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Introduction

6.1 Until the early 1990s, the role of the financial system in India was primarily restricted to the function of channelling resources from the surplus to deficit sectors. Whereas the financial system performed this role reasonably well, its operations came to be marked by some serious deficiencies over the years. The banking sector suffered from lack of competition, low capital base, low productivity and high intermediation cost. After the nationalisation of large banks in 1969 and 1980, the Government-owned banks have dominated the banking sector. The role of technology was minimal and the quality of service was not given adequate importance. Banks also did not follow proper risk management systems and the prudential standards were weak. All these resulted in poor asset quality and low profitability. Among non-banking financial intermediaries, development finance institutions (DFIs) operated in an over-protected environment with most of the funding coming from assured sources at concessional terms. In the insurance sector, there was little competition. The mutual fund industry also suffered from lack of competition and was dominated for long by one institution, viz., the Unit Trust of India. Non-banking financial companies (NBFCs) grew rapidly, but there was no regulation of their asset side. Financial markets were characterised by control over pricing of financial assets, barriers to entry, high transaction costs and restrictions on movement of funds/participants between the market segments. This apart from inhibiting the development of the markets also affected their efficiency. It was in this backdrop that wide-ranging financial sector reforms in India were introduced as an integral part of the economic reforms initiated in the early 1990s.

6.2 Financial sector reforms in India are grounded in the belief that competitive efficiency in the real sectors of the economy will not be realised to its full potential unless the financial sector was reformed as well. Thus, the principal objective of financial sector reform was to improve the allocative efficiency of resources and accelerate the growth process of the real sector by removing structural deficiencies affecting the performance of financial institutions and financial markets.

6.3 The main thrust of reforms in the financial sector was on the creation of efficient and stable financial institutions and markets. Reforms in respect of the banking as well as non-banking financial institutions focused on creating a deregulated environment and enabling free play of market forces while at the same time strengthening the prudential norms and the supervisory system. In the banking sector, the particular focus was on imparting operational flexibility and functional autonomy with a view to enhancing efficiency, productivity and profitability, imparting strength to the system and ensuring financial soundness. The restrictions on activities undertaken by the existing institutions were gradually relaxed and barriers to entry in the banking sector were removed. In the case of non-banking financial intermediaries, reforms focussed on removing sector-specific deficiencies. Thus, while reforms in respect of DFIs focussed on imparting market orientation to their operations by withdrawing assured sources of funds, in the case of NBFCs, the reform measures brought their asset side also under the regulation of the Reserve Bank. In the case of the insurance sector and mutual funds, reforms attempted to create a competitive environment by allowing private sector participation.

6.4 Reforms in financial markets focused on removal of structural bottlenecks, introduction of new players/instruments, free pricing of financial assets, relaxation of quantitative restrictions, improvement in trading, clearing and settlement practices, more transparency, etc. Reforms encompassed regulatory and legal changes, building of institutional infrastructure, refinement of market microstructure and technological upgradation. In the various financial market segments, reforms aimed at creating liquidity and depth and an efficient price discovery process.

6.5 In response to reforms, the Indian financial sector has undergone radical transformation over the 1990s. Reforms have altered the organisational structure, ownership pattern and domain of operations of institutions and infused competition in the financial sector. The competition has forced the institutions to reposition themselves in order to survive and grow. The extensive progress in technology has enabled markets to graduate from outdated systems to modern market

design, thus, bringing about a significant reduction in the speed of execution of trades and the transaction costs. However, despite substantial improvements in the financial sector, some issues have to be addressed over time as the reform process is entrenched further. Whether the public sector character of the banking sector is affecting its performance adversely? Whether dilution of the government stake would have a positive impact on the efficiency of the banking sector? As a result of various reform measures aimed at enhancing stability of financial institutions, there is a possibility that such measures might have affected the efficiency of financial institutions. Whether DFIs have lost their relevance? The relevant issue, however, is how to fill the vacuum that would be created when DFIs withdraw from the scene. The role of mutual funds in promoting savings continues to be insignificant. There is also an issue of availability of adequate risk capital with the resource mobilisation from the primary capital market showing a sharp decline in the second half of 1990s and the early 2000s. It has also been argued by some that various markets are still segmented. With blurring of boundaries among providers of various financial services, the issue as to what should be the appropriate supervisory framework for regulating them has also arisen.

6.6 As wide-ranging reforms have been initiated in the financial sector with a view to making it more efficient and stable, the main focus of this chapter is to assess the impact of reforms on efficiency and stability of financial institutions and financial markets. Besides, this chapter attempts to seek answers to the following three questions: (i) whether ownership pattern (public or private) impinges on the efficiency of the banking sector; (ii) whether various stability enhancing measures introduced in the Indian banking system have had any adverse impact on its efficiency; and (iii) whether the various market segments have become integrated.

6.7 The Chapter is structured as follows. Section I provides the theoretical underpinnings of the financial sector reforms and cross-country experiences with respect to reforms in the financial sector. Section II assesses the impact of reforms on the banking sector and other financial intermediaries in terms of various parameters relating to efficiency and stability. It also highlights some of the issues emerging out of the operations of various categories of non-banking financial institutions (NBFIs) such as DFIs, NBFs, insurance companies and mutual funds. Section III presents an analysis of the impact of reforms on various segments of the financial market, viz., the money market, the Government securities market, the

foreign exchange market and the capital market. The integration of various market segments is also tested empirically and analysed in this Section. The final Section sets out an overall assessment of reforms.

I. FINANCIAL SECTOR REFORMS: THEORETICAL RATIONALE AND INTERNATIONAL EXPERIENCE

6.8 The financial system acts as an efficient conduit for allocating resources among competing uses. The role and importance of the financial sector in the process of economic growth has evolved over time along with the changing paradigms. Till the late 1960s, the role of financial intermediaries in general, and banks in particular, in the process of economic growth of a country was largely ignored. The views on neutrality of financial intermediaries to economic growth, however, came under attack during the late 1960s. It was pointed out that there exists a strong positive correlation between financial development and economic growth of a country (McKinnon, 1973; Shaw, 1973). The McKinnon–Shaw paradigm highlighted the negative impact of ‘financial repression’, under which the Government determined the quantum, allocation and price of credit, on the growth process. They argued that credit is not just another input and instead, credit is the engine of growth. Subsequently, the proponents of endogenous growth theories argued that with positive marginal productivity of capital, development of financial market induces economic growth in the short as well as long-run by improving efficiency of investment (Bencivenga and Smith, 1991). Under this approach, efficient financial intermediation is growth-inducing through its role in allocating financial resources in the best possible uses. This approach challenged the McKinnon–Shaw paradigm that efficient financial intermediation results in positive real interest rate and that this enhances both saving and investment and thereby economic growth.

6.9 Notwithstanding the debate over the relative significance of the channels of financial intermediation in promoting economic growth, an efficient financial system is regarded as a necessary pre-condition for higher growth. Several developing countries, therefore, undertook programmes for reforming their financial systems. In the initial stages of the development process, the financial sector in developing countries was characterised by directed credit allocation, interest rate restrictions and lending criteria based on social needs, etc. These policies retarded the nature of financial intermediation in developing countries and the recognition of the same paved the way for financial

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sector reforms. Since the late 1970s and the 1980s, financial sector reforms encompassing deregulation of interest rates, revamping of directed credit and the

measures to promote competition in the financial services became an integral part of the overall structural adjustment programmes in many developing economies (Box VI.1).

Box VI.1

Financial Sector Reforms: Cross-Country Experiences

The guiding objectives of financial sector reforms in several countries were to improve financial sector efficiency while strengthening financial stability. It was believed that stable and efficient financial systems provided the foundation for implementing effective stabilisation policies, stepping up savings and improving the efficiency of investment, all of which help in achieving sustainable and higher rates of economic growth.

Cross-country experiences relating to financial sector reforms exhibited significant diversity, both over time and across countries. Despite the evolving consensus on the underlying rationale of a robust financial system, there was no unique approach that was uniformly applied across countries. Significant differences could be observed in respect of the content, pace and sequencing of reforms, which, to some extent, were due to the reason that some countries experienced financial crises after implementation of liberalisation measures.

Table 6.1: Financial Liberalisation in Select Countries: 1973-2002

Country	Year	Credit Controls	Interest Rates	Entry Barriers	Government Regulation of Operations	Privatisation
	1	2	3	4	5	6
United States	1973	BL; S&LR	LL	PR	L	L
	2002	L	L	LL	L	L
United Kingdom	1973	LL	B:LL	B:LL	L	L
	2002	L	L	L	L	L
Korea	1973	R	R	R	R	R
	2002	LL	LL	B: PR NBFI:LL	PR	LL
Philippines	1973	R	R	R	PR	PR
	2002	PR	LL	LL	PR	LL
Thailand	1973	R	R	R	-	PR
	2002	LL	L	LL	-	LL
Argentina	1973	R	R	R	-	R
	2002	LL	LL	L	-	PR
Brazil	1973	R	R	R	-	PR
	2002	PR	LL	LL	-	PR
India	1973	R	R	R	R	R
	2002	LL	LL	PR	LL	PR

L: Liberalised – A liberalised system is one where the role of the Government has been largely curtailed.

LL: Largely liberalised – Largely liberalised denotes a system governed more by market forces, with Government role in certain important spheres.

R: Repressed – A repressed system is one in which virtually all decisions in the relevant dimension are made by the Government.

PR: Partly repressed – A partly repressed system is one where repression is not complete, but the system is closer to that end of the spectrum.

B: Banks; NBFIs: Non-banking financial institutions; S&L: Saving and Loan Associations.

Note/Source: The position for 1973 is from Williamson and Mahar (1998). The position for 2002 is compiled based on information from central bank websites, IMF reports, etc.

There was significant liberalisation of the financial sector both in industrial and developing countries over the period 1973-2002 (Table 6.1). Interest rate controls were almost universally eliminated and barriers to entry for most non-bank financial institutions were lowered, and in certain instances, rationalised. Most Latin American economies eliminated directed credit programmes and interest rate controls (exceptions being Brazil and Venezuela). Competition in the commercial banking sector was permitted in Latin American economies in the late 1970s and more recently in several Asian countries. Privatisation of state-owned banks was less sweeping across developing countries. For instance, prior to reforms, in several developing countries, the state-owned banks accounted for at least 40 per cent of the total banking sector assets. In several Asian (Korea, Taiwan and Indonesia) and Latin American countries (Chile and Mexico), the share of state-owned banks was higher than 70 per cent. However, recent evidence suggests a significant scaling down of Government ownership in the banking sector.

As regards the pace of reforms, Asian countries like Japan, Korea, Malaysia and Indonesia followed a gradualist approach to financial liberalisation in contrast to transition economies of Eastern Europe and some of the Latin American countries which adopted the 'big-bang' approach. While the Asian countries could afford a gradualist approach and maintain a system of financial repression because it did not reduce their ability to mobilise savings for economic development, some of the Southern Cone countries needed to liberalise rapidly to encourage greater mobilisation of savings to finance development. The pace of liberalisation tended to be faster in the Latin American countries, although there were instances of reversal. For example, Chile first liberalised with a big-bang in the 1970s when it privatised nationalised banks and removed controls on interest rates. Argentina also eliminated directed credit and interest rate controls in the late 1970s. However, both Chile and Argentina re-imposed controls during the financial crisis of the early 1980s, although they were subsequently relaxed. Chile, for instance, removed most controls by 1984 and re-privatised the nationalised banks in the mid-1980s. Argentina, on the other hand, embarked on a course of bank regulatory reform in the early 1990s, *albeit* at a slower pace. The major elements of the reforms comprised privatisation, free entry, limited safety net support and a mix of regulatory and market discipline to ensure stable growth of the banking system during the liberalisation process (Calomiris and Powell, 2000). Mexico's liberalisation in the late 1980s was punctuated by four turning points: 1982 (exchange rate crisis and bank nationalisation), 1988-89 (interest rate liberalisation), 1991-92 (bank privatisation) and 1994 (Tequila crisis). The financial liberalisation process culminated into transfer of ownership of state-owned banks to the private sector in 1991-92 and elimination of most of the entry barriers.

(Contd...)

(Contd...)

A number of countries in Asia, following the gradualist approach, progressively dismantled their directed credit programmes by introducing market-based rates on directed loans and increasing the number of categories eligible for special credit access. In Thailand, for instance, directed credit was eased in 1987 by widening the definition of agricultural credit to include wholesale and small-scale industrial activities. In Indonesia, Malaysia and South Korea, targeted lending programmes were reduced in scope, and subjected to market rates in the 1980s and the 1990s. In Philippines, however, the Government exerts influence over credit allocations through commercial banks' dependence on central bank rediscount window. Indonesia, Malaysia and Philippines assumed the lead in interest rate deregulation, beginning the process in the early 1980s.

Following the macroeconomic crisis in the early 1980s in Argentina and Chile and subsequent to the initiation of financial sector reforms, a strand of literature evolved which sought to explain the failure of reforms in terms of incorrect sequencing of the reform programmes (McKinnon, 1993). According to the conventional wisdom, stable macroeconomic environment and a sound system of prudential supervision are prerequisites for domestic financial deregulation. In practice, however, several countries implemented macroeconomic reforms prior to, or in tandem with, financial liberalisation. Chile, Peru and Turkey began financial sector deregulation under conditions of macroeconomic instability, but implemented their reforms as part of a larger stabilisation effort. Argentina, Brazil and Mexico, however, deregulated their financial sectors during periods of high inflation ahead of stabilisation programmes.

The apprehension that financial liberalisation is destined to breed crises has been documented in an influential study (Diaz-Alejandro, 1985). Several developing and industrial countries experienced episodes of systemic or borderline banking crises of varying magnitude and frequency, although in several instances they were not associated with financial liberalisation. Most developing countries, in particular, witnessed some financial instability, following liberalisation, including those in Latin America (Argentina, Chile, Brazil and Mexico) and Asia (Indonesia, Malaysia, Philippines, Sri Lanka, Thailand and Turkey). Banks generally found their existing loan portfolios to be less sound in a liberalised environment, because borrowers were not able to service debts due to higher interest costs or simply because implicit guarantees from Government on these debts were no longer available.

Thus, the evidence suggests that there are no iron cast formulae for financial liberalisation. A strategy adopted by a country could largely depend on the initial conditions of its financial infrastructure and extent of repression, the response of monetary and credit aggregates to monetary reforms and the health of its banking sector. Recent studies indicate that banking crises tend to precipitate balance of payments crises, but not *vice versa* (Kaminsky and Reinhart, 1999). The analysis of the experience of over 50 countries during 1980-1995 reveals that banking crises are more likely to occur in liberalised financial systems, but not where the institutional environment is strong in terms of respect for the rule of law, low level of corruption and good contract enforcement (Demirgüç-Kunt and Detragiache, 2002).

II. FINANCIAL INTERMEDIARIES - AN ASSESSMENT OF REFORMS

6.10 While financial institutions and financial markets are two generic mechanisms for transferring resources from the surplus sectors to deficit sectors, their relative significance varies from country to country. In the context of the underdeveloped capital market in India, financial intermediaries or institutions have traditionally played a predominant role in meeting the fund requirements of various sectors in the form of credit and investment. The major institutional purveyors of credit in India are banks (commercial banks and co-operative banks), DFIs and NBFCs. Traditionally, banks and NBFCs predominantly extended short-term credit and DFIs mainly provided medium and long-term loans. Insurance companies and mutual funds provided medium to long-term funds mainly in the form of investments. This distinction has got somewhat blurred in recent years. While financial intermediaries play an important role in the growth process by encouraging saving and investment and by improving the allocative efficiency of resources, this role is performed well only

when financial intermediaries are sound, stable and efficient.

