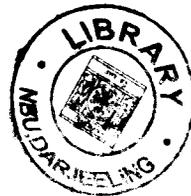


**IMPACT OF REFORMS
ON
EFFICIENCY AND PROFITABILITY OF
COMMERCIAL BANKS IN INDIA
– A STUDY OF SOME SELECTED BANKS IN WEST BENGAL**

**A DISSERTATION SUBMITTED
FOR PH.D DEGREE IN ECONOMICS (ARTS) AT THE
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CHAPTER – I

Introduction

- 1.1 Statement of the Problem
- 1.2 Genesis of Banking Sector Reforms
- 1.3 Objectives of the Study
- 1.4 Review of Literature
- 1.5 Research Design and Methodology
- 1.6 Hypothesis
- 1.7 Short Overview of the Chapters

INTRODUCTION

1.1 Statement of the Problem

The Committee on Financial System (CFS), popularly known as Narasimham Committee, was set up in 1991, to recommend for bringing about the necessary reforms in the financial sector. Narasimham Committee appraised and acknowledged the success and progress of Indian banks since the major banks were nationalized on 19 July 1969. Unfortunately, the developments were witnessed only in the field of expansion and spread of bank branches, generation of huge employment and mobilization of savings rather than improvement in the efficiency that counts a lot. Besides, corruption, fraud, misutilization in public money, outdated technology and politicization in policy making were found to be major drawbacks in the real progress of the banks. As the banking sector plays an important and crucial role in the economy of a country for its stabilization and balanced growth, major reforms were urgently felt, long after 22 years of nationalization, to revive Indian banks in the field not only of profitability but also of the overall efficiency, viz., better management of non-performing asset (NPA), satisfying capital requirements, increased cost effectiveness and control, enhanced customer service, improved technology, establishing competitive interest rate, effective man-power planning, introduction of asset-liability management, better productivity, launching new products, and becoming more competent to face the upcoming challenges and competition from foreign as well as private sector banks in the era of globalization and liberalization.

1.2 Genesis of Banking Sector Reforms

In the post liberalization era, RBI has initiated several measures to ensure safety and soundness of the Indian banking system and at the same time to encourage banks to play an effective role in accelerating the growth process. It has been recognized that the Indian banking system should be in tune with well-laid-down international standards and prudential norms. Although the banks in India have contributed significantly in the Indian economy, certain weaknesses, such as decline in productivity and efficiency and erosion in profitability had

developed in the system. Keeping in view these backdrops, the Committee on Financial System (Narasimham Committee – I) was set up. The Narasimham Committee – I (1991) witnessed the following observations while reviewing the performance of Indian banks:

- Gross profits before provisions were no more than 1.10% of working funds indicating low profitability of banks.
- Net profit of public sector banks as a percentage of total assets shows as low as 0.17%.
- Average operating cost of banks as percentage of assets was about 2.3% in India, while it was as low as 1.10% in China, 1.60% in Malaysia, 1.90% in Thailand, 1.00% in Japan and 2.10% in the European countries.
- The CRR stood at its legal upper limit of 15% and SLR at 38.50%.
- C – D ratio shows 62.54% and Investment Deposit ratio at 38%.
- Huge amount of NPA without any clear-cut regulation.
- 40% of bank credit channelized to priority sector at concessional rate.
- Restriction on entry and expansion of domestic, private and foreign banks.
- Non-interest income as a percentage of total income shows 9.25%.
- High intermediation cost as 2.61%.
- Capital Adequacy ratio was 1.5% in India as compared to 4% in Korea and Pakistan and 4% to 6% in Taiwan, Thailand and Singapore.

On the basis of the above findings and drawbacks in Indian banking, the Narasimham Committee – I (1991) recommended a number of guidelines, norms and suggestions, such as:

- Interest rate regulation.
- Implementation of Prudential Norms .
- Increasing the competition and transparency.
- Improving quality of customer service.
- Restructuring weaker banks.
- Allowing free entry of new banks.
- Building infrastructure relating to the supervision, audit technology and legal framework.
- Tightening NPA norms.

- Reviewing the policies relating to recruitment, training and placement.

The radical reform measures as suggested by the Narasimham Committee – I (1991), have since changed the face and prospects of Indian banking. By mid – 1997, the RBI reported that the reform process had started yielding results. The improvement, after the reforms measures had been adopted in the banking sector, was only able to arrest the deterioration of the earlier system; but there was still scope for considerable reforms. There had been improvement in several of the quantitative indices but there were many areas in which weaknesses still persisted. Some of the major results during this period are as follows:

- Net profit of the scheduled commercial banks as a percentage of their total assets has been turned around to 5% during 1994–95 to 1997 – 98.
- By March 1997, almost all public sector banks have achieved the minimum Capital Adequacy norm of 8%.
- Business per employee in case of most public sector banks and profit per employee have shown improvement in the recent years.
- The gross and net NPAs of the banking system as percentage of advances have declined to 14.4% and 7.3%, respectively, by March 1998.
- The gross and net NPAs of the banking system as percentage of total assets have declined to 7.0% and 3.3%, respectively, by March 1998.
- It was against this backdrop that the Govt. of India had set up the Committee on banking sector reforms in 1997, popularly known as the Narasimham Committee – II (1998), to review the record of implementation of financial sector reforms recommended by the earlier committee and chart the reforms necessary in future to make India's banking system stronger and better equipped to meet the global competition.

A major part of the reform measures recommended by the Narasimham Committee – II were primarily aimed at strengthening the banking sector which can be broadly grouped as under:

- Stricter Prudential norms in line with the international best practices.
- Reduction of Govt. stake in banks to 33%.
- Setting up of the Asset Reconstruction Fund for better monitoring of NPAs.

- Consolidation of the banking industry by merging the strong banks.
- Rehabilitation of the weak banks by introducing narrow banking.
- Freedom to negotiate wages independently by the banks.
- Adoption of scientific tools for management risks.
- Technology improvements to modernize Indian banking.
- Legal reforms to expedite recovery of banks' dues.
- Increasing Capital Adequacy norms to 10% by 2002.

Besides the Narasimham Committee – I (1991) and II (1998), several other committees have been set up time to time in the post liberalization era to review the Indian banking system and to recommend reform measures to make the Indian banking industry viable in the new millennium. The Govt. has implemented many of the recommendations and reform measures time to time as suggested by these committees.

The present statistics are not unfavourable for the banking system as a whole. The improvement, as envisaged in the above-mentioned statistics after the reforms measures had been adopted in the banking sector, was only able to arrest the deterioration of the earlier system; but there is still scope for considerable reforms. There has been improvement in several of the quantitative indices but there are many areas in which weaknesses still persist.

The Government has implemented many of the recommendations and reform measures time to time as suggested by these committees. The present study investigates the rationale of these reform measures and its impact on the efficiency and profitability of Indian banks.

1.3 Objectives of the Study

This proposed study aspires to make a humble attempt to assess the impact of reforms on the efficiency of Indian banks. A period of fifteen years, from 1992–2007, is taken for the study. The objective of the present study may be stated below:

- To examine the need and relevance of reforms in Indian banks.
- To assess the efficiency and profitability of Indian banks during reforms from different perspectives.

- To discuss various issues of NPA management in the light of reforms.
- To measure the performance of the banks of West Bengal during the reforms.
- To analyse the role of Information Technology and its relevancy in Indian banks in the era of reforms.
- To impart necessary suggestions for the improvement of the efficiency and profitability of Indian banks.

1.4 Review of Literature

Considerable work of research takes place on efficiency and profitability of Indian banks as well as other related fields like banking sector reforms, etc. by the academicians, researchers and institutions individually outside the banking system and also by institutions within the fold of Indian banking system, viz. RBI, NIBM, various committees set up by RBI etc. in general and also in particular. A brief review of the major studies is given hereunder:

McGregor (1977) in his study argued that management of spread, which is a potent tool for improving profit margins, could be achieved by maximizing net interest margin. The technique of spread management as shown in this analysis indicates the relationship between asset yield and liability costs.

Hawast and John (1977) in their study states that bank profitability is significantly determined by cost control methods adopted by a particular bank. They concluded that the high profit generating banks recorded lower operating costs as a percentage of total revenue than low profit generating banks, because of better cost control mechanism used by high profit generating banks.

Devatia and Venkatachalam (1978) in their study proposed a composite index which they believe would be able to investigate the efficiency of bank operations and profitability. The main elements of this composite index are operational efficiency in terms of productivity, social objectives and profitability.

Varde and Singh (1979) in a thought provoking study of nationalized banks in India, concluded that an average, the profitability of nationalized banks in India declined during 1964 – 77. They highlighted that the main causes for this

decline in profitability are low spread, high manpower and other operational expenses.

Shah (1979) in his study argues that bank profitability is linked with bank management, customer service, and financial performance. He recommended that in order to improve profitability in a bank, emphasis should be laid on reducing costs, creating a team spirit, improving the management, and making the user-pay for the cost involved in a service.

Srivastava (1981) tries to build a relationship between the productivity and profitability of commercial banks. He argues that an important reason of low profitability is because of low productivity, and low productivity could be the result of ineffective time that occurs due to defects in the form-design, inefficient methods of operations, bad layouts, excessive product variety, bad working conditions, power breakdown and poor maintenance of records.

Joshi (1986) in his study of all scheduled commercial banks operating in India analyses the profitability and profit planning relating to the period 1970 – 1982. The study discusses and trends in profits and profitability of commercial banks since nationalization. The factors leading to the deterioration of profitability are highlighted.

Minakshi and **Kaur** (1990) attempted to measure quantitatively the impact of the various instruments of monetary policy on the profitability of commercial banks. The study empirically proves that pre-liberalization banking being highly regulated and controlled industry, has suffered a lot so far as profitability is concerned. The bank rate and reserve requirements ratios have played a significant role in having a negative impact on the bank's profitability.

Ojha (1992) in his study attempts to measure the productivity of public sector commercial banks in India. After identifying various measures of productivity like total assets per employee, total credit per employee, total deposits per employee, pre-tax profits per employee, net profit per employee, working funds per employee, ratio of establishment expenses to working funds and net interest per employee, comparison is made with the banks at the international level. The study concludes that Indian banks have very less

productivity ratios compared with western countries. Since in his study a comparison has been made of Indian public sector banks, which have to perform other social functions unlike western commercial banks.

In the study of *Verma* and *Malhotra* (1993), the impact of funds management on profitability has been analyzed. With the help of detailed profitability ratios, the study concludes that the nationalized banks are facing low profitability because of administered interest rate structure, rising operational costs, increasing overheads and frauds. For the first time any study by an academician has brought out those frauds in commercial banks which have also contributed to the declining profitability in commercial banks.

Mishra (1993) in his study has described various factors, which have a bearing on bank profitability. The study makes a detailed analysis of income and expenditure to underline the factors, which affect each aspect of income and expenditure, thus profitability.

Amandeep (1993) in her study attempted to examine the trends in profits and profitability of 20 nationalized commercial banks, with the help of trend analysis, ratio analysis and concentration indices of the selected parameters. Using the multivariate analysis, she concluded that it is the efficient management of the burden, which plays a major role in determining the profitability of commercial banks.

Singh, Jagwant (1993) in his study has made an attempt to analyse the concept of productivity in Indian banking industry with diverse aspects like cost effectiveness, profitability, customer service, priority sector lending, mobilization of deposits and deployment of credit.

The study of *Prajapati* (1994) is a good attempt of post-liberalization researches made in the area of commercial banking profitability. The study is focused on two profit making banks. As the period of reference includes four years of pre and four years of post-liberalization, the analysis has made a comparison between the performance and strategies of the two banks, although both of them operate in the similar micro-environment like common regulated borrowing and lending rates, statutory reserve requirement, priority sector lending

obligations etc. The study helps to gain insights into the unique strategies followed by these banks in the new milieu required in the emerging banking scenario in India.

On the same pattern, the study of *Hansda* (1995) has identified certain strategic variables, which have been tested to evaluate the performance of the banks in the post-liberalization era. The researcher contends that in view of the new banking environment the bank should be examined from productivity, financial management, profitability and overall sustainability point of view. He argues that the time has come where the profitability of a bank is a 'sine quonam' for sustainability; and gone are the days when total deposits, total credit and the number of branches/employees were used to be a standard rod for measuring the efficiency of a bank in India.

The study of *Raut, Kishore and Das, Santosh* (1996) attempts to examine, measure and analyze the profitability trend of the commercial banks operating in India over a time-frame through an empirical study of the profitability showing the relationship among the earnings factors and expenses factors which are endogenous and exogenous in nature enriching the scope of the study.

Das, Abhiman (1999) attempts to estimate and compare various efficiency measures of public sector banks in India under the framework of data envelopment analysis model, and examines the issue on how far a bank can increase its output by augmenting its efficiency through optimal deployment of resources.

Tarapore, S.S. (1999) reviews the policy of RBI and its possible effect on banking sector reforms.

Bhatia, Saveeta and Verma, Satish (1999) made an attempt to determine empirically the factors influencing the profitability of public sector banks in India by making use of the technique of multiple regression analysis.

Das, Abhiman and Ramanathan, T.V. (2000) have shown the DEA approach in this study which has provided new estimates of technical efficiency of commercial banks in India. The study reveals that much of the lost output of Indian commercial banks during 1998 was the result of underutilization or wasting of resources.

Dasgupta, Debajyoti (2001) analyses a comparative study of parameters like net profit and net worth of selected banks to assess their profitability vis-à-vis liberalization.

Saha, Gurudas (2001) in his study analyses that public sector banks have a better competitive edge that gets lost because of poor governance leading to human resource mismanagement and loss of productivity and profitability. The study analyses the major financial parameters of public and Private Sector banks and highlights the strategic importance of banking cost determination and cost management.

Anantha Swamy, B. N. (2001) in his study covers a number-crunching survey of the performance of specific bank-groups over the period 1995-96 to 1999-2000 shows the impact of deregulation and competition in a liberalized economy.

The study of *Edirisuriya, Piyadasa* and *Fang, Victor* (2001) finds that beginning with the Narasimham Committee recommendations, Indian banks have become more efficient and more competitive than in the period before deregulation; but still comparison with the OECD countries is fairly difficult due to the structural differences in the Indian banking system.

Shirai, Sayuri (2002) in her study on assessing the gradual approach to banking sector reforms in India reveals two important lessons. The first is that banks' engagement in nontraditional activities and the consequent increase in profits from these activities have helped to improve performance. The expansion of the scope of banks' business has helped to offset a decline in net interest income from advances. The second lesson is that banks should be prohibited from connected lending.

Thus from the above discussion it becomes clear that most of the studies on profitability and efficiency of commercial banks in India are made in the pre-reforms era. There are also a few studies during the period of reforms, which attempt to reveal some partial findings on this subject that may not be able to assess the overall impact of banking sector reforms on efficiency and profitability of commercial banks in India. It is against this backdrop that the present study is

undertaken to fill up this gap and make a modest contribution in the field of bank efficiency and profitability management.

1.5 Research Design and Methodology

1.5.1 Universe of Study

For the present study, the universe of study is some selected commercial banks of India. Some selected banks from North Bengal and South Bengal districts of West Bengal are also taken for a comparative study.

1.5.2 Sampling Frame

A good number of samples are selected from the population. In selecting samples, accepted statistical sampling method is adopted.

1.5.3 Sampling Procedure

A random sampling technique is used.

1.5.4 Units of Observation and Sampling Size

The units of observation are the commercial bank branches. Total size of the sample would be twenty bank branches.

1.5.5 Tools and Techniques of Data Collection

Data are collected through questionnaire, personal interaction with the relevant respondents and from various secondary sources.

1.5.6 Data Collection

The present study demands for both quantitative and qualitative analyses and it needs primary as well as secondary data. Primary data are collected from selected and representative bank branches and through precoded questionnaire and schedule, discussion with the bank officials and the customers in general. Secondary data are collected from the annual reports of several banks, RBI bulletin, various reports on Indian banks, publications of Indian Bank Association, Indian Institute of Bankers, National Institute of Bank Management, various journals on related fields, etc. With the advancement of information technology, it was to gather wide range of information through Internet. A number of web sites are looked into for the study.

1.5.7 Data Processing

Numerical techniques, like ratios, percentage, compound rate of growth along with various statistical, econometric and mathematical models are also considered for the purpose of meaningful comparison and analysis of the performance of these banks to derive a concrete conclusion.

Certain parameters of cost and revenues are selected in respect of the banks under the study. This has enabled to derive inferences about the degree of efficiency attained by the banks.

1.6 Hypotheses

The present study aims at testing the following hypotheses with the help of the sample data. The hypotheses are:

- There was no genuine need for banking sector reforms in India.
- Reforms in banking sector have no significant impact on efficiency and profitability of Indian banks.
- Non Performing Assets have a negative impact on bank profitability.
- IT does not play a vital role during the transition phase of Indian banks.
- Reform measures have positive impact over the banks in West Bengal.

1.7 Short Overview of the Chapters

The second chapter gives an overall emphasis on banking sector reforms. The third chapter deals with the management of non-performing assets. Use of information technology and the related matter have widely been discussed in the fourth chapter. The fifth chapter is about measuring efficiency of commercial banks in India in the regime of reforms. Profitability of commercial banks has been portrayed in the sixth chapter. The up-to-date performance of commercial banks has been presented in the seventh chapter. The eighth chapter is about conclusions and recommendations.

CHAPTER – II

Banking Sector Reforms – An Overview

2.1 Introduction

2.2 Background: Pre-Reform Period

2.3 Banking Sector Reforms since 1991

2.4 An Account of Banking Sector Developments in India:
1980 – 2005

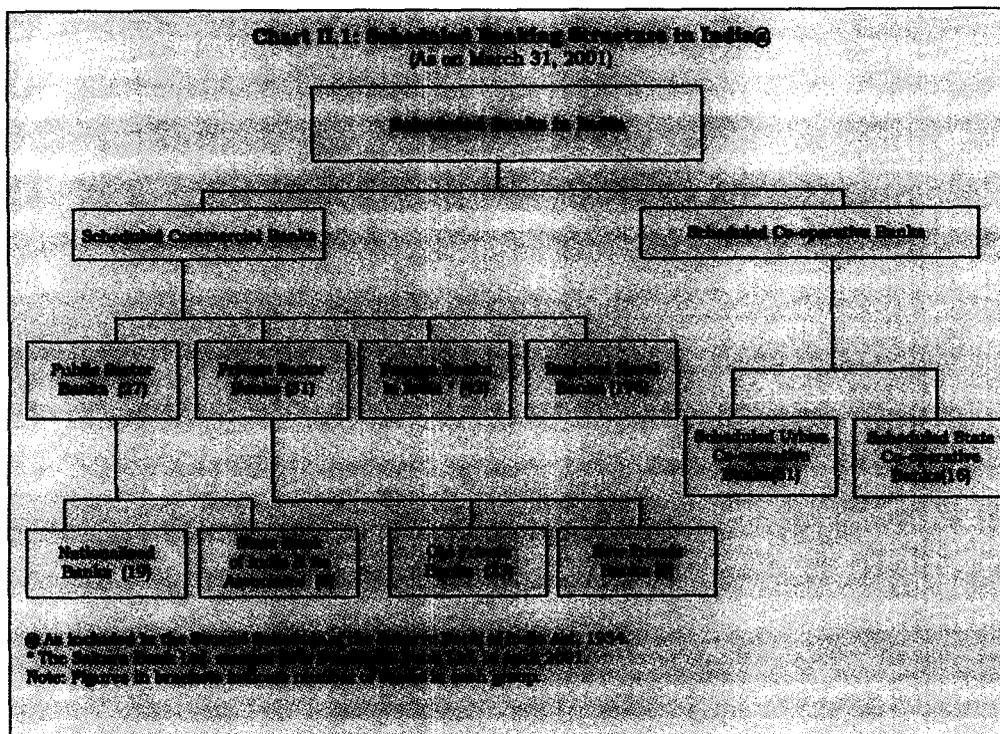
2.5 Observations

BANKING SECTOR REFORMS – AN OVERVIEW

2.1 Introduction

The banking system is central to a nation's economy. Banks are special as they not only accept and deploy large amounts of uncollateralized public funds in a fiduciary capacity, but also leverage such funds through credit creation. In India, prior to nationalization, banking was restricted mainly to the urban areas and neglected in the rural and semi-urban areas. Large industries and big business houses enjoyed major portion of the credit facilities. Agriculture, small-scale industries and exports did not receive the deserved attention. Therefore, inspired by a larger social purpose, 14 major banks were nationalized in 1969 and six more in 1980. Since then the banking system in India has played a pivotal role in the Indian economy, acting as an instrument of social and economic change.

India's commercial banking system consists of "nonscheduled banks" and "scheduled banks" (Chart 2.1). Nonscheduled banks refer to those that are not included in the Second Schedule of the Banking Regulation Act of 1965 and, thus, do not satisfy the conditions laid down by that schedule. Nonscheduled banks are further divided into two classifications: central cooperative banks and primary credit societies, and commercial banks. Scheduled banks refer to those that are included in the Second Schedule of the Banking Regulation Act of 1965 and satisfy the following conditions: a bank must (1) have paid-up capital and reserves of not less than Rs 500,000 and (2) satisfy the Reserve Bank of India (RBI) that its affairs are not conducted in a manner detrimental to the interests of its depositors.

Chart 2.1: Banking Structure in India (As on March 31, 2001)

Source: Report on Trend and Progress of Banking in India, 2001, Reserve Bank of India.

Scheduled banks consist of scheduled commercial banks and scheduled cooperative banks. The former are further divided into four categories: (1) public sector banks (which are further classified as nationalized banks and State Bank of India [SBI] banks); (2) private sector banks (which are further classified as old private sector banks and new private sector banks that emerged after 1991); (3) foreign banks in India; and, (4) regional rural banks (which operate exclusively in rural areas to provide credit and other facilities to small and marginal farmers, agricultural workers, artisans, and small entrepreneurs). These scheduled commercial banks with the exception of foreign banks are registered in India under the Companies Act.

The SBI banks consist of eight independently capitalized banks: seven associate banks, and SBI itself. The SBI is the largest commercial bank in India in terms of assets, deposits, branches, and employees and has 13 head offices governed each by a board of directors under the supervision of a central board. It was originally established in 1806 when the Bank of Calcutta (latter called the Bank of Bengal) was established, and then amalgamated as the Imperial Bank of

India after merger with the Bank of Madras and the Bank of Bombay. The shares of Imperial Bank of India were sold to the RBI in 1955.

Nationalized banks refer to private sector banks that were nationalized (14 banks in 1969 and 6 in 1980) by the Central Government. Unlike SBI banks, nationalized banks are centrally governed by their respective head offices. Thus, there is only one board for each bank and meetings are less frequent. In 1993, Punjab National Bank merged with another nationalized bank, New Bank of India, so the number of nationalized banks fell from 20 to 19. Regional rural banks account for only 4% of total assets of scheduled commercial banks. Scheduled cooperative banks are further divided into scheduled urban cooperative banks and scheduled state cooperative banks. As at the end of March 2007, the number of scheduled banks is as follows: 28 public sector banks, 17 old private sector banks, eight new private sector banks, 29 foreign banks, totaling 82 scheduled commercial banks.

Since 1991, India has undertaken comprehensive banking sector reforms, which aimed to increase the profitability and efficiency of the then 28 public sector banks that controlled about 90% of all deposits, assets, and credit. The reforms were initiated in the middle of a “current account” crisis that occurred in early 1991. The crisis was caused by poor macroeconomic performance, characterized by a public deficit of 10% of gross domestic product (GDP), a current account deficit of 3% of GDP, inflation rate of 10%, and growing domestic and foreign debt, and was triggered by a temporary oil price boom following the Iraqi invasion of Kuwait in 1990. Such reforms have contributed to financial deepening (although the pace was only slightly faster in the 1990s than in the 1980s), as evidenced by an increase in M2 and deposits, respectively, as a share of GDP (Table 2.1). This section briefly reviews the banking sector reforms undertaken since 1991 after a brief overview of the pre-reform period.

Table 2.1: Selected Macroeconomic Indicators, 1970-1999 (%)

Year	Real GDP Growth	CPI-Based Inflation Rate	Deposits/GDP	M1/GDP	M2/GDP	Gross Fixed Capital Formation /GDP	Domestic Credit /GDP	Composition of GDP			Gross Fiscal Deficit/GDP
								Agriculture	Industries	Services	
1970	-	3.0	12.9	15.7	16.7	14.6	24.8	45.2	17.0	37.8	3.1
1971	1.7	6.5	14.5	16.5	17.7	15.3	27.8	43.4	17.7	39.0	3.5
1972	-0.6	17.0	16.0	16.9	18.2	15.9	29.1	43.4	17.8	38.9	4.0
1973	3.2	28.5	15.4	16.3	17.6	14.6	28.8	46.6	17.4	36.0	2.6
1974	1.2	5.8	15.2	15.2	16.6	15.0	28.0	43.4	19.1	37.5	3.0
1975	9.2	-7.6	16.9	15.5	17.2	16.9	30.4	40.5	19.1	40.4	3.6
1976	1.7	8.3	19.5	18.0	30.3	18.0	33.2	38.5	19.9	41.6	4.2
1977	7.2	2.5	21.8	18.6	31.9	17.9	33.7	39.9	19.6	40.5	3.6
1978	5.7	6.2	24.4	15.1	35.7	18.1	36.4	38.2	21.0	40.8	5.2
1979	-5.2	11.4	26.2	15.5	38.2	18.6	39.4	36.2	22.1	41.7	5.3
1980	6.7	13.1	26.3	15.0	37.3	19.3	40.7	38.1	20.9	41.0	5.7
1981	6.6	7.9	25.8	14.6	37.3	19.7	42.3	36.8	21.8	41.4	5.1
1982	3.5	11.9	27.2	15.4	39.2	20.1	46.0	35.2	22.2	42.6	5.6
1983	6.9	8.3	27.6	14.9	39.3	19.3	45.9	36.1	22.1	41.7	5.9
1984	4.5	5.6	29.3	15.8	41.6	19.7	49.7	34.5	22.4	43.1	7.1
1985	5.7	8.7	30.5	15.7	42.9	20.7	51.5	33.0	22.6	44.4	7.8
1986	4.6	8.8	32.8	16.3	45.3	21.2	54.7	31.7	22.5	45.8	8.4
1987	3.9	9.4	33.2	16.3	46.3	21.7	55.3	31.3	22.5	46.2	7.6
1988	10.1	6.1	33.1	14.9	43.1	20.2	51.4	32.3	22.5	45.1	7.3
1989	6.2	9.0	34.2	15.3	43.3	21.1	52.9	31.1	23.5	45.4	7.3
1990	5.6	13.9	33.9	15.0	42.7	21.8	51.5	31.0	23.3	45.7	7.8
1991	1.1	11.8	35.3	16.0	44.0	20.9	51.2	31.3	22.0	46.7	5.6
1992	4.7	6.4	35.9	15.0	45.0	21.3	50.4	30.6	22.5	46.9	5.4
1993	5.0	10.2	36.7	15.5	45.8	21.4	49.7	31.0	21.1	48.0	7.0
1994	7.3	10.2	38.3	16.8	46.8	22.0	47.6	30.5	21.9	47.6	5.7
1995	7.7	9.0	36.7	15.9	44.4	24.6	44.5	28.4	22.7	48.9	5.1
1996	7.0	7.2	37.1	15.8	45.8	23.0	46.2	29.3	22.0	48.7	4.9
1997	4.6	13.2	39.5	16.0	48.4	22.7	46.5	28.0	21.4	50.6	5.9
1998	6.4	4.7	40.5	15.4	49.3	21.2	46.4	29.1	20.0	50.9	6.4
1999	7.2	4.0	-	16.2	51.9	21.3	49.1	27.9	20.1	52.0	-

Sources: IFS Database, International Monetary Fund (IMF); Handbook of Statistics on Indian Economy, Reserve Bank of India, 2000; DRI Asia Database, CEIC Data Company.



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Table 2.1: Selected Macroeconomic Indicators (Contd.) (%)

	Corporate Bonds¹/GDP	Government Bonds²/GDP	Equity Market Capitalization/GDP
1990	-	16.6	-
1991	-	16.8	-
1992	-	17.9	-
1993	-	20.7	-
1994	-	20.0	-
1995	1.1	20.8	36.8
1996	1.9	21.4	38.7
1997	2.2	18.7	30.6
1998	2.6	20.4	31.9
1999	3.0	23.0	27.9
2000	-	-	-

Note: 1/ Corporate Bonds include Public Issues and Private Placements.

2/ Government Bonds include the Bonds and Treasury Bills issued by the Central and State Governments.

Source: Indian Securities Market: A Review, September 2000, National Stock Exchange; Handbook of Statistics on Indian Economy, Reserve Bank of India (RBI), 2000.

2.2 Background: Pre-Reform Period

Prior to the 1991 reforms, India's banking sector had long been characterized as highly regulated and financially repressed. The prevalence of a reserve requirement (i.e., a cash reserve ratio [CRR] that requires banks to hold a certain amount of deposits in the form of deposits with the RBI), liquidity requirement (i.e., statutory liquidity ratio [SLR] that requires banks to hold a certain amount of deposits in the form of government and eligible securities),¹ interest rate controls, and allocation of financial resources to so-called "priority sectors" (i.e., agriculture, small scale industries [SSIs],

¹In the 1960s and 1970s, the CRR was 5%, but then rose steadily to its legal upper limit of 15% in early 1991. The SLR was 25% in 1970 and increased to 38.5% in 1991, nearly to the level of its legal upper limit of 40%. With respect to directed lending, a priority sector target of 33% of total advances was introduced in 1974, with the ratio gradually raised to 40% in 1985. There were sub-targets for agriculture, small farmers, and disadvantaged sections.

small transport operators, small businesses, and professional and self-employed persons) increased the degree of financial repression and adversely affected the country's financial resource mobilization and allocation.

After Independence in 1947, the Government took the view that loans extended by colonial banks were biased toward working capital for trade and large firms [Joshi and Little (1996)]. Moreover, it was perceived that banks should be utilized to assist India's planned development strategy by mobilizing financial resources for strategically important sectors. Reflecting these views, all large private sector banks were nationalized, as indicated earlier. Subsequently, quantitative loan targets were imposed on these banks to expand their networks in rural areas and extend credit to priority sectors. These nationalized banks were then increasingly used to finance fiscal deficits. Although non-nationalized private sector banks and foreign banks were allowed to coexist with public sector banks at that time, their activities were highly restricted through entry regulations and strict branch licensing policies. Thus, their activities remained negligible.

In the period 1969-1991, the number of banks increased only slightly, but savings were successfully mobilized, in part because relatively low inflation kept negative real deposit interest rates at a mild level and in part because the number of branches held by public sector banks was encouraged to expand rapidly. Nevertheless, many banks remained unprofitable, inefficient, and unsound owing to their poor lending strategies and lack of internal risk management under government ownership. Joshi and Little (1996) have reported that the average return on assets in the second half of the 1980s was only about 0.15%, while capital and reserves (equity) averaged only about 1.5% of assets. Given that global accounting standards were not applied, even these indicators are likely to have exaggerated banks' true performance. Further, in 1992-93, non performing assets (NPAs) of 27 public sector banks amounted to 24% of total credit, only 15 public sector banks achieved a net profit, and half of the public sector banks faced negative net worth.

Major factors that contributed to deteriorating bank performance included

(1) reserve and liquidity requirements that were too stringent;(2) low yields on government bonds (as compared with those on commercial advances); (3) directed and concessional lending; (4) administered interest rates; and (5) lack of competition. These factors not only reduced banks' incentives to operate properly, but also undermined regulators' incentives to prevent banks from taking risks via incentive-compatible prudential regulations and protect depositors with a well-designed deposit insurance system. While government involvement in the banking sector can be justified at the initial stage of economic development, the prolonged presence of excessively large public sector banks often results in inefficient resource allocation and concentration of power in a few banks. Further, once entry deregulation takes place, it will put newly established private sector banks as well as foreign banks in an extremely disadvantageous position.

Against this background, the first wave of financial liberalization took place in the second half of the 1980s, mainly taking the form of the introduction of Treasury Bills (TBs), development of money markets, and partial interest rate deregulation. In 1986, 182-day TBs were introduced through auction systems. In 1988, the Discount and Financial House of India was established as an institution that would provide liquidity in the financial market. In 1989, both commercial paper and certificates of deposit were introduced. Prior to this period, almost all interest rates were administered and influenced by budgetary concerns and the degree of concessionality given to each sub sector under priority sector loan programs. To preserve some profitability, interest rate margins were kept sufficiently large by keeping deposit rates low and non-concessional lending rates relatively high. Based on the 1985 report of the Chakravarty Committee, coupon rates on government bonds were gradually increased to reflect demand and supply conditions. In 1988, the maximum (or ceiling) lending rate and ranges in minimum rates were unified and switched to a minimum lending rate (MLR) in 1988 (Table 2.2). As a result, banks were able to set interest rates more flexibly. In 1989, the maximum interest rates on call money were liberalized.

Table 2.2: Lending and Deposit Rate of Commercial Banks, 1970-2000

Year (April- March)	Call Money Rates ^{1/}	Term Deposit Rates			Lending Rate			
		1 to 3 Years	3 to 5 Years	Above 5 Years	SBI Advance Rate ^{4/}	Ceiling Rate General	Minimum Rate General	Minimum Rate Selective Credit Control
1970-71	6.38	6.00 - 6.50	7.00	7.25	7.00-8.50	-	-	-
1971-72	5.16	6.00	6.50	7.25	8.50	-	-	12.00
1972-73	4.15	6.00	6.50	7.25	8.50	-	-	12.00
1973-74	7.83	6.00	7.00	7.25	8.50-9.00	-	10.00-11.00	12.00-13.00
1974-75	12.82	6.75-8.00	7.75-9.00	8.00-10.00	9.00-13.50	-	11.00-13.00	14.00-15.00
1975-76	10.55	8.00	9.00	10.00	14.00	16.50	12.50	14.00-15.00
1976-77	10.84	8.00	9.00	10.00	14.00	16.50	12.50	14.00-15.00
1977-78	9.28	6.00	8.00	9.00	13.00	15.00	12.50	14.00-15.00
1978-79	7.57	6.00	7.50	9.00	13.00	15.00	12.50	14.00-15.00
1979-80	8.47	7.00	8.50	10.00	16.50	18.00	12.50	15.50-18.00
1980-81	7.12	7.50-8.50	10.00	10.00	16.50	19.40- 19.50	13.50	16.70-19.50
1981-82	8.96	8.00-9.00	10.00	10.00	16.50	19.50	-	17.50-19.50
1982-83	8.78	8.00-9.00	10.00	11.00	16.50	19.50	-	17.50-19.50
1983-84	8.63	8.00-9.00	10.00	11.00	16.50	18.00	-	16.50-18.00
1984-85	9.95	8.00-9.00	10.00	11.00	16.50	18.00	-	16.50-18.00
1985-86	10.00	8.50-9.00	10.00	11.00	16.50	17.50	-	16.50-17.50
1986-87	9.99	8.50-9.00	10.00	11.00	16.50	17.50	-	16.50-17.50
1987-88	9.88	9.00-10.00	10.00	10.00	16.50	16.50	-	16.50
1988-89	9.77	9.00-10.00	10.00	10.00	16.50	-	16.00	16.00
1989-90	11.49	9.00-10.00	10.00	10.00	16.50	-	16.00	16.00
1990-91	15.85	9.00-10.00	11.00	11.00	16.50	-	16.00	16.00
1991-92	19.57	12.00	13.00	13.00	16.50	-	19.00	19.00
1992-93	14.42	11.00	11.00	11.00	19.00	-	17.00	17.00
1993-94	6.99	10.00	10.00	10.00	19.00	-	14.00	15.00
1994-95	9.40	11.00	11.00	11.00	15.00	-	15.00 ^{3/}	Free
1995-96	17.73	12.00	13.00 ^{2/}	13.00 ^{2/}	16.50	-	16.50 ^{3/}	Free
1996-97	7.84	11.00- 12.00 ^{2/}	12.00- 13.00 ^{2/}	12.50- 13.00 ^{2/}	14.50	-	14.50- 15.00 ^{3/}	Free
1997-98	8.69	10.50- 11.00 ^{2/}	11.50- 12.00 ^{2/}	11.50- 12.00 ^{2/}	14.00	-	14.00 ^{3/}	Free
1998-99	7.83	9.00-11.00 ^{2/}	10.50- 11.50 ^{2/}	10.50- 11.50 ^{2/}	12.00-14.00	-	12.00- 13.00 ^{3/}	Free
1999-00	9.00	8.50-9.50 ^{2/}	10.00- 10.50 ^{2/}	10.00- 10.50 ^{2/}	12.00	-	12.00- 12.50 ^{3/}	Free

Note: 1/ The call money rate upto 1997-98 is the weighted arithmetic average of the rate

at which money is accepted and reported by select scheduled commercial banks at Mumbai, the weights being proportional to the amounts accepted during the period by the respective banks. Data upto 1997-98 were also published in Volume II of the Report on Currency and Finance. The data since 1998-99 relate to those reported by scheduled commercial banks, primary dealers and select financial institutions.

2/ Refers to the deposit rates of 5 major public sector banks as at end March.

3/ Refers to the Prime Lending Rates of 5 major public sector banks as at end March.

4/ Relates to State Bank's prime lending rate which regulates all interest rates for the various categories and classes of advances granted by the bank.

Source: Handbook of Statistics on Indian Economy, RBI, 2000.

Table 2.2: Other Interest Rates (1980-2000) (Cont.) (%)

Year	Central Govt. Securities	State Govt. Securities	Post Office Saving Bank Accounts ^{1/}	Public Provident Fund	Post Office Time Deposit Account	Post Office Recurring Deposit Account	Post office Monthly Income Scheme
1980-81	5.98-7.50	6.75	-	-	-	-	-
1981-82	6.00-8.00	7.00	-	-	-	-	-
1982-83	6.25-9.00	7.50	-	-	-	-	-
1983-84	7.75-10.00	8.25-8.75	-	-	-	-	-
1984-85	7.75-10.50	9.00	-	-	-	-	-
1985-86	9.00-11.50	9.75	-	-	-	-	-
1986-87	10.00-11.50	11.00	-	-	-	-	-
1987-88	10.50-11.50	11.00	-	-	-	-	-
1988-89	10.00-11.50	11.50	-	-	-	-	-
1989-90	10.50-11.50	11.50	-	-	-	-	-
1990-91	10.50-11.50	11.50	5.5	12	9.5-11.5	11.5 ^{8/}	12.0
1991-92	10.50-12.50	11.50-12.00	5.5	12	9.5-11.5 ^{4/}	11.5 ^{8/}	12.0
1992-93	12.00-12.75	13.00	5.5	12	12.0-13.5 ^{5/}	13.5 ^{8/}	14.0
1993-94	12.00-13.40	13.50	5.5	12	10.5-12.5 ^{6/}	12.5 ^{8/}	13.0
1994-95	11.00-12.71	12.50	5.5	12	10.5-12.5 ^{6/}	12.5 ^{8/}	13.0
1995-96	13.25-14.00	14.00	5.5	12	10.5-12.5 ^{6/}	12.5 ^{8/}	13.0
1996-97	13.40-13.85	13.75-13.85	5.5	12	10.5-12.5 ^{6/}	12.5 ^{8/}	13.0
1997-98	10.85-13.05	12.30-13.05	5.5	12	10.5-12.5 ^{6/}	12.5 ^{8/}	13.0
1998-99	11.10-12.60	12.15-12.50	5.5	12	10.5-12.5 ^{6/}	12.5 ^{8/}	13.0
1999-00	10.72-12.45	11.00-12.25	5.5 ^{2/}	12 ^{3/}	10.5-12.5 ^{7/}	12.5 ^{8/}	13.0

Note: 1/ open ended scheme.

2/ 4.5% since Jan. 15, 2000. 4.5 % for individual/joint and group account, 4.0% for public account and security deposit accounts for purchase of motor vehicles or tractors, official capacity accounts and other accounts 3%.

3/ 11% since Jan. 15, 2000.

4/ Compounded quarterly and payable annually. 1 Year -9.5%, 2 Year -10.0, 3 Year -10.5% and 5 Year -11.0%.

5/ Compounded quarterly and payable annually. 1 Year -12.0%, 2 Year -12.5.%, 3 Year -13.0% and 5 Year -13.5%.

6/ Compounded quarterly and payable annually. 1 Year -10.5%, 2 Year -11.0%, 3 Year -12.0% and 5 Year -12.5%.

7/ 8.0 to 10.5% since Jan. 15, 2000. Compounded quarterly and payable annually. 1 Year -9.0%, 2 Year -10.0%, 3 Year -11.0% and 5 Year - 11.5%.

