

Shirai, Sayuri

**Working Paper**

## Road from State to Market-Assessing the Gradual Approach to Banking Sector Reforms in India-

ADB Research Paper Series, No. 32

**Provided in Cooperation with:**

Asian Development Bank Institute (ADBI), Tokyo

*Suggested Citation:* Shirai, Sayuri (2002) : Road from State to Market-Assessing the Gradual Approach to Banking Sector Reforms in India-, ADB Research Paper Series, No. 32, Asian Development Bank Institute (ADBI), Tokyo,  
<https://hdl.handle.net/11540/4138>

This Version is available at:

<https://hdl.handle.net/10419/111132>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*



<https://creativecommons.org/licenses/by/3.0/igo/>

## Road from State to Market

*–Assessing the Gradual Approach to Banking Sector Reforms in India–*

Sayuri Shirai

25 February 2002

Since the initiation of banking sector reforms in 1991, India's highly regulated banking sector has seen significant and favorable changes. Initially, foreign and private sector banks generally outperformed public sector (nationalized and State Bank of India) banks, but such differences have diminished as the latter have improved their performance.

However, this does not imply that the reforms have been a total success, for the following reasons. First, public sector banks still remain dominant. In addition, the profitability of nationalized banks has not improved, once interest income from recapitalization bonds is excluded. Second, partial privatization has not significantly improved corporate governance, due to the ceiling of individual voting rights at 10%, the Government's continued dominance as the largest shareholder, and the absence of major reforms determining the boards of directors. Third, priority sector lending still remains a hindrance for the full commercialization of banks. Fourth, banks' large-scale holdings of government securities, while improving their capital adequacy ratios, might crowd out the private sector in the expansionary phase of the economy and lower banks' incentives to improve their risk management skills on lending activities.



**ADB Institute  
Research Paper Series  
No.32**

25 February 2002

---

**Road from State to Market**  
—Assessing the Gradual Approach  
to Banking Sector Reforms in India—

---

**Sayuri Shirai**

**ABOUT THE AUTHOR**

*Sayuri Shirai is a visiting scholar at the ADB Institute working in the fields of developing capital markets and strengthening financial and exchange systems. She is also an Associate Professor at Keio University and was formerly a staff economist at the International Monetary Fund.*

Additional copies of the paper are available free from the Asian Development Bank Institute, 8<sup>th</sup> Floor, Kasumigaseki Building, 3-2-5 Kasumigaseki, Chiyoda-ku, Tokyo 100-6008, Japan. Attention: Publications. Also online at [www.adbi.org](http://www.adbi.org)

**Copyright © 2002 Asian Development Bank Institute. All rights reserved. Produced by ADBI Publishing.**

*The Research Paper Series primarily disseminates selected work in progress to facilitate an exchange of ideas within the Institute's constituencies and the wider academic and policy communities. The findings, interpretations, and conclusions are the author's own and are not necessarily endorsed by the Asian Development Bank Institute. They should not be attributed to the Asian Development Bank, its Boards, or any of its member countries. They are published under the responsibility of the Dean of the ADB Institute. The Institute does not guarantee the accuracy or reasonableness of the contents herein and accepts no responsibility whatsoever for any consequences of its use. The term "country", as used in the context of the ADB, refers to a member of the ADB and does not imply any view on the part of the Institute as to sovereignty or independent status. Names of countries or economies mentioned in this series are chosen by the authors, in the exercise of their academic freedom, and the Institute is in no way responsible for such usage.*

## PREFACE

---

The ADB Institute aims to explore the most appropriate development paradigms for Asia composed of well-balanced combinations of the roles of markets, institutions, and governments in the post-crisis period.

Under this broad research project on development paradigms, the ADB Institute Research Paper Series will contribute to disseminating works-in-progress as a building block of the project and will invite comments and questions.

I trust that this series will provoke constructive discussions among policymakers as well as researchers about where Asian economies should go from the last crisis and recovery.

Masaru Yoshitomi  
Dean  
ADB Institute

## ABSTRACT

---

Indian banking sector has seen many favorable changes since the beginning of banking sector reforms in 1991. Even though foreign banks and private sector banks have generally performed better than public sector banks in the early 1990s, such differences seem to have diminished as public sector banks have improved their performance in the second half of the 1990s.

However, one should be cautious in deriving a conclusion about the success of reform. The following arguments expose some of the weaknesses that still exist in the banking sector in India. First, public sector banks have remained dominant, accounting for about 80% of deposits and assets in the commercial banking sector. Second, one can notice that the profitability of nationalized banks has not improved much once interest income from recapitalization bonds is excluded. Some public sector banks have continued to suffer from poor management skills, over-branching, and over-staffing.

Third, although some public sector banks have promoted partial privatization, this has not improved their corporate governance through greater shareholder participation. This is partly because of the rules that restrict individual voting rights to a maximum of 10%, and partly because of the majority shareholding by the Government. Such half-hearted privatization attempts without institutional changes (so that private shareholders and boards of directors cannot take independent decisions) will not produce favorable results on the performance of public sector banks.

Fourth, even though public sector banks enjoy scale advantages of nationwide branch networks, attempts to improve their performance without rationalizing them may not produce intended benefits for these banks. The Government can take further initiative by encouraging M&As of banks and/or branches and closing unviable public sector banks and/or branches. Also, further action to tackle the NPA problems—possibly through operating an Asset Reconstruction Company in order to avoid moral hazard problems—may be necessary.

Fifth, priority sector lending could be gradually phased out even though the negative impact of such lending has declined in recent years. Thanks to financial sector reforms and liberalization of lending rates, the advances to priority sectors seem to have become more productive thereby improving the earnings efficiency and cost efficiency of the banking sector. However, a significant contribution to profitability is not observed. Therefore, further measures could be taken so that, priority sector lending by commercial banks are conducted under market conditions and at the own initiative of banks.

Sixth, investment in government securities could lower the share of risky assets in the bank's portfolio, thus improving capital adequacy ratios. But holding a large amount of government bonds would crowd out the private sector investment in the expansionary phase of the economy and reduce banks' incentives to improve their risk management skills necessary for efficient lending. Thus, there should be a careful consideration given to these trade-offs, while a further reduction of the SLR is considered.

Finally, there are two good lessons that can be learnt 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 could help in offsetting a decline in net interest income from advances as in the case of India. The second lesson is that banks should be prohibited from connected lending. The RBI prohibits cross-holdings with industrial groups to minimize connected lending. Considering that connected lending was one of the major causes of excessive risk-taking by banks in the crisis-affected Asian countries, bank regulators need to impose this restriction from the beginning when entry deregulations are made.

## TABLE OF CONTENTS

---

<i>About the Author</i>	II
<i>Preface</i>	III
<i>Abstract</i>	IV
<i>Table of Contents</i>	VI
Executive Summary	1
1. Introduction	4
2. Banking Sector Reforms	5
2.1. Background: Pre-Reform Period	8
2.2. Banking Sector Reforms Since 1991	11
2.3. Summary of Banking Sector Reforms—Gradual Approach	29
3. Commercial Banking Sector Development and Main Issues	31
3.1. Development of the Commercial Banking Sector	31
3.2. Main Discussion Issues	46
4. Appraisal of Commercial Banking Sector Performance	52
4.1. Profitability, Earnings Efficiency, and Cost Efficiency	52
4.2. Capital, Asset Quality, Management, and Liquidity	56
4.3. Testing Differential Behavior between Public Sector, Foreign, and Private Sector Banks	57
4.4. Empirical Estimation	59
5. Conclusions	65
References	69
Acronyms and Abbreviations	73
Indicators and Variables used for Regression	73



Tables and Charts (in body of texts)		
Table 1.	India: Selected Macroeconomic Indicators, 1970-1999	7
Table 2.	Lending and Deposit rate of Commercial Banks, 1970-2000	10
Table 3.	Implicit Lending and Deposit Rates for the Commercial Banks, 1993-2000	15
Table 4.	Recapitalization of Nationalized Banks and the Cost of Rescue Operation, 1993-1999	24
Table 5.	Ownership of Public Sector Banks, 1995-2000	26
Table 6.	Concentration Indicators, 1995-2000	31
Table 7.	The Asset Structure of the Commercial Banking Sector, 1993-2000	34
Table 8.	Sectoral Deployment of Gross Bank Credit by Major Sectors	37
Table 9.	Non-performing Assets of the Commercial Banking Sector, 1997-2001	39
Table 10.	The Liability Structure of the Commercial Banking Sector, 1993-2000	40
Table 11.	The Income Structure of the Commercial Banking Sector, 1993-2000	42
Table 12.	The Expenditure Structure of the Commercial Banks, 1993-2000	45
Table 13.	Selected Indicators for the Performance of Commercial Banks, 1993-2000	52
Table 14.	Net Profit Before and After Adjustment of Interest on Recapitalization Bonds, 1997-2000	55
Table 15.	Testing the Differential Behavior between Different Groups of Banks 1993-2000	58
Table 16.	Regression Results on the Public Sector Banks	61
Table17a.	Regression Results on Profitability (ROA) of All Commercial Banks	63
Table17b.	Regression Results on Earnings-Efficiency (INCOME) of All Commercial Banks	63
Table17c.	Regression Results on Cost-efficiency of All Commercial Banks	64
Chart 1.	Banking Structure in India	6
Chart 2.	Banking Sector Reforms Since 1991	11
Chart 3.	Cash Reserve Ratio (CRR) and Statutory Liquidity Ratio (SLR), 1991-2001	13
Chart 4.	Various Deposit Rates, 1993-2000	15
Chart 5.	Various Lending Rates, 1993-2000	17
Chart 6.	Entry Deregulation, 1991 and 2001	20
Chart 7.	Annual Averages of Share Price Indices, 1983-2000	28
Chart 8.	Concentration Indicators (Deposit Based), 1991 and 2000	32
Chart 9.	The Asset Structure of the Commercial Banking Sector, 1993-2000	37

## Executive Summary

- It is widely accepted that capital account liberalization should follow current account and domestic financial sector liberalization. This sequence issue is particularly important for countries such as India and the People's Republic of China (PRC), where there is no full capital account convertibility yet and public sector (or state-controlled) banks still remain dominant. In such countries, financial sector liberalization encounters more political problems than those that have already opened up their capital account to a substantial degree, since they have to first restructure predominant public sector banks.
- This paper focuses on India's banking sector, which has undergone a faster and more comprehensive reform program than the PRC. Prior to reforms in 1991, 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]), liquidity requirement (i.e., statutory liquidity ratio [SLR]), interest rate controls, and allocation of financial resources to the so-called "priority sectors" increased the degree of financial repression and adversely affected the country's financial resource mobilization and allocation. After Independence in 1947, all large private sector banks were nationalized and were then increasingly used to finance fiscal deficits.
- Owing to their poor lending strategy and lack of risk management under government ownership, many banks became unprofitable, inefficient, and unsound. Against this background, the Government launched comprehensive banking sector reforms starting in 1991. India's banking sector reforms included the following changes. 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, at which level it has remained.
- Second, interest rates became flexible with respect to almost all term deposit rates and lending rates on advances more than Rs200,000. Third, reforms governing priority sector lending—mainly through an expansion of coverage and interest rate decontrols on advances in excess of Rs200,000—helped banks to mitigate the negative impact from such policy loans.
- Fourth, entry barriers were reduced both on private sector and foreign banks and their full ownership was granted. Public sector banks were allowed to rationalize some branches, while branch licensing was removed.
- Fifth, various prudential norms and more appropriate accounting standards were introduced. Better accounting standards have revealed the extent of public sector banks' non performing asset (NPA) problems. This not only increased the pressure on them to improve their balance sheets, but also called for appropriate government policies to deal with NPA problems. Sixth, the Government recapitalized nationalized banks and partially privatized 11 public sector banks.
- Nevertheless, these reforms should be regarded as having been a gradual approach for the following reasons. First, the SLR remains at 25%, which is quite high by international standard. Although banks currently hold government bonds in excess of the SLR, the SLR is likely to be binding and crowd out the private sector in the expansionary phase of the economy, given that the gross fiscal deficit has also remained high.

- Second, interest rates on savings deposit as well as other savings schemes have remained tightly regulated, preventing the imposition of any effective monetary policy. Third, lending rates on advances in excess of Rs200,000 remain subject to the prime lending rate (PLR) and spread guidelines. Further, bank lending rates tend to diverge little from each other, partly because large public sector banks dominate. Many banks offer lending rates below the PLR to high quality borrowers in the face of increasing competition from the commercial paper market. In addition, lending rates on advances up to Rs200,000 remain regulated and protected in a sense that rates are set below the PLR regardless of the risk and return involved in each lending project.
- Fourth, banks are not completely free from directed lending. For example, there are cases of priority sector lending when the Government requires banks to lend to particular individuals or firms belonging to weaker sections of the economy. Fifth, branching requirements in rural and semi-urban areas remain costly for new private sector banks. Sixth, while prudential regulation has improved, prudential norms still do not approach global standards. Seventh, the pace of partial privatization has been limited. Many banks remain fully owned by the public sector (Central Government or the Reserve Bank of India [RBI]).
- While India's banking sector reforms have been gradual, they have produced some favorable results. The performance of public sector banks has improved during the late 1990s. Profitability (measured by return on assets) of nationalized banks turned positive in 1997-2000 and that of State Bank of India (SBI) banks was superior in 1996-2000 compared to earlier. Further, nationalized and SBI banks have steadily become more cost-efficient (measured by operating cost divided by operating income) over the reform period. Also, even though foreign and private sector banks have generally outperformed 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 gained ground.
- However, one must be cautious when deriving a conclusion about the success of the reforms, and the following points remain noteworthy. First, despite the reforms, public sector banks have remained dominant, accounting for about 80% of deposits and assets in the commercial banking sector. In addition, profitability of nationalized banks has remained small once interest income from recapitalization bonds is excluded. This suggests that nationalized banks have continued to suffer from poor management skills, overbranching, and overstaffing. Although their net NPA ratios have gradually declined, the ratios have remained high. Some nationalized banks have remained short of capital, demanding further recapitalization. Since only 45% of NPAs are attributable to priority sector lending and most recent NPAs have arisen from new lending activities, this indicates that their corporate governance and risk management systems have not improved much.
- Second, although some public sector banks have promoted partial privatization, this has so far not improved their corporate governance through greater shareholder supervision. This is partly because rules have limited individual voting rights to a maximum of 10%, and partly because the share of the public sector has remained large. While the privatization of viable public sector banks should also be promoted further, the information, legal, and judiciary infrastructure needed for developing a sound capital market should also be strengthened. Mere privatization, without institutional changes that will allow external shareholders and independent boards of directors to practice corporate

governance properly, will not have a favorable impact on the performance of partially privatized public sector banks.

- Third, given that public sector banks enjoy scale advantages through their nationwide branch networks, the current approach of improving their performance without rationalizing them may not have further and substantial benefits for India's banking sector. As public sector banks have been exposed to the new regulatory environment and pressures, it may be time for the Government to take a further step by promoting mergers and acquisitions (M&As) and closing unviable nationalized banks and branches. Also, further attempts to improve NPA problems—possibly through an Asset Reconstruction Company (ARC) with supplementary measures to avoid moral hazard problems—may be necessary.
- Fourth, priority sector lending should be phased out, even though the negative impact of such lending has declined in recent years. Thanks to the reforms in priority sector lending, advances to priority sectors have exerted a positive effect on earnings efficiency (measured by the ratio of income to assets) and cost efficiency. Nevertheless, priority sector lending has lowered the profitability of public sector banks. Such lending, if performed by commercial banks, should be exercised according to market principles and at the initiative of banks. It is important to ensure that commercial lending and policy lending are separated, as this would be a prerequisite for improving banks' accountability and management skills.
- Fifth, 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. However, a large amount of holdings of government bonds would crowd out the private sector in the expansionary phase of the economy and reduce banks' incentives to improve their risk management skills on lending activities. Since banks have increased investment in government securities despite a decline in the SLR, they have increasingly held an excess of bonds. This appears to have adversely affected banks' profitability and cost efficiency. While it is important to improve the soundness of the banking system, supplementary measures (e.g., removal of spread guidelines) that give banks incentives to engage in more "relationship" lending to lower quality borrowers should be considered.
- Last, there are two important lessons that could be learned from India's banking sector reforms and applied to other countries. 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. This has an important policy implication for the sequencing of financial liberalization. Namely, regulators should impose policies to counter the decline in net interest income that would be caused by 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. Considering the fact that connected lending was one of the major causes of excessive risk taking by banks in the crisis-affected Asian countries, bank regulators should impose this restriction from the beginning when entry deregulations are made.

# **Road from State to Market**

## —Assessing the Gradual Approach to Banking Sector Reforms in India—

Sayuri Shirai<sup>1</sup>

### **1. Introduction**

Strengthening financial systems is one of the central issues facing emerging markets and developing economies. This is because sound financial systems serve as an important channel for achieving economic growth through the mobilization of financial savings, putting them to productive use, and transforming various risks (Beck, Levin, and Loayza [1999]; King and Levin [1993]; Rajan and Zingales [1998]; Demirgüç-Kunt and Maksimovic [1998]; and Jayaratne and Strahan [1996]). In this context, many countries adopted a series of financial sector liberalization measures in the late 1980s and early 1990s, which included interest rate liberalization, entry deregulations, reduction of reserve requirements, and removal of credit allocation. In many cases, the timing of financial sector liberalization coincided with that of capital account liberalization; domestic banks were given access to cheap loans from abroad and allocated those resources to domestic production sectors.

Since the Asian financial crisis of 1997-1999, the importance of balancing financial liberalization with adequate regulation and supervision prior to full capital account liberalization has been increasingly recognized. The crisis was preceded by massive, unhedged, short-term capital inflows, which then aggravated double mismatches (a currency mismatch coupled with a maturity mismatch) and undermined the soundness of the domestic financial sector. A maturity mismatch is generally inherent in the banking sector, since commercial banks accept short-term deposits and convert them into relatively longer-term, often illiquid, assets. Nevertheless, massive, predominantly short-term capital inflows—largely in the form of inter-bank loans—shortened banks' liabilities, thus expanding the maturity mismatch. Further, a currency mismatch was aggravated, since massive capital inflows denominated in foreign currency were converted into domestic currency in order to finance the cyclical upturn of domestic investment in manufacturing equipment, real estate, and stocks (Asian Policy Forum [2000], Yoshitomi and Shirai [2000]).

---

<sup>1</sup> This paper was presented at the ESCAP-ADB Joint Workshop on “Mobilizing Domestic Finance for Development: Reassessment of Bank Finance and Debt Markets in Asia and the Pacific,” Bangkok, 22-23 November 2001; the Second Brainstorming Workshop on “Sequencing Domestic and External Financial Liberalization,” Tokyo, 20-21 December 2001; and an Internal Staff Seminar of the ADB Institute, 8 January 2002. This paper benefited from many insightful and useful comments from the participants at these seminars. I am also grateful to Dr. Y. V. Reddy, Deputy Governor of the Reserve Bank of India; Dr. G. S. Bhati, Dr. Abha Prasad, and Ms. Usha Thorat and other staff of the Reserve Bank of India; Dr. V. V. Desai of ICICI Ltd.; Dr. Jayati Sarkar, Dr. Subrata Sarker, and Dr. Rajendra R. Vaidya of the Indira Gandhi Institute of Development Research; Prof. Mukul G. Asher of the National University of Singapore; Mr. Ashok Sharma of the Asian Development Bank; Mr. Saumitra Chaudhuri of the Investment Information and Credit Rating Agency of India; and ADB Institute staff for providing me with useful comments and information. I also acknowledge the help of Mr. Prithipal Rajasekaran for his excellent research assistance.

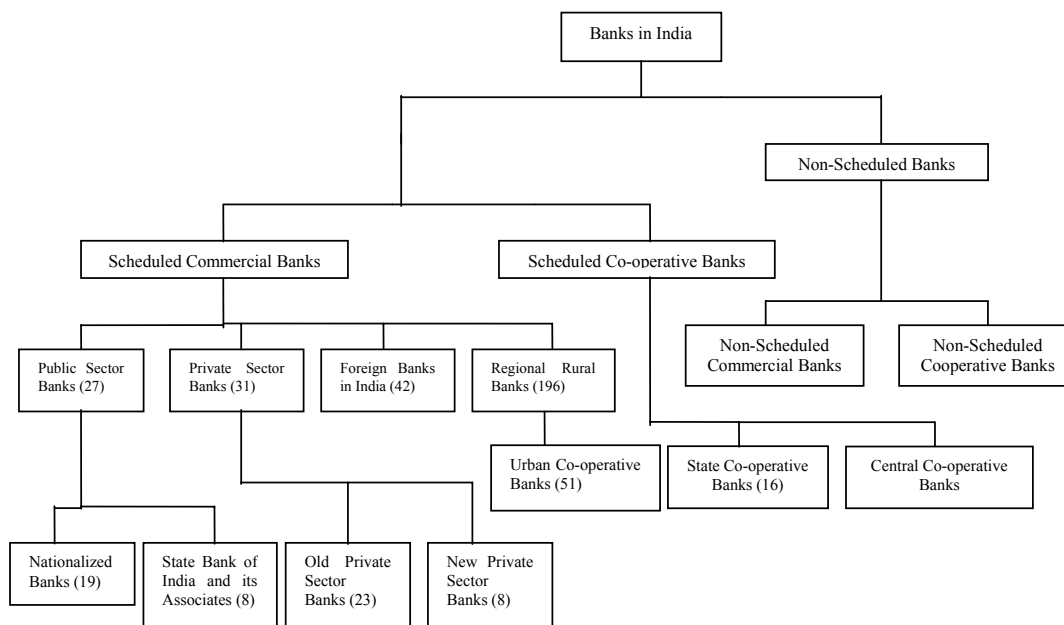
In other words, many share the view that the proper sequencing of financial sector and capital account liberalization is one of the most important policies in preventing another Asian-type “capital account” crisis. It is now widely accepted that capital account liberalization should follow current account and domestic financial sector liberalization (McKinnon [1973]). This sequence issue is even more important for countries such as India and the People’s Republic of China (PRC), which have not yet achieved full capital account convertibility and where public sector (or state-controlled) banks remain dominant. In such countries, financial sector liberalization comes against more politically difficult issues compared to those that have already opened up their capital account to a substantial degree, since they have to first restructure predominant public sector banks.