6.11 The key objective of reforms in the financial sector in India has been to enhance the stability and efficiency of financial institutions. To achieve this objective, various reform measures were initiated that could be categorised broadly into three main groups: enabling measures, strengthening measures and institutional measures. The enabling measures were designed to create an environment where financial intermediaries could respond optimally to market signals on the basis of commercial considerations. Salient among these included reduction in statutory pre-emptions so as to release greater funds for commercial lending, interest rate deregulation to enable price discovery, granting of operational autonomy to banks and liberalisation of the entry norms for financial intermediaries. The strengthening measures aimed at reducing the vulnerability of financial institutions in the face of fluctuations in the economic environment. These included, *inter alia*, capital adequacy, income recognition, asset

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classification and provisioning norms, exposure norms, improved levels of transparency, and disclosure standards. Institutional measures were aimed at creating an appropriate institutional framework conducive to development of markets and functioning of financial institutions. Salient among these included reforms in the legal framework pertaining to banks and creation of new institutions.

6.12 Although there was a broad commonality in the objectives and instruments of reforms for all types of financial intermediaries, the pace and sequencing in each segment of the financial sector was determined keeping in view the state of development of the segment, its systemic implications and certain segment-specific characteristics. In view of their overwhelming dominance in the financial system and their systemic importance, reform measures were first introduced for commercial banks and subsequently extended to other financial intermediaries such as DFIs, NBFCs (especially public deposit-taking NBFCs) and co-operative banks, and insurance sector.

Commercial Banks

6.13 Reforms in the commercial banking sector had two distinct phases. The first phase of reforms, introduced subsequent to the release of the Report of the Committee on Financial System, 1992 (Chairman: Shri M. Narasimham) focussed mainly on enabling and strengthening measures. The second phase of reforms, introduced subsequent to the recommendations of the Committee on Banking Sector Reforms, 1998 (Chairman: Shri M. Narasimham) placed greater emphasis on structural measures and improvement in standards of disclosure and levels of transparency in order to align the Indian standards with international best practices. Reforms have brought about considerable improvements as reflected in various parameters relating to capital adequacy, asset quality, profitability and operational efficiency.

Stability Parameters (Capital Adequacy and Asset Quality)

6.14 Since banks are highly leveraged and exposed to risks, the capital adequacy requirements provide them with the financial cushion to cope with adverse effects on their portfolio. With the introduction of capital to risk-weighted asset ratio (CRAR) norms in 1992, significant improvement was noticed in the capital position of banks operating in India. While in 1995-96, 75 out of 92 banks had a CRAR of above eight per cent, as on March 31, 2002, 92 out of 97 banks operating in India had CRAR above the statutory minimum level of nine per cent (Table 6.2).

Table 6.2: Distribution of Scheduled Commercial Banks by CRAR

Year	Public Sector Banks		Private Sector Banks		Foreign Banks	SCBs
	SBI Group	Natio-nalised	Old	New		
	1	2	3	4	5	6
1995-96						
Below 8 per cent	–	8	6	–	3	17
8 per cent and above	8	11	19	9	28	75
1996-97						
Below 8 per cent	–	2	4	–	–	6
8 per cent and above	8	17	21	9	39	94
1997-98						
Below 8 per cent	–	1	4	–	–	5
8 per cent and above	8	18	21	9	42	98
1998-99						
Below 8 per cent	–	1	5	1	–	7
8 per cent and above	8	18	20	8	43	97
1999-2000						
Below 9 per cent	–	1	4	–	–	5
9 per cent and above	8	18	20	8	42	96
2000-2001						
Below 9 per cent	–	2	3	–	–	5
9 per cent and above	8	17	20	8	42	95
2001-2002						
Below 9 per cent	–	2	1	1	1	5
9 per cent and above	8	17	21	7	39	92

Note : SCBs had to comply with a minimum CRAR of 8 per cent up to end-March 1999 and 9 per cent from the year ended March 31, 2000 onwards.

6.15 There has been an improvement in overall capital adequacy of banks after the introduction of CRAR norms. However, as some banks in the public sector were not able to comply with the CRAR norms, there was a need to recapitalise them to augment their capital base. After the introduction of banking sector reforms in 1992, an amount of Rs.17,746 crore was infused as recapitalisation support to nationalised banks till March 31, 2002. At the same time, the Government's share in the capital of public sector banks (PSBs) is being diluted gradually with several banks making public offerings of their equity shares. Between 1993-94 and 2001-02, 12 public sector banks mobilised equity capital of Rs.6,501 crore through this route, including a premia of Rs.5,252 crore. However, available data suggest that some improvement in CRAR was also due to internal generation of funds.

6.16 Consequent upon the introduction of prudential norms relating to asset classification, income

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recognition and provisioning, the most visible structural change in the banking sector was an improvement in their asset quality. The share of NPAs, in gross as well as net terms, declined significantly during the reform period. The ratio of gross NPAs to gross advances of scheduled commercial banks (SCBs) declined from 15.7 per cent as at end-March 1997 to 10.4 per cent as at end-March 2002. For PSBs, in particular, the ratio of gross NPAs to gross advances witnessed a perceptible decline from 23.2 per cent as at end-March 1993 to 11.1 per cent as at end-March 2002.

6.17 Incremental NPAs generally tend to be higher in economic downturns as during such phases, there is increased possibility of default by borrowers. In India, the average GDP growth rate, which was 6.8 per cent during the period 1992-93 to 1996-97, decelerated to 5.4 per cent during the next five-year period. Despite this slowdown, gross NPAs of PSBs as a proportion of gross advances, on an average, declined from 20.7 per cent to 13.9 per cent. Factors contributing to this decline related *inter alia* to improvements in credit appraisal and monitoring and recovery of past NPAs.

6.18 The difference between gross and net NPAs of PSBs (the latter typically equals about one-half of the former) reflects both obligatory provisions made against NPAs and the limited write-offs of NPAs undertaken by these banks (Chart VI.1).

6.19 The information on distribution of SCBs in terms of the ratio of net NPAs to net advances is set out in Table 6.3. The number of domestic banks with net NPAs above 10 per cent of net advances declined between 1996 and 2002. The reduction in the number of banks with high net NPAs was particularly noticeable for public sector banks. The number of foreign banks with net

NPAs above 10 per cent, however, increased in recent years, on account of the impaired asset position of some small foreign banks.

Table 6.3: Distribution of Scheduled Commercial Banks by Net NPAs to Net Advances

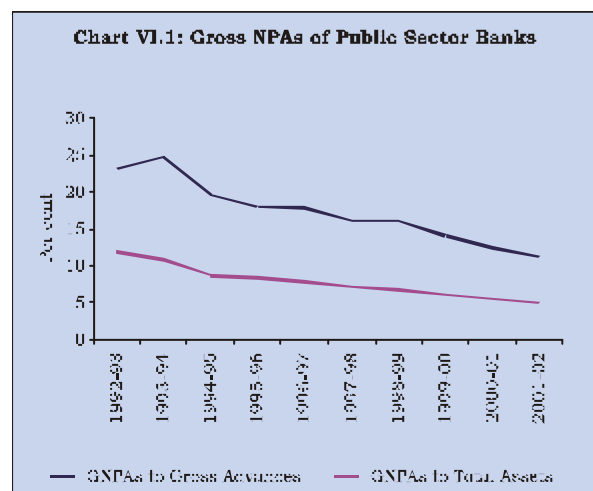
(Number of banks)

Bank Group	As at end-March						
	1996	1997	1998	1999	2000	2001	2002
	1	2	3	4	5	6	7
Public Sector Banks							
Up to 10 per cent	19	17	17	18	22	22	24
Above 10 and up to 20 per cent	6	9	9	8	5	5	3
Above 20 per cent	2	1	1	1	-	-	-
Old Private Sector Banks							
Up to 10 per cent	22	22	21	17	18	16	17
Above 10 and up to 20 per cent	-	3	4	5	5	4	3
Above 20 per cent	-	-	-	3	1	3	2
New Private Sector Banks							
Up to 10 per cent	9	9	9	9	8	8	8
Above 10 and up to 20 per cent	-	-	-	-	-	-	-
Above 20 per cent	-	-	-	-	-	-	-
Foreign Banks							
Up to 10 per cent	30	36	34	27	31	31	26
Above 10 and up to 20 per cent	1	1	6	11	7	6	5
Above 20 per cent	-	2	2	3	4	5	9

6.20 NPAs – both gross and net – as a proportion of advances/assets have declined since the early 1990s. In absolute terms, however, the stock of NPAs has been increasing. This is mainly due to the NPAs accumulated in the past on which interest due keeps on adding to the stock of NPAs every year. Doubtful assets form as much as 60 per cent of the NPAs, while sub-standard assets (which are of more recent origin) account for about 30 per cent. Furthermore, while there has been a decline in sub-standard assets in absolute terms since the late 1990s, the amount of doubtful assets increased. It is important to note, however, that incremental NPAs as a proportion of gross NPAs remained low and varied between 3-5 per cent during the period 1998-99 to 2001-02.

6.21 Net NPAs (*i.e.*, that portion of NPAs, which is not provided for) raise a major concern for the solvency of a bank. Although net NPAs as percentage of net advances in PSBs declined gradually from 10.7 per cent in 1994-95 to 5.8 per cent in 2001-02, they are still sizeable. There was also a wide divergence between gross NPAs to total assets (4.6 per cent) and net NPAs to total assets (2.3 per cent) for SCBs as at end of March 2002, reflecting mainly the extent of provisioning made.

6.22 Various reform measures introduced to recover past NPAs have met with limited success. For instance, in terms of the guidelines issued in May 1999 to PSBs



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for one-time non-discretionary and non-discriminatory settlement of NPAs of small loans (operative up to September 30, 2002), a meagre amount of Rs.668 crore was recovered by PSBs. Likewise, under the modified guidelines for recovery of the stock of NPAs of Rs.5 crore and less as on March 31, 1997 (valid up to June 30, 2001), an amount of Rs.2,600 crore was recovered by PSBs by September 2001. Debt Recovery Tribunals (DRTs) could decide only 9,814 cases involving Rs.6,264 crore pertaining to PSBs till September 30, 2001. The amount recovered in respect of such cases amounted to Rs.1,864 crore. As many as 3,049 cases involving Rs.42,989 crore were pending with DRTs as on September 30, 2001.

6.23 In the more recent period, the Reserve Bank and the Government of India have undertaken several more measures to contain the NPA problem. In order to strengthen the institutional set up for debt recovery, *Lok Adalats* and Settlement Advisory Committees were established. For improving the information sharing among the financial intermediaries, the Credit Information Bureau of India Ltd. (CIBIL) was set up. The Reserve Bank also put in place a system for periodic circulation of details of wilful defaults by borrowers. The Corporate Debt Restructuring (CDR) mechanism was institutionalised to provide a timely and transparent system for restructuring of the corporate debt of Rs.20 crore and above. The Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act was enacted in 2002. All these measures are expected to provide a fresh impetus to the recovery efforts by banks.

Parameters Relating to Competition and Efficiency

6.24 Improvement in the efficiency of financial intermediaries has been at the core of the reform process. In order to provide greater choice to customers and promote competition, the Reserve Bank permitted the entry of new private banks and more liberal entry of foreign banks. Consequently, nine new banks were set up in the private sector and the number of foreign banks increased significantly from 26 as at end-March 1996 to 44 as at end-March 1999. 'In-principle' approval was granted to two more new banks in the private sector in February 2002. There was, however, some consolidation in the banking industry, particularly in the new private and foreign bank segment. As at end-March 2002, there were 8 new private sector banks and 40 foreign banks.

6.25 An increase in the number of players in the banking sector led to increased competition as is reflected in the bank concentration ratio, measured in terms of the share of top 5 banks in assets, deposits

or profits. The share of top 5 banks in total assets declined from 51.7 per cent in 1991-92 to 43.5 per cent by 2001-02. Similar trends were evident in deposits and profits as well (Table 6.4).

Table 6.4: Share of Top Five Banks - Assets, Deposits and Profits

Parameter	(Per cent)				
	1991-92	1995-96	1998-99	2000-01	2001-02
	1	2	3	4	5
Assets	51.7	45.9	44.7	43.9	43.5
Deposits	49.0	45.0	44.4	43.9	43.3
Profits	54.5	190.7*	49.1	44.8	41.4

* Owing to presence of loss-making banks.

6.26 The positive impact of increased competition in the banking industry was also evident from the net interest income or spread, measured as the difference between interest income and interest expenditure as a proportion of assets. Initially, the deregulation of lending rates led to an increase in interest spread. However, as competition intensified, spread tended to narrow. The gradual lowering of the Bank Rate and its effect in lowering banks' prime lending rates (PLR) resulted in further narrowing of spread. It is significant to note that the decline in spread took place across all categories of banks with the decline being more pronounced in the case of new private sector banks (Table 6.5). Spread in the case of foreign banks were relatively higher than those of public and private sector banks. These trends are in line with international experience (Claessens, Demirgüç-Kunt and Huizinga, 1998).

Table 6.5: Net Interest Income (Spread) to Total Assets

Bank Group	(Per cent)						
	1992-95 (average)	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02
	1	2	3	4	5	6	7
Public Sector Banks	2.72	3.16	2.91	2.80	2.70	2.86	2.73
Old Private Sector Banks	3.24	2.93	2.57	2.15	2.33	2.51	2.39
New Private Sector Banks	1.17*	2.88	2.23	1.98	1.95	2.14	1.15
Foreign Banks in India	3.98	4.13	3.93	3.47	3.92	3.63	3.25
Scheduled Commercial Banks	2.84	3.22	2.95	2.78	2.73	2.85	2.57

* Data for New Private Sector Banks are available from 1994-95 onwards.

6.27 Significant variations observed in spread across bank groups were mainly on account of large differences in their non-fund based activities. For instance, the technology-intensive new private and foreign banks have been generating substantial income from fee-based activities arising from off-balance sheet-

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based business, enabling them to afford a larger decline in their spread. On the other hand, PSBs tend to rely more heavily on interest income, reflecting lack of sufficient diversification into fee-based activities. An important challenge for PSBs, thus, would be to diversify their activities to augment their non-interest income.

6.28 Despite the fact that banks were required to follow income recognition and provisioning norms and that there was intensification of competition, all major bank-groups in India remained profitable. There was also an increase in the number of profit-making PSBs over the reform period (Table 6.6). Since the mid-1990s, profitability of SCBs, as measured by Return on Assets (RoA) has not showed a definite trend and has hovered in the range of 0.5-0.8 per cent (Table 6.7 and Chart VI.2). The ratios in respect of new private sector banks, however, declined during the same period. Foreign banks remained the most profitable amongst all the major bank groups. The ratio of other income to total assets also did not show a definite trend for the SCBs as a group, but the share of such income was high in the case of foreign banks. Cross-country evidence suggests that profitability of banks in India is on the lower side as compared to most developing countries, which is generally in excess of one per cent. On the other hand, in the industrialised countries, profitability is lower at around 0.5 per cent (Claessens, Demirgüç-Kunt and Huizinga, 1998).