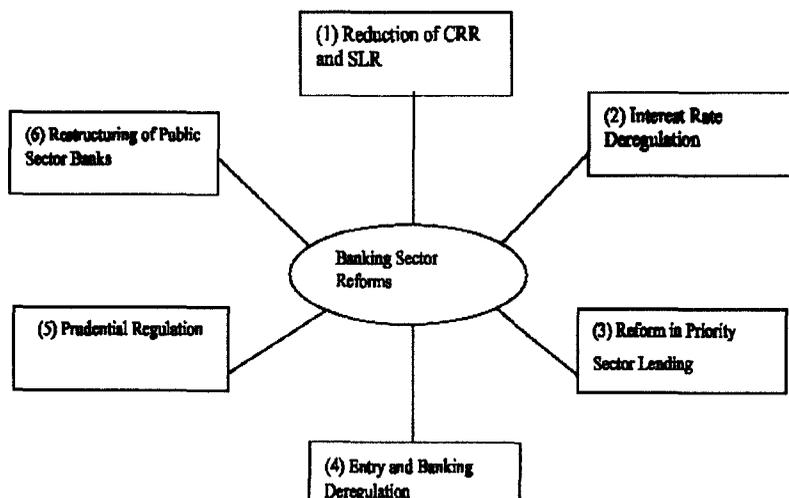
8/ Compounded interest rate.

Source: Handbook of Statistics on Indian Economy, RBI, 2000.

2.3 Banking Sector Reforms Since 1991

Following most of the recommendations made in the 1991 report of the Narasimham Committee, the Government launched comprehensive banking sector reforms that same year. The reforms included (1) a reduction of the CRR and SLR, (2) interest rate and entry deregulation, (3) reform of priority sector lending, (4) entry and branch deregulation, (5) a shift in banking sector supervision from intrusive micro-level intervention over credit decisions toward prudential regulations, and (6) restructuring of public sector banks. Major reforms are summarized in Chart 2.2 and discussed in more detail below:

Chart 2.2: Banking Sector Reforms Since 1991



Source: Report on Trend and Progress of Banking in India, 1991-2000, RBI

2.3.1 Reduction of the CRR and SLR

The CRR refers to the minimum reserve deposits that all scheduled commercial banks (except Regional Rural Banks) have to keep with the RBI. The CRR is calculated as a specific percentage to Reservable Liabilities, which can be derived after subtracting all liabilities exempted from statutory reserve requirements from net demand and time liabilities (NDTLs). NDTLs refer to liabilities to others plus net interbank liabilities (liabilities to the banking system minus assets with the banking system). In 1997, all interbank liabilities were exempted for the calculation of Reservable Liabilities.

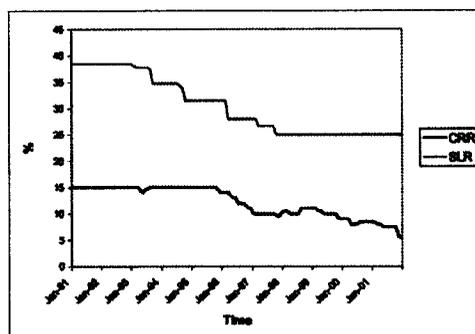
Other exemptions included Nonresident (External) Rupee Accounts (NREs), Nonresident Non-repatriable Rupee Accounts (NRNRs), Foreign Currency Nonresident (Bank) Accounts (FCNR[B]s), exchange earners' foreign currency accounts, Resident Foreign Currency Accounts, and foreign credit lines for pre-shipment credit accounts in foreign currency. These exemptions have resulted in increased complexity of the CRR as an instrument of liquidity management and have given rise to a divergence between the prescribed level and the effective level (Reserve Bank of India, 2001b). For example, the effective CRR was about 6.3% while the CRR was 7.5% in the first half of 2001. In response to these problems, the RBI decided to remove all exemptions on liabilities, except interbank liabilities, for the computation of NDTLs in November 2001.

It is widely known that India's high reserve requirement based on the CRR was one of the main causes of low profitability and high spreads in the banking system. In line with the recommendations by the Narasimham Committee, the RBI reduced the CRR gradually in the reform period. Chart 2.3 indicates that the CRR has declined gradually from 15% in 1991 to 5.75% in November 2001 and to 5.5% in December 2001. The pace of reduction in the CRR has been determined by considering the following factors: pace of reduction in the fiscal deficit, monetary developments vis-à-vis growth in real output, and developments in foreign exchange markets. For example, the RBI increased the CRR in August 1993 in order to sterilize foreign capital inflows. Banks are

required to maintain the CRR for a fortnight on an average basis, where the minimum daily CRR of 50% should be maintained for the first seven days of the reporting week and 65% for the remaining period. The RBI has been paying an interest rate on eligible cash balances that banks maintain with the RBI. In April 2001, this rate was raised from 4% to 6%. In November 2001, the rate was switched to the Bank Rate, which was lowered from 7% to 6.5% in October 2001.

The SLR refers to the minimum reserves that banks have to keep in the form of cash or gold valued at a price not exceeding the current market price, or government and other approved securities (securities of State-associated bodies such as electricity boards, housing boards, corporation bonds, and shares of regional rural banks) valued at market price.

Chart 2.3: Cash Reserve Ratio^{1/} (CRR) and Statutory Liquidity Ratio^{2/}(SLR), 1991-2001



Note: 1/ The CRR is the minimum cash reserves the banks are required to hold with RBI as prescribed by the RBI. The legal upper limit of the CRR and the SLR (maximum rate the RBI can impose on the banks by law) has remained 15% and 40%. In the earlier years, RBI imposed high CRR and SLR reaching the legal upper limit in the case of the CRR (almost reaching in the case of the SLR). But the CRR and the SLR have been falling steadily, increasing the gap between the legal upper limit and that actually imposed by RBI.

2/ For the SLR, the rates before November, 1994 are based on net demand and time liabilities (NDTL). However, after November 1994 multiple prescription of the SLR was gradually withdrawn in favor of a single SLR by October 1997. In the interim period the rates indicate the overall effective SLR.

Source: Report on Trend and Progress of Banking in India, 1991-2000, RBI

The SLR is calculated as a specific percentage of NDTLs or Reservable Liabilities (whichever is higher). The SLR has to be maintained for a fortnight. In line with the recommendations of the Narasimham Committee, the SLR was

reduced gradually from 38.5% in 1991 to 25% in October 1997. The SLR has remained at this rate until today, while the legal upper limit has stayed at 40% throughout the period (Chart 2.3). One could expect that the reduction of SLR would reduce the captive market for government bonds and, thus, the Government would find it would inevitably have to pay higher interest rates as a result of a decline in demand for these bonds. Therefore, the fiscal cost would be increased as a result of the Government increasingly paying market interest rates. But this did not happen since banks increased holdings of government bonds.

2.3.2 Interest Rate Deregulation

After liberalizing interest rates on money markets, the Government started interest rate deregulation in 1992. This led to a complete liberalization of all term deposit rates and lending rates on advances in excess of Rs200,000. Since term deposits account for about 70% of total deposits and advances exceeding Rs200,000 account for more than 90% of total advances, these interest rate decontrols embraced a wide range of deposits and advances. The remaining interest rate controls are savings deposit rates and lending rates up to Rs200,000. However, in the case of the latter, banks are allowed to set lending rates freely as long as they are maintained at or below the PLR. Another important development is the reactivation of the Bank Rate as an instrument to transmit signals of monetary policy and as a reference rate for influencing the direction of interest rate movements in the economy. The Bank Rate is the rate at which the RBI lends to commercial banks by rediscounting bills or eligible paper.

2.3.2.1 Deposit Rates

Deposit rates were liberalized first by setting an overall maximum rate for term deposits and adjusting the rate in accordance with the macroeconomic conditions in 1992-1995 (Table 2.2). In October 1995, banks were then allowed to fix term deposit rates freely for deposits with a maturity of two years. This was changed to a maturity of one year in 1996. With respect to term deposits for remaining maturities, the minimum was lowered from 46 days to 30 days in 1996. A term deposit rate for this maturity was subject to the maximum rate during 1992-1997, but was then fixed to the Bank Rate minus 2 percentage points in April 1997.

This policy has reactivated the Bank Rate as a signal and a reference rate.

All term deposit rates became flexible in October 1997. The minimum maturity period of term deposits was further lowered to 15 days in 1998. In line with the changes effected in the prescription of interest rates on domestic term deposits, the RBI freed the interest rates on term deposits of more than one year under the NRE scheme and brought them on a par with those on domestic term deposits in April 1997. In September 1997, banks were given the freedom to fix their own interest rates on NRE term deposits of at least six months. As for FCNR(B)s, the rate was switched from the maximum rate prescribed by the RBI to the maximum rate equal to the London interbank offered rate (LIBOR).

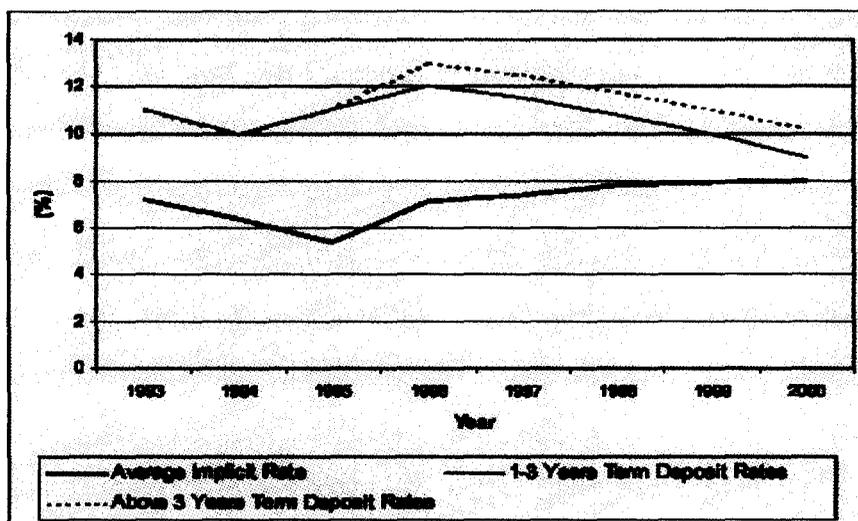
In 1998, approval was given to banks to set their own penal interest rates for premature withdrawal of domestic term deposits and banks were advised to inform depositors of the applicable penal rate along with the deposit rate. With respect to domestic term deposits of Rs1.5 million and above, the RBI also removed a restriction that required banks to offer the same rate on deposits of the same maturity irrespective of the size of the deposits. However, banks were advised to disclose in advance the schedule of interest rates payable on deposits.

Interest rates on saving deposits remain fixed. Furthermore, public provident funds (15 years at 12% from 1992 to 1999 and 11% since 2000), and post office saving accounts (open ended at 5.5% from 1993 to 1999 and 4.5% since 2000), and post office time deposit accounts (one to three years and five years at 10.5-12.5% from 1993 to 1999 and 8-10.5% since 2000) have been regulated. The interest rate on post office saving accounts constitutes the floor for the general level of interest rates in the economy, precluding the effective transmission of indirect monetary policy (Kohli, 2001).

As a result of these liberalization measures on deposit interest rates, banks increased average term deposit rates from 1996, after the complete liberalization of interest rates on term deposits for a maturity of more than two years in the previous year and the extension of this policy for a maturity of more than one year in 1996. Chart 2.4 and Table 2.3 show that the implicit deposit rate obtained from the ratio of total interest expenditure to total deposits has gradually

increased during 1997-2000, albeit at a limited pace. Since term deposit rates for a maturity of one to three years and in excess of three years as indicated in Chart 2.4 have declined, the increase in the implicit deposit rate implies that other possibly shorter-term rates have risen to increase deposits in the presence of intensified competition.

Chart 2.4: Various Deposit Rates, 1993-2000



Source: PROWESS Database, Center for Monitoring Indian Economy Pvt. Ltd.; Report on Trend and Progress of Banking in India, 1991-2000, RBI

2.3.2.2 Lending Rates

The rate on advances bigger than Rs200,000 was switched from the maximum lending rate of 16.5% in 1987/88 to the MLR of 16% in 1988-99. This shift to the floor rate enabled banks to set lending rates more flexibly and offset the cost involved in concessional lending to priority sectors. The MLR was progressively increased to 19% in 1991-92 and was then lowered to 17% in 1992-93 and further to 14% in 1993-94 (Table 2.2). During 1992-1994, the MLR was adjusted in accordance with macroeconomic developments. In 1994, the MLR was removed for advances greater than Rs200,000 and banks were allowed to set the PLR as the floor rate. In 1995, banks were permitted to set their own lending rates freely on advances bigger than Rs200,000 although these rates were subject to the PLR and spread guidelines. Banks have been

advised to announce and maintain a specified band over the PLR and to have a range of lending rates across different types of risk within reasonable limits (Sarkar, 1999).

In 2001, banks were allowed to offer loans above Rs200,000 at below PLR rates to exporters and other creditworthy borrowers including public enterprises provided that a transparent and objective policy was approved by their boards. As of December 2001, advances for purchase of consumer durables, and loans to individuals against shares and debentures/bonds, and other non-priority sector personal loans can be determined freely by banks without reference to the PLR. However, it is not the intention for the RBI to allow any concessionality in the case of loans bigger than Rs200,000 and therefore banks are advised not to charge rates below the PLR. Thus, interest rate subsidies, which used to be applied to specific economic activities at fixed low rates, are now applicable only for loans below Rs200,000 with a uniform interest rate.²

For advances below Rs200,000, interest rates continue to be prescribed and carry varying degrees of concessionality depending on the loan size and sectors. In 1992, the lending rate for loans up to Rs7,500 was fixed at 11.5%, for loans ranging between Rs7,500 and Rs25,000 at 13.5%, and for loans of more than Rs25,000 to below Rs200,000 at 16.5% in 1992. In addition to the above size-based loans, there is also concessional lending for (1) term loans to agriculture, SSIs and transport operators owning up to two vehicles (15% for loans of between Rs25,000 and Rs 200,000 and a post-shipment financing, and rupee- and dollar-denominated advances. Term loans refer to those that are repayable within a period of no less than three years. In 1994, lending rates on advances up to Rs25,000 and between Rs25,000 and Rs200,000 were maintained at 12% and 13%. In 1997, a lending rate on advances of between Rs25,000 and Rs200,000 was switched from a fixed rate to a maximum lending rate. In 1998, the lending rate on advances up to Rs200,000 was switched from the maximum

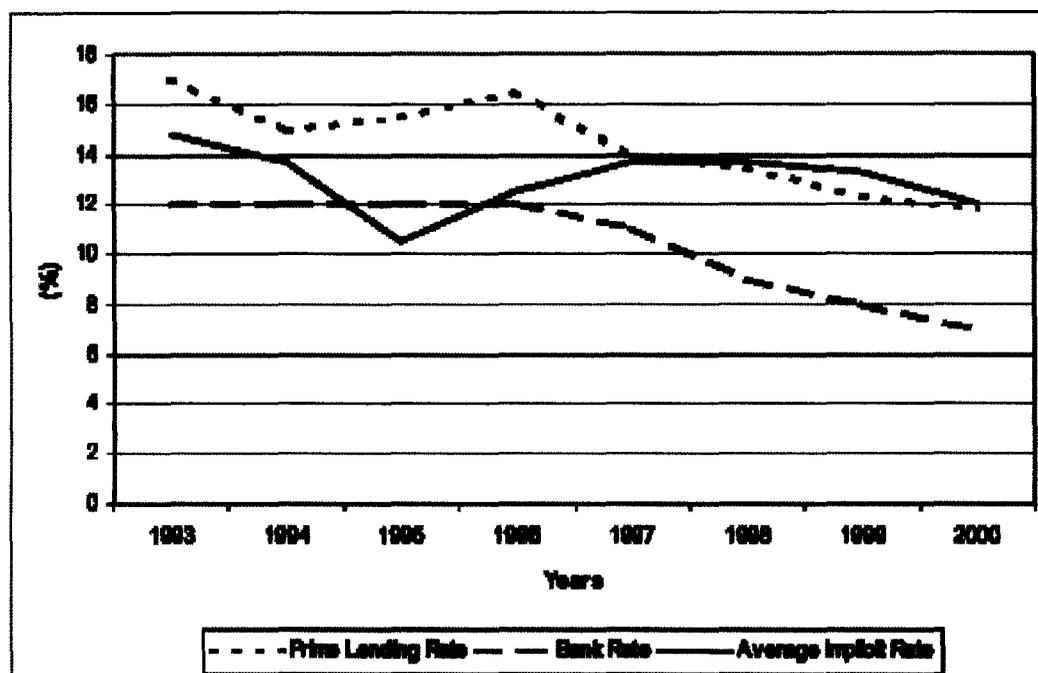
² The Government has not paid any direct compensation for the loss arising from subsidized lending.

fixed rate to the maximum rate being equal to the PLR, which banks are allowed to freely decide from the maximum rate of 13.5% for credit limits of between Rs25,000 and Rs200,000 and 12% for credit limits up to Rs25,000. Interest rates charged on all advances against term deposits were also allowed to be set at the PLR or below. Thus, the interest rate on advances up to Rs200,000, other than consumer credit, should not exceed the PLR, the rate available to the best borrowers of the concerned bank.

Moreover, a separate PLR for export credit financing may be fixed for short-term credit while separate Prime Term Lending Rates (PTLRs) may be prescribed for term loans of three years and above (determined in 1997). Banks should announce the PLR and PTLR and indicate the maximum spread over the PLR for all advances other than consumer credit. The banks could also prescribe a separate PLR for the loan component and cash credit component, and prescribe separate spreads for both. In 1997, the RBI removed a regulation that required banks to extend finance to housing finance intermediary agencies for on-lending at 1.5 percentage points below the PLR; banks were then allowed to set different lending rates provided that these rates were below each bank's PLR.

As a result of interest rate deregulations, the implicit lending rate defined as the ratio of interest incomes from advances to total advances rose during 1996-1997, immediately after complete liberalization with respect to advances in excess of Rs200,000 (Chart 2.5 and Table 2.3).³ The increase in the implicit lending rate occurred in 1996-1997, even though the rate of inflation dropped to 7% in 1996 from 9% in 1995 and the Bank Rate and the PLR declined in 1997. This suggests that banks raised average interest rates in response to excess demand for credit driven by the repressed economy during the previous regime. However, the implicit lending rate and other relevant rates have declined during 1998-2000 reflecting a decline in the rate of inflation.

³ In 1995, the implicit lending rate was below the Bank Rate. Although this appears puzzling, the Bank Rate was not used actively and, thus, the comparison does not make much sense until 1997.

Chart 2.5: Various Lending Rates, 1993-2000

Source: PROWESS Database, Center for Monitoring Indian Economy Pvt. Ltd.; Report of Trend and Progress of Banking in India, 1991-2000, RBI.

2.3.2.3 Other Interest Rates

With respect to interest rates on government bonds, they have been increasingly determined in auctions. Following the 1985 report of the Chakravarty Committee, the Government gradually increased coupon rates on government bonds in 1989-90. In 1986, the Government introduced 182-day TB auction markets, along with the traditional tap. In 1992, a 364-day TB was replaced with the 198-day TB and sold in auction. In 1993, a 91-day TB was introduced and sold in auction. Nevertheless, some argue that the rules of the auction effectively allowed the RBI to set the rate (Kathuria and Hanson, 2000). In addition, the SLR has given rise to artificial demand for government bonds and, thus, the interest rate of government bonds has remained below the truly market-clearing rate. In 1997, the Government and the RBI ceased the practice of automatic monetization through the issuance of ad hoc TBs.

2.3.3 Reform of Priority Sector Lending

In India, the Government has been requiring banks to allocate a specified portion of advances on the end-use laid by itself since 1969. The advances to the priority sectors constitute the biggest component of directed credit. In 1974, banks were required to direct 33% of their net bank credit at concessional fixed interest rates to priority sectors. Since then, banks have been advised to finance various credit-based poverty alleviation programs, such as the Integrated Rural Development Program (IRDP) introduced in 1980. The target on advances to priority sectors was raised gradually to 40% of advances in 1985. In addition, subtargets were also introduced (i.e., 18% for agriculture and 10% for weaker sections). In 1992, a target of 10% for export credit was introduced for foreign banks. However, export credit does not form part of the priority sector for domestic banks. In 1993, the overall target under priority sector lending for foreign banks was increased from 15% to 32% (10% target each on SSIs and the export sector) in 1993. While there is a sub-target for SSIs for foreign banks, no target on advances to SSIs was imposed on domestic banks. In 1996-97, the target for export credit was raised from 10% to 12% for foreign banks, although the target on overall advances to the priority sectors have remained unchanged.

While the targets of 40% imposed on domestic banks and 32% on foreign banks have not changed during the reform period, the burden of this directed lending practice has been gradually reduced by (1) expanding the definition of priority sector lending, and (2) liberalizing lending rates on advances in excess of Rs200,000, as discussed above. As for the former, for example, the Government redefined SSIs with investments in plant and machinery worth up to Rs6 million (Rs7 million in the case of ancillary units and export-oriented units) in 1993-94. All advances granted to SSIs within this definition were treated as priority sector advances by the RBI. In 1995-96, banks facing a shortfall in achieving the priority sector sub-target of 18% for agriculture were advised to contribute an amount equal to the shortfall (subject to a maximum of 1.5% of the net bank credit treated as priority sector lending) to the Rural Infrastructure Development Fund (RIDF), newly set up at the National Bank for Agriculture and Rural

Development (NABARD).⁴ Further, banks facing a shortfall in achieving the priority sector target were advised to provide Rs10 billion on a consortium basis to the Khadi and Village Industries Commission at an interest rate of 1.5% below the average PLR of five major banks, on top of lending to the Handloom Cooperatives to finance viable khadi and village industrial units. This lending was now treated as priority sector lending by the RBI. The entire amount of refinance granted by banks to regional rural banks would be regarded as priority sector lending.

In 1996-97, further, banks were notified that credit extended to dealers in drip irrigation, sprinkler irrigation systems, and agricultural machinery would be regarded as indirect finance to agriculture and, thus, priority sector lending. In the same year, banks were informed that all short-term advances to traditional plantations (such as tea, coffee, rubber, and spices) regardless of the size of holdings would be regarded as direct agricultural advances and therefore priority sector lending. Also, private sector banks falling short of the priority sector lending target of 40% as on the last Friday of March 1996 were required to deposit 50% of the shortfall with NABARD for one year at an interest rate of 8%. These banks were also given another option to deposit 50% of the shortfall with NABARD for five years at an interest rate of 11.5%. In 1996-97, banks were allowed to include their investments in special bonds issued by certain specified institutions (e.g. NABARD) as priority sector lending under the appropriate sub target.

In 1998-99, priority sector lending included incremental credit given to non bank financial companies (NBFCs) for on-lending to small road and water transport operators and to units in tiny sectors of industry and investment in venture capital. In the same year, activities such as food processing and related

⁴ NABARD was established in 1982 as a refinance institution to financial institutions with a view to providing credit for the promotion of agriculture, SSIs, cottage and village industries, handicrafts, and other rural crafts and allied economic activities in rural areas.

services in agriculture, fisheries, poultry, and dairy farming were included in the priority sector. In 2000-01, all micro finance extended by banks to individual borrowers directly or indirectly was recognized as part of priority sector lending. Reflecting these changes, as of 2001, the priority sector comprises the following: (1) agriculture (all direct and indirect), (2) SSIs (including the setting up of industrial estates and covering units with original cost of plant and machinery not exceeding Rs10 million), (3) small road and water transport operators (owning up to 10 vehicles), (4) small businesses (original cost of equipment used for the business not exceeding Rs1 million and a working capital limit of Rs500,000), (5) retail trade (retail traders up to Rs500,000), (6) professional and self-employed persons (up to Rs500,000), (7) State-sponsored organizations for scheduled castes and tribes, (8) education (educational loans granted to individuals), (9) housing (direct and indirect up to Rs500,000), (10) consumption loans (under the consumption credit scheme for weaker sections), (11) refinance by banks to regional rural banks, (12) micro credit (direct and indirect), (13) software industry (up to Rs10 million), (14) the food and agro-processing sector, and (15) venture capital.

With respect to the overall target of priority sector lending, the Government has not up until now expressed any intention to lower the requirement, contrary to the recommendation of the Narasimham Committee that advances to the priority sectors should be reduced from 40% to 10%.

2.3.4 Deregulation of Entry Barriers and Branching

2.3.4.1 Restrictions Entry Deregulation

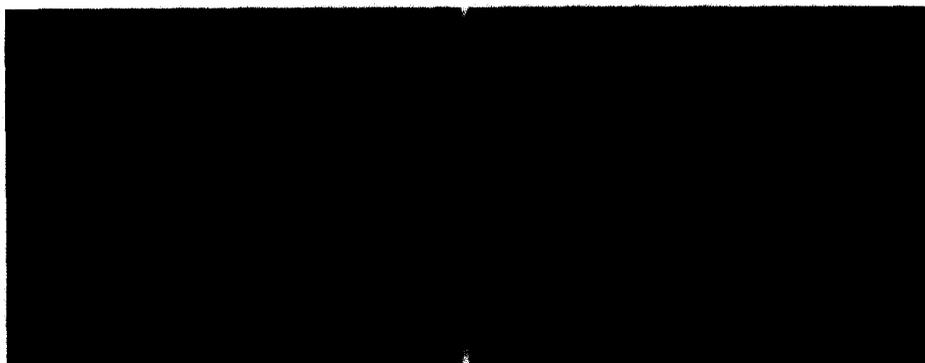
The RBI issued guidelines in 1993 governing the establishment of new private sector banks. The guidelines stated that a new bank needed to (1) maintain minimum paid-up capital of Rs1 billion; (2) list its shares on stock exchanges; (3) fulfill the priority sector lending requirement with modification allowed in the composition of such lending for an initial period of three years; (4) set a ceiling of 1% of total voting rights held by an individual shareholder as stipulated by the Banking Regulation Act of 1949; (5) postpone setting up a subsidiary or mutual fund until at least three years after its establishment, and (6)

use modern infrastructural facilities to provide good customer service. In 1994, the Banking Regulation Act of 1949 was amended in order to raise the ceiling of voting rights of an individual shareholder in a private bank from 1% to 10%.

Following these guidelines, the RBI approved six new private sector banks in 1994. In 1996, new private sector banks were permitted to open rural branches without insisting on the recommendations of the Directorate of Institutional Finance of respective state governments. In 1996, new guidelines were issued for the setting up of new private local area banks with jurisdiction over two or three contiguous districts. Subsequently, the RBI granted an “in principle” approval to three local area banks. As of December 2001, there are eight new private sector banks, increasing the number of private sector banks from 24 in 1993 to 31 in 2000. Some private sector banks were merged during this period.

A total of 26 new foreign banks have opened branches in India (up to 2001) since the reforms, in addition to the 18 that existed before. Of these, Sakura Bank was merged with Sumitomo Bank in April 2001 and the British Bank of Middle East, which used to operate as a subsidiary of the Hongkong Shanghai Banking Corporation Ltd. (HSBC), was integrated with the latter in 2000. Chart 6 indicates that the share of foreign banks increased from 32% in 1991 to 42% in 2001, lowering the share of public sector banks from 36% to 27% during the same period. Although full ownership by foreign banks is granted, foreign banks are allowed to operate solely through branches. Thus, the “tests of entry” criteria are applied to branches of foreign banks. A new foreign bank is required to bring in minimum assigned capital of \$25 million, of which \$10 million should be brought in at the opening of each of the first two branches and the balance of \$5 million at the opening of a third branch. Upon entry, the RBI examines dealings of the foreign bank with Indian parties, international and home country ranking where available, international presence, and supervisory standards prevalent in the home country.

Chart 2.6: Entry Deregulation, 1991 and 2001 (Percentage of Total Number of Commercial Banks)



Source: Report on Trend and Progress of Banking in India, 1991-2000, RBI.

While foreign institutional investors (FIIs) are permitted to acquire shares of Indian companies, including banks in the secondary market, the acquisition of shares is subject to a ceiling of 10% of the paid-up capital of the investee company for an individual FII and 24% for all FIIs taken together.

2.3.4.2 Deregulation of Branch Restrictions

Following the Narasimham Committee recommendations governing branch licensing restrictions, the RBI changed its licensing policy in 1992 in order to provide banks with operational autonomy to rationalize their branch networks. Banks were allowed to shift their existing branches within the same locality, open certain types of specialized branches, convert existing nonviable rural branches into satellite offices, spin off business of a branch, and open extension counters and administrative units without prior approval of the RBI. In the same year, banks that attained the stipulated capital adequacy requirement and followed appropriate accounting standards were permitted to establish new branch offices and upgrade extension counters into full-fledged branches without prior approval of the RBI.

In 1993-94, banks were permitted to close one loss-making branch at rural centers serviced by two commercial bank (excluding regional rural bank) branches by mutual consent with approval of the RBI. In the same year, regional rural banks were allowed to relocate their loss-making branches to new places

within their service area. In 1993, the RBI required new private sector banks that entered the banking sector in 1994 to open 25% of their total branches in rural or semi-urban areas.

In 1994-95, the RBI advised banks to submit a plan of action for opening new branches or upgrading existing extension counters during 1995, provided that a bank attained a capital adequacy ratio of 8%, earned net profit for three consecutive years, had NPAs not exceeding 15% of total outstanding loans, and minimum owned funds of Rs1 billion. In the same year, banks were advised to open at least one specialized agricultural finance branch that would focus on high technology-based agricultural financing in each state.

In 1995-96, the RBI changed the licensing policy for regional rural banks in line with the Bhandari Committee's recommendations. As a result, 70 rural regional banks were freed from service area obligations and were allowed to relocate their loss-making branches within the same block or convert them into satellite or mobile offices. Also, two loss-making branches of the same regional rural banks within 5 kilometers areas were permitted to merge. Rural regional banks with service area obligations were allowed to relocate loss-making branches at specified centers within their area. In the same year, public sector banks operationalized 136 specialized branches in 85 districts and 33 specialized branches in other districts in order to meet the needs of the SSI credit. The RBI allowed banks to open branches freely, provided that a bank met the capital adequacy ratio of 8%; earned a net profit for three consecutive years, and had NPAs not exceeding 15% of total outstanding loans. In 1998-99, old and new foreign banks were permitted to open up to 12 branches a year, as against the earlier stipulation of eight branches.

2.3.5 Adoption of Prudential Norms

Following the 1991 report of the Narasimham Committee, the RBI issued guidelines in 1992-93 on income recognition, asset classification, and provisioning. In particular, the RBI required domestic banks with an international presence to meet the capital adequacy ratio of 8% by the end of March 1994, while foreign banks in India were told to meet the same requirement by the end of

March 1993. All other banks were told to achieve a 4% ratio by the end of March 1993 and 8% by the end of March 1996. The total amount of Tier-II capital was limited to a maximum of 100% of Tier-I capital. In 1993-94, domestic banks with international presence were given a one-year extension to fulfill the requirement to the end of 1995. In 1994-95, revaluation reserves were treated as part of Tier-II capital at a discount rate of 55% instead of the 25% imposed earlier.

With the new guidelines, putative “incomes” from NPAs have no longer been treated as income. NPAs have been defined as loans in which interest has remained unpaid for four quarters in 1992-93. This period was shortened to three quarters in 1993-94 and to two quarters in 1994-95. NPAs have been also classified as substandard (if loans have remained NPAs up to two years), doubtful (more than two years), and loss (if certified as loss by external auditors). The provisioning requirement has been set at 10% for substandard loans, 20-50% for doubtful loans, and 100% for loss loans.

In 1995-96, banks were advised to maintain 5% of Tier-I capital funds for the foreign exposure open position limit. Subsequently, this requirement was clarified with a new guideline that risk-weighted assets should be notionally increased by multiplying the minimum capital charge for open exchange position limit by 12.5 (the reciprocal of 8%). In 1996-97, banks were instructed that subordinated debt instruments included in Tier-II capital should be discounted at rates ranging from 20% (four to five years) to 100% (less than one year) based on the remaining maturity period of the instrument.

The Narasimham Committee of 1998 (“Narasimham Committee II”) recommended that (1) a 5% weight should be given for market risk for government and approved securities; (2) the same risk weight should be applied for government guaranteed advances and other advances; (3) a 100% risk weight should be imposed on the foreign exchange open position limit; (4) a minimum capital adequacy ratio of 9% and 10% should be achieved in 2000 and 2002, respectively; (5) an asset should be classified as doubtful if it is in the substandard category for 18 months in the first instance (this period to be shortened later to 12 months) and loss if it has been so identified but not written off; (6) a 1%

provision should be made on standard assets; (7) bonds issued by banks for Tier-II capital that would make these bonds eligible for the SLR could be guaranteed by the Government; and (8) banks should disclose their maturity pattern of assets and liabilities, foreign currency assets and liabilities, provision, NPAs, and exposure to any particular sectors sensitive to asset price fluctuations.

In response to some of these recommendations, the RBI advised banks in 1999-2000 to disclose the details of the maturity profile of deposits and borrowings, loans and investments, provisions, etc. Further, banks were advised to submit a report to the RBI on details of subordinated debt issued for raising Tier-II capital. With respect to the risk weight on government-guaranteed advances, banks were advised in 2000-01 to assign a risk weight of 100% only on those government-guaranteed securities issued by the defaulting entities and not all the securities issued or guaranteed by the Government. In 1999-2000, the RBI also required banks to treat assets as doubtful if they had remained in the substandard category for 18 months - tightening the definition from the 24-month period applied earlier. In the same year, banks were also instructed to make a 0.25% provision on standard assets on a global portfolio basis. While banks are permitted to issue bonds to augment their Tier-II capital, the Government currently takes the view that guaranteeing these bonds is not necessary.

In 1999-2000, further, a 100% risk weight was applied for open foreign exchange and gold positions, while a 2.5% risk weight was introduced for market risk on government and other securities in 1998-99. Moreover, 75% of a bank's portfolio of government and other approved securities were required to be marked to market in the same year. Banks were required to disclose the maturity pattern of their loans and advances, investment securities, deposits and borrowings, foreign currency assets and liabilities, NPAs, and lending to sensitive sectors in the same year. Banks were also advised not to participate in the equity of any financial services venture, such as portfolio investments in the equity of financial companies (including Stock Exchanges), without prior approval of the RBI. In addition, they were advised not to provide loans to companies for buyback of shares and securities. In the same year, the RBI increased the minimum maturity for FCNR[B] deposits from six months to one year in order to minimize short-

term external borrowing liabilities. In 2000-01, the exposure limit on loans to an individual borrower was lowered from 25% to 20% of a bank's capital funds, with a view to moving closer to the international standard of 15%.

As for regulatory supervision, the RBI developed a rating model for banks based on capital, assets, management, earnings, and liquidity (CAMEL) in 1999-2000 in order to improve its assessment on the performance of each bank and the aggregate strength and soundness of the banking system. Further, the RBI issued detailed guidelines for risk management system in banks. The guidelines broadly cover management of credit, market, and operation risks.

NBFCs, meanwhile, were now required to register with the RBI and meet a minimum net-owned funds requirement. NBFCs that are approved to accept public deposits are now subject to extensive prudential norms on income recognition, asset classification, accounting standards, provisioning, capital adequacy, and credit/investment concentration ratios, while those not accepting public deposits are regulated in a limited manner. The capital adequacy requirement applied to NBFCs was raised to 10% by the end of March 1998 and to 12% by the end of March 1999.

2.3.6 Restructuring of Public Sector Banks

Public sector banks have been known for accumulating a large amount of NPAs from the previous highly regulated regime. The new prudential guidelines introduced in 1992 have revealed the true state of NPA problems of these banks to some extent. In 1992-93, their NPAs amounted, on average, to 24% of the total loan portfolio. Initially, only 15 public sector banks achieved a net profit, while 13 banks made overall losses (Joshi and Little, 1996). Loss-making banks accounted for 30% of total deposits or assets of all public sector banks. Public sector banks made an aggregate loss of about Rs35 billion. About half of the public sector banks had negative net worth. However, the true figures remain underestimated since prudential norms were not fully implemented until later in the 1990s.

2.3.6.1 Recapitalization

To cope with the problems of public sector banks, liquidation was not considered as an option from the beginning. As liquidation involved allocating losses to shareholders and depositors, it implied that either the Government as the sole owner of these banks or a large number of depositors would have to pay the cost. Since both options were not regarded as politically possible, the Government envisaged gradual privatization of these banks. To promote privatization, the balance sheets of these banks must be cleaned up to begin with. For this reason, the Government decided to make capital injections out of its budget to public sector banks.

Table 2.4: Recapitalization of Nationalized Banks and the Cost of Rescue Operation, 1993-1999

	Up to 1992-93	1993- 1994	1994- 1995	1994- 95 1/	1995- 1996	1996- 97	1997- 1998	1998- 1999
Number of Recap. Banks		19	13	6	8	6	3	3
Allahabad Bank	1.7	0.9	3.6	1.0	1.6	-	-	-
Andhra Bank	0.9	1.5	1.8	-	-	1.7	-	-
Bank of Baroda	1.6	4.0	-	-	-	-	-	-
Bank of India	4.6	6.4	8.5	3.5	-	-	-	-
Bank of Maharashtra	1.8	1.5	3.3	-	0.8	-	-	-
Canara Bank	1.1	3.7	-	-	-	-	6.0	-
Central Bank of India	1.8	4.9	6.3	-	-	5.0	-	-
Corporation Bank	0.7	0.5	-	-	-	-	-	-
Dena Bank	1.5	1.3	0.1	0.7	-	-	-	-
Indian Bank	1.9	2.2	2.3	1.8	-	-	17.5	1.0
Indian Overseas Bank	3.6	7.1	2.6	1.3	-	-	-	-
Oriental Bank of Commerce	0.8	0.5	-	-	-	-	-	-
Punjab & Sind Bank	2.5	1.6	1.2	-	0.7	-	-	-
Punjab National Bank	1.7	4.2	-	-	-	1.5	-	-
Syndicate Bank	1.5	6.8	2.8	0.9	1.7	-	-	-
UCO Bank	4.9	5.4	5.2	-	1.1	0.5	3.5	2.0
Union Bank of India	1.3	2.0	-	-	-	-	-	-
United Bank of India	3.6	2.2	5.4	-	2.6	3.4	-	1.0
Vijaya Bank	1.3	0.7	0.1	-	-	3.0	-	-
Total Capital Infusion	40.0	57.0	52.9	-	8.5	15.1	27.0	4.0
Cumulative Infusion 1/ 2/		57.0	109.9	-	118.4	133.5	160.5	164.5
Recapital Cost/GDP (%)		0.66	0.50	-	0.07	0.11	0.18	0.02

Note: 1/ Capital contributed as Tier-II.

2/ Excludes Rs 40 billion injected before 1993.

Source: Report on Trend and Progress of Banking in India 2001, the Reserve Bank of India.

The Government already provided Rs40 billion for recapitalization of 19

nationalized banks from 1991-92 to 1992-93. During 1993-1999, the Government engaged in additional recapitalization programs for 19 nationalized banks by spending Rs164.5 billion or between 0.02% and 0.7% of GDP each year (Table 2.4).

The capital infusion was made through the issuance of bonds directly to recapitalized banks, carrying fixed coupon rates initially at the rate of 7.75% per annum and in subsequent issues at 10%. These coupon rates were relatively lower than those applied to general government bonds at the time of issuance. Such practices helped banks to clean up their balance sheets, enabling some of them to make a public issue of equity.

To help avoid moral hazard problems arising from recapitalization programs, the RBI introduced a set of performance obligations and commitments (including deposit mobilization, improvement of investment yield, expansion and diversification of credit, reduction of NPAs, and cost reduction) in 1992-93. These performance agreements, which were contained in the Memorandum of Understanding (MOU), were supposed to be fulfilled by nationalized banks receiving recapitalization within the same year. The RBI monitored recapitalized banks by reviewing their performance in meeting targets at the end of the year and identifying reasons for banks not achieving the targets. Later, the RBI removed the purview of the MOU arrangement from a few nationalized banks that had performed well and had been partially privatized. In 1997-98, autonomy with respect to branch expansion, recruitment of new staff, and fresh capital expenditure was granted to nationalized banks provided that they had attained a capital adequacy ratio of 8%, profits for three consecutive years, net NPA ratios of below 9%, and minimum owned funds of Rs1 billion. These eligible banks were also exempted from the MOU exercise. Nevertheless, the MOU exercise has been criticized as having had only limited success in improving the performance of weak nationalized banks. This is because the targets were set too high for these banks to meet on the one hand and no penalties were imposed on the failures on the other hand, aggravating moral hazard problems (Reserve Bank of India, 1999b).

Among recapitalized nationalized banks, some returned capital to the Government. So far, five banks have done this with the total amount being Rs69 billion. In 1996-97, the Bank of Baroda, Corporation Bank, and the Bank of India returned capital of Rs3.8 billion, Rs300 million, and Rs900 million, respectively. In 1997-98, the Punjab National Bank returned capital of Rs1.4 billion, while in 2000-01, Andhra Bank returned capital of Rs500 million to the Government. The reduction in capital would help improve their earnings per share and, thus, enable banks to obtain a better pricing of their shares at the time of public issue.

2.3.6.2 Debt Recovery and Bankruptcy

As another measure to cope with NPAs, the Government passed the Recovery of Debts Act in 1993-94 and tribunals were established in major cities. Nevertheless, tribunals have not functioned well because their constitutionality has been challenged in the Delhi and Madras High Courts (Joshi and Little, 1996). Moreover, India's bankruptcy code is inadequate due to lack of provision for penalties for persons who negligently or fraudulently prepare bankruptcy petitions. Also, there is no separate bankruptcy court and no detailed rules prescribed on debtors' duties (Reserve Bank of India, 2001c). The inadequacy of existing bankruptcy codes and related laws is frequently pointed out by bankers as one major deterrent against smoother resolution of NPA problems.