This paper focuses on India’s banking sector, which underwent a reform program that was more comprehensive and took place faster than in the PRC. It assesses whether the reform program has been successful so far in restructuring public sector banks and, if so, what elements of the program have contributed to this success. This paper tackles the following fundamental questions. In what way has the reform program affected the behavior of public sector banks? To what extent have foreign and new private sector banks contributed to the performance of the whole banking sector? Has India’s gradual approach to the privatization of banks been successful? What policy implications can we derive from India’s experience?

## **2. Banking Sector Reforms**

India’s commercial banking system consists of “nonscheduled banks” and “scheduled banks”(Chart 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 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 (later 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 was sold to the RBI in 1955.

Nationalized banks refer to private sector banks that were nationalized (14 banks in 1969 and six 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 2001, the number of scheduled banks is as follows: 19 nationalized banks, eight SBI banks, 23 old private sector banks, eight new private sector banks, 42 foreign banks, 196 regional rural banks, 51 urban cooperative banks, and 16 state cooperative 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 M<sub>2</sub> and deposits, respectively, as a share of GDP (Table 1). This section briefly reviews the banking sector reforms undertaken since 1991 after a brief overview of the pre-reform period.

**Table 1. India Selected Macroeconomic Indicators, 1970-1999**

Year	Real GDP Growth	CPI- Based Inflation Rate	Deposits / GDP	M <sub>1</sub> / GDP	M <sub>2</sub> / 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.



**Table 1. Selected Macroeconomic Indicators (Contd.)**

	Corporate Bonds <sup>1/</sup> /GDP	Government Bonds <sup>2/</sup> /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.

### **2.1. 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),<sup>2</sup> interest rate controls, and allocation of financial resources to so-called "priority sectors" (i.e., agriculture, small scale industries [SSIs], 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.

<sup>2</sup> In 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.

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, nonperforming 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 subsector 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). 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. Lending and Deposit rate of Commercial Banks, 1970-2000**

(%)

Year (April-March)	Call Money Rates <sup>1/</sup>	Term Deposit Rates			Lending Rate			
		1 to 3 Years	3 to 5 Years	Above 5 Years	SBI Advance Rate <sup>4/</sup>	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 <sup>3</sup>	Free
1995-96	17.73	12.00	13.00 <sup>2</sup>	13.00 <sup>2</sup>	16.50	-	16.50 <sup>3</sup>	Free
1996-97	7.84	11.00-12.00 <sup>2</sup>	12.00-13.00 <sup>2</sup>	12.50-13.00 <sup>2</sup>	14.50	-	14.50-15.00 <sup>3</sup>	Free
1997-98	8.69	10.50-11.00 <sup>2</sup>	11.50-12.00 <sup>2</sup>	11.50-12.00 <sup>2</sup>	14.00	-	14.00 <sup>3</sup>	Free
1998-99	7.83	9.00-11.00 <sup>2</sup>	10.50-11.50 <sup>2</sup>	10.50-11.50 <sup>2</sup>	12.00-14.00	-	12.00-13.00 <sup>3</sup>	Free
1999-00	9.00	8.50-9.50 <sup>2</sup>	10.00-10.50 <sup>2</sup>	10.00-10.50 <sup>2</sup>	12.00	-	12.00-12.50 <sup>3</sup>	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. Other Interest Rates (1980-2000) (Cont.)**

(%)

Year	Central Government Securities	State Government Securities	Post Office Saving Bank Accounts <sup>1/</sup>	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 <sup>8</sup>	12.0
1991-92	10.50-12.50	11.50-12.00	5.5	12	9.5-11.5 <sup>4</sup>	11.5 <sup>8</sup>	12.0
1992-93	12.00-12.75	13.00	5.5	12	12.0-13.5 <sup>5</sup>	13.5 <sup>8</sup>	14.0
1993-94	12.00-13.40	13.50	5.5	12	10.5-12.5 <sup>6</sup>	12.5 <sup>8</sup>	13.0
1994-95	11.00-12.71	12.50	5.5	12	10.5-12.5 <sup>6</sup>	12.5 <sup>8</sup>	13.0
1995-96	13.25-14.00	14.00	5.5	12	10.5-12.5 <sup>6</sup>	12.5 <sup>8</sup>	13.0
1996-97	13.40-13.85	13.75-13.85	5.5	12	10.5-12.5 <sup>6</sup>	12.5 <sup>8</sup>	13.0
1997-98	10.85-13.05	12.30-13.05	5.5	12	10.5-12.5 <sup>6</sup>	12.5 <sup>8</sup>	13.0
1998-99	11.10-12.60	12.15-12.50	5.5	12	10.5-12.5 <sup>6</sup>	12.5 <sup>8</sup>	13.0
1999-00	10.72-12.45	11.00-12.25	5.5 <sup>2</sup>	12 <sup>3</sup>	10.5-12.5 <sup>6</sup>	12.5 <sup>8</sup>	13.0

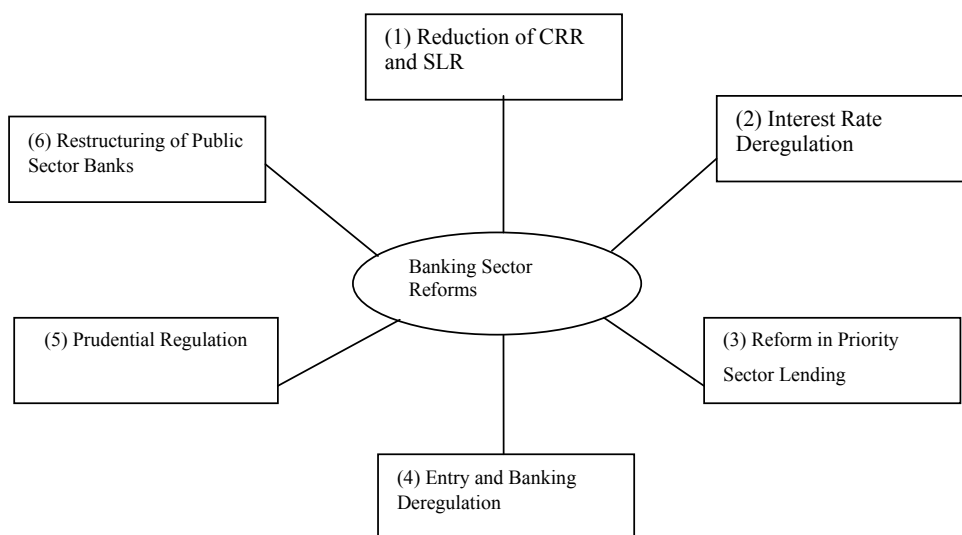
Note: 1/ open ended scheme.  
 2/ 4.5% since Jan. 15, 2000. 4.5% for individual/joint and group account, 4.0% for public account and security deposit accounts for purchase of motor vehicles or tractors, official capacity accounts and other accounts 3%.  
 3/ 11% since Jan. 15, 2000.  
 4/ Compounded 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.

## 2.2. 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, (3) 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 and discussed in more detail below:

**Chart 2. Banking Sector Reforms Since 1991**



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

### (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.

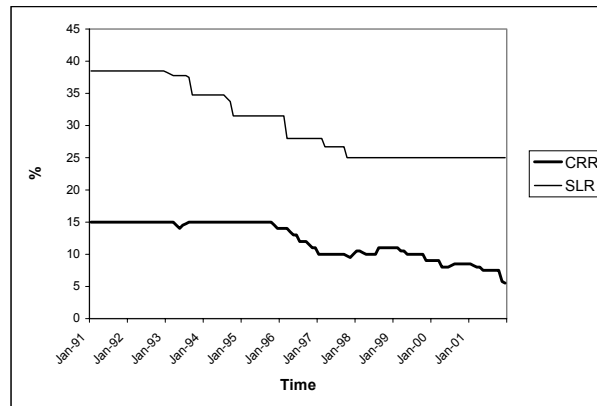
Other exemptions included Nonresident (External) Rupee Accounts (NREs), Nonresident Non-repatriable Rupee Accounts (NRNRs), Foreign Currency Nonresident (Bank) Accounts (FCNR[B]s), exchange earners' foreign currency accounts, Resident Foreign Currency Accounts, and foreign credit lines for pre-shipment 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 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. 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 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, as discussed below.

**Chart 3. Cash Reserve Ratio<sup>1/</sup> (CRR) and Statutory Liquidity Ratio<sup>2/</sup> (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

## (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.

### 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). 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.

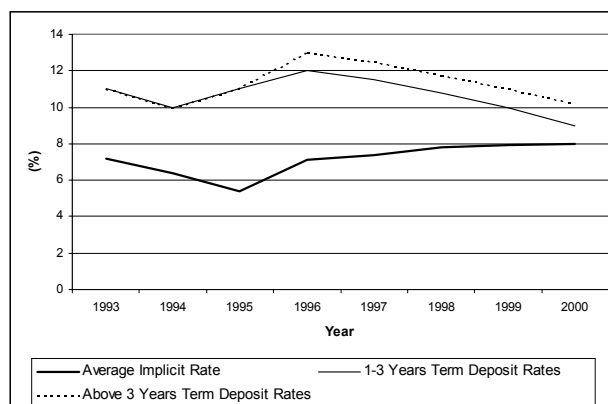
All term deposit rates became flexible in October 1997. The minimum maturity period of term deposits was further lowered to 15 days in 1998. In line with the changes effected in the prescription of interest rates on domestic term deposits, the RBI freed the interest rates on term deposits of more than 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 4 and Table 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 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 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

**Table 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.

## 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). 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.<sup>3</sup>

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 Rs200,000 and a minimum 15% for loans of more than Rs200,000); (2) advances to poorer and disadvantaged borrowers (at 4.5%); and (3) lending rates for pre- and 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 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.

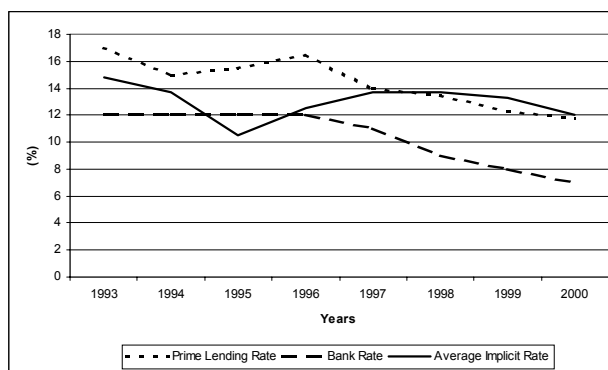
Moreover, a separate PLR for export credit financing may be fixed for short-term credit while separate Prime Term Lending Rates (PTLRs) may be prescribed for term loans of three years and above (determined in 1997). Banks should announce the PLR and PTLR and indicate the maximum spread over the PLR for 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.

---

<sup>3</sup> The Government has not paid any direct compensation for the loss arising from subsidized lending.

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 5 and Table 3).<sup>4</sup> 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.

**Chart 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.

### 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.

<sup>4</sup> 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.

### **(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 subtarget 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 subtarget 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).<sup>5</sup> 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,

---

<sup>5</sup> 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.

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 subtarget.

In 1998/99, priority sector lending included incremental credit given to nonbank 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 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%.

#### **(4) Deregulation of Entry Barriers and Branching Restrictions**

##### **Entry Deregulation**

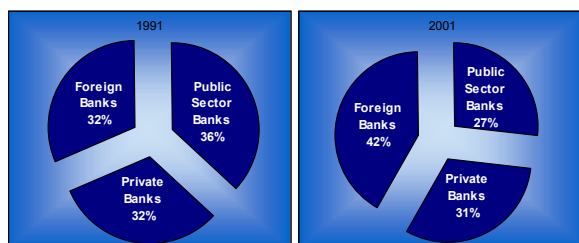
The RBI issued guidelines in 1993 governing the establishment of new private sector banks. The guidelines stated that a new bank needed to (1) maintain minimum paid-up capital of Rs1 billion; (2) list its shares on stock exchanges; (3) fulfill the priority sector lending requirement with modification 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 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 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.

## **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.

### **(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 1 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 raging 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 was 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.

## **(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.

## 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. 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 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.

**Table 4. Recapitalization of Nationalized Banks and the Cost of Rescue Operation, 1993-1999**

	(Billions of Rupees)							
	Up to 1992-93	1993-94	1994-95	1994-95 <sup>1/</sup>	1995-96	1996-97	1997-98	1998-99
<b>Number of Recap. Banks</b>		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 <sup>1/2/</sup>		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.

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.

### **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.<sup>6</sup> 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. In 2000/01, the RBI used modified guidelines to public sector banks in order provide a simplified non-discretionary and non-discriminatory mechanism for recovery of stock of NPAs.

### Partial Privatization

While the Narasimham Committee proposed that public sector banks should be rationalized, the Government decided to maintain operations of most public sector banks, promote them to achieve a reasonably good starting point before privatization, and let the market select winners. The SBI Act of 1955 was amended in 1993 in order to promote partial private shareholding. The SBI became the first public sector bank that had access to the capital market and raised Rs22 billion through equity issues and Rs10 billion through bond issues. Since these bonds were subordinated debt, they could be included in Tier II capital. As a result of privatization, the shareholding of the RBI in the equity share of the SBI declined from 98.2% to 66.3% and later to 59.7% (Table 5). Among other SBI banks, five have been partially privatized.

**Table 5. Ownership of Public Sector Banks, 1995-2000**

		(%)							
		1993	1994	1995	1996	1997	1998	1999	2000
Major Shareholders									
<b>Nationalized Banks</b>									
Allahabad Bank	Central Government	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Andhra Bank	Central Government	100.0	100.0	100.0	100.0	100.0	100.0	100.0	67.0
Bank of Baroda	Central Government	100.0	100.0	100.0	66.2	66.2	66.2	66.2	66.2
Bank of India	Central Government	100.0	100.0	100.0	100.0	76.0	76.0	76.5	76.5
Bank of Maharashtra	Central Government	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Canara Bank	Central Government	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Central Bank of India	Central Government	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Corporation Bank Ltd.	Central Government	100.0	100.0	100.0	100.0	68.3	68.3	68.3	68.3
Dena Bank	Central Government	100.0	100.0	100.0	71.0	71.0	71.0	71.0	71.0
Indian Bank	Central Government	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Indian Overseas Bank	Central Government	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Oriental Bank of Commerce Ltd.	Central Government			66.5	66.5	66.5	66.5	66.5	66.5
Punjab & Sind Bank	Central Government	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Punjab National Bank	Central Government	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Syndicate Bank	Central Government	100.0	100.0	100.0	100.0	100.0	100.0	100.0	73.5
UCO Bank	Central Government	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Union Bank of India	Central Government	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
United Bank of India	Central Government	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Vijaya Bank Ltd.	Central Government	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

<sup>6</sup> 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.

**Table 5. Ownership of Public Sector Banks, 1995-2000 (Contd.)**

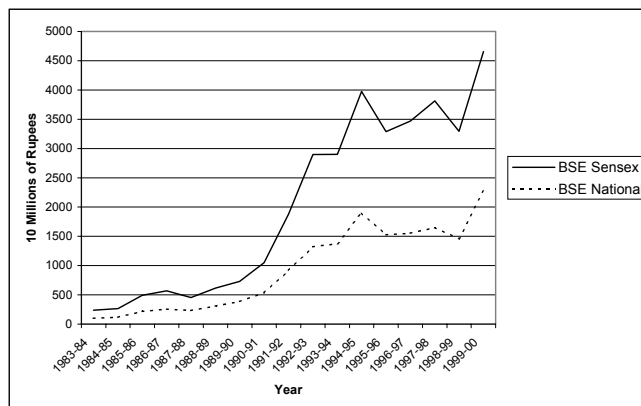
		(%)							
		1993	1994	1995	1996	1997	1998	1999	2000
SBI Banks									
State Bank of Bikaner and Jaipur	State Bank of India	100.0	100.0	100.0	100.0	95.0	75.0	75.0	75.0
State Bank of Hyderabad	State Bank of India	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
State Bank of India	Reserve Bank of India	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 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.<sup>7</sup>

<sup>7</sup> 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 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 7).<sup>8</sup> 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.

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,

<sup>8</sup> 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.

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.

### **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.

### **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.

### **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.

### ***2.3. Summary of Banking Sector Reforms—Gradual Approach***

India's banking sector reforms can be summarized into six areas, as indicated in Chart 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 subtarget 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.

However, these reforms should be regarded as having been a gradual approach, for the following reasons. First, the SLR has remained high at 25%. Currently, banks hold government bonds in excess of the SLR, as discussed in Section III. Once economic growth accelerates, however, the SLR is likely to be binding and crowd out the private sector, given that the gross fiscal deficit has remained high (Table 1). Also, the CRR remains above the statutory minimum level of 3%. Second, savings deposit rates as well as other saving schemes—such as, postal savings, public provident funds, and national savings certificates—have also remained regulated. To the extent that some of these rates constitute the floor, any effective monetary policy is prevented. Third, lending rates on advances in excess of Rs200,000 remain subject to the PLR and some spread guidelines. Further, the degree of divergence among each bank's lending rates tends to be limited, partly because large, dominant public sector banks tend to be leaders. Many banks offer lending rates below the PLR to high quality borrowers in the presence of increasing competition from the commercial paper market. In addition, lending rates on advances up to Rs200,000 remain regulated and protected in a sense that rates are set below the PLR regardless of the risk and return involved in each lending project.

Fourth, banks are not completely free from policy loans, even though reforms have increased flexibility associated with lending to priority sectors and have mitigated the cost of directed loans. For example, there are cases that banks are required by the Government to lend to particular individuals or firms belonging to weak sections. Fifth, branching requirements in rural and semi-urban areas remain costly for new private sector banks. Sixth, while prudential regulations have been improved, their prudential norms are

still not equivalent to global standards. Seventh, the pace of partial privatization has been limited owing to the sluggish equity market. 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 them would be presumably prohibitively high. As a result, investors have shown scant interest in investing in these banks.

### 3. Commercial Banking Sector Development and Main Issues

Based on an overview of India's banking sector reforms during 1991-2001, this section examines developments in the commercial banking sector (excluding regional rural banks) through measuring various concentration indicators and reviewing the structures of the balance sheets and income statements. Based on this review, the main issues surrounding banking sector reforms are discussed.

#### 3.1. Development of the Commercial Banking Sector

##### (1) Concentration Index

Public sector banks have dominated India's banking system. Even though entry deregulations took place during 1991-2000, the dominance of public sector banks has remained largely unchanged according to the three concentration indicators.

For the first indicator, the share of 27 public sector banks was measured based on both deposits and assets. Based on the deposit base, the share of 19 nationalized banks and eight SBI banks accounted for more than 50% and 27% throughout 1998-2000, during which consistent data were available (Table 6). Public sector banks together accounted for a little more than 80% during 1993-2000, slightly declining from 91% in 1991. Based on the asset base, the share of 19 nationalized banks declined modestly from 56% in 1995 to 50% in 2000, contributing to a decline in the share of 27 public sector banks from 87% in 1995 to 81% in 2000 accordingly. These indicators suggest that the dominance of public sector banks remains disproportionately high (Chart 8). While the shares of private sector banks and foreign banks have remained small during this period, the share of new private sector banks has increased somewhat from 1.5% in 1996 to 5.3% in 2000.