Table 6.6: Number of Profit and Loss-making Banks

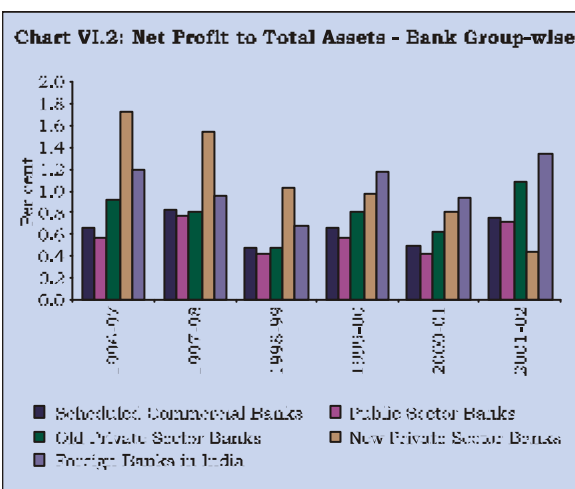
Year	Public Sector Banks	Old Private Sector Banks	New Private Sector Banks	Foreign Banks in India
	1	2	3	4
1995-96				
Profit-making	19	22	8	27
Loss-making	8	1	–	5
1996-97				
Profit-making	24	22	8	31
Loss-making	3	–	–	5
1997-98				
Profit-making	25	21	8	29
Loss-making	2	1	–	9
1998-99				
Profit-making	25	21	8	30
Loss-making	2	1	–	10
1999-2000				
Profit-making	26	22	8	31
Loss-making	1	–	–	9
2000-01				
Profit-making	25	19	8	30
Loss-making	2	3	–	10
2001-02				
Profit-making	27	22	7	29
Loss-making	–	–	1	11

Table 6.7: Important Financial Parameters – Bank Group-wise

(Per cent to total assets)

Bank Group	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02
	1	2	3	4	5	6
Operating Profit/Total Assets						
Scheduled Commercial Banks	1.82	1.84	1.45	1.66	1.52	1.94
Public Sector Banks	1.60	1.58	1.37	1.46	1.34	1.88
Old Private Sector Banks	1.89	1.96	1.21	1.82	1.75	2.70
New Private Sector Banks	2.98	2.84	1.78	2.11	1.74	1.21
Foreign Banks in India	3.62	3.90	2.32	3.24	3.05	3.13
Net Profit/Total Assets						
Scheduled Commercial Banks	0.67	0.82	0.47	0.66	0.50	0.75
Public Sector Banks	0.57	0.77	0.42	0.57	0.42	0.72
Old Private Sector Banks	0.91	0.80	0.48	0.81	0.62	1.08
New Private Sector Banks	1.73	1.55	1.03	0.97	0.81	0.44
Foreign Banks in India	1.19	0.96	0.69	1.17	0.93	1.33
Other Income/Total Assets						
Scheduled Commercial Banks	1.45	1.52	1.34	1.42	1.32	1.57
Public Sector Banks	1.32	1.33	1.22	1.29	1.22	1.43
Old Private Sector Banks	1.48	1.71	1.33	1.66	1.23	2.38
New Private Sector Banks	2.03	2.42	1.53	1.58	1.35	1.18
Foreign Banks in India	2.49	2.93	2.43	2.54	2.47	2.91
Provisions & Contingencies/Total Assets						
Scheduled Commercial Banks	1.15	1.02	0.98	1.00	1.03	1.19
Public Sector Banks	1.03	0.81	0.95	0.89	0.92	1.16
Old Private Sector Banks	0.98	1.16	0.73	1.01	1.15	1.62
New Private Sector Banks	1.24	1.32	0.75	1.14	0.93	0.77
Foreign Banks in India	2.44	2.94	1.63	2.08	2.12	1.80

6.29 Improvement in efficiency was also evident from the intermediation cost. Between 1996-97 and 2001-02, the cost of intermediation for SCBs declined from 2.85 per cent to 2.19 per cent (Table 6.8). The intermediation cost declined in respect of all categories



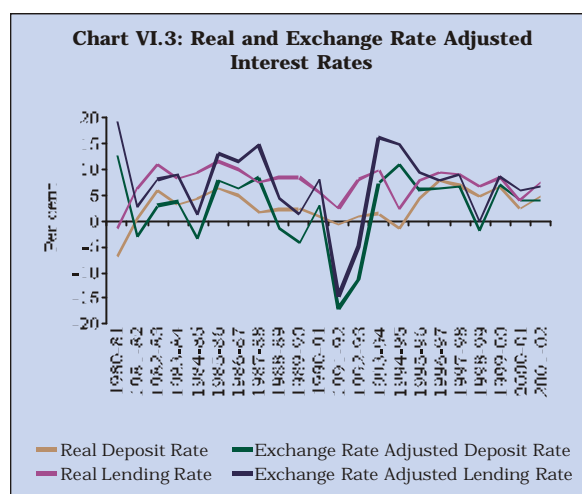
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of banks barring foreign banks. In the case of foreign banks, the intermediation cost increased between 1996 and 1999 due to addition of a significant number of foreign banks, which had to begin their operations with initial high start-up cost. Although the intermediation cost declined thereafter, it was still significantly higher in comparison with 1996 and other bank groups. The decline in intermediation cost was more pronounced in respect of private bank groups. This was possible due largely to their technology-driven operations, especially new private banks, all of which are 100 per cent computerised. The decline in intermediation cost in general, could be ascribed to growing competition in respect of business, enhanced application of information technology and improvements in payment and settlement system. While intermediation cost in general of PSBs increased in 2000-01 because of the rise in wages consequent upon the wage settlement, there was a significant lowering of intermediation cost in 2001-02 due to the decline in staff costs, subsequent to the voluntary retirement scheme (VRS).

Table 6.8: Intermediation Cost to Total Assets

Bank Group	(Per cent)					
	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02
	1	2	3	4	5	6
Public Sector Banks	2.88	2.66	2.66	2.53	2.72	2.29
Old Private Sector Banks	2.52	2.31	2.26	2.17	1.99	2.08
New Private Sector Banks	1.94	1.76	1.74	1.42	1.75	1.12
Foreign Banks in India	3.00	2.97	3.59	3.22	3.05	3.03
Scheduled Commercial Banks	2.85	2.63	2.67	2.50	2.64	2.19

6.30 Another test of improvement in efficiency could be the trend in real interest rates. Cross-country experience suggests that positive and stable real interest rates play an important role in efficient allocation of financial resources (Goyal and McKinnon, 2003). Real interest rates in India remained generally positive in the 1980s. In the post-reform period, real lending rates remained positive for all the years. Real deposit rates also remained positive barring one year, i.e., 1994-95 when they turned negative. While real lending rates generally declined during the 1990s as compared with the 1980s, real deposit rates increased during the same period. As a result, the gap between the lending rate and the deposit rate, in real terms, narrowed significantly in the second half of the 1990s (Table 6.9 and Chart VI.3). This was reflective, to an extent, of the increased competitiveness and efficiency of the Indian commercial banks.

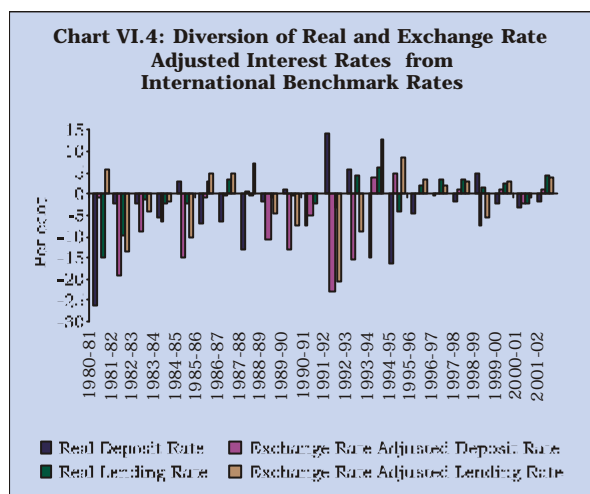


6.31 Another aspect of efficiency could be the difference between domestic and international benchmark rates. There has been a noticeable decline in the difference between real interest rates in India and international benchmark rates (LIBOR 1 year) since the mid-1990s (Chart VI.4). After deregulation of interest rates, India's real domestic interest rates

Table 6.9 Real and Exchange Rate Adjusted Interest Rates

Year	(Per cent per annum)			
	Real Deposit Rate	Real Lending Rate	Exchange Rate Adjusted Deposit Rate	Exchange Rate Adjusted Lending Rate
	1	2	3	4
1980-81	-7.0	-1.5	12.6	19.3
1981-82	0.6	6.6	-3.0	2.7
1982-83	5.8	11.1	3.0	8.1
1983-84	3.2	8.3	3.8	8.9
1984-85	4.3	9.4	-3.5	1.3
1985-86	6.3	11.6	7.9	13.2
1986-87	4.9	10.1	6.3	11.5
1987-88	1.7	7.7	8.4	14.8
1988-89	2.4	8.4	-1.5	4.3
1989-90	2.4	8.4	-4.3	1.3
1990-91	0.7	5.7	3.0	8.1
1991-92	-0.6	2.4	-17.2	-14.6
1992-93	0.9	8.1	-11.4	-5.0
1993-94	1.5	9.8	7.5	16.3
1994-95	-1.3	2.2	10.9	14.9
1995-96	4.5	7.8	6.1	9.4
1996-97	7.8	9.5	6.2	7.9
1997-98	7.0	9.2	6.7	8.9
1998-99	4.8	6.7	-1.9	-0.2
1999-2000	6.8	8.5	7.0	8.7
2000-01	2.4	4.1	4.1	5.8
2001-02	4.9	7.6	4.1	6.8

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(deflated for movements in exchange rates) have got better aligned with international benchmark rates, notwithstanding the adverse impact of the East Asian crisis during the latter half of the 1990s. This suggests increased integration of the banking sector with the rest of the world.

A Comparison with Other Countries

6.32 The financial performance of the Indian banking sector has been evaluated *vis-à-vis* select East Asian and developed economies. In this regard, Table 6.10 brings out a number of interesting aspects.

- (i) Spreads in India were marginally higher than those in East Asian countries and major developed economies.

Table 6.10: Banking Sector Performance

(Per cent to total assets)

Variable	India		East Asia ¹		Latin America ⁵		G3 ⁶	
	1992-97 ¹	1999	1992-97	1999	1992-97	1999	1992-97	1999
	1	2	3	4	5	6	7	8
Spread	2.9	2.8	2.6	2.2	5.2	5.4	2.0	2.0
Other Income	1.4	1.3	0.7	0.8	2.3	2.0	0.7	1.0
Operating Cost	2.7	2.7	1.6	2.3	5.5	5.7	1.7	1.8
Loan Losses ²	1.6	0.9	0.6	1.8	1.2	1.7	0.2	0.3
Pre-tax Profit ³	1.6	1.5	0.8	-0.7	1.4	2.4	0.7	0.8

Note: Figures for India pertain to Scheduled Commercial Banks.

- Simple average over the period.
- For India, refers to provisions and contingencies.
- For India, pre-tax profit refers to gross profits.
- Simple average of Indonesia, Korea, Malaysia, Philippines and Thailand.
- Simple average of Argentina, Brazil, Chile, Colombia, Mexico and Peru.
- Simple average of Germany, Japan and US.

Source: Hawkins and Turner (1999), Hawkins and Mihaljek (2001).

- (ii) Profitability in India was found to be significantly higher than East Asian and advanced countries. Pre-tax profit of banks in East Asia turned negative in 1999 due to large losses as a result of the financial crisis. Profitability of banks in India remained stable at around 1.5-1.6 per cent during 1992-99. Although operating costs in India were higher than East Asian countries, to an extent, it was made up by other income, which was found to be higher than both groups of countries. Although in terms of all parameters (other than pre-tax profits) the Indian banks were better placed than their counterparts in Latin America, the comparison needs to be viewed with caution. High operating costs (and high spread) in Latin American countries were, to a large extent, the legacy of the high-inflation period of the 1980s and the early 1990s, when there was little pressure on banks to cut costs. Secondly, "other income" seems to constitute a high proportion of earnings in Latin America. This was on account of their large holdings of Government bonds, which were included in "other income" rather than in interest income.

- (iii) The level of competition, as measured by concentration ratio, in India compared favourably with several Asian and Latin American countries. The overall CRAR of the Indian banking system, although much above the prescribed level, was significantly lower than that of several countries in Asia and Latin America.

- (iv) Finally, overall asset impairment in India was also at a much higher level in comparison with several other countries (Table 6.11).

Table 6.11: Summary of Banking Systems: 1998

Country	Number of Large and Medium Domestic Banks ¹	Concentration ²	CRAR (per cent)	Non-performing Loans (NPLs) as percentage of Loans
	1	2	3	4
<i>Asia</i>				
India	11	42	11.5 ^a	14.7 ^b (15.9)
Hong Kong	21	29	19.0	5
Singapore	5	39	20.0	8
Korea	14	50	10.8	7
Philippines	14	60	17.5	11
Thailand	9	62	12.4	48
<i>Latin America</i>				
Argentina	8	38	14.0	9
Brazil	22	52	15.8	11
Chile	7	47	13.5	1
Mexico	6	68	16.0	11

- Number of banks in top 1000, as provided by *The Banker*, 1999.
- Five largest banks' assets as percentage of total assets.

a: Public Sector Banks; b: Scheduled Commercial Banks.

Source: Hawkins and Turner (1999), Hawkins and Mihaljek (2001).

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6.33 It may, thus, be noted that financial performance of the Indian banks has not been out of line with banks in other countries. While the capital position of the Indian banks remained comfortable, the asset quality, however, remains a cause of concern. Notwithstanding this, however, the positive impact of competitive pressures created by financial sector reforms in the early 1990s is becoming gradually discernible.

Relationship between Stability and Efficiency

6.34 After the East Asian crisis, the stability of the financial system has assumed an added importance and many countries have initiated measures to strengthen their financial systems. However, the impact of the instruments used for achieving financial stability on efficiency is often not obvious. For instance, although the stipulation of minimum level of capital adequacy is expected to inculcate prudent behaviour on the part of banks and thereby enhance stability, its impact on efficiency of the banking system is not always apparent. This is because higher capital requirements may lead banks to assume higher risk or alternatively, make them lower their risk exposure. Thus, the relationship between capital and risk can be bi-directional depending on the risk appetite of the manager. While a risk-loving manager looking for high profits may

assume higher risk, the behaviour would be opposite in the case of risk-averse manager. Credit risk also impinges on efficiency. Risks may be costly to manage in the sense that a high-risk firm may require additional capital and labour inputs to produce the same level of output. If it is more costly to run a risky firm, credit risk is expected to have a negative effect on efficiency. However, active risk-taking, which is expected to be rewarded by higher expected return, could have a positive effect on efficiency. There is also a relationship between capital and efficiency. Well-capitalised banks often tend to be better run, suggesting that the relationship between capital and efficiency is likely to be positive. On the other hand, efficiently run banks are able to generate higher profits, enabling them to plough back a part of their earnings into capital and thereby improve their capital position. Thus, capital, credit risk and efficiency are related to one another and the exact nature of the relationship depends on the behaviour of the financial entity. The literature in this context, drawing upon international experiences, shows how the exact nature of the relationship varies across countries (Box VI.2).

6.35 Enhancing efficiency and stability of the banking sector have been the key objectives of reforms in the financial sector in India. It is, therefore,

Box VI.2

Credit Risk, Capitalisation, Ownership and Bank Efficiency: International Experience

The macroeconomic consequences of financial sector fragility, in general, and banking sector weaknesses, in particular, have attracted the attention of policy makers. This can be attributed to several factors. The first has been the worldwide trend towards deregulation of the financial sector and the growing number and severity of financial crises. The second has been the globalisation of banking operations in an increasingly market-led environment driven by rapid advances in information technology and communications networking. An important strand in the literature examines the interrelationships among capital, credit risk and efficiency in this context.

While the theoretical evidence is not unambiguous regarding the nature of the relationship between capital and risk, available empirical finding for the US banking industry suggests that, in general, management tends to offset increases in capital with increases in risk (Shrieves and Dahl, 1992). For example, a study of US banks for the period 1986-1995 suggests that inefficiency not only has a positive effect on credit risk, it also impacts bank capitalisation (Kwan and Eisenbis, 1997).