The problems of NPAs are closely associated with banks' lending to sick companies (defined as those in which accumulated losses are equal to or exceed the total paid-up capital and free reserves). In the case of public sector banks, about 45% of NPAs are related to advances to the priority sectors and only 3% related to loans to the public sector.⁵ The rest is explained by politicized lending or the product of arm-twisting of banks. Among 45% of NPAs arising from priority sector lending, about 43% are attributable to advances to SSIs. On the other hand, only 28% of NPAs are related to advances to the priority sectors in the case of private sector banks, of which 55% was attributed to advances to SSIs

⁵ The small share of NPAs arising from lending to the public sector reflects limited lending activities to this sector. This is because development financial institutions are major financiers to public enterprises in India. Also, priority sector lending was not the major cause of NPAs in the 1990s thanks to reforms in this type of lending.

		1993	1994	1995	1996	1997	1998	1999	2000
Indian Overseas Bank	Central Govt.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Oriental Bank of Commerce Ltd.	Central Govt.			66.5	66.5	66.5	66.5	66.5	66.5
Punjab & Sind Bank	Central Govt.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Punjab National Bank	Central Govt.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Syndicate Bank	Central Govt.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	73.5
UCO Bank	Central Govt.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Union Bank of India	Central Govt.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
United Bank of India	Central Govt.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Vijaya Bank Ltd.	Central Govt.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

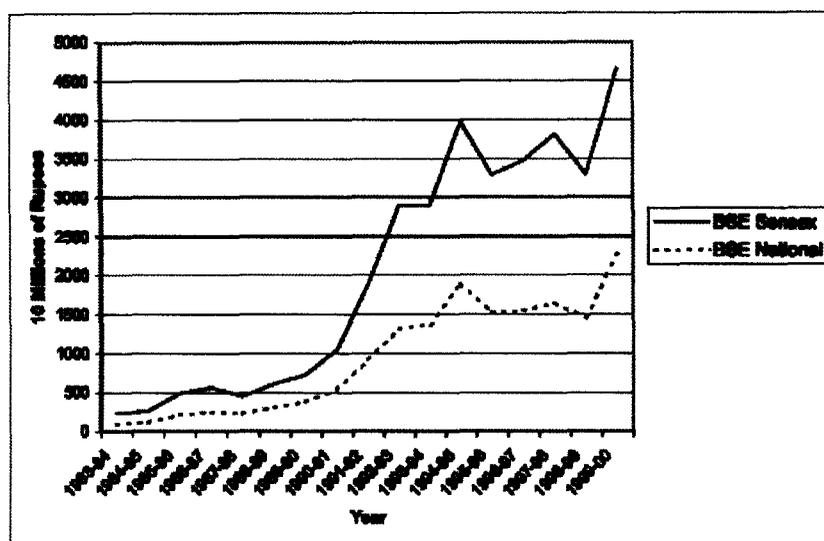
Table 2.5: Ownership of Public Sector Banks, 1995-2000 (Contd.) (%)

		1993	1994	1995	1996	1997	1998	1999	2000
SBI Banks									
State Bank of Bikaner and Jaipur	State Bank of India	100.0	100.0	100.0	100.0	95.0	75.0	75.0	75.0
State Bank of Hyderabad	State Bank of India	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
State Bank of India	Reserve Bank of India	66.3	66.3	66.3	66.3	59.7	59.7	59.7	59.7
State Bank of Indore	State Bank of India	-	-	97.5	97.5	97.5	97.5	98.1	98.1
State Bank of Mysore	State Bank of India	-	-	88.9	88.9	92.3	92.3	92.3	92.3
State Bank of Patiala	State Bank of India	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
State Bank of Saurashtra	State Bank of India	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
State Bank of Travancore	State Bank of India	-	-	97.1	97.3	97.1	76.0	76.0	76.0

Source: Bankscope, Fitch IBCA; Report on Trend and Progress of Banking in India 1996-97 and 1997-98, Reserve Bank of India.

Among 19 nationalized banks, seven banks made progress on partial privatization (Table 2.5). Oriental Bank of Commerce was the first bank that lowered its government ownership, from 100% to 66.5% in 1994. The 1994 Amendment of the Banking Act allowed banks to raise private equity up to 49% of paid-up capital. Dena Bank partially privatized its bank by lowering government ownership to 71% in 1996. The next year, the Bank of Baroda and Corporation Bank lowered their government ownership from 100% to 66.2% and from 100% to 68.3%, respectively. The Bank of India lowered its government ownership from 100% to 76% in 1997, but increased it again to 76.5% in 1999. In 2000, Andhra Bank reduced its government ownership from 100% to 67%. Despite the Government's efforts at recapitalization, there remain gaps between the capital required by weak nationalized banks and the amount of capital available from the capital market, implying the need for the Government to re-engage in recapitalization programs.⁶

⁶ As of March 1999, the RBI had identified the following eight banks as ones in which accumulated losses and net NPAs exceeded their net worth: Allahabad Bank, Indian Bank, Indian Overseas Bank, Punjab and Sind Bank, State Bank of India, State Bank of Mysore, State Bank of Travancore, and United Bank of India. Moreover, Indian Bank, UCO Bank, and United Bank of India produced negative operating profits less income on recapitalization bonds for three consecutive years. The poor performance of these three banks is particularly attributable to overstaffing, poor management skills, and inadequate corporate governance. The Verma Report on restructuring weak public sector banks (Reserve Bank of India, 1999b), released in February 1999, identified weak banks according to seven parameters: capital adequacy ratio, coverage ratio (the ratio of equity capital and loan loss provisions less NPAs to total assets), rate of return on assets, net interest margin; ratio of operating profit to average working funds; ratio of costs to income; and ratio of staff costs to income. Based on these indicators, the above nine banks showed strong signs of distress and ran a high risk of slipping into the category of weak banks. The Verma Report recommended that Indian Bank, UCO Bank, and United Bank of India should improve their performance through (1) operational restructuring (e.g., changes in work practices, the adoption of modern technology, and a reduction in the number of staff); (2) transfer of NPAs to an Asset Reconstruction Fund and changes in the legal system to improve debt recovery mechanisms; and (3) improved governance practices and managerial efficiency.

Chart 2.7: Annual Averages of Share Price Indices, 1983-2000

Note: BSE (Bombay Stock Exchange) Sensex includes the shares of 30 companies that are actively traded on the BSE. These stocks are the ones that account for a large chunk of both the volume and value of shares traded on the exchange. The BSE National Index includes 100 companies.

Source: Handbook of Statistics on Indian Economy, RBI, 2000.

While the Government takes the view that a gradual privatization process should be promoted further, the pace of privatization has remained slow. This is partly because the continued depressed conditions in the primary market for new issues in recent years have discouraged banks from floating issues in the stock market in order to raise capital. Share price indices declined in 1995-96, 1998-99, and 2000-2001 due to a mild recession and contagion from the Mexican crisis in the case of the former and from the East Asian crisis in the case of the latter (Chart 2.7).⁷ Another reason for the slow pace of privatization is that the balance sheets of some nationalized banks as well as their management and operational skills have remained weak so that the cost of restructuring these banks would be presumably prohibitively high. As a result, investors hardly showed interest in investing in these banks.

⁷ Despite the sluggish equity market, however, new private sector banks, such as the ICICI Bank, Global Trust Bank, and HDFC Bank, could issue initial public offerings (IPOs) during this period.

In order to promote further privatization, the Government submitted the amendment of the Banking Companies (Acquisition and Transfer of Undertakings) Act of 1970 and 1980 to Parliament, which would enable to lower the minimum government ownership of nationalized banks from 51% to 33%. However, the Government has maintained its stance that such equity sales would be carried out without changing the public sector character of banks. This Bill was approved in November 2000. This Bill also contained a removal of the restriction on free transferability of shares held by the Government. Moreover, the number of full-time board directors was increased from two to four. Nevertheless, the Government continues to appoint chairpersons of nationalized banks and cannot be fired by the board of directors. Also, the improvement of governance may be limited to the extent that any takeover threat by FIIs is limited by regulations. The Banking Regulation Act also restricts banks' nonstate shareholders from exercising voting rights in excess of 10% of the total of all the shareholders of the banking company.

Also, any transfer of shares in a banking company that exceeds 5% of the paid-up capital of the bank requires acknowledgement by the RBI before the registration of the transfer in their books. While seeking acknowledgement from the RBI, the bank has to give a declaration that the proposed transferee is not likely to acquire either singly or along with the companies and concerns in the group a controlling interest in the bank.

2.3.6.4 Writing-Off of Bad Debts

To write off bad debt, some public sector banks reduced their capital against losses. For example, the Government permitted Canara Bank to reduce its paid-up capital in 1997-98 by Rs5 billion against the loss arising from the CanStar Scheme. The aggregate amount of capital permitted to be written off by nationalized banks has reached Rs63.3 billion until today. In 1999-2000, the powers of chairpersons and managing directors of public sector banks for waiver and write off of loans was raised from Rs1 million to Rs5 million. So far, the Government has admitted occasional large write-off of banks' capital against losses.

2.3.6.5 Setting up of an Asset Reconstruction Company

Until recently, the Government did not follow the recommendation made by the Narasimham Committee of 1991 that an Asset Reconstruction Fund should be set up to deal with NPAs. It was not adopted again when the Narasimham Committee-II recommended that the Government should set up an ARC that would take over loans categorized as doubtful and losses, while the ARC should issue NPA Swap Bonds to these banks based on the realizable value of the assets transferred. The Government is reluctant to adopt this policy on the ground that the Debt Recovery Act and other relevant legislation should be strengthened first in order to prevent moral hazard problems. Reflecting the need to urgently restructure weak public sector banks, however, the Government finally announced its plan in December 2001 to set up an ARC to recover NPAs of weak banks by the end of January 2002. The Government has already decided to provide capital support to the Indian Bank, a nationalized bank with a negative capital adequacy ratio, once the ARC is set up.

2.3.6.6 Reduction of Operational Costs

Last, in order to cut operational costs, the Government introduced a voluntary retirement scheme for public sector banks in 2000-01. So far, this scheme has been criticized as unsuccessful owing to the lack of will and a systematic vision for this strategy.

India's banking sector reforms can be summarized into six areas, as indicated in Chart 2.2. First, the CRR declined from 15% in 1991 to 5.5% in 2001. The SLR also declined, from 38.5% in 1991 to 25% in 1997, remaining at this level until today. Declines in the CRR and SLR increased banks' flexibility in allocating credit and, hence, enabled them to improve their profitability.

Second, interest rates become flexible as to almost all term deposits rates and lending rates on advances in excess of Rs200,000. Interest rate deregulations have encouraged banks to improve their cost efficiency and diversify their business into nontraditional areas.

Third, reform in priority sector lending mainly through the expansion of coverage and interest rate decontrols on advances in excess of Rs200,000 helped

banks to mitigate the negative impact arising from such policy loans. In addition, new banks are allowed to modify the sub target composition of priority sector lending for an initial period of three years.

Fourth, entry barriers were reduced for private sector and foreign banks and their full ownership was granted. The entry of new banks has increased competition. Public sector banks were allowed to rationalize some branches, while branch licensing was removed. Following India's commitment to the World Trade Organization (WTO) agreement concerning the services sector, (new and old) foreign banks have been permitted to open up to 12 branches per year. Foreign banks can also be exempted from branching requirements in rural and semi-urban areas provided that they, for example, contribute to the Rural Infrastructure Development Fund of NABARD and make deposits with NABARD. Local area banks have also been established to induce competition in urban, semi-urban, and rural areas.

Fifth, various prudential norms and more appropriate accounting standards were introduced. Better accounting standards have revealed some of the true status of NPA problems of public sector banks. This not only increased the pressures on these banks to improve their balance sheets, but also enables the Government to impose appropriate policies to deal with NPA problems.

Sixth, the Government recapitalized nationalized banks and 11 public sector banks have been partially privatized.

2.4 An Account of Banking Sector Developments in India: 1980-2005

On the backdrop of reforms, a study has been made on the important banking indicators for the last 25-year period from 1981 to 2005. These indicators have been broadly grouped into different categories, *viz.*, (i) number of banks and offices (ii) deposits and credit (iii) investments (iv) capital to risk-weighted assets ratio (CRAR) (v) non performing assets (NPAs) (vi) Income composition (vii) Expenditure composition (viii) return on assets (ROAs) and (ix) some select ratios.

2.4.1 Number of Banks and Offices

The number of offices of all scheduled commercial banks almost doubled from 29,677 in 1980 to 55,537 in 2005. This rapid increase in the number of bank offices is observed in the case of all the bank groups. However, the number of banks in the case of foreign bank group and domestic private sector bank group decreased from 42 in 2000 to 31 in 2005 and from 33 in 2000 to 29 in 2005, respectively. This fall in the number of banks is reflective of the consolidation process and, in particular, the mergers and acquisitions that are the order of the banking system at present (Table 2.6).

Table 2.6: Number of Scheduled Commercial Banks - Bank Group-wise

Year	SBI & its Associates		Nationalized Banks		Foreign Banks		Domestic Private Sector Banks		All Scheduled Commercial Banks	
	No. of Banks	No. of Offices	No. of Banks	No. of Offices	No. of Banks	No. of Offices	No. of Banks	No. of Offices	No. of Banks	No. of Offices
1980	8	7745	20	18083	13	NA	34	3849	75	29677
1985	8	10568	20	25061	20	NA	32	4833	80	40462
1990	8	12074	20	29800	22	148	25	3961	75	45983
1995	8	12947	19	31817	27	157	32	4213	86	49134
2000	8	13589	19	33905	42	237	33	5437	101	53168
2005	8	13896	20	35075	31	245	29	6321	88	55537

Note : Number of banks and branches of the Nationalized bank group for the year 2005 includes IDBI Ltd.

Source: Data on number of bank offices are taken from *Banking Statistics, 1972 to 1996, Basic Statistical Returns*, 1998 and various issues of Statistical Tables Relating to Banks in India for the years from 1996 to 2005.

2.4.2 Deposits and Credit

2.4.2.1 Credit Deposit Ratio

The credit-deposit ratio (C-D ratio) provides an indication of the extent of credit deployment for every unit of resource raised in the form of deposits. The C-D ratios of all scheduled commercial banks decreased gradually from 63.3 per cent in 1980 to 49.3 per cent in 2000. This declining trend has been reversed in

the recent years, with the ratio increasing to 62.7 per cent in 2005. The foreign bank group recorded the highest C-D ratio (87.1 per cent) and State Bank Group the lowest (56.3 per cent) in 2005. The C-D ratios of all the bank groups had fallen drastically in 2000, except for foreign banks. With respect to domestic private sector banks group, this ratio was high at 70.5 per cent in 2005. With respect to State Bank Group and nationalized bank group, the C-D ratios were lower at 56.3 per cent and 61.3 per cent, respectively, which were less than the C-D ratio of all scheduled commercial banks at 62.7 per cent in 2005. There has been a significant increase in the C-D ratios in 2005 across all the bank groups. (Table 2.7).

Table 2.7: Credit Deposit Ratios of Scheduled Commercial Banks (%)

	SBI & its Associates	Nationalized Banks	Foreign Banks	Domestic Private Sector Banks	All Scheduled Commercial Banks
	C-D Ratio	C-D Ratio	C-D Ratio	C-D Ratio	C-D Ratio
1980	74.4	58.9	73.5	54.3	63.3
1985	64.6	58.9	74.1	55.5	60.8
1990	74.0	56.6	62.3	54.1	61.6
1995	57.1	48.0	54.3	54.3	51.4
2000	50.3	46.4	72.2	49.0	49.3
2005	56.3	61.3	87.1	70.5	62.7

Note: Ratio includes the impact of the conversion of two non-banking entities into banking entities.

Source: Base data are taken from Annual Accounts of Scheduled Commercial Banks 1979 to 2004 and Statistical Tables Relating to Banks in India 2004-05.

2.4.2.2 Per Office Deposits and Credit

The overall business of foreign banks per office is higher than the per office business of other bank groups. Across the board, the per office deposits are more than the per office credit as expected. With respect to all scheduled commercial banks, deposits per office increased from Rs. 1.4 crore in 1980 to Rs. 33 crore in 2005 and credit per office also increased from Rs. 0.9 crore to Rs. 20.7 crore during the same period (Table 2.8).

2.4.2.3 Type-wise Deposits

Over the years, there has been a shift in the composition of deposits. While the savings bank deposits of all scheduled commercial banks remained more or less constant at around one fourth of the total deposits, term deposits increased from 55.1 per cent in 1980 to 63.0 per cent in 2005. On the other hand, demand deposits fell from 19.7 per cent in 1980 to 12.8 per cent in 2005. More or less similar trend is observed for both State Bank Group and also for the nationalized bank group. In the case of foreign banks and domestic private sector bank groups, the pattern in the composition of deposits differs from that of the public sector banks. In the case of foreign banks, demand deposits, which formed 25.7 per cent in 1980, increased to 30.1 per cent in 2005. The share of savings bank deposits in total deposits of foreign banks, decreased from 21.5 per cent in 1980 to 9.9 per cent in 2000. This share was 17.9 per cent in 2005. The analysis shows that more funds of short-term nature are parked with the foreign banks group. This may be an indication that the business class is attracted towards better service offered by foreign banks.

Table 2.8: Per Office deposits and credit of Scheduled Commercial Banks

(Rs. crore)

Year	SBI & its Associates		Nationalized Banks		Foreign Banks		Domestic Private Sector Banks		All Scheduled Commercial Banks	
	Deposits	Credit	Deposits	Credit	Deposits	Credit	Deposits	Credit	Deposits	Credit
1980	1.5	1.1	1.5	0.9	-	-	0.6	0.3	1.4	0.9
1985	2.8	1.8	2.5	1.5	-	-	1.0	0.5	2.5	1.5
1990	4.7	3.5	4.3	2.4	60.3	37.6	2.0	1.1	4.4	2.7
1995	8.7	5.0	7.4	3.6	178.5	97.0	6.9	3.8	8.3	4.2
2000	18.9	9.5	14.2	6.6	208.1	150.3	20.9	10.3	16.9	8.3
2005	36.4	20.5	26.5	16.2	353.1	307.4	49.5	34.9	33.0	20.7

Source: Base data are taken from Annual Accounts of Scheduled Commercial Banks 1979 to 2004 and Statistical Tables Relating to Banks in India 2004-05.

In the case of domestic private sector bank group, while the composition of demand deposits did not vary much over the 25-year period, the share of savings deposits fell from 26.8 per cent in 1980 to 16.0 percent in 2005, whereas term deposits increased from 56.7 per cent to 69.5 per cent over the same period.

Table 2.9: Bank Group-wise Deposits of Scheduled Commercial Banks: Type-wise

(Per cent)

Year	SBI & its Associates			Nationalized Banks			Foreign Banks		
	Demand Deposits	Savings Bank Deposits	Term Deposits	Demand Deposits	Savings Bank Deposits	Term Deposits	Demand Deposits	Savings Bank Deposits	Term Deposits
		Deposits			Deposits			Deposits	
1980	24.6	23.3	52.1	17.6	26.1	56.3	25.7	21.5	52.8
1985	24.7	23.4	52.0	16.5	24.9	58.6	33.7	16.9	49.4
1990	26.7	22.9	50.4	16.7	22.2	61.1	26.9	9.3	63.8
1995	22.5	22.5	55.0	15.8	23.5	60.7	15.5	8.3	76.2
2000	17.7	21.5	60.7	11.9	24.1	64.0	21.6	9.9	68.5
2005	14.1	25.0	60.9	9.9	27.2	63.0	30.1	17.9	51.9
	Domestic Private Sector Banks			All Scheduled Commercial Banks					
Year	Demand Deposits	Savings Bank Deposits	Term Deposits	Demand Deposits	Savings Bank Deposits	Term Deposits			
1980	16.5	26.8	56.7	19.7	25.2	55.1			
1985	16.9	27.3	55.8	19.4	24.3	56.2			
1990	16.9	25.1	58.0	19.9	22.0	58.1			
1995	16.0	15.0	69.0	17.6	21.6	60.8			
2000	14.3	11.0	74.7	14.4	20.9	64.7			
2005	14.4	16.0	69.5	12.8	24.2	63.0			

Source: Base data are taken from Annual Accounts of Scheduled Commercial Banks 1979 to 2004 and Statistical Tables Relating to Banks in India 2004-05.

Even though bank deposit rates are low, people prefer to park major portion of their funds in the form of term deposits because of the risk free returns and assured returns it provides. We can infer that the interest rate structure has definitely influenced the maturity structure of bank deposits. For example, since

the year 2000, the share of term deposits to total deposits declined across bank groups except for State Bank group. The deposit rates of 1 to 3 yrs maturity show that there is a clear fall in the rates since 2000. This could be the major reason for decline in term deposits after 2000 (Table 2.9).

2.4.2.4 Bank Group-wise Share in Deposits

The bank group-wise share in deposits of scheduled commercial banks depicts that nationalized bank group contributed more than 50 per cent in the total deposits mobilized by all scheduled commercial banks in the year 2005. This share dropped from 64.4 per cent in 1980 to 50.7 per cent in 2005. The share of deposits of State Bank group remained more or less constant during the 25-year period constituting a little more than one fourth of the total deposits by all scheduled commercial banks. State Bank group is successful in holding on to its percentage share of deposits in total deposits of all scheduled commercial banks. However, nationalized bank group is seen to be slipping in this area. The share of foreign bank group in total deposits is showing increasing trend. The share of foreign banks increased from 2.9 per cent to 4.7 per cent and in the case of domestic private sector banks, it increased from 5.3 per cent in 1980 to 17.0 per cent in 2005. This shows that banks in the private sector have taken a head start in the deposit mobilization after the liberalization measures adopted with regard to entry of new private sector banks in 1995 (Table 2.10).

2.4.2.5 Security-wise Advances

The advances secured by tangible assets in the case of all scheduled commercial banks increased from 73.2 per cent in 1992 to 76.4 percent in 2005. For all the bank groups, with the exception of foreign bank group, advances secured by tangible assets were more than 70 per cent for the period 1992 to 2005. In the case of foreign banks, such secured loans increased from 54 per cent in 1992 to 57.9 per cent in 2005. Advances covered by government / bank guarantees with respect to all scheduled commercial banks decreased from 15.1 per cent to 5.9 per cent during the same period. Such type of advances declined for each of the bank groups. It is interesting to note here that unsecured loans granted by foreign banks group was more than a third of the total advances for all the years from 1992 to

2005. For all other bank groups, unsecured loans were less than 21 per cent. It is also noteworthy that unsecured advances granted by State Bank of India and its Associates increased sharply from 15.4 per cent in 2004 to 20.9 percent in 2005 (Table 2.11).

Table 2.10: Bank Group-wise Share of Deposits of Scheduled Commercial Banks
(Per cent)

Year	SBI & its Associates	Nationalized Banks	Foreign Banks	Domestic Private Sector Banks
1980	27.4	64.4	2.9	5.3
1985	29.3	63.2	2.9	4.6
1990	28.1	63.6	4.4	3.9
1995	27.8	58.2	6.9	7.2
2000	28.5	53.4	5.5	12.6
2005	27.6	50.7	4.7	17.0

Source: Base data are taken from Annual Accounts of Scheduled Commercial Banks 1979 to 2004 and Statistical Tables Relating to Banks in India 2004-05.

2.4.2.6 Bank Group-wise Share in Advances

The bank group-wise share of advances of scheduled commercial banks depicts that nationalized bank group contributed about 50 per cent of the total credit advanced by all scheduled commercial banks followed by State Bank Group with a share of about 25 per cent, domestic private sector banks with a share of 19 per cent and foreign banks about 7 per cent in the year 2005. This indicates that banks in the public sector even after the implementation of reforms since 1991, contribute about 75 per cent of the total credit advanced by all scheduled commercial banks.

Table 2.11: Security-wise Advances of Scheduled Commercial Banks

(Per cent)

Year	SBI & its Associates			Nationalized Banks			Foreign Banks		
	Secured by Tangible assets	Covered by Bank/Govt. Guarantees	Un-secured	Secured by tangible assets	Covered by Bank/Govt. Guarantees	Un-secured	Secured by tangible assets	Covered by Bank/Govt. Guarantees	Un-secured
1992	70.8	24.7	4.5	76.4	10.0	13.6	54.0	13.9	32.1
1995	78.3	18.0	3.7	76.0	14.3	9.7	67.2	5.9	26.8
2000	86.0	8.3	5.8	81.6	8.7	9.7	56.1	8.1	35.9
2001	81.0	7.6	11.4	80.0	8.5	11.5	51.9	9.3	38.8
2002	81.4	6.3	12.3	77.2	9.9	12.9	53.1	12.0	34.9
2003	80.4	7.2	12.4	79.9	7.2	12.9	56.2	11.3	32.6
2004	77.3	7.4	15.4	80.1	6.5	13.3	58.7	7.3	34.0
2005	74.7	4.4	20.9	77.6	7.2	15.1	57.9	5.6	36.4
Year	Domestic Private Sector Banks			All Scheduled Commercial Banks					
	Secured by tangible assets	Covered by Bank/Govt. Guarantees	Un-secured	Secured by tangible assets	Covered by Bank/Govt. Guarantees	Un-secured			
1992	76.2	8.7	15.1	73.2	15.1	11.7			
1995	87.0	6.4	6.6	77.2	14.0	8.8			
2000	76.7	11.9	11.4	80.2	8.9	10.9			
2001	77.6	8.3	14.1	77.7	8.3	14.1			
2002	85.9	5.8	8.3	78.0	8.4	13.6			
2003	85.5	6.4	8.1	79.4	7.4	13.3			
2004	85.1	5.1	9.7	78.9	6.5	14.6			
2005	81.7	4.4	14.0	76.4	5.9	17.7			

Source : Base data are taken from Annual Accounts of Scheduled Commercial Banks 1979 to 2004 and Statistical Tables Relating to Banks in India 2004-05.

This trend may not continue in future as the data reveals that the share of the public sector banks declined from 92.1 per cent in 1980 to 74.3 per cent in 2005. On the other hand, the advances made by foreign banks increased from 3.3

per cent in 1980 to 6.5 per cent in 2005 and that made by private banks in the domestic sector increased from 4.5 per cent in 1980 to 19.2 per cent in 2005. Data supports that in the post reform period, public sector banks are facing increasing competition from the private sector banks—both foreign and domestic (Table 2.12).

2.4.2.7 Priority Sector Advances

Priority sector advances of scheduled commercial banks showed some marginal decline from 35 per cent in 1992 to 34 per cent in 2005. This declining trend is observed in the case of all bank groups except for foreign banks. In the case of foreign banks, priority sector advances increased over the years since the banking sector reforms started. Of the total advances, nationalized banks advanced loans to priority sectors to the extent of 37.4 per cent and State Bank group to the extent of 35.3 per cent in 2005. Such loans were low with respect to domestic private sector banks group at 26.5 per cent and foreign banks at 25.8 per cent. A target of 40 per cent of net bank credit has been stipulated for lending to the priority sector by domestic scheduled commercial banks both in the public and private sectors and a target of 32 per cent has been stipulated for lending to the priority sector by foreign bank groups at present.

Table 2.12: Bank Group-wise Share of Advances of Scheduled Commercial Banks

Year	(Per cent)			
	SBI & its Associates	Nationalised Banks	Foreign Banks	Domestic Private Sector Banks
1980	32.2	59.9	3.3	4.5
1985	31.1	61.2	3.5	4.2
1990	33.7	58.4	4.5	3.4
1995	30.8	54.3	7.3	7.6
2000	29.1	50.3	8.0	12.6
2005	24.8	49.5	6.5	19.2

Source: Base data are taken from Annual Accounts of Scheduled Commercial Banks 1979 to 2004 and Statistical Tables Relating to Banks in India 2004-05.

However, the data presented in this section are percentages of priority sector lending to gross bank credit (Table 2.13).

Table 2.13: Percentage of Priority Sector Advances to Total Advances: Bank Group-wise

Year	(Per cent)				
	SBI & its Associates	Nationalized Banks	Foreign Banks	Domestic Private Sector Banks	All Scheduled Commercial Banks
1992	36.0	38.4	7.9	28.9	35.0
1995	31.1	33.6	20.7	27.0	31.3
2000	32.3	34.1	21.4	26.6	31.5
2001	32.2	33.9	21.1	24.5	31.0
2002	31.4	34.1	21.6	16.9	29.2
2003	31.2	36.2	21.9	22.2	31.1
2004	33.2	38.6	23.2	26.9	33.7
2005	35.3	37.4	25.8	26.5	34.0

Source : Base data are taken from Annual Accounts of Scheduled Commercial Banks 1979 to 2004 and Statistical Tables Relating to Banks in India 2004-05.

2.4.3 Investments

Bank group-wise investments show that all scheduled commercial banks invested 92.6 per cent of their total investments in government and other approved securities in the year 1980, which declined to 82.4 per cent in 2005; whereas other investments increased from 7.4 per cent to 17.6 per cent during the same period. This could be due to the reduction in SLR requirements. Even though the SLR requirements have been reduced from a high of 38.5 per cent in 1992 to the statutory minimum of 25 per cent, banks still prefer to invest large portion of their investments in approved securities, because of the risk-free and assured returns they get through such investments. In the case of public sector banks and foreign banks, there was a reduction in investment in government securities and a preference for other investments like shares, bonds and debentures, which are not counted for SLR requirements. However, in 2005, a major reduction was noticed with respect to investments in other securities and a clear preference for government and other approved securities. As against this, in the case of domestic private sector banks, there is a clear preference for

investments in other securities after the year 1995 and a reduction of investments in government and other approved securities. Since the year 2000, with the entry of more private sector banks, this group invested more than one third of their total investments in non- SLR securities, which indicates that the private banks of late are currently venturing into more riskier, nonetheless challenging business (Table 2.14).

Table 2.14: Bank Group-wise Distribution of Investments of Scheduled Commercial Banks

(Per cent)

Year	SBI & its Associates		Nationalised Banks		Foreign Banks	
	Govt. & Other Appr. Securities	Other Investments	Govt. & Other Appr. Securities	Other Investments	Govt. & Other Appr. Securities	Other Investments
1980	94.5	5.5	92.2	7.8	97.7	2.0
1985	97.3	2.7	92.2	7.8	94.5	5.5
1990	91.9	8.1	91.6	8.4	85.5	14.5
1995	88.7	11.3	85.8	14.2	71.4	28.6
2000	81.8	18.2	76.4	23.6	63.8	36.2
2005	90.5	9.5	81.7	18.3	80.5	19.5
Year	Domestic Private Sector Banks		All Scheduled Commercial Banks			
	Govt. & Other Appr. Securities	Other Investments	Govt. & Other Appr. Securities	Other Investments		
1980	82.6	17.2	92.6	7.4		
1985	93.6	6.3	94.0	6.0		
1990	94.1	5.9	91.5	8.5		
1995	78.5	21.5	85.2	14.8		
2000	65.2	34.8	75.7	24.3		
2005	69.8	30.2	82.4	17.6		

Source: Base data are taken from Annual Accounts of Scheduled Commercial Banks 1979 to 2004 and Statistical Tables Relating to Banks in India 2004-05.

2.4.4 Capital To Risk-weighted Assets Ratio (CRAR)

The capital to risk weighted assets ratio (CRAR) is an indicator for assessing soundness and solvency of banks. Out of 92 scheduled commercial banks, 75 banks could maintain the CRAR of more than 8 per cent during the year 1995-96, when the prescribed CRAR was 8 per cent. During 1999-2000, 96 banks maintained CRAR of 9 to 10 per cent and above when the prescribed rate was 9 per cent. In 2004-05, out of 88 scheduled commercial banks, 78 banks could maintain CRAR of above 10 per cent and 8 banks between 9 and 10 per cent. All banks in the State Bank group maintained capital to risk weighted assets ratio of more than 10 per cent in 2004-05. In the nationalized bank group, 17 banks reached more than 10 per cent CRAR level except two banks whose CRAR during 2004-05 was between 9-10 per cent. During 2004-05, there were 2 banks in the old private sector category whose CRAR was less than 9 per cent (Table 2.15).

2.4.5 Non-performing Assets (NPAs)

The measure of non-performing assets helps us to assess the efficiency in allocation of resources made by banks to productive sectors. The problem of NPAs arise either due to bad management by banks or due to external factors like unanticipated shocks, business cycle and natural calamities (Caprio and Klingebiel, 1996). Several studies have underscored the role of banks' lending policy and terms of credit, which include cost, maturity and collateral in influencing the movement of non-performing assets of banks (Reddy, 2004, Mohan 2003, 2004).

The ratio of gross non-performing assets (NPAs) to gross advances of all scheduled commercial banks decreased from 14.4 per cent in 1998 to 5.1 per cent in 2005. Bank group-wise analysis shows that across the bank groups there has been a significant reduction in the gross non-performing assets. With respect to public sector banks (State Bank group and nationalised bank group together), NPAs have decreased from 16.0 per cent in 1998 to 5.4 per cent in 2005. In the case of foreign banks group, gross NPAs as a percentage to gross advances, which was the lowest among all the groups at 6.4 per cent in 1998, decreased to 2.9 per cent in 2005.

Table 2.15: Distribution of Scheduled Commercial Banks by CRAR

Year	Bank Group	State Bank Group	Nationalized Bank Sector Banks	Old Private Sector Banks	New Private	Foreign Banks in India	Scheduled Commercial Banks
1995-1996	Below 4 per cent	-	5	3	-	-	8
	Between 4-8 per cent	-	3	3	-	3	9
	Between 8-10 per cent	6	7	7	1	12	33
	Above 10 per cent	2	4	12	8	16	42
1999-2000	Below 4 per cent	-	1	2	-	-	3
	Between 4-9 per cent	-	-	2	-	-	2
	Between 9-10 per cent	-	4	2	1	5	12
	Above 10 per cent	8	14	18	7	37	84
2003-2004	Below 4 per cent	-	-	-	1	-	1
	Between 4-9 per cent	-	-	-	1	-	1
	Between 9-10 per cent	-	1	-	-	-	1
	Above 10 per cent	8	18	20	8	33	87
2004-05	Below 4 per cent	-	-	1	-	-	1
	Between 4-9 per cent	-	-	1	-	-	1
	Between 9-10 per cent	-	2	3	2	1	8
	Above 10 per cent	8	17	15	7	30	78

Source: Handbook of Statistics on the Indian Economy, 2004-05 & Report on Trend and Progress of Banking in India 2004-05.

With regard to domestic private sector banks group, gross NPAs decreased from 8.7 per cent to 3.9 per cent during the same period. The ratio of net NPAs to net advances of different bank groups also exhibited similar declining trends during the period from 1998 to 2005. The net NPAs of all scheduled commercial banks

declined from 7.3 per cent in 1998 to 2.0 per cent in 2005 (Table 2.16).

Table 2.16: NPAs of Scheduled Commercial Banks (Bank Group-wise)

(Per cent)

Year	Public Sector Banks		Foreign Banks		Domestic Private Sector Banks		All SCBs	
	Gross NPA	Net NPA	Gross NPA	Net NPA	Gross NPA	Net NPA	Gross NPA	Net NPA
1998	16.0	8.2	6.4	2.2	8.7	5.3	14.4	7.3
2000	14.0	7.4	7.0	2.4	8.2	5.4	12.7	6.8
2001	12.4	6.7	6.8	1.8	8.4	5.4	11.4	6.2
2002	11.1	5.8	5.4	1.9	9.6	5.7	10.4	5.5
2003	9.4	4.5	5.3	1.8	8.1	5.0	8.8	4.4
2004	7.8	3.0	4.6	1.5	5.8	2.8	7.2	2.9
2005	5.4	2.1	2.9	0.9	3.9	2.2	5.1	2.0

Source: Handbook of Statistics on Indian Economy 2004-05 and Report on Trend and Progress of Banking in India 2004-05.

The decline in NPAs is more evidenced across bank groups especially since 2003. This reflects on the positive impact of the measures taken by the Reserve Bank towards NPA reduction and specifically due to the enactment of the Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest (SARFAESI) Act, ensuring speedier recovery without intervention of courts or tribunal.

The composition of NPAs of public sector banks brings to light certain interesting aspects. It is observed that in 1995 for State Bank group, the share of NPAs was 52.5 per cent for the priority sector, 41.4 per cent for the non-priority sector, and 6.1 per cent for the public sector. These percentages were 47.4 per cent, 51.5 per cent and 1.1 per cent, respectively in 2005. Similarly in the case of nationalized banks also, the NPA composition for non-priority sector has increased, whereas, that for priority sector and public sector, there is a marginal reduction. This shows that not only advances to the priority sector are going non-performing, but more than that, non-priority sector lending is the area where the bankers need to cautiously examine the possibilities of loans becoming non-performing. Here the question of moral hazard, adverse selection and credit rationing comes to the fore. These issues are to be addressed face on. This also

goes to explode the commonly held myth that the problem of NPAs is caused mainly due to the credit allocation to priority sectors. (Table 2.16A).

Table 2.16A: Composition of NPAs of Public Sector Banks

(Per cent)

Year	SBI & its Associates			Nationalized Banks		
	Priority Sector	Non-priority Sector	Public Sector	Priority Sector	Non-priority Sector	Public Sector
1995	52.5	41.4	6.1	48.7	49.2	2.0
2000	45.2	51.9	2.8	44.1	54.5	1.5
2001	44.2	49.8	6.0	46.2	52.3	1.5
2002	47.0	50.4	2.6	45.7	53.1	1.2
2003	47.5	49.4	3.1	47.1	51.3	1.6
2004	47.1	51.5	1.5	47.7	51.1	1.1
2005	47.4	51.5	1.1	48.4	50.7	0.9

Source: Statistical Tables Relating to Banks in India, Various issues.

2.4.6 Income Composition

Income composition of scheduled commercial banks shows that across the different bank groups, interest income viz., income from advances and investments are falling and the percentage of other income is increasing. Other income *inter alia* includes income earned in the form of commission, exchange and brokerage and income from profit on sale of investments. In 1980, the share of interest income of all scheduled commercial banks was 89.0 per cent, which decreased to 82.0 per cent in 2005. Other income on the other hand, increased from 11.0 per cent to 18.0 per cent during the same period. This reflects upon the increasing reliance on non-interest income *vis-à-vis* interest income of commercial banks. This is a welcome trend as it may reduce the risks arising out of the sole dependency on interest as the source of income (Ramasastry, Samuel & Gangadaran, 2004)

Bank group-wise interest and non-interest income shows that in the case of SBI and its Associates, interest income declined from 84.5 per cent in 1980 to 82.3 percent in 2005 and in the case of nationalized banks group, the same declined from 91.4 per cent to 84.0 per cent. In the case of domestic private sector banks also, interest income declined from 90.3 per cent in 1990 to 80.5 per cent in

2005. It is evident from these figures that more than 80 per cent of the income still comes from interest income in the case of public sector banks and domestic private sector banks, which indicates that these banks are seen to be dependent mainly on the traditional way of earning income even though there is a reduction in such dependence. In contrast, foreign banks are seen to be increasingly dependent upon non-interest sources of income. Non-interest income of foreign banks formed about 29.6 per cent of their total income, followed by domestic private sector banks 19.5 per cent, State Bank of India and its Associates 17.7 percent and nationalized banks 16.0 per cent (Table 2.17).

Table 2.17: Income Composition of Scheduled Commercial Banks

(Per cent)

Year	SBI & its Associates		Nationalised Banks		Foreign Banks		Domestic Private Sector Banks		All Scheduled Commercial Banks	
	Interest Income	Other Income	Interest Income	Other Income	Interest Income	Other Income	Interest Income	Other Income	Interest Income	Other Income
1980	84.5	15.5	91.4	8.6	-	-	-	-	89.0	11.0
1985	88.2	11.8	93.6	6.4	-	-	-	-	91.8	8.2
1990	89.1	10.9	91.9	8.1	82.8	17.2	90.3	9.7	90.3	9.7
1995	86.9	13.1	88.8	11.2	80.1	19.9	86.0	14.0	87.2	12.8
2000	85.8	14.2	88.4	11.6	79.2	20.8	83.9	16.1	86.2	13.8
2005	82.3	17.7	84.0	16.0	70.4	29.6	80.5	19.5	82.0	18.0

'-': Not Available.

Source: Base data are taken from Annual Accounts of Scheduled Commercial Banks 1979 to 2004 and Statistical Tables Relating to Banks in India 2004-05

A comparison of the break-up of interest income viz., interest on advances and interest on investments shows that with respect to all scheduled commercial banks, interest income on advances has fallen from 60.7 per cent in 1992 to 52.3 per cent in 2005. Whereas, interest income on investments increased from 25.6 per cent in 1992 to 42.2 per cent in 2005. This is true for all the bank groups (Table 2.17A).