**Table 6. Concentration Indicators, 1995-2000**

	1995	1996	1997	1998	1999	2000
<b>Deposits (% of Total Deposits)</b>						
Nationalized Banks	-	-	-	55.6	54.1	53.6
SBI Banks	-	-	-	27.0	28.4	28.6
Old Private	-	-	-	7.4	7.3	7.1
New Private	-	-	-	3.4	4.0	5.2
Foreign	-	-	-	6.6	6.2	5.5
<b>Assets (% of Total Assets)</b>						
Nationalized Banks	56.1	53.2	52.3	52.4	50.9	50.1
SBI Banks	31.1	31.2	30.4	29.3	30.1	30.4
Old Private	5.3	6.2	6.6	6.9	6.9	6.6
New Private	-	1.5	2.4	3.2	4.1	5.3
Foreign	7.5	7.9	8.3	8.2	8.1	7.5

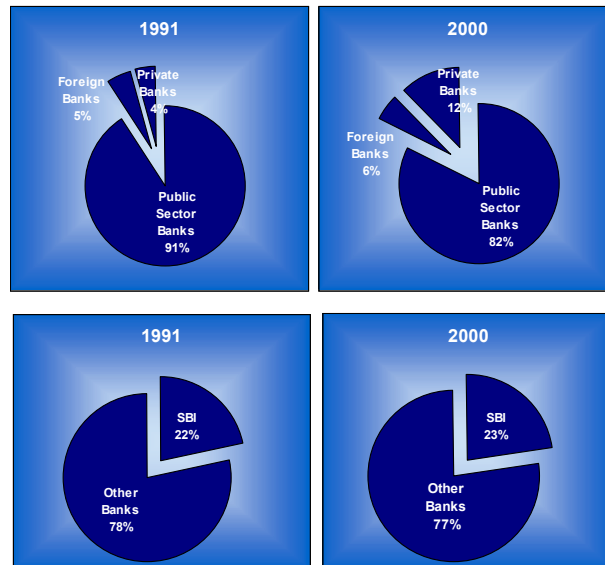


**Table 6. Concentration Indicators, 1995-2000 (Contd.)**

	1995	1996	1997	1998	1999	2000
<b>Concentration Ratio</b>						
<b>Deposit Based</b>						
1 Bank Concentration Ratio	21.1	21.4	20.9	20.6	22.5	22.8
5 Bank concentration Ratio	45.5	45.6	44.8	44.4	45.4	45.4
10 Bank concentration Ratio	-	63.0	61.4	60.3	61.0	60.9
<b>Asset Based</b>						
1 Bank Concentration Ratio	23.9	23.7	22.9	22.4	23.2	23.5
5 Bank concentration Ratio	46.2	44.9	44.1	44.0	43.9	43.4
10 Bank concentration Ratio	-	59.6	58.3	57.9	57.4	57.2
<b>Herfindahl-Index</b>						
<b>Deposit Based</b>						
All Commercial Banks	-	-	6.6	6.5	7.0	7.0
100/N	-	-	1.0	1.0	1.0	1.1
Public Sector Banks	-	-	9.4	9.4	10.1	10.1
100/N	-	-	3.7	3.7	3.7	3.7
Private & Foreign Banks	-	-	3.5	3.3	3.5	3.7
100/N	-	-	1.4	1.4	1.4	1.5
<b>Asset Based</b>						
All Commercial Banks	-	-	7.6	7.3	7.6	7.6
100/N	-	-	1.0	1.0	1.0	1.1
Public Sector Banks	-	-	11.1	10.9	11.4	11.5
100/N	-	-	3.7	3.7	3.7	3.7
Private & Foreign Banks	-	-	3.5	3.3	3.4	3.6
100/N	-	-	1.4	1.4	1.4	1.5
<b>Memorandum:</b>						
<b>Deposits (% of Total Deposits)</b>	1991			1998	1999	2000
Public Sector	90.9	-	-	82.6	82.5	82.2
Private Sector	4.1	-	-	10.8	11.3	12.3
Foreign	5.1	-	-	6.6	6.2	5.5

Source: PROWESS Database, Center for Monitoring Indian Economy Pvt. Ltd.; Report on Trend and Progress of Banking in India, 1994-2000, RBI; DRI Asia Database, CEIC Data Company.

**Chart 8. Concentration Indicators (Deposit Based), 1991 and 2000**



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

As the second indicator, the m-bank concentration ratio is adopted following Sarkar and Bhaumik (1998). The m-bank concentration measures (a) the one bank concentration ratio (market share of the largest bank, the SBI), (b) five-bank ratio, and (c) 10-bank ratio. This paper uses both deposits and assets to estimate the m-bank concentration indicator. The one bank concentration indicator reports that the SBI has continued to operate as the single largest bank, accounting for about 20% of deposits and assets, respectively. In terms of the deposit base, moreover, the SBI, the largest public sector bank, has slightly increased from 22% in 1991 to 23% in 2000 (Chart 8). The five-bank and 10-bank indicators have also revealed the same result, with the share remaining about 40% and 60% (based on both deposits and assets), respectively, during 1995-2000. However, it should be noted that there was a slight decline in the five-bank indicator based on assets and in the 10-bank indicator based on both deposits and assets. Considering that there are about 100 commercial banks in India, this degree of concentration in the banking sector appears too high. Since most of these large banks are public sector banks with extensive branch networks across the country, this indicates that public sector banks continue to be dominant and enjoy scale advantages over new banks.

The third indicator uses the Herfindahl Index adopted by Juan-Ramon, Randall, and Williams (2001). The Herfindahl Index is defined as  $100 \times \sum_{i=1}^{i=N} k_i^2$  where  $k_i = K_i / \sum_{i=1}^{i=N} K_i$  and N=number of banks during the period under consideration. This indicator can be calculated for the whole banking sector, public sector banks, and private sector banks including foreign banks, respectively. The higher the indicator, the greater the concentration of the banking sector. The lower limit of this indicator is obtained as 100 divided by N and the upper limit is 100. The Herfindahl Index reports that the degree of concentration in the whole commercial banking sector more or less remained unchanged during 1997-2000 in the case of both deposits and assets. The same conclusion is reached concerning public sector and private sector banks, including foreign banks.

## **(2) Structure of the Assets and Liabilities and NPAs**

### **Assets Side**

The major components of assets are advances and investment, accounting for about 40-45% and 25-35% of total assets throughout 1993-2000, regardless of whether banks are public sector or private sector banks (Table 7). Of these, short-term advances account for about half of the total advances and secured advances account for 70-80% of total advances. The share of secured advances among foreign banks has been small compared with other banks, in part because their customers tend to be of high quality, large, and foreign-capital enterprises.

**Table 7. The Asset Structure of the Commercial Banking Sector, 1993-2000**

(Percentage of Total Assets)

	1993	1994	1995	1996	1997	1998	1999	2000
<b>1. Cash and Balance with the RBI</b>								
All Banks	13.7	12.0	12.1	10.7	8.6	8.3	7.1	6.4
Public Sector Banks								
Of which: Nationalized Banks	11.9	11.7	13.9	13.2	10.2	10.4	10.1	8.8
SBI Banks	9.9	13.2	12.9	14.1	13.6	10.6	9.5	8.5
Private Sector Banks								
Of which: Old Private Sector Banks	17.8	16.5	14.4	12.6	10.1	10.1	9.3	8.7
New Private Sector Banks	-	-	9.0	9.2	8.3	9.0	7.3	6.8
Foreign Banks	12.9	9.2	9.7	7.4	5.8	5.4	4.1	3.6
<b>2. Balance with Banks</b>								
All Banks	4.5	3.0	3.9	5.0	3.8	4.3	5.1	5.3
Public Sector Banks								
Of which: Nationalized Banks	1.8	1.0	1.3	1.9	2.2	1.6	1.3	1.6
SBI Banks	1.9	2.6	1.7	3.1	1.2	2.6	3.3	3.5
Private Sector Banks								
Of which: Old Private Sector Banks	6.5	4.2	3.2	4.3	5.4	6.3	6.2	5.6
New Private Sector Banks	-	-	18.6	10.1	3.7	2.0	3.6	3.9
Foreign Banks	5.3	1.9	2.8	6.5	4.1	5.0	6.9	7.5
<b>3. Investments</b>								
All Banks	29.9	35.6	31.8	26.0	30.4	31.7	35.3	36.5
Public Sector Banks								
Of which: Nationalized Banks	32.2	40.0	37.5	36.7	40.4	40.7	40.6	41.2
SBI Banks	29.5	32.5	32.2	29.0	31.5	33.2	36.6	38.2
Private Sector Banks								
Of which: Old Private Sector Banks	28.4	32.5	32.4	27.8	30.8	32.7	33.7	34.4
New Private Sector Banks	-	-	23.2	18.5	30.5	34.4	38.1	40.2
Foreign Banks	29.5	36.9	29.4	19.3	24.9	26.1	32.9	34.1
<b>Of which:</b>								
<b>Investment in Government Securities</b>								
All Banks	20.4	23.8	20.7	19.1	21.3	22.0	23.3	24.3
Public Sector Banks								
Of which: Nationalized Banks	21.0	26.7	25.1	25.6	28.0	27.3	27.1	27.0
SBI Banks	21.2	23.2	23.2	21.5	24.1	25.1	28.1	30.3
Private Sector Banks								
Of which: Old Private Sector Banks	21.0	21.8	21.0	19.1	20.9	21.3	22.4	23.2
New Private Sector Banks	-	-	7.3	12.8	19.6	21.2	20.8	24.3
Foreign Banks	19.5	24.4	20.5	16.3	18.0	19.4	21.6	22.3
<b>Investment in Other Approved Securities</b>								
All Banks	4.7	4.6	3.6	2.9	2.5	2.0	1.7	1.3
Public Sector Banks								
Of which: Nationalized Banks	8.3	8.3	7.0	6.2	5.4	4.4	3.6	2.9
SBI Banks	7.1	6.7	6.0	4.8	3.9	3.6	2.8	2.2
Private Sector Banks								
Of which: Old Private Sector Banks	5.3	5.4	4.1	3.7	3.0	2.6	2.0	1.7
New Private Sector Banks	-	-	0.1	0.1	0.1	0.1	0.1	0.1
Foreign Banks	1.4	1.1	1.1	0.6	0.8	0.6	0.8	0.3

**Table 7. The Asset Structure of the Commercial Banking Sector, 1993-2000 (Contd.)**

	(Percentage of Total Assets)								
	1993	1994	1995	1996	1997	1998	1999	2000	
<b>4. Advances</b>									
All Banks	44.4	41.6	42.3	46.8	45.0	43.4	39.9	42.4	
Public Sector Banks									
Of which: Nationalized Banks	45.4	39.9	40.8	41.2	39.3	39.0	39.1	40.5	
SBI Banks	47.6	40.9	44.4	44.9	43.6	43.9	41.3	41.9	
Private Sector Banks									
Of which: Old Private Sector Banks	42.2	42.0	44.2	48.0	46.8	43.5	43.3	44.6	
New Private Sector Banks	-	-	28.3	51.2	47.7	42.0	39.7	39.2	
Foreign Banks	44.4	44.7	45.2	48.6	46.3	45.5	38.2	42.9	
<b>Of which:</b>									
<b>Short-term Advances</b>									
All Banks	25.3	23.9	25.9	26.3	23.0	22.5	20.2	21.3	
Public Sector Banks									
Of which: Nationalized Banks	25.4	22.8	23.6	25.0	22.8	22.9	21.5	22.0	
SBI Banks	31.2	26.1	29.0	30.4	30.1	29.6	27.1	26.8	
Private Sector Banks									
Of which: Old Private Sector Banks	25.8	25.3	26.6	27.6	25.6	25.4	23.4	23.9	
New Private Sector Banks	-	-	19.5	26.9	22.8	18.8	16.6	17.1	
Foreign Banks	23.4	24.3	28.1	25.2	19.9	19.7	17.2	19.4	
<b>Term Advances</b>									
All Banks	10.5	9.8	9.5	12.7	14.0	14.6	13.8	15.2	
Public Sector Banks									
Of which: Nationalized Banks	15.1	12.5	12.6	11.9	12.5	12.6	14.5	15.6	
SBI Banks	11.1	9.6	9.1	10.0	9.6	10.2	10.6	11.3	
Private Sector Banks									
Of which: Old Private Sector Banks	10.4	10.4	11.2	11.9	13.7	11.9	13.4	14.0	
New Private Sector Banks	-	-	-	9.3	10.1	8.7	10.3	10.8	
Foreign Banks	7.5	7.8	8.5	15.0	16.5	19.4	15.0	17.2	
<b>5. Fixed Assets</b>									
All Banks	1.3	1.4	2.4	2.9	3.0	2.4	2.3	2.0	
Public Sector Banks									
Of which: Nationalized Banks	0.9	1.3	1.5	1.7	1.6	1.5	1.4	1.3	
SBI Banks	0.6	0.6	0.6	0.6	0.6	0.6	0.7	0.6	
Private Sector Banks									
Of which: Old Private Sector Banks	1.2	1.2	2.1	3.2	2.9	2.7	2.6	2.3	
New Private Sector Banks	-	-	1.8	5.1	4.3	4.5	4.2	3.1	
Foreign Banks	1.8	1.9	4.0	3.3	3.9	2.5	2.4	2.2	
<b>6. Other Assets</b>									
All Banks	6.2	6.4	7.5	8.6	9.2	9.9	10.3	7.4	
Public Sector Banks									
Of which: Nationalized Banks	7.8	6.1	5	5.3	6.3	6.8	7.5	6.6	
SBI Banks	10.5	10.2	8.2	8.3	9.5	9.1	8.6	7.3	
Private Sector Banks									
Of which: Old Private Sector Banks	3.9	3.6	3.7	4.1	4	4.7	4.9	4.4	
New Private Sector Banks	-	-	19.1	5.9	5.5	8.1	7.1	6.8	
Foreign Banks	6.1	5.4	8.9	14.9	15	15.5	15.5	9.7	

**Table 7. The Asset Structure of the Commercial Banking Sector, 1993-2000 (Contd.)**

	(Percentage of Total Assets)							
	1993	1994	1995	1996	1997	1998	1999	2000
<b>Memorandum (1):</b>								
<b>Secured Advances<sup>1/</sup></b>								
All Banks	34.5	34.4	35.1	38.1	38.5	37.2	33.8	31.5
Public Sector Banks								
Of which: Nationalized Banks	38.7	33.4	36.3	33.1	33.9	34.6	34.3	28.2
SBI Banks	44.4	31.7	42.6	43.6	42.2	42.5	39.6	39.9
Private Sector Banks								
Of which: Old Private Sector	35.9	40.9	38.7	43.7	42.5	39.7	39.9	37.4
New Private Sector	-	-	19.7	42.7	43.3	31.9	34.9	32.7
Foreign Banks	28.5	32.6	33.9	34.5	36.3	36.8	29.0	28.0
<b>Unsecured Advances<sup>2/</sup></b>								
All Banks	9.9	7.2	7.2	8.8	6.5	6.2	6.0	10.9
Public Sector Banks								
Of which: Nationalized Banks	6.8	6.5	4.5	8.1	5.4	4.4	4.7	12.4
SBI Banks	3.1	9.2	1.8	1.2	1.4	1.4	1.7	2.0
Private Sector Banks								
Of which: Old Private Sector	6.3	1.1	5.5	4.3	4.3	3.8	3.3	7.3
New Private Sector	-	-	8.6	8.4	4.4	10.1	4.8	6.5
Foreign Banks	15.9	12.1	11.3	14.1	10.0	8.7	9.2	15.0
<b>Advances to Public Sector</b>								
All Banks	2.4	2.5	1.8	1.5	1.8	1.8	2.0	2.2
Public Sector Banks								
Of which: Nationalized Banks	3.8	4.0	4.7	3.6	3.4	4.3	4.5	5.9
SBI Banks	7.3	5.9	6.2	5.9	5.2	5.8	5.8	6.1
Private Sector Banks								
Of which: Old Private Sector	1.0	1.0	0.7	0.9	1.5	1.4	1.6	1.4
New Private Sector	-	-	0.0	0.0	0.9	0.4	0.7	1.2
Foreign Banks	1.4	1.7	0.2	0.2	0.8	0.4	0.7	0.2
<b>Advances to Priority Sector</b>								
All Banks	10.0	11.5	11.7	12.2	12.2	12.2	11.7	12.0
Public Sector Banks								
Of which: Nationalized Banks	14.9	13.5	13.0	13.4	13.4	13.1	13.1	13.2
SBI Banks	15.7	14.2	15.0	15.3	15.0	16.0	15.6	15.4
Private Sector Banks								
Of which: Old Private Sector	13.0	12.1	12.5	14.4	14.9	14.1	14.0	13.5
New Private Sector	-	-	4.7	8.0	9.5	8.6	7.0	6.6
Foreign Banks	3.7	9.6	11.5	10.4	9.9	10.4	9.9	10.9

Note: 1/ Secured advances are backed by a pledge of collateral.

2/ Unsecured advances are not backed by collateral but only by the integrity of the borrower.

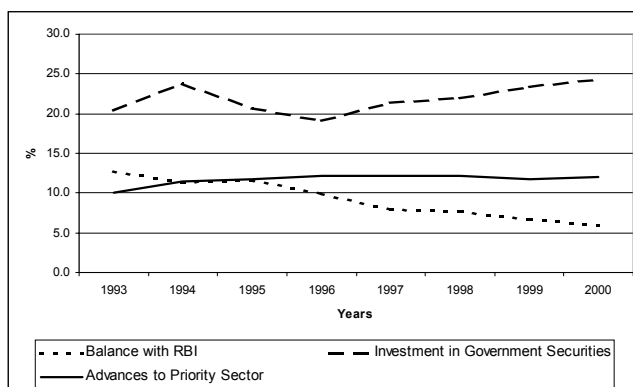
Source: PROWESS Database, Center for Monitoring Indian Economy Pvt. Ltd.

**Table 8. Sectoral Deployment of Gross Bank Credit by Major Sectors**

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
(Billions of Rupees Unless Specified)										
<b>Gross Bank Credit</b>	1,260	1,472	1,568	1,970	2,319	2,590	3,003	3,420	4,008	4,692
Food (% of Gross Bank Credit)	3.7	4.6	7.0	6.2	4.2	2.9	4.2	4.9	6.4	8.5
Non-food (% of Gross Bank Credit)	96.3	95.4	93.0	93.8	95.8	97.1	95.8	95.1	93.6	91.5
<b>1. Priority Sectors</b>	454	498	539	641	733	849	995	1,146	1,318	1,545
(% of Gross Bank Credit)	36.1	33.9	34.3	32.5	31.6	32.8	33.1	33.5	32.9	32.9
Agriculture (% of Priority Sector Credit)	40.0	40.1	39.4	37.4	36.9	37.0	35.0	34.6	33.7	33.6
Small Scale Industries (% of Priority Sector Credit)	40.0	40.2	42.0	43.1	43.5	42.3	43.7	42.3	40.1	36.3
Others (% of Priority Sector Credit)	20.1	19.8	18.7	19.6	19.6	20.6	21.2	23.1	26.3	30.1
<b>2. Industry - Medium and Large Firms</b>	471	586	579	747	931	1,026	1,175	1,305	1,473	1,628
(% of Gross Bank Credit)	37.4	39.9	36.9	37.9	40.1	39.6	39.1	38.2	36.8	34.7
<b>3. Wholesale Trade</b>	615	697	733	975	120	123	132	130	168	178
(% of Gross Bank Credit)	4.9	4.7	4.7	4.9	5.2	4.8	4.4	4.1	4.2	3.8
<b>4. Other Sectors</b>	227	250	269	361	437	516	575	661	762	941
(% of Gross Bank Credit)	18.0	17.0	17.1	18.3	18.9	19.9	19.2	19.3	19.0	20.1
Housing (% of other sectors)	-	-	-	14.7	14.4	15.1	15.7	17.3	18.5	17.2
Consumer durables (% of other sectors)	-	-	-	3.3	3.4	4.5	4.4	4.7	5.1	5.9
Non-banking financial companies (% of other sectors)	-	-	-	0.0	7.7	10.0	10.8	9.2	9.4	8.3
Loans to individuals (% of other sectors)	-	-	-	5.3	4.4	4.0	3.3	2.5	2.8	1.8
Real estate loans (% of other sectors)	-	-	-	3.1	2.7	3.0	3.3	2.5	2.2	1.9
Other non-priority sector personal loans (% of other sectors)	-	-	-	27.4	28.8	24.0	17.6	18.6	20.2	19.2
Advances against fixed deposits (% of other sectors)	-	-	-	-	-	2.9	20.5	22.9	24.8	21.2
Tourism and tourism related hotels (% of other sectors)	-	-	-	-	-	0.0	1.4	0.9	1.2	1.1

Note: Data include rural regional banks.  
Source: Report on Trend and Progress of Banking in India, Reserve Bank of India.

**Chart 9. The Asset Structure of the Commercial Banking Sector, 1993-2000**



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

While advances to the public sector took only a small share, public sector banks tended to provide greater advances to the public sector during 1993-2000, compared with private sector banks and foreign banks, suggesting the presence of one form of directed lending. As for advances to the priority sectors, these have accounted for about 12% of assets throughout 1993-2000 (Table 7 and Chart 9). Table 8 shows that priority sector

lending accounted for more than 30% of total bank credit during 1992-2001.<sup>9</sup> Of this, the share of the agricultural sector to priority sector lending declined from 40% in 1992 to 33% in 2001. The share of priority sector lending to SSIs remained above 40% during 1992-2000, but dropped to 36% in 2001. Instead, priority sector lending to others (including the export sector) increased from 20% in 1992 to 30%. Together with priority sector lending, advances to medium and large industrial firms accounted for another 30-40% of advances.