A possible explanation in this regard is the role of managers as agents of stockholders. Managers, especially if they are risk averse, seek to maximise their own compensation at the expense of shareholders. Since managerial compensation is linked to firm growth, management may be tempted to increase firm growth beyond the efficient size. This might lead to a lowering of efficiency, and expose the banking firm to more risks, which can affect asset quality.

As regards the linkage between ownership and performance,

international evidence suggests that ownership has limited impact on economic efficiency. In case of the Belgian banking sector, for instance, it was found that public bank branches are relatively more efficient than those of the private bank (Tulkens, 1993). Recent work in this context for the German banking industry finds little evidence to suggest that privately owned banks are more efficient than public sector counterparts (Altunbas 2002). For emerging economies, some evidence for the Turkish banking industry covering both the pre- and post-liberalisation period for 1970-94 suggests the lack of difference in efficiency between the state-owned and privately owned banks (Denizer *et al*, 2000). It is, therefore, by no means guaranteed that privately owned firms would necessarily outperform state-owned firms. On the other hand a study on 92 countries for the 10 largest commercial and development banks, shows that greater state ownership of banks in 1970 was associated with less financial sector development, lower growth and productivity over the period 1970-1995 (La Porta *et al*, 2002).

In the Indian case, for 1993-94 and 1994-95, it was observed that, in so far as profitability is concerned, foreign banks outperformed domestic banks and there was no discernible difference between unlisted domestic private and state-owned banks (Sarkar *et al*, 1998). It is possible that since the process of deregulation of the banking sector commenced in 1992, the impact of competitive pressures was felt much later. Recent research however, has observed that differences in profitability and cost efficiency between foreign and private banks and state-owned counterparts have diminished as the latter have improved their profitability (Shirai, 2002).

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important to understand not only the impact of various reforms measures on the stability and efficiency of the banking system as has already been done, but also the impact of stability measures, if any, on the efficiency of the system. In the Indian context, where public sector banks account for majority of the banking assets, the interrelationship among credit risk, capital and efficiency acquires an additional dimension. A related issue in the Indian context has been whether the public sector character of the banking system has impinged on its efficiency, although international evidence suggests that privately owned banks do not necessarily outperform the state-owned banks. Dilution of Government stake, it has been argued, could provide greater operational freedom to banks, which could have a positive impact on their efficiency. As these aspects are of crucial importance, an attempt is made to examine in the Indian context the following two issues: (i) whether

there is a relationship between ownership and efficiency, and (ii) what is the exact nature of relationship among credit risk, capital and efficiency.

Ownership and Efficiency

6.36 To examine the relationship between ownership (public and private) and efficiency, an attempt is made to compare the performance of banks based on select parameters at two levels: (a) comparison of a representative sample of five PSBs which divested their Government holding early in the reform process with a representative sample of five wholly government-owned banks, (b) comparison of the aforesaid two categories with old private sector banks as a group. The parameters used are operating expenses, spread, net profit, asset quality and capital adequacy. The relevant data are set out in Table 6.12(A) and 6.12(B) and the main points emerging from the analysis are set out below.

Table 6.12(A): Important Parameters of Select Bank-Groups

(Per cent)

Bank Group	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02
	1	2	3	4	5	6	7
Operating Expenses/Total Assets							
Scheduled Commercial Banks	2.94	2.85	2.63	2.67	2.50	2.64	2.19
Public Sector Banks	2.99	2.88	2.66	2.66	2.53	2.72	2.29
All Old Private Sector Banks	2.60	2.52	2.31	2.26	2.17	1.99	2.08
All New Private Sector Banks	1.89	1.94	1.76	1.74	1.42	1.75	1.12
Spread/Total Assets							
Scheduled Commercial Banks	3.13	3.22	2.95	2.78	2.73	2.85	2.57
Public Sector Banks	3.08	3.16	2.91	2.80	2.70	2.86	2.73
All Old Private Sector Banks	3.14	2.93	2.57	2.15	2.33	2.51	2.39
All New Private Sector Banks	2.84	2.88	2.23	1.98	1.95	2.14	1.15
Net Profit/Total Assets							
Scheduled Commercial Banks	0.16	0.67	0.82	0.47	0.66	0.49	0.75
Public Sector Banks	-0.07	0.57	0.77	0.42	0.57	0.42	0.72
All Old Private Sector Banks	1.06	0.91	0.81	0.48	0.81	0.59	1.08
All New Private Sector Banks	1.85	1.73	1.55	1.03	0.97	0.81	0.44
Gross NPAs to Gross Advances							
Scheduled Commercial Banks	N.A.	15.70	14.40	14.70	12.70	11.40	10.40
Public Sector Banks	18.00	17.80	16.00	15.90	14.00	12.40	11.10
All Old Private Sector Banks	N.A.	10.70	10.90	13.10	10.80	10.90	11.00
All New Private Sector Banks	N.A.	2.60	3.50	6.20	4.10	5.10	8.90
Net NPAs to Net Advances							
Scheduled Commercial Banks	N.A.	8.10	7.30	7.60	6.80	6.20	5.50
Public Sector Banks	8.90	9.20	8.20	8.10	7.40	6.70	5.80
All Old Private Sector Banks	N.A.	6.60	6.50	9.00	7.10	7.30	7.10
All New Private Sector Banks	N.A.	2.00	2.60	4.50	2.90	3.10	4.90
CRAR							
Scheduled Commercial Banks	N.A.	10.40	11.51	11.27	11.10	11.39	11.90
Public Sector Banks	8.72	10.00	11.53	11.20	10.66	11.20	11.80
All Old Private Sector Banks	10.68	11.70	12.30	12.07	12.35	11.93	12.52
All New Private Sector Banks	N.A.	15.33	13.19	11.76	13.44	11.51	11.60

N.A. Not available.

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Table 6.12(B): Important Parameters of Select Bank-Groups

(Per cent)

Bank Group	1995-96	1996-97	1997-98	1998-99	1999-2000	2000-01	2001-02
	1	2	3	4	5	6	7
Operating Expenses to Total Assets							
Government-owned PSBs*	3.16	3.17	2.93	2.79	2.75	2.81	2.81
Divested PSBs**	2.79	2.65	2.56	2.51	2.35	2.62	2.13
Old Private Sector Banks	2.60	2.52	2.31	2.26	2.17	1.99	2.08
Spread to Total Assets							
Government-owned PSBs*	2.38	2.58	2.79	2.59	2.57	2.64	2.61
Divested PSBs**	3.43	3.37	3.15	2.93	2.75	2.94	2.81
Old Private Sector Banks	3.14	2.93	2.57	2.15	2.33	2.51	2.39
Net Profit to Total Assets							
Government-owned PSBs*	-1.04	-0.30	0.27	0.26	0.37	0.18	0.40
Divested PSBs**	0.81	0.92	1.06	0.75	0.81	0.57	0.85
Old Private Sector Banks	1.06	0.91	0.81	0.48	0.81	0.59	1.08
Gross NPAs to Gross Advances							
Government-owned PSBs*	26.06	27.97	25.34	22.88	18.35	16.12	14.09
Divested PSBs**	12.95	13.23	11.64	13.17	12.72	11.08	10.03
Old Private Sector Banks	N.A.	10.70	10.90	13.10	10.80	10.90	11.00
Net NPAs to Net Advances							
Government-owned PSBs*	13.22	13.62	11.83	11.46	9.55	9.26	8.16
Divested PSBs**	6.29	7.07	6.33	7.42	7.14	6.19	5.26
Old Private Sector Banks	N.A.	6.60	6.50	9.00	7.10	7.30	7.10
CRAR							
Government-owned PSBs*	6.77	6.46	9.83	10.07	10.77	10.54	10.71
Divested PSBs**	11.51	12.12	12.33	12.54	11.85	12.40	11.95
Old Private Sector Banks	10.68	11.70	12.30	12.07	12.35	11.93	12.52

N.A. Not available.

* 'Government-owned PSBs' are the set of select PSBs, which were fully Government-owned at end-March 2002. These included: Bank of Maharashtra, Central Bank of India, Punjab and Sind Bank, UCO Bank and United Bank of India.

** 'Divested PSBs' are the set of select PSBs, which have accessed the capital market and consequently, lowered the Government holding in them. These included: State Bank of India (December 1993 and October 1996), Oriental Bank of Commerce (October 1994), Bank of Baroda (December 1996), Bank of India (February 1997) and State Bank of Bikaner and Jaipur (November 1997). Figures in brackets in the aforementioned sentence indicate the month and the year of divestment.

Note : Figures under the heads 'Government-owned PSBs' and 'Divested PSBs' are the averages of five representative banks in that year.

- During each year of the sample period (*i.e.*, from 1995-96 to 2001-02), 100 per cent Government-owned banks had higher ratio of operating expenses to total assets in comparison with those PSBs, which have divested their equity as well as old private sector banks. While the ratio for 100 per cent Government-owned PSBs was higher than the industry level, the ratio in respect of both old private sector banks and those banks which divested their equity was lower than the industry. The sudden fall in the operating expenses to total assets of PSBs in 2001-02 [Table 6.12(A)] was on account of reduction in wage costs (of the order of Rs.1,884 crore) consequent upon the introduction of voluntary retirement scheme (VRS) in 2000-01. The operating expenses, as percentage of total assets, for divested PSBs witnessed a sharp rise in 2000-01 [Table 6.12(B)]. It, however, was due mainly to large outgo on account of VRS-related expenditure incurred by these banks. This led to a reduction in the wage bill in the subsequent year, which, in turn, led to a marked decline in the operating expenses in 2001-02. The operating expense ratio for these banks is now lower than the earlier years, reflecting clear gains from the policy of labour force restructuring adopted by these banks.
- Interest spread (net interest income to total assets) provides a mixed picture. Interest spread of 100 per cent government-owned PSBs were lower in comparison with divested PSBs during each of the seven years due to their lower efficiency of raising resources, but were generally higher than those of old private sector banks.
- Profitability (ratio of net profit to total assets), on an average, of both old private sector banks and

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the Government-owned banks which divested their equity was, more or less, at the same level. Profitability of both the aforementioned bank groups was higher than those of fully Government-owned PSBs. The gap narrowed down significantly from 1998-99 onwards. The sharp rise in profits across most bank groups during 2001-02 was on account of capital gains on Government securities resulting from softening of interest rates and the containment in operating expenses.

- Asset impairment (ratio of gross NPAs to gross advances) during each of the years under reference in respect of 100 per cent Government-owned banks was much higher in comparison with PSBs, which divested their equity and old private sector banks. It is, however, significant to note that the gap, which was very wide during 1995-96 to 1996-97 (at about 14 per cent in respect of those banks that divested their equity and 15-18 per cent in respect of old private sector banks) narrowed down considerably by 2001-02 (at about 4 per cent in respect of banks which divested their equity and 5 per cent in respect of old private sector banks). The gap narrows down further if one takes into account net NPAs (after adjusting for provisioning and part payments received) of these banks. It also needs to be noted that net NPAs of partially Government-owned PSBs as at end-March 2002 stood lower than those of old private sector banks.
- Capital adequacy ratio (CRAR), on an average, in fully Government-owned PSBs was lower than those PSBs which divested their equity as well as old private banks. It needs to be noted that CRAR of fully Government-owned banks which, on an average, was roughly half as compared with old private banks and PSBs with reduced Government ownership, improved significantly over the last few years.
- In terms of all the above mentioned parameters, new private sector banks outperformed all other bank groups. While there was an increase in the divergence in terms of most financial parameters, the capital adequacy and NPA position of new private sector banks witnessed a convergence towards industry averages in recent times. For 2001-02, the data relating to new private banks reflect the impact of mergers, and are, therefore, not strictly comparable with those of the earlier years.

6.37 Where do these stylised facts lead? In terms of financial parameters, old private banks performed

better than partially Government-owned PSBs, which, in turn, performed better than the wholly Government-owned PSBs. However, fully Government-owned PSBs showed a significant improvement in respect of almost all parameters from 1997-98 onwards and their financial performance tended to converge with partially Government-owned PSBs and old private banks. Although fully Government-owned PSBs also exhibited significant improvement in their credit risk management, as was evident in the decline in their NPAs in the last few years, NPAs level as such remained high as compared with old private banks and the partially Government-owned PSBs. In terms of capital position (CRAR) also, fully Government-owned PSBs witnessed a significant improvement, but the levels remained consistently below the PSBs with reduced Government ownership and private sector banks.

6.38 It is also significant to note that there has been a convergence in the financial performance of the partially Government-owned PSBs with old private banks in recent years. Asset quality of divested PSBs as at end-March 2002 stood significantly higher than that of old private banks. However, capital adequacy, which was slightly higher for divested banks in 1995-96 than old private sector banks stood slightly lower as at end-March 2002.

Credit Risk, Capitalisation and Efficiency

6.39 The relationship between credit risk, capitalisation and efficiency has been tested empirically using regression analysis (simultaneous equation system). The empirical specification examining these issues in respect of three size classes of PSBs, viz., large, medium and small¹ is addressed in Box VI.3. The broad findings emerging from the analysis are set out below:²

1 Banks within each size class in alphabetical order are: 'large' (Bank of Baroda, Bank of India, Canara Bank, Central Bank of India, Indian Overseas Bank, Punjab National Bank, State Bank of India, Syndicate Bank and Union Bank of India); 'medium' (Allahabad Bank, Andhra Bank, Bank of Maharashtra, Dena Bank, Indian Bank, State Bank of Hyderabad, State Bank of Patiala, United Bank of India and UCO Bank); and 'small' (Corporation Bank, Oriental Bank of Commerce, Punjab and Sind Bank, State Bank of Bikaner and Jaipur, State Bank of Indore, State Bank of Mysore, State Bank of Saurashtra, State Bank of Travancore and Vijaya Bank).

2 A caveat, which needs to be considered, is that the period of study is one characterised by transition, with several public sector banks being recapitalised over the sample period. As a consequence, the results would need to be interpreted with caution. A different sample period, for instance, the five years immediately following the inception of reforms might engender different results. Data limitations would, however, be a constraint in taking this into consideration.

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- Greater soundness (higher capital position) leads to improvement in efficiency, particularly in the case of small banks. Improvements in efficiency, especially in respect of small banks, also have a positive effect on their soundness. Furthermore, the positive impact of efficiency on soundness is reinforced as higher profitability was found to be leading to increased soundness in the case of small and medium-sized banks.
- Better asset quality (greater stability) promotes greater efficiency in the case of medium-sized banks but not in case of other two bank size classes. However, the relationship between asset quality and efficiency was not found to be mutually reinforcing for any of the bank groups.
- Soundness and stability were found to be reinforcing each other. In other words, adequately capitalised banks in the small and medium categories are less prone to credit risk. In the case of latter category, in particular, improvements in credit risk management also had a beneficial effect on stability through improvements in the capital position.

Box VI.3

Credit Risk, Capitalisation and Bank Efficiency : Evidence from India

Keeping in view the theoretical observations on the interlinkages among the reform of credit risk, capital and efficiency, an attempt has been made to empirically examine the same for the 27 Indian PSBs for the period 1995-96 to 2001-02.¹ These banks were disaggregated into three size classes (large, medium and small), based on their total assets at the beginning of the sample period. The size class classification permitted an equal number of banks within each of the three categories.

A banking firm can achieve a certain level of overall risk exposure by choosing one of the several alternative convex combinations of credit risk and capital. As a consequence, these two types of risks have been modelled as simultaneously determined. Credit risk has been measured by the ratio of gross non-performing loans to gross advances (GNPA). In a sense, credit risk is measured *ex-post*. Capital adequacy, on the other hand, is measured by the ratio of capital to risk-weighted assets (CRAR). The inefficiency (INEFF) was derived following the intermediation approach².

