# CHAPTER 1
# INTRODUCTION

In the Indian context, banking is the mirror of the economic growth of the nation. Before liberalization, the structure of Indian banking was mainly controlled and the parameters like branch size and location were given paramount importance. The Indian banking industry has travelled from a drowsy institution to a dynamic entity. Now, the Indian banking industry is undergoing a period of rapid change, where global trends are impacting the banking business due to increasing competition. Liberalization has boosted customer expectations, increasing disintermediation, competitive pricing and possibilities of macro-volatility. It is a result of liberalization and economic reforms. However, these reforms have provided a base for the Indian banks to inculcate operational flexibility and functional autonomy, in their work culture thereby enhancing growth & performance, efficiency, productivity and profitability.

The rate of economic growth has a direct and efficient link with the working of financial sector of the country. An efficient financial sector gains economic growth at a faster rate. Efficiency increases with the improvements in the techniques, technology and management of the production process. These improvements have lead to higher production and lower costs. Higher per-capita incomes of developed countries reflect higher levels of efficiency whereas low and stagnant per-capita incomes show low levels of efficiency. The concept of operational efficiency of banks is connected with diverse aspects of its operations. Operational efficiency in a service industry like banking has a wide connotation. This connotation is considerably enlarged where banks are required to assume responsibility of serving social as well as economic objectives. The need of improving efficiency has increased substantially for the survival and sustained viability of commercial banks.

The banking business as a whole had given more emphasis on deposit mobilization, credit deployment and branch expansion. However now a days, it has also started giving emphasis on operational efficiency. It will not be possible to increase profit without improving efficiency and productivity. The increasing competition inspired the commercial banks to become cost effective and efficient in

using the resources to perform well. A bank is considered to be cost effective, if it uses equal amount of input resources as others but also generates higher levels of output in terms of income or profit or if it spends less amount of input resources to generate same level of performance as others in banking industry. There is a need of capturing more market share and to be cost effective and competitive for survival in today's market scenario. That's why, operational efficiency of banks is critical as a basic for effective competition. *In this context the main objective of the study is to analyze the Operational Efficiency of Selected Public Sector Banks in India.*

This chapter is a window to entire thesis. It includes need of the study, objectives of study, scope of study, sampling design, data collection, data analysis plan , statistical tools and techniques, chapter scheme and limitations of study.

## 1.1 Need of the Study

The evaluation of the operational efficiency of banking industry is important because it makes possible to identify those banks that performed well from those banks that could not perform well. This enables the bank managers to improve managerial performance by identifying "best practice" and "worst practice" associated with high and low efficiency respectively. In addition, one may gauge the impact of a regulatory change by measuring its effects on bank efficiency or one can examine the efficiency of banks, in different stages to measure the effects of differences in branching restrictions or other regulations. Analyzing the operational efficiency of banks has greater significance in the overall rating of banks. Therefore the study of operational efficiency of the public sector banks in India has lots of relevance and it is the need of the hour, as the growth in the Indian economy is directly related to it. The results of the study may help other developing nations initiating reform process to take appropriate strategy to improve the banking efficiency.

## 1.2 Objectives of Study

The broad objective of the study is to analyze the operational efficiency of selected public sector banks in India. In this context the detailed objectives of the study are as follows:

a) To review the theory and empirics on operational efficiency of banking system;

b) To compare the progress of public sector banks with regards to deposits, advances, investment, number of branches and employment generation;

c) To analyze the productivity of public sector banks on the basis of various productivity indicators;

d) To evaluate the profitability of public sector banks;

e) To explore the technical efficiency scores for the selected public sector banks operating in India; and

f) To suggest measures for improving profitability, productivity and efficiency of public sector banks.

## 1.3 Methodology and Coverage

The present study has been undertaken to measure and evaluate the operational efficiency of public sector banks in India. Operational Efficiency is an important pre-requisite for sustained growth and development of any institution. The study covers the period of 21 years; from the year 1990-1991 to 2011-2012. The sample for the study takes into account 69 percent of the total public sector banks in India. For the purpose, all the 26 public sector banks are ranked on the basis of Business per Employee as on 31$^{st}$ March, 2011 and the selection of public sector banks for the purpose of study has been done on the same basis. This has been significant consideration in the selection of the banks as the business is one of the major determinants of performance of a bank. Here Business per Employee means total business of a bank includes the sum of deposits, advances and investments divided by no. of employees.