As for investments, government securities account for about 70% of total investments by banks. The increase in government bonds held by nationalized banks from 21% in 1993 to 27% in 1994 can be attributed to a rise in the holdings of recapitalization bonds by these banks under the Government's recapitalization program, as pointed out in Section II. However, nationalized banks did not increase their share of government bonds in 1995, even though recapitalization, albeit on a smaller scale, took place. This suggests that nationalized banks reduced the amount of holdings of regular government bonds in order to increase holdings of recapitalization bonds.

Traditionally, banks' holdings of government securities have been heavily affected by the SLR requirement. Thus, one would expect that a gradual and steady decline in the SLR during 1993-1997 would have lowered the ratio of investment in government securities (together with other approved securities) to assets in line with the declining pace of the SLR. However, Chart 9 indicates that the share of investment in government securities indeed increased during 1997-2000 and this expected phenomenon has taken place regardless of ownership of banks, while the share of other approved securities has declined steadily (Table 7). This indicates that banks have been recently holding government securities beyond the amount required by the SLR. This may reflect that (1) interest rates paid on government bonds have increasingly become more market-based through auctions, as pointed out in Section II; (2) stringent prudential norms and accounting standards have induced banks to become more cautious in their lending to the private sector and, thus, they prefer safer, more liquid government securities; (3) there is a lack of high-quality borrowers due to mild recession; and (4) substitution of a decline in the CLR to maintain sufficient liquidity.

The third major category of assets is cash and balances with the RBI, which has declined steadily from 13.7% in 1993 to 6.4% in 2000 (Table 7 and Chart 9). This decline can be attributable to the decline in the CRR. It should be noted that the decline in the ratio of cash and balances with the RBI to assets has contributed to the increase in the ratio of investment to assets, not to the ratio of advances to assets. In addition to the factors indicated above, this may be attributable to banks' reluctance to increase advances because banks have to increase advances to the priority sectors proportionally, notwithstanding that the negative impact of directed lending has been gradually diluted in recent years.

---

<sup>9</sup> This ratio is below 40% since some items, such as deposits with NABARD, are included in deposits with other banks.

As for NPAs, Table 9 shows that public sector banks have on average greater NPAs than other banks, mainly due to their accumulation from new lending. With respect to NPAs inherited from the previous regime, nationalized banks completed full provisioning by the middle of the 1990s. Public sector banks tried to lower their NPAs, resulting in a drop from 17.8% of gross advances in 1997 to 12.4% in 2001. Nevertheless, inadequate bankruptcy laws and relevant codes and difficulties in writing-off bad loans have led to the emergence of two types of NPA classification: gross NPAs and net NPAs (after provisioning).

**Table 9. Non-performing Assets of the Commercial Banking Sector, 1997-2001**

		(%)					
		Scheduled Commercial	Public Sector Banks	All Private Sector Banks	Old Private Sector Banks	New Private Sector Banks	Foreign Banks in
1997	Gross NPA / Gross Advances	15.7	17.8	8.5	10.7	2.6	4.3
	Net NPA / Net Advances	8.1	9.2	5.4	6.6	2.0	1.9
1998	Gross NPA / Gross Advances	14.4	16.0	8.7	10.9	3.5	6.4
	Net NPA / Net Advances	7.3	8.2	5.3	6.5	2.6	2.2
1999	Gross NPA / Gross Advances	14.7	15.9	10.8	13.1	6.2	7.6
	Net NPA / Net Advances	7.6	8.1	7.4	9.0	4.5	2.9
2000	Gross NPA / Gross Advances	12.7	14.0	8.2	10.8	4.1	7.0
	Net NPA / Net Advances	6.8	7.4	5.4	7.1	2.9	2.4
2001	Gross NPA / Gross Advances	11.4	12.4	8.5	11.1	5.1	6.8
	Net NPA / Net Advances	6.2	6.7	5.4	7.3	3.1	1.9

Note: Data include rural regional banks.

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

Old private sector banks have also maintained relatively large shares of NPAs. In addition, their share of NPAs has remained largely unchanged—in contrast to the performance of public sector banks. Their poor performance may reflect a lack of risk management skills and incentives, as well as the legacy from the previous planned system that reduced opportunities to exploit scale advantages. In 2001, their net NPAs as a share of net advances exceeded that of public sector banks, suggesting that some drastic and urgent measures need to be undertaken by old private sector banks.

New private sector and foreign banks, on average, have maintained relatively low NPA ratios throughout the period. In particular, foreign banks have maintained higher provisioning than other banks, leading to a constantly low level of net NPAs.

### Liabilities Side

The major liabilities of commercial banks are deposits, which account for about 70% of total liabilities. Table 10 indicates that term deposits are the major form of deposits. Foreign banks lowered their dependence on deposits from 67% in 1993 to 47% in 2000, while new private sector banks have increased the ratio from 40% in 1995 to 80% in 2000. All other banks have more or less maintained the share of deposits at the same level during 1993-2000. It should be noted that banks have faced growing competition from contractual savings schemes and small savings schemes operated by



NBFCs, including postal savings.<sup>10</sup> For example, the amount of bank deposits held by the household sector rose from Rs17.9 billion in 1991/92 to Rs80 billion in 1999/2000. Meanwhile, the amount of provident/pension funds and nonbank deposits increased from Rs2.5 billion to Rs56 billion and from Rs2.2 billion to Rs8.5 billion during the same period.

**Table 10. The Liability Structure of the Commercial Banking Sector, 1993-2000**

	(Percentage of Total Liabilities)							
	1993	1994	1995	1996	1997	1998	1999	2000
<b>1. Deposits</b>								
All Banks	78.4	81.3	75.1	68.0	71.1	72.5	69.6	69.8
Public Sector Banks								
Of which: Nationalized Banks	87.9	90.2	87.9	86.7	89.5	89.4	89.4	89.2
SBI Banks	77.4	77.2	78.1	76.2	77.9	79.6	79.5	79.5
Private Sector Banks								
Of which: Old Private Sector Banks	87.5	89.4	87.5	83.6	87.1	88.7	87.8	87.7
New Private Sector Banks	-	-	39.5	59.4	78.2	83.0	78.3	79.8
Foreign Banks	66.7	73.6	64.8	45.1	48.7	50.5	47.2	46.7
<b>Of which:</b>								
<b>Demand Deposits</b>								
All Banks	12.5	11.5	11.6	10.0	11.3	10.6	9.7	10.1
Public Sector Banks								
Of which: Nationalized Banks	12.5	13.3	13.8	11.8	12.6	10.9	10.4	10.3
SBI Banks	15.4	14.8	16.1	13.1	14.4	14.3	13.4	12.4
Private Sector Banks								
Of which: Old Private Sector Banks	13.6	12.2	11.6	10.6	9.9	9.1	9.5	9.6
New Private Sector Banks	-	-	8.4	12.4	10.4	12.2	11.9	12.6
Foreign Banks	11.0	9.6	10.2	7.3	11.2	10.5	8.4	9.4
<b>Savings Deposits</b>								
All Banks	12.1	13.1	12.2	10.9	9.9	9.8	9.4	10.0
Public Sector Banks								
Of which: Nationalized Banks	18.5	20.3	20.6	20.8	21.2	21.2	21.1	21.1
SBI Banks	16.8	17.0	18.1	17.7	16.8	18.0	18.2	18.2
Private Sector Banks								
Of which: Old Private Sector Banks	18.7	18.8	17.5	15.2	13.8	13.2	12.4	12.8
New Private Sector Banks	-	-	0.6	1.9	2.5	3.3	4.3	5.1
Foreign Banks	2.7	3.3	3.7	2.4	1.9	1.9	1.9	2.4
<b>Term Deposits</b>								
All Banks	53.8	56.7	51.3	47.1	49.9	52.1	50.5	49.7
Public Sector Banks								
Of which: Nationalized Banks	56.9	56.6	53.5	54.0	55.7	57.3	57.9	57.8
SBI Banks	45.2	45.4	43.9	45.4	46.6	47.3	47.9	48.9
Private Sector Banks								
Of which: Old Private Sector Banks	55.2	58.5	58.4	57.8	63.4	66.5	65.9	65.3
New Private Sector Banks	-	-	30.5	45.2	65.3	67.6	62.1	62.1
Foreign Banks	53.0	60.7	51.0	35.4	35.6	38.1	36.9	35.0
<b>2. Borrowings</b>								
All Banks	11.5	5.5	6.8	13.0	9.7	9.5	12.2	13.9
Public Sector Banks								
Of which: Nationalized Banks	4.4	2.3	3.5	5.3	1.9	1.6	1.6	2.4
SBI Banks	6.4	3.5	6.2	5.1	3.3	2.8	2.5	3.2
Private Sector Banks								
Of which: Old Private Sector Banks	4.4	2.7	4.8	6.6	3.1	2.7	3.3	2.9
New Private Sector Banks	-	-	3.5	9.7	6.5	4.0	10.2	10.0
Foreign Banks	21.8	10.7	11.9	25.2	19.9	20.0	24.1	28.5

<sup>10</sup> Among small savings schemes, interest from post office savings bank accounts and time deposit accounts, public provident funds, and deposit schemes for retiring government employees are exempted from income tax.

**Table 10. The Liability Structure of the Commercial Banking Sector, 1993-2000 (Contd.)**

(Percentage of Total Liabilities)

	1993	1994	1995	1996	1997	1998	1999	2000
<b>Of which:</b>								
<b>RBI Borrowings</b>								
All Banks	3.7	0.8	2.2	3.3	0.6	0.4	1.6	2.1
Public Sector Banks								
Of which: Nationalized Banks	0.0	0.2	1.2	2.3	0.0	0.0	0.3	0.6
SBI Banks	0.6	0.0	2.5	2.1	0.0	0.0	0.4	0.3
Private Sector Banks								
Of which: Old Private Sector Banks	1.4	0.3	1.3	2.0	0.1	0.0	0.7	0.8
New Private Sector Banks	-	-	2.8	7.3	0.6	0.1	2.6	2.0
Foreign Banks	8.4	1.9	3.3	4.2	1.2	0.9	2.8	3.8
<b>Borrowing from Banks</b>								
All Banks	4.2	2.0	1.8	5.7	5.6	4.9	5.9	5.4
Public Sector Banks								
Of which: Nationalized Banks	0.7	0.1	0.2	0.5	0.4	0.1	0.1	0.1
SBI Banks	0.2	0.1	0.0	0.1	0.4	0.1	0.1	0.2
Private Sector Banks								
Of which: Old Private Sector Banks	0.6	0.1	0.8	2.3	0.5	0.2	0.4	0.0
New Private Sector Banks	-	-	0.2	1.8	3.4	1.3	3.4	3.2
Foreign Banks	9.8	5.3	4.7	13.7	13.0	12.0	13.0	12.5
<b>Borrowing from Financial Institutions</b>								
All Banks	2.8	1.9	1.6	2.9	2.3	2.2	3.4	2.9
Public Sector Banks								
Of which: Nationalized Banks	3.2	1.4	1.3	1.8	0.9	0.8	0.8	0.8
SBI Banks	1.7	1.2	1.0	0.8	0.6	0.6	0.5	0.5
Private Sector Banks								
Of which: Old Private Sector Banks	2.3	2.2	2.5	2.1	2.2	1.6	1.6	1.1
New Private Sector Banks	-	-	0.3	0.5	2.3	2.0	3.3	3.3
Foreign Banks	3.0	2.4	1.5	5.1	3.5	3.6	6.2	5.2
<b>3. Capital plus Reserves (EQUITY)</b>								
All Banks	4.1	4.6	8.7	13.6	14.4	13.3	13.6	11.4
Public Sector Banks								
Of which: Nationalized Banks	1.7	2.3	3.9	3.4	4.1	4.8	4.3	4.0
SBI Banks	1.7	2.0	2.2	3.2	3.9	4.8	4.5	4.6
Private Sector Banks								
Of which: Old Private Sector Banks	3.2	3.6	4.0	5.6	5.4	5.5	5.6	5.6
New Private Sector Banks	-	-	9.0	25.5	10.0	7.8	6.3	6.0
Foreign Banks	6.8	7.9	17.4	25.0	28.4	25.2	25.4	20.5
<b>4. Capital Adequacy Ratio <sup>1/</sup></b>								
All Banks	-	-	-	17.6	22.8	21.9	25.5	20.4
Public Sector Banks								
Of which: Nationalized Banks	-	-	-	8.2	10.2	10.5	10.9	11.1
SBI Banks	-	-	-	10.0	10.4	12.5	11.9	12.0
Private Sector Banks								
Of which: Old Private Sector Banks	-	-	-	10.5	11.3	11.7	12.2	12.3
New Private Sector Banks	-	-	-	42.7	15.9	13.9	12.0	13.4
Foreign Banks	-	-	-	24.3	40.6	37.3	44.2	31.9
<b>5. Other Liabilities and Provisions</b>								
All Banks	6.0	8.6	9.4	5.4	4.8	4.7	4.6	4.9
Public Sector Banks								
Of which: Nationalized Banks	6.0	5.2	4.7	4.6	4.5	4.2	4.7	4.4
SBI Banks	14.5	17.3	13.5	15.5	14.9	12.8	13.5	12.7
Private Sector Banks								
Of which: Old Private Sector Banks	4.9	4.3	3.7	4.2	4.4	3.1	3.3	3.8
New Private Sector Banks	-	-	48.0	5.4	5.3	5.2	5.2	4.2
Foreign Banks	4.7	7.8	5.9	4.7	3.0	4.3	3.3	4.3

**Table 10. The Liability Structure of the Commercial Banking Sector, 1993-2000 (Contd.)**

	(Percentage of Total Liabilities)							
	1993	1994	1995	1996	1997	1998	1999	2000
<b>Memorandum:</b>								
<b>Contingent Liabilities/ Liabilities</b>								
All Banks	16.2	17.5	17.7	16.6	20.9	18.6	17.3	15.1
Public Sector Banks								
Of which: Nationalized Banks	10.9	10.5	10.2	9.8	10.0	8.7	8.2	6.9
SBI Banks	9.0	9.5	16.1	13.1	13.8	12.2	10.4	10.2
Private Sector Banks								
Of which: Old Private Sector Banks	5.5	4.3	7.5	9.6	8.3	7.7	8.4	8.4
New Private Sector Banks	-	0.0	15.7	21.3	22.0	17.0	14.1	10.8
Foreign Banks	28.3	34.7	32.6	25.6	35.8	32.0	28.2	24.5

Note: 1/ Excludes nationalized banks with negative network.

Source: PROWESS Database, Center for Monitoring Indian Economy Pvt. Ltd; Report on Trend and Progress of Banking in India, 1997-2000, RBI

While reducing the share of deposits in total liabilities, foreign banks have increased equity rapidly from 6.8% in 1993 to 20.5% in 2000. The risk-weighted capital adequacy ratio also indicates that foreign banks have higher ratios than other banks. Nevertheless, all types of banks meet, on average, the 8% capital adequacy requirement thanks to the strengthening of prudential norms.

In general, foreign banks tend to focus on wholesale business while public sector and private sector banks focus on retail business. This is evident from the fact that deposits per account was Rs174.6 million for foreign banks as of March 2000, compared with Rs20.5 million for SBI banks, Rs18.9 million for nationalized banks, and Rs33.4 million for private sector banks. In addition to capitalization, foreign banks increased borrowings (particularly, from other banks), from 21.8% (9.8%) in 1993 to 28.5% (12.5%) in 2000. Compared with old private and public sector banks, moreover, new private sector banks have maintained larger equity as a percentage of liabilities.

### (3) Structure of Income and Expenditure and Interest Spread

Banks' major income sources are interest income from advances and from investment (Table 11). Interest incomes have been declining, from 63.4% in 1993 to 51.2% in 2000, regardless of the type of banks. This reflects a declining trend in lending interest rates (as evidenced by a drop in the implicit lending rate during 1999-2000) and an increasing trend in deposit interest rates (as evidenced by an increase in the implicit deposit interest rate during 1996-2000 ([Table 3, and Charts 4 and 5])).

**Table 11. The Income Structure of the Commercial Banking Sector, 1993-2000**

	(Percentage of Total Income)							
	1993	1994	1995	1996	1997	1998	1999	2000
<b>I. Interest Income</b>								
All Banks	63.4	59.2	57.4	61.0	59.8	54.4	55.3	51.2
Public Sector Banks								
Of which: Nationalized Banks	63.5	61.5	56.7	56.3	53.5	48.6	48.8	47.0
SBI Banks	60.0	55.0	50.0	56.5	58.1	53.0	50.8	47.7
Private Sector Banks								
Of which: Old Private Sector Banks	64.8	61.0	61.1	63.5	63.1	56.5	57.3	53.5
New Private Sector Banks	-	-	59.2	65.8	62.0	52.1	53.1	46.2
Foreign Banks	63.3	56.1	55.7	61.6	60.6	56.7	58.5	53.8

**Table 11. The Income Structure of the Commercial Banking Sector, 1993-2000 (Contd.)**

	(Percentage of Total Income)							
	1993	1994	1995	1996	1997	1998	1999	2000
<b>2. Income from Investment</b>								
All Banks	24.3	28.9	28.8	25.5	26.0	28.8	31.7	34.8
Public Sector Banks								
Of which: Nationalized Banks	24.1	29.3	33.4	34.6	38.2	42.0	42.8	43.6
SBI Banks	26.5	30.3	33.5	28.2	29.1	33.5	36.0	37.7
Private Sector Banks								
Of which: Old Private Sector Banks	25.7	29.5	28.6	27.0	27.3	31.4	33.0	34.0
New Private Sector Banks	-	-	15.8	18.0	22.3	29.6	34.6	38.8
Foreign Banks	22.9	28.4	28.4	20.1	19.1	19.8	24.6	29.6
<b>3. Income from Securities Transaction</b>								
All Banks	0.7	2.0	3.6	1.0	1.5	3.8	1.4	3.2
Public Sector Banks								
Of which: Nationalized Banks	0.6	1.4	1.5	0.3	0.5	1.7	1.1	2.8
SBI Banks	0.4	0.8	1.5	0.1	0.2	1.1	0.5	2.3
Private Sector Banks								
Of which: Old Private Sector Banks	0.6	1.8	2.6	0.5	1.0	4.1	1.5	4.8
New Private Sector Banks	-	-	17.3	4.5	3.3	8.4	2.9	6.5
Foreign Banks	0.9	3.0	2.5	0.9	2.2	4.2	1.4	2.0
<b>4. Income from Exchange Transactions</b>								
All Banks	4.5	3.6	3.3	5.3	4.2	4.7	4.3	3.3
Public Sector Banks								
Of which: Nationalized Banks	2.5	2.0	2.1	2.5	2.0	2.2	2.0	1.5
SBI Banks	3.3	2.6	2.8	4.0	2.6	2.3	2.1	1.6
Private Sector Banks								
Of which: Old Private Sector Banks	1.9	1.2	1.4	1.8	1.6	1.8	1.8	1.3
New Private Sector Banks	-	-	1.5	2.8	2.9	2.9	2.5	1.6
Foreign Banks	7.7	7.0	6.3	10.5	7.6	8.5	7.5	5.9
<b>5. Income from Commission and Brokerage</b>								
All Banks	6.2	6.2	6.8	6.7	7.9	7.9	6.7	6.9
Public Sector Banks								
Of which: Nationalized Banks	5.7	5.9	6.3	6.2	5.8	5.4	5.2	4.9
SBI Banks	9.8	11.3	12.2	11.3	9.9	10.2	10.5	10.3
Private Sector Banks								
Of which: Old Private Sector Banks	7.0	6.4	6.0	6.2	5.9	5.4	5.4	5.2
New Private Sector Banks	-	-	6.1	7.4	7.1	5.5	5.7	6.0
Foreign Banks	5.2	5.5	7.0	6.4	9.9	10.6	7.5	8.3
<b>6. Income from Leasing and Hire Services</b>								
All Banks	0.0	0.0	0.1	0.4	0.5	0.3	0.3	0.3
Public Sector Banks								
Of which: Nationalized Banks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SBI Banks	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3
Private Sector Banks								
Of which: Old Private Sector Banks	0.0	0.0	0.3	0.9	1.1	0.8	0.9	0.9
New Private Sector Banks	-	-	0.0	1.4	2.4	1.4	1.2	0.8
Foreign Banks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>7. Others</b>								
All Banks	0.9	0.1	0	0.1	0.1	0.1	0.3	0.3
Public Sector Banks								
Of which: Nationalized Banks	3.6	-0.1	0	0.1	0	0.1	0.1	0.2
SBI Banks								
Private Sector Banks								
Of which: Old Private Sector Banks	0	0.1	0	0.1	0	0	0.1	0.3
New Private Sector Banks	-	-	0.1	0.1	0	0.1	0	0.1
Foreign Banks	0	0	0.1	0.5	0.6	0.2	0.5	0.4
<b>Memorandum (1):</b>	(Percentage of Total Assets)							
Net Interest Income								
All Banks	0.6	0.4	0.4	0.6	0.6	-0.1	-0.5	-0.7
Public Sector Banks								
Of which: Nationalized Banks	-0.9	-0.6	-0.5	-0.7	-1.1	-1.5	-1.6	-1.8
SBI Banks	0.0	-0.3	-0.3	0.3	0.2	-0.3	-0.6	-1.0
Private Sector Banks								
Of which: Old Private Sector Banks	0.4	0.1	0.4	0.2	-0.1	-1.0	-1.5	-1.3
New Private Sector Banks	-	-	0.3	1.9	0.5	-0.8	-1.5	-1.7
Foreign Banks	1.7	1.7	1.1	1.3	2.0	1.4	0.8	0.3