The empirical specification in the simultaneous equation system comprised the following three equations:

$$GNPA = f_1 (CRAR, INEFF, NPRIOL, ADVGR, ADVGRSQ)(1)$$

$$CAPITAL = f_2 (GNPA, INEFF, RoA, RPL, RPH, SIZE) \quad (2)$$

$$INEFF = f_3 (GNPA, CRAR, ADVGR, ADVGRSQ, DIVEST) \quad (3)$$

where,

NPRIOL = ratio of loans given to non-priority sector to total loans;

ADVGR = annual growth rate of total loans; ADVGRSQ=square of ADVGR;

RoA = return on assets;

SIZE = natural logarithm of total asset;

DIVEST = Government ownership, defined as a variable which equals 1 in the year in which the bank has made an equity offering (and all subsequent years) and zero, otherwise;

Low regulatory pressure: $RPL = [(1/\text{Stipulated CRAR}) - (1/\text{Actual CRAR})]$;

High regulatory pressure: $RPH = [(1/\text{Actual CRAR}) - (1/\text{Stipulated CRAR})]$

GNPA, CRAR and INEFF are the three exogenous variables. The model is closed by including endogenous variables that have explanatory power for each of the exogenous variables.

GNPA is expected to be related to the loan portfolio composition. Accordingly, the ratio of non-priority sector loans to total loans (NPRIOL) has been included as an explanatory variable. The effect of loan growth on the quantity of bad loan is controlled by using the one-year loan growth rate (ADVGR). To allow for the possibility of a U-shaped relation between loan growth and bad loan, the square of loan growth term (ADVGRSQ) has also been included.

The CRAR is expected to exhibit positive relation with profitability, owing to the plough back of earnings into reserves. This suggests the RoA as a plausible explanatory variable. In addition, the effect of bank size is controlled by including the natural logarithm of total assets (SIZE). In order to capture the effects of capital regulation, regulatory pressure variables, denoted by RPH (high) and RPL (low) was included (Jacques and Nigro, 1997). By construction, RPH should have a positive effect on capital ratios, because one of the options available to banks to meet the prescribed capital standards is simply to raise capital. As regards RPL, although banks with risk-based capital ratios in excess of the stipulated minimum are not explicitly constrained by the prescribed capital standards, it might turn out that the risk-based standards induce them to reduce their ratios (the opportunity cost of holding additional capital might be high).

(Contd...)

1 The choice of public sector banks is dictated by two considerations. The first is the availability of a consistent and published dataset. Second, given the wide heterogeneity across state-owned banks in terms of their product sophistication and customer orientation and the fact that these account for the majority of banking assets, a study of the state-owned banks enables to draw broad inferences about the banking sector as a whole.

2 Three variables were selected as inputs: total funds (deposits plus borrowings), fixed assets and total number of employees. The relevant outputs are loans and investments. In order to mitigate the price effects, the variables were deflated by the relevant deflators. Accordingly, the cost of funds, repairs and maintenance and per employee cost was taken as the relevant input prices. A stochastic frontier cost function with composite error terms and standard distributional assumptions was specified. The total cost was approximated by a translog function with multiple inputs and outputs.



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(Contd...)

Finally, in the INEFF equation, the effect of loan growth is controlled by introducing ADVGR and ADVGRSQ.³ To the extent that a low to moderate loan growth rate partially reflects on managerial quality, while a high growth rate is reflective of managerial entrenchment, the relation between growth and efficiency may turn out to be U-shaped. Finally, the effect of Government ownership is controlled by DIVEST. The variable

intends to ascertain whether the divestment of Government ownership in state-owned banks has had an effect on efficiency.⁴

The estimation procedure employed was pooled time-series, cross-section observations using the two-stage least squares (2SLS) procedure separately for each size class.⁵

3 The adjusted R² in case of the INEFF equation was found to be the lowest. The result was, however, in consonance with evidence for the US banking industry, wherein the explanatory power of this variable was also found to be quite low (Kwan and Eisenbis, 1997).

4 The disadvantage of such a variable, however, lies in the fact that it does not consider the extent of divestment. In other words, a bank, which has divested 20 per cent of its equity capital is treated at par with a divestment of, say, 35 per cent. Notwithstanding its limitations, DIVEST enables an inference of the impact of Government shareholding on efficiency.

5 The 2SLS procedure performs the reduced-form regression of the dependent variable on all the pre-determined variables in the system (stage 1), obtaining the estimates of the dependent variable and thereafter replacing the dependent variable in the original equation by its estimated value and applying ordinary least squares to the transformed equation (stage 2). The estimators thus obtained are consistent, *i.e.*, they converge to their true values as the sample size increases.

- On the whole, the empirical findings suggest that capital, credit risk and efficiency are interlinked, and to a certain extent, they reinforce and complement one another.

financial soundness and stability tended to reinforce each other in the case of Indian banking sector and that there was no evidence of various stability measures impinging on the efficiency of financial institutions.

6.40 To conclude, various reform measures introduced in the banking sector have resulted in remarkable improvement in banks' capital position as reflected in the overall increase in their capital adequacy ratio. Asset quality of the commercial banking sector on the whole also improved markedly in spite of gradual tightening of prudential norms and the slowing down of the economy in recent years. There is evidence to suggest that competition in the banking industry has intensified. Significant improvement was also discernible in the various parameters of efficiency, especially intermediation costs, which declined significantly. Profitability of commercial banks, on the whole, improved significantly despite a decline in spread and higher provisioning following the introduction and subsequent tightening of prudential norms.

6.41 It was found empirically that in the case of the Indian banking sector, ownership did impinge on the efficiency of banks as old private sector banks performed better, in terms of various parameters, than those PSBs which divested their equity in the 1990s, which, in turn, performed better than the fully Government-owned banks. The performance of new private sector banks was well above all other bank groups. At the same time, however, it needs to be noted that the fully Government-owned banks showed remarkable improvement in almost all parameters in recent years and that their performance is gradually converging with that of better performing banks. Finally,

6.42 Notwithstanding significant improvements as set out above, there are several challenges that lie ahead. Much of the improvement in the capital position of banks in the initial years, especially in the case of PSBs, was due to recapitalisation support from the Government. This is not a sustainable option. Banks, therefore, need to further improve their profitability so that they can increase their capital funds through internal generation. Improved financial performance is also necessary when banks enter the market for raising capital. Notwithstanding improvement in the asset quality, the level of NPAs appears high by international standards. A major challenge in the years ahead, thus, lies in bringing down the non-performing assets. Alongside, provisioning for non-performing assets also needs to be enhanced. Tightening of the provisioning norms and a switch-over to the forward-looking provisioning would further enhance the stability of the Indian banking sector. A related issue concerns a large amount of loss assets being carried by banks in their books. Such assets, which ideally should be written off, still constitute about 10 per cent of the gross NPAs mainly for the reason that many of the accounts are under litigation and cannot be written off before resolution of such cases. Profitability in India is still low as compared to several developing countries and banks need to make concerted efforts to improve their profitability by diversifying their business, especially into non-fund-based activities.

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Co-operative Banks

6.43 The co-operative banking sector in India comprising urban co-operative banks (UCBs) and rural co-operative banks such as state co-operative banks (StCBs) and district central co-operative banks (CCBs) has an extensive branch network and reach in the remote areas.³ Though much smaller as compared to scheduled commercial banks, co-operative banks constitute an important segment of the Indian banking system and have traditionally played an important role in creating banking habits among the lower and middle-income groups and in strengthening the rural credit delivery system.

6.44 The reform process has tried to achieve regulatory convergence among various financial intermediaries in view of their systemic importance. Therefore, the basic objectives and instruments of reforms for co-operative banks have been the same as for SCBs. However, given the special characteristics of co-operative banks, they have been extended certain dispensations in terms of pace and sequencing of reforms.

Parameters Relating to Stability

6.45 Information on CRAR of co-operative banks is not available. Therefore, for analysing the capital position of co-operative banks, alternative measures, viz., share capital to asset ratio, owned funds to asset ratio and compliance with minimum capitalisation norm under Section 11(1) of the Banking Regulation Act, 1949 were examined.⁴ Movements in share capital to asset ratio as well as owned funds to asset ratio indicate that there was very little perceptible improvement in capitalisation of co-operative banks between 1998 and 2002 (Table 6.13). Asset quality of co-operative banks during the same period also did not show any discernible improvement in any segment (Table 6.14). Gross NPAs in absolute terms increased significantly in respect of all types of co-operative banks. However, NPAs as a ratio of total loans outstanding remained more or less unchanged for all types of co-operative banks barring scheduled UCBs, in respect of which they increased sharply from 2001. The increase in the stock of NPAs over the years reflected partly the impact of gradual tightening of income recognition and asset classification norms and partly general deterioration of recovery performance.

3 There are other types of credit co-operatives as well, which are, however, not banks under the definition provided by the Banking Regulation (B.R.) Act, 1949.

4 Depending on certain characteristics of a bank, the minimum capitalisation requirement under this Act varies between Rs. 1-10 lakh.

Table 6.13: Capitalisation of Co-operative Banks : Select Indicators

(Ratios in per cent)

	As at end-March				
	1998	1999	2000	2001	2002
	1	2	3	4	5
Scheduled Urban Co-operative Banks					
Share Capital to Asset Ratio	1.0	1.0	1.0	1.0	1.1
Non-scheduled Urban Co-operative Banks					
Owned Fund to Asset Ratio	11.5	10.9	10.3	10.5	11.9
Non-compliance with Minimum Capitalisation (Number)	N.A.	250	261	119	N.A.
State Co-operative Banks					
Share Capital to Asset Ratio	1.4	1.4	1.3	1.3	N.A.
Owned Fund to Asset Ratio	9.2	9.9	10.3	11.1	N.A.
Non-compliance with Minimum Capitalisation (Number)	N.A.	5	6	9	N.A.
District Central Co-operative Banks					
Share Capital to Asset Ratio	3.6	3.5	3.3	3.2	N.A.
Owned Fund to Asset Ratio	10.4	10.6	12.0	12.6	N.A.
Non-compliance with Minimum Capitalisation (Number)	N.A.	137	139	139	N.A.

N.A. Not available.
Note : Non-compliance with minimum capitalisation relates to the same under Section 11(1) of the B.R.Act, 1949.

Table 6.14: Non-Performing Assets of Co-operative Banks

	As at end-March				
	1998	1999	2000	2001	2002
	1	2	3	4	5
Amount (Rs. crore)					
Urban Co-operative Banks	2,839	3,306	4,535	9,245	11,472
State Co-operative Banks	2,443	2,748	2,758	3,889	N.A.
District Central Co-operative Banks	5,551	6,573	7,543	9,371	N.A.
As a Ratio of Total Outstanding Loans (per cent)					
Urban Co-operative Banks	13.2	11.7	12.2	16.1	21.9
State Co-operative Banks	12.5	12.6	10.7	13.0	N.A.
District Central Co-operative Banks	17.8	17.8	17.2	17.9	N.A.

N.A. Not available.
Note : Data include unaudited information.

Parameters Relating to Efficiency

6.46 During the period from 1997-98 to 2001-02, interest spread of scheduled UCBs declined sharply and remained in alignment with those of commercial banks, while there was no significant change in spread of rural co-operative banks (Table 6.15). This reflected greater competition between scheduled UCBs and commercial banks and general insulation of rural co-operative banks from such competition. Operating expenses as a proportion of assets, however, declined

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significantly across all segments of co-operative banks with the movement in respect of scheduled UCBs closely following those of SCBs. Profitability of scheduled UCBs, however, deteriorated, while there was some improvement in profitability of rural co-operative banks between 1997-98 and 2000-01 (Table 6.15).

Table 6.15: Select Indicators of Efficiency of Co-operative Banks vis-à-vis Scheduled Commercial Banks

(Per cent)

	1997-98	1998-99	1999-2000	2000-01	2001-02
	1	2	3	4	5
Interest Spread as a Proportion of Assets					
Scheduled Urban Co-operative Banks	3.8	3.2	3.2	2.8	2.2
State Co-operative Banks	2.0	1.5	1.9	2.1	N.A.
District Central Co-operative Banks	3.1	3.1	3.0	3.0	N.A.
Scheduled Commercial Banks	3.0	2.8	2.7	2.9	2.6
Operating Expenses as a Proportion of Assets					
Scheduled Urban Co-operative Banks	2.4	2.1	2.1	2.0	2.0
State Co-operative Banks	0.9	0.8	0.8	0.7	N.A.
District Central Co-operative Banks	2.2	2.2	2.0	1.8	N.A.
Scheduled Commercial Banks	2.6	2.7	2.5	2.7	2.3
Net Profit as a Proportion of Assets					
Scheduled Urban Co-operative Banks	0.5	0.9	0.8	-2.3	-0.6
State Co-operative Banks	-0.4	-0.2	0.3	0.4	N.A.
District Central Co-operative Banks	-0.4	0.1	0.1	0.1	N.A.
Scheduled Commercial Banks	0.8	0.5	0.7	0.5	0.8
Profitable Banks as a Proportion of the Total for the Category					
Scheduled Urban Co-operative Banks	N.A.	N.A.	98.0	94.1	84.6
State Co-operative Banks	N.A.	75.9	79.3	76.7	N.A.
District Central Co-operative Banks	N.A.	67.8	61.6	66.8	N.A.
Scheduled Commercial Banks	89.3	87.6	90.1	85.0	87.6
N.A. Not available.					

6.47 The foregoing analysis, thus, shows that since the introduction of reforms, there has been very little perceptible improvement in either stability or efficiency of co-operative banks. In particular, the asset quality and profitability of scheduled UCBs showed some deterioration in the reform period. Positive impact of reforms, as has been witnessed in the case of commercial banking sector, may take longer to get manifested for co-operative banks given the late start of the reform process in this sector. Unless such a positive scenario evolves for the co-operative banking sector in the near future, the financial health of many of these banks would continue to remain a cause of concern.

6.48 It is significant to note that introduction of reforms and the consequent increase in competition has resulted in some convergence in operations of commercial banks and co-operative banks, especially scheduled UCBs. However, in the face of lower spread, while the

commercial banking sector could maintain its profitable status, scheduled UCBs as a group incurred losses. Furthermore, while most of the loss-making commercial banks are relatively small, in the case of UCBs some of the large banks are incurring losses and this increases the vulnerability of the whole segment.

6.49 Detection of irregularities in a few UCBs in the recent past has raised concerns about the conduct of the management in co-operative banks. Although remedial measures have been taken to limit the contagion effect of such disturbances spreading to other segments of the financial sector, and mechanisms have also been put in place to avoid recurrence of such developments, the current duality of control over co-operative banks is an impediment to effective supervision of such entities. For this purpose, the Reserve Bank has suggested the establishment of a unified supervisory authority for UCBs and the related amendment of the Banking Regulation Act, 1949 is currently under consideration of the Central Government.

6.50 Between 1996-97 and 1998-99, deposits of UCBs grew much faster than those of commercial banks. Co-operative banks are allowed to offer higher interest rates than SCBs on saving and current account deposits. This, coupled with the same deposit insurance protection for co-operative and commercial banks, might have resulted in the higher deposit growth in co-operative banks. Such a situation, however, might create a moral hazard problem since in order to compensate for the higher cost of deposits mobilised by them, co-operative banks could deploy such funds in riskier avenues. Steps such as stricter entry point norms, enhanced internal control and corporate governance norms, effective supervision and increased market discipline through greater disclosure for co-operative banks are required to address the problem.

Development Finance Institutions

6.51 Development finance institutions (DFIs) were set up in the country at various points of time starting from the late 1940s to cater to the medium to long-term financing requirements as the capital market in India had not developed sufficiently. The endorsement of planned industrialisation at the national level provided the critical inducement for establishment of DFIs at both all-India and State-levels. In order to perform their role, DFIs were extended funds in the form of Long-Term Operations (LTO) Fund of the Reserve Bank and Government guaranteed bonds, which constituted major sources of their funds. Funds from these sources were not only available at concessional rates, but also

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on a long-term basis with their maturity ranging from 10-15 years. On the asset side, their operations were marked by near absence of competition.