Table 2.17A: Composition of Interest Income of Scheduled Commercial Banks

Year	SBI & its Associates			Nationalized Banks			Foreign Banks		
	Interest on Advances	Interest on Investments	Others	Interest on Advances	Interest on Investments	Others	Interest on Advances	Interest on Investments	Others
1992	60.8	22.5	16.7	60.9	28.0	11.1	61.1	21.5	17.4
1995	47.4	44.1	8.5	49.6	42.1	8.3	52.8	41.5	5.7
2000	44.3	43.4	12.3	48.3	45.9	5.7	52.1	40.3	7.5
2001	44.2	43.7	12.2	49.1	45.0	5.9	54.4	38.1	7.5
2002	39.5	47.7	12.8	49.4	44.9	5.7	55.0	37.8	7.2
2003	39.1	48.7	12.1	50.1	45.4	4.6	60.1	35.0	4.9
2004	39.7	51.0	9.3	49.1	47.1	3.8	56.1	37.9	6.0
2005	43.0	48.4	8.6	52.8	43.3	3.9	60.4	32.1	7.5
Year	Domestic Private Sector Banks			All Scheduled Commercial Banks					
	Interest on Advances	Interest on Investments	Others	Interest on Advances	Interest on Investments	Others			
1992	56.7	27.6	15.6	60.7	25.6	13.7			
1995	56.9	36.0	7.2	49.7	42.3	8.1			
2000	50.8	42.1	7.1	47.8	44.3	8.0			
2001	49.9	43.5	6.6	48.2	43.9	8.0			
2002	48.8	44.6	6.6	46.7	45.2	8.1			
2003	57.0	37.8	5.3	48.7	44.4	6.9			
2004	59.0	36.1	4.9	48.6	45.7	5.7			
2005	63.5	32.1	4.5	52.3	42.2	5.5			

Note: 'Others' include interest on balances with RBI and other inter-bank funds and others.

Source: Base data are taken from Annual Accounts of Scheduled Commercial Banks 1979 to 2004 and Statistical Tables Relating to Banks in India 2004-05.

2.4.7 Expenditure Composition

The expenditure composition of scheduled commercial banks indicates that the percentage of interest expenses to total expenses of all scheduled commercial banks declined by 2.1 per cent from 66.3 per cent in 1980 to 64.2 per cent in 2005. Percentage of operating expenses to total expenses has increased from 33.7 per cent in 1980 to 35.8 per cent in 2005. In the case of all bank groups, similar

trend is noticed except for foreign banks where the interest expense has decreased from 64.6 per cent in 1990 to 47.9 per cent in 2005. Whereas, percentage of operating expenses to the total expenses of foreign banks increased from 35.4 per cent to 52.1 per cent (Table 2.18).

Table 2.18: Expenditure Composition of Scheduled Commercial Banks

(Per cent)

Year	SBI & its Associates		Nationalised Banks		Foreign Banks		Domestic Private Sector Banks		All Scheduled Commercial Banks	
	Interest expenses to total	Operating expenses to total	Interest expenses to total	Operating expenses to total	Interest expenses to total	Operating expenses to total	Interest expenses to total	Operating expenses to total	Interest expenses to total	Operating expenses to total
1980	64.3	35.7	67.4	32.6	-	-	-	-	66.3	33.7
1985	64.8	35.1	68.6	31.4	-	-	-	-	67.3	32.6
1990	69.0	31.0	71.4	28.6	64.6	35.4	62.8	37.2	69.9	30.1
1995	65.5	34.5	67.6	32.4	67.4	32.6	70.9	29.1	67.1	32.9
2000	70.6	29.4	71.4	28.6	65.8	34.2	78.0	22.0	71.5	28.5
2005	64.9	35.1	65.5	34.5	47.9	52.1	65.3	34.7	64.2	35.8

- = Not Available.

Source: Base data are taken from Annual Accounts of Scheduled Commercial Banks 1979 to 2004 and Statistical Tables Relating to Banks in India 2004-05.

A further break-up of operating expenses reveals that wages, as percentage of operating expenses of public sector banks is more than 60 per cent. These are symptoms of under employment. This situation calls for more apt and pragmatic human resource policies and proper man power planning for the future. The wages of foreign banks increased from 25.9 per cent in 1990 to 30.6 per cent of their operating expenses in 2005. In the case of domestic private sector banks group, wages as percentage of operating expenses was 73.5 per cent in 1990 and the same decreased drastically to 33.7 per cent. This goes to indicate that banks in the private sector both foreign and domestic are spending for other business boosting measures like image building, software development etc. (Table 2.18A).

Table 2.18A: Wages as Percentage of Operating Expenses* of Scheduled Commercial Banks

(Per cent)

Year	SBI & its Associates	Nationalised Banks	Foreign Banks	Domestic Private Sector Banks	All Scheduled Commercial Banks
1980	74.1	72.1	-	-	72.9
1985	72.5	71.3	-	-	71.7
1990	67.8	68.9	25.9	73.5	65.7
1995	72.4	67.1	32.8	62.9	66.1
2000	71.6	73.6	33.3	49.1	67.0
2005	67.4	67.4	30.6	33.7	58.3

- = Not Available.

* Wages are calculated as percentage of payments to and provisions for employees to total expenses.

Source: Base data are taken from Annual Accounts of Scheduled Commercial Banks 1979 to 2004 and Statistical Tables Relating to Banks in India 2004-05.

2.4.8 Return on Assets

Return on assets (ROA) is an important performance indicator of banks. Return on assets has been worked out by taking the ratio of net profit or loss to average advances and investments. For all scheduled commercial banks, the ROA increased from 0.1 per cent in 1980 to 1.1 per cent in 2005. Amongst the bank groups, the ROA of foreign banks group is the highest at 1.8 per cent in 2005. All other bank groups recorded a return on assets of 1.1 per cent showing that all banks are making profits and their performances are good. Foreign banks group is on a higher plane with respect to its performance in comparison with other bank groups. Compared to the pre-reform period, the ROA of public sector banks improved significantly after the initiation of reforms. In the case of foreign banks and domestic private sector banks, data are available only from 1995 (Table 2.19).

Table 2.19: Return on Assets (ROAs)* of Scheduled Commercial Banks

(Per cent)

Year	SBI & its Associates	Nationalised Banks	Foreign Banks	Domestic Private Sector Banks	All Scheduled Commercial Banks
1980	0.1	0.1	-	-	0.1
1985	0.1	0.1	-	-	0.1
1990	0.2	0.2	-	-	0.3
1995	0.8	0.1	2.6	1.9	0.6
2000	1.2	0.6	1.7	1.3	0.9
2005	1.1	1.1	1.8	1.1	1.1

'-' = Not Available.

* ROAs are calculated as percentage of net profit / loss to average advances and investments.

Source: Base data are taken from Annual Accounts of Scheduled Commercial Banks 1979 to 2004 and Statistical Tables Relating to Banks in India 2004-05.

The distribution of scheduled commercial banks by ROA reveals that in 1995, with respect to State Bank group, all 8 banks were in the ROA range of up to 1 per cent. This position improved slightly as one bank was in the ROA category of more than 1.5 per cent in 2000 and 2005. This goes to indicate that State Bank group has much potential to enhance their performance. Similarly, majority of the banks in the nationalized group were in the ROA range of less than 1 per cent in 1995, which exhibited some improvement since 2000. In the case of domestic private sector banks also, there seems to be more scope for improvement as many banks reported negative ROA in 2005. In contrast to all other bank groups, majority of the foreign banks were placed in the category of high ROA of more than 1.5 per cent (Table 2.19A).

Table 2.19A: Distribution of Scheduled Commercial Banks by ROA

Year	Range	SBI & its Associates	Nationalised Banks	Foreign Banks	Domestic Private Sector Banks	All Scheduled Commercial Banks
1995	Negative	-	8	-	2	10
	0 to 0.1	1	2	4	11	18
	0.1 to 0.5	3	2	2	3	10
	0.5 to 1.0	4	4	1	3	12
	1 to 1.5	-	1	2	4	7
	>1.5	-	2	18	9	29
2000	Negative	-	1	9	1	11
	0 to 0.1	-	-	6	2	8
	0.1 to 0.5	-	8	1	3	12
	0.5 to 1.0	3	5	2	7	17
	1 to 1.5	4	3	6	8	21
	>1.5	1	2	18	11	32
2005	Negative	-	1	8	10	19
	0 to 0.1	-	-	1	3	4
	0.1 to 0.5	1	2	-	2	5
	0.5 to 1.0	3	6	2	4	15
	1 to 1.5	3	8	4	4	19
	>1.5	1	3	16	6	26

Source: Base data are taken from Annual Accounts of Scheduled Commercial Banks 1979 to 2004 and Statistical Tables Relating to Banks in India 2004-05.

2.4.9 Some Select Ratios

The data reveals that the ratio of interest on advances to average advances of all scheduled commercial banks, which is reflective of the lending rates, decreased from 14.0 per cent in 1992 to 7.1 percent in 2005. The prime lending rate was 19.0 per cent in 1992 and in the range of 10.25 to 10.75 per cent in 2005. From this, it is evidenced that banks are lending at the sub prime lending rates. The gap between the PLR and lending rates of all scheduled commercial banks was very less for the years 2000 to 2002. However, this gap widened since 2003. This is true for all the bank groups, which is indicative of the fact that during the recent years, banks are lending at sub PLR rates with wider gaps between PLR and lending rates.

Table 2.20: Some Select Ratios of Scheduled Commercial Banks (Bank Group-wise)

Year	Ratio of Interest on Advances to Average advances					PLR*
	SBI & its Associates	Nationalized Banks	Foreign Banks	Domestic Pvt. Sector Banks	All Sch. Comm. Banks	
1992	13.9	13.4	21.8	13.8	14.0	19.00
1995	11.1	11.5	14.7	13.0	11.7	15.00
2000	10.9	11.8	13.1	12.3	11.7	12.00-12.50
2001	10.7	11.5	13.1	11.7	11.4	11.00-12.00
2002	9.7	10.6	11.6	8.8	10.1	11.00-12.00
2003	9.0	9.8	10.7	10.9	9.9	10.75-11.50
2004	7.9	8.7	9.0	9.8	8.7	10.25-11.00
2005	6.6	7.1	7.3	7.5	7.1	10.25-10.75
Year	Ratio of interest on Investments to average Investments					Interest Rate on Central Govt. Dated Securities (Weighted average)
	SBI & its Associates	Nationalized Banks	Foreign Banks	Domestic Pvt. Sector Banks	All Sch. Comm. Banks	
1992	10.1	10.1	10.1	10.6	10.1	11.78
1995	12.3	11.0	11.0	12.0	11.5	11.90
2000	11.7	11.7	11.7	11.5	11.7	11.77
2001	10.7	11.4	11.4	11.2	11.1	10.95
2002	10.8	11.0	11.0	9.2	10.6	9.44
2003	9.7	10.2	10.2	9.0	9.7	7.34
2004	8.9	9.2	9.2	7.6	8.8	5.71
2005	8.2	7.8	6.9	6.0	7.6	6.11
Year	Ratio of interest on deposits to average deposits					Deposit Rates** (1 to 3 Yrs.)
	SBI & its Associates	Nationalized Banks	Foreign Banks	Domestic Pvt. Sector Banks	All Sch. Comm. Banks	
1992	7.9	7.5	6.9	6.8	7.5	12.00
1995	7.1	6.8	5.9	6.9	6.8	11.00
2000	7.9	7.5	7.2	8.1	7.7	8.50 - 9.50
2001	7.6	7.2	6.7	7.8	7.3	8.50 - 9.00
2002	7.6	6.9	6.1	7.3	7.1	7.50 - 8.50
2003	7.0	6.2	5.3	6.6	6.5	4.25 - 6.00
2004	5.8	5.2	3.9	5.3	5.3	4.00 - 5.25
2005	4.6	4.2	3.0	3.8	4.2	5.25 - 5.50

* Relates to the prime lending rates of 5 major public sector banks.

** Relates to the deposit rates of 5 major public sector banks.

Source: (i) Base data are taken from Annual Accounts of Scheduled Commercial Banks 1979 to 2004 and Statistical Tables Relating to Banks in India 2004-05.

(ii) Handbook of Statistics on the Indian Economy, 2004-05.

The ratio of interest on investments to average investments, which is reflective of the return on investments, shows that for all scheduled commercial banks, the rates have declined from 10.1 per cent in 1992 to 7.6 percent in 2005. In comparison, the interest rates on central government dated securities (weighted average) declined from 11.8 per cent in 1992 to 6.1 per cent in 2005. Overall trends indicate that the return on investments made by the public sector banks is higher than that of all scheduled commercial banks. An interesting point to note here is that even though private sector banks invested more of their funds in non-SLR securities, still their interest on investments as a percentage to average investments is lower than that obtained by the public sector banks. Between State Bank group and nationalized bank group, the former was successful in getting higher yields on their investments than the latter group.

The ratio of interest on deposits to average deposits of scheduled commercial banks, which is reflective of the deposit rate, declined from 7.5 per cent in 1992 to 4.2 per cent in 2005. These rates are lower than the rates of deposits with 1 to 3 year maturity for all the bank groups. This indicates that banks are able to mobilize deposits at a lower rate than that of the rates for deposits of 1 to 3 years maturity (Table 2.20).

The spread between the lending and deposit rates have reduced over the years from 1992 to 2005. The general fall in interest rates in the recent period is in consonance with the monetary policy stance of a soft and flexible interest rate regime.

2.5 Observations

There has been a spurt in the number of banks during the late 1990s, which decreased during the early period of the new millennium. This could be reflective of the consolidation process, and in particular, the mergers and acquisitions that are the order of the banking system at present. The number of bank offices increased significantly during the early 1980s. After a consolidation phase during the late 1980s and early 1990s, there has been a moderate increase in the number of offices mainly due to the entry of new generation private sector banks since late nineties.

The public sector banks continued to play a very prominent role in both deposit mobilization and credit disbursal even after the implementation of reforms since 1991. They contribute about 75 per cent of the total deposits mobilized and total credit advanced by all scheduled commercial banks. The entry of domestic private sector banks has been altering this trend to some extent since the late nineties.

There has been a significant change in the composition of deposits, with a clear shift in favour of term deposits, whereas demand deposits witnessed a decline. The share of savings bank deposits remained more or less constant. It is observed that more funds of short-term nature in the form of demand deposits are parked with the foreign banks group. This may be an indication that the business class is attracted towards better service offered by foreign banks.

Even though the SLR requirements have been reduced to the statutory minimum of 25 per cent, banks still prefer to invest large portion of their investments in approved securities, due to the risk-free and assured returns they get through such investments. However, in the case of private sector banks in the domestic sector, there is a clear preference for investments in other securities and a reduction of investments in government and other approved securities. Since the year 2000, with the entry of more private sector banks, this group invested more than one third of their total investments in non-SLR securities, which indicates that the private banks, of late, are currently venturing into more riskier, nonetheless challenging business.

Across the bank groups, there has been a significant reduction in the non-performing assets (NPAs). The composition of NPAs of public sector banks interestingly reveals that NPAs connected to non-priority sector has increased, whereas, NPAs relating to priority sector advances exhibited a decline. This goes to explode the commonly held myth that the problem of NPAs is caused mainly due to the credit allocation made to priority sectors.

The share of non-interest income in the total income has been increasing across the different bank groups. This is a welcome trend as it may reduce the risks arising out of the sole dependency on interest as the source of income.

Wages as a percentage of operating expenses of public sector banks is more than 60 per cent. This situation possibly calls for more apt and pragmatic human resource policies and proper manpower planning for the future of these banks. Banks in the private sector both foreign and domestic, however, have reduced their wage component in the operating expenses and are spending more for other business boosting measures like image building, software development etc.

Compared to the pre-reform period, the ROA of public sector banks improved significantly after the initiation of reforms, although it is still lower as compared to foreign banks.

The objective of the analysis was to study the trends in banking during a span of 25 years, covering both pre- and post- reforms period. The study has clearly brought out the positive effects of the reform measures on the banking industry in general. A comparative analysis of various bank groups with respect to different variables has also identified certain specific problem areas of the respective groups. The pace of the reform process is sometimes a cause for concern and criticism. But, there seems to be a great wisdom in this gradualism.

The Indian approach to financial sector reforms is based on five principles-cautious and proper sequencing; mutually reinforcing measures, complementarity between reforms in the banking sector and changes in fiscal, external and monetary policies, developing financial infrastructure and developing financial markets (Reddy, 2000). The progress of the banking sector reforms this far, *albeit* slow, vindicates this stand.

Table 2.3. Implicit Lending and Deposit Rates for the Commercial Banks, 1993-2000

	All Banks			Nationalized Banks			SBI Banks			Old Private Sector Banks			New Private Sector Banks			Foreign Banks		
	Implicit Interest Rate on Advances	Implicit interest Rate on Deposits	Spread	Implicit Interest Rate on Advances	Implicit interest Rate on Deposits	Spread	Implicit Interest Rate on Advances	Implicit interest Rate on Deposits	Spread	Implicit Interest Rate on Advances	Implicit interest Rate on Deposits	Spread	Implicit Interest Rate on Advances	Implicit interest Rate on Deposits	Spread	Implicit Interest Rate on Advances	Implicit interest Rate on Deposits	Spread
1993	14.8	7.2	7.6	10.2	7.0	3.2	12.8	8.2	4.6	12.3	7.1	5.2	-	-	-	20.2	7.2	13.0
1994	13.7	6.4	7.3	12.2	7.1	5.1	12.6	7.6	5.0	11.8	6.6	5.2	-	-	-	14.7	5.7	9.0
1995	10.5	5.4	5.1	10.5	6.3	4.2	10.8	6.8	4.0	11.2	6.5	4.7	2.7	1.2	1.5	12.0	4.8	7.2
1996	12.5	7.1	5.4	13.3	6.8	6.5	13.4	7.5	5.9	13.1	7.5	5.6	10.2	6.5	3.7	12.1	7.0	5.1
1997	13.7	7.4	6.3	13.6	7.4	6.2	14.6	8.1	6.5	14.4	8.2	6.2	14.2	6.8	7.4	13.1	6.9	6.2
1998	13.7	7.8	5.9	11.6	7.1	4.5	12.6	7.6	5.0	13.7	8.1	5.6	13.0	7.3	5.7	15.0	8.2	6.8
1999	13.3	7.9	5.4	11.4	7.2	4.2	11.7	7.4	4.3	13.0	8.7	4.3	12.1	8.0	4.1	14.7	7.9	6.8
2000	12.0	8.0	4.0	10.9	7.2	3.7	10.7	7.4	3.3	11.8	7.9	3.9	9.8	6.4	3.4	13.3	8.9	4.4

Source: PROWESS Database, Center for Monitoring Indian Economy Pvt. Ltd

CHAPTER – III

Management of Non Performing Assets

- 3.1 Introduction
- 3.2 Meaning of NPA
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MANAGEMENT OF NON PERFORMING ASSETS

3.1 Introduction

The Non Performing Assets (NPA) concept was first introduced in India by the Reserve Bank of India (RBI) with effect from 01-04-1992 and certain norms, popularly known as Prudential Norms, were issued as to the methods of NPA identification, asset classification, provisioning and income recognition. The accrual concept of accounting convention has also been followed without reckoning the amount actually realized. As long as expected income is realized from an asset, it is treated as a “Performing Asset” and as a “Non Performing Asset” when it fails to generate income or deliver value on due date.

3.2 Meaning of NPA

When the loans and advances made by a bank or financial institution turn-out non-productive and non-rewarding, they become Non Performing Assets (NPAs). According to Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest (SARFAESI) Act, 2002: *NPA is an asset or account of a borrower, which has been classified by a bank or financial institution as Substandard asset, Doubtful or Loss asset, in accordance with the guidelines relating to assets classification issued by the RBI.*

3.3 Review of Literature

Keeping in view of the importance of managing NPAs effectively in the process of reducing NPAs and growth of a bank as well as economic development of a country, large number of studies have been carried out by academicians, professionals, both in India and abroad on the concept, types, impact, reasons and measures for NPAs and certain guidelines for recover in NPAs.

Toor, N. S. (1994) analyzed that poor recovery management leads to reduction in yield on advances, reduced productivity, loss in the credibility and put determined impact on the policies of the banks.

Pati, A. P. (1999) conducted a study on Indian commercial banks and particularly of public sector banks, identified the growing NPA as the key factor

that affecting the profitability and viability of the banks and he also suggested some measures to improve recovery mechanism, improving credit management, the Asset Reconstruction Fund option, writing off debt, new initiatives, etc.

Ranjan, Rajiv et. al (2003) attempted an empirical approach to the analysis of commercial banks' non-performing loans (NPLs) in the Indian context and suggest that the terms of credit variables have significant effect on the banks' non-performing loans in the presence of bank size induced risk preferences and macroeconomic shocks.

Reddy, Ramakrishna et. al (2004) have identified the impact of NPAs on different financial parameters viz, ROA, ROE, CAR, banks profitability, etc., and identified the NPAs are not just a problem for the banks, they are bad for the economy. They have given some guidelines for the effective management of NPAs like early warning signals for incipient sickness, close monitoring, rehabilitation of deserving units, etc.

R. K., Raul (2004) attempted to study the nature and consequential affect of the NPAs on the banking sector and concluded that an appropriate set of substantial financial sector regulation clarity including changes in tax laws in imperative for the banking system to get rid off NPAs.

Yeoele, Arun (2004) stated the "successful management pre-supposes that the right type and right amount of credit is given to the right type of client". He concluded, it is essential to enforce the Securitization Act with more stringent provisions to realize the securities and personal assets of the defaulters.

Kaur, Harpreet et. al (2004) focused the problem of NPAs in PSBs and concluded the total elimination of NPAs is not possible but can be minimized, for which it is always wise to follow proper policy for appraisal, supervision and follow-up of advances to avoid NPAs.

Sharma, Meena (2005) has examined and find the NPAs affect a negative impact on the profitability, productivity, achievement of capital adequacy level, funds deployment and mobilization policy, credibility of the banking system and overall economy and suggested the government should not use PSBs as a vehicle to achieve its political objectives by lending to unviable projects, announcing loan

melas and loan waiver schemes, etc.

Shiralashetu, A. S. et. al (2006) have analyzed bank-wise and sector-wise gross and net NPAs of the scheduled commercial banks and find the problems of NPAs are more in the PSBs compared to private and foreign banks in India. Similarly the problems of NPA are more in non-priority sector than priority and public sector. They concluded that the banks in India must apply the principles of financial management to solve the problems of NPA.

G. Naik, Janardan (2006) pointed out on the problem of NPAs management in the banking sector and he concluded the Govt. of India has to set ARCs to manage NPAs to face the challenges before the banking sector.

Rajesham and Rajender K. (2007) have attempted to focus on the causes and consequences of NPAs, scenario of NPAs at global level and analyze sector-wise and bank group-wise NPAs in Indian SCBs. They find that the NPAs have negative impact on the productivity, achievement of capital adequacy level, funds deployment and mobilization policy, credibility of the banking system and overall economy and concluded that a strong political basis will only be able to find satisfactory solution to the problem of mounting level of NPAs.

3.4 RBI Guidelines for NPA Recognition

RBI has issued guidelines in respect of recognition of NPAs time to time. A summary of these guidelines is given below:

Table 3.1: Summarized RBI Guidelines for NPAs Recognition

Loans and Advances	Guidelines Applicable from 31-03-2001*	Guidelines Applicable from 31-03-2004
Term loan interest and / or installment remains over due for more than	180 days	90 days
Overdraft / Cash Credit A/C	Remains out of order**	Remains out of order**
Bills purchased and discounted remains overdue for more than	180 days	90 days
Agricultural loan interest and / or installment remains overdue for	Two harvest seasons but not exceeding two and half years	Two harvest seasons but not exceeding two and half years
Other accounts – any amount to be received remains overdue for more than	180 days	90 days

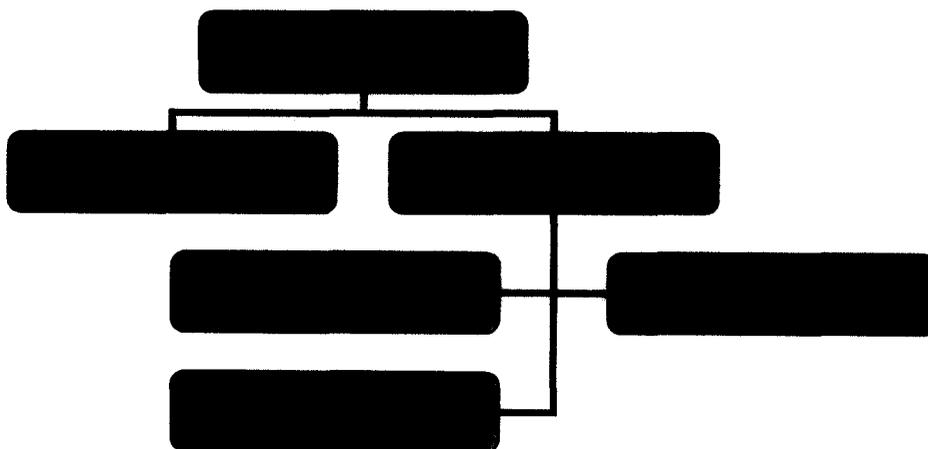
* Prior to 31-03-2001 NPAs were to be reckoned on “*past due*” basis. As per these guidelines if the amount remained “*past due*” for more than two quarters, it would be considered as NPA. When the advance remains outstanding for 30 days beyond the due date it is “*past due*” according to the RBI clarification issued in December 1992.

** “*Out of order*” means the outstanding balance in the Overdraft / Cash Credit Account which remains continuously in excess of the sanctioned limit for 6 months. If the outstanding balance in principal OD/CC is less than the sanctioned limit but there is no credit balance for 6 months or the balance is not enough to cover interest debited in the period, then also such account is taken as “*out of order*”

It may be noted that the criteria for NPA recognition has become stricter over the years. RBI reports that these stricter guidelines due to improvements in the payment and settlement systems, recovery climate and up gradation of technology in the banking system, etc.

3.5 RBI Guidelines for NPA Classification and Provisioning

Chart 3.1: NPA Classification



RBI guidelines for NPA Classification and Provisioning are summarized below:

Table 3.2: Summarized RBI Guidelines for NPAs Classification and Provisioning

Classification of NPAs	Guidelines for Classification prior to 31-03-2001	Guidelines for Classification from 31-03-2001	Provisioning Norms
Sub-standard Assets	NPAs for a period less than or equal to 2 years	NPAs for a period less than or equal to 18 months	10% of outstanding principal + entire outstanding interest
Doubtful Assets (Note 1)	NPAs for a period exceeding 2 years	NPAs for a period exceeding 18 months	For advances not covered by realizable securities – provide at 100% of advances. For advances covered by realizable securities provide at: - 20% of advances, if doubtful for below 1 year - 30% of advances, if doubtful for 1-3 years - 50% of advances, if doubtful for 3 & above 3 years
Loss Assets	Identified as lost by the bank or auditors or by RBI on inspection	Identified as lost by the bank or auditors or by RBI on inspection	Write-off entire asset or provide at 100%
Standard Assets	Which are not NPAs, but has business risks	Which are not NPAs, but has business risks	A minimum of 0.25% on “Global Portfolio” but not on “Domestic Portfolio”

[Note 1: With effect from 31-03-2005, the period exceeding 12 months, which is internationally accepted norm, has come into force.]

The following table (Table 3.3) shows Classification of Loan Assets of Scheduled Commercial Banks (Bank Group-wise).

Table 3.3: Classification of Non-Performing Assets (Bank Group-wise) (As at end-March)

Bank Group/ Year	Standard Assets		Sub-standard Assets		Doubtful Assets		Loss Assets		Total NPAs		Total Advances
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount
1	2	3	4	5	6	7	8	9	10	11	12
Scheduled Commercial Banks											
1998	3,01,881	85.6	17,428	4.9	27,146	7.7	6,242	1.8	50,815	14.4	3,52,696
1999	3,40,714	85.3	19,926	5.0	31,350	7.8	7,444	1.9	58,722	14.7	3,99,436
2000	4,14,917	87.2	19,594	4.1	33,688	7.1	7,558	1.6	60,841	12.8	4,75,758
2001	4,94,716	88.6	18,206	3.3	37,756	6.8	8,001	1.4	63,963	11.4	5,58,679
2002	6,09,972	89.6	21,382	3.1	41,201	6.0	8,370	1.2	70,953	10.4	6,80,925
2003	7,09,260	91.2	20,078	2.6	39,731	5.1	8,971	1.1	68,780	8.8	7,78,040
2004	8,37,130	92.9	21,026	2.3	36,247	4	7,625	0.9	64,898	7.2	9,02,027
2005	10,93,523	94.9	14,016	1.2	37,763	3.3	7,382	0.6	59,161	5.1	11,52,684
2006	14,99,431	96.7	14,826	1	30,105	2	7,016	0.4	51,947	3.3	15,51,378
2007	19,61,87	97.5	20,010	1.0	24,408	1.2	6,215	0.3	50,633	2.5	20,12,510
Public Sector Banks											
1998	2,39,318	84.0	14,463	5.1	25,819	9.1	5,371	1.9	45,653	16.0	2,84,971
1999	2,73,618	84.1	16,033	4.9	29,252	9.0	6,425	2.0	51,710	15.9	3,25,328
2000	3,26,783	86.0	16,361	4.3	30,535	8.0	6,398	1.7	53,294	14.0	3,80,077
2001	3,87,360	87.6	14,745	3.3	33,485	7.6	6,544	1.5	54,774	12.4	4,42,134
2002	4,52,862	88.9	15,788	3.1	33,658	6.6	7,061	1.4	56,507	11.1	5,09,369
2003	5,23,724	90.6	14,909	2.6	32,340	5.6	6,840	1.1	54,089	9.4	5,77,813
2004	6,10,435	92.2	16,909	2.5	28,756	4.4	5,876	0.9	51,541	7.8	6,61,975
2005	8,30,029	94.6	11,068	1.3	30,779	3.5	5,929	0.7	47,796	5.4	8,77,825
2006	10,92,607	96.2	11,453	1	25,028	2.2	5,636	0.5	42,117	3.7	11,34,724
2007	14,25,515	97.3	14,275	1.0	19,873	1.4	4,826	0.3	38,974	2.7	14,64,493

(Amount in Rs. crore)

Contd...

Old Private Sector Banks												
1998	22,786	89.1	1,402	5.5	1,068	4.2	324	1.3	2,794	10.9	25,580	
1999	25,195	86.9	1,920	6.6	1,463	5.0	401	1.4	3,784	13.1	28,979	
2000	31,447	88.8	1,577	4.5	2,061	5.8	347	1.0	3,986	11.3	35,433	
2001	35,166	88.7	1,622	4.1	2,449	6.2	413	1.0	4,484	11.3	39,650	
2002	39,262	89.0	1,834	4.2	2,668	6.1	348	0.8	4,850	11.0	44,112	
2003	46,761	91.1	1,474	2.9	2,772	5.4	321	0.6	4,567	8.9	51,328	
2004	53,516	92.4	1,161	2	2,727	4.7	504	0.9	4,392	7.6	57,908	
2005	66,212	94	784	1.1	2,868	4	549	0.8	4,201	6	70,413	
2006	81,414	95.6	710	0.8	2,551	3	479	0.6	3,740	4.4	85,154	
2007	91,903	96.9	760	0.8	1,783	1.9	425	0.4	2,969	3.1	94,872	
New Private Sector Banks												
1998	10,781	96.5	365	3.3	9	0.1	19	0.2	392	3.5	11,173	
1999	13,199	93.8	737	5.2	128	0.9	6	0.0	871	6.2	14,070	
2000	21,870	95.9	560	2.5	294	1.3	92	0.4	946	4.2	22,816	
2001	29,905	94.9	963	3.1	620	2.0	11	0.0	1,594	5.1	31,499	
2002	70,010	91.2	2,904	3.8	3,871	4.9	41	0.0	6,816	8.8	76,826	
2003	87,487	92.3	2,700	2.9	3,675	3.9	856	0.9	7,231	7.6	94,718	
2004	1,13,560	95	1,966	1.6	3,665	3	321	0.3	5,952	5	1,19,512	
2005	1,22,577	96.2	1,449	1.1	3,061	2.4	334	0.3	4,844	3.8	1,27,421	
2006	2,28,504	98.3	1,717	0.7	1,855	0.8	460	0.2	4,032	1.8	2,32,536	
2007	3,19,002	98.1	3,608	1.1	2,147	0.7	516	0.2	6,271	1.9	3,25,273	
Foreign Banks												
1998	28,996	93.6	1,198	3.9	250	0.8	528	1.7	1,976	6.4	30,972	
1999	28,702	92.4	1,238	4.0	507	1.6	612	2.0	2,357	7.6	31,059	
2000	34,817	93.0	1,096	2.9	798	2.1	721	1.9	2,615	7.0	37,432	
2001	42,285	93.1	876	1.9	1,202	2.6	1,033	2.3	3,111	6.9	45,396	
2002	47,838	94.5	856	1.7	1,004	2.0	920	1.8	2,780	5.5	50,618	
2003	51,288	94.7	995	1.8	944	1.7	954	1.8	2,893	5.3	54,181	
2004	59,619	95.1	990	1.6	1,099	1.8	924	1.5	3,013	4.8	62,632	
2005	74,705	97	715	1	1,035	1.3	570	0.7	2,320	3	77,025	
2006	96,907	98	946	1	670	0.7	441	0.5	2,057	2	98,965	
2007	1,25,453	98.1	1,367	1.1	605	0.5	447	0.3	2,419	1.9	1,27,872	

Source: Report on Trend and Progress of Banking India, India

3.6 Reasons for Assets becoming NPAs

A few prominent reasons for assets becoming NPAs are as under:

- Poor credit appraisal system.
- Lack of proper monitoring.
- Lack of vision / foresightness while sanctioning / reviewing or enhancing credit limits.
- Reckless advances to achieve the budgetary targets.
- Inadequate legal provisions on foreclosure and bankruptcy.
- Lack of sincere corporate culture.
- Non-transparent accounting policy and poor auditing practices.
- Lack of coordination between banks / FIs.
- Directed / schematic lending to certain sectors.
- Failure on the part of the promoters to bring in their portion of equity from their own sources or public issue due to market turning lukewarm.

3.7 Impact of NPAs on Banking Operations

NPAs have the following impacts in the banking operations:

- Bank's profitability is affected adversely because of provisioning for Doubtful Assets / writing off of Loss Assets. Besides provisioning, banks are also required to meet the cost of funding these unproductive assets.
- The interest income of the banks will fall as interest is to be accounted only on receipt basis.
- NPAs reduce earning capacity of assets. Return on Assets (ROA) also gets affected. NPAs carry risk weights of 100% (to the extent it is uncovered). Hence, they block capital for maintaining capital adequacy.
- As NPAs do not earn any income, they adversely affect Capital Adequacy Ratio (CAR).
- Cost of Capital will go up.
- Assets and Liability mismatch will widen.
- Economic Value Addition (EVA) by banks gets upset, because EVA is

equal to Net Operating Profit minus Cost of Capital.

- Carrying NPAs require incurrence of Cost of Capital Adequacy and cost of funds blocked in NPAs. Public Sector Banks are incurring around as high as 11% of their NPAs as operating cost for monitoring and recovering NPAs every year.
- NPAs demoralize the operating staff.
- New branch licenses are not given to the banks where they have high level of NPAs.
- Regulatory and Credit Rating Agencies may not be comfortable with the high level of NPAs of the banks.

3.8 Cost of NPAs

Operating cost of NPAs and total loss due to NPA of Public Sector Banks at the then prevailing bank rates for the years ended as on 31-03-1998 to 31-03-2000 have been shown below. For the purpose of calculation, the level of Gross NPAs has been taken into account over and above the 5% level of NPAs assuming that this is the international standard of NPAs.

Table 3.4: Total Loss due to NPA (Public Sector Banks)

(Rs. in crores)

Year	Total Advances Rs.	Gross NPAs Rs.	Gross NPAs over 5% of Total Advances Rs.	Maintenance Cost @ 11% Rs.	Bank Rate	Opportunity Cost at Bank Rate compounded with quarterly rests Rs.	Total Loss Rs.
(1)	(2)	(3)	(4) [(3)-5% of (2)]	(5) [11% of (4)]	(6)	(7) [% of (4)]	(8) [(5)+(7)]
1998	284971	45653	31405	3455	10.5	3430	6885
1999	325328	51710	35444	3899	8.0	2922	6821
2000	380077	53294	34290	3772	8.0	2827	6599

It can be easily observed from the above table that NPAs are directly and indirectly nullifying the efforts of the Public Sector Banks to increase their profitability with huge amount of losses arising out of NPAs.

Table 3.5: Position of Actual Net Worth vis-à-vis Net Worth after accounting for Net NPAs (Public Sector Banks)

(Rs. in crores)

Year	Capital	Reserves	Net Worth	Net NPAs	Actual Net Worth
(1)	(2)	(3)	(4) [(2)+(3)]	(5)	(6) [(4)-(5)]
1999	14406	27447	41853	24211	17642
2000	14234	31819	46053	26188	19865

The above analysis shows that Net NPAs are as high as 57% of Total Net Worth (TNW) of PSBs. If Net NPAs are deducted from the TNW, the TNW (Actual Net Worth) would be reduced to 43% of their existing figure.

3.9 Magnitude of NPAs

After the implementation of Prudential Norms as recommended by the Narasimham Committee, the Gross NPAs of Public Sector Banks increased from about Rs.18,000 crore in 1991-92 (prior to introduction of Prudential Norms) to Rs.39,253 crore as at the end of March 1993 (as a result of introduction of Prudential Norms) and Rs.53,294 at the end of March 2000. Whereas in terms of percentage it declined from 23.2% in 31 March 1993 to 14.0 % by the end of March 2000. In case of Net NPAs it increased from about Rs.17,567 crore in 31 March 1995 to Rs.26,188 crore by the end of March 2000. The Net NPAs as a percentage to net advances came down from 10.7% to 7.42% during the same period.

According to RBI guidelines NPAs are to be viewed as Gross and Net NPAs. When the NPAs are taken at their book values, they are known as Gross NPAs. Net NPAs are Gross NPAs less provisions made for NPAs, balance in interest receivable a/c and claims from ECGC / DIGC but kept in suspense a/c.

The measure of non-performing assets helps us to assess the efficiency in allocation of resources made by banks to productive sectors. The problem of NPAs arise either due to bad management by banks or due to external factors like unanticipated shocks, business cycle and natural calamities (*Caprio and Klingebiel, 1996*). Several studies have underscored the role of banks' lending

policy and terms of credit, which include cost, maturity and collateral in influencing the movement of non-performing assets of banks (*Reddy, 2004, Mohan 2003, 2004*).

The ratio of gross non-performing assets (NPAs) to gross advances of all scheduled commercial banks decreased from 14.4 per cent in 1998 to 5.1 per cent in 2005. Bank group-wise analysis shows that across the bank groups there has been a significant reduction in the gross non-performing assets. With respect to public sector banks (State Bank group and nationalized bank group together), NPAs have decreased from 16.0 per cent in 1998 to 5.4 per cent in 2005. In the case of foreign banks group, gross NPAs as a percentage to gross advances, which was the lowest among all the groups at 6.4 per cent in 1998, decreased to 2.9 per cent in 2005. With regard to domestic private sector banks group, gross NPAs decreased from 8.7 per cent to 3.9 per cent during the same period. The ratio of net NPAs to net advances of different bank groups also exhibited similar declining trends during the period from 1998 to 2005. The net NPAs of all scheduled commercial banks declined from 7.3 per cent in 1998 to 2.0 per cent in 2005 (Table 3.6).

The decline in NPAs is more evidenced across bank groups especially since 2003. This reflects on the positive impact of the measures taken by the Reserve Bank towards NPA reduction and specifically due to the enactment of the Securitization and Reconstruction of Financial Assets and Enforcement of Security Interest (SARFAESI) Act, ensuring speedier recovery without intervention of courts or tribunal.

The composition of NPAs of public sector banks brings to light certain interesting aspects. It is observed that in 1995 for State Bank group, the share of NPAs was 52.5 per cent for the priority sector, 41.4 per cent for the non-priority sector, and 6.1 per cent for the public sector. These percentages were 47.4 per cent, 51.5 per cent and 1.1 per cent, respectively in 2005. Similarly in the case of nationalized banks also, the NPA composition for non-priority sector has increased, whereas, that for priority sector and public sector, there is a marginal reduction (Table 3.7).

Table 3.6: NPAs of Scheduled Commercial Banks (Bank Group-wise)

(Per cent to Advances)

Year	Public Sector Banks		Foreign Banks		Private Sector Banks		All SCBs	
	Gross NPA	Net NPA	Gross NPA	Net NPA	Gross NPA	Net NPA	Gross NPA	Net NPA
1998	16.0	8.2	6.4	2.2	8.7	5.3	14.4	7.3
1999	15.9	8.1	7.6	2.9	10.8	7.4	14.7	7.6
2000	14.0	7.4	7.0	2.4	8.2	5.4	12.7	6.8
2001	12.4	6.7	6.8	1.8	8.4	5.4	11.4	6.2
2002	11.1	5.8	5.4	1.9	9.6	5.7	10.4	5.5
2003	9.4	4.5	5.3	1.8	8.1	5.0	8.8	4.4
2004	7.8	3.0	4.6	1.5	5.8	2.8	7.2	2.9
2005	5.5	2.0	2.8	0.8	3.7	1.8	5.2	2.0
2006	3.7	1.3	1.9	0.8	2.4	1.0	3.3	1.2
2007	2.7	1.1	1.8	0.7	2.2	1.0	2.5	1.0

Source: Handbook of Statistics on Indian Economy 2004-05 and Report on Trend and Progress of Banking in India .