**Table 11. The Income Structure of the Commercial Banking Sector, 1993-2000 (Contd.)**

	(Percentage of Total Assets)								
	1993	1994	1995	1996	1997	1998	1999	2000	
<b>Memorandum (2)</b>									
<b>1. Income from Investment</b>									
All Banks	2.9	3.1	3.1	2.8	2.9	3.4	3.6	4.0	
Public Sector Banks									
Of which: Nationalized Banks	2.6	2.9	3.3	3.7	4.2	4.4	4.4	4.5	
SBI Banks	3.1	3.3	3.7	3.3	3.5	3.8	4.0	4.1	
Private Sector Banks									
Of which: Old Private Sector Banks	2.8	3.1	2.9	3.1	3.2	3.7	3.8	3.8	
New Private Sector Banks	-	-	0.8	1.8	2.4	3.3	3.7	3.6	
Foreign Banks	3.2	3.5	3.5	2.2	2.1	2.7	3.0	3.8	
<b>2. Net Income from Securities Exchange</b>									
All Banks	0.0	0.2	0.3	0.1	0.1	0.5	0.1	0.4	
Public Sector Banks									
Of which: Nationalized Banks	0.1	0.1	0.1	0.0	0.1	0.2	0.1	0.3	
SBI Banks	0.0	0.1	0.1	-0.1	0.0	0.1	0.0	0.3	
Private Sector Banks									
Of which: Old Private Sector Banks	0.0	0.2	0.3	0.0	0.1	0.5	0.1	0.5	
New Private Sector Banks	-	-	0.5	0.4	0.3	1.0	0.3	0.6	
Foreign Banks	0.0	0.4	0.3	0.1	0.1	0.7	0.1	0.3	
<b>3. Net Income from Exchange Transactions</b>									
All Banks	0.5	0.3	0.2	0.4	0.3	0.5	0.5	0.4	
Public Sector Banks									
Of which: Nationalized Banks	0.3	0.2	0.2	0.3	0.2	0.2	0.2	0.2	
SBI Banks	0.4	0.3	0.3	0.5	0.3	0.3	0.2	0.2	
Private Sector Banks									
Of which: Old Private Sector Banks	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.1	
New Private Sector Banks	-	-	0.1	0.3	0.3	0.3	0.3	0.2	
Foreign Banks	1.0	0.5	0.3	0.6	0.5	1.0	1.0	0.7	
<b>4. Income from Commission and Brokerage</b>									
All Banks	0.8	0.7	0.7	0.8	0.9	1.0	0.8	0.8	
Public Sector Banks									
Of which: Nationalized Banks	0.6	0.6	0.6	0.7	0.6	0.6	0.5	0.5	
SBI Banks	1.2	1.2	1.3	1.3	1.2	1.2	1.2	1.1	
Private Sector Banks									
Of which: Old Private Sector Banks	0.8	0.7	0.6	0.7	0.7	0.6	0.6	0.6	
New Private Sector Banks	-	-	0.3	0.8	0.8	0.6	0.6	0.5	
Foreign Banks	0.8	0.7	0.8	0.8	1.2	1.6	1.0	1.1	
<b>5. Income from Diversification (2+3+4)</b>									
All Banks	1.3	1.2	1.2	1.3	1.3	2.0	1.4	1.6	
Public Sector Banks									
Of which: Nationalized Banks	1.0	0.9	0.9	1.0	0.9	1.0	0.8	1.0	
SBI Banks	1.6	1.6	1.7	1.7	1.5	1.6	1.4	1.6	
Private Sector Banks									
Of which: Old Private Sector Banks	1.0	1.0	1.0	0.9	1.0	1.3	0.9	1.2	
New Private Sector Banks	-	-	0.9	1.5	1.4	1.9	1.2	1.3	
Foreign Banks	1.8	1.6	1.4	1.5	1.8	3.3	2.1	2.1	

Source: PROWESS Database, Center for Monitoring Indian Economy Pvt. Ltd; Report on Trend and Progress of Banking in India, 1997-2000, RBI

The decline in the implicit lending rate may be due to intensified competition from the commercial paper market for high quality borrowing firms (since their lending rates from commercial paper issuance are often below the PLR) in addition to a decline in the inflation rate. An increase in the deposit interest rate may reflect increased competition from small saving schemes and those operated by NBFCs. Since small saving schemes, for example, are subject to tax exemptions, their effective rates of return are substantially higher than the term deposit or other saving rates. This means that banks have to offer equally competitive deposit interest rates to attract savings, contributing to

the decline in net interest rate incomes in the presence of the rapid growth of savings of NBFIs.

The decline in the share of interest income from advances has been offset largely by the increase in income from investment (largely consisting of interest income from government bonds). In particular, nationalized banks rely more heavily on income from investment (including recapitalization bonds). Other major income sources are net income from securities transactions, exchange transactions, and commission and brokerage fees. This paper defines income arising from securities and foreign exchange transactions, and commissions and brokerage as income arising from diversification of bank business. Banks earned negative net interest income during 1998-2000. A decline in income from net advances, however, is offset by the increase in income from investment as a result of increased holdings of government bonds and stable income from diversification of business.

As a result of interest rate deregulation, interest spreads, calculated as the difference between an implicit lending rate and an implicit deposit rate, have declined, especially in recent years (Table 3). This decline is closely associated with the reduced share of net interest income to assets seen in Table 11. In general, foreign banks have maintained greater interest spreads and net interest income compared with other banks.

About 70% of expenditure comes from interest expenditure (Table 12). In line with the decline in deposit shares, foreign banks have generally had lower interest expenditure as a percent of expenditure. For other banks, the ratios of interest expenditure have either remained more or less constant or have increased over the period.

**Table 12. The Expenditure Structure of the Commercial Banks, 1993-2000**

	(Percentage of Total Expenditure)							
	1993	1994	1995	1996	1997	1998	1999	2000
<b>1. Interest Expenditure</b>								
All Banks	75.0	71.1	65.5	66.9	67.4	71.2	71.5	73.1
Public Sector Banks								
Of which: Nationalized Banks	74.3	72.5	69.5	69.9	71.6	72.3	73.1	73.8
SBI Banks	70.0	68.6	65.1	65.5	69.6	69.4	69.3	70.8
Private Sector Banks								
Of which: Old Private Sector Banks	71.4	71.8	72.2	74.3	77.4	78.6	80.1	79.3
New Private Sector Banks	-	2.6	38.0	66.5	77.6	82.7	86.4	85.9
Foreign Banks	79.0	73.2	64.6	59.7	55.9	63.9	63.5	67.4
<b>2. Personnel Cost</b>								
All Banks	14.8	15.9	16.8	16.5	15.9	15.0	15.5	15.1
Public Sector Banks								
Of which: Nationalized Banks	19.0	20.6	23.4	24.2	22.6	22.2	21.8	21.4
SBI Banks	21.7	22.3	24.9	25.5	23.1	23.5	24.0	22.6
Private Sector Banks								
Of which: Old Private Sector Banks	21.8	21.9	21.3	19.9	16.9	15.8	14.5	15.6
New Private Sector Banks	-	6.8	5.9	4.3	4.4	4.0	3.9	4.1
Foreign Banks	5.9	7.1	9.6	10.6	12.7	11.6	13.8	12.4
<b>3. Provision for NPA and Contingencies</b>								
All Banks	25.2	27.7	19.4	12.9	9.3	12.7	14.2	17.7
Public Sector Banks								
Of which: Nationalized Banks	19.7	31.0	12.1	16.5	8.1	8.4	7.8	7.4
SBI Banks	12.9	15.0	17.8	15.1	11.5	10.4	11.3	10.0
Private Sector Banks								
Of which: Old Private Sector Banks	11.8	13.0	17.4	12.0	7.3	8.7	5.8	8.0
New Private Sector Banks	-	6.5	11.1	6.9	6.2	7.8	5.2	11.6
Foreign Banks	40.4	39.9	28.9	12.4	11.4	18.7	23.9	30.6

**Table 12. The Expenditure Structure of the Commercial Banks, 1993-2000 (Contd.)**

	(Percentage of Total Expenditure)								
	1993	1994	1995	1996	1997	1998	1999	2000	
<b>4. Others</b>									
All Banks	-15	-14.7	-1.7	3.7	7.4	1.1	-1.2	-5.9	
Public Sector Banks									
Of which: Nationalized Banks	-13	-24.1	-5.0	-10.6	-2.3	-2.9	-2.7	-2.6	
SBI Banks	-4.6	-5.9	-7.8	-6.1	-4.2	-3.3	-4.6	-3.4	
Private Sector Banks									
Of which: Old Private Sector Banks	-5	-6.7	-10.9	-6.2	-1.6	-3.1	-0.4	-2.9	
New Private Sector Banks	-	84.1	45.0	22.3	11.8	5.5	4.5	-1.6	
Foreign Banks	-25.3	-20.2	-3.1	17.3	20	5.8	-1.2	-10.4	

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

The second largest item is personnel cost, which accounts for about 15% of expenditure. In general, new private sector banks followed by foreign banks have relatively lower personnel costs owing to smaller branch networks and staff. Table 12 shows that foreign banks have maintained greater provisions for NPAs than other banks. Table 9 indicated that gross NPAs of foreign banks are greater than those of new private sector banks, while their net NPAs are lower than those of the latter. This suggests that foreign banks have maintained greater provisions than new private sector banks, as shown by Table 12.

### 3.2. Main Discussion Issues

#### (1) Drastic versus Gradual Privatization Approach

While India's financial reforms have been comprehensive and in line with global trends, one unique feature is that, unlike other former planned economies such as Hungary and Poland, the Indian Government did not engage in drastic privatization of public sector banks. Rather, it chose a gradual approach toward restructuring these banks by enhancing competition through entry deregulation of foreign and domestic banks. This reflects the view of the Narasimham Committee that ensuring integrity and autonomy of public sector banks is a more relevant issue and that they could improve profitability and efficiency without changing their ownership if competition were enhanced.

Since this approach was introduced, some criticisms have been expressed (Joshi and Little [1996]). First, public sector banks continue to dominate, thanks to their better branch coverage, customer base, and knowledge of the market compared with newcomers. Second, public sector banks would find it more difficult to reduce personnel expenditure because of strong trade unions. Third, the Government would find it difficult to accept genuine competition within public sector banks. In response to these concerns, the Government decided to gradually expand private sector equity holdings in public sector banks, but still avoided the transformation of their ownership. However, many public sector banks have remained fully or largely owned by the Government, as discussed in Section II.

Meanwhile, a consensus is emerging that state ownership of banks is bad for financial sector development and growth (World Bank [2001]). Based on data of the 10

largest commercial and development banks in 92 countries for 1970-1995, La Porta et al. (2000) have found that greater state ownership of banks in 1970 was associated with a lesser degree of financial sector development, lower growth, lower productivity, and that these effects were greater for countries with lower levels of income. Barth, Caprio, and Levine (2001a, 2001b) have shown that greater state ownership of banks tends to be associated with higher interest rate spreads, less private credit, less activity on the stock exchange, and less nonbank credit, even after taking into account other factors that could influence financial development. This suggests that greater state ownership tends to be anticompetitive, reducing competition both from banks and nonbanks. Barth, Caprio, and Levin (2001a) have also noted that applications for bank licenses are more often rejected and there are fewer foreign banks when state ownership is greater. Moreover, Caprio and Martinez-Peria (2000) have shown that greater state ownership at the start of 1980-1997 was associated with a greater probability of a banking crisis and higher fiscal costs.

On the privatization of banks, moreover, the World Bank (2001) takes the view that it can yield real benefits to economies provided that an appropriate accounting, legal, regulatory infrastructure is in place. It should be noted, however, that premature privatization may give rise to banking crises. Clarke and Cull (1998) have demonstrated that Argentina promoted privatization of public sector banks in a reasonably developed regulatory and infrastructure environment and, thus, privatized banks improved productivity remarkably.

Considering the implications derived from the above studies, this paper examines whether India's gradual approach has been successful so far by examining whether public sector banks have improved their performance (profitability and efficiency) in the reform period. This paper adopts two hypotheses in this regard. The first hypothesis ( $H_1$ ) is that an increase in nongovernment ownership has improved the performance of public sector banks. This paper adopts three types of performance indicators: (1) profitability, (2) earnings efficiency, and (3) cost efficiency. It tests this hypothesis by analyzing trend patterns and empirically testing the performance of public sector banks, followed by regression estimation.

## **(2) Diversification of Banking Activities**

The second unique feature of India's banking sector is that the RBI has permitted commercial banks to engage in diverse business, such as securities-related transactions (e.g., dealing and brokerage), foreign exchange transactions, investment in shares rather than solely extending bank credit, etc. Diversification of banks' activities can be justified for at least five reasons. First, entry deregulation and resultant intensified competition may leave banks with no choice but to take risks in the fight for market share or profit margins. As a result, risk-taking would reduce the value of banks' future earnings and associated incentives to avoid bankruptcy (Allen and Gale [2000]).



Second, banks need to obtain implicit rents in order to provide discretionary, repetitive, and flexible loans.<sup>11</sup> Also, banks attempt to reduce the extent of information asymmetry by processing inside information on their clients and monitoring their performance. Such roles are unique to the banking system and important particularly for small and medium enterprises (SMEs), since information on them tends to be highly idiosyncratic. Without sufficient rents, however, banks are likely to cease providing these services and the implication for SMEs and economic development can be enormous. Thus, it is important for bank regulators to ensure adequate implicit rents to banks in order to encourage them to provide such unique services. Moreover, banks may lose an opportunity to collect implicit rents if their clients switch to capital markets once they become larger and profitable.

Diversification of banking activities helps banks to mitigate the two problems raised above (taking excessive risks and ceasing the provision of discretionary, repetitive, and flexible loans) by providing them with an opportunity to gain noninterest income and thereby sustain profitability. This enables banks to maintain long-term relationships with clients throughout the latter's life cycles and gives them an incentive to process inside information and monitor their clients.

Third, banks can stabilize their income by engaging in activities whose returns are imperfectly correlated, thereby reducing costs of funds and, thus, lending and underwriting costs.

Fourth, diversification promotes efficiency by allowing banks to utilize inside information arising out of long-term lending relationships.<sup>12</sup> Thanks to this advantage, banks are able to underwrite securities at lower costs than nonbank underwriters. Also, firms may obtain higher prices on their securities underwritten by banks because of their perceived monitoring advantages. Further, banks can exploit economies of scope from the production of various financial services, since they can spread fixed physical (i.e., branches and distribution channels) and human capital costs (Steinherr and Huvencers [1990]).

Fifth, diversification may improve banks' performance through diluting the impact of directed lending (through requiring banks to allocate credit to sectors selected by the Government). Directed lending reduces banks' incentives to process information and engage in monitoring. As a result, this not only lowers banks' profitability by limiting financial resources available to more productive usages, but also results in a

---

<sup>11</sup> For example, banks' clients are able to obtain refinance or to return loans earlier than maturity with relatively small fees. Further, if borrowers become financially distressed, banks often make flexible choices as to whether to continue to supply loans or buy back ones that turn problematic (Gilson, John, and Lang [1990]; Hoshi, Kashyap, and Scharfstein [1990]). Also, banks may renegotiate with firms over lowering interest rates in order to prevent risk-taking, as pointed out by Stiglitz and Weiss (1981). Since most of these transactions cannot be written explicitly in loan contracts, these promises are regarded as implicit "insurance" that commercial banks provide to their borrowers.

<sup>12</sup> Through long-term relationships, banks already possess inside information about creditworthiness of borrowers and features of their investment projects that are not readily available to outsiders. Thus, banks do not need to use a lot of resources in collecting the information about their clients that is necessary for underwriting securities issued by them.

deterioration of efficiency and soundness by discouraging banks from functioning properly.

These five advantages, however, can be offset by the following disadvantages. First, public sector banks' engagement in securities business may promote a concentration of power in the banking sector. This is partly because banks become too large and partly because they have a natural tendency to promote lending over securities, thereby indirectly deterring the development of capital markets. Further, the reputation and informational advantages enjoyed by public sector banks put them in an even more advantageous position, preventing other banks and investment firms from competing on a level playing field.

Second, banks' engagement in underwriting services may lead to conflicts of interest between banks and investors. Banks may decide to underwrite securities for troubled borrowers so that the proceeds of the issue of securities can be used to pay off these banks' own claims to the companies. Banks may dump into the trust accounts they manage the unsold part of the securities they underwrite. Further, banks may impose tie-in deals on customers by using their lending relationships with firms to pressure them to purchase their underwriting services (e.g., using the threat of increased credit costs or nonrenewal of credit lines). Banks may also use the confidential inside information that they possess when they underwrite firms' securities in a way that the firms do not contemplate, such as disclosing the information directly or indirectly to the firms' competitors.<sup>13</sup>

Third, diversification may expose banks to various new risks. For example, banks may end up buying the securities they underwrite. They may also face greater market risks as they increase their share of securities holdings and market making activities. Further, derivatives involve higher speed and greater complexity, which may reduce the solvency and transparency of banking operations.

The presence of these three potential disadvantages suggests that measures are needed to balance the advantages and disadvantages. In India, banks have been allowed to engage in merchant banking for a long time; leasing since 1983; and mutual funds, hire purchase, factoring, etc., since 1987. Traditionally, the RBI has tried to cope with the disadvantages by encouraging banks to engage in leasing, hire purchase, factoring, and mutual funds through subsidiaries, thereby putting in place firewalls between traditional banking and securities services to some extent. Since 1994, however, banks have been allowed to engage in these activities departmentally. As for merchant banking, these services used to be performed in-house, but banks have been allowed to set up separate subsidiaries to handle these activities since 1983. Banks also set up subsidiaries to deal in government securities as primary dealers. Meanwhile, banks are not permitted to

---

<sup>13</sup> These conflicts of interest are likely to lower the quality of services offered by banks, thus investors need special protection against such malpractices. Conflicts of interest can be exploited especially when (1) there is some monopoly power, as with tie-in deals; (2) there is an asymmetry of information between the contracting parties, as in the conflict between the bank's promotional and advisory roles; or (3) one of the parties involved is naïve, as when securities are issued to transfer bankruptcy risks to outside investors (Santos, 1998).

engage in insurance business, trade in commodities, and become members of the stock exchange.

To assess the overall impact of banks' activities, this paper examines whether diversification improves bank performance. It is also important to examine whether diversification has led to even greater dominance of public sector banks by examining whether banks' asset portfolios differ between public sector and private sector banks. This paper examines the hypothesis ( $H_2$ ) that banks' engagement in foreign exchange and securities business has improved their profitability and earnings efficiency. The impact of diversification on cost efficiency is likely to be positive if banks can gain economies of scope, informational advantages, etc.

### **(3) Reserve and Liquidity Requirement and Priority Sector Lending**

Despite a decline in the SLR, banks' investment has remained above 30% and even increased during 1997-2000. In particular, this increase in investment reflects a rise in banks' holdings of government bonds. This suggests that banks hold government bonds beyond the SLR requirement. Such practices may be justified when the economy is in mild recession, as is now the case in India, and, thus, private sector demand for credit is limited. However, once the economy pulls out of the mild recession, such practices may crowd out the private sector. Moreover, allocation of too many financial resources away from lending activities because of the SLR requirement may increase banks' costs of operation from these activities. This is because banks may not be able to reduce the costs of collecting and evaluating information regarding creditworthiness of their borrowers through economies of scale. The economies of scale arise from the fixed cost of hiring professional staff with special expertise in loan evaluation. They also derive from the provision of settlement and checking accounts and other financial services to their borrowers, which gives banks an opportunity to gain a sense of the economic activities and cash flow movements of their borrowers. Meanwhile, gradual liberalization of lending rates during the reform period has increased the opportunity for banks to profit more from advances to the private sector. This paper, therefore, tests the hypothesis ( $H_3$ ) that investment in government bonds is detrimental to banks' performance.

With respect to the CRR, this requirement has historically increased banks' preference for holding balances with the RBI. In line with a decline in the CRR from 15% in 1993 to 5.5% in 2001, however, the share of cash and balances with the RBI has declined (Table 7). Since the share of advances in assets has been more or less constant at 42% and has not shown an increasing trend, a decline in the CRR appears to have led to a rise in banks' investment in government bonds. While the RBI pays an interest rate for the deposits, banks can enjoy higher income and lower operational costs if they are given an opportunity to diversify their asset portfolio as well as realize economies of scale and scope. Therefore, this paper tests the hypothesis ( $H_4$ ) that a decline in cash and balances with the RBI has contributed to an improvement in banks' performance.