6.52 The Reserve Bank started monitoring the operations of DFIs in 1990 with a view to taking an integrated view of the operations of financial institutions and commercial banks and for providing a more comprehensive basis for the conduct of monetary and credit policies. DFIs were brought within the supervisory jurisdiction of the Board for Financial Supervision from 1994.

6.53 The main objectives of reforms in the case of DFIs were to impart market orientation to their operations and strengthen them by applying prudential norms. Following reforms in the financial sector, market borrowing allocations of Government guaranteed bonds were gradually phased out for DFIs. Their access to low cost funds of the Reserve Bank was also discontinued. Prudential norms relating to capital adequacy, income recognition, asset classification and provisioning were prescribed in 1994 and were progressively strengthened.

6.54 Notwithstanding withdrawal of two major sources of funds, operations of DFIs were not adversely affected during the early years of the reform, as there were several factors that worked to their advantage. Lending interest rates both for banks and DFIs were deregulated in the early 1990s. However, this was the period when the inflation rate was very high. As a result, interest rates ruled very high. While the marginal cost of funds for DFIs increased sharply, they had the advantage of recycling some of the past concessional borrowings at high rate of interest (DFIs raised funds in the maturity range of 10-15 years but lent on a 5-7 year basis). Taking advantage of flexibility provided to them in the matter of raising and deploying external commercial borrowings, DFIs also raised significant funds from the international market. In view of the booming conditions in the domestic capital market, some of the DFIs could also raise resources successfully both by way of debt and equity at handsome premia. On the asset side, there was a good demand for funds due to acceleration of economic activity in general and industrial sector in particular. This is evident from their sanctions and disbursements, which grew rapidly between 1992-93 and 1997-98 (Table 6.16).

6.55 DFIs also took several steps to reposition themselves and reorient their operations in the competitive environment by offering innovative products and diversifying their activities into new areas of business (such as investment banking, stock broking, custodial services, etc.) so as to harness the

Table 6.16: Sanctions and Disbursements of Select FIs*
(Annual Growth Rate)

Period	Sanctions	Disbursements
	1	2
1991-92	6.8	22.6
1992-93	38.0	26.3
1993-94	42.5	27.9
1994-95	59.7	41.1
1995-96	7.6	9.7
1996-97	-11.2	23.7
1997-98	57.0	35.3
1998-99	7.8	6.9
1999-2000	17.8	16.3
2000-01	15.5	11.3
2001-02	-37.4	-26.5
<i>Memo:</i>	(Annual Average Growth Rate)	
1980-90	21.4	19.9
1990-95	38.0	30.5
1995-2000	15.7	18.4

* Comprising ICICI, IDBI, IFCI and IIBI.

synergies and to reduce the risk arising out of narrow specialisation. DFIs were reasonably successful in diversifying into some non-traditional products, especially fee and commission based business. As a result of all these factors, profitability of DFIs, in general, improved significantly between 1993-94 and 1997-98 (Table 6.17). At the same time, DFIs were subjected to income recognition and provisioning norms from the year ended March 1994.

6.56 Things, however, started changing for DFIs some time in 1998-99. Interest rates started softening gradually in the second half of the 1990s. The industrial sector also started decelerating from 1996-97. This affected DFIs in the following years in two ways. On the one hand, the main business of DFIs was adversely affected as reflected in the slowdown of their sanctions and disbursements (Table 6.16). On

Table 6.17: Ratio of Profit Before Tax to Total Assets
(Per cent)

Year	IDBI	IFCI	ICICI	IIBI
	1	2	3	4
1991-92	2.05	1.45	1.58	5.72
1992-93	1.99	1.68	1.89	5.74
1993-94	2.30	1.39	2.37	0.00
1994-95	2.70	3.05	2.32	0.00
1995-96	2.95	3.32	2.34	0.07
1996-97	2.94	2.65	2.41	2.80
1997-98	3.00	2.17	2.57	3.16
1998-99	1.88	0.10	1.87	2.35
1999-2000	1.42	0.25	2.03	0.92
2000-01	1.02	-1.15	0.79	2.54

Source: Report on Development Banking in India, IDBI (various issues).

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the other hand, it affected the asset quality of DFIs adversely as some of the traditional industries to which DFIs had significant exposures were affected badly both due to high cost of funds borrowed in the past and slowdown of the industrial sector. As a result of liberalisation of trade and industrial sectors, competition in the commodity market increased. While some companies were able to cope with the increased competition effectively, some others were not. This also had an adverse effect on the asset quality of DFIs. In a declining interest rate scenario, high cost of funds raised by DFIs in the past became a cause of concern. As a result, some of the DFIs by exercising call option redeemed the long-term bonds long before their final maturity. Competition on the asset side also increased with some banks stepping up their project finance activity. All these factors significantly impinged on the profitability of DFIs. As DFIs have high NPAs, they would be required to provide for them, which is likely to put a further pressure on their profitability. An idea as to how DFIs were adversely affected both on the asset and the liability sides from the year 1998-99 could be discerned from the parameters as set out in

Table 6.18. Net interest income and net profits declined sharply in the recent years. In tandem with the decline in interest rates, while the ratio of interest expended to total assets declined in the case of banks, it remained almost stagnant in the case of DFIs. Increase in the cost of funds, on the one hand, and lending at very competitive rates on the other resulted in decline in spread and profitability of DFIs.

6.57 While asset quality of DFIs in general deteriorated over the years, some DFIs were affected more than others. Asset impairment of two DFIs, *i.e.*, IFCI and IIBI was significant at above 20 per cent (Table 6.19). Despite decline in profitability and asset quality, DFIs were able to maintain CRAR. However, growing NPAs and declining profitability could also impinge on the capital adequacy of certain DFIs in future.

6.58 A comparison of performance of DFIs with SCBs, based on certain operational and prudential indicators shows that the asset quality of DFIs as a group stood significantly lower than that of the commercial banking sector as at end-March 2002. The ratio of spread to total assets for DFIs was also much

Table 6.18: Important Financial Ratios for Development Finance Institutions*

(Per cent to total assets)

Item	1998-99		1999-2000		2000-01		2001-02	
	DFIs	SCBs	DFIs	SCBs	DFIs	SCBs	DFIs	SCBs
	1	2	3	4	5	6	7	8
Interest Expended	7.6	6.4	7.9	6.3	7.9	6.0	7.6	5.7
Other Operating Expenses	1.2	2.7	1.0	2.5	1.1	2.6	0.6	2.2
Net Interest Income (Spread)	2.3	2.8	1.7	2.7	2.1	2.9	1.3	2.6
Provisions & Contingencies	N.A.	1.0	0.3	1.0	0.6	1.0	0.7	1.2
Net Profit	1.6	0.5	1.4	0.7	1.4	0.5	0.9	0.8
Net NPA**	9.8	7.6	9.7	6.8	8.5	6.2	8.8	5.5

N.A. Not available. * Comprising 10 DFIs (9 in 2001-02). ** As ratio to net loans.

Table 6.19: Financial Institution-wise CRAR and Net NPAs to Net Loans

(Per cent)

Financial Institution	1996-97		1997-98		1998-99		1999-2000		2000-01		2001-02	
	CRAR	Net NPAs*	CRAR	Net NPAs*	CRAR	Net NPAs*	CRAR	Net NPAs*	CRAR	Net NPAs*	CRAR	Net NPAs*
	1	2	3	4	5	6	7	8	9	10	11	12
IDBI	14.7	10.9	13.7	10.1	12.7	12.0	14.5	13.4	15.8	14.8	17.9	13.4
ICICI	13.3	7.8	13.0	7.7	12.5	7.8	17.2	7.6	14.6	5.2	@	@
IFCI	10.0	13.9	11.6	13.6	8.4	20.8	8.8	20.7	6.2	20.8	3.1	22.5
SIDBI	25.7	2.5	30.3	2.0	26.9	1.4	27.8	1.3	28.1	1.2	45.0	3.0
NABARD	40.4	0.9	52.5	1.5	53.3	4.2	44.4	3.5	38.5	0.0	36.9	0.0
EXIM Bank	31.5	14.9	30.5	14.5	23.6	14.5	24.4	8.4	23.8	8.2	33.1	7.4
IIBI	10.6	19.3	12.8	13.1	11.7	14.0	9.7	16.7	13.9	22.9	13.6	24.1
Memo: SCBs	10.4	8.1	11.5	7.3	11.3	7.6	11.1	6.8	11.4	6.2	11.9	5.5

@ Merged with ICICI Bank.
* As per cent of net loans.

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lower than that of banks. The profitability of DFIs declined in recent years, in contrast with the profitability of SCBs, which showed a considerable improvement (Table 6.18). Thus, on the whole, financial performance of DFIs has been adversely affected in the post-reform period, though they have been able to maintain comfortable capital position.

6.59 DFIs were set up with the specific objective of meeting the medium to long-term requirement of funds. However, DFIs in the present form are finding it difficult to sustain their operations. Their business has slowed down and their operations have become less profitable. This has raised issues relating to the viability of DFIs. It is not clear, however, whether the perceived lack of viability emanates from the structural constraints under which they operate or simply from the legacy of the past.

6.60 The Narasimham Committee II (1998) had recommended that DFIs should, over a period of time, convert themselves into banks or NBFCs. There would then be only two forms of intermediaries, *i.e.*, banks and NBFCs. The Reserve Bank in the Discussion Paper released in January 1999 indicated that DFIs should have the freedom to retain their status and specialise in their own activities. However, if a DFI chooses to become a bank, that option should also be available. In response to interest evinced by DFIs, the Reserve Bank issued guidelines setting out various operational and regulatory parameters that need to be complied with by DFIs if they are to become banks. ICICI, one of the major DFIs, along with two of its subsidiaries has recently merged with the ICICI Bank. However, to fill the void being created by the disappearance of DFIs, urgent steps are required to be taken to develop the private corporate debt market and introduce appropriate instruments to reduce the risk arising out of long-term financing by other players such as banks.

Non-Banking Financial Companies

6.61 Non-Banking Financial Companies (NBFCs) in India offer a wide variety of financial services and play an important role in providing credit to the unorganised sector and to small borrowers at the local level. NBFCs are of various types such as equipment leasing companies, hire purchase companies, loan and investment companies *etc.* In terms of relative importance of various activities financed by NBFCs, hire-purchase finance is the largest activity, accounting for over one-third of their total assets, followed by

loans and inter-corporate deposits, equipment leasing and investment. In terms of public deposit taking activities, Residuary Non-Banking Companies (RNBCs), which have certain similarities with banks in terms of their asset composition, hold the largest deposits.

6.62 Though NBFCs in India have existed for long, there was a sudden proliferation of such entities between the late 1980s and the mid-1990s. While, on an average basis, deposits of NBFCs as a proportion of bank deposits were 0.8 per cent during 1985-86 to 1989-90, they shot up to 9.5 per cent by 1996-97. This sharp jump in NBFC deposits was mostly on account of the high rates of interest offered on such deposits.

6.63 Although NBFCs were regulated by the Reserve Bank, the focus was mainly on the liability side. Given the lack of adequate regulation and supervision mechanism for most types of NBFCs, funds mobilised by many such companies were deployed into unsustainable uses. In 1994, prudential regulations as prescribed for commercial banks were extended to NBFCs. However, keeping in view various systemic issues, the need was felt for further strengthening of the regulatory and supervisory framework for NBFCs. Accordingly, the Reserve Bank (Amendment) Act enacted in 1997 conferred extensive powers on the Reserve Bank for regulation and supervision of NBFCs. Given the immense diversity among NBFCs, norms were strengthened particularly for public deposit taking and systemically important NBFCs. As against the uniform CRAR of 8 per cent across all NBFCs earlier, the CRAR requirement now ranges between 12-15 per cent depending on the principal line of business activity of an NBFC.

Parameters Relating to Stability (Capital Adequacy and Asset Quality)

6.64 Distribution of NBFCs in terms of the level of CRAR maintained by them indicates that compliance with CRAR requirement has generally improved since 1998 (Table 6.20). Apart from capital adequacy ratio, two other ratios, *viz.* the ratio of public deposits to net owned funds and public deposits to total assets were also examined with a view to assessing the stability of the sector. The public deposits to net owned funds ratio of NBFCs declined considerably between 1998 and 1999 and has remained generally stable since then. The public deposits to assets ratio, on the other hand, declined continuously from 1998 (Table 6.21).

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Table 6.20: Capital Adequacy Position of NBFCs

CRAR Range (per cent)	As at end-March			
	1998*	1999	2000	2001
	1	2	3	4
Number of NBFCs				
Less than 12	98	88	33	61
12-15	17	18	7	8
Above 15	390	571	559	645
Total	505	677	599	714
As percentage of Total				
Less than 12	19.4	13.0	5.5	8.5
12-15	3.4	2.7	1.2	1.1
Above 15	77.2	84.3	93.3	90.3

* As at end-September.

Note: Including Residuary Non-banking Companies.

6.65 Information regarding the extent of NPAs in the NBFC sector was not available on a consistent basis. However, according to the limited information available, the asset quality of NBFCs deteriorated in the late 1990s. This was evident from supervisory returns submitted by around 50 NBFCs, according to which the NPAs of such entities as proportion of total assets, which were 7.1 per cent as at end-September 1998, increased to 9.3 per cent as at end-March 1999.

Parameters Relating to Efficiency

6.66 Consolidated information on financial performance of NBFCs was available for only three years and, therefore, it was difficult to draw any firm conclusion about the impact of the reform measures. There are, however, indications that the reform process has not as yet resulted in any noticeable improvement in the operational efficiency of NBFCs. In fact, profitability position showed some signs of deterioration in recent years (Table 6.22).

Table 6.21: Public Deposits of NBFCs

	As at end-March			
	1998	1999	2000	2001
	1	2	3	4
Public Deposits to Net Owned Funds Ratio	1.6	1.2	1.3	1.3
Public Deposits to Assets Ratio	39.0	27.2	20.8	17.2

Note: Excluding Residuary Non-banking Companies.

Table 6.22: Operating Expenditure and Net Profit

	(As per cent to total assets)		
	1998-99	1999-2000	2000-01
	1	2	3
Operating Expenditure	3.0	4.0	3.1
Net Profit	0.3	0.3	-0.9

Note: Excluding Residuary Non-banking Companies.

6.67 In recent years, operations of NBFCs witnessed significant changes especially on the liability side. With the tightening of regulations, many of the NBFCs with insufficient capital base have been weeded out. This combined with the tightening of regulations for raising deposits resulted in reduction in size of this sector. Although the definition of public deposits of NBFCs has been revised and no strict comparison is possible between deposits of NBFCs before and after 1998, there are clear indications of a sharp decline in the relative importance of NBFC deposits. The ratio of NBFC deposits to total bank deposits declined from the peak of 9.5 per cent in 1996-97 to 1.1 per cent in 2000-01. Public deposits of NBFCs including RNBCs as at end-March 1998 were just 19 per cent of the total deposits and 45 per cent of the regulated deposits of NBFCs as at end-March 1997.

6.68 It is significant to note that between 1988-89 and 2000-01, considerable changes were noticed in the share of different types of NBFCs in total public deposits held by them. While the shares of RNBCs and hire purchase finance companies increased significantly, those of loan and investment companies fell sharply. RNBCs were the only category of NBFCs whose public deposit increased in absolute terms between 1998 and 2001. As on March 31, 2001, RNBCs accounted for over 30 per cent of the assets and nearly two-thirds of the public deposits of the NBFC sector, while their net owned fund was negative. RNBCs have important systemic implications, given their large size.

