
<td>7</td>
<td>Union Bank of India</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Central Bank of India</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Syndicate Bank</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>UCO Bank</td>
<td></td>
</tr>
</tbody>
</table>

a) **Period of the Study**: The period for evaluating performance of the selected public and private sector banks through CAMEL model in this study is five years, i.e. from financial year 2010-11 to 2014-15.

b) **Measures of CAMEL Model**: To achieve desired objectives, following ratios as per CAMEL model are calculated in this study as we all know that CAMEL is a ratio based model

- C - Capital Adequacy
- A - Asset Quality
- M - Management Quality
- E - Earnings Capacity
- L - Liquidity Management
1) **Measures of Capital Adequacy**
   1. Capital Adequacy to Risk Weighted Assets Ratio (CRAR)
   2. Debt Equity Ratio
   3. Total Advance to Total Asset Ratio
   4. Government Securities to Total Investments
   5. Coverage Ratio

2) **Measures of Asset Quality**
   1. Net NPA to Net Advances Ratio
   2. Net NPA to Total Assets Ratio
   3. Total Investments to Total Assets Ratio
   4. % Change in the growth of NPA Ratio

3) **Measures of Management Quality**
   1. Business per Employee
   2. Profit per Employee
   3. Total Advance to Total Deposit Ratio
   4. Return on Net worth Ratio

4) **Measures of Earnings Ability**
   1. Return on Asset
   2. Net Interest Margin Ratio
   3. Interest Income to Total Income
   4. Operating Profit to Total Income Ratio
   5. Net Profit Margin Ratio

5) **Measures of Liquidity**
   1. Liquid Assets to Total Assets
   2. Liquid Assets to Total Deposit
   3. Government and Approved Securities to Total Assets Ratio
   4. Liquid Assets to Demand Deposit

3.8 **Method of Data collection**:- In our research we will use secondary data because CAMEL is an internal rating model to assess the performance of a bank. Use secondary data like annual reports of the selected banks, economic times reports, moneycontrol.com, Trends and progress reports of RBI publications, Statistical tables of RBI, journals, books for ratio analysis. Data published by the RBI in the annual publication of banking and finance etc.
3.9 Tools and Techniques

There are many accounting and statistical techniques used for the analysis purpose of the collected data. Below given are list of the tools and techniques used for analysis: As we all know that CAMEL is a Ratio based model also includes accounting ratio and profitability ratios.

**Accounting Techniques**

1) **Ratio Analysis**: Financial ratios are those ration which helps in determining the mathematical relationship and comparisons of financial statement. Ratios help the financial institution to compare with the others in order to identify their strengths and weaknesses.

2) **Comparative Statement Analysis**: A statement which compares the financial data of different periods of time. The comparative statement positions up a section of the income statement, balance sheet or cash flow statement with the corresponding section of a previous period.

**Statistical Techniques**

The following statistical tools will used in the study.

1. **Measures of Central Tendency**: -It provides an overall measure of some data set; it is sometimes desirable to represent some property of the entire data set using a single statistic.

2. **Arithmetic Mean**: The most commonly used measure of central tendency is called the arithmetic mean. It is the average of set of distribution. It is calculated as sum of observations divided by number of observations.

3. **Variance**: Variance is a measure of the range of a set of data with respect to the average value, or mean. In mathematically terms, it is the sum of the squared difference between each data point of the mean divided by the number of data points.

4. **The Standard Deviation**: Standard deviation is the tool to measure how the actual distribution is deviate from the mean value.

5. **Coefficient of Variation**: Coefficient of variation is the percentage measure of standard deviation to mean.

6. **Spearman Ranking Correlation Analysis**: Correlation is a tool use to establish and measure the mathematical relationship between the two or more observations. Spearman Ranking Method is used to compare the ranks of the selected public and private sector banks.
7. **One way Analysis of variance (ANOVA):** It is considered to be statistical models which are used to measure the differences between means of two or more groups and their related procedures

8. **t– test Analysis:** It is a statistical test used to compare the means of two or more groups. It is considered to be the small samples size test where sample size should be less than 30. So in our study for hypothesis testing t-test is applicable because sample size is less than 30.

**Graphical Presentation of Data**

It is visualization technique of an overall message much better than a list of tables.

- Common Statistical Graphs
- Histogram -- vertical bar chart of frequencies
- Frequency Polygon -- line graph of frequencies

3.10 **Organization of the Study:** - The study has been organized into 8 chapters

The titles of these chapters are as follows:

**Chapter-1 Introduction:** - This chapter deals with the subject matter consisting Background of the study, Focus of the Study, conceptual Framework of CAME Model, CAMEL Rating System and Profiles of the selected Banks

**Chapter: 2 Review of Literature:** - Review of Literature deals with review some work analysis and discussion already made in CAMEL Analysis in the form of thesis and journals and also analyses the gap

**Chapter: 3 Research Methodology:** - Research Methodology Chapter includes Research Problem, Design, Approach, Strategy, Sampling, Data Collection Procedure, , Period of Study, Data Processing, Data Analysis Tools and techniques

**Chapter-4 Legislative Framework of CAMEL Model:** - This chapter includes the law and the Acts related with the CAMEL Model Rating system

**Chapter- 5 Performance Analysis of Banking Industry through Capital Adequacy and Asset Quality,** in this chapter Presentation and Analysis of Data related to capital Adequacy and Asset quality of the selected banks with the help of statistical techniques

**Chapter- 6 Performance Analysis of Banking Industry through Management Quality and Earnings Abilities,** in this chapter Presentation and Analysis of Data related to Management Quality and Earnings Abilities of the selected banks with the help of statistical techniques
Chapter-7 :- Performance Analysis of Banking Industry through Liquidity Positions And overall analysis, in this chapter Presentation and Analysis of Data related to Liquidity and overall analysis and conclusion has been drawn on the basis of CAMEL Model of the selected banks with the help of statistical techniques

Chapter -8 Findings, Conclusions, and Future Prospects of Research: - In this chapter finding of the study, conclusion, recommendations and future prospects of research has been discussed.

REFERENCES & BIBLOGRAPHY

ANNEXURES

PUBLISHED PAPERS