Moreover, while advances to priority sectors are one of the major forms of directed lending in India, the Government has attempted to mitigate the adverse impact of directed lending on banks' performance by expanding the coverage and gradually

liberalizing lending interest rates on advances in excess of Rs200,000, as indicated in Section II. Thus, the adverse impact is expected to decline over the period and help improve banks' performance. Meanwhile, banks continue to be asked to extend credit to weaker sections—frequently to particular individuals and projects. Therefore, if the positive contribution of the reform exceeds the negative impact, such lending may improve banks' performance. This paper tests the hypothesis ( $H_5$ ) that lending to the priority sectors has improved banks' performance.

#### **(4) Presence of Foreign and Private Sector Banks**

It is generally viewed that the entry of well-capitalized new private sector and foreign banks is likely to improve the quality and variety of services, efficiency of bank management, and prudential supervisory capacity (Levine [1996], Walter and Gray [1983], and Gelb and Sagari [1990]). The entry of foreign banks tends to lower interest margins, profitability, and the overall expenses of domestic banks (Clarke, Cull, D'Amato, and Molinari [2000]; Claessens, Demirgüç-Kunt, and Huizinga [2000]). Further, Claessens, Demirgüç-Kunt, and Huizinga (2000) have reported that the number of entrants matters compared to their market share, indicating that foreign banks affect local bank competition upon entry rather than after they have gained a substantial market share. Moreover, these banks may be able to provide a source of new capital for enterprises and, thus, reduce government restructuring costs, especially when the domestic banking sector is devastated in the aftermath of a crisis. Some studies also find that foreign banks tend to go for higher interest margins and profitability than domestic banks in developing countries, while the opposite is true in developed countries (Claessens, Demirgüç-Kunt, and Huizinga [2000]).

On the other hand, premature deregulation and foreign entry may cause some downside effects. First, they may increase the risk of a banking crisis in the presence of macroeconomic or regulatory weakness, as was experienced in Argentina, Brazil, and Chile in the 1970s (Demirgüç-Kunt and Detragiache [1998]). Second, foreign banks may exhibit a home country bias, leading them to retreat promptly and massively at the first sign of difficulty. In the East Asian crisis, for example, it is widely believed that foreign banks operating in Asia, including Citibank, played a major role in supporting the capital outflow without consideration as to the national damage caused.

This paper assesses whether their performance shows statistically different results from that of public sector banks through three steps: (1) analyzing trend patterns, (2) testing the null hypotheses that the average level of each indicator is the same between public sector and foreign and private sector banks, and (3) using OLS regression. The first hypothesis ( $H_6$ ) is that foreign and private sector banks have performed better than public sector banks, and, thus, have contributed to an improvement in overall banking sector performance. The second hypothesis ( $H_7$ ) is that new banks perform better.

#### 4. Appraisal of Commercial Banking Sector Performance

In order to assess the performance of the commercial banking sector, this paper adopts three indicators: (1) profitability (proxied as profit after tax divided by average assets [ROA]), (2) earnings efficiency (proxied as income divided by assets [INCOME]), and (3) cost efficiency (proxied as operating cost divided by operating income [COST]). In addition to these indicators, the paper adopts relevant indicators to estimate the overall soundness of the banking sector (Table 13).

##### 4.1. Profitability, Earnings Efficiency, and Cost Efficiency

First, foreign banks' profitability measured by ROA exceeded that of private sector and public sector banks in 1993-1995 (Table 13). However, their profitability has since then shown a declining trend, partly because of the establishment of new branches and new employment in the case of new private sector banks. New private sector banks increased their numbers of employees and branches, on average, from 183 in 1996 to 918 in 2000 and from nine in 1996 to 58 in 2000, respectively. This may explain why profits per employee and branch declined from 1996 to 2000. It usually takes some time for banks to be able to gain relatively stable income and profits after establishment.

**Table 13. Selected Indicators for the Performance of Commercial Banks, 1993–2000**

	1993	1994	1995	1996	1997	1998	1999	2000
	(%)							
<b>Profit After Tax/Asset (ROA)</b>								
All Banks	-0.1	0.1	1.1	0.8	1.1	1.0	0.5	0.4
Public Sector Banks								
Of which: Nationalized Banks	-1.5	-3.2	0.0	-0.7	0.4	0.7	0.3	0.5
SBI Banks	0.4	0.2	0.4	0.6	0.7	1.2	0.7	0.9
Private Sector Banks								
Of which: Old Private Sector Banks	-0.2	0.5	1.2	0.8	1.0	0.9	0.6	0.9
New Private Sector Banks	-	-	1.1	2.3	2.2	1.9	1.3	1.2
Foreign Banks	2.0	2.0	2.0	1.6	1.6	1.1	0.4	-0.2
<b>Income/Assets (INCOME)</b>								
All Banks	12.5	11.1	10.3	11.9	12.2	12.3	11.5	11.5
Public Sector Banks								
Of which: Nationalized Banks	10.6	10.1	9.9	10.7	11.1	10.5	10.3	10.4
SBI Banks	11.8	10.7	11.0	11.9	12.0	11.5	11.0	10.9
Private Sector Banks								
Of which: Old Private Sector Banks	10.9	10.5	10.5	11.4	11.8	11.8	11.4	11.3
New Private Sector Banks	-	0.3	3.2	11.0	11.1	11.3	10.8	9.3
Foreign Banks	14.9	13.0	12.2	13.4	13.3	13.8	12.4	12.8
<b>Growth of Assets</b>								
All Banks	19.4	22.2	24.0	52.4	57.4	46.3	22.6	24.6
Public Sector Banks								
Of which: Nationalized Banks	13.9	14.2	23.0	12.6	11.5	19.7	18.8	16.7
SBI Banks	20.9	19.3	15.2	19.8	15.3	12.2	19.7	19.0
Private Sector Banks								
Of which: Old Private Sector Banks	27.6	26.2	37.7	19.1	29.5	24.6	19.1	20.5
New Private Sector Banks	-	-	-42.1	174.9	155.2	70.1	54.6	67.2
Foreign Banks	21.0	25.5	19.8	81.3	89.9	75.9	20.6	23.2
<b>Operating Expenses/Operating Income</b>								
All Banks	81.5	78.4	82.6	83.0	84.8	76.8	83.8	78.3
Public Sector Banks								
Of which: Nationalized Banks	96.7	94.5	89.1	90.0	89.3	87.0	88.6	87.5
SBI Banks	86.0	84.7	81.1	82.1	80.5	79.8	81.7	80.0
Private Sector Banks								
Of which: Old Private Sector Banks	86.4	84.5	81.6	82.5	83.1	82.5	87.5	82.4
New Private Sector Banks	-	74.5	76.4	73.2	72.4	72.1	77.8	73.8
Foreign Banks	67.7	60.9	80.7	81.7	87.2	68.6	81.2	72.2

**Table 13. Selected Indicators for the Performance of Commercial Banks, 1993–2000 (Contd.)**

	1993	1994	1995	1996	1997	1998	1999	2000
								(%)
<b>Intermediation Cost/Assets <sup>1/</sup></b>								
All Banks	0.1	0.1	1.1	2.2	2.4	1.4	0.9	0.7
Public Sector Banks								
Of which: Nationalized Banks	0.6	-0.4	1.7	1.3	2.0	1.8	1.7	1.7
SBI Banks	1.8	1.5	1.5	1.9	1.8	1.9	1.7	1.7
Private Sector Banks								
Of which: Old Private Sector Banks	1.7	1.4	1.0	1.3	1.5	1.2	1.4	1.2
New Private Sector Banks	-	0.2	0.7	2.0	1.0	0.7	0.7	0.2
Foreign Banks	-1.6	-0.7	0.7	3.7	3.6	1.3	0.3	-0.2
<b>Provisions for NPA, Contingencies, etc. /Advances (PROV)</b>								
All Banks	7.4	8.1	5.0	3.3	2.3	3.4	3.9	4.8
Public Sector Banks								
Of which: Nationalized Banks	5.0	10.4	3.3	4.6	2.2	2.4	2.0	1.9
SBI Banks	4.8	3.8	4.2	3.7	3.0	2.5	2.8	2.5
Private Sector Banks								
Of which: Old Private Sector Banks	4.5	3.7	3.1	3.1	2.0	2.1	1.6	2.0
New Private Sector Banks	-	-	4.1	1.5	1.5	2.1	1.6	2.8
Foreign Banks	14.0	10.5	8.0	3.0	2.6	5.1	6.9	8.5
<b>Equity /Liabilities (INVDEBT)</b>								
All Banks	4.5	5.1	8.8	21.0	15.5	42.2	33.4	19.7
Public Sector Banks								
Of which: Nationalized Banks	1.8	2.4	4.1	3.5	4.4	5.1	4.5	4.2
SBI Banks	1.8	2.1	2.3	3.4	4.1	5.0	4.8	4.8
Private Sector Banks								
Of which: Old Private Sector Banks	3.4	3.8	4.3	6.1	5.8	6.0	6.1	6.1
New Private Sector Banks	-	0.5	10.7	93.2	11.2	8.5	6.8	6.5
Foreign Banks	7.4	8.8	17.3	29.4	33.5	99.1	72.9	40.4
<b>Average Number of Employees</b>								
All Banks	12,849	13,135	12,669	10,616	9,640	9,366	9,343	9,510
Public Sector Banks								
Of which: Nationalized Banks	29,795	30,667	30,620	30,508	30,046	29,806	29,647	29,370
SBI Banks	38,101	38,638	39,125	39,272	39,788	40,145	39,984	39,444
Private Sector Banks								
Of which: Old Private Sector Banks	2,331	2,349	2,381	2,358	2,318	2,345	2,461	2,458
New Private Sector Banks	-	-	-	183	302	412	575	918
Foreign Banks	584	567	510	450	364	355	347	322
<b>Average Number of Branches</b>								
All Banks	634	650	631	536	494	487	494	513
Public Sector Banks								
Of which: Nationalized Banks	1,564	1,608	1,625	1,650	1,666	1,688	1,711	1,726
SBI Banks	1,573	1,599	1,609	1,625	1,639	1,652	1,670	1,685
Private Sector Banks								
Of which: Old Private Sector Banks	168	173	177	176	173	177	187	189
New Private Sector Banks	-	-	-	9	15	25	36	58
Foreign Banks	6	6	6	5	4	4	4	4
<b>Profit Per Employee (1,000 Rupees)</b>								
All Banks	-44	-39	22	9	46	67	48	76
Public Sector Banks								
Of which: Nationalized Banks	-63	-81	5	-20	25	45	32	44
SBI Banks	9	12	27	25	53	75	46	85
Private Sector Banks								
Of which: Old Private Sector Banks	11	24	65	66	70	75	54	105
New Private Sector Banks	-	-	-	999	1026	1072	765	775
Foreign Banks	-670	386	476	493	469	423	465	717
<b>Profit Per Branch (1,000 Rupees)</b>								
All Banks	-893	-783	439	177	904	1,286	916	1,413
Public Sector Banks								
Of which: Nationalized Banks	-1202	-1540	87	-370	457	800	552	743
SBI Banks	223	278	657	611	1,273	1,824	1,097	1,987
Private Sector Banks								
Of which: Old Private Sector Banks	158	326	878	891	934	996	695	1,363
New Private Sector Banks	-	-	-	20,122	20,365	17,489	12,078	12,379
Foreign Banks	-64,286	35,000	41,788	40,412	38,057	34,615	39,643	53,480

Note: 1/ Intermediation cost is defined as operating expenditure minus interest expenditure minus provisions for contingencies, NPA, etc.

On the other hand, the average number of employees and branches did not increase for foreign banks during 1993-2000: declining between 1993 and 2000 from 584 to 322 and from six to four, respectively. Since foreign banks include new banks, whose number increased more than private sector banks (Chart 6), this suggests that new banks concentrate their business on the wholesale market. This is why profits per employee and branch during 1993-2000. Thus, it is likely that foreign banks' ROA declined during 1996-2000 mainly as a result of expansion of wholesale business and, thus, asset size.

Also, income from investment and profits from diversification as a percentage of assets appear to have increasingly contributed to profitability for all banks, offsetting a decline in net interest income. This suggests that the diversification effect is positive, but more important, income from investment, mainly from government bonds, has increased its contribution to profits as a result of banks' increased holdings of government bonds.

Further, Table 13 shows that nationalized and SBI banks both improved their performance in the latter half of the 1990s. However, there needs to be caution, particularly on the improved performance of nationalized banks, since profits of nationalized banks include income from recapitalized bonds. Table 14 shows that ROA of nationalized banks was only 0.03% in 1997, 0.05% in 1998, -0.15% in 1999, and 0.01% in 2000, if incomes from recapitalized bonds were excluded. This suggests that the improvement of the performance of nationalized banks is attributable to holdings of recapitalization bonds, not so much because of their efforts to restructure their management and governance systems. On the other hand, the improvement of the performance of SBI banks, none of which were recapitalized, may reflect an improvement of their management and governance.

**Table 14. Net Profit Before and After Adjustment of Interest on Recapitalization Bonds, 1997-2000**

Banks	1997		1998		1999		2000	
	Net Profit Before Adjustment/ Assets	Net Profit After Adjustment/ Assets	Net Profit Before Adjustment/ Assets	Net Profit After Adjustment/ Assets	Net Profit Before Adjustment/ Assets	Net Profit After Adjustment/ Assets	Net Profit Before Adjustment/ Assets	Net Profit After Adjustment/ Assets
Allahabad Bank	0.5	0.0	0.9	0.3	0.8	0.4	0.4	0.0
Andhra Bank	0.4	0.1	0.8	0.1	0.8	0.3	0.8	0.4
Bank Of Baroda	0.8	0.7	1.0	1.0	0.8	0.8	0.9	0.8
Bank Of India	1.0	0.6	0.8	0.4	0.4	0.1	0.3	0.0
Bank Of Maharashtra	0.6	-0.1	0.6	-0.2	0.4	-0.2	0.6	0.1
Canara Bank	0.4	0.4	0.5	0.4	0.5	0.3	0.4	0.2
Central Bank Of India	0.6	0.3	0.6	-0.1	0.4	-0.1	0.4	-0.1
Corporation Bank	1.6	1.5	1.5	1.4	1.3	1.3	1.4	1.4
Dena Bank	0.8	0.6	0.9	0.6	0.8	0.6	0.4	0.2
Indian Bank	-2.6	-2.9	-1.8	-2.2	-4.3	-5.6	-2.2	-3.4
Indian Overseas Bank	0.6	0.3	0.5	-0.1	0.2	-0.3	0.1	-0.3
Oriental Bank Of Commerce	1.6	1.5	1.4	1.3	1.2	1.2	1.1	1.1
Punjab & Sind Bank	0.3	-0.2	0.8	-0.1	0.6	-0.1	0.5	0.0
Punjab National Bank	0.7	0.6	1.2	1.0	0.8	0.7	0.8	0.7
Syndicate Bank	0.4	0.1	0.4	-0.3	0.7	0.1	0.8	0.3
Uco Bank	-1.2	-1.9	-0.6	-1.7	-0.4	-1.4	0.2	-0.8
Union Bank Of India	1.0	1.0	1.0	0.9	0.5	0.4	0.3	0.2
United Bank Of India	-1.0	-2.0	0.1	-1.3	0.1	-0.9	0.2	-0.8
Vijaya Bank	0.3	0.0	0.3	-0.4	0.3	-0.2	0.4	0.0
<b>Average</b>	<b>0.34</b>	<b>0.03</b>	<b>0.57</b>	<b>0.05</b>	<b>0.31</b>	<b>-0.15</b>	<b>0.41</b>	<b>0.01</b>

Source: PROWESS Database, Center for Monitoring Indian Economy Pvt. Ltd.; Report on Trend and Progress of Banking in India, 1997-2000, RBI

As for earnings efficiency, foreign banks have been generally better performers. According to INCOME, foreign banks have consistently performed better than private sector and public sector banks, although foreign banks' income generating capacity deteriorated somewhat from 14.9% in 1993 to 12.8% in 2000. The poor performance of domestic banks relative to foreign banks can be attributed to (1) the larger share of credit extended to the public sector (in the case of 27 public sector banks) as shown in Table 7; (2) more stringent requirements imposed on domestic banks regarding advances to priority sectors, as pointed out in Section II; and (3) lower net interest income and interest rate margins as reported in Tables 3 and 11.

Further, foreign and new private sector banks are generally more cost-efficient than public sector banks. However, foreign banks showed deteriorating cost efficiency



during 1995-1997 and 1999, probably because new foreign banks have expanded their wholesale business. It should be noted that nationalized banks and the SBI have improved cost efficiency over the sample period.

#### ***4.2. Capital, Asset Quality, Management, and Liquidity***

This paper assesses the overall soundness of the banking sector from four aspects: capital adequacy, asset quality, management, and liquidity. In the case of the capital adequacy ratio, two indicators were used: equity plus reserves over liabilities (EQUITY) and the risk-weighted capital adequacy ratio. According to the first indicator, the ratio of foreign banks increased from 7% in 1993 to 20% in 2000 (Table 10). In terms of the latter, foreign banks have maintained ratios above 30% during 1997-2000, albeit at a decelerating trend (Table 10). This ratio is significantly high not only compared to the global standard but also with other domestic banks. While these indicators have shown an increasing trend for old private sector banks and public sector banks, the scale of the increase has been small. This suggests that foreign banks have greater incentives to lend prudently and remain well capitalized than the two other kinds of banks. This reflects the fact that foreign banks have steadily reduced their deposit-dependence ratio, while other banks have maintained their deposit-dependence ratio throughout the sample period. It suggests that foreign banks have been generally better capitalized compared with other banks.

Asset quality can be measured by (1) the ratio of contingent liabilities to assets, (2) asset growth, (3) the ratio of investment in securities to assets, (4) the ratio of provisions for NPAs to assets (PROV), and (5) the ratio of medium- and long-term credit to assets. They reveal mixed results. The first indicator shows that the ratio of foreign banks (at 25-30%) has been greater than that of private and public sector banks (Table 10). While this indicates that foreign banks are more exposed to high potential losses in cases of default, it may simply reflect that foreign banks provide more complex and sophisticated services than domestic banks, given that their activities are concentrated in urban areas, wholesale markets, and among large clients.

The second indicator shows that foreign and new private sector banks faced rapid credit growth in 1996-2000, signaling some kind of risk-taking behavior. However, this may be explained simply by their early stage of development, not necessarily by risk-taking behavior. The third indicator shows that all banks invested about 20-30% of assets in government and other approved securities (Table 7). While substantial investment in these securities may lower profitability, earnings efficiency, and cost efficiency for the reasons discussed in Section III, those securities can be used as a large cushion against NPAs.

The fourth indicator reports that foreign banks generally have allocated greater provisions for NPAs (Table 13). Given that more stringent accounting and auditing standards of their mother countries are applied to foreign banks, they are more resilient to adverse shocks. The final indicator reports that foreign banks have increased medium- to long-term advances from 7.5% in 1993 to 17% in 2000, suggesting their increased

confidence in India's financial market. Public and private sector banks maintained the same level of exposure throughout the sample period (Table 7).

For management performance, two indicators have been used: (1) the ratio of credit to deposits, and (2) the ratio of equity to liabilities (inverse of leverage [INVDEBT]). The first indicator shows that foreign banks attempt to boost their income by expanding lending operations, compared with other domestic banks. The ratio of foreign banks surged from 56% in 1993 to 94% in 2000, while domestic banks maintained the ratio at about 40% over the same period. Given that foreign banks' ratio of credit to assets is similar to that of other domestic banks (about 35% of assets), however, this simply suggests that foreign banks have lowered the deposit dependence ratio, as pointed out in Section III. Based on the second indicator, foreign banks are generally less leveraged than private and public sector banks (Table 13).

Last, all banks have maintained a sufficient liquidity position in terms of cash and balance with banks and the RBI and investment in government securities, suggesting that they are relatively resilient to systemic banking crises (Table 7).

#### ***4.3. Testing Differential Behavior between Public Sector, Foreign, and Private Sector Banks***

As a second step, a statistical test was conducted to see whether the average levels of the following indicators are the same for nationalized banks, SBI banks, foreign banks, and new and old private sector banks for each year during 1993-2000: ROA, INCOME, COST, EQUITY, PROV, and INVDEBT. Table 15 shows the following results. First, foreign banks were more profitable than nationalized banks, SBI banks, and old private sector banks, with a statistical significant level of 1-5% in 1993-1997. During 1996-2000, however, new private sector banks were more profitable than foreign banks, with a statistical significance level of 5-10%.