6.69 The decline in deposits of NBFCs in the recent years, however, was not captured by the banking sector in a significant way. This was evident from the average annual growth rate of bank deposits, which after the tightening of norms for NBFCs (i.e., 1998-2001) increased only marginally in comparison with the period prior to the introduction of such norms.

6.70 The decline in the deposits of NBFCs should not be a matter of concern as in several other countries public deposit is generally not a significant

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source of funding for NBFCs. As the share of deposits declined, other sources of funds, especially borrowing from banks, market borrowings, borrowings from the Government and inter-corporate borrowings emerged as major sources of funding for NBFCs. As a result of changes in the financing pattern of NBFCs, their cost of funds also increased. High cost of funds could induce NBFCs into excessive risk-taking and may, thereby, result in adverse selection. Deposit insurance, as has been suggested in some quarters, may reduce the risk premium demanded by depositors and may, therefore, reduce some cost of funds for these companies. However, the extension of deposit insurance to NBFCs could create a serious moral hazard problem that might be difficult to tackle.

6.71 While NBFCs may not have much control over the cost of funds, they can improve their profitability by operating more efficiently. The operating cost of NBFCs as a group increased in the recent years as indicated earlier. In fact, their operating cost stood much higher than that of even co-operative banks. Therefore, NBFCs need to make concerted efforts to reduce their high operating expenses.

6.72 As NBFCs provide important services in certain niche areas of the financial sector, improvement in the efficiency of these entities is of crucial importance. The Reserve Bank continues to pursue with various State Governments the case for enacting legislation for protection of interest of depositors in financial establishments. Creating public awareness about activities and risk-profile of NBFCs is yet another important area, which needs to be focussed upon even as an extensive publicity campaign has already been taken up using the print and electronic media to educate the depositors. Improvement in corporate governance practices and financial disclosures by NBFCs also need to be focused upon in future.

Insurance

6.73 Insurance has been an important part of the Indian financial system. Until recently, insurance services were provided by the public sector, *i.e.*, life insurance by the Life Insurance Corporation of India since the mid-1950s, and general insurance by the General Insurance Corporation (GIC) and its four subsidiaries since the 1970s. The insurance industry was opened up to the private sector in August 2000. The primary objective of liberalisation in the insurance sector was to deepen insurance penetration by enlarging consumer choices through product

innovation. After opening up of the insurance sector, 12 new companies have entered the life segment and 9 companies in the non-life segment. The increased competition led to rapid product innovations for catering to the diverse requirements of the various segments of the population. Besides statutory commitments in respect of weaker sections of society, competitive pressures are pushing life insurers to adopt innovative marketing strategies to extend insurance penetration, especially targeting lower income groups.

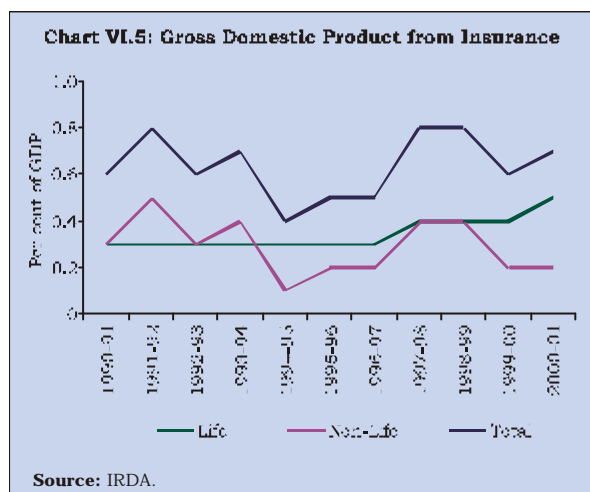
6.74 The size of the insurance sector, which stagnated around 0.6 per cent of GDP during the 1980s and the 1990s, accelerated in recent years as the existing insurers endeavoured to retain their market share, while new players attempted to establish themselves (Table 6.23 and Chart VI.5).

6.75 The share of insurance sector in household financial savings moved up from 7.6 per cent during the 1980s to 10.1 per cent during the 1990s and further to about 12 per cent during 2000-01. However, the insurance penetration (*i.e.*, the share of premium as percentage of GDP) in India remained low at 2.3

Table 6.23: Insurance Business: Summary Statistics

	(Rs. crore)	
	2000-01	2001-02
	1	2
Life Insurance		
Premium	36,070	50,094
<i>Of which:</i> Private Insurers	7	273
Total Investments	1,94,010	2,46,869
<i>Of which:</i> Government & Other Approved Securities	1,00,037	1,32,177
Other than Approved Investments	18,584	16,521
General Insurance		
Gross Direct Premium Income	10,087	12,383*
<i>Of which:</i> Private Insurers	7	466
Total Investments	24,462	26,373
<i>Of which:</i> Government & Other Guaranteed Securities	7,703	15,910
Other than Approved Investments	3,761	2,972
* Excluding GIC.		
Source: IRDA.		

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per cent as at end-March 2000 in comparison with the world average of 7.8 per cent and the emerging market average of 3.2 per cent.

6.76 The opening up of the insurance sector is expected to lead to increased competition and innovations in financial products. Insurance products compete with other saving products such as bank term deposits and small savings. Many of the new insurance products, especially unit-linked insurance/pension schemes, now bear a close resemblance to mutual funds. While the yield on life insurance products, in the range of 7.15 per cent to 9.46 per cent during the 1990s, was normally much lower than other long-run investments, this was compensated by the insurance cover and tax benefits. As new players join the fray, the competition in respect of various financial products is expected to go up in the near future.

6.77 The expansion of the insurance industry has a special significance in that it creates a demand for long-term Government paper, especially as Government securities accounted for 52.2 per cent of the life investment as at end-March 2002. This could ease the fiscal constraint on monetary policy in two ways, *i.e.*, by enlarging the pool of institutional investors in the Government securities market and by according the Reserve Bank the necessary flexibility to enlarge the maturity profile of public debt.

6.78 The key policy challenge, at this stage, is to ensure the financial stability of the new insurers, while at the same time encouraging entrepreneurship, product innovation and increasing insurance penetration especially in rural and semi-urban areas.

There is, therefore, a case for gradually replacing across-the-board capital requirements with capital stipulations linked to the risk and claims characteristics of a particular line of business as is the practice in some advanced countries as recommended by the Advisory Group on Insurance Regulation (2001). This would increase the number of players and product innovation. Also, while the present statutory stipulations are adequate, there is a need to explore the possibilities of linking prudential norms to the size of the balance sheet, especially in terms of capital adequacy norms (IRDA, 2002). Presently, insurers are mainly offering insurance schemes, which are based on assured returns. This is fraught with serious risks, especially when interest rate scenario/market condition changes. In order to stave off the risks associated with assured returns schemes, insurers need to shift to unit-linked insurance schemes based on the market rates of return. While the joint ventures formed by new insurers with entities, including banks and NBFCs, having a large branch/dealer network, minimise establishment costs, the contagion risks also get amplified in the process. This would require close co-ordination among the regulating agencies.

Mutual Funds

6.79 The Unit Trust of India (UTI), set up in 1964, was the only mutual fund in the country until 1987-88 when a public sector bank-sponsored mutual fund was established. The mutual fund industry expanded in the 1990s after it was opened to the private sector in 1993. A large number of mutual funds (37 as at end-March 2002) operating in the country has intensified competition and led to product innovation. Mutual funds presently offer a variety of options to investors such as income funds, balanced funds, liquid funds, gilt funds, index funds, exchange traded funds, sectoral funds, *etc.* In all, there were 417 schemes (as at end-March 2002) in operation to cater to diverse investor needs.

6.80 Despite increase in the number of mutual funds and the schemes operated by them, net resource mobilisation by mutual funds decelerated sharply during 1990-2002 (with the average annual growth rate being 13.0 per cent) in comparison with the 1980s (71.1 per cent). Net resource mobilisation in relation to GDP also declined sharply from 1.7 per cent in 1991-92 to 0.4 per cent in 2001-02 (Table 6.24). Their share in household savings also declined to 1.3 per cent in 2000-01 from 5.5 per cent in 1993-94. Total assets under management of all mutual funds also witnessed a similar trend.

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Table 6.24: Resources Mobilised/Assets under Management by Mutual Funds*

Year	Resources Mobilised (Rs. crore)	Assets under Management (Rs. crore)	Resources Mobilised (% of GDP)	Assets under Management (% of GDP)
	1	2	3	4
1991-92	11,253	–	1.72	–
1992-93	13,021	–	1.74	–
1993-94	11,243	–	1.31	–
1994-95	11,275	–	1.11	–
1995-96	-5,833	–	-0.49	–
1996-97	-2,037	–	-0.15	–
1997-98	4,064	–	0.27	–
1998-99	2,695	68,193	0.15	3.88
1999-2000	22,117	1,07,946	0.15	5.59
2000-01	11,135	90,587	0.53	4.30
2001-02	8,024	1,00,594	0.35	4.38

* Including UTI.

6.81 The sharp deceleration in the growth of mutual funds in the 1990s and early 2000s could be attributed partly to relatively poor performance of the stock market (the BSE Sensex during 1990-2002 on an average increased by 17.5 per cent per annum as compared with 22.4 per cent per annum during the 1980s) and partly to withdrawal of tax benefits under Section 80M of the Income Tax Act. Another major factor which appeared to have contributed to the deceleration was the problem with assured return schemes and US-64 of UTI.

6.82 Some of the mutual funds had offered assured return schemes. While these assured return schemes enabled them to mobilise large resources, a number of mutual funds faced difficulties in meeting their redemption obligations relating to such schemes. In several cases, the sponsors of mutual funds had to infuse additional funds to meet the shortfall. As a result, mutual funds, by and large, discontinued the floatation of assured return schemes, which had some dampening effect on the resource mobilisation by mutual funds. While most of the mutual funds were somehow able to meet their commitments on account of assured return schemes, UTI faced a somewhat different problem on two different occasions between October 1998 and July 2001. US-64, which was the flagship scheme of UTI and enjoyed the investors' faith, first faced problem in December 1998 when the reserves under the scheme were reported negative. In July, the original corpus of US-64 scheme had been eroded to the extent of over Rs.1,000 crore. In order to restore investors' confidence, several measures were initiated by the Government/UTI. While these helped the US-64 to make a turnaround, the problem resurfaced again in July 2001 when UTI slashed down the dividend

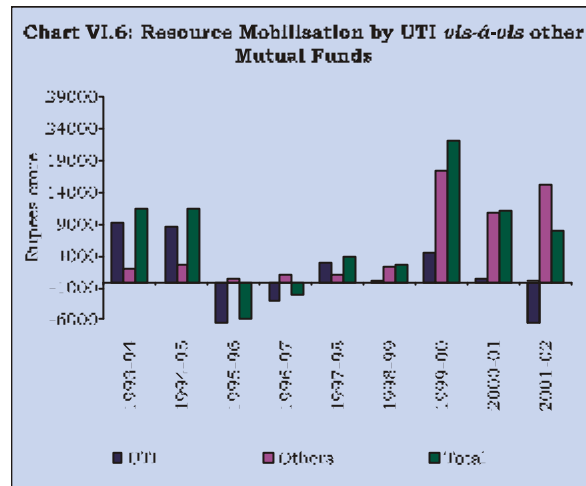
rate for the year 2000-01 and suspended sales and repurchases of US-64 for a period of six months from July 2001 to December 2001. This created a crisis of confidence and to restore investors' confidence various measures were initiated, which culminated in splitting the UTI into two parts, i.e., UTI-I and UTI-II.⁵

6.83 The problem with US-64 scheme of UTI adversely affected the resource mobilisation by mutual funds in general and UTI in particular (Table 6.25 and Chart VI.6). On both the occasions when UTI faced difficulties, while resource mobilisation by UTI declined sharply, private sector mutual funds were able to fill

Table 6.25: Net Resource Mobilisation by Mutual Funds

(Rs. crore)

Year	UTI	Public Sector	Private Sector	Total
	1	2	3	4
1993-94	9,297	387	1,560	11,243
1994-95	8,611	1,342	1,322	11,275
1995-96	-6,314	348	133	-5,833
1996-97	-3,043	143	864	-2,037
1997-98	2,875	440	749	4,064
1998-99	170	459	2,067	2,695
1999-2000	4,548	631	16,937	22,117
2000-01	322	1,521	9,292	11,135
2001-02	-7,284	1,330	13,977	8,024



5 The UTI-I comprises US-64 for which assured repurchase prices have been announced and all other assured returns scheme and would be managed by a Government-appointed administrator with the Government meeting all obligations annually to cover any deficit. The UTI-II comprises all NAV-based schemes, managed by a professional Chairman and Board of Trustees and will be disinvested in the future. Since UTI-II would not be subject to any redemption guarantees or assured returns schemes, its transactions could be based on the market perception of its fund managers and the management.

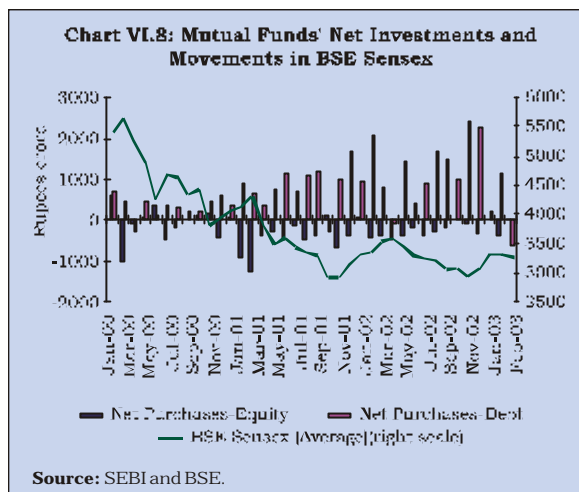
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the gap created by UTI only partially as overall mobilisation by all mutual funds on both the occasions declined sharply after the occurrence of the problem. During 1998-99, resource mobilisation declined by 33.67 per cent in comparison with 1997-98 (UTI faced problem first in October 1998) and by 27.9 per cent in 2001-02 in comparison with 2000-01 (UTI faced problem again in July 2001). During 2002-03 (April-September), net outflow of resources from UTI was more or less offset by net inflows into private sector mutual funds and thus, private sector mutual funds were able to fill the gap created by UTI.

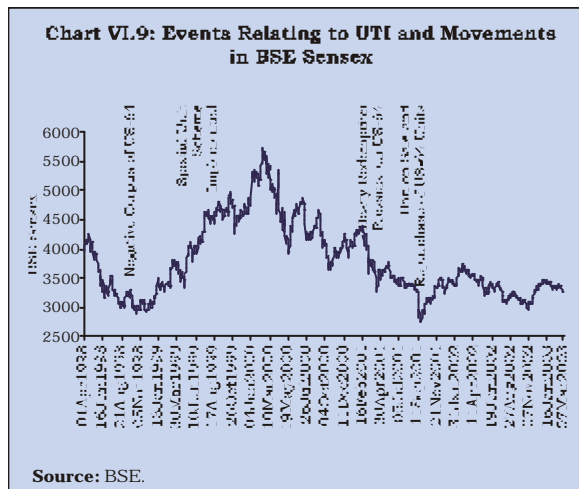
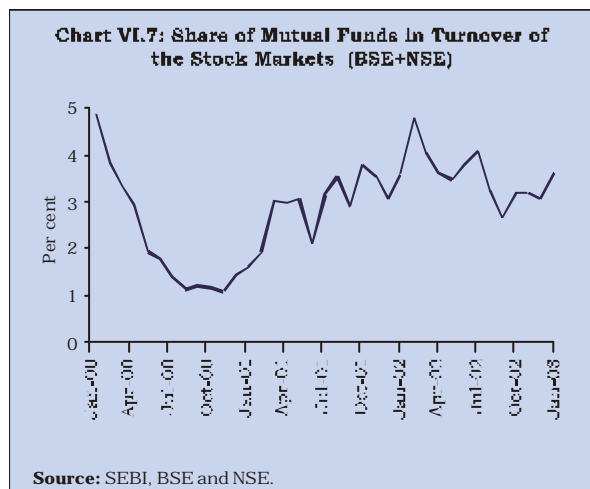
Role of Mutual Funds in the Stock Market

6.84 Mutual funds are an ideal vehicle for investment by retail investors in the stock market for several reasons. First, it pools the investments of small investors together increasing thereby the participation in the stock market. Secondly, mutual funds, being institutional investors, can invest in market analysis generally not available or accessible to individual investors, providing thereby informed decisions to the small investors. Thirdly, mutual funds can diversify the portfolio in a better way as compared with individual investors due to the expertise and availability of funds.