Table 3.7: Composition of NPAs of Public Sector Banks

(Per cent)

Year	SBI & its Associates			Nationalized Banks		
	Priority Sector	Non-priority Sector	Public Sector	Priority Sector	Non-priority Sector	Public Sector
1995	52.5	41.4	6.1	48.7	49.2	2.0
2000	45.2	51.9	2.8	44.1	54.5	1.5
2001	44.2	49.8	6.0	46.2	52.3	1.5
2002	47.0	50.4	2.6	45.7	53.1	1.2
2003	47.5	49.4	3.1	47.1	51.3	1.6
2004	47.1	51.5	1.5	47.7	51.1	1.1
2005	47.4	51.5	1.1	48.4	50.7	0.9

Source: Statistical Tables Relating to Banks in India, Various issues.

This shows that not only advances to the priority sector are going non-performing, but more than that, non-priority sector lending is the area where the bankers need to cautiously examine the possibilities of loans becoming non-performing. Here the question of moral hazard, adverse selection and credit rationing comes to the fore. This also goes to explode the commonly held myth that the problem of NPAs is caused mainly due to the credit allocation to priority sectors. (Table 3.7).

3.10 Recent Movements in Provisions for Non-performing Assets

Provisioning for non-performing assets tends to follow a cyclical pattern. Although gross NPAs in absolute terms declined, net NPAs increased, reflecting the higher write back of excess provisioning than the fresh provisioning made during the year. This trend was observed across all bank groups, barring new private sector banks and foreign banks. Cumulative provisions at end-March 2007 were, thus, lower than their respective levels a year ago in respect of all bank groups, except new private sector banks and foreign banks. Cumulative provisions as percentage of gross NPAs declined marginally to 56.1 per cent at end-March 2007 from 58.9 per cent at end-March 2006. Bank-group wise, the ratio was the highest for old private sector banks (66.0 per cent), followed by PSBs, foreign banks and new private sector banks.

Despite increase in net NPAs in absolute terms, net NPAs as percentage of net advances declined marginally to 1.0 per cent from 1.2 per cent at end-March 2006. Similar trend in the gross and net NPA ratios was observed for all bank-groups, except new private sector banks, which recorded an increase in the NPA ratios both in gross and net terms.

The net NPAs to net advances ratio was close to 1.0 per cent at end-March 2007 for all bank-groups, except foreign banks (0.7 per cent). Between end-March 2006 and end-March 2007, the net NPA ratio of public sector and old private sector banks declined, while it increased in respect of new private sector banks leading to convergence of net NPA ratio at the bank-group level. The deviation in net NPA ratio at the individual bank level narrowed down significantly during the year. The net NPAs to net advances ratio at end-March 2007 of 75 banks (as against 65 last year) out of 82 (as against 85 last year) was less than 2 per cent. The net NPAs ratio of only two banks was higher than 5 per cent, of which the net NPA ratio of one foreign bank was higher than 10 per cent. During 2006-07, the net NPA ratio of twenty three banks in the public sector and fifteen banks in the private sector improved.

The data on loan asset categories suggest further improvement in the asset quality of SCBs during 2006-07. While the share of standard assets in total

advances increased to 97.5 per cent from 96.7 per cent at end-March 2006, the share of 'sub-standard' loans remained stable at a low level of 1.0 per cent. The share of 'doubtful' and 'loss' categories, however, declined. In these two categories ('loss' and 'doubtful'), NPAs declined in absolute terms as well. More or less similar trend was observed across all bank groups, except new private sector banks and foreign banks in whose case NPAs in all the three categories (sub-standard, doubtful and loss) generally increased. Thus, the asset quality of new private sector banks, though comfortable, showed some signs of weakening.

The consolidated statement of public and private sector banks with respect to sector-wise NPA indicates that the NPAs in the priority sector increased during 2006-07. This was mainly due to increase in NPAs in the agriculture sector, while NPAs in the SSI sector declined. The NPAs in the public sector also increased during the year. However, NPAs in the non-priority sector declined during 2006-07. At the aggregate level, the share of priority sector NPAs was the highest at 54.1 per cent, of which priority sector NPAs other than agriculture and SSIs constituted almost a quarter (25.1 per cent) of the total NPAs. The share of non-priority sector NPAs was 44.9 per cent during 2006-07.

3.11 Statistical Calculations

3.11.1 ANOVA to test Bank Group-wise NPA Performance of SCBs

Let us set up the null hypothesis that there is no significant difference between the NPAs of banks group-wise viz., Public Sector Banks, Private Sector Banks and Foreign Banks during the study period 1998 – 2007 as per the Table 3.6, for which the ANOVA test is employed and the results are presented in the Table 3.8A and 3.8B.

At 5% level of significance as per Table 3.8A, the calculated value of 'F' (4.8787) is greater than the table value (3.3541), the null hypothesis is rejected. Hence there is significant difference in the means between the NPAs of banks group-wise.

At 1% level of significance as per Table 3.8B, the calculated value of 'F' (4.8787) is lower than the table value (5.4881), the null hypothesis is accepted.

Hence there is no significant difference in the means between the NPAs of banks group-wise.

The P-value in both of the cases is 0.0155 which denotes that there is no significant difference in the means between the NPAs of banks group-wise up to 1.55% level of significance and there is significant difference in the means between the NPAs of banks group-wise over and above 1.55% level of significance.

Table 3.8A: ANOVA: Single Factor Significance Level - 5%

SUMMARY

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Public Sector Banks	10	98.5	9.85	23.554
Private Sector Banks	10	67.9	6.79	9.421
Foreign Banks	10	49.6	4.96	4.5604

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	122.08	2	61.041	4.8787	0.0155	3.3541
Within Groups	337.82	27	12.512			
Total	459.9	29				

Table 3.8B: ANOVA: Single Factor Significance Level – 1%

SUMMARY

<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>
Public Sector Banks	10	98.5	9.85	23.554
Private Sector Banks	10	67.9	6.79	9.421
Foreign Banks	10	49.6	4.96	4.5604

ANOVA

<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit</i>
Between Groups	122.08	2	61.041	4.8787	0.0155	5.4881
Within Groups	337.82	27	12.512			
Total	459.9	29				

3.11.2 ANOVA to test Asset-wise NPA Performance of SCBs

Let us set up the null hypothesis that there is no significant difference in the asset-wise recovery of the NPAs of SCBs viz., Sub-standard Assets, Doubtful Assets and Loss Assets during the study period 1998 – 2007 as per the Table 3.3, for which the ANOVA test is employed and the results are presented in the Table 3.8C.

At 5% and 1% level of significance as per Table 3.8C, the calculated value of 'F' (14.4335) is greater than the table value (3.3541 at 5% and 5.4881 at 1%), the null hypothesis is rejected. Hence there is significance difference in the means of Sub-standard Assets, Doubtful Assets and Loss Assets in recovery of mounting NPAs.

Table 3.8C: ANOVA: Single Factor Significance Level – 5% and 1%

SUMMARY							
<i>Groups</i>	<i>Count</i>	<i>Sum</i>	<i>Average</i>	<i>Variance</i>			
Sub-standard Assets	10	28.5	2.85	2.28722			
Doubtful Assets	10	51	5.1	5.66889			
Loss Assets	10	11.2	1.12	0.32178			
ANOVA							
<i>Source of Variation</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P-value</i>	<i>F crit at 5%</i>	<i>F crit at 1%</i>
Between Groups	79.6527	2	39.8263	14.4335	5.5E-05	3.3541	5.4881
Total	154.154	29					

3.12 Observations and Suggestions

The following are the observations and suggestions to improve the effective management of mounting NPAs of scheduled commercial banks:

- The bank should follow different strategies of NPA management, timely construction of loan portfolio. Keeping in view the present condition of the sensitive sector where the volatility is increasing day by day the SCBs should diversify its services into capital market, consultancy, leasing, credit card, housing finance, insurance service, etc.
- As per the guidelines framed by the RBI, the aggregate advances to the

priority sector should constitute 40% of the total net banking credit (NBC), the sub-target in respect of agriculture is 18% of NBC and in respect of weaker section it is 10%.

- The SCBs should implement effective CRM system, Basel-II implementation, improved risk management systems, implementation of new accounting standards, transparency and disclosures, effective cost management, supervision of financial conglomerates and corporate governance to face the competitive global environmental conditions.
- The SCBs has to constitute more legal recovery cells and tribunals, recovery branches, NPA management departments, ARCs, Lok Adalats, fix recovery targets and also share information on known and willful defaulters.
- The SCBs should be free to design and implement their own policies for recovery especially in case of old and unresolved cases falling under the NPA category. According to the RBI an independent settlement advisory committee should be set up, headed by retired judge of High Court to scrutiny and recommend proposals.
- The affected banks should send circulation to informant and defaulters, which will serve as a caution list considering request for new additional credit limits defaulting borrowing units and also file criminal cases in regard to willful defaulters.
- The SCBs are advised that the NPAs should be avoided in initial stages of credit consideration by putting in place appropriate credit appraisal mechanism.
- One of the prime responsibilities of the banks is that the borrower should also realize their role and responsibilities. The banks have to build up awareness in this respect.

CHAPTER – IV

Information Technology in Indian Banks

- 4.1 Introduction
- 4.2 Views of Narasimham Committee on Computerization in Indian Banks
- 4.3 Dimensions of Bank Transformation
- 4.4 Review of Literature
- 4.5 The Indian Scenario
- 4.6 Policy Implications and Recommendations
- 4.7 Recommendations of the Working Group on Internet Banking set up by the RBI

INFORMATION TECHNOLOGY IN INDIAN BANKS

4.1 Introduction

The changes after Liberalization and Globalization process instated since 1991 significant impact on the financial system particularly on the banking industry. The fast pace of changes have radically and perceptibly transformed the operational environment of the banking sector. The IT revolution is of entirely changing the way banking business is done and has considerably widened the range of products and increased the expected demand of the bank customers.

With the rapid improvements in electronic technology and availability of higher computer power society has become more sophisticated society than in the older days. We have a better informed and better organized customer who want to be more financially sophisticated, that is, more aware of the value of funds, time and convenience. What does it require? –An efficient banking system that can provide an efficient payment system with lesser time and cost. It has resulted in more competition among the banks and also stimulated more technological developments. The banks are using the electronic technology to meet the ever-increasing competition in banking which has converted the traditional brick and mortar banking into Electronic Banking (E-Banking). We can define the electronic banking as, “delivery of bank’s services to a customer at his office or home by using electronic technology.”

The following developments in the Indian banking system have made it possible to use Electronic Technology to each banking transaction like cash receipts, cash payments, transfer of funds, payments of utility bills and payment of dividends and interests etc.:

- Automated Teller Machines (ATM)
- Electronic Funds Transfer (EFT)
- Electronic Data Interchange (EDI)
- Electronic Clearing System (ECS)

- Shared Payment Network System (SPNS)
- Debit Cards/Credit Cards
- Telephone Banking
- PC Banking
- Internet Banking
- Mobile Banking

Internet banking is the latest and the cheapest technology introduced in the banking industry. It is acknowledged that the Internet has already had a profound effect on delivery of financial services and is likely to bring more radical changes.

Internet banking is the use of Internet as a delivery channel for the banking services, including traditional services, such as electronic bill presentment and payment, which allow the customers to pay and receive the bills on a bank's web site.

There are two ways to offer Internet banking. First, an existing bank with physical offices can establish a web site and offer Internet banking in addition to its traditional delivery channels. Second, a bank may be established as a "branchless", "Internet only", or "virtual" bank.

4.2 Views of Narasimham Committee on Computerization in Indian Banks

- **Views of Narasimham Committee (1991)**

The committee endorsed Rangarajan Committee's (on computerization) view that there is urgent need for a far greater use of computerized systems than at present. The committee emphasized that computerization has to be recognized as an indispensable tool for improvement in customer service, the institution and operation of better control systems, greater efficiency in information technology and the betterment of the work environment for employees. The committee stressed that these are essential requirements for the banks to function effectively and profitably.

- **Views of Narasimhan Committee (1998)**

The committee is of the view that technological upgradation has to be given high priority. The committee observed that the programme of branch computerization has been making slow progress and needs to be speeded up. In further states, that technological upgradation of technology through widespread computerization would enhance the productivity and efficiency of the system, reduce costs and improve customer service. It also presumes that there is no reason to expect that employees will not agree to co-operate or welcome efforts in enhancing the productivity and efficiency of banks.

4.3 Dimensions of Bank Transformation

The term transformation in Indian Banking Industry relates to intermediately stage when the industry is passing from the earlier social banking era to the newly conceived technology based customer-centric and competitive banking. The activities and banks have grown in multi-directional as well as in multi-dimensional manners.

During transformation, all known parameters of the earlier regime continuously change. The current transformation process in the Indian Banking has many aspects. They pertain to:

- Capital Restructuring
- Financial Re-engineering
- Information Technology
- Human Resource Development

IT in banking has been used in four major ways:

- To handle a greatly expanded customers ways
- To reduce substantially to real cost of handing payments
- To liberate the banks from the traditional constraints on time and place
- To introduce new products and services.

Table 4.1: Cost Advantage of E-Delivery Channels in Indian Banks

Cost, if transaction is made through Branch	Rs.50 per Transaction
Cost, if transaction is made through ATM	Rs.15 per Transaction
Cost, if transaction is made through Internet	Rs.4 per Transaction

In ICICI Bank, UTI, HDFC Bank, ABN Amro Bank, only 10 percent of the total transactions take place through the net.

Table 4.2: Impact of Various E-Delivery Channels in Indian Banking Industry (2000-2003).

Name of the Bank	Technology	Customer Base
ICICI Bank	ATMs (125-1750)	2 Million - 5 Million
UTI Bank (647 - 1000)	ATMs	Servicing a base of 1.3 million customers and 90% of total cash withdrawals is through ATMs
ABN Amro Bank	—	92% withdrawals through ATMs 2.5 lakh customers added through ATMs

4.4 Review of Literature

Arora, K. (2003) highlighted the significance of bank transformation. Technology has a definitive role in facilitating transactions in the banking sector and the impact of technology implementation has resulted in the introduction of new products and services by various banks in India.

Brett (1997) studied the changing in old money structure into E-Money. Now days the banks are providing different cards (Smart Card, Credit & Debit Cards) to their customers.

Bakshi, S. (2003) said that good governance is of interest not only to

an individual bank but also to the society in which it operates-the basic objectives being protection of depositors and safeguarding the integrity and soundness of the system.

Chachadi, A. H. (2003) given his views that we have to hone our skills in developing an appropriate culture, which is characterized by teamwork commitment and a problem solving approach.

Clifford (2002) studied the impact of IT on the financial services. The dimensions of banking business are changing in the new economy. In many banks, transformation is managed by IT.

Das, S.C. (2003) said that manpower management is undoubtedly the most important rather the most sensitive and critical areas of management that needs to be handled with utmost care and diligence.

Federick & Phil (2000) analyzed the E-Loyalty. According to them, the unique economics of e-business make customers loyalty more important than ever.

Garg, I.K. (2003) highlighted the challenges faced by the banks in the present transition mode. He also suggested that continuous change must be adopted as a culture and appropriate institutional arrangements must be made to facilitate it.

Jalan, B. (2003) rightly expressed his view in the Bank Economists' Conference (2003), a forward-looking approach to our long-term vision must focus on building human resources in a continuous cycle of competency and development.

Mohan, R. (2003) expressed his views regarding the transformation in Indian Banking that if Indian Banks are to compete globally, the time is opportune for them to institute sound and robust risk management practices.

Robert, T. Parry (2000) said that transformation is taking place amid broader changes in banking sector and suggest three principles to cope up with the transformation. He concluded that countries adopting the suggested principles are benefiting from the increasing globalization of financial services; hence other should follow the road map.

Sankarn, S. (2001) concluded that in the era of transformation banks should go for mergers and acquisitions to improve their size, skills and services. He suggested that Indian Banking has to operate with a global mindset even while fulfilling local banking requirements.

Shapiro (2002) studied the affects of cyberspace on efficiency and productivity of banks. He also analyzed the nature of bank transformation.

Trivedi, A. K. (2003) has rightly said that Indian Banks have always proved beyond doubt their adaptability to change and it would be possible for them to mould themselves into agile and resilient organizations by adopting fine-tuned CRM strategies, operations based on asset-liability and risk management systems, the required technological capabilities and developing human resources to meet the challenges of the paradigm shift.

The review of literature on various aspects of bank transformation concludes that transformation is taking place and IT is playing vital role in bringing this transformation and it is need of the hour to manage this transformation with IT.

4.5 The Indian Scenario

4.5.1 The Entry of Indian banks into Net Banking

Internet banking, both as a medium of delivery of banking services and as a strategic tool for business development, has gained wide acceptance internationally and is fast catching up in India with more and more banks entering the fray. India can be said to be on the threshold of a major banking revolution with net banking having already been unveiled.

The growth potential is, therefore, immense. Further incentives provided by banks would dissuade customers from visiting physical branches, and thus get 'hooked' to the convenience of arm-chair banking. The facility of accessing their accounts from anywhere in the world by using a home computer with Internet connection, is particularly fascinating to Non-Resident Indians and High Networth Individuals having multiple bank accounts.

Costs of banking service through the Internet form a fraction of costs through conventional methods. Rough estimates assume teller cost at Re.1 per

transaction, ATM transaction cost at 45 paise, phone banking at 35 paise, debit cards at 20 paise and Internet banking at 10 paise per transaction. The cost-conscious banks in the country have therefore actively considered use of the Internet as a channel for providing services. Fully computerized banks, with better management of their customer base are in a stronger position to cross-sell their products through this channel.

4.5.2 Products and Services offered

Banks in India are at different stages of the web-enabled banking cycle. Initially, a bank, which is not having a web site, allows its customer to communicate with it through an e-mail address; communication is limited to a small number of branches and offices which have access to this e-mail account. As yet, many scheduled commercial banks in India are still in the first stage of Internet banking operations.

With gradual adoption of Information Technology, the bank puts up a web-site that provides general information on the banks, its location, services available e.g. loan and deposits products, application forms for downloading and e-mail option for enquiries and feedback. It is largely a marketing or advertising tool. For example, Vijaya Bank provides information on its web-site about its NRI and other services. Customers are required to fill in applications on the Net and can later receive loans or other products requested for at their local branch. A few banks provide the customer to enquire into his demat account (securities/shares) holding details, transaction details and status of instructions given by him.

Some of the banks permit customers to interact with them and transact electronically with them. Such services include request for opening of accounts, requisition for cheque books, stop payment of cheques, viewing and printing statements of accounts, movement of funds between accounts within the same bank, querying on status of requests, instructions for opening of Letters of Credit and Bank Guarantees etc. These services are being initiated by banks like ICICI Bank Ltd., HDFC Bank Ltd. Citibank, Global Trust Bank Ltd., Axis Bank Ltd., Bank of Madura Ltd., Federal Bank Ltd. etc.

Some of the more aggressive players in this area such as ICICI Bank Ltd., HDFC Bank Ltd., Axis Bank Ltd., Citibank, Global Trust Bank Ltd. and Bank of Punjab Ltd. offer the facility of receipt, review and payment of bills on-line. These banks have tied up with a number of utility companies. The 'Infinity' service of ICICI Bank Ltd. also allows online real time shopping mall payments to be made by customers. HDFC Bank Ltd. has made e-shopping online and real time with the launch of its payment gateway. It has tied up with a number of portals to offer business-to-consumer (B2C) e-commerce transactions. The first online real time e-commerce credit card transaction in the country was carried out on the Easy3shoppe.com shopping mall, enabled by HDFC Bank Ltd. on a VISA card.

Banks like ICICI Bank Ltd., HDFC Bank Ltd. etc. are thus looking to position themselves as one stop financial shops. These banks have tied up with computer training companies, computer manufacturers, Internet Services Providers and portals for expanding their Net banking services, and widening their customer base. ICICI Bank Ltd. has set up a web based joint venture for on-line distribution of its retail banking products and services on the Internet, in collaboration with Satyam Infoway, a private ISP through a portal named as icicisify.com. The customer base of www.satyamonline.com portal is also available to the bank. Setting up of Internet kiosks and permeation through the cable television route to widen customer base are other priority areas in the agendas of the more aggressive players. Centurion Bank Ltd. has taken up equity stake in the teauction.com portal, which aims to bring together buyers, sellers, registered brokers, suppliers and associations in the tea market and substitute their physical presence at the auctions announced.

Banks providing Internet banking services have been entering into agreements with their customers setting out the terms and conditions of the services. The terms and conditions include information on the access through user-id and secret password, minimum balance and charges, authority to the bank for carrying out transactions performed through the service, liability of the user and the bank, disclosure of personal information for statistical analysis and credit scoring also, non-transferability of the facility, notices and termination, etc.

The race for market supremacy is compelling banks in India to adopt the latest technology on the Internet in a bid to capture new markets and customers. HDFC Bank Ltd. with its 'Freedom- the e-Age Saving Account' Service, Citibank with 'Suvidha' and ICICI Bank Ltd. with its 'Mobile Commerce' service have tied up with cellphone operators to offer Mobile Banking to their customers. Global Trust Bank Ltd. has also announced that it has tied up with cellular operators to launch mobile banking services. Under Mobile Banking services, customers can scan their accounts to seek balance and payments status or instruct banks to issue cheques, pay bills or deliver statements of accounts. It is estimated that cellular phones will have become the premier Internet access device, outselling personal computers. Mobile banking will further minimize the need to visit a bank branch.

4.5.3 The Future Scenario

Compared to banks abroad, Indian banks offering online services still have a long way to go. For online banking to reach a critical mass, there has to be sufficient number of users and the sufficient infrastructure in place. The 'Infinity' product of ICICI Bank Ltd. gets only about 30,000 hits per month, with around 3,000 transactions taking place on the Net per month through this service. Though various security options like line encryption, branch connection encryption, firewalls, digital certificates, automatic sign-offs, random pop-ups and disaster recovery sites are in place or are being looked at, there is as yet no Certification Authority in India offering Public Key Infrastructure which is absolutely necessary for online banking. The customer can only be assured of a secured conduit for its online activities if an authority certifying digital signatures is in place. The communication bandwidth available today in India is also not enough to meet the needs of high priority services like online banking and trading. Banks offering online facilities need to have an effective disaster recovery plan along with comprehensive risk management measures. Banks offering online facilities also need to calculate their downtime losses, because even a few minutes of downtime in a week could mean substantial losses. Some banks even today do not have uninterrupted power supply unit or systems to take care of prolonged power breakdown. Proper encryption of data and effective use of passwords are also

matters that leave a lot to be desired. Systems and processes have to be put in place to ensure that errors do not take place.

Users of Internet Banking Services are required to fill up the application forms online and send a copy of the same by mail or fax to the bank. A contractual agreement is entered into by the customer with the bank for using the Internet banking services. In this way, personal data in the applications forms is being held by the bank providing the service. The contract details are often one-sided, with the bank having the absolute discretion to amend or supplement any of the terms at any time. For these reasons domestic customers for whom other access points such as ATMs, telebanking, personal contact, etc. are available, are often hesitant to use the Internet banking services offered by Indian banks. Internet Banking, as an additional delivery channel, may, therefore, be attractive / appealing as a value added service to domestic customers. Non-resident Indians for whom it is expensive and time consuming to access their bank accounts maintained in India find net banking very convenient and useful.

The Internet is in the public domain whereby geographical boundaries are eliminated. Cyber crimes are therefore difficult to be identified and controlled. In order to promote Internet banking services, it is necessary that the proper legal infrastructure is in place. Government has introduced the Information Technology Bill, which has already been notified in October 2000. Section 72 of the Information Technology Act, 2000 casts an obligation of confidentiality against disclosure of any electronic record, register, correspondence and information, except for certain purposes and violation of this provision is a criminal offence. Notification for appointment of Authorities to certify digital signatures, ensuring confidentiality of data, is likely to be issued in the coming months. Comprehensive enactments like the Electronic Funds Transfer Act in U.K. and data protection rules and regulations in the developed countries are in place abroad to prevent unauthorized access to data, malafide or otherwise, and to protect the individual's rights of privacy. The legal issues are, however, being debated in our country and it is expected that some headway will be made in this respect in the near future.

Notwithstanding the above drawbacks, certain developments taking place at present, and expected to take place in the near future, would create a conducive environment for online banking to flourish. For example, Internet usage is expected to grow with cheaper bandwidth cost. The Department of Telecommunications (DoT) is moving fast to make available additional bandwidth, with the result that Internet access will become much faster in the future. This is expected to give a fillip to Internet banking in India.

The recommendations of the Vasudevan Committee on Technological Upgradation of Banks in India have also been circulated to banks for implementation. In this background, banks are moving in for technological upgradation on a large scale. Internet banking is expected to get a boost from such developments. Reserve Bank of India has taken the initiative for facilitating real time funds transfer through the Real Time Gross Settlement (RTGS) System. Under the RTGS system, transmission, processing and settlements of the instructions will be done on a continuous basis. Gross settlement in a real time mode eliminates credit and liquidity risks. Any member of the system will be able to access it through only one specified gateway in order to ensure rigorous access control measures at the user level. The system will have various levels of security, viz., Access security, 128 bit cryptography, firewall, certification etc. Further, Generic Architecture, both domestic and cross border, aimed at providing inter-connectivity across banks has been accepted for implementation by RBI. Following a reference made this year, in the Monetary and Credit Policy statement of the Governor, banks have been advised to develop domestic generic model in their computerization plans to ensure seamless integration. The abovementioned efforts would enable online banking to become more secure and efficient.

With the process of dematerialisation of shares having gained considerable ground in recent years, banks have assumed the role of depository participants. In addition to customers' deposit accounts, they also maintain demat accounts of their clients. Online trading in equities is being allowed by SEBI. This is another area which banks are keen to get into. HDFC Bank Ltd., has tied up with about 25 equity brokerages for enabling third party transfer of funds and

securities through its business-to-business (B2B) portal, 'e-Net'. Demat account holders with the bank can receive securities directly from the brokers' accounts. The bank has extended its web interface to the software vendors of National Stock Exchange through a tie-up with NSE.IT – the infotech arm of the exchange. The bank functions as the payment bank for enabling funds transfer from its customers' account to brokers' accounts. The bank is also setting up a net broking arm, HDFC Securities, for enabling trading in stocks through the web. The focus on capital market operations through the web is based on the bank's strategy on tapping customers interested in trading in equities through the Internet. Internet banking thus promises to become a popular delivery channel not only for retail banking products but also for online securities trading.

WAP (Wireless Application Protocol) telephony is the merger of mobile telephony with the Internet. It offers two-way connectivity, unlike Mobile Banking where the customer communicates to a mailbox answering machine. Users may surf their accounts, download items and transact a wider range of options through the cell phone screen. WAP may provide the infrastructure for P2P (person to person) or P2M (person to merchant) payments. It would be ideal for transactions that do not need any cash backup, such as online investments. Use of this cutting edge technology could well determine which bank obtains the largest market share in electronic banking. IDBI Bank Ltd. has recently launched its WAP- based mobile phone banking services (offering facilities such as banking enquiry, cheque book request, statements request, details of the bank's products etc).

At present, there are only 2.6 phone connections per 100 Indians, against the world average of 15 connections per 100. The bandwidth capacity available in the country is only 3.2 gigabits per second, which is around 60% of current demand. Demand for bandwidth is growing by 350% a year in India. With the help of the latest technology, Indian networks will be able to handle 40 gigabits of Net traffic per second (as compared to 10 gigabits per second in Malaysia). Companies like Reliance, Bharti Telecom and the Tata Group are investing billions of rupees to build fibre optic lines and telecom infrastructure for data, voice and Internet telephony. The online population has increased from just

500,000 in 1998 to 5 million in 2000. By 2015, the online population is expected to reach 70 million. IT services is a \$1.5 billion industry in India growing at a rate of 55% per annum. Keeping in view all the above developments, Internet banking is likely to grow at a rapid pace and most banks will enter into this area soon. Rapid strides are already being made in banking technology in India and Internet banking is a manifestation of this. Every day sees new tie-ups, innovations and strategies being announced by banks. State Bank of India has recently announced its intention to form an IT subsidiary. A sea change in banking services is on the cards. It would, however, be essential to have in place a proper regulatory, supervisory and legal framework, particularly as regards security of transactions over the Net, for regulators and customers alike to be comfortable with this form of banking.

4.6 Policy Implications and Recommendations

In the liberalized, globalized and highly competitive environment, Indian Banking Industry should manage each and every activity through cost effective IT. PSBs should speed up technology up gradation even in the semi-urban and rural sector branches.

- More awareness should be created regarding the IT in banks.
- More training should be given to the staff in PSBs.
- For improving the share of banks, the low-cost deposited action plans should be prepared for those centers where there is adequate potential for deposit mobilization.
- For those centers where inadequate potential for business development is available, an strategy should be formulated for considering the merger and relocation of branches within the framework of RBI guidance.
- A strategic action plan should be initiated for reducing NPAs through IT.
- In order to involve all members in business development and build team spirit at the branch level, regular staff meeting must be organized at least fortnightly or monthly. In this case, IT can play vital and effective role.
- To create awareness about the management of NPAs, profitability

consciousness, planned business development etc., suitable training programming require to be organized for loss-making branches of e-banks and IT can help to create this type of awareness.

- RBI should stop copying the western banking models and should take special care to understand the local ethos and cultural backdrop. Indian bankers should try to promote innovations and creativity taking into account the local ethos.
- With increasing competition among the banks, to meet customer expectations, banks should offer a broader range of deposits, investments and credit products through diverse distributional channels including ungrounded branches, ATMs, telephone and Internet. For this banks should:
 - Become more customer-centric, offering a wide range of products through multiple e-delivery channels.
 - Pay greater attention to profitability (through IT) including cost reduction and increasing fee-based income.
 - Become proficient in managing assets and liabilities according to risk and return.
 - All these changes require vision, determination and extensive communication across all levels in the organization so that the vision and mission of the banks is communicated and understood down the line.
 - Bank should regularly update themselves with economic and trade related developments.
 - Bank should launch an awareness-building programme for understanding the WTO and various e-delivery channels.
 - Bank should help their customers in formulating strategies for achieving global competitiveness.
- Better and Cheaper access to basic infrastructure requirements such as power, telecommunications i.e. VSAT, leased lines etc.
- Creation of customer awareness and education for technology adoption are imperative.

- The IT Act, 2000 should be implemented in totality to handle legal issues.
- Connecting branches into boutiques catering to the requirements of clients and re-engineering the functions of branch banking using technology and delivery channels.
- Setting up of e-banking group to provide grid principles for risk management of e-banking activities.

4.7 Recommendations of the Working Group on Internet Banking Set up by the RBI

Reserve Bank of India constituted a Working Group to examine different issues relating to i-banking and recommend technology, security, legal standards and operational standards keeping in view the international best practices. The Group was headed by the Chief General Manager-in-Charge of the Department of Information Technology and comprised experts from the fields of banking regulation and supervision, commercial banking, law and technology. The Bank also constituted an Operational Group under its Executive Director comprising officers from different disciplines in the bank, who would guide implementation of the recommendations.

The Working Group, as its terms of reference, was to examine different aspects of Internet banking from regulatory and supervisory perspective and recommend appropriate standards for adoption in India, particularly with reference to the following:

- Risks to the organization and banking system, associated with Internet banking and methods of adopting International best practices for managing such risks.
- Identifying gaps in supervisory and legal framework with reference to the existing banking and financial regulations, IT regulations, tax laws, depositor protection, consumer protection, criminal laws, money laundering and other cross border issues and suggesting improvements in them.

- Identifying international best practices on operational and internal control issues, and suggesting suitable ways for adopting the same in India.
- Recommending minimum technology and security standards, in conformity with international standards and addressing issues like system vulnerability, digital signature, information system audit etc.
- Clearing and settlement arrangement for electronic banking and electronic money transfer; linkages between i-banking and e-commerce.
- Any other matter, which the Working Group may think as of relevance to Internet banking in India.

Under the present regime there is an obligation on banks to maintain secrecy and confidentiality of customer's account. In the Internet banking scenario, the risk of banks not meeting the above obligation is high on account of several factors like customers not being careful about their passwords, PIN and other personal identification details and divulging the same to others, banks' sites being hacked despite all precautions and information accessed by inadvertent finders. Banks offering Internet banking are taking all reasonable security measures like SSL access, 128 bit encryption, firewalls and other net security devices, etc. The Group is of the view that despite all reasonable precautions, banks will be exposed to enhanced risk of liability to customers on account of breach of secrecy, denial of service etc., because of hacking/other technological failures. The banks should, therefore, institute adequate risk control measures to manage such risk.

In Internet banking scenario there is very little scope for the banks to act on stop-payment instructions from the customers. Hence, banks should clearly notify to the customers the timeframe and the circumstances in which any stop-payment instructions could be accepted.

The banks providing Internet banking service and customers availing of the same is currently entering into agreements defining respective rights and liabilities in respect of Internet banking transactions. A standard format/minimum consent requirement to be adopted by banks may be

designed by the Indian Banks' Association, which should capture all essential conditions to be fulfilled by the banks, the customers and relative rights and liabilities arising there from. This will help in standardizing documentation as also develop standard practice among bankers offering Internet banking facility.

The concern that Internet banking transactions may become a conduit for money laundering, has been addressed by the Group. Such transactions are initiated and concluded between designated accounts. Further, the proposed Prevention of Money Laundering Bill 1999 imposes obligation on every banking company to maintain records of transactions for certain prescribed period. The Banking Companies (Period of Preservation of Records) Rules, 1985 also require banks to preserve certain records for a period ranging between 5 to 8 years. The Group is of the view that these legal provisions which are applicable to all banking transactions, whether Internet banking or traditional banking, will adequately take care of this concern and no specific measures for Internet banking is necessary.

4.7.1 Regulatory and Supervisory Issues

All banks, which propose to offer transactional services on the Internet should obtain approval from RBI prior to commencing these services. Bank's application for such permission should indicate its business plan, analysis of cost and benefit, operational arrangements like technology adopted, business partners and third party service providers and systems and control procedures the bank proposes to adopt for managing risks, etc. The bank should also submit a security policy covering recommendations made in chapter-6 of this report and a certificate from an independent auditor that the minimum requirements prescribed there have been met. After the initial approval the banks will be obliged to inform RBI any material changes in the services/products offered by them.

RBI may require banks to periodically obtain certificates from specialist external auditors certifying their security control and procedures. The banks will report to RBI every breach or failure of security systems and procedure and the

latter, at its discretion, may decide to commission special audit/inspection of such banks.

To a large extent the supervisory concerns on Internet banking are the same as those of electronic banking in general. The guidelines issued by RBI on 'Risks and Controls in Computers and Telecommunications' will equally apply to Internet banking. The RBI as supervisor would cover the entire risks associated with electronic banking as a part of its regular inspections of banks and develop the requisite expertise for such inspections. Till such capability is built up, RBI may outsource this function to qualified EDP auditors.

Record maintenance and their availability for inspection and audit is a major supervisory focus. RBI's guidelines on 'Preservation and Record Maintenance' will need to be updated to include risks heightened by banking on the net. The enhancements will include access to electronic record only by authorized officials, regular archiving of data, a sufficiently senior officer to be in charge of archived data with well defined responsibilities, use of proper software platform and tools to prevent unauthorized alteration of archived data, availability of data on-line, etc. If not available on-line, the system should be capable of making available the data for the same financial year within 24 hours and past data within a period of maximum 48 hours.

Banks should develop outsourcing guidelines to manage effectively, risks arising out of third party service providers such as risks of disruption in service, defective services and personnel of service providers gaining intimate knowledge of banks' systems and misutilizing the same, etc. Alternatively, IBA or IDBRT may develop broad guidelines for use of the banking community.

With the increasing popularity of e-commerce, i.e. buying and selling over the Internet, it has become imperative to set up 'Interbank Payment Gateways' for settlement of such transactions. The Group has suggested a protocol for transactions between the customer, the bank and the portal and have recommended a framework for setting up of payment gateways. In their

capacity as regulator of banks and payment systems of the country, the RBI should formulate norms for eligibility of an institution to set up a payment gateway and the eligible institution should seek RBI's approval for setting up the same.

Only institutions who are members of the cheque clearing system in the country may be permitted to participate in Interbank payment gateways for Internet payment. Each gateway must nominate a bank as the clearing bank to settle all transactions. Only direct debits and credits to accounts maintained with the participating banks by parties to an e-commerce transaction may be routed through a payment gateway. Payments effected using credit cards, payments arising out of cross border e-commerce transactions and all intra-bank payments (i.e. transactions involving only one bank) should be excluded for settlement through an inter-bank payment gateway.

Inter-bank payment gateways must have capabilities for both net and gross settlement. All settlement should be intra-day and as far as possible, in real time. It must be obligatory for payment gateways to maintain complete trace of any payment transaction covering such details like date and time of origin of transaction, payee, payer and a unique transaction reference number (TRN).

Connectivity between the gateway and the computer system of the member bank should be achieved using a leased line network (not through Internet) with appropriate data encryption standard. All transactions must be authenticated using user-id and password. Once, the regulatory framework is in place, the transactions should be digitally certified by any licensed certifying agency. SSL/128 bit encryption must be used as minimum level of security. Adequate firewalls and related security measures must be taken to ensure privacy to the participating institutions in a payment gateway. Internationally accepted standards such as ISO8583 must be used for transmitting payment and settlement messages over the network.

The RBI may have a panel of auditors who will be required to certify the security of the entire infrastructure both at the payment gateway end and

the participating institutions end prior to making the facility available for customers use.

The credit risk associated with each payment transaction will be on the payee bank. The legal basis for such transactions and settlement will be the bilateral contracts between the payee and payee's bank, the participating banks and service provider and the banks themselves. The rights and obligations of each party must be clearly stated in the mandate and should be valid in a court of law.

It will be necessary to make customers aware of risks inherent in doing business over the Internet. This requirement will be met by making mandatory disclosures of risks, responsibilities and liabilities to the customers through a disclosure template. The banks should also provide their latest published financial results over the net.

CHAPTER - V

Efficiency of Commercial Banks in India during the Reforms

- 5.1 Introduction
- 5.2 Objectives of the Study
- 5.3 Data Envelopment Analysis (DEA) - An Overview
- 5.4 Benefits and Limitations of the Data Envelopment
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EFFICIENCY OF COMMERCIAL BANKS IN INDIA DURING THE REFORMS

5.1 Introduction

Indian Banks are going through a transitional phase. Recommendations of Narasimham Committee Report, Prudential Norms and other international guidelines are strictly followed to improve the miserable condition of the banking sector during pre-reforms period. An important objective of these measures is to increase the operational efficiency of the banking sector as a whole as well as of individual institutions. In fact, policy makers have clearly recognized that inefficiency is an important factor contributing to the high level of cost of banking services in India. This is quite apparent from the following statement by Bimal Jalan, the then Governor of Reserve Bank of India:

“Inefficiency in the use of resources, tolerance of waste and slothfulness also contributes to low productivity as often reflected in high spreads. The important challenge of managing transformation would, for the banking sector, mean moving from high cost, low productivity and high spread to being more efficient, productive and competitive” (Jalan 2002).

Now it is the right time to evaluate efficiency of Indian Banks as the Banking Sector has come across a sufficiently longer period since 1991 i.e. 17 years. In this chapter an attempt has been taken to measure the efficiency of Indian Public Sector Banks during 2005-2006 using a variety of efficiency measures computed by the nonparametric method of **Data Envelopment Analysis (DEA)** through computer software.

5.2 Objectives of the Study

The major objectives of the study are as follows:

- To perform comparative efficiency studies of the Public Sector Banks in India.
- To allocate resources more efficiently.
- To identify potential improvements.
- To perform reference comparison and reference contribution.

- To evaluate input-output contribution.
- To obtain information for Planning Strategy.
- To identify under achievers and star performers.
- To obtain reference set frequency distribution graph.
- To perform overall improvement summary.

5.3 Data Envelopment Analysis (DEA) - An Overview

Efficiency measurement is one aspect of firm performance. Efficiency is measured with respect to an objective; it can be measured with respect to maximization of output, maximization of profits, or minimization of costs. We would like to investigate questions of economic optimization. For example, is the firm minimizing its costs of production given its choice of inputs, taking input prices as given; is the firm maximizing its profits given its choice of inputs and outputs, taking input and output prices as given. A firm might be operating on its production frontier (i.e. not wasting resources), and so be technically efficient, but could still be allocatively inefficient if it is choosing the wrong mix of inputs given the relative prices of those inputs. Similarly, the firm could be technically and allocatively efficient in producing its chosen level of output, but choosing the wrong level of output in order to maximize profits. Data Envelopment Analysis (DEA) technique has been used remarkably in recent years to measure efficiency of firms in the light of above questions.