**Table 15. Testing the Differential Behavior between Different Groups of Banks,  
1993-2000**

	Foreign vs.	Foreign vs.	Foreign vs.	Foreign vs.	New Private	New Private	New Private	Old Private	Old Private	SBI vs.
1993										
ROA	4.18***	-	2.06**	-	-	-	-	1.05	-0.16	-
INCOME	6.49***	4.75***	5.70***	-	-	-	-	0.99	-1.30**	5.22***
COST	-6.69***	-4.74***	-4.15***	-	-	-	-	-2.43**	0.05	-3.00***
EQUITY	4.59***	6.03***	2.78***	-	-	-	-	1.22	0.63*	0.04
PROV	2.34**	-	2.45**	-	-	-	-	-0.28	-0.07	-
INVDEBT	-	5.72***	2.69**	-	-	-	-	-	0.64*	-
1994										
ROA	4.19***	9.71***	3.14***	-	-	-	-	2.83**	0.28	2.78**
INCOME	3.58***	2.46**	3.02***	-	-	-	-	1.37*	-0.43	1.37
COST	-9.00***	-9.13***	-6.42***	-	-	-	-	-2.34**	-0.03	-2.87***
EQUITY	5.61***	6.97***	3.90***	-	-	-	-	1.18	0.70*	-0.24
PROV	0.02	5.95***	5.65***	-	-	-	-	-2.29**	-0.09	-2.27**
INVDEBT	5.53***	6.70***	3.74***	-	-	-	-	1.17	0.70*	-0.33
1995										
ROA	6.23***	6.56***	1.79**	-	-	-	-	2.78***	0.89**	1.49*
INCOME	2.27**	1.14	1.66*	5.94***	-5.85***	-6.82	-6.37***	2.65**	-1.02**	4.74***
COST	-0.66	-0.04	-0.07	0.28	-1.36	-0.52	-0.56	-2.15**	0.07	-2.75***
EQUITY	2.88***	3.23***	2.85***	1.51	1.60*	2.12**	1.55*	0.14	1.10**	-2.53***
PROV	6.07***	4.85***	5.87***	-	-	-	-	-0.44	-0.98*	1.91**
INVDEBT	1.10	1.11	1.10	1.07	1.61*	2.06**	1.57*	0.19	1.03**	-2.54***
1996										
ROA	3.52***	3.72***	2.06**	-1.46*	4.32***	4.86***	3.27***	2.18**	0.25	2.07**
INCOME	1.34*	0.72	0.99	1.13	0.38	-1.16	-0.51	2.05**	-0.60	3.38***
COST	0.96	1.00	1.00	1.04	-3.92***	-2.45**	-2.32**	-2.41**	0.07	-3.01***
EQUITY	3.93***	3.97***	3.51***	-0.05	2.45**	2.47**	2.20**	2.20**	1.00**	-0.18
PROV	-1.34*	-0.87	-0.04	1.57*	-2.70***	-3.09***	-1.98**	-1.48*	-0.50	-0.93
INVDEBT	0.16	0.16	0.14	-0.49	1.25	1.25	1.21	2.16**	0.96**	-0.28
1997										
ROA	3.67***	3.78***	2.15**	-1.58*	4.82***	5.02***	3.62***	2.26**	0.79**	1.20
INCOME	1.42*	0.83	0.92	1.16	0.04	-0.80	-0.69	3.02***	-0.24	2.83***
COST	-0.15	0.50	0.31	1.09	-5.44***	-3.53***	-4.12***	-2.39**	0.72*	-3.78***
EQUITY	4.71***	4.77***	4.48***	3.54***	5.34***	6.25***	4.46***	1.42*	0.98**	-0.20
PROV	0.49	-0.34	0.81	1.15	-1.06	-1.88**	-0.66	-0.64	-1.10*	1.33
INVDEBT	1.55*	1.55*	1.54*	1.51*	5.32***	5.99***	4.26***	1.47*	0.97**	-0.30
1998										
ROA	0.50	-0.21	0.21	-1.09	3.90***	2.10**	3.17***	0.80	-0.63	1.88**
INCOME	5.35***	3.63***	3.33***	2.70**	1.06	-0.26	-0.63	5.62***	0.63	3.55***
COST	-5.71***	-4.22***	-4.70***	-1.00	-4.72***	-2.99**	-3.60***	-1.83**	0.71*	-3.46***
EQUITY	5.14***	5.12***	4.91***	4.34***	3.94***	3.54***	2.36**	0.94	0.41	0.00
PROV	1.51**	1.43*	1.65**	1.59*	-0.39	-0.57	-0.02	-0.59	-0.46	0.31
INVDEBT	1.32*	1.32*	1.32*	1.31*	3.88***	3.50***	2.16**	1.01	0.43	0.00
1999										
ROA	0.26	-0.49	-0.21	-1.66**	2.96***	2.91**	2.96***	0.78	-0.33	1.30
INCOME	3.38***	2.20**	1.48*	2.13**	0.87	-0.48	-1.32	4.61***	0.84*	3.08***
COST	-1.14	-0.08	-0.98	0.51	-4.36***	-1.83*	-4.43***	-0.55	1.95***	-3.34***
EQUITY	5.47***	5.40***	5.04***	4.92***	3.18***	2.74**	0.76	1.54*	0.58	0.45
PROV	1.84**	1.53*	1.99***	1.99**	-0.72	-2.94***	-0.09	-0.74	-1.91***	1.94**
INVDEBT	1.06	1.06	1.06	1.06	3.17***	2.72**	0.55	1.51*	0.57	0.43
2000										
ROA	-1.08	-1.81	-1.79**	-2.17**	3.01***	1.42*	1.30	2.12**	0.00	2.30**
INCOME	4.13***	3.22***	2.48**	4.77***	-2.31**	-3.24	-3.78*	3.28***	0.68	2.47**
COST	-4.66***	-2.41**	-3.20***	-0.42	-5.08***	-2.35**	-3.33***	-2.52**	0.78	-3.55***
EQUITY	5.89***	5.69***	5.22***	5.09***	2.50**	1.82*	0.43	1.90**	0.64	0.89
PROV	3.06***	2.78***	3.00***	2.55***	1.64*	0.60	1.40	0.53	-1.07*	1.91**
INVDEBT	2.95***	2.90***	2.79***	2.77***	2.50**	1.82**	0.32	1.84**	0.62	0.87

Note: The values reported are t-test values and \*, \*\*, \*\*\* indicate significance at 10%, 5% and 1% significance level respectively.

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

Second, foreign banks have been more earnings-efficient than nationalized banks, SBI banks, and old private sector banks during 1993-1994 and 1998-2000, with a statistical significance level of 1-10%. Foreign banks were also more cost-efficient than these banks, with a statistical significance level of 1% during 1993-1994 and 1998-2000. Compared with new private sector banks, foreign banks were also more earnings-efficient during 1995 and 1998-2000, while there were no significant differences in terms of cost efficiency.

Third, foreign banks are in general more capitalized, provisioned, and less leveraged than domestic banks over the period, suggesting that soundness of the balance sheets of foreign banks is greater than that of other banks.

Fourth, between SBI and nationalized banks, the former have generally performed better. In particular, compared with nationalized banks, SBI banks were more profitable during 1994-1996, more earnings-efficient during 1993 and 1995-2000, and more cost-efficient during 1993-2000, with a statistical significance level varying between 1 and 10%.

#### ***4.4. Empirical Estimation***

Based on the above analysis, this section assesses the extent of concentration in the banking sector and conducts an empirical estimation to test seven hypotheses explored in Section III. There are two major existing studies that have assessed the impact of India's reform program. Based on data of 1993/94 and 1994/95, Sarkar, Sarkar, and Bhaumik (1998) have shown that foreign banks are more profitable than public sector banks, based on two indicators (profits divided by average assets and operating profits divided by average assets). Profitability of private sector banks is similar to that of foreign banks, but foreign banks spend more resources on provisions for NPAs. Second, foreign banks are more efficient than private sector and public sector banks, based on two measures (net interest rate margins and operating cost divided by average assets).

Based on data of 1980-1997/98, Sarkar and Bhaumik (1998) have concluded that foreign banks, despite the superior quality of services they offer, have not been a competitive threat in Delhi, West Bengal, and Maharashtra, where their presence is greatest. This reflects that competition has emerged only at the fringe, since the entry of new banks has been at the lower end. Domestic private sector banks have gained some market share in these regions, but the impact on public sector banks was small and instead, gained at the expense of foreign banks. In Uttar Pradesh, Madhya Pradesh, Bihar, Orissa, Gujarat, and Punjab, public sector banks have been predominant before and since the reforms, thus no apparent impact of new entries was observed. In Tamilnadu, Kerala, Andhra Pradesh, Karnataka, Jammu and Kashmir, and Rajasthan, private sector banks have been more concentrated than in other regions and have experienced an increase in market share at the expense of public sector banks. But the presence of foreign banks is small.

## **(1) Performance of the Public Sector Banks**

This paper investigates the progress of India's financial reforms via three steps. For the first step, it assesses the overall impact of the financial reforms on public sector banks by using panel data. The performance measures adopted in this paper are ROA, COST, and INCOME. Some of these indicators were employed from Claessens, Demirgüç-Kunt, and Huizinga [2000]; Demirgüç-Kunt and Huizinga [1997]; Sarkar, Sarkar, and Bhaumik [1998]; and Sarkar and Bhaumik [1998].

The time dummy (TIME) has been introduced to capture time differences in the sample. A significant coefficient of the time dummy variable would indicate that the particular year was different, which could be due to numerous factors, including changes in regulations and accounting standards, if any, that happened during that year. This paper includes five other explanatory variables that account for banks' specific features and behavior: (1) diversification (proxied by the sum of profits from securities and foreign exchange transactions and brokerage and commissions, divided by assets [DIVERSE]); (2) investment in government and other approved securities divided by assets (SBOND); (3) deposits with the RBI as a share of assets (RBIDEP); (4) lending to priority sectors (proxied by lending to priority sectors as a percentage of assets [PRIORITY]); and (5) ownership dummies (SBI) (=1 if a public sector bank is one of the SBI banks); and (6) size of the bank (proxied by the log of each bank's asset size [SIZE]).

This paper also uses the share of government or RBI ownership to total capital (PUBLIC) or the dummy variable (LISTED) (=1 when and after a public sector bank is listed). Some may argue that PUBLIC (or LISTED) and performance are endogenous since public sector banks that perform well are privatized. While it is true that profitable and efficient banks tend to be privatized, it was found that privatized banks were not necessarily the best performers immediately prior to privatization. Several banks were very profitable but did not go for privatization. Thus, endogeneity problems are not as obvious as expected.<sup>14</sup>

Data were obtained from the Prowess database for 1993-2000 compiled by the Center for Monitoring Indian Economy Pvt. Ltd. (CMIE). This is the database mostly frequently used by researchers and covers all scheduled commercial banks, excluding regional rural banks. The database does not cover the initial reform period of 1991-1992. However, the assessment of the impact of the banking sector reforms without covering this period remains valid, as major elements of the reforms began in 1993.

The results from this estimation support most of the hypotheses explored in Section III and are summarized below (Table 16). First, the time effect on ROA given in column 1 was negative and statistically significant in 1994. Since many of the changes in regulations and accounting standards took place during the earlier stage of reforms, the significance of the time effect could reflect the initial negative impact of the reform, which has disappeared in the later period. In fact, the coefficients of TIME in INCOME and COST equations were statistically significant and positive (negative) in 1997 (and

---

<sup>14</sup> The regression estimation was conducted by including individual bank effects.

1998). Based on these outcomes, the financial reforms appear to have had a non-negligible impact on the overall performance of public sector banks.

**Table 16. Regression Results on the Public Sector Banks**

EXPLANATORY VARIABLES	DEPENDENT VARIABLES								
	ROA			INCOME			COST		
Time94	-2.79* (-1.7)	-2.79* (-1.69)	-3.03* (-1.83)	-0.14 (-0.32)	-0.13 (-0.31)	-0.09 (-0.2)	-1.4 (-0.34)	-1.67 (-0.41)	-1.59 (-0.38)
Time95	-0.7 (-0.51)	-0.7 (-0.51)	-0.7 (-0.51)	-0.30 (-0.85)	-0.3 (-0.84)	-0.24 (-0.68)	-3.82 (-1.14)	-4.01 (-1.19)	-4.18 (-1.22)
Time96	-0.99 (-0.87)	-0.99 (-0.86)	-0.99 (-0.86)	0.51* (1.69)	0.51* (1.68)	0.56* (1.85)	-2.42 (-0.85)	-2.62 (-0.91)	-2.74 (-0.94)
Time97	0.06 (0.06)	0.06 (0.06)	0.06 (0.06)	0.88*** (3.62)	0.88*** (3.59)	0.93*** (3.77)	-3.3 (-1.42)	-3.57 (-1.52)	-3.58 (-1.51)
Time98	0.21 (0.3)	0.21 (0.29)	0.21 (0.3)	0.29 (1.58)	0.29 (1.58)	0.32* (1.75)	-2.97* (-1.71)	-3.14* (-1.79)	-3.18* (-1.8)
Time99	0.1 (0.19)	0.09 (0.19)	0.09 (0.17)	0.16 (1.23)	0.16 (1.22)	0.17 (1.3)	-1.38 (-1.1)	-1.41 (-1.12)	-1.41 (-1.12)
DIVERSE	2.58*** (2.94)	2.58*** (2.9)	2.51*** (2.84)	1.29*** (5.68)	1.28*** (5.6)	1.27*** (5.57)	11.86***	11.61***	11.62***
SBOND	-0.01 (-0.24)	-0.01 (-0.24)	-0.002 (-0.05)	-0.01 (-1.13)	-0.01 (-1.13)	-0.007 (-0.71)	0.11 (1.21)	0.11 (1.25)	0.09 (1.05)
RBIDEP	0.03 (0.59)	0.03 (0.59)	0.04 (0.7)	0.04***	-	-	-0.02 (-0.19)	-0.02 (-0.15)	-0.01 (-0.09)
PRIORITY	-0.27** (-2.45)	-0.29** (-2.39)	-0.24** (-2.09)	0.05* (1.72)	0.05* (1.69)	0.06** (2.13)	0.29 (1.07)	0.24 (0.87)	0.22 (0.79)
SIZE	0.08 (0.05)	0.08 (0.05)	0.17 (0.1)	-0.1 (-0.24)	-0.1 (-0.23)	0.03 (0.07)	-8.22** (-1.98)	-8.86** (-2.11)	-9.09** (-2.11)
LISTED	-	-0.001 (-0.002)	-	-	-0.01 (-0.07)	-	-	1.29 (0.89)	-
PUBLIC	-	-	0.004 (0.19)	-	-	0.004 (0.93)	-	-	-0.04 (-0.84)
R <sup>2</sup>	0.59	0.59	0.6	0.82	0.82	0.82	0.87	0.87	0.87
F-Statistic	18.99	17.13	17.65	63.69	57.49	57.64	93.05	84.54	83.58
N	170	170	168	177	177	175	177	177	175

Note: \*\*\* indicates significant at 1% significance level; \*\* indicates significant at 5% significance level; \* indicates significant at 10% significance level.

Second, the coefficients of PUBLIC or LISTED were statistically insignificant. These outcomes may be explained by the fact that many public sector banks remain owned by the public sector and partial privatization took place without major reforms in the system of board of directors.

Third, DIVERSE has exerted a statistically positive (negative) contribution to ROA and INCOME (COST), indicating that the diversification effect on the performance of public sector banks is favorable and, thus, H<sub>2</sub> is supported. Securities and related business and foreign exchange transactions have contributed to improving banks' profitability largely through gains in cost efficiency.

Fourth, the coefficients of SBOND were statistically insignificant. Fifth, the coefficient of RBIDEP was statistically significant and negative in the INCOME equation. This suggests that a decline in the CRR has increased banks' flexibility in allocating credit and, thus, has improved their earnings efficiency, in line with H<sub>4</sub>.

Sixth, PRIORITY has made a statistically significant and positive (negative) impact on INCOME (ROA). This suggests that recent reforms in priority sector lending have contributed to improving banks' earnings efficiency. Nevertheless, such lending has also contributed to lowering profitability (and, hence, accumulating NPAs). Therefore, this result is consistent with the view that lending to priority sectors remains a typical example of directed lending and, thus, cause of NPAs, despite the reforms.

Seventh, the coefficient of SIZE in the COST equation was negative and statistically significant. This suggests that large banks have cost advantages over small banks. However, the overall statistically insignificant impact suggests that some negative effect (such as the operation of numerous inefficient loss-making branches and overstaffing) offset such a positive effect.

## **(2) Performance of the Commercial Banking Sector**

As a next step, this paper examines the overall impact of the whole commercial banking sector, excluding regional rural banks, by running regression for each year from 1994 to 2000.<sup>15</sup> Since India underwent banking sector liberalization gradually during this period, it is likely that the environment surrounding the banking sector has changed. In particular, changes in prudential regulations and accounting standards might have had an effect on performance. Thus, it is important to perform a regression analysis for each year if sufficient samples are available.<sup>16</sup> In addition to the approach adopted above, this paper uses ownership dummy variables ([OFOREIGN], [OPRIVATE], [NFOREIGN], and [NPRIVATE]) to capture differences in ownership. OFOREIGN (NFOREIGN) equals 1 if the bank is old foreign (new foreign)-owned and equals 0 otherwise. OPRIVATE (NPRIVATE) equals 1 if the bank is old private (new private)-owned and equals 0 otherwise.

The estimation results reported in Tables 17a, 17b, and 17c are summarized as follows. First, the coefficients of OFOREIGN in the ROA (COST) equation were statistically significant and positive (negative) in 1994 (1994-1995 and 1997), although the coefficients of OFOREIGN in the ROA equation turned negative in 1998-1999. OFOREIGN had positive and statistically significant coefficients in INCOME equations during 1995-1999. The coefficients of NFOREIGN in the ROA equations were negative and statistically significant in 1998 and 1999, while those on INCOME (COST) were positive (negative) and statistically significant during 1995 and 1997-98 (1994 and 1998). These results indicate that new and old foreign banks performed better than nationalized banks initially, but the differences disappeared in the later reform period. Similar patterns have been observed in the case of new and old private sector banks (OPRIVATE and NPRIVATE). Also, there were no statistically significant differences between SBI banks and nationalized banks.

---

<sup>15</sup> The year 1993 was dropped due to lack of a sufficient number of observations.

<sup>16</sup> The paper also conducted regression analysis based on panel data with individual bank effect. The results of regression were similar to those reported in Tables 17a-17c.

**Table 17a. Regression Results on Profitability (ROA) of All Commercial Banks**

EXPLANATORY VARIABLES	DEPENDENT VARIABLE (ROA)						
	1994	1995	1996	1997	1998	1999	2000
Constant	0.33 (0.06)	4.74* (1.81)	1.34 (0.52)	1.41 (1.04)	5.3* (1.82)	5.64** (2.39)	-0.75 (-0.26)
SBI	2.24 (1.57)	0.13 (0.23)	0.86 (0.87)	0.02 (0.04)	-0.42 (-0.38)	-0.04 (-0.05)	0.29 (0.26)
OFOREIGN	3.91** (2.35)	0.84 (1.10)	1.27 (1.23)	0.39 (0.74)	-1.88* (-1.6)	-2.05** (-2.06)	0.08 (0.07)
OPRIVATE	2.57* (1.69)	0.18 (0.27)	1.09 (1.2)	0.14 (0.32)	-1.53 (-1.52)	-1.01 (-1.30)	0.47 (0.46)
NFOREIGN	3.51 (1.53)	0.8 (0.84)	1.20 (0.93)	0.45 (0.69)	-4.28*** (-3.04)	-3.09** (-2.59)	-1.36 (-0.89)
NPRIVATE	-	-0.63 (-0.48)	1.34 (0.94)	1.2** (2.05)	-0.26 (-0.21)	-0.62 (-0.63)	0.79 (0.66)
DIVERSE	0.47 (0.95)	0.09 (0.33)	-0.03 (-0.14)	0.11 (1.08)	0.58*** (4.43)	0.51*** (2.61)	0.39 (1.54)
SBOND	-0.16** (-2.45)	-0.12*** (-3.35)	-0.11* (-1.89)	-0.06** (-2.61)	-0.08* (-1.84)	-0.1*** (-3.07)	-0.03 (-1.11)
RBIDEP	0.04 (0.54)	0.05 (1.05)	-0.06 (-0.74)	-0.03 (-0.70)	-0.17** (-2.01)	-0.13 (-1.18)	-0.01 (-0.07)
PRIORITY	0.03 (0.45)	-0.06* (-1.92)	0.01 (0.24)	0.04 (1.56)	0.12** (2.53)	0.02 (0.48)	0.04 (0.76)
SIZE	0.07 (0.15)	-0.09 (-0.47)	0.22 (1.0)	0.06 (0.54)	-0.26 (-1.05)	-0.18 (-0.91)	0.14 (0.54)
R <sup>2</sup>	0.51	0.52	0.34	0.37	0.31	0.19	0.13
F-Statistic	4.96	5.52	3.39	4.61	4.06	2.06	1.26
N	53	61	76	89	100	97	95

Note: \*\*\* indicates significant at 1% significance level;  
 \*\* indicates significant at 5% significance level;  
 \* indicates significant at 10% significance level.