### 1.3.1 Criteria of Selection of Public Sector Banks for the Study

On the basis of table 1.1 six top ranking banks, IDBI Bank Ltd, Corporation Bank, Oriental Bank of Commerce, Bank of Baroda, Bank of India and Punjab & Sind Bank (representing high employee productivity), Six middle ranking banks, Andhra Bank, Vijaya Bank, UCO Bank, State Bank of Hyderabad, Indian Bank and State Bank of Patiala (representing medium employee productivity) and six bottom ranking banks namely State Bank of Travancore, Bank of Maharashtra, Syndicate

Bank , State Bank of Bikaner & Jaipur, State Bank of Mysore and State Bank of India (representing low employee productivity) have been selected for the study.

**Table 1.1: Ranking of Public Sector Banks on the basis of Business per Employee as on 31st March, 2011**

| Serial No. | Name of Bank | Business per Employee | Ranks |
|------------|--------------|-----------------------|-------|
| 1. | Allahabad Bank | 12.66 | 12 |
| 2. | Andhra Bank | 13.32 | 9 |
| 3. | Bank of Baroda | 15.37 | 4 |
| 4. | Bank of India | 15.02 | 5 |
| 5. | Bank of Maharashtra | 9.82 | 22 |
| 6. | Canara Bank | 13.55 | 8 |
| 7. | Central Bank of India | 10.68 | 19 |
| 8. | Corporation Bank | 17.82 | 2 |
| 9. | Dena Bank | 12.84 | 11 |
| 10. | Indian Bank | 11.17 | 17 |
| 11. | Indian Overseas Bank | 11.92 | 16 |
| 12. | Oriental Bank of Commerce | 16.77 | 3 |
| 13. | Punjab & Sind Bank | 14.92 | 6 |
| 14. | Punjab National Bank | 12.24 | 15 |
| 15. | Syndicate Bank | 9.73 | 23 |
| 16. | UCO Bank | 12.47 | 14 |
| 17. | Union Bank of India | 14.84 | 7 |
| 18. | United Bank of India | 10.46 | 20 |
| 19. | Vijaya Bank | 13.27 | 10 |
| 20. | IDBI Bank Ltd. | 29.84 | 1 |
| 21. | State Bank of India | 8.90 | 26 |
| 22. | State Bank of Patiala | 10.89 | 18 |
| 23. | State Bank of Hyderabad | 12.30 | 13 |
| 24. | State Bank of Bikaner & Jaipur | 9.48 | 24 |
| 25. | State Bank of Travancore | 10.40 | 21 |
| 26. | State Bank of Mysore | 9.08 | 25 |

**Source:** Calculated


**1.3.2 Data Collection**

The Study is primarily based on secondary data. To achieve the objectives of the study, secondary data has been collected. The database has been created from the published secondary sources, primarily the reports of Indian Bankers Association (IBA) and the Reserve Bank of India (RBI). The data relating to financial performance of the selected public sector banks has been obtained from various sources like "Financial Analysis of Banks" brought by Indian Banker's Association, "Statistical Tables Relating to Banks in India", "Reserve Bank of India Monthly Bulletin", "Performance Highlights of Public Sector Banks", "Trends and Progress of Banking in India" and other publications of Reserve Bank of India.

### 1.3.3 Data Analysis Plan

The Study attempts to accomplish its objectives by dividing the analysis of data into four parts. In the first part of the study, the determinants of efficiency of public sector banks have been analyzed in terms of deposits mobilization, credit deployment, investments, branches expansion and employment generation. The second part of analysis deals with productivity of banks on the basis of 12 indicators. These indicators have been divided into three categories. The first set of indicators measure output in terms of input of number of employees, that is employee productivity. The second set of indicators measure output in terms of input of number of branches, that is branch productivity. The last set of indicators depicts productivity on the basis of certain financial ratios, that is, financial productivity. In third part emerging trends in the profits of the banks have been studied while analyzing data of selected banks regarding spread ratio and burden ratio. The fourth part of analysis covers technical efficiency of the public sector banks by using CCR and BCC models. The set of indicators of productivity are as follows:

Per Employee Indicators (Labour Productivity)

a) Deposits per Employee
b) Credit per Employee
c) Business per Employee
d) Total Expenditure  per Employee
e) Establishment Expenses per Employee

Per Branch Indicators (Branch Productivity)

a) Deposits per Branch
b) Credit  per Branch
c) Business per Branch
d) Total Expenses per Branch
e) Establishment Expenses per Branch

Financial Ratios Measuring Productivity (Financial Productivity)

a) Establishment Expenses as Percentage to Total Expenditure
b) Total Earning as Percentage to Total Credit

### 1.3.4 Statistical Tools & Techniques

The following statistical tools have been used for analyzing data. The analysis of data collected has been carried out by using average, simple growth rates, exponential growth rates, coefficient of variation and ratio analysis. Brief description of some important tools is given as under:

a) **Simple Growth Rate**: It simply gives the percentage increase over the previous year, i.e.

$$g = (\frac{yt - yt-1}{yt-1})\,x100$$

Where, g = growth rate;

$yt$ =value of variable y in current year; and

$yt - 1$= value of variable y in the previous year

b) **Exponential Growth Rate**: It is simply compound growth rate but unlike the compound growth rate, it is worked out for a period on the basis of the value of a variable for all the years. In this case, least square trend is fitted for given years and given values of the variables. The exponential equations used are:

$$Ye = ab^t \qquad\qquad\qquad ..(1)$$

$$where, b = 1 + \frac{g}{100} \qquad\qquad\qquad ..(2)$$

$Ye$ is the computed value of concerned variables, $a$ and $b$ are the estimates, $t$ is the time period rate and $g$ is the growth rate. In the semi-logarithmic form, the equation (1) takes the form:

$$Log\ ye = log\ a + t\ log\ b \qquad\qquad\qquad ..(3)$$

The present equation is known as semi-logarithmic equation which gives the straight line. For this linear equation, we get the estimated value of log b and log a. The growth rate obtained from equation (2) is

$$g = (b\text{-}1)\ x\ 100$$

If we have value of log b, then, g = [Antilog (log b) -1] x 100.

The growth rate of the entire variable–deposits, advances, investments, branches and employment generation have been calculated separately for three periods. First, the growth rate has been calculated for the entire period of study from 1990-91 to 2011-12, to analyze the growth rate among the selected public sector banks during the period of study. Further to see the impact of banking reforms, the data has been divided into two parts- Period of new regime P1 (from 1990-91 to 1999-2000) and Period of information technology & recession P2 (from 2001 to 2011-12). The first period (P1) comprises 10 years while second (P2) comprises 12 years. The growth rates of all the variables have also been calculated separately for total period (P) along with periods (P1) and (P2), to determine effect of bank

reforms. The growth rate for the total period (P) and two sub-periods (P1 and P2); have also been calculated for various profitability and productivity indicators.

c) **Average/ Mean**: The most commonly used average is the arithmetic mean, briefly referred to as the mean. The mean can be found by adding all the variables and dividing it by total number of the years taken. It gives a brief picture of a large group which represents and gives a basic of comparison with other groups.

d) **Standard Deviation**: The Standard deviation concept was introduced by Karl Pearson in 1823. It is a widely used measure of studying dispersion. Standard deviation is also known as root mean square deviation for the reason that it is the square root of the mean of the square deviation from arithmetic mean.

e) **Co-efficient of Variation**: Coefficient of variation has been applied to check the consistency of various variables and compare the selected variables used in the present study. The coefficient of variation (CV) has been calculated by using the following formula:

Co-efficient of variation (CV) $= \frac{Standard\ Deviation}{Mean} X 100$

$$i.e.\ \frac{\sigma}{\bar{X}} X 100$$

where, $\sigma$ (Standard Deviation) $= \sqrt{\frac{\sum(x-\bar{x})^2}{n} - (\bar{x})^2}$

There is inverse relationship between the coefficient of variation and consistency. More the value of coefficient of variation, lesser is the consistency and vice-versa.