DEA is a linear programming technique initially developed by Charnes, Cooper and Rhodes (1978) to evaluate the efficiency of public sector non-profit organisations. Sherman and Gold (1985) were the first to apply DEA to banking. DEA calculates the relative efficiency scores of various Decision Making Units (DMUs) in the particular sample. The DMUs could be banks or branches of banks. The DEA measure compares each of the banks/branches in that sample with the best practice in the sample. It tells the user which of the DMUs in the sample are efficient and which are not. The ability of the DEA to identify possible peers or role models as well as simple efficiency scores gives it an edge over other methods. As an efficient frontier technique, DEA identifies the inefficiency

in a particular DMU by comparing it to similar DMUs regarded as efficient, rather than trying to associate a DMU's performance with statistical averages that may not be applicable to that DMU.

DEA is a multi-factor productivity analysis model for measuring the relative efficiencies of a homogenous set of decision making units (DMUs). The efficiency score in the presence of multiple input and output factors is defined as follows:

$$\text{Efficiency} = \frac{\text{Weighted Sum of Outputs}}{\text{Weighted Sum of Inputs}} \dots\dots\dots (1)$$

Assuming that there are n DMUs, each with m inputs and s outputs, the relative efficiency score of a test DMU p is obtained by solving the following model proposed by Charnes et al. (1978):

$$\begin{aligned} \max \quad & \frac{\sum_{k=1}^s v_k y_{kp}}{\sum_{j=1}^m u_j x_{jp}} \\ \text{s.t.} \quad & \frac{\sum_{k=1}^s v_k y_{ki}}{\sum_{j=1}^m u_j x_{ji}} \leq 1 \quad \forall i \\ & v_k, u_j \geq 0 \quad \forall k, j, \end{aligned} \dots\dots\dots (2)$$

Y_{ki} = amount of output k produced by DMU i ,

X_{ji} = amount of input j utilized by DMU i ,

v_k = weight given to output k ,

u_j = weight given to input j .

The fractional program shown as (2) can be converted to a linear program as shown in (3).

$$\begin{aligned}
\max \quad & \sum_{k=1}^s v_k y_{kp} \\
s.t \quad & \sum_{j=1}^m u_j x_{jp} = 1 \\
& \sum_{k=1}^s v_k y_{ki} - \sum_{j=1}^m u_j x_{ji} \leq 0 \quad \forall i \\
& v_k, u_j \geq 0 \quad \forall k, j.
\end{aligned}
\tag{3}$$

The above problem is run n times in identifying the relative efficiency scores of all the DMUs. Each DMU selects input and output weights that maximize its efficiency score. In general, a DMU is considered to be efficient if it obtains a score of 1 and a score of less than 1 implies that it is inefficient.

5.4 Benefits and Limitations of the Data Envelopment Analysis

DEA offers some benefits to other approaches but also has some limitations that have to be kept in mind when using DEA.

Benefits:

- DEA is able to handle multiple inputs and outputs.
- DEA does not require a functional form that relates inputs and outputs.
- DEA optimizes on each individual observation and compares them against the “best practice” observations.
- DEA can handle inputs and outputs without knowing a price or knowing the weights.
- DEA produces a single measure for every DMU that can be easily compared with other DMUs.

Limitations:

- DEA only calculates relative efficiency measures.
- As a nonparametric technique statistical hypothesis test are quite difficult.

5.5 Different DEA Models

Data envelopment analysis is not just one single method. This analysis is a collection of different methods which serve different needs depending on scale effects, measurement of the distance to the envelopment surface or the functional form of the envelopment analysis. Usually in literature four different characteristics of the DEA are differentiated:

- **CCR model (Charnes, Cooper and Rhodes, 1978):**

The CCR model bases the evaluation on a production technology that has constant returns to scale (CRS) and radial distance measure to the efficient frontier i.e. that the inefficiency of a DMU compared to the corresponding efficient units lying on the efficient border is measured via a radius vector.

The CCR model is differentiated in input or output orientation, depending upon reduction of inputs with constant outputs or enhancement of output with constant input. As a result the CCR model reveals an objective description of overall efficiency and identifies the sources of inefficiencies.

- **BCC model (Banker, Charnes and Cooper, 1984):**

In contrast to the CCR model the BCC model offers a differentiation between technical efficiency and scale-efficiency because it evaluates solutions for nonincreasing returns to scale (NIRS), nondecreasing returns to scale (NDRS) or variable returns to scale (VRS). With a combination of the CCR model inefficient CCR DMUs do not have to be technical inefficient. Potentially a part of this inefficiency can be mitigated by increasing or decreasing the production volume resulting in a removal of scale inefficiencies. The BCC model also implies a radial distance measure and a piecewise linear frontier. Like the CCR model the BCC model also differentiates in an input or output orientation.

- **Multiplicative model (Charnes, Cooper, Seiford and Stutz, 1983):**

In contrast to the CCR and BCC model the multiplicative model offers a different characteristic of the efficient frontier by providing a piecewise log-linear envelopment surface or a piecewise Cobb-Douglas interpretation of the production process. The returns to scale assumption depend on the envelopment

surface: a log-linear surface assumes constant returns to scale and a Cobb-Douglas coherence assumes variable returns to scale.

- **Additive model (Charnes, Cooper, Golany, Seiford and Stutz, 1985):**

Unlike the CCR or BCC model the additive model is unoriented, i.e. it does not differentiate between input or output orientation which means that a reduction of input with a synchronous enhancement of outputs is possible. The additive model assumes constant returns to scale and piecewise linear efficient frontier. These four models in literature have commonly used and described DEA models to build a profound basis for an efficiency analysis with different returns to scale, different envelopment surfaces and different ways to project inefficient units to the efficient frontier. During the last few years a lot of extensions to these four models have been developed that allow further fine tuning to the basic models.

5.6 Review of Literature

The literature on the efficiency of financial institutions is by now quite large despite its relatively recent origin. Numerous attempts have been made to study the efficiency of banks in developed countries. By contrast, studies analysing the efficiency of banks in developing countries, especially in India, are far fewer.

Berger and *Humphrey* (1997) documented 130 studies of financial institution efficiency, using data from 21 countries, from multiple time periods, and from various types of institutions, including banks, bank branches, savings and loans, credit unions, and insurance companies. Of the 130 studies of financial institution efficiency considered by *Berger* and *Humphrey* (1997), 116 were published between 1992 and 1997. They find that, overall, depository financial institutions/banks operate at an annual average technical efficiency level of around 77 percent (median 82 percent). Frontier inefficiency, sometimes called X-inefficiency, at financial institutions account for a considerable portion of the total costs, are a much greater source of performance problems than either scale or product mix inefficiencies, and have a strong empirical association with higher probabilities of failures [*Bauer et al.* (1998)].

In another group of studies, bank efficiency is measured by a number of

financial indicators and compared over various categories of banks. For example *Sarkar et al.* (1998) considered three bank groups- public, Indian private and foreign- for comparison purpose. After controlling for effects of some concomitant variables, they conducted regression analysis to find the effect of ownership type on different efficiency measures. *Rammohan* (2002, 2003) also used financial measures for comparing operational performance of different categories of banks over a period of time.

Using data for Indian banks for 1994-95, *Chatterjee* (1997) studied the effect of output expansion from the existing branches as also through opening of new branches. He concluded that Indian banks could reap cost efficiency gains by expanding their business at the existing branches. If new branches are opened to expand output, only the small and medium sized private sector banks may prove efficient. Indian banks, thus, appear to possess significant unrealized potential scale economies and can expand their business without expanding their branch network.

Sarkar and *Das* (1997) examined the inter-bank differences in the efficiency levels of banks in India using balance sheet data for 1994-95 and observed wide variation in the performance among banks based on indicators of profitability, productivity and financial management. The most important observation was that no significant efficiency measure differences found between public and private sector banks.

Bhattacharya et al. (1997) examined the impact of partial liberalization during mid eighties using DEA. The study covered 70 commercial banks during the period 1986-1991. The study found the Public Sector Banks had the highest efficiencies, followed by foreign banks.

Das (1999) found that banks in India during the period 1992-1998 have succeeded in achieving a reduction in their burden of raising working funds. Spreads, however, constitute the driving factor behind profitability of Indian banks and in a competitive environment banks must assign high importance to customer services to become more profitable through higher non-interest income in the form of commissions, brokerages, etc.

Sathye (2001) compared publicly owned and foreign banks operational in India in the year 1997-98 and reported that productive efficiency of private sector banks as a group is lower than public sector banks.

Shanmugam and *Das* (2004) investigated Indian commercial banks during the period 1992-1999 using parametric methods and observed that the foreign banks are more efficient.

Verma (2001) reflects, the public sector banks which constitute about 65% of the banking sector are still affected by Union issues and shun away in leveraging technology. He mentioned India is still in an early stage of Internet Banking. There is scope for reduction in establishment expenses, particularly wage bills, and mechanization of banks can enhance profitability of banks. The risk-averse behaviour of the banks in response to the tightening prudential regulations have contributed to the shift in the banks' preference for investments, as opposed to loans and advances. The Indian banking system, however, is gradually getting used to the risk-return trade-off in a liberalized market economy while improving its performance simultaneously. There has been some evidence of convergence in the performance of banks coming under greater pressures to meet the minimum efficiency standards.

5.7 Methodology

The following inputs and outputs have been selected for the study:

A. Input data:

- i) No. of Employees
- ii) No. of Branches
- iii) Interest Expenses / Total Assets (Int. Exp./ T.A.)
- iv) Operating Expenses / Total Assets (Op. Exp./ T.A.)

B. Output data:

- i) Interest Income / Total Assets (Int. Inc / T.A.)
- ii) Return on Assets (ROA)
- iii) Net Profit / Total Assets (N.P./T.A.)
- iv) Profit per Employee (Profit / Empl.)

C. Decision Making Units (DMUs):

The following are the Decision Making Units (DMUs):

Public Sector Banks [Decision Making Units (DMUs)]	
Allahabad Bank	Syndicate Bank
Andhra Bank	UCO Bank
Bank of Baroda	Union Bank of India
Bank of India	United Bank of India
Bank of Maharashtra	Vijaya Bank
Canara Bank	State Bank of India
Central Bank of India	State Bank of Bikaner & Jaipur
Corporation Bank	State Bank of Hyderabad
Dena Bank	State Bank of Indore
Indian Bank	State Bank of Mysore
Indian Overseas Bank	State Bank of Patiala
Oriental Bank of Commerce	State Bank of Saurashtra
Punjab & Sind Bank	State Bank of Travancore
Punjab National Bank	IDBI Ltd

Concerning these input and output data the application of the “Data Envelopment Analysis” seems to be suitable. Data Envelopment Analysis (DEA) uses input and output factors to identify a single relative efficiency measure to compare a DMU to the best performing organizations. This method does not require monetary inputs and outputs. Furthermore it uses combinations of efficient units to compare inefficient units against these linear combinations (or virtual units) and identifies their relative efficiency scores.

The present study uses the latest available published data for the year 2005-06 compiled by the Indian Banks’ Association and RBI Bulletin. As per the database, in the year 2005-06, there were 28 public sector commercial banks operating in India as mentioned above.

The performance of 28 Public Sector Banks operating in India during 2005-2006 along with four identified inputs and outputs have been shown in Table 5.1.

D. The Data Set

Table 5.1: Few Financial Parameters of Indian Public Sector Banks during the year 2005-2006

DMU		INPUTS				OUTPUTS			
Sl. No.	Public Sector Banks	No. of Empl.	No. of Br.	Int. Exp./ T.A. (%)	Op. Exp./ T.A. (%)	Int. Inc / T.A. (%)	ROA (%)	N.P./ T.A. (%)	Profit/ Empl. (Rs. In lacs)
1.	Allahabad Bank	18742	1,932	3.96	2.1	6.81	1.42	1.28	3.69
	Andhra Bank	13169	1,148	3.70	2.11	6.58	1.38	1.19	3.69
3.	Bank of Baroda	38737	2,687	3.42	2.1	6.26	0.79	0.73	2.13
4.	Bank of India	41808	2,563	3.92	1.88	6.26	0.68	0.62	1.66
5.	Bank of Maharashtra	14052	1,287	4.81	2.11	7.53	0.16	0.16	0.36
6.	Canara Bank	46893	2,551	3.86	1.77	6.56	1.01	1.01	3.02
7.	Central Bank of India	37241	3,143	4.02	2.3	7.21	0.37	0.34	0.68
8.	Corporation Bank	10754	794	3.46	1.84	6.48	1.24	1.1	4.13
9.	Dena Bank	10156	1,039	3.91	2.11	6.63	0.29	0.27	0.72
10.	Indian Bank	21302	1,395	3.89	2.41	7.06	1.16	1.06	2.36
11.	Indian Overseas Bank	24178	1,523	3.94	2.13	7.42	1.32	1.32	3.22
12.	Oriental Bank of Commerce	14962	1,161	4.27	1.64	6.99	1.39	0.95	5.37
13.	Punjab & Sind Bank	9542	780	3.51	2.54	6.82	0.64	0.57	1.14
14.	Punjab National Bank	58047	4,028	3.39	2.08	6.6	1.09	0.99	2.48
15.	Syndicate Bank	24624	1,897	3.55	2.35	6.63	0.91	0.88	2.05
16.	UCO Bank	24510	1,749	4.51	1.9	7.04	0.34	0.32	0.82
17.	Union Bank of India	25421	2,095	3.92	1.57	6.58	0.84	0.76	2.66
18.	United Bank of India	17319	1,316	4.03	2.51	7.1	0.62	0.62	1.18
19.	Vijaya Bank	11494	924	4.25	1.98	7.33	0.45	0.4	1.16
20.	State Bank of India	198774	9,143	4.08	2.37	7.25	0.89	0.89	2.17
21.	State Bank of Bikaner & Jaipur	12089	816	3.54	2.76	7.14	0.53	0.53	1.20
22.	State Bank of Hyderabad	13108	930	4.07	2.01	6.77	1.13	1.05	3.26
23.	State Bank of Indore	6647	436	3.77	1.92	6.39	0.76	0.67	2.09
24.	State Bank of Mysore	9744	634	3.8	2.69	6.96	1.23	1.12	2.22
25.	State Bank of Patiala	11350	753	3.54	1.48	5.94	0.73	0.73	2.66
26.	State Bank of Saurashtra	7257	425	4.22	1.87	7.12	0.31	0.36	0.64
27.	State Bank of Travancore	11642	694	4.22	1.98	7.21	0.86	0.81	2.34
28.	IDBI Ltd	4548	173	5.65	0.97	6.08	0.68	0.63	12.45

Source: Report on Trend & Progress of Banking in India 2005-06, RBI

E. Assumptions

- i) We have used the above data set of Indian Public Sector Banks for the year 2005-2006 to organize efficiency study under different conditions of BCC and CCR Models – the two pillars of Data Envelopment Analysis (DEA).
- ii) The Scaling Mode under BCC Model is Varying Returns to Scale (VRS) that is outputs fall off as input levels rise, while Constant Returns to Scale i.e. output directly reflect input levels, is the Scaling Mode under CCR Model.
- iii) Under both the models we have applied both of the Optimization Modes that is Max. Outputs and Min. Inputs. Under Max. Output, we seek to maximize outputs given the current inputs and under Min. Input, we seek to minimize inputs to produce the same outputs.
- iv) This is an unweighted analysis. No weights have been assigned to any inputs and outputs.

5.8 Analysis and Results of Efficiency Study on Indian Public Sector Banks

5.8.1 Efficiency Scores Report and Ranking of Public Sector Banks during 2005-2006

Table 5.2 shows that under CCR Model both of the Optimization Modes i.e. Max. Outputs and Min. Inputs give the same result of efficiency scores; whereas under the BCC Model, the two optimization modes give different results. In our rest of the discussion, we have used BCC Model under Max. Output with VRS Scaling Mode and CCR Model under Min. Input with CRS Scaling Mode.

Table 5.2: Efficiency Scores Report of the Indian Public Sector Banks during the year 2005-2006

Under Different Conditions of BCC & CCR Model

DMUs		BCC Model (VRS*)		CCR Model (CRS*)	
Sl. No.	Public Sector Banks	Optimization Modes		Optimization Modes	
		Max. Output	Min. Input	Max. Output	Min. Input
1.	Allahabad Bank	100.0	100.0	100.0	100.0
2.	Andhra Bank	100.0	100.0	100.0	100.0
3.	Bank of Baroda	95.5	100.0	94.5	94.5
4.	Bank of India	89.0	89.5	88.9	88.9
5.	Bank of Maharashtra	100.0	100.0	91.4	91.4
6.	Canara Bank	96.8	97.4	96.8	96.8
7.	Central Bank of India	97.0	94.1	94.0	94.0
8.	Corporation Bank	100.0	100.0	100.0	100.0
9.	Dena Bank	94.0	93.0	92.8	92.8
10.	Indian Bank	96.1	95.3	95.1	95.1
11.	Indian Overseas Bank	100.0	100.0	100.0	100.0
12.	Oriental Bank of Commerce	100.0	100.0	100.0	100.0
13.	Punjab & Sind Bank	100.0	100.0	100.0	100.0
14.	Punjab National Bank	100.0	100.0	100.0	100.0
15.	Syndicate Bank	96.2	97.3	96.1	96.1
16.	UCO Bank	96.7	92.0	91.6	91.6
17.	Union Bank of India	100.0	100.0	100.0	100.0
18.	United Bank of India	96.6	91.7	91.39	91.39
19.	Vijaya Bank	100.0	100.0	98.4	98.4
20.	State Bank of India	97.5	93.1	92.6	92.6
21.	State Bank of Bikaner & Jaipur	100.0	100.0	100.0	100.0
22.	State Bank of Hyderabad	98.5	94.9	91.9	91.9
23.	State Bank of Indore	100.0	100.0	100.0	100.0
24.	State Bank of Mysore	100.0	100.0	100.0	100.0
25.	State Bank of Patiala	100.0	100.0	100.0	100.0
26.	State Bank of Saurashtra	100.0	100.0	100.0	100.0
27.	State Bank of Travancore	100.0	100.0	97.9	97.9
28.	IDBI Ltd	100.0	100.0	100.0	100.0

*VRS – Varying Returns to Scale *CRS – Constant Returns to Scale

Efficiency Score 100% → Efficient DMUs (Banks); Efficiency Score below 100% → Inefficient DMUs (Banks)

Table 5. 3: Efficiency Scores Report and Ranking of the Indian Public Sector Banks during the year 2005-2006

DMUs		BCC Model (Max. Output & VRS)		CCR Model (Min. Input & CRS)		Absolute Difference in Rankings between B CC & CCR Models
Sl. No.	Public Sector Banks	Efficiency Scores (%)	Ran k	Efficiency Scores (%)	Ran k	
1.	Allahabad Bank	100.0	9	100.0	7.5	1.5
2.	Andhra Bank	100.0	9	100.0	7.5	1.5
3.	Bank of Baroda	95.5	26	94.5	20	6
4.	Bank of India	89.0	28	88.9	28	0
5.	Bank of Maharashtra	100.0	9	91.4	26	17
6.	Canara Bank	96.8	21	96.8	17	4
7.	Central Bank of India	97.0	20	94.0	21	1
8.	Corporation Bank	100.0	9	100.0	7.5	1.5
9.	Dena Bank	94.0	27	92.8	22	5
10.	Indian Bank	96.1	25	95.1	19	6
11.	Indian Overseas Bank	100.0	9	100.0	7.5	1.5
12.	Oriental Bank of Commerce	100.0	9	100.0	7.5	1.5
13.	Punjab & Sind Bank	100.0	9	100.0	7.5	1.5
14.	Punjab National Bank	100.0	9	100.0	7.5	1.5
15.	Syndicate Bank	96.2	24	96.1	18	6
16.	UCO Bank	96.7	22	91.6	25	3
17.	Union Bank of India	100.0	9	100.0	7.5	1.5
18.	United Bank of India	96.6	23	91.39	27	4
19.	Vijaya Bank	100.0	9	98.4	15	6
20.	State Bank of India	97.5	19	92.6	23	4
21.	State Bank of Bikaner & Jaipur	100.0	9	100.0	7.5	1.5
22.	State Bank of Hyderabad	98.5	18	91.9	24	6
23.	State Bank of Indore	100.0	9	100.0	7.5	1.5
24.	State Bank of Mysore	100.0	9	100.0	7.5	1.5
25.	State Bank of Patiala	100.0	9	100.0	7.5	1.5
26.	State Bank of Saurashtra	100.0	9	100.0	7.5	1.5
27.	State Bank of Travancore	100.0	9	97.9	16	7
28.	IDBI Ltd	100.0	9	100.0	7.5	1.5

As per Table 5.3, 17 banks under BCC Model and 14 banks under CCR Model are efficient, each of which scores 100%; whereas rest of the banks that is 11 banks and 14 banks respectively are inefficient (in comparison to the efficient banks with the given data set) who scores less than 100%. The above table shows that Bank of India is the most inefficient DMU under both BCC (Rank - 28) and CCR ((Rank - 28) Model which scores only 89.0% and 88.9% respectively.

It is to be clearly mentioned that the banks having 100% Efficiency Score have no scope for further potential improvement and in such cases Actual and Target figures are the same. But banks having below 100% Efficiency Score have ample scope for further potential improvement.

The Spearman Rank Correlation Coefficient of the two rankings is 0.82 which shows a fairly high degree of correlation between the ranks and this value is also significant at $p < 0.05$. We have used STATISTICA to calculate Spearman Rank Correlation Coefficient. So we can conclude that there is no high degree of deviation in rankings under BCC and CCR Model under this data set.

5.8.2 Reference Set Frequency of the Efficient Public Sector Banks during 2005-2006

- **Reference Set Frequencies:** Reference Set Frequency shows how many times an efficient unit that is Reference Unit appears in an inefficient unit's reference set. The higher the frequency, the more likely the efficient unit is an example of good performance.
- **Reference Units:** Reference Units are the 100% Efficient Units, against which each Inefficient Unit (below 100% Efficiency) is compared. An inefficient unit will have one or more peers in its Reference Set. All the peers are Efficient units.
- **Referencing Units:** Referencing Units are the inefficient units which are compared with the Reference Units.

Table 5.4: Reference Set Frequencies of the Public Sector Banks during the year 2005-2006

DMUs		BCC Model		CCR Model	
Sl. No.	Public Sector Banks	Efficiency Scores (%)	Reference Set Frequencies	Efficiency Scores (%)	Reference Set Frequencies
1.	Allahabad Bank	100.0	1	100.0	1
2.	Andhra Bank	100.0	1	100.0	1
3.	Bank of Baroda	95.5	-	94.5	-
4.	Bank of India	89.0	-	88.9	-
5.	Bank of Maharashtra	100.0	5	91.4	-
6.	Canara Bank	96.8	-	96.8	-
7.	Central Bank of India	97.0	-	94.0	-
8.	Corporation Bank	100.0	7	100.0	13
9.	Dena Bank	94.0	-	92.8	-
10.	Indian Bank	96.1	-	95.1	-
11.	Indian Overseas Bank	100.0	9	100.0	6
12.	Oriental Bank of Commerce	100.0	4	100.0	7
13.	Punjab & Sind Bank	100.0	1	100.0	2
14.	Punjab National Bank	100.0	3	100.0	7
15.	Syndicate Bank	96.2	-	96.1	-
16.	UCO Bank	96.7	-	91.6	-
17.	Union Bank of India	100.0	3	100.0	4
18.	United Bank of India	96.6	-	91.39	-
19.	Vijaya Bank	100.0	4	98.4	-
20.	State Bank of India	97.5	-	92.6	-
21.	State Bank of Bikaner & Jaipur	100.0	6	100.0	6
22.	State Bank of Hyderabad	98.5	-	91.9	-
23.	State Bank of Indore	100.0	1	100.0	1
24.	State Bank of Mysore	100.0	3	100.0	1
25.	State Bank of Patiala	100.0	1	100.0	3
26.	State Bank of Saurashtra	100.0	2	100.0	5
27.	State Bank of Travancore	100.0	2	97.9	-
28.	IDBI Ltd	100.0	1	100.0	2

As per Table 5.4 under BCC Model, Indian Overseas Bank (IOB) have maximum Reference Set Frequency that is 9 which means, IOB has been referred nine times while measuring the efficiency of inefficient banks (see Table 5.5). So IOB can be termed as “Global Leader”, which performs consistently well in comparison with other units. The banks having “0” Reference Set Frequency denotes that these efficient banks are not at all referred in measuring efficiencies of inefficient banks. Under CCR Model, Corporation Bank is the Global Leader with 13 Reference Set Frequency.

Reference Set Frequency Tables under BCC and CCR Model are shown below in Chart 5.1 and 5.2.

Chart 5.1: Reference Set Frequencies of Efficient Public Sector Banks during the year 2005-2006

BCC Model

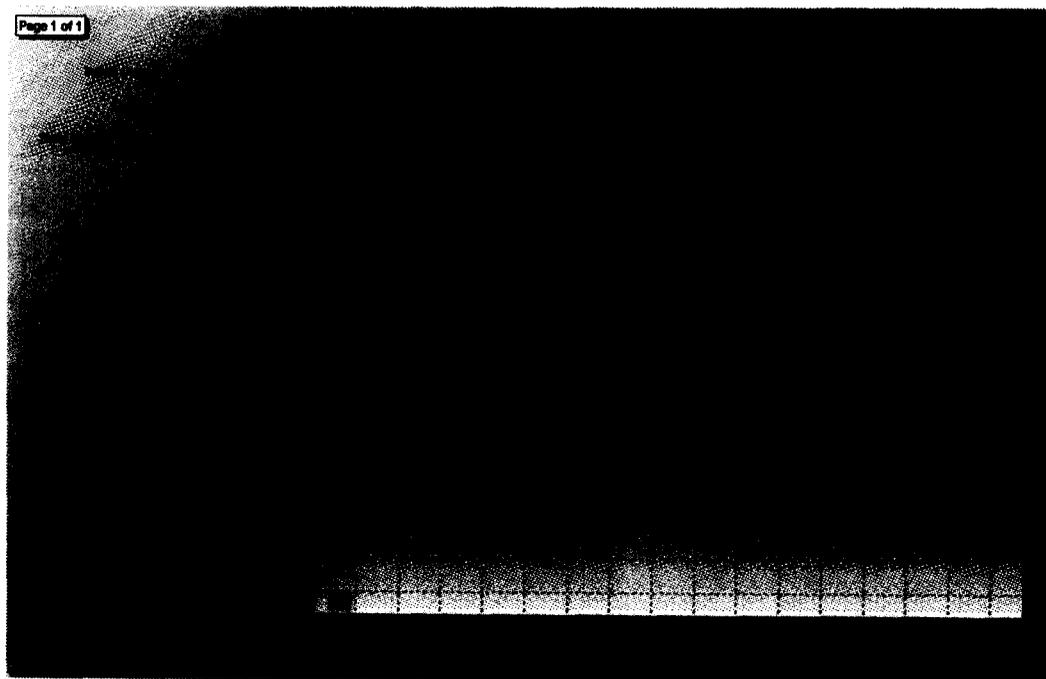


Chart 5.2: Reference Set Frequencies of Efficient Public Sector Banks during the year 2005-2006

CCR Model

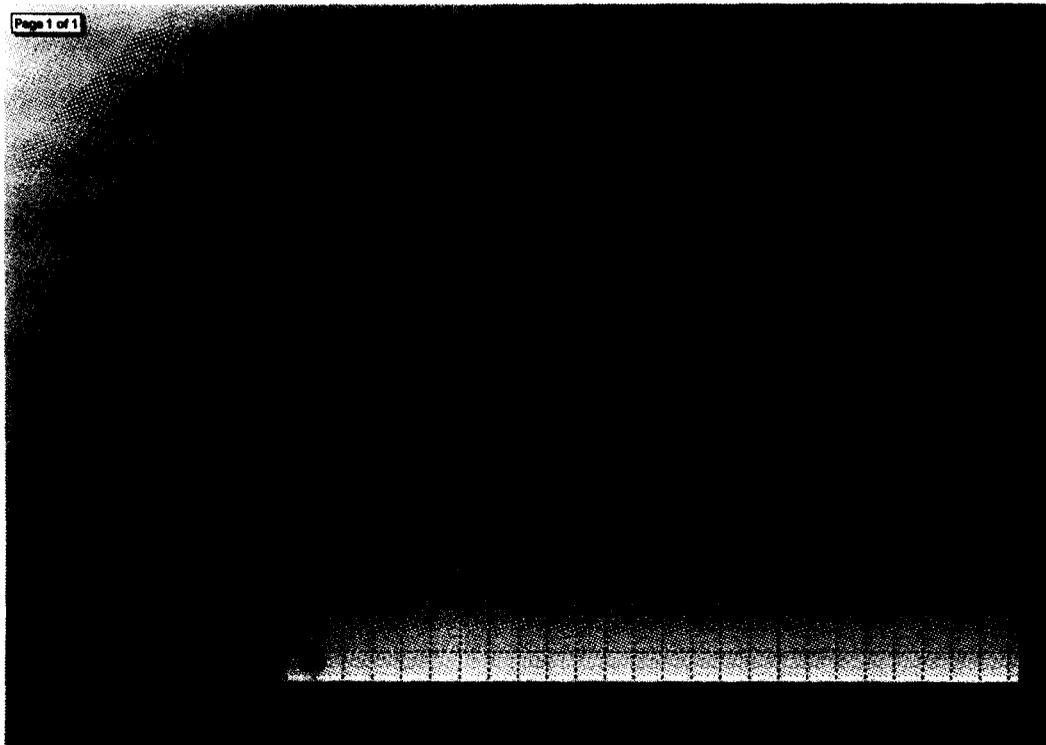


Table 5.5: Selected Reference Units & Associated Referencing Units (Inefficient Indian Public Sector Banks) during the year 2005-2006

DMUs		Referencing (Inefficient) Units under Selected Reference Units (BCC Model)		Referencing (Inefficient) Units under Selected Referene Units (CCR Model)	
Sl. No.	Public Sector Banks	Indian Overseas Bank* (9**)	Corporation Bank* (7**)	Corporation Bank* (13**)	Oriental Bank of Commerce* (7**)
1.	Allahabad Bank				
2.	Andhra Bank				
3.	Bank of Baroda		YES	YES	
4.	Bank of India	YES	YES	YES	
5.	Bank of Maharashtra			YES	YES
6.	Canara Bank	YES	YES		YES
7.	Central Bank of India	YES		YES	
8.	Corporation Bank		YES	YES	
9.	Dena Bank		YES	YES	
10.	Indian Bank	YES		YES	
11.	Indian Overseas Bank	YES			
12.	Oriental Bank of Commerce				YES
13.	Punjab & Sind Bank				
14.	Punjab National Bank				
15.	Syndicate Bank	YES	YES	YES	
16.	UCO Bank			YES	YES
17.	Union Bank of India				
18.	United Bank of India	YES		YES	
19.	Vijaya Bank			YES	YES
20.	State Bank of India	YES			
21.	State Bank of Bikaner & Jaipur				
22.	State Bank of Hyderabad	YES	YES	YES	YES
23.	State Bank of Indore				
24.	State Bank of Mysore				
25.	State Bank of Patiala				
26.	State Bank of Saurashtra				
27.	State Bank of Travancore			YES	YES
28.	IDBI Ltd				

*Reference Units

**Reference Set Frequencies

In the above table selected Reference Units i.e. 100% efficient units along with their Referencing (Inefficient) Units are shown.

5.8.3 Potential Improvement Schedule of Inputs and Outputs of the Inefficient Public Sector Banks during the year 2005-2006

- **In case of Inputs:** Potential Improvement should be negative i.e. the inefficient DMUs should reduce the input utilization to become 100% efficient.
- **In case of Outputs:** Potential Improvement should be positive i.e. the inefficient DMUs should increase the level of output in order to become 100% efficient.
- In case of **Output Optimization Model** under BCC, all of four outputs of all inefficient DMUs have a scope for further potential improvement; but there may not be any scope for further reduction for some of the inputs (“0” reduction) and in case of **Input Minimization Model** under CCR, all of four inputs of all inefficient DMUs have a scope for further potential reduction; but there may hardly be any scope for further improvement for some of the outputs (“0” improvement) as shown in Table 5.6 & 5.7.

In Table 5.6, we may take the case of Bank of India (BOI) which has obtained the lowest efficiency score of 89.01% under BCC Model. So it should have ample scope for further improvement in input utilization and output maximization over the original value. As per Table 5.6, BOI can improve its output level to a great extent, e.g. Interest Income / Total Assets by 12.35%, Return On Assets by 63.19%, Net Profit / Total Assets by 72.85% and Profit per Employee by 80.62%; while the input utilization may be reduced (i.e. negative potential improvement) in some cases, e.g. No. of Employees by 41.63% and No. of Branches by 31.56% and there will be no change in case of utilization of other two inputs i.e. Interest Expenses / Total Assets and Operating Expenses / Total Assets. This has been shown clearly in Chart 5.3 below.

Table 5.6: Potential Improvement (Outputs) / Reduction (Inputs) Schedule (%) of the Inefficient Public Sector Banks during the year 2005-2006

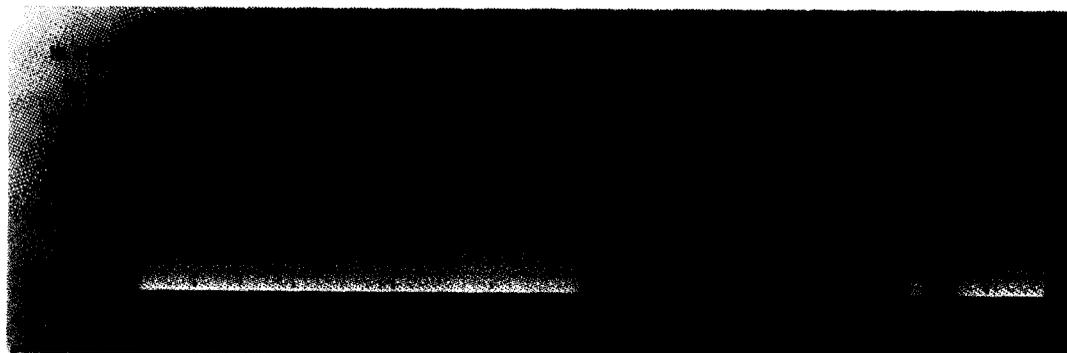
BCC Model

Inefficient Public Sector Banks	No. of Peers	Efficiency Scores (%)	Inputs				Outputs			
			No. of Employees (%)	No. of Branches (%)	Int. Exp./T.A (%)	Op. Exp./T.A (%)	Int. Inc /T.A. (%)	ROA (%)	N.P/T.A. (%)	Profit/Empl. (%)
.Bank of Baroda(26)	3	95.45	-0.74	0	0	-5.16	4.76	44.76	40.92	46.89
Bank of India (28)	3	89.01	-41.63	-31.56	0	0	12.35	63.19	72.85	80.62
Canara Bank (21)	4	96.78	-69.95	-58.86	0	0	3.33	28.61	3.33	50.44
Central Bank of India (20)	2	97.04	-37.58	-52.23	0	-7.47	3.05	227.93	256.86	334.85
Dena Bank (27)	4	94.05	0	-31.27	0	0	6.33	100.32	106.36	120.83
Indian Bank(25)	4	96.10	0	-2.95	0	-6.81	4.06	4.06	12.85	21.45
Syndicate Bank (24)	4	96.23	0	-11.04	0	3.81	3.92	7.02	3.92	26.01
UCO Bank (22)	3	96.68	-42.65	-32.32	0	0	3.43	106.59	61.27	206.68
United Bank of India (23)	3	96.58	0	-7.63	0	-6.64	3.55	19.47	19.47	49.72
State Bank of India (19)	2	97.48	-88.66	-83.76	0	-10.26	2.59	27.34	27.34	27.18
.State Bankof Hyderabad (18)	5	98.54	0	0	-5.08	0	1.48	12.17	1.48	18.69

* Figures in the bracket show the ranking.

Chart 5.3: Potential Improvement Chart (%) of Bank of India for the year 2005-2006

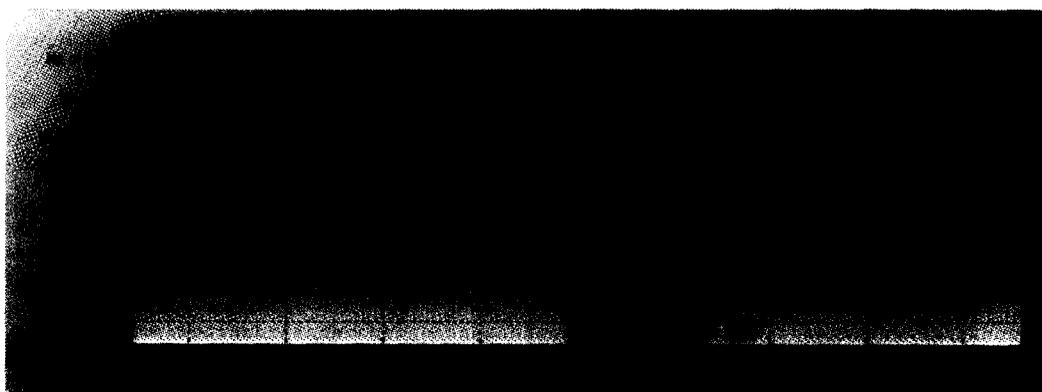
BCC Model



In Table 5.7, we may take the case of State Bank of India (SBI) which has obtained an efficiency score of 92.63% under CCR Model. So it should have ample scope for further improvement in input utilization and output maximization over the original value. As per Table 5.7, SBI can improve its output level to a great extent, e.g. Return On Assets by 39.10%, Net Profit / Total Assets by 32.19% and Profit per Employee by 34.09% and there will be no change in case of Interest Income / Total Assets; while the input utilization may be reduced (i.e. negative potential improvement) in some cases, e.g. No. of Employees by 76.80%, No. of Branches by 65.73%, Interest Expenses / Total Assets by 7.37% and Operating Expenses / Total Assets by 7.37%. This has been shown clearly in Chart 5.4 below.

Chart 5.4: Potential Improvement Chart (%) of State Bank of India for the year 2005-2006

CCR Model



5.8.4 Reference Contribution of Inefficient Public Sector Banks during 2005-2006

- **Reference Contribution:** It shows the extent to which each Reference Unit has contributed in determining the efficiency of an inefficient unit. Reference Units are those units which are considered to be 100% efficient and against which an inefficient unit has been directly compared. The contribution of each Reference Unit, to the targets of an inefficient unit's input or output is shown as percentage. The Reference Contribution

provides information on which members of a unit's reference set have had the most influence to setting its targets for potential improvements. This helps to identify the key units to compare its performance against inefficient unit. The contribution for each variable is shown in percentage terms, with inputs and outputs each totally 100%.

In Table 5.8, two inefficient banks have been taken into consideration, such as, State Bank of Hyderabad (Efficiency: 98.54%) and Bank of India (Efficiency: 89.01%). In case of State Bank of Hyderabad five Reference Units (Corporation Bank, Indian Overseas Bank, Oriental Bank of Commerce, State Bank of Mysore and State Bank of Travancore) and in case of Bank of India three Reference Units (Corporation Bank, Indian Overseas Bank and Union Bank of India) have been identified.

In case of State Bank of Hyderabad, we observe that Corporation Bank, Oriental Bank of Commerce and State Bank of Mysore have had the great influence to setting its targets for potential improvement and hence these banks are very good Reference Units. Again in case of Bank of India, we observe that Indian Overseas Bank and Union Bank of India have had the most influence and hence these banks are very good Reference Units under this circumstances.

5.8.5 Input-Output Contribution of Public Sector Banks during 2005-2006

The Input / Output Contribution table displays information about the emphasis that the analysis has used for each input / output variable. This is a useful indication of which inputs and outputs have been used in determining efficiency, and which have been ignored. In some cases, this may help to validate the score.