**Table 17b. Regression Results on Earnings-Efficiency (INCOME) of All Commercial Banks**

EXPLANATORY VARIABLES	DEPENDENT VARIABLE (INCOME)						
	1994	1995	1996	1997	1998	1999	2000
Constant	23.41*** (6.05)	-0.01 (-0.004)	1.51 (0.2)	-3.63 (-0.65)	6.35*** (2.73)	5.23** (2.19)	11.16*** (5.52)
SBI	-0.66 (-0.61)	1.6 (1.16)	1.25 (0.37)	1.15 (0.44)	0.74 (0.82)	-0.25 (-0.27)	-0.52 (-0.68)
OFOREIGN	-1.12 (-0.93)	6.62*** (5.28)	9.03*** (2.74)	10.35*** (3.75)	2.65*** (2.73)	2.44** (2.32)	0.05 (0.06)
OPRIVATE	-2.11* (-1.89)	2.85** (2.46)	2.37 (0.78)	3.42 (1.49)	1.73** (2.1)	1.31 (1.57)	-0.18 (-0.25)
NFOREIGN	-2.56 (-1.56)	3.6** (-2.14)	3.34 (0.79)	5.46* (1.68)	3.51*** (3.05)	2.01 (1.56)	-0.07 (-0.07)
NPRIVATE	-17.19*** (-5.75)	-0.25 (-0.12)	3.66 (0.85)	3.99 (1.38)	1.14 (1.1)	1.18 (1.13)	-1.88** (-2.27)
DIVERSE	1.2*** (3.18)	-0.34 (-0.68)	0.05 (0.05)	0.11 (0.22)	0.64*** (6.0)	1.3*** (6.68)	1.52*** (8.68)
SBOND	-0.14*** (-2.95)	0.16** (2.37)	0.06 (0.43)	0.08 (1.06)	0.06* (1.69)	-0.002 (-0.07)	-0.002 (-0.10)
RBIDEP	-0.15** (-2.51)	-0.06 (-0.8)	0.10 (0.41)	0.03 (0.16)	0.05 (0.65)	0.16 (1.36)	0.05 (0.55)
PRIORITY	-0.04 (-0.7)	0.18*** (3.66)	0.12 (0.98)	0.24** (2.01)	0.02 (0.54)	0.1*** (2.76)	-0.007 (0.22)
SIZE	-0.79** (-2.44)	0.38 (1.37)	0.46 (0.62)	0.87* (1.66)	0.09 (0.45)	0.13 (0.59)	-0.24 (-1.32)
R <sup>2</sup>	0.64	0.62	0.15	0.21	0.48	0.44	0.61
F-Statistic	8.6	10.44	1.36	2.39	8.41	7.11	13.10
N	60	76	88	100	101	100	95

Note: \*\*\* indicates significant at 1% significance level;  
 \*\* indicates significant at 5% significance level;  
 \* indicates significant at 10% significance level.



**Table 17c. Regression Results on Cost-efficiency of All Commercial Banks**

EXPLANATORY VARIABLES	DEPENDENT VARIABLE (COST)						
	1994	1995	1996	1997	1998	1999	2000
Constant	74.41*** (3.77)	205.05*** (5.22)	79.25*** (2.75)	215.7*** (4.07)	68.04*** (6.26)	70.61*** (3.65)	59.92*** (4.36)
SBI	-4.68 (-0.85)	-4.25 (-0.24)	-2.31 (-0.17)	0.09 (0.004)	-3.62 (-0.86)	-1.32 (-0.18)	-5.92 (-1.16)
OFOREIGN	-26.38*** (-4.27)	-45.85** (-2.85)	-2.22 (-0.17)	-43.05* (-1.78)	-6.20 (-1.37)	1.18 (0.14)	-0.99 (-0.17)
OPRIVATE	-4.69 (-0.82)	-29.99** (-2.02)	-7.65 (-0.64)	-23.76 (-1.19)	1.77 (0.46)	8.69 (1.28)	2.10 (0.43)
NFOREIGN	-29.36*** (-3.5)	-23.72 (-1.1)	2.74 (0.16)	-33.18 (-1.17)	-8.42* (-1.57)	7.06 (0.68)	-1.88 (-0.26)
NPRIVATE	3.09 (0.2)	-65.46** (-2.49)	-3.24 (-0.19)	-43.6* (-1.73)	-5.46 (-1.14)	2.31 (0.27)	-6.69 (-1.19)
DIVERSE	-0.89 (-0.46)	-5.13 (-0.80)	-7.84** (-2.39)	-5.85 (-1.35)	-1.61*** (-3.25)	-9.8*** (-6.22)	-3.97*** (-3.35)
SBOND	0.86*** (3.45)	-0.46 (-0.53)	0.16 (0.21)	-0.34 (-0.51)	0.83*** (4.87)	1.94*** (10.24)	0.47*** (3.29)
RBIDEP	-0.04 (-0.14)	-0.47 (-0.45)	-0.57 (-0.52)	-1.54 (-0.9)	-0.32 (-0.99)	-1.95* (-2.09)	-0.07 (-0.12)
PRIORITY	-0.32 (-1.11)	-1.82*** (-2.9)	1.43*** (2.92)	-2.13** (-2.13)	-0.004 (-0.02)	-0.5* (-1.68)	0.17 (0.77)
SIZE	-0.48 (-0.29)	-7.09** (-1.97)	0.08 (0.03)	-7.01 (-1.5)	-0.28 (-0.30)	-0.82 (-0.48)	1.53 (1.24)
R <sup>2</sup>	0.73	0.30	0.19	0.16	0.54	0.63	0.34
F-Statistic	13.21	2.76	1.75	1.72	10.73	15.12	4.39
N	60	76	87	99	101	100	95

Note: \*\*\* indicates significant at 1% significance level;  
 \*\* indicates significant at 5% significance level;  
 \* indicates significant at 10% significance level.

Second, DIVERSE has improved profitability (with a statistical significance level of 1% in 1998-1999), earnings efficiency (1% in 1998-2000), and cost efficiency (1-5% in 1996 and 1998-2000), in line with H<sub>2</sub>.

Third, SBOND helps banks to increase holdings of safe, liquid assets and, thus, improve their liquidity position. At the same time, however, it reduces the opportunity to allocate limited financial resources toward more needed sectors and hence cuts profitability and cost and earnings efficiency. The results indicate that the coefficients of SBOND on ROA (and COST) were negative (positive) and statistically significant throughout the period except 2000 (in 1994, 1998-1999), supporting H<sub>3</sub>. The impact of SBOND on INCOME was statistically insignificant in most of the period and the signs were mixed. With respect to RBIDEP, no statistically significant effects were observed in all the equations except in the case of 1998 for ROA, 1994 for INCOME, and 1999 for the COST equation.

Fourth, the coefficient of PRIORITY on INCOME was positive and statistically significant in 1995, 1997, and 1999, implying that the expansion of coverage of priority sectors and interest rate liberalization have improved banks' earnings efficiency and, thus, diluted the negative impact of directed lending, supporting H<sub>5</sub>. Also, PRIORITY exerted a statistically significant and negative contribution to COST in 1995, 1997, and 1999, but the signs indicated the opposite in 1996. Moreover, the coefficients of PRIORITY with respect to ROA were statistically insignificant during most of the period and the signs

were mixed. This suggests that while recent reforms in priority sector lending have had a favorable impact on banks' earnings efficiency and cost efficiency to some extent, the overall impact on profitability has been negligible, indicating the need for further reforms in directed lending.

## **5. Conclusions**

Since the imposition of banking sector reforms in 1991, India's banking sector has seen favorable changes. This paper has assessed the impact of these reforms by examining changes in the performance of the banking sector. It found that the performance of public sector banks improved in the second half of the 1990s. Profitability (measured by return on assets) of nationalized banks turned positive in 1997-2000 and that of SBI banks was superior in 1996-2000 compared to earlier. 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 (measured by the ratio of income to assets), 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, overbranching, 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 10 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 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.<sup>17</sup> 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 Rs200,000 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

---

<sup>17</sup> As measures to restructure weak public sector banks, the Verma Report (Reserve Bank of India, 1999b) recommends (1) merger or closure (only if the synergies and complementing strengths of merging units are present); (2) privatization; (3) narrow banking (but only as a temporary measure); (4) comprehensive operational restructuring (e.g., preparation of business plans, reduction in staff and branches, introduction of new technology, etc.), organizational restructuring, and financial restructuring (e.g., capital infusion, write-off, etc.).

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, bank regulators need to impose this restriction from the beginning when entry deregulations have occurred.

## References

- Allen, Franklin, and Douglas Gale, 2000, *Comparing Financial Systems*, the MIT Press.
- Asian Policy Forum, “2000, Policy Recommendations for Preventing Another Capital Account Crisis”, ADB Institute.
- Barth, James, Gerard Caprio, and Ross Levine, 2001a, “Banking Systems Around the Globe: Do Regulation and Ownership Affect Performance and Stability?” forthcoming in Frederic Mishkin (ed.), *Prudential Regulation and Supervision: Why it is Important and What are the Issues*, Cambridge, Mass.: National Bureau of Economic Research.
- Barth, James, Gerard Caprio, and Ross Levine, 2001b, “The Regulation and Supervision of Banks Around the World: A New Database,” Policy Research Working Paper, World Bank.
- Beck, Thorsten, Ross Levine, and Norman Loayza, 1999, “Finance and the Sources of Growth,” mimeo.
- Caprio, Gerald, and Maria Soledad Martinez-Peria, 2000, “Avoiding Disaster: Policies to Reduce the Risk of Banking Crises,” Discussion Paper, Egyptian Center for Economic Studies, Egypt.
- Claessens, Stijn, Asli Demirgüç-Kunt, and Harry Huizinga, 2000, “How Does Foreign Entry Affect the Domestic Banking Market?” in Stijn Claessens and Marion Jansen (eds.), *The Internationalization of Financial Services: Issues and Lessons for Developing Countries*, Dordrecht, Holland: Kluwer.
- Clarke, George R. G., and Robert Cull, 1998, “Why Privatize: The Case of Argentina’s Public Provincial Banks,” Policy Research Working Paper No. 1,972, World Bank.
- Clarke, George R. G., Robert Cull, Laura D’Amato, and Andrea Molinari, 2000, “The Effect of Foreign Entry on Argentina’s Domestic Banking Sector,” In Stijn Claessens and Marion Jansen (eds.), *The Internationalization of Financial Services: Issues and Lessons for Developing Countries*, Dordrecht, Holland: Kluwer.
- Demirgüç-Kunt, Asli, and Enrica Detragiache, 1998, “Financial Liberalization and Financial Fragility,” Annual Bank Conference on Development Economics, Washington, DC.
- Demirgüç-Kunt, Asli, and Harry Huizinga, 1997, “Determinants of Commercial Bank Interest Margins and Profitability: Some International Evidence,” World Bank Policy Research Working Paper No. 1,900.
- Demirgüç-Kunt, Asli, and Vojislav Maksimovic, 1998, “Law, Finance, and Firm Growth,” *Journal of Finance*, Vol. 53, No. 6, pp. 2,107-2,137.
- Deolalkar, G. H., 2000, “The Indian Banking Sector: On the Road to Progress,” mimeo.

- Gelb, Alan, and Silvia Sagari, 1990, "Banking," in P. Messerlin and K. Sanvant (eds.), *The Uruguay Round: Services in the World Economy*. Washington, DC: World Bank and UN Center on Transnational Corporations.
- Gilson, Stuart, Kose John, and Larry Lang, 1990, "Troubled Debt Restructurings: An Empirical Study of Private Reorganization of Firms in Default," *Journal of Financial Economics*, Vol. 27, pp. 315-353.
- Hoshi, Takeo, Anil Kashyap, and David Scharfstein, 1990, "The Role of Banks in Reducing the Costs of Financial Distress in Japan," *Journal of Financial Economics*, Vol. 27, pp. 67-88.
- International Monetary Fund, 2000, "India: Recent Economic Developments," IMF Staff Country Report No. 00/155.
- International Monetary Fund, 2001, "India: Recent Economic Developments and Selected Issues," IMF Country Report No. 01/181.
- Jayarathne, J., and P. E. Strahan, 1996, "The Finance-Growth Nexus: Evidence from Bank Branch Deregulation," *Quarterly Journal of Economics*, Vol. 111, pp. 639-670.
- Joshi, Vijay, and I. M. D. Little, 1996, *India's Economic Reforms: 1991-2001*, Clarendon Press, Oxford.
- Juan-Ramon, V. Hugo, Ruby Randall, and Oral Williams, 2001, "A Statistical Analysis of Banking Performance in the Eastern Caribbean Currency Union in the 1990s," IMF Working Paper WP/01/105.
- Kathuria, Sanjay, and James A. Hanson, 2000, "India's Financial System: The Challenges of Reform," mimeo.
- King, Robert G., and Ross Levine, 1993, "Finance and Growth: Schumpeter Might Be Right," *Quarterly Journal of Economics*, August, Vol. 108, No. 3, pp. 713-737.
- Kohli, Renu, 2001, "Sequencing of Capital Account Liberalization with Reference to Domestic Financial Sector Reforms: The Case of India," a paper presented to the Second Brainstorming Workshop of ADB Institute on "Sequencing Domestic and External Financial Liberalization," 20-21 December, Tokyo.
- La Porta, Rafael, Florencio Lopez-de-Silanes, and Guillermo Zamarripa, 2000, "Soft Lending and Hard Lending: Related Lending in Mexico," mimeo., Harvard University.
- Levine, Ross, 1996, "Foreign Banks, Financial Development, and Economic Growth," in Claude E. Barfield (ed.), *International Financial Markets*, Washington, DC: AEI Press.
- Llewellyn, David T., 1996, "Universal Banking and the Public Interest: A British Perspective," in Saunders, Anthony, and Ingo Walter (eds.), *Universal Banking:*

- Financial System Design Reconsidered*, Chicago: Irwin Professional Publishing, pp. 161-204.
- McKinnon, Ronald, 1973, *Money and Capital in Economic Development*, Washington, DC: Brookings Institution.
- Patra, Michael Debabrata, and Sunando Roy, 2000, "Financial Stability: A Survey of the Indian Experience," Reserve Bank of India Occasional Papers, Vol. 21, No. 1, Summer.
- Rajan, Raghuram G., and Luigi Zingales, 1998, "Financial Systems, Industrial Structure, and Growth," mimeo.
- Raje, Pradeep, 2000, "Where Did India Miss a Turn in Banking Reform: Is there a Comeback?" CASI Working Paper, Center for the Advanced Study of India.
- Reserve Bank of India, 1991, "Report of the Committee on the Financial System."
- Reserve Bank of India, 1997, "Report on Trend and Progress of Banking in India 1996-97."
- Reserve Bank of India, 1998, "Report on Trend and Progress of Banking in India 1997-98."
- Reserve Bank of India, 1999a, "Report on Trend and Progress of Banking in India 1998-99."
- Reserve Bank of India, 1999b, "Report of the Working Group on Restructuring Weak Public Sector Banks."
- Reserve Bank of India, 2000, "Report on Trend and Progress of Banking in India 1999-00."
- Reserve Bank of India, 2001a, "Report on Trend and Progress of Banking in India 2000-01."
- Reserve Bank of India, 2001b, "Mid-Term Review of Monetary and Credit Policy for the Year 2001-2002."
- Reserve Bank of India, 2001c, "Interim Report of the Advisory Group on Bankruptcy Laws," January.
- Santos, Joao A. C., 1998, "Commercial Banks in the Securities Business: A Review," Bank for International Settlements Working Papers No. 56.
- Sarkar, Jayati, 1999, "India's Banking Sector: Current Status, Emerging Challenges and Policy Imperatives in a Globalized Environment," mimeo.



- Sarkar, Jayati, and Sumon Kumar Bhaumik, 1998, "Deregulation and the Limits to Banking Market Competition: Some Insights from India," *International Journal of Development Banking*, July-December.
- Sarkar, Jayati, Subrata Sarkar, and Sumon Kumar Bhaumik, 1998, "Does Ownership Always Matter? Evidence from the Indian Banking Industry," *Journal of Comparative Economics*, Vol. 26, pp. 262-281.
- Steinherr, Alfred, and C. Huveneers, 1990, "Universal Banks: The Prototype of Successful Banks in the Integrated European Market? A View Inspired by the German Experience," Center for European Policy Studies, Financial Markets Unit, Working Paper No. 2.
- Stiglitz, Joseph, and Andrew Weiss, 1981, "Credit Rationing in Markets with Imperfect Information," *American Economic Review*, Vol. 71(3), pp. 393-410.
- Walter, Ingo, and H. Peter Gray, 1983, "Protectionism and International Banking, Sectoral Efficiency, Competitive Structure and National Policy," *Journal of Banking and Finance* 7, 597-609.
- World Bank, 2001, *Finance for Growth: Policy Choices in a Volatile World*, New York, NY: Oxford University Press.
- Yoshitomi, Masaru, and Sayuri Shirai, 2000, "Technical Background Paper for Policy Recommendations for Preventing Another Capital Account Crisis," ADB Institute.
- Yoshitomi, Masaru, and Sayuri Shirai, 2001, "Designing a Financial Market Structure in Post-Crisis Asia—How to Develop Corporate Bond Markets," ADB Institute Working Paper No. 15.

## ACRONYMS AND ABBREVIATIONS

ARC	Asset Reconstruction Company
CRR	Cash Reserve Ratio
FCNR	Foreign Currency Nonresident Account
FII	Foreign Institutional Investor
GDP	Gross Domestic Product
IRD	Integrated Rural Development Program
M&A	Merger and Acquisition
MLR	Minimum Lending Rate
MOU	Memorandum of Understanding
NABARD	National Bank for Agriculture and Rural Development
NBFC	Nonbank Financial Company
NDTL	Net Demand and Time Liability
NPA	Nonperforming Asset
NRE	Nonresident Rupee Account
NRNR	Nonresident Non-repatriable Rupee Account
PLR	Prime Lending Rate
PRC	People's Republic of China
PTLR	Prime Term Lending Rate
RBI	Reserve Bank of India
RIDF	Rural Infrastructure Development Fund
SBI	State Bank of India
SLR	Statutory Liquidity Ratio
SME	Small and Medium Enterprise
SSI	Small Scale Industry
TB	Treasury Bill

## INDICATORS AND VARIABLES USED FOR REGRESSION

BRANCH	Number of branches
COST	Operating cost divided by operating income
DIVERSE	Profits from securities and foreign exchange transactions and brokerage and commissions, divided by assets
EQUITY	Capital plus reserves divided by assets
FOREIGN	Dummy variable (=1 if a bank is a foreign bank; =0 otherwise)
INCOME	Income divided by average assets
INVDEBT	Equity divided by liabilities
LISTED	Dummy variable (=1 when and after a public sector bank is listed; =0 otherwise)
PRIORITY	Lending to priority sectors divided by assets
PRIVATE	Dummy variable (=1 if a bank is a private sector bank; =0 otherwise)
PROV	Provisions for NPAs divided by Assets
PUBLIC	Dummy variable (=1 if a bank is a public sector bank; =0 otherwise)
RBIDEP	Deposits with the RBI divided by assets
ROA	Profits after tax divided by average assets
SBI	Dummy variable (=1 if a bank is an SBI bank; =0 otherwise)
SBOND	Investment in government and approved securities divided by assets
SIZE	Log of asset
TIME	Dummy variable for time

## RESEARCH PAPER SERIES

- *Searching for New Regulatory Frameworks for the Intermediate Financial Market Structure in Post-Crisis Asia*  
September 3, 2001 Code: 24-2001 by Sayuri Shirai
- *Overview of Financial Market Structures in Asia*  
–Cases of the Republic of Korea, Malaysia, Thailand and Indonesia–  
September 4, 2001 Code: 25-2001 by Sayuri Shirai
- *How Do Global Credit Rating Agencies Rate Firms from Developing Countries?*  
September 2001 Code: 26-2001 by Li-Gang Liu and Giovanni Ferri
- *Business Groups Looted by Controlling Families, and the Asian Crisis*  
November 2001 Code: 27-2001 by Sang-Woo Nam
- *Family-Based Business Groups: Degeneration of Quasi-Internal Organizations and Internal Markets in Korea*  
November 2001 Code: 28-2001 by Sang-Woo Nam
- *Can “Moral Hazard” Explain the Asian Crises?*  
December 2001 Code: 29-2002 by Luiz A. Pereira da Silva and Masaru Yoshitomi
- *Avoiding Double Mismatches and Withstanding Regional Financial Crises: The Singapore Experience*  
December 2001 Code: 30-2001 by Khee-Giap Tan, T. Karigane, and M. Yoshitomi
- *The Political Ecology of Famine: The North Korean Catastrophe and Its Lessons*  
January 2002 Code: 31-2002 by Meredith Woo-Cumings
- *Road from State to Market—Assessing the Gradual Approach to Banking Sector Reforms in India—*  
February 2002 Code: 32-2002 by Sayuri Shirai
- *Growth and Poverty: Lessons from the East Asian Miracle Revisited*  
February 2002 Code: 33-2002 by M. G. Quibria
- *Did East-Asian Developing Economies Lose Export competitiveness in the Pre-Crisis 1990s?*  
–Assessing East-Asian Export Performance from 1980 to 1996–  
March 2002 Code: 34-2002

### HOW TO CONTACT US?

Asian Development Bank Institute  
Kasumigaseki Building 8F  
3-2-5 Kasumigaseki, Chiyoda-ku,  
Tokyo 100-6008 Japan

Tel: +81 (03) 3593-5500  
Fax: +81 (03) 3593-5571  
E-mail: [info@adbi.org](mailto:info@adbi.org)  
[www.adbi.org](http://www.adbi.org)

*Papers are also available online at the ADBI Internet site:*  
<http://www.adbi.org/publications/>