f) **Ratio Analysis**: Ratio analysis has been applied to calculate various productivity indicators-employee productivity, branch productivity and financial productivity indicators as well as various profitability indicators-spread ratio and burden ratio.

g) **DEA Approach**: Data Envelopment Analysis (DEA) approach was first proposed by Charnes et al. (1978) which were based on Farrell's work (Farrell, 1957). It is a nonparametric technique which is used for measuring the relative efficiency of a set of similar units, which usually refers to decision making units (DMUs). DEA is capable of handling multiple inputs and outputs without requiring any judgment on their importance. DEA identifies the efficiency of a particular bank by comparing it to similar banks which are considered as efficient, rather than trying

to associate a bank's performance with statistical averages that may not be applicable to that bank. The main objective of DEA is to find out the banks which are operating on efficient frontier and the banks which are not operating efficiently. The efficiency score in the presence of multiple input and output factors is defined as:

Efficiency = weighted sum of outputs / weighted sum of inputs

## 1.4 Chapter Scheme

The present study has been divided into six chapters. The details of which are as follows:

**Chapter-1:** Entitled "Introduction" deals with the introduction as well as design for the present study. It includes need of the study, objectives, scope of study, sampling design, data collection, data analysis plan, objectives of chapter scheme and limitations of study.

**Chapter-2:** Entitled "Review of Literature" deals with a brief review of research studies undertaken in the banking sector. In this chapter important studies and committee reports relating to growth and performance of banking, productivity and profitability of banks and efficiency of banks conducted in India as well as abroad have been reviewed.

**Chapter-3:** Entitled "Indian Banking System: An Overview" covers the brief history and development of Indian banking system, Phases of Indian Banking System, structure and present scenario of Indian banking system. It also studied the legal frame work presently prevailing in the country with special reference to banking industry.

**Chapter-4:** Entitled "Operational Efficiency in Banking Sector- A Conceptual Framework" deals with conceptual framework of operational efficiency in banking sector. It covers the meaning of efficiency, categorization of efficiency, operational efficiency in banking sector, dimensions of operational efficiency in banking sector.

**Chapter-5:** Entitled "Measuring Operational Efficiency: An Analysis of Public Sector Banks" deals with an analysis and interpretation of operational efficiency of selected Public Sector Banks. It covers analysis of data collected for the purpose of

the study. It analyzes and compares the operational efficiency of selected public sector banks on the basis of selected variables.

**Chapter-6:** Entitled "Conclusion and Recommendations" summarize the findings of the study. An attempt has also been made to draw conclusions from the study and suggest ways to improve operational efficiency in Public Sector Banks in India.

## 1.5 Limitations of the Study

Every research study, however, carefully planned is likely to have limitations which remain unknown to researchers; or come to their knowledge much later in the study. The present study is no exception. As a researcher, I confess the following limitations of the study:

a) In the study, the operational efficiency of only PSBs, have been examined. No private sector banks and foreign banks have been considered in the study. Therefore, the study does not show the entire scenario of operational efficiency of the banking sector.

b) At many stages the basic objectives of the study suffered due to non availability of data for IDBI Ltd for the period between 1990-91 to 2003-04. As it started functioning as public sector bank after $30^{th}$ September, 2004 as per RBI notification incorporating IDBI as a "Scheduled Bank" under the RBI Act, 1934.

c) The study is based on secondary data as published in various publications of RBI and IBA. The data is based on the historical accounting concept, which does not consider the impact of inflation. If due consideration was given to the price level changes than the results could be different.

d) In the present study, only the quantitative aspects of efficiency have been studied, qualitative aspects such as employees motivation level, level of customer satisfaction, goodwill of the bank have not been taken into consideration that plays an important role in the operational efficiency of a bank.

e) For checking the profitability of public sector banks the researcher has emphasized mainly on spread ratio and burden ratio. Although NPAs impact the profitability but it has not been considered in the present study as lots of

accounting norms and mechanism have come into existence after liberalization for reduction of bad loans.

The broad conclusion that emerges from the study is that, although, different parameters of operational efficiency have shown varying results but one thing is crystal clear that all banking groups, as well as, individual banks are improving performance; and efficiency has a convergence tendency in the temporal dimension.