In Table 5.9, it is clear that in case of Indian Overseas Bank two inputs – No. of Employees (42%) and Interest Expenses / Total Assets (58%) and two outputs – Interest Income / Total Assets (96%) and ROA (4%), in case of State Bank of Hyderabad two inputs – No. of Employees (43%) and Operating Expenses / Total Assets (56%) and two outputs – Interest Income / Total Assets (77%) and Net Profit /

Total Assets (23%) and in case of Bank of India two inputs – Interest Expenses / Total Assets (60%) and Operating Expenses / Total Assets (40%) and only one output – Interest Income / Total Assets (100%) have got most emphasis in determining the efficiency

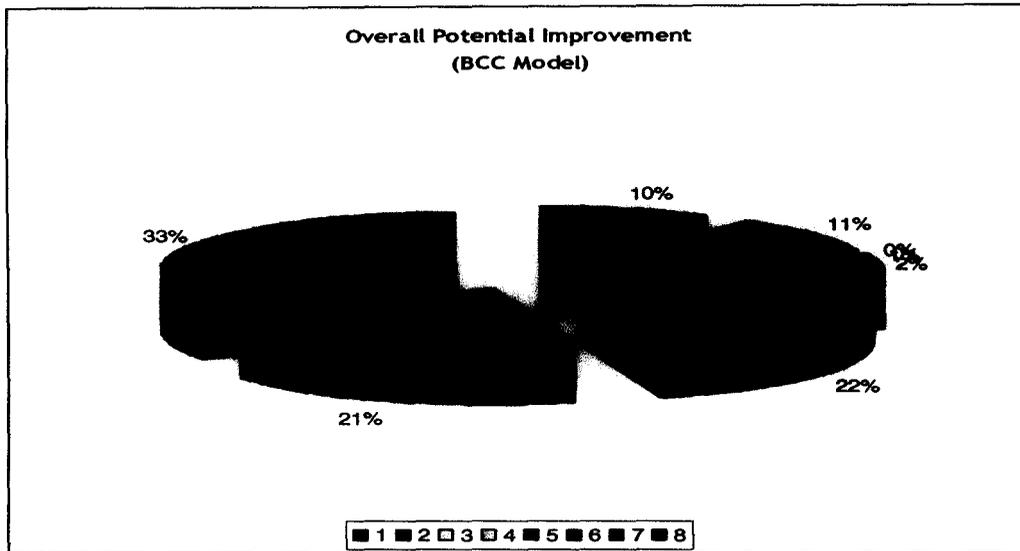
5.8.6. Overall Potential Improvement of Public Sector Banks during 2005-2006

Table 5.10: Overall Potential Improvement

Variables	Contribution (%)		Input/Output
	BCC Model	CCR Model	
No. of Employees	-9.64	-4.41	Input
No. of Branches	-10.63	-4.83	Input
Int. Exp./ T.A.	-0.17	-1.32	Input
Op. Exp./ T.A.	-1.38	-1.42	Input
Int. Inc / T.A.	1.67	0.00	Output
ROA	21.98	24.93	Output
N.P./T.A.	20.79	20.88	Output
Profit / Empl.	33.74	42.21	Output
Total	100.00	100.00	

The Improvement Summary Graph provides a graphical summary of the possible improvements identified by the analysis. This helps to determine the potential improvement calculated by the DEA analysis for each variable and unit count. The benefit is that the user has a quick visual summary of the results of the analysis and can see quickly, where changes should be made.

Chart 5.5



In the above pie diagram, under BCC Model the largest slice of potential improvement is for Profit / Empl. (Output) at 33.74%, the next one is ROA (Output) at 21.98% and so on. This indicates, to improve the overall efficiency of the Public Sector Banks in India, the refereed banks have to increase their Profit / Empl. by 33.74% (overall), and ROA by 21.98% (overall) and so on. Under CCR Model, to improve the overall efficiency of the Public Sector Banks in India, the refereed banks have to increase their Profit / Empl. by 42.21% (overall), and ROA by 24.93% (overall) and so on.

5.9 Observations

The DEA Analysis is a very effective approach to measure the efficiency of banks (DMUs), if the assumptions are realistic and model setting is perfect. Here in this chapter, we have analyzed the case on the basis of four specific inputs and four specific outputs only. This study may be extended further if we include other inputs and outputs.

The following major observations are found in the above analysis:

- Out of 28 Public Sector Banks operating in India during the year 2005-2006, only 17 banks are 100% efficient as per BCC Model and 14 banks are 100% efficient as per CCR Model. (Table 5.2).

- Indian Overseas Bank is the Global Leader or the Star Performer having maximum Reference Set Frequency as per BCC Model and Corporation Bank is the Global Leader as per CCR Model (Table 5.4).
- Bank of India is the most inefficient Bank with 89% and 88.9% efficiency score as per BCC and CCR Model respectively (Table 5.3).
- To improve the overall efficiency of the Public Sector Banks in India, the refereed banks have to increase their Profit / Empl. by 33.74% (overall), and ROA by 21.98% (overall) and so on and under CCR Model, to improve the overall efficiency of the Public Sector Banks in India, the refereed banks have to increase their Profit / Empl. by 42.21% (overall), and ROA by 24.93% (overall) and so on (Table 5.10).

Table 5.7: Potential Improvement (Outputs) / Reduction (Inputs) Schedule (%) of the Inefficient Public Sector Banks during the year 2005-2006

CCR Model

Inefficient Public Sector Banks	No. of Peers	Efficiency Scores (%)	Inputs				Outputs			
			No. of Employees (%)	No. of Branches (%)	Int. Exp./ T.A. (%)	Op. Exp./ T.A. (%)	Int. Inc / T.A. (%)	ROA (%)	N.P./ T.A. (%)	Profit/ Empl. (%)
Bank of Baroda(20)	4	94.54	-5.46	-5.46	-5.46	-5.46	0.00	25.39	24.21	19.24
Bank of India(28)	2	88.94	-62.89	-52.29	-11.06	-11.06	0.00	54.37	51.04	107.68
Bank of Maharashtra (26)	3	91.42	-8.58	-26.59	-8.58	-8.58	0.00	632.51	479.14	1053.26
Canara Bank(17)	3	96.76	-59.12	-47.11	-3.24	-3.24	0.00	16.29	0.00	20.47
Central Bank of India(21)	3	94.00	-6.00	-21.82	-6.00	-6.00	0.00	245.68	237.37	442.11
Dena Bank(22)	3	92.79	-7.21	-34.52	-7.21	-7.21	0.00	194.82	189.60	254.14
Indian Bank(19)	4	95.09	-10.81	-4.91	-4.91	-9.89	0.00	0.00	0.00	47.46
Syndicate Bank(18)	4	96.11	-3.89	-16.24	-3.89	-6.96	0.00	0.00	0.00	9.40
UCO Bank(25)	3	91.62	-18.45	-8.38	-8.38	-8.38	0.00	239.55	194.35	389.12
United Bank of India(27)	3	91.39	-8.61	-14.92	-8.61	-8.61	0.00	68.83	53.51	170.23
Vijaya Bank(15)	3	98.45	-1.55	-12.44	-1.55	-1.55	0.00	131.60	122.56	201.78
State Bank of India(23)	2	92.63	-76.80	-65.73	-7.37	-7.37	0.00	39.10	32.19	34.09
State Bank of Hyderabad(2)	3	91.95	-9.78	-8.05	-8.05	-8.05	0.00	5.80	1.30	25.36
.State Bank of Travancore(6)	3	97.90	-13.72	-2.10	-2.10	-2.10	0.00	0.00	0.00	25.87

* Figures in the bracket show the ranking.

Table 5.8: Reference Contribution in the Inputs & Outputs of Selected Inefficient DMUs BCC Model

DMUs	State Bank of Hyderabad (Efficiency: 98.54%) Rank – 18						Bank of India (Efficiency: 89.01%) Rank – 28			
	Corpora- tion Bank	Indian Overseas Bank	Oriental Bank of Commerce	State Bank of Mysore	State Bank of Travancore	Total %	Corporat ion Bank	Indian Overseas Bank	Union Bank of India	Total %
Peer References → Inputs(I) & Outputs(O) ↓	Contribu tion (%)	Contribu tion (%)	Contribu tion (%)	Contrib u tion (%)	Contribu tion (%)		Contribu tion (%)	Contribu tion (%)	Contribu tion (%)	
No. of Employees(I)	26.90	17.92	33.30	16.81	5.07	100	1.04	53.72	45.24	100
No. of Branches(I)	27.99	15.91	36.42	15.41	4.26	100	1.07	47.07	51.86	100
Int. Exp./ T.A.(I)	29.37	9.91	32.25	22.24	6.24	100	2.08	54.50	43.42	100
Op. Exp./ T.A.(I)	30.01	10.29	23.81	30.26	5.63	100	2.31	61.43	36.26	100
Int. Inc / T.A.(O)	30.92	10.49	29.69	22.91	5.99	100	2.17	57.20	40.62	100
ROA(O)	32.07	10.11	32.00	21.94	3.87	100	2.63	64.50	32.87	100
N.P./T.A.(O)	33.85	12.03	26.01	23.77	4.34	100	2.42	66.79	30.79	100
Profit / Empl.(O)	35.00	8.08	40.49	12.97	3.45	100	3.25	58.23	38.52	100

Table 5.9: Input-Output Contribution of Selected Public Sector Banks (2005-2006)

BCC Model

Indian Overseas Bank (Efficiency: 100%)			State Bank of Hyderabad (Efficiency: 98.54%)			Bank of India (Efficiency: 89.01%)		
Variable	Contribution (%)	Input/Output	Variable	Contribution (%)	Input/Output	Variable	Contribution (%)	Input/Output
No. of Employees	42	Input	No. of Employees	43	Input	No. of Employees	0	Input
No. of Branches	0	Input	No. of Branches	1	Input	No. of Branches	0	Input
Int. Exp./ T.A.	58	Input	Int. Exp./ T.A.	0	Input	Int. Exp./ T.A.	60	Input
Op. Exp./ T.A.	0	Input	Op. Exp./ T.A.	56	Input	Op. Exp./ T.A.	40	Input
TOTAL	100	Input	TOTAL	100	Input	TOTAL	100	Input
Int. Inc / T.A.	96	Output	Int. Inc / T.A.	77	Output	Int. Inc / T.A.	100	Output
ROA	4	Output	ROA	0	Output	ROA	0	Output
N.P./T.A.	0	Output	N.P./T.A.	23	Output	N.P./T.A.	0	Output
Profit/Empl.	0	Output	Profit/Empl	0	Output	Profit/Empl.	0	Output
TOTAL	100	Output	TOTAL	100	Output	TOTAL	100	Output

CHAPTER – VI

Profitability of Commercial Banks in India during the Reforms

- 6.1 Introduction
- 6.2 Objectives of the Study
- 6.3 Review of Literature
- 6.4 Research Methodology
- 6.5 Analysis, Results and Discussions
- 6.6 Conclusion

PROFITABILITY OF COMMERCIAL BANKS IN INDIA DURING THE REFORMS

6.1 Introduction

In the light of liberalization, privatization and globalization a lot of challenges were faced by the commercial banks. After the nationalization and till the early 1990s, the main thrust of banking operations was on social banking and accordingly the emphasis was placed on enhancing the branch network in rural and semi-urban areas. Further banks had to undertake several responsibilities which included financing the fiscal deficit and facilitating the development of certain specific sectors as reflected in high and increasing prescriptions of SLR and directed lending. By and large, banking remained concentrated in the public sector and functioned in a highly regulated environment. All this implied that profit earning was not considered as an important objective. While all these social objectives continue to be important from the socio-economic perspective even today, profitability of banking assumed significant importance in the context of financial sector reforms, which have resulted in increased competition to enhance efficiency/productivity and positioning stringent supervisory norms on the lines of international best practice to ensure banking soundness.

An important question which arises in this context is whether banks should focus on social responsibilities and facilitate growth of specific sectors or should aim at enhancing profitability based on commercial considerations. Profit motive has surfaced in recent years from a number of valid considerations. Profitability of the banking sector assumes critical importance in order to retain confidence of the saving community, who view banking as one of the safest channels of savings. Earlier as most of the banks were in the public sector, the financial soundness per se was not viewed as quite essential to sustain confidence of the depositors, as there was built in confidence on account of public ownership. With the launching of financial sector reforms and move towards enhancing competition/reduction in Government equity holding, increased efficiency to meet new challenges have been at the forefront of sound and stable banking system.

The phenomenal growth in the business of new private sector banks is a testimony to this challenge. Furthermore, the strain on the fiscal system may not permit continued Government support through capitalization.

Table 6.1: Net Profit as a Percentage of Total Assets during the period 1995 – 2007.

Year	Public Sector Banks	Old Private Sector Banks	New Private Sector Banks	Foreign Banks	All Scheduled Commercial Banks
1995-1996	-0.07	1.06	1.85	1.58	0.16
1996-1997	0.57	0.91	1.73	1.19	0.67
1997-1998	0.77	0.81	1.55	0.97	0.82
1998-1999	0.42	0.48	1.03	0.69	0.47
1999-2000	0.57	0.84	0.97	1.17	0.66
2000-2001	0.42	0.59	0.81	0.93	0.49
2001-2002	0.72	1.08	0.44	1.32	0.75
2002-2003	0.96	1.17	0.90	1.56	1.01
2003-2004	1.12	1.20	0.83	1.65	1.13
2004-2005	0.87	0.33	1.05	1.29	0.89
2005-2006	0.82	0.58	0.97	1.54	0.88
2006-2007	0.83	0.7	0.91	1.65	0.90

Source: Report on Trend & Progress of Banking in India, RBI

An important aspect of banking soundness amply echoed in high capital adequacy ratios. Banks would be in a better position to enlarge their equity base through public issues, if the banks are in sound financial condition and enjoy investors' confidence and continue to observe various prudential measures prescribed from time to time. Another way to enhance capital ratios is through reinvested profits. Thus, enhancing the strength of the banking institutions depends upon the inherent strength and efficiency of any bank. Thus, we cannot afford the luxury of ignoring profitability of banks and factors contributing in enhancing the same. In view of the foregoing, the quest for profitability is central both from the point of view of safeguarding and strengthening the viability of

banks and their ability to serve the socio-economic objectives of the society. In this context, identification of determinants of profitability would facilitate efficient use of bank resources and long-term banking performance. An attempt is made in this chapter to examine and identify the factors, which influence banking profitability in India. Table 6.1 shows a comparative profit performance (Net Profit as a % of Total Assets) of different Bank-Groups during the period 1995 – 2007.

6.2 Objectives of the Study

The above table shows an improvement in the performance of almost all the bank groups, although this has not been uniform across individual banks within the same bank group. The differential profit performance has been attributed to various factors. The objective of the study is to identify these factors and examine whether they have any significant influence on profitability of banks in India.

6.3 Review of Literature

There are many micro and macro level studies conducted by individuals and institutions, which analyzed the factors affecting the profitability of commercial banks in India. Some of the recent studies are reviewed as follows:

Shah (1977), in his various papers discussed bank profitability and productivity. He expressed concern about increased expenses and overheads. Slow growth in productivity and efficiency, wasteful work of banks that higher profitability can result from increased spread and that innovations have a limited role. He favoured written job descriptions for improvement to staff productivity. He also emphasized reduction of costs, creation of a team spirit improvement in the management for improving bank profitability and productivity.

Swamy and *Subrahmanyam* (1993), attempted to focus on profitability within public sector banks in an attempt to set benchmark for laggards.

Satyamurty (1994), clarified the concepts of profits, profitability and productivity applicable to the banking industry. It is organized by the bank managements that the pressure on the profitability is more due to the factors beyond their control. He suggested the technique of ratio analysis to evaluate the

profit and profitability performance of banks. He opined that endeavors should be made to improve the spread performance through better funds management.

Murty (1996), analyzed various factors, which can be helpful to improve the profitability of public sector banks. The study examine the impact of monetary policy and market interest rates on the bank profitability and also suggest various measures to improve the profitability of the public sector banks in India.

Sarker and Das (1997), compares the performance of public, private and foreign banks for the year 1994-95 by using measures of profitability, productivity and financial management. They found PSBs performing poorly with the other two categories. However, they give caution that no firm inference can be derived from a comparison done for a single year.

Das (1999), compares performance among public sector banks for three years in the post-reform period, 1992, 1995 and 1998. He finds a certain convergence in performance. He also notes that while there is a welcome increase in emphasis on non-interest income, banks have tended to show risk-averse behaviour by opting for risk-free investments over risky loans.

Sabnani (2000), analyzed the importance of “Universal Banking” in India. Globalization, Liberalization and Deregulation of financial markets in many developed and developing countries have resulted in increased dis-intermediation and have made commercial banks vulnerable to interest rate risk. Relaxing exchange controls, adopting uniform accounting practices concerning income recognition, assets classification, provisioning norms, and prescribing capital adequacy norms has further aggravated the position. Now the developments in IT and telecommunications are allowing international pooling of financial resources thereby spreading the risk across more than one market. He feels that Universal Banking System will come to stay in India in the near future. There is therefore need to prepare ourselves right now.

Swamy (2001), studied the comparative performance of different bank-groups since 1995-96 to 1999-2000. During this period, IT, new competition, deregulation took place. He studied three important aspects:

- What has been the impact of financial sector reforms on the structure of the Indian banking system?
- What are the advantages reaped by some of the new Indian private and foreign banks vis-à-vis PSBs?
- Whether new competition has enhanced the overall efficiency of the banking system?

Swamy identified those factors, which could have led to changes in the position of individual banks in terms of their share in the overall banking industry.

Kaveri (2001), in his study attempts to extend the study conducted by the Verma Committee more specifically to ascertain whether enough signals of weakness were indicated much before the event. The present study considers 1998-99 as the year of event when the Verma Committee identified weak banks, strong banks and potential weak banks. This study considers nine efficiency parameters, which are computed, based on the data collected from the RBI publications. The parameters include –

- Capital Adequacy Ratio
- Net Non Performance Assets / Net Adequacy
- Net Profit / Total Assets
- Gross Profit / Working Funds
- Net Interest Income / Total Assets
- Interest Expended / Total Assets
- Intermediation Cost / Total Assets
- Provision and Contingencies / Total Assets

The above parameters focus on two major concerns of banks i.e. loan default and profitability whereas the Verma Committee covered all aspects of financial health. This article has given some evidence to indicate that no bank can be weak or potential weak all of a sudden. There is a gradual deterioration in the position of loan default and profitability. Hence, it is to be suggested to develop a ratio model to arrive at a single score to classify banks into three categories i.e. weak, strong and potential weak.

Passah, P.M. (2002), analyzed the Indian financial system comprising the commercial banks, the financial institutions and the capital markets. He concluded that Indian banking has undergone a very rapid transformation in the past three decades. There is a sea change in the Indian banking sector in the post-financial sector reforms.

Shveeta and *Satish Verma* (2002), analyzed the inter-temporal profitability behavior of SBI group, other nationalized and foreign banks in India. They empirically estimated factors influencing the profitability of banks. They concluded that priority sector advances (in case of PSBs) and spread and burden (for all categories of banks) were the major and significant factors that influence the profitability of banks.

6.4 Research Methodology

6.4.1 Bank Groups

We have categorized the banks into seven groups for our study, viz.:

- (A) Scheduled Commercial Banks
- (B) Public Sector Banks
- (C) Nationalized Banks
- (D) State Bank Group
- (E) Old Public Sector Banks
- (F) Old Private Sector Banks
- (G) New Private Sector Banks
- (H) Foreign Banks

6.4.2 Study Period

The study covers secondary data for a very recent period of 3 years, ranging from 2004-05 to 2006-07.

6.4.3 Variables Used

Six factors or variables have been selected which are affecting the profitability of the banks in the either direction. They are as follows:

Dependent Variable	Independent Variable
Net Profit as a % of Total Assets (Net Profit) – Y	1. Interest Income as % of Total Assets (Interest Income) – X_1
	2. Other Income as % of Total Assets (Other Income) – X_2
	3. Interest Expenses as % of Total Assets (Interest Expenses) – X_3
	4. Operating Expenses as % of Total Assets (Operating Expenses) – X_4
	5. Net NPA as % of Total Assets (Net NPA) – X_5
	6. Spread (NII) as % of Total Assets (Spread) – X_6

NII – Net Interest Income

6.4.4 Hypothesis

An attempt has been made in this chapter to test the following hypothesis:

“Net Profit of different bank groups depends upon Interest Income, Other Income, Interest Expenses, Operating Expenses, Net NPA and Spread.”

6.4.5 Statistical and Econometric Techniques Used

- For the simplification of the study we have taken the mean of the figures of three consecutive years i.e. 2004 – 2007.
- Multiple Correlation and Multiple Regression Technique (Enter and Forward Stepwise Method) have been used for the study.
- To calculate all the statistical results, SPSS Package (Version – 16.0) has been used.

6.4.6 The Data Set

Table 6.2: Important Financial Indicators - Bank Group-wise (2004 – 2007)(%)

Bank Groups / Years	Net Profit (Y)	Interest Income (X ₁)	Other Income (X ₂)	Interest Expenses (X ₃)	Operating Expenses (X ₄)	Net NPA (X ₅)	Spread (NII) (X ₆)
1	2	3	4	5	6	7	8
(A) Scheduled Commercial Banks:							
2004-05	0.89	6.61	1.46	3.78	2.13	1.28	2.83
2005-06	0.88	6.65	1.27	3.85	2.13	1.07	2.81
2006-07	0.90	6.85	1.12	4.16	1.91	1	2.69
Mean	0.89	6.70	1.28	3.93	2.06	0.72	2.78
(B) Public Sector Banks:							
2004-05	0.87	6.79	1.36	3.88	2.09	1.31	2.91
2005-06	0.82	6.84	1.09	4	2.05	1.06	2.85
2006-07	0.83	6.89	0.86	4.24	1.77	0.91	2.65
Mean	0.84	6.84	1.10	4.04	1.97	0.76	2.80
(C) Nationalized Banks:							
2004-05	0.89	6.91	1.32	3.89	2.18	1.28	3.02
2005-06	0.81	6.74	0.9	3.84	2	0.98	2.89
2006-07	0.85	6.89	0.79	4.18	1.73	0.92	2.71
Mean	0.85	6.85	1.00	3.97	1.97	0.69	2.87
(D) State Bank Group:							
2004-05	0.91	7.02	1.51	3.96	2.14	1.53	3.06
2005-06	0.86	7.13	1.38	4.05	2.28	1.31	3.07
2006-07	0.82	6.99	0.97	4.2	1.98	0.96	2.79
Mean	0.86	7.05	1.29	4.07	2.13	0.89	2.97
(E) Other Public Sector Banks:							
2004-05	0.38	3.26	0.77	3.03	0.56	0.07	0.23
2005-06	0.63	6.08	1.45	5.65	0.97	0.27	0.43
2006-07	0.61	6.11	0.99	5.48	0.75	0.27	0.63
Mean	0.54	5.15	1.07	4.72	0.76	0.79	0.43
(F) Old Private Sector Banks:							
2004-05	0.33	6.95	0.94	4.25	1.96	1.35	2.7
2005-06	0.58	6.92	0.81	4.17	2.06	0.93	2.75
2006-07	0.7	7.25	0.9	4.42	1.85	1.19	2.83
Mean	0.54	7.04	0.88	4.28	1.96	0.96	2.76

Bank Groups / Years	Net Profit (Y)	Interest Income (X₁)	Other Income (X₂)	Interest Expenses (X₃)	Operating Expenses (X₄)	Net NPA (X₅)	Spread (NII) (X₆)
1	2	3	4	5	6	7	8
(G) New Private Sector Banks:							
2004-05	1.05	5.77	1.74	3.6	2.06	0.8	2.17
2005-06	0.97	5.89	1.63	3.62	2.12	0.81	2.27
2006-07	0.91	6.75	1.65	4.41	2.11	0.97	2.34
Mean	0.98	6.14	1.67	3.88	2.10	0.59	2.26
(H) Foreign Banks:							
2004-05	1.29	5.97	2.52	2.63	2.88	1.69	3.34
2005-06	1.54	6.17	2.69	2.58	2.94	1.8	3.58
2006-07	1.65	6.48	2.5	2.74	2.78	1.8	3.74
Mean	1.49	6.21	2.57	2.65	2.87	0.39	3.55

Source: Trend and Progress of Banking in India, 2006-2007 and Balance sheets of respective banks.

Note:

1. The number of scheduled commercial banks in 2004-05, 2005-06 and 2006-07 were 88, 85 and 82, respectively.
2. The number of old private banks in 2004-05, 2005-06 and 2006-07 were 20, 20 and 17, respectively.
3. The number of new private banks in 2004-05, 2005-06 and 2006-07 were 9, 8 and 8, respectively.
4. The number of foreign banks in 2004-05, 2005-06 and 2006-07 were 31, 29 and 29, respectively.
5. Figures in the table are percentages to total assets.
6. NII - Net Interest Income.
7. Scheduled commercial banks data for 2005-06 are as reported in the balance sheets for 2006-07 and hence may not tally with those reported in the Report on Trend and Progress of Banking in India, 2005-06, to the extent the figures of 2005-06 were revised by some banks.

6.5 Analysis, Results and Discussions

6.5.1 Correlation Analysis

Table 6.3: Correlation Matrix of Select Financial Indicators of Group-wise Banks (2004 – 2007)

Variables	Measures	Net Profit (Y)	Int. Income (X ₁)	Other Income (X ₂)	Int. Exp. (X ₃)	Op. Exp. (X ₄)	Net NPA (X ₅)	Spread (NII) (X ₆)
Net Profit	Pearson Correlation	1.00	0.02	0.93**	-0.97**	0.81*	-0.88**	0.63
	Sig. (2-tailed)		0.96	0.00	0.00	0.01	0.00	0.10
Interest Income	Pearson Correlation	0.02	1.00	-0.24	-0.14	0.55	0.34	0.78*
	Sig. (2-tailed)	0.96		0.56	0.75	0.16	0.41	0.02
Other Income	Pearson Correlation	0.93**	-0.24	1.00	-0.90**	0.67	-0.87**	0.40
	Sig. (2-tailed)	0.00	0.56		0.00	0.07	0.01	0.33
Interest Expenses	Pearson Correlation	-0.97**	-0.14	-0.90**	1.00	-0.88*	0.82*	-0.73*
	Sig. (2-tailed)	0.00	0.75	0.00		0.00	0.01	0.04
Operating Expenses	Pearson Correlation	0.81*	0.55	0.67	-0.88**	1.00	-0.52	0.94**
	Sig. (2-tailed)	0.01	0.16	0.07	0.00		0.18	0.00
Net NPA	Pearson Correlation	-0.88**	0.34	-0.87**	0.82*	-0.52	1.00	-0.28
	Sig. (2-tailed)	0.00	0.41	0.01	0.01	0.18		0.51
Spread	Pearson Correlation	0.63	0.78*	0.40	-0.73*	0.94**	-0.28	1.00
	Sig. (2-tailed)	0.10	0.02	0.33	0.04	0.00	0.51	

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 6.3 shows the output of correlation table. The values in the correlation table are standardized and range from 0 – 1 (positive and negative).

First column of Table 6.2 shows that except for Interest Income (X_1), all the other variables are highly correlated (ranging from 0.63 to 0.97) either positively or negatively with the dependent variable, Net Profit (Y). This means that we may have chosen a fairly good set of independent variables (X_2 , X_3 , X_4 , X_5 and X_6) to correlate with Net Profit (Y). Interest Expenses (X_3) and Net NPA (X_5) are rightly negatively correlated with Net Profit. But surprisingly, Operating Expense (X_4) is positively correlated with Net Profit.

The correlation table can also be used to find out the correlation between independent variables. We further observe that except for the Interest Income (X_1) column, all other independent variables are more or less highly correlated with each other. This indicates that they are not independent of each other and only one or two of them can be used to predict the dependent variable, Net Profit. Regression is helpful in eliminating some of the independent variables as all of them are not required. Some of them, being correlated with other variables, do not add any value to the regression model.

6.5.2 Regression Analysis

A Regression Analysis is done to explain the variation in one variable (dependent variable), based on variation in one or more other variables (independent variables). In case there is only one independent variable to explain the variation in one dependent variable, it is known as simple regression. If there are multiple independent variables to explain the variation in a single dependent variable, it is known as a multiple regression model. In this case, we use multiple regression model to arrive at a solution.

6.5.2.1 ENTER Method

The regression model of the following form has been used by entering all the six independent variables in the model:

$$Y = a + b_1 X_1 + b_2 X_2 + b_3 X_3 + b_4 X_4 + b_5 X_5 + b_6 X_6 \dots\dots\dots(1)$$

As per the Enter Method (Table 6.4) [SPSS Package (Version 16.0)], the value of 'B', the unstandardized coefficients give all the coefficients of the included 5 independent variables of the model, which are as follows:

$$b_2 = 0.86$$

$$b_3 = 0.66$$

$$b_4 = -0.76$$

$$b_5 = -1.25$$

$$b_6 = 0.68$$

$$a = -2.21$$

Note: Interest Income (X1) is excluded for the purpose of regression (Table 6.5), the unstandardized beta coefficient of which is 0.96.

The above values can be substituted in the regression equation no....(1) to get and predict the value of Y (Net Profit):

$$\begin{aligned} \text{Net Profit} = & - 2.21 + 0.86* (\text{Other Income}) + 0.66* (\text{Interest Expenses}) \\ & - 0.76* (\text{Operating Expenses}) - 1.25* (\text{Net NPA}) + \\ & 0.68* (\text{Spread}) \dots\dots\dots(2) \end{aligned}$$

Interpretation:

- From the above equation it can be inferred that if ‘Other Income’ is increased by 1%, ‘Net Profit’ will be increased by 0.86%, assuming all the other variables to be constant. Similarly the influence on the ‘Net Profit’ for every % increase or decrease in the above 5 factors can be explained by their coefficients case by case.
- In multiple-regression analysis, the regression coefficients often become less reliable as the degree of correlation between the independent variables increases. If there is a high level of correlation between the independent variables, we have a problem that statisticians call multicollinearity. The last column in Table 6.4 is Collinearity Statistics. In this column, we get statistics for testing multicollinearity in the model. Collenearity Statistics gives two values – Tolerance and VIF (variance inflation factor). Tolerance is just the inverse of VIF. A value of VIF higher than 5 or Tolerance less than 0.2 indicates the presence of multicollinearity. In social sciences research, a VIF value as high as 10 is considered to be acceptable. Here in the model VIF value for all the 5 included independent

variables are more than 10 or the Tolerance is less than 0.2. So there exists every sign of multicollinearity in the model as reflected in Table 6.4.

- The 5 independent variables as used in equation no.(2) are not good predictors for 'Net Profit', as there exists multicollinearity i.e. strong inter-relationships between the independent variables as was reflected in Table 6.3 showing Correlation Matrix.

Table 6.5: Excluded Variables^b

Model	Beta In	t	Sig.	Partial Co- rrelation	Collinearity Statistics		
					Tolerance	VIF	Minimum Tolerance
Interest Income	0.96 ^a	3.48	0.18	0.96	8.90E-05	1.12E+04	4.11E-05

a. Predictors in the Model: (Constant), Spread, Net NPA, Other Income, Operating Expenses, Interest Expenses

b. Dependent Variable: Net Profit

6.5.2.2 FORWARD Stepwise Regression Method:

When the problem involves 6 independent variables, all the variables may not be equally important. It may be that some combinations can effectively explain the variation better than others. To resolve this uncertainty, an evaluation of various combinations of independent variables can be done in different regression equations. The number of variables to be included in the analysis should be decided upon. Stepwise multiple regression analysis is done for the above purpose. Here we have applied FORWARD Stepwise regression method.

It is a model, in which the algorithm adds one factor at a time, starting with the one which explains most of the variation in 'Net Profit' and adding any one of the given six factors to it, rechecking the model to see that both the variables form a good model, then adding a third variable to see that it could still add to the explanation of 'Net Profit' and so on.

Table 6.6 shows that the result of running a forward stepwise regression, which ends up only one out of 6 factors in the regression model. The only

variable included in the model is Interest Expenses (X_3). This explains the principle of multicollinearity, i.e. there is some dependency between the independent variables taken.

Based on the model from Table 6.6, the equation can be written as follows:

$$\text{Net Profit} = 2.80 - 0.49 * (\text{Interest Expenses}) \dots\dots\dots(3)$$

Table 6.9 shows the F-test for the model, which is highly significant and the R^2 value for the model is 0.94 which shows that 94% of the variation in 'Net Profit' can be explained by the only independent variable, Interest Expenses (Table 6.9). The t-value of 'Interest Expenses' is also highly significant as per Table 6.6. As the value of VIF is less than 5 i.e. 1 as per Table 6.6, there exists no multicollinearity in this model and hence the equation no.(3) is quite reliable.

Table 6.6: Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
(Constant)	2.80	0.21		13.50	0.00	2.29	3.31		
Interest Expenses	-0.49	0.05	-0.97	-9.38	0.00	-0.62	-0.36	1.00	1.00

a. Dependent Variable: Net Profit

Table 6.7: Excluded Variables^b

Model	Beta In	t	Sig.	Partial Correlation	Collinearity Statistics		
					Tolerance	VIF	Minimum Tolerance
Interest Income	-0.11 ^a	-1.08	0.33	-0.44	0.98	1.02	0.98
Other Income	0.31 ^a	1.47	0.20	0.55	0.20	5.12	0.20
Operating Expenses	-0.19 ^a	-0.82	0.45	-0.34	0.22	4.57	0.22
Net NPA	-0.27 ^a	-1.76	0.14	-0.62	0.33	2.99	0.33
Spread	-0.16 ^a	-1.09	0.33	-0.44	0.47	2.11	0.47

a. Predictors in the Model: (Constant), Interest Expenses

b. Dependent Variable: Net Profit

Table 6.8: Collinearity Diagnostics^a

Dimension	Eigen Value	Condition Index	Variance Proportions	
			(Constant)	Interest Expenses
1	1.990	1.000	0.00	0.00
2	0.010	14.407	1.00	1.00

a. Dependent Variable: Net Profit

Table 6.9: ANOVA^b

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	0.577	1	0.577	87.896	0.000 ^a
Residual	0.039	6	0.007		
Total	0.616	7			

a. Predictors: (Constant), Interest Expenses

b. Dependent Variable: Net Profit

Table 6.10: Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0.97 ^a	0.94	0.925	0.081	3.005

a. Predictors: (Constant), Interest Expenses

b. Dependent Variable: Net Profit

6.6 Conclusion

From the above calculation, it is clear that 'Interest Expenses' is the only good predictor for 'Net Profit' of all different bank groups taking together during the years 2004-05 to 2006-07 with the given data set. The study may be extended to take other important variables into consideration as well as to include other years after 1991 or to calculate the factors affecting 'Net Profit' of each bank group individually over a certain period of time.

Table 6.4: Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	95% Confidence Interval for B		Collinearity Statistics	
	B	Std. Error	Beta			Lower Bound	Upper Bound	Tolerance	VIF
(Constant)	-2.21	0.17		-13.14	0.01	-2.93	-1.48		
Other Income	0.86	0.03	1.59	28.90	0.00	0.74	0.99	0.01	67.97
Interest Expenses	0.66	0.04	1.30	18.13	0.00	0.50	0.81	0.01	115.55
Operating Expenses	-0.76	0.04	-1.48	-21.01	0.00	-0.92	-0.60	0.01	111.07
Net NPA	-1.25	0.04	-0.75	-31.12	0.00	-1.43	-1.08	0.08	12.99
Spread	0.68	0.03	2.12	25.88	0.00	0.57	0.79	0.01	150.39

a. Dependent Variable: Net Profit

CHAPTER – VII

Performance of Commercial Banks in West Bengal during the Reforms

- 7.1 Introduction
- 7.2 Trends in Bank Advances and Deposits in West Bengal
- 7.3 A Case Study on Punjab National Bank, S.F. Road Branch, Siliguri, West Bengal
- 7.4 A Case Study on NPA Management Rating Model – SBI and IOB
- 7.5 A Case Study on Punjab National Bank, Jawaharlal Nehru Road Branch, Siliguri, West Bengal (2006 – 2007)

PERFORMANCE OF COMMERCIAL BANKS IN WEST BENGAL DURING THE REFORMS

7.1 Introduction

As the impacts of reforms were evidenced in the Indian banking industry, it was also seen in West Bengal. The data were taken from different districts of West Bengal to exhibit the volume of deposit and credit mobilization in the year 2006-07 (Table 7.1). The districts are categorized into three parts such as Rural, Semi-Urban and Urban.

Table 7.1: District and Population Group-wise Deposits and Credit of Scheduled Commercial Banks of West Bengal as on March 2007

State / Districts	DEPOSITS			CREDIT
	No. of	No. of	Amount	Amount
	Offices	Accounts		Outstanding
(1)	(2)	(3)	(4)	(5)
WEST BENGAL	4,818	372,24,858	151035,75	97704,05
Rural	2,267	123,67,242	19029,76	7393,52
Semi-urban	538	52,74,041	12588,28	4250,87
Urban	786	83,48,988	31933,32	10428,96
Metropolitan	1,227	112,34,587	87484,39	75630,70
DISTRICT-WISE PERFORMANCE				
BANKURA	172	10,18,563	1843,60	684,02
Rural	147	7,94,530	1104,76	404,30
Semi-urban	11	92,347	215,82	90,29
Urban	14	1,31,686	523,02	189,43
BARDHAMAN	410	31,22,869	9254,47	3380,75
Rural	213	11,90,140	2147,17	838,13
Semi-urban	42	4,30,219	1140,98	373,00
Urban	155	15,02,510	5966,33	2169,62
BIRBHUM	179	10,81,621	1917,07	743,59
Rural	133	6,76,056	940,86	374,28
Semi-urban	46	4,05,565	976,21	369,31
DAKSHIN DINAJPUR	65	3,03,145	522,54	314,84
Rural	53	2,07,972	244,06	191,01
Semi-urban	3	16,548	32,90	32,41
Urban	9	78,625	245,59	91,42
DARJEELING	129	9,50,802	2936,33	1918,47
Rural	43	2,24,793	312,62	125,00
Semi-urban	13	1,36,925	375,83	153,62
Urban	73	5,89,084	2247,88	1639,84
HOWRAH	237	23,04,023	6066,85	2054,83
Rural	99	8,16,167	1423,68	367,18
Semi-urban	29	3,47,977	859,17	157,69
Urban	27	2,37,569	782,65	373,43

Metropolitan	82	9,02,310	3001,35	1156,52
HOOGLY	267	25,29,664	5518,65	1463,22
Rural	147	9,47,311	1596,20	450,71
Semi-urban	45	5,63,138	1363,15	441,76
Urban	75	10,19,215	2559,31	570,75
JALPAIGURI	139	9,67,379	1984,18	845,53
Rural	90	4,81,168	856,52	303,79
Semi-urban	28	2,78,150	555,88	255,51
Urban	21	2,08,061	571,78	286,24
COCHBEHAR	113	5,73,501	917,59	563,77
Rural	78	3,15,668	284,06	240,25
Semi-urban	35	2,57,833	633,53	323,52
KOLKATA	1,145	103,32,277	84483,04	74474,18
Metropolitan	1,145	103,32,277	84483,04	74474,18
MALDAH	154	7,73,958	1405,10	771,64
Rural	116	5,07,197	662,43	368,81
Semi-urban	26	1,60,449	404,14	168,81
Urban	12	1,06,312	338,53	234,02
MURSHIDABAD	230	13,14,152	2393,31	1017,32
Rural	142	6,49,546	887,14	411,88
Semi-urban	62	4,48,844	788,73	311,86
Urban	26	2,15,762	717,44	293,58
NADIA	188	14,54,802	2907,98	1026,36
Rural	106	5,89,738	882,13	354,39
Semi-urban	54	5,77,206	1298,61	398,13
Urban	28	2,87,858	727,25	273,84
NORTH 24 PARGANAS	436	46,79,513	16500,45	3952,00
Rural	158	11,61,537	1708,98	662,90
Semi-urban	40	5,15,875	1444,71	326,16
Urban	238	30,02,101	13346,75	2962,94
PASCHIM MEDINIPUR	303	15,92,443	3459,02	1704,15
Rural	241	10,33,468	1513,48	844,67
Semi-urban	17	1,47,958	370,10	185,58
Urban	45	4,11,017	1575,44	673,90
PURBA MEDINIPUR	201	11,71,487	2980,73	1086,83
Rural	159	8,78,307	1320,73	573,46
Semi-urban	20	1,73,482	556,37	216,21
Urban	22	1,19,698	1103,63	297,15
PURULIYA	116	6,69,264	1435,22	354,39
Rural	93	4,71,436	801,09	171,48
Semi-urban	9	78,452	205,31	38,33
Urban	14	1,19,376	428,82	144,59
SOUTH 24 PARGANAS	251	19,62,401	3739,16	897,34
Rural	185	11,67,599	1959,15	474,60
Semi-urban	51	5,95,039	1269,24	331,97
Urban	15	1,99,763	510,78	90,77
UTTAR DINAJPUR	83	4,22,994	770,45	450,81
Rural	64	2,54,609	384,71	236,67
Semi-urban	7	48,034	97,60	76,70
Urban	12	1,20,351	288,13	137,44

Source: Basic Statistical Returns 2006-07, RBI

7.2 Trends in Bank Advances and Deposits in West Bengal

In the study, two sample districts of the northern part of West Bengal (Jalpaiguri and Darjeeling) and two sample districts of the southern part of West Bengal (Hooghly and Kolkata) give multi dimensional results in respect of percentage of advances to deposits during the period 1999 – 2003.

Table 7.2 (A) shows that percentage of advances to deposits has been increased remarkably in Jalpaiguri district in the rural belt, whereas in the semi-urban and urban belt this is more or less same throughout the study period. In Darjeeling district, the scenario is quite different. It experienced considerable growth in the percentage of advances to deposits in the urban areas whereas in other areas no such significant growth was found [Table 7.2 (B)].

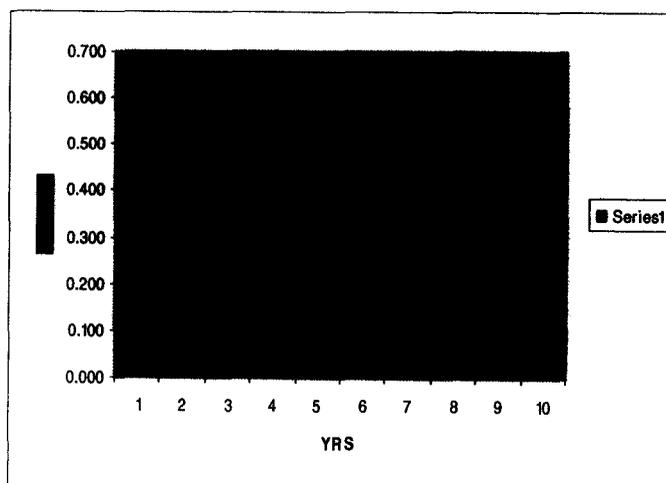
A different picture was observed in two sample districts of southern part of West Bengal viz. Hooghly and Kolkata. No significant growth in the above ratio is observed in the two districts during the study period [Table 7.2 (C) & 7.2 (D)].

7.3 A Case Study on Punjab National Bank, S.F. Road Branch, Siliguri, West Bengal

NPA Ratio of Punjab National Bank, S.F. Road Branch, Siliguri, West Bengal

I. GROSS NPA RATIO = GROSS NPA / GROSS ADVANCES

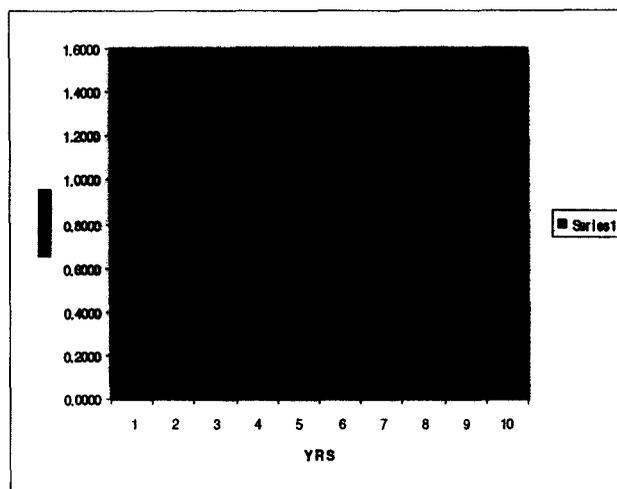
Years	NPA Ratio
1997-98	0.0531
1998-99	0.4014
1999-2000	0.6001
2000-01	0.0186
2001-02	0.2644
2002-03	0.0149
2003-04	0.0107
2004-05	0.0026
2005-06	0.0041
2006-07	0.0034



Gross NPA Ratio has been reduced remarkably throughout the period.

II. NET NPA RATIO = NET NPA / NET ADVANCES

Years	NPA Ratio
1997-98	1.3572
1998-99	0.9732
1999-2000	0.6007
2000-01	0.168
2001-02	0.2609
2002-03	0.0147
2003-04	0.0106
2004-05	0.0015
2005-06	0.0015
2006-07	0.0023



Net NPA Ratio has been reduced remarkably throughout the period.

Pair t-Test

With the help of pair t-test we can now find that whether there are any significant differences between the Gross NPA ratio of Punjab National Bank, S.F. Road Branch over two periods.

Let, X_1 = 1997-98 to 2001-02;

X_2 = 2002-03 to 2006-07

X_1	X_2
0.53	0.01
0.4	0.01
0.6	0.002
0.01	0.004
0.26	0.003

H_0 : There is no significant difference in increase in the Gross NPA ratio within two periods.

H_1 : There are significant differences in increase in the Gross NPA ratio within two periods.

t-Test: Paired Two Sample for Means		
	X₁	X₂
Mean	0.36	0.0058
Variance	0.05515	0.0000152
Observations	5	5
Pearson Correlation	0.240285812	
Hypothesized Mean Difference	0	
Df	4	
t Stat	3.385633009	
P(T<=t) one-tail	0.013820607	
t Critical one-tail (10%)	2.131846486	
P(T<=t) two-tail	0.027641214	
t Critical two-tail(10%)	2.776450856	

Remarks: As the computed value (3.385) is more than the critical value, there is no reason to accept H_0 and as such H_0 is rejected and H_1 is accepted i.e. there are significant differences in increase in the Gross NPA ratio within two periods (1997-98 to 2001-02 and 2002-03 to 2006-07).

t-Test: Two-Sample Assuming Equal Variances

Let, X_1 = GROSS NPA RATIO OF PNB AS A WHOLE.

X_2 = GROSS NPA RATIO OF PNB, S.F ROAD BRANCH.

YEARS	GROSS NPA RATIO OF PNB AS A WHOLE (X_1)	GROSS NPA RATIO OF PNB, S.F ROAD BRANCH (X_2)
1997-98	14.76	0.53
1998-99	14.12	0.4
1999-00	13.19	0.6
2000-01	11.71	0.01
2001-02	11.38	0.26
2002-03	11.58	0.01
2003-04	9.35	0.01
2004-05	5.96	0.002
2005-06	4.1	0.004
2006-07	3.45	0.003

H_0 : There is no significant difference of Gross NPA ratio to Advances of PNB as a whole and PNB, S.F.Road Branch.

H_1 : There are significant differences of Gross NPA ratio to Advances of PNB as a whole and PNB, S.F.Road Branch.

t-Test: Two-Sample Assuming Equal Variances		
	Gross NPA to Advances	
	X₁	X₂
Mean	9.96	0.1829
Variance	16.84151	0.059367
Observations	10	10
Pooled Variance	8.450439	
Hypothesized Mean Difference		0
Df		18
t Stat		7.520651
P(T<=t) one-tail		2.92E-07
t Critical one-tail		1.734063
P(T<=t) two-tail		5.84E-07
t Critical two-tail		2.100924

Remarks: As the computed value (7.520) is more than the critical value, there is no reason to accept H_0 and as such H_0 is rejected and H_1 is accepted i.e. there are significant differences in Gross NPA ratio to Advances of PNB as a whole and PNB, S.F.Road Branch.

t-Test: Two-Sample Assuming Equal Variances

Let, X_1 = NET NPA RATIO OF PNB AS A WHOLE.

X_2 = NET NPA RATIO OF PNB, S.F ROAD BRANCH.

YEARS	NET NPA RATIO OF PNB AS A WHOLE (X₁)	NET NPA RATIO OF PNB, S.F ROAD BRANCH (X₂)
1997-98	8.87	1.35
1998-99	8.96	0.97
1999-00	8.52	0.6
2000-01	6.69	0.16
2001-02	5.27	0.26
2002-03	3.8	0.1
2003-04	0.98	0.1
2004-05	0.2	0.001
2005-06	0.28	0.001
2006-07	0.75	0.002

H₀: There is no significant difference of Net NPA ratio to Advances of PNB as a whole and PNB, S.F.Road Branch.

H₁: There are significant differences of Net NPA ratio to Advances of PNB as a whole and PNB, S.F.Road Branch.

t-Test: Two-Sample Assuming Equal Variances		
	Net NPA to Advances	
	X₁	X₂
Mean	4.4	0.3544
Variance	13.44276	0.220068
Observations	10	10
Pooled Variance	6.831412	
Hypothesized Mean Difference		0
Df		18
t Stat		3.461089
P(T<=t) one-tail		0.001394
t Critical one-tail		1.734063
P(T<=t) two-tail		0.002787
t Critical two-tail		2.100924

Remarks: As the computed value (3.461) is more than the critical value, there is no reason to accept H_0 and as such H_0 is rejected and H_1 is accepted i.e. there are significant differences in Net NPA ratio to Advances of PNB as a whole and PNB, S.F.Road Branch.

7.4 NPA Management Rating Model

A NPA Management Rating Model has been developed to assess the quality of the asset. This model is applied on two important bank branches of Jalpaiguri town of Jalpaiguri district, West Bengal viz. State Bank of India and Indian Overseas Bank. The results are shown below.

Table 7.3 Rating of State Bank of India (Main Branch), Jalpaiguri Branch, West Bengal over the period 1999 – 2003 (end of 31st March)

(A) PARAMETERS

(rupees in '000)

Parameters	1999	2000	2001	2002	2003
Gross Advance	122403	118005	155709	227092	298758
Gross NPA	10080	15495	14943	7450	9494
Substandard Asset	8820	10666	6543	3975	1351
Doubtful Asset	572	784	1646	755	4896
Loss Asset	688	4045	6754	2720	3247

(B) RATIO ANALYSIS (%)

1. Gross NPA Ratio	8.24	13.13	9.60	3.28	3.18
2. Net NPA Ratio*	8.24	13.13	9.60	3.28	3.18
3. Substandard Asset Ratio	87.5	68.84	43.79	53.35	14.23
4. Doubtful Asset Ratio	5.67	5.06	11.02	10.13	51.57
5. Loss Asset Ratio	6.83	26.10	45.19	36.52	34.20
6. NPA Reduction Ratio	-	-	3.56	50.14	-
7. NPA Accretion Ratio	-	53.72	-	-	27.44
8. Increase/ Decrease in Gross NPA	-	Increase	Decrease	Decrease	Increase
9. Increase/ Decrease in Gross NPA Ratio	-	Increase	Decrease	Decrease	Decrease
10. Increase/ Decrease in Gross NPA Reduction Ratio	-	-	Increase	Increase	-

(C) RATING

1.(5% & less+1; more than 5%-1)	-1	-1	+1	+1
2.(2.5% & less+1; more than 2.5%-1)	-1	-1	+1	+1
3.(35% & less+1; more than 35%-1)	-1	-1	-1	+1
4.(60% & less+1; more than 60%-1)	+1	+1	+1	+1
5.(5% & less+1; more than 5%-1)	-1	-1	-1	-1
6.(30% & more+1; less than 30%-1)	-	-1	+1	-
7.(less than 100%+1; 100% & more-1)	+1	-	-	+1
8.(decrease+1; increase-1)	-1	+1	+1	-1
9. (decrease+1; increase-1)	-1	+1	+1	+1
10. (increase+1; decrease-1)	-	+1	+1	-
TOTAL	-4	-1	+5	+4
RATING	D Poor	C Average	A Very good	B Good

*As no information is obtained regarding Net NPA and Net Advance, it is assumed that the Net NPA Ratio is achieved to the same proportion of the Gross NPA Ratio.

Scale: 8 to 10: A+(Excellent); 5 to 7: A (Very Good); 2 to 4: B (Good); -1 to 1: C (Average); -4 to -2: D (Poor); -7 to -5: E (Very Poor); -10 to -8: F (Very Very Poor).

Table 7.4: Rating of Indian Overseas Bank, Jalpaiguri Branch, West Bengal over the period 1999 – 2005 (end of 31st March)

(A) PARAMETERS

(rupees in crores)

Parameters	1999	2000	2001	2002	2003	2004	2005
Total Advance	3.52	3.87	4.50	7.50	9.68	10.58	10.50
NPA	0.82	0.78	0.69	0.55	0.35	0.32	0.29
Substandard Asset	0.30	0.26	0.17	0.27	0.08	0.06	0.03
Doubtful Asset	0.18	0.18	0.18	0.10	0.09	0.08	0.08
Loss Asset	0.34	0.34	0.34	0.18	0.18	0.18	0.18

(B) RATIO ANALYSIS (%)

1. NPA Ratio	23.29	20.15	15.33	7.33	3.61	3.02	2.76
2. Substandard Asset Ratio	36.58	33.33	24.63	49.09	22.85	18.75	10.34
3. Doubtful Asset Ratio	21.95	23.07	26.08	18.18	25.71	25.00	27.58
4. Loss Asset Ratio	41.46	43.58	49.27	32.72	51.42	56.25	62.06
5. NPA Reduction Ratio	-	4.87	11.53	20.28	36.36	8.57	9.37
6. Increase/Decrease in NPA	-	Decrease	Decrease	Decrease	Decrease	Decrease	Decrease
7. Increase/Decrease in NPA Ratio	-	Decrease	Decrease	Decrease	Decrease	Decrease	Decrease
8. Increase/Decrease in NPA Reduction Ratio	-	Increase	Increase	Increase	Increase	Increase	Increase

(C) RATING

1.(5% & less+1; more than 5%-1)	-1	-1	-1	+1	+1	+1
2.(35% & less+1; more than 35%-1)	+1	+1	-1	+1	+1	+1
3.(60% & less+1; more than 60%-1)	+1	+1	+1	+1	+1	+1
4.(5% & less+1; more than 5%-1)	-1	-1	-1	-1	-1	-1
5.(30% & more+1; less than 30%-1)	-1	-1	-1	+1	-1	-1
6.(decrease+1; increase-1)	+1	+1	+1	+1	+1	+1
7.(decrease+1; increase-1)	+1	+1	+1	+1	+1	+1
8.(increase+1; decrease-1)	+1	+1	+1	+1	-1	+1
TOTAL	+2	+2	0	+7	+2	+4
RATING	B Good	B Good	B Good	A+ Excellent	B Good	A Very Good

Scale: 6 to 8: A+ (Excellent); 3 to 5: A (Very Good); 0 to 2: B (Good); -3 to -1: C (Average); -6 to -4: D (Poor); -9 to -7: E (Very Poor); -12 to -10: F (Very Very Poor).

7.5 A Case Study on Punjab National Bank, Jawaharlal Nehru Road Branch, Siliguri, West Bengal (2006 – 2007)

Response Analysis

In order to understand the basis on which various variables/factors depend, a questionnaire is applied on 2000 respondents (customers) on 10 various factors and then the data is used for **Factor Analysis** to get the conclusions.

- **Variables:**

1. PNB is having a wide **Branch Network**.
2. **Interest rate** on loan of PNB is competitive.
3. PNB provides better **Customer service** than other bank in the same locality.
4. **Loan processing** system is not cumbersome.
5. **Loan schemes** are customer friendly.
6. PNB provides better **Reliability** than other banks in the same locality.
7. PNB uses upgraded **Technology** initiatives.
8. PNB provides improved **ATM** facility.
9. Amount of **Loan disbursement** caters the need of the customers.
10. **Problem free** loan disbursement system exists.

- **Scale:**

1. Completely Disagree
2. Disagree
3. Neither agree nor disagree
4. Agree
5. Completely Agree

- **Tool used:** Factor Analysis

- **Statistical Package used:** SPSS 16

- **Extraction Method:** Principal Component Analysis

The followings are the results after manipulating the data based on questionnaire as mentioned above on 2000 respondents through SPSS package:

Table 7.5: Communalities

Variables	Initial	Extraction
Branch_Network	1	0.776
Interest_Rate	1	0.762
Customer_Service	1	0.733
Loan_Processing	1	0.971
Loan_Schemes	1	0.794
Reliability	1	0.531
Technology	1	0.516
ATM	1	0.777
Loan_Disbursement	1	0.855
Problem_Free	1	0.971

Extraction Method: Principal Component Analysis.

Table 7.6. Total Variance Explained

Component	Initial Eigen Values		
	Total	% of Variance	Cumulative %
1	2.803	28.025	28.025
2	1.970	19.697	47.723
3	1.615	16.149	63.871
4	1.296	12.964	76.836
5	0.754	7.543	84.379
6	0.676	6.755	91.134
7	0.415	4.155	95.289
8	0.233	2.335	97.624
9	0.197	1.968	99.592
10	0.041	0.408	100.000

Table 7.7: Component Matrix*

Variables	Component			
	1	2	3	4
Branch_Network	0.755	0.206	0.054	0.400
Interest_Rate	0.426	-0.496	0.556	0.158
Customer_Service	0.472	0.025	0.710	0.070
Loan_Processing	-0.748	0.119	0.255	0.577
Loan_Schemes	0.289	0.834	0.018	0.118
Reliability	0.558	0.102	-0.251	0.333
Technology	-0.020	0.319	0.643	0.003
ATM	0.422	-0.177	-0.496	0.566
Loan_Disbursement	-0.067	0.909	-0.075	-0.138
Problem_Free	-0.809	0.032	0.078	0.556

Extraction Method: Principal Component Analysis.

*4 components extracted.

Table 7.8. Rotated Component Matrix*

Variables	Component			
	1	2	3	4
Branch_Network	-0.210	0.191	0.735	0.393
Interest_Rate	-0.125	-0.525	0.172	0.664
Customer_Service	-0.150	-0.007	0.094	0.837
Loan_Processing	0.971	0.042	-0.157	0.038
Loan_Schemes	-0.045	0.828	0.271	0.181
Reliability	-0.203	0.106	0.690	0.037
Technology	0.152	0.282	-0.232	0.599
ATM	0.010	-0.181	0.830	-0.233
Loan_Disbursement	0.009	0.917	-0.096	-0.066
Problem_Free	0.961	-0.034	-0.148	-0.154

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

*Rotation covered in 6 iterations.

Table 7.9. Component Score Coefficient Matrix

Variables	Component			
	1	2	3	4
Branch_Network	0.047	0.086	0.373	0.177
Interest_Rate	0.021	-0.275	0.054	0.376
Customer_Service	-0.001	-0.011	-0.012	0.474
Loan_Processing	0.528	0.011	0.087	0.107
Loan_Schemes	0.029	0.417	0.131	0.082
Reliability	0.015	0.046	0.366	-0.028
Technology	0.088	0.139	-0.141	0.371
ATM	0.144	-0.102	0.505	-0.173
Loan_Disbursement	-0.029	0.469	-0.065	-0.042
Problem_Free	0.509	-0.026	0.100	-0.006

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

A. Interpretation of output:

The output of factor analysis has been obtained by requesting **Principal Component Analysis** in SPSS Package and specifying the rotation. There are two stages in the above factor analysis as below:

Stage I:

This is the factor extraction process stage wherein the objective is to identify how many factors are to be extracted from the data (see Table 7.7 & 7.8). The most popular method for this is called “Principal Component Analysis” which has been used here. A rule of thumb commonly used for cut-off ratio to identify high loading is 0.40 There is also a rule of thumb based on the computation of an Eigen Value (characteristic root of the correlation or covariate matrix) to determine how many factors to be extracted. Here, instruction has been given in the SPSS package to extract the factors which have Eigen values more than 1. The higher the Eigen Value of a factor, the higher is the amount of variance explained by the factor. (See Table 7.6)

As evident from Table 7.6 (looking at the cumulative % column), it is found that the four factors extracted having Eigen Values more than 1 account for 76.836% of the Total Variance. Hence we have reduced the number of variables from 10 to 4 underlying factors.

Stage II:

In this stage we compute component score co-efficient matrix. The co-efficients are used to calculate the factor scores i.e. the estimated value of the factors.

B. Concluding Remark:

Stage II:

- Looking at the Table 7.8 (Rotated Component Matrix), we see that the variables: Loan_Processing and Problem_free have loadings of 0.971 & 0.961 respectively on Factor 1. This suggests that the Factor 1 is a combination of these two variables. Therefore this factor can be interpreted as **Loan Processing**.
- Now for Factor 2 in Table 7.8, we see that Loan_schemes and Loan_disbursement have a high loading of 0.828 & 0.917 respectively. These variables can be clubbed into a single factor called **Loan Disbursement**.
- As for Factor 3 in Table 7.8, it is evident that Branch_network, Reliability & ATM have the highest loading of 0.735, 0.690 & 0.830 respectively. These variables can be termed as **Bank Facility**.
- In Factor 4, Interest rate, Customer_service & Technology have got the highest loadings of 0.664, 0.837 & 0.599 respectively. We can club these variables into one factor namely **Customer Friendly**.

Stage II:

The component score coefficient pattern matches the loading pattern. From the Component score coefficient matrix in Table 7.9, the behaviour of the observation can be explained in the following ways:

Factor 1 = 0.047 Branch_network + 0.021 Interest_rate - 0.001 Customer_service + 0.528 Loan_processing + 0.029 Loan_schemes + 0.015 Reliability + 0.088 Technology + 0.144 ATM - 0.029 Loan_disbursement + 0.509 Problem_free.

Factor 2 = 0.086 Branch_network - 0.275 Interest_rate - 0.011 Customer_service + 0.011 Loan_processing + 0.417 Loan_schemes + 0.046 Reliability + 0.139 Technology - 0.102 ATM + 0.469 Loan_disbursement - 0.026 Problem_free.

Factor 3 = 0.373 Branch_network + 0.054 Interest_rate - 0.012 Customer_service + 0.087 Loan_processing + 0.131 Loan_schemes + 0.366 Reliability - 0.141 Technology + 0.505 ATM - 0.065 Loan_disbursement + 0.100 Problem_free.

Factor 4 = 0.177 Branch_network + 0.376 Interest_rate + 0.474 Customer_service + 0.107 Loan_processing + 0.082 Loan_schemes - 0.028 Reliability + 0.371 Technology - 0.173 ATM - 0.042 Loan_disbursement - 0.006 Problem_free.

The following observations are found:

- In case of Factor 1, Loan Processing has got the maximum importance to the tune of 52.80%.
- In case of Factor 2, Loan Disbursement has got the maximum importance to the tune of 46.9%.
- In case of Factor 3, Branch Network has got the maximum importance to the tune of 37.30%.
- In case of Factor 4, Customer Service has got the maximum importance to the tune of 47.40%.

Table 7.2: Deposits & Advances of Commercial Banks in select Districts of West Bengal

(A) District: Jalpaiguri

(Rupees in lakhs)

Year	Rural				Semi-Urban			
	No. of Offices	Deposits	Advances	% of Advances to Deposits	No. of Offices	Deposits	Advances	% of Advances to Deposits
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1999	84	34687	5069	14.60	51	47665	10510	22.00
2000	84	32086	7576	23.60	51	55931	12694	22.70
2001	84	44627	17287	38.70	51	67727	17291	25.50
2002	84	56006	12398	22.10	51	76137	19769	25.00
2003	84	56064	24406	43.50	51	82868	23851	28.80

Urban/Metropolitan				Total				Average Population per Office (in thousand)
No. of Offices	Deposits	Advances	% of Advances to Deposits	No. of Offices	Deposits	Advances	% of Advances to Deposits	
(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	762	138	18.1	136	83114	15717	18.9	25
1	1001	226	22.6	136	89018	20497	23.0	20
1	1211	250	20.6	136	113565	34827	30.7	25
1	1387	256	18.5	136	133531	32413	24.3	26
1	1599	277	17.3	136	140531	48534	34.5	26

(B) District: Darjeeling**(Rupees in lakhs)**

Year	Rural				Semi-Urban			
	No. of Offices	Deposits	Advances	% of Advances to Deposits	No. of Offices	Deposits	Advances	% of Advances to Deposits
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1999	43	12651	2851	22.50	26	34368	4108	12.00
2000	43	15314	3311	21.60	26	40995	5564	13.60
2001	43	18671	3870	20.70	26	47595	6812	14.30
2002	43	20588	4482	21.80	26	53378	8972	16.80
2003	43	22660	5391	23.80	26	58897	11100	18.80

Urban/Metropolitan				Total				Average Population per Office (in thousand)
No. of Offices	Deposits	Advances	% of Advances to Deposits	No. of Offices	Deposits	Advances	% of Advances to Deposits	
(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
36	60134	17988	29.90	105	107153	24948	23.30	15
37	74606	24197	32.40	106	130915	33072	25.30	15
40	91995	32769	35.60	109	158260	43451	27.50	15
42	97685	38634	39.50	111	171651	52087	30.30	15
45	107104	45581	42.60	114	188661	62072	32.90	15

(C) District: Hooghly

(Rupees in lakhs)

Year	Rural				Semi-Urban			
	No. of Offices	Deposits	Advances	% of Advances to Deposits	No. of Offices	Deposits	Advances	% of Advances to Deposits
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1999	152	69780	14243	20.4	48	61707	10692	17.3
2000	152	79414	16675	21.0	48	72103	11591	16.1
2001	152	92360	18021	19.5	48	83678	12795	15.3
2002	152	108467	19488	18.0	49	98051	14159	14.4
2003	152	120530	23099	19.2	49	108447	16510	15.2

Urban/Metropolitan				Total				Average Population per Office (in thousand)
No. of Offices	Deposits	Advances	% of Advances to Deposits	No. of Offices	Deposits	Advances	% of Advances to Deposits	
(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
48	86749	11926	13.7	248	218236	36862	16.9	21
50	100737	13301	13.2	250	252254	41567	16.5	21
52	118715	14990	12.6	252	294753	45806	15.5	20
52	134687	16667	12.4	253	341205	50315	14.7	20
52	145285	19133	13.2	253	374262	58743	15.7	21

(D) District: Kolkata

(Rupees in lakhs)

Year	No. of Offices	Deposits	Advances	% of Advances to Deposits	Average Population per Office (in thousand)
(1)	(2)	(3)	(4)	(5)	(6)
1999	969	2842160	1751779	61.6	6
2000	975	3155103	2123256	67.3	6
2001	988	3652770	2230724	61.1	5
2002	990	4032269	2716462	67.4	5
2003	994	4490359	3069864	68.4	5

Note: a) Rural - Includes all centers having population of 10,000 or less.

b) Semi Urban - Includes all centers with population over 10,000 and up to 1 lakh

c) Urban - Includes all centers having population over 1 lakh and up to 10 lakhs

d) Metropolitan - Includes all centers with population over 10 lakhs.

e) Average population per Bank office is based on estimated population as on end of June except for the year 2001.

Source: Department of Statistical Analysis & Computer services, Mumbai, Reserve Bank India.

CHAPTER – VIII

CONCLUSIONS AND RECOMMENDATIONS

8.1 Conclusions

8.2 Recommendations

CONCLUSIONS AND RECOMMENDATIONS

8.1 Conclusions

Since the imposition of banking sector reforms in 1991, India's banking sector has seen favourable changes. This work has assessed the impact of these reforms by examining changes in the performance of the banking sector. It was found that the performance of public sector banks were much improved in the second half of the 1990s. Profitability (measured by return on assets) of nationalized banks turned positive after 1997. Further, nationalized and SBI banks have steadily improved their cost efficiency (measured by operating costs divided by operating income) over the reform period. Even though foreign banks and private sector banks generally performed better than public sector banks in terms of profitability, earnings efficiency and cost efficiency in the initial stage, such differences have diminished as public sector banks have improved profitability and cost efficiency. This suggests that the banking sector reforms since 1991 have exerted increased pressure and, thus, had a positive non-negligible impact on the performance of public sector banks.

However, it should be stressed that this does not imply that the reforms have had wholly satisfactory results; indeed, this has been far from the case, for the following reasons. First, public sector banks have remained dominant, accounting for about 80% of deposits and assets in the commercial banking sector. During 1995-2000, there was only a moderate decline in the share of public sector banks and a slight increase in the share of old and new private sector banks in terms of asset base. Further, the SBI, the largest public sector bank, has even increased its share both in terms of deposits and assets.

Second, profitability of nationalized banks has remained small once interest income from recapitalization bonds was excluded. This suggests that nationalized banks have continued to suffer from poor management skills, over branching, and overstaffing. Although their net NPA ratios have gradually

declined, the ratios have remained high. Some nationalized banks have stayed short of capital, demanding further recapitalization. Since only 45% of NPAs are attributable to priority sector lending and most of the recent NPAs are the result of new lending activities, this indicates that corporate governance and risk management systems have been problematic.

Third, although some nationalized banks have promoted partial privatization, this has not improved their corporate governance through greater shareholder supervision. This is partly because rules have restricted individual voting rights to a maximum of 10%, and partly because the share held by the public sector (Central Government or the RBI) has remained large. Indeed, many have remained fully owned by the public sector. While privatization of viable public sector banks should be promoted further, the information, legal, and judiciary infrastructure that is needed for developing a sound capital market should be strengthened. Mere privatization without institutional changes, where external shareholders and independent boards of directors cannot practice corporate governance properly, will not have a favorable impact on the performance of partially privatized public sector banks.

In addition, the Government believes that the public sector nature of nationalized banks should continue even if its stake drops to 33% (Raje, 2000). To improve the performance of public sector banks, the Government should alter this view and transform public sector banks into purely commercial-oriented banks with greater autonomy for their operations and human resources policies. This is particularly so if it wishes that these banks could become more profitable and efficient, thereby being able to compete with private sector and foreign banks on a level playing field and lowering their dependence on government financial support. Moreover, the board of directors system should be reformed by increasing the number of competent external directors, guaranteeing independence of the board from government and political interference, improving accounting and disclosure standards, and strengthening minority shareholders' rights. It is important to ensure a clear separation of management and ownership. Improving corporate governance

in the banking sector would also help to increase the price of IPOs and, hence, promote privatization.

Fourth, given that public sector banks enjoy scale advantages because of their nationwide branch networks (especially compared with private sector banks, which tend to compete in the retail market), the current approach of improving their performance without rationalizing them may not have further and substantial benefits for India's banking sector. As 17 years have passed since the reforms were initiated and public sector banks have been exposed to the new regulatory environment and pressures, it may be the time for the Government to take a further step by promoting M&As of banks and/or branches and closing unviable nationalized banks and/or branches. Also, further action to improve NPA problems - possibly through operating an ARC in order to avoid moral hazard problems - may be necessary.

Fifth, priority sector lending should be gradually phased out even though the negative impact of such lending has declined in recent years. Thanks to reforms that liberalized lending rates on advances of more than Rs.200,000 and broadened the coverage of priority sector lending, advances to priority sectors have exerted a positive effect on earnings efficiency and cost efficiency on the whole banking sector. However, it has lowered profitability of public sector banks and contributed to an accumulation of NPAs. A positive impact on profitability of the overall banking sector was also not evident. Priority sector lending, if performed by commercial banks, should be exercised on market terms and at the initiative of banks. It is important to ensure a separation of commercial lending and policy lending, which would be a prerequisite for enhancing banks' accountability and management skills. Otherwise, such lending should be conducted under a government budget and increasingly undertaken by specialized financial institutions. It would also be difficult for the Government to cease financial support to problematic banks as long as it imposes policy loans on these banks.

Sixth, investment in government securities has tended to lower the profitability and cost efficiency of the whole banking sector. Investment in

government bonds could lower the share of high risk-weighted assets and, thus, would improve capital adequacy ratios. But a large amount of holdings of government bonds would crowd out the private sector in the expansionary phase and reduce banks' incentives to improve their risk management skills governing lending. Since banks have increased their investment in government securities despite a decline in the SLR, they have increasingly held excessive amounts of bonds. This appears to have affected adversely profitability and cost efficiency. Prudential regulations may have induced banks to prefer safer and more liquid assets such as government bonds, rather than loans to the private sector. While it is important to improve the soundness of the banking system, supplementary measures (e.g., removal of the RBI's payment of interest rates on reserves and spread guidelines) that would give banks incentives to exert more 'relationship' lending to lower quality borrowers or SMEs should be considered. Thus, there should be more careful consideration given to these trade-offs, while a further reduction of the SLR should be pursued.

Seventh, the Government should give in the next reform agenda the highest priority to more drastic measures for reforming public sector banks and liberalizing the whole commercial banking sector, through careful consideration of the various aspects indicated above. The existence of remaining barriers, such as administered interest rates on saving deposits and other saving schemes, may partly explain why financial deepening has taken place at a relatively mild pace in India, compared with the earlier period. Household sector savings have remained at 20% of GDP, while physical savings account for only 9% of GDP. Given India's large population and relatively high-income growth, there is room for the country's banking sector to grow further through increased deposit mobilization.

Finally, there are two good lessons that could be learned from the experience of India's banking sector reforms and applied to other countries that are undergoing financial sector liberalization. The first is that banks' involvement in non-traditional activities and the increase in profits from these activities have contributed to improvements in banking sector performance based on profitability,

cost efficiency, and earnings efficiency. Banks were allowed to engage in diverse activities including securities and foreign exchange transactions, brokerage and dealing activities, and other fee-based business even before the 1991 reform programs were launched. The expansion of the scope of banks' business has certainly helped offset a decline in net interest income from advances. This has an important policy implication for the sequencing of financial liberalization. Namely, regulators should put forward policies that will supplement the expected decline in net interest income arising from interest rate liberalization, in order to prevent banks from taking excessive risks as they try to maintain profitability.

The second lesson is that banks should be prohibited from connected lending. The RBI prohibits cross-holdings with industrial groups to minimize connected lending. The Banking Regulation Act prohibits loans and advances to directors or to any firm or company in which directors are interested or individuals in respect of whom any of its directors is a partner or guarantor. In addition, banks are required to provide loans to their own subsidiaries or joint ventures on an arm's-length basis. Banks' investments in subsidiaries are deducted from their Tier-I capital. Considering that connected lending was one of the major causes of excessive risk-taking by banks in the crisis-affected Asian countries, from the beginning when entry deregulations have occurred.

Although a lot of reforms have been made in public sector banks, still there is a need to modify the policies of public sector banks. At present they are facing many internal and external challenges, which are hindering their performance, but these banks can convert these challenges into opportunities with care and some modifications. With globalization and changes in the technology, financial markets, world over have become closely integrated. Customers can access their accounts anywhere and banks' customer base is also spread across the world. Deregulation and liberalization have opened up new opportunities for banks but at the same time the pressure of competition have led to narrowing spreads, shrinking margins, consolidation and restructuring.

8.2 Recommendations

Increasingly, banks are focusing on core competencies, synchronizing strengths and shedding activities that are not remunerative. The winds of change sweeping across global markets will impact India also, and the Indian financial sector is set to see tremendous transformation in the coming years. The face of banking is set to change as banks adopt technology to reduce costs, widen product range for customer convenience and to manage risks. Greater market access to foreign banks, post-WTO will increase competition and as we move towards full capital account convertibility, banks will need to be equipped to handle large and sensitive volatile-capital flows.

8.2.1 Avoiding Competition

Due to LPG banks are facing a severe competition. To stay ahead in the race, therefore, banks will have to leverage technology for innovative product development including developing sophisticated financial products. While some banks have taken lead in developing new tech-savvy products to beat the competition, also the public sector banks in particular will have to speed up their efforts in this area.

8.2.2 Greater Customer-Orientation

Greater customer-orientation is the only way to retain customer loyalty and stay ahead of competition. In a market-driven strategy of development, consumer preference is paramount. Gone are the days when customers used to come to the doors of the banks and now banks are required to chase the customers. Thus, only banks that are customer-centric and extremely focused on the needs of their clients will succeed and there is need to change the mindset of banks at all levels on this issue.

Public sector banks in particular need to bring about total customer-orientation not only in their products/services but their policies and strategies should also be customer-focused. In fact, they must realize that customer is the only profit centre and all others are overheads. Identification of profitable customers, understanding their needs and preferences, improving the delivery systems and

reducing the transaction costs for them should become important strategic issues for banks, if they want to survive in the fiercely competitive environment. Enhancing the customer base, cross selling of products/services and strengthening the customer relationship management will be the most important aspect.

8.2.3 Technology

In the deregulated environment, managing a wide range of products on shrinking margins in a fiercely competitive environment and offering top class customer services will create new challenges. In this context, technology will be the key to reduce transaction cost, offering customized products and managing risks. Growing consumer acceptance of e-channels is compelling banks to provide Internet-banking facilities and increasingly, customers are demanding fast, convenient and glitch-free banking services.

However, as banks expand into virtual banking, they will need to pay greater attention to foolproof security arrangements and systems to safeguard against frauds. Supervision and audit of e-banking will have to be strengthened and vigilance against hackers stepped up. Our public sector banks are lagging behind in technology when we compare them with their counterparts. There is a need for vision, strategy, planning and coordination at all levels of the organization.

8.2.4 New Credit Assessment Skills

So far the focus of attention in the Indian banking industry has largely been extending finance to agriculture and manufacturing sectors covering small, medium and large industries. But now banks should capture service class also. Through IT, banks therefore, have to sharpen their credit assessment skills and lay more emphasis in providing finance to the wide range of activities in the services sector.

8.2.5 Effective Management of NPAs

The level of NPAs in the Indian banking industry is a greater concern and thus urgent cleaning up of banks balance that has become a crucial issue. NPAs will have to be reduced drastically and adequate provisioning for bad and doubtful debts will have to be made.

There is a need to have long-term solutions for overcoming this challenge. The internal control systems, risk management systems and systems of catch early warning signals for timely detection of NPAs have to be strengthened by banks. In addition, the role of legal reforms in bringing down the level of NPAs is crucial for speedy settlement of disputes and realization of banks' dues. Also, strengthening the Debt Recovery Tribunals and empowering banks to enforce their charge without court intervention will result in expedition recovery of bad debts.

8.2.6 New Basel Capital Accord

The new Basel Accord to modify the existing capital adequacy framework is currently under discussion. Under the revised capital adequacy framework, banks will have to provide for market risk and operational risk besides credit risk. Against the background of government decisions to reduce its shareholding in nationalized banks to 33%, maintaining the required level of capital adequacy by the banks could come under strain.

Strong banks will be able to access the capital markets for raising additional equity, but weak banks could face severe problems. But in any case, there will be tremendous pressure on banks to improve their financial performance if they have to attract additional capital.

Profitability will thus have to be improved so that higher dividends are paid to shareholders, capital market perception about public sector banks changes and there is a positive impact on the valuation of shares so that the shares of public sector banks fetch attractive market prices.

8.2.7 WTO and Indian Banking Industry

As WTO provisions came into force, countries including India have to provide greater market access to other countries by eliminating Quantitative Restrictions (QR), regarding tariff barriers and liberalizing the market for financial services. The impact of these developments on various sectors of the Indian economy would be critical.

The banks will have to keep themselves updated on sector specific developments taking place in the world, particularly in countries that are India's

major trading partners and advise their corporate clients to help them to prepare for competition with multinational companies.

8.2.8 Corporate Governance

Deregulation and self regulation go hand-in-hand. RBI has also asked banks to set up specialized committees like Risk Management Committee, Audit Committee, Compensation Committee, Narasimham Committee etc., to ensure the uppermost standards of corporate governance and development of best practices.

A good fiscal management and clear-cut policies affecting various sectors of the economy, can promote corporate governance. The public sector banks, new private sector banks & foreign banks should ensure corporate governance in all the activities and to win the heart of shareholders.

8.2.9 Issues of HRM

Training, development and retaining talented and committed staff is a major emerging challenge before the public sector banks. Today, our employee performance review systems are neither objective nor transparent. They do not differentiate high performers, risk takers and innovators lot from amongst the total staff. Time has come to measure the value of human capital and take urgent steps to ensure it to its optimum level.

8.2.10 Risk Management

Today, instead of banks managing the risk, risk is managing the banks. A clear understanding of the risk-return profile of each activity of the bank is crucial to ensure the soundness and solvency of the organization. Skill upgradation and preparing a cadre for the risk organization is a major challenge for public sector banks particularly in the wake of high labor turnover,

8.2.11 Actionable Planning

Lack of planning or ineffective planning is very relevant to public sector banks. Though all the banks have established elaborate performance budgeting system and created MIS, it does not meet the management' present requirements. Basically, the entire planning process is still deposit and credit oriented, that too, without any cost and yield linkages.

To tackle this challenge an actionable strategic plans which are systematically broken-up into annual plans and performance is strictly reviewed in terms of the targets and accountability is fixed for non-performances.

8.2.12 Accountability

In case of public sector banks, there is non-accountability of profits. No one is responsible. Every bank should fix the responsibility and good performer employees should be honored.

8.2.13 Public Perception

In the ultimate analysis it is the public perception that will decide the future of public sector banks. The perception of customers regarding public sector banks is very poor. Public sector banks should improve their perception by all means to remain competitive in the market.

8.2.14 Customers Expectations

In the era of e-banking and severe competition, the expectations of the bank customers have increased. Due to this banks should offer a broad range of deposits, investment and credit products through diverse distribution channels including upgraded branches, ATMs, telephone and Internet. For this banks should:

- Become more customer-centric, offering a wide range of products through multiple delivery channels.
- Become proficient in managing assets and liabilities according to risk and return.
- Pay greater attention to profitability including cost-reduction and increasing fee-based income.
- All these changes require vision, determination and extensive communication across all levels in the organization so that the vision and mission of the banks is communicated and understood down the line and receiver unqualified support.

8.2.15 Mergers and Acquisitions

Today 'size' has become an important issue in financial market world over. Merger on commercial considerations and strategic mergers are the order of the day. One of the possible ways to remain in competition would be mergers and acquisitions. The privately/foreign banks have already set in the trend.

We can say that a constructive and serious measure should be initiated for:

- Better and cheaper access to basic infrastructure requirements such as power, telecommunications i.e. VSAT, leased lines etc.
- Creation of customer awareness and education for technology adoption are imperative.
- The IT, Act 200 should be implemented in totality to handle legal issues.
- Converting branches into boutiques catering to the requirements of clients and, re-engineering the functions of branch banking using technology and delivery channels.
- Setting up an e-banking group to provide grid principles for risk management of e-banking activities.
- Widening core banking facilities in every sphere of the society.

It can be concluded that transformation is taking place almost in all categories of the banks. This transformation will helpful to cope with new economic and financial policies of the banks. IT is playing a crucial role to create the drastic changes in the banking industry particularly in the new private sector and foreign banks. The private banks take a big share of cake; our public sector banks are still lagging behind regarding the various financial parameters. The immense opportunities are also available for the public sector banks if they change/modify and adopt new policies to combat the different recent challenges. Mere introduction of IT alone will not be sufficient to bring necessary performance improvement and to get the competitive edge. Intelligent people are required to use such intelligent tools. Thus, even though IT management is a challenge flow in future banking scenario, marketing not technology is going to be the challenge.

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