6.85 Mutual funds in India, because of their small size and slower growth in the recent past, have tended to play only a limited role in the stock market. The share of mutual funds in total turnover of the stock markets (BSE+NSE), which was 4.9 per cent in January 2000, declined to 3.6 per cent by January 2003 (Chart VI.7). One of the reasons for the decline in the share of mutual funds in the turnover was that in the recent past, mutual funds shifted the portfolio composition from equity to debt due to subdued equity market conditions (Chart VI.8).



6.86 In view of small size of their operations, mutual funds in normal times hardly exert any influence on the stock market. This is evident from the correlation coefficient between net purchases of equities by mutual funds and the BSE Sensex during the period from February 4, 2000 to February 7, 2003, which worked out to an insignificant -0.02. Nonetheless, major developments concerning mutual funds do exert significant influence on the sentiment. It can be seen from Chart VI.9 that negative developments at UTI such as reporting of negative corpus for US-64 in October 1998, heavy redemption pressure on US-64 and ban on sale and repurchase of US-64 units in July 2001 resulted in decline in the BSE Sensex. On the other hand, positive developments like implementation of special unit scheme and announcement of positive corpus for US-64 were associated with general uptrend in the equity prices.



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6.87 Mutual funds are very popular all over the world and they play an important role in many countries. As at end 2001, there were about 52,735 open-ended mutual fund schemes in operation in the world with a total asset base of US \$ 1,094 billion. Despite a long history, assets of mutual funds in India constitute less than 5 per cent of GDP which is very low in comparison with about 25 per cent in Brazil and 33 per cent in Korea. (Table 6.26).

Table 6.26: Ratio of Assets of Open-end Funds to GDP

Country	(Per cent)		
	1999	2000	2001
	1	2	3
Brazil	22.17	25.01	25.24
Denmark	15.83	20.24	18.88
Korea	41.17	23.97	32.46
India	2.92	2.98	—
UK	66.52	61.76	48.68
USA	73.82	70.89	63.62

Source : Compiled from Mutual Fund Factbook, 2002.

6.88 One of the major reasons for this is that the penetration of mutual funds, especially in the rural areas remains small. According to the survey carried out by SEBI-NCAER (2000), mutual funds have been found to be popular mainly with the middle and high-income groups and have not been found to be an attractive investment avenue for the low-income groups. Thus, if mutual funds have to grow fast, they would need to devise appropriate schemes to attract the saving of low-income groups, especially in rural areas. This is the only way to ensure participation of all categories of investors into the capital market, which is so crucial for its long-term development. Mutual funds with large funds at their disposal are also required to act as a counterweight to FIIs, which generally exerts a significant influence on the stock market.

6.89 To sum up, financial sector reforms introduced since the early 1990s have brought about a significant improvement in the financial system. The commercial banking sector, which constitutes the most important segment, has witnessed a remarkable improvement both in stability and efficiency parameters such as capital position, asset quality, spread and overall profitability. It is significant to note that the improvement was noticed in respect of all bank groups. However, the empirical evidence does suggest that public ownership impinged on the efficiency of the banking sector. This was evident from the fact that old private sector banks and those PSBs, which divested their equity recently, outperformed fully government-owned banks, although significant improvement was observed in the performance of fully Government-owned banks

in the recent years. There is a feeling in some quarters that stability measures impinge on the efficiency of the banking sector. However, in the context of the Indian banking sector, various measures introduced to enhance the stability of the Indian banking system have not adversely affected their efficiency. In fact, stability and efficiency measures were found to be mutually reinforcing and complimentary.

6.90 In respect of other intermediaries, however, the impact of reforms was not so perceptible. In the case of co-operative banks, no significant improvement was observed either in the stability or efficiency parameters, except that state co-operative banks and District central co-operative banks, which were incurring losses, turned around and made some profits. The performance of scheduled urban co-operative banks in terms of asset quality and profitability deteriorated in the recent years. One reason for this appears to be that the reform process for co-operative banks started much later than the commercial banking sector and that too in a phased manner. It may, therefore, take some more time for the reforms to have their impact.

6.91 While there was some improvement in the stability parameters (capital and assets quality) of DFIs as a group, the asset quality of some of the DFIs was seriously impaired. Profitability of DFIs, in general, also declined. The decline in their profitability was due to increased competition on the asset side and increased cost of funds on the liability side after assured sources of funds were withdrawn. Thus, insofar as DFIs are concerned, overall there has been some deterioration in efficiency parameters. Reforms have been successful in increasing the competition in the insurance sector and mutual fund industry. In the case of mutual funds, while the reforms have been successful in creating a competitive environment, the growth of mutual funds slowed down sharply partly due to depressed market conditions and partly due to the problem faced by UTI. Reforms in the insurance sector, which are of recent origin, have also been successful in enhancing competition even as the impact of increased competition on insurance penetration is yet to be felt. Thus, insofar as financial intermediaries are concerned, reforms have had a mixed impact. While reforms have brought about significant improvement in respect of commercial banks, the impact was not so perceptible in respect of co-operative banks and non-bank financial intermediaries

III. FINANCIAL MARKETS: AN ASSESSMENT OF REFORMS

6.92 A major objective of reforms in the financial sector was to develop various segments of the financial market, viz., the money market, the Government securities market, the foreign exchange

market and the capital market. Another important objective of reforms in financial markets was elimination of segmentation across various markets in order to smoothen the process of transmission of impulses across markets, easing the liquidity management process and making resource allocation process more efficient across the economy. The strategy adopted for meeting these objectives involved removal of restrictions on pricing of assets, building the institutional structure and technological infrastructure, introduction of new instruments, and

fine-tuning of the market microstructure. The market development efforts were supported by appropriate changes in the legal framework to remove structural rigidities and improvements in the regulatory design to ensure smooth functioning of markets. Aiming at widening and deepening of financial markets, new players and instruments were introduced (Box VI.4). This section assesses the impact of reforms on various market segments in terms of parameters such as liquidity, volatility, efficiency and integration of various segments.

Box VI.4

Financial Markets - Reform Measures

Since the early 1990s, various measures were initiated in all segments of financial markets aimed at improving depth and liquidity in the markets. The reforms also emphasised on improving the transparency and efficiency of the markets. The key reform measures undertaken in different market segments are briefly presented below.

Money Market

- A ceiling of 10 per cent on call money rates imposed by the Indian Banks Association was withdrawn in 1989.
- Initially, the participation in the call market was gradually widened by including non-banks, such as, financial institutions, non-banking finance companies, primary/satellite dealers, mutual funds, corporates (through primary dealers), etc. The process of transformation of call money market to a pure inter-bank market commenced effective May 2001.
- The 182-day treasury bills were introduced effective November 1986, followed subsequently by phasing out of on-tap treasury bills, introduction of auctioning system in 91-day treasury bills since January 1993, and introduction of 14-day and 364-day treasury bills. The system of *ad hoc* treasury bills (with a fixed 4.6 per cent interest rate since July 1974), which were issued by the Central Government to the Reserve Bank, was abolished effective April 1997. Currently only the 91-day and 364-day treasury bills exist.
- The Discount and Finance House of India (DFHI) was set up in April 1988, and was allowed to participate in the call/notice money market both as a borrower and lender commencing from July 1988.
- Several new financial instruments were introduced, such as inter-bank participation certificates (1988), certificates of deposit (June 1989), commercial paper (January 1990) and repos (December 1992).
- Derivative products like forward rate agreements and interest rate swaps were introduced in July 1999 to enable banks, FIs and PDs to hedge interest rate risks.
- A full-fledged Liquidity Adjustment Facility was introduced on June 5, 2000 with a view to modulating short-term liquidity under diverse market conditions.
- With a view to adopting the sound risk management procedures and eliminating counter-party risk, the Clearing Corporation of India Ltd. was set up on February 15, 2002. The CCIL acts as a central counter-party to all trades

involving foreign exchange, government securities and other debt instruments routed through it and guarantees their settlement.

- The segment refinance facility for banks is gradually being phased out.

Government Securities Market

- New auction-based instruments were introduced with varying maturities such as 364-day, 182-day, 91-day and 14-day treasury bills and the zero coupon bond. The auction system was also introduced for Government of India dated securities. An innovative feature of 'part payment' was added to the auction of Government of India dated securities.
- In the long-term segment, Floating Rate Bonds (FRBs) benchmarked to the 364-day treasury bill yields and a 10-year loan with embedded call and put options exercisable on or after 5 years from the date of issue were introduced.
- A system of Primary Dealers (PDs) was made operational in March 1996.
- Foreign Institutional Investors (FIIs) were allowed to set up 100 per cent debt funds to invest in Government (Central and State) dated securities in both primary and secondary markets.
- The system of automatic monetisation of budget deficit through *ad hoc* treasury bills which hampered the development of the market was phased out over a period of three years from 1993-94 to 1996-97 and was replaced by the system of Ways and Means Advances (WMA) with effect from April 1, 1997.
- The Delivery-versus-Payment system (DvP) was introduced in 1995 for the settlement of transactions in Government securities. A screen-based trade reporting system with the use of VSAT communication network complemented by a centralised Subsidiary General Ledger (SGL) accounting system was put in place.
- The Negotiated Dealing System (NDS) (Phase I) was operationalised in February 2002 to enable on-line electronic bidding facility in the primary auctions of Central/State Government securities, OMO/LAF auctions, screen-based electronic dealing and reporting of transactions in money market instruments, including repo and to facilitate information on trades with minimal time lag.
- Since timely flow of information is a critical factor in evolving the efficient price discovery mechanism, improvements were

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- brought in transparency of operations and data dissemination.
- A practice of pre-announcing a calendar of treasury bills and government securities auctions to the market was introduced.
- Retail trading in Government securities at select stock exchanges commenced in January 2003.

Foreign Exchange Market

- The current account was gradually made convertible leading to the acceptance of obligations under Article VIII of the IMF. The exchange rate, which was pegged to a basket of currencies, was made market-determined in a phased manner. Several transactions in the capital account were also gradually liberalised over the years.
- In line with the liberal policy environment of the 1990s, the Foreign Exchange Regulation Act, 1973 (FERA) was replaced by the Foreign Exchange Management Act (FEMA) in 1999.
- Banks were given increased freedom for operating in the forex market. These related to the following: (a) freedom to fix overnight position limit and gap limits approved by RBI, replacing the system of across-the-board or RBI-prescribed limits; (b) freedom to initiate trading position in the overseas market; freedom to borrow (up to 25 per cent of Tier I capital or up to US \$ 250 million, whichever is higher) or freely invest funds in the overseas market; (c) freedom to determine the interest rates (subject to a ceiling) and maturity period of Foreign Currency Non-Resident (FCNR) deposits (not exceeding three years); (d) freedom to use derivative products for asset-liability management.
- Corporates were allowed to undertake active hedging operations by resorting to cancellation and rebooking of forward contracts, book forward contracts based on past performance without having to produce documents endorsing a forex exposure, use foreign currency options and variations thereof like range forwards and ratio range forwards. They can access a range of products including Foreign Currency-Rupee Swap to manage longer-term exposures arising out of External Commercial Borrowings.

Capital Market

- With the repeal of the Capital Issues (Control) Act, 1947, companies were given freedom to price their issues. The book-building process in the new issue of capital was introduced with a view to further strengthen the price discovery process.

- In the secondary market, the floor-based open outcry trading system was replaced by electronic trading system in all the stock exchanges.
- The account period settlement system was replaced by rolling settlement, thus, reducing the scope for speculation. The rolling settlement cycle was shortened from T+5 to T+3 with effect from April 1, 2002. This process was enabled by a shift to electronic book entry transfer system through depository mechanism.
- The risk management system was made more comprehensive with trading members being subject to margins based on trading volumes and some other parameters and exposure norms based on the capital deposited with the exchange. The mark-to-market margins based on 99 per cent value at risk were introduced to capture the risk profile of trading members.
- The Indian companies were allowed to raise funds from abroad, through American/Global Depository Receipts (ADRs/GDRs), foreign currency convertible bonds (FCCBs) and external commercial borrowings (ECBs). The Reserve Bank allowed two-way fungibility of ADRs/GDRs in February 2002.
- Foreign institutional investors (FIIs) were allowed to participate in the capital market.
- For strengthening the process of information flows from the listed companies, several measures were introduced: (i) while sufficient disclosures are mandatory for the companies at the stage of public issue, the listed companies are also required under the listing agreement to make disclosures on a continuing basis; (ii) for ensuring quick flow of information to the public, the decision pertaining to dividend, bonus and right announcements or any material event are now required to be disclosed to the public within 15 minutes of the conclusion of the board meeting in which the decisions are taken; (iii) the accounting practices were streamlined with norms introduced for segment reporting, related party transactions and consolidated balance sheets.
- Insider trading was made a criminal offence. The regulations governing substantial acquisition of shares and takeovers of companies were also introduced aimed at protecting the interests of minority shareholders by making the takeover process more transparent.
- For providing market participants instruments for hedging and risk management, several types of derivative products on equities were introduced. Non-transparent products like 'badla' were banned.

Money Market

6.93 The money market forms an important part of the financial system by providing an avenue for equilibrating the surplus funds of lenders and the requirements of borrowers for short periods ranging from overnight up to a year. It also provides a focal point for central bank's intervention for influencing the liquidity in the financial system and thereby transmitting the monetary policy impulses.

6.94 Traditionally, the money market in India

comprised mainly the call money market. Although other money market segments, viz., commercial bills market and inter-corporate deposits market have been in existence for a long time, there has not been much activity in these segments. Therefore, for assessing the impact of reforms on the money market the focus is mainly on the call money market. The impact of reforms is assessed in terms of behaviour of the call money market and the market growth related parameters, including those instruments, which were introduced in the 1990s.

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Call/Notice Money Market

6.95 The call money market, which deals in overnight funds, is a key segment of the money market in India. Funds for 2-14 days are termed as notice money. Various reform measures initiated in this segment have resulted in more orderly conditions and increased liquidity.

6.96 In the initial phase of money market reforms in the late 1980s, considerable volatility was noticed in the call rate, resulting primarily from a free call money market while interest rates in other segments of the money market remained regulated. As a result, any fluctuation in the liquidity conditions impinged on the call money market.

6.97 The call money market during the 1990s witnessed orderly conditions barring a few episodes of volatility (Chart VI.10). The call rates first came under pressure in May 1992 when they touched a peak of 35.3 per cent, essentially reflecting liquidity tightness due to high levels of statutory preemptions and withdrawal of all refinance facilities except for export credit refinance. After witnessing tranquil conditions during July 1992-December 1994, the call money market came under pressure again during 1995-96. The call rate touched a peak of around 35.0 per cent in November 1995, largely mirroring turbulence in the foreign exchange market. To stabilise the market, the Reserve Bank injected liquidity through reverse repos, enhanced banks' refinance facilities against Government securities and reduced the CRR. The call rate softened to a single digit level thereafter till December 1997. However, the call rate hardened again and touched a high of around 29 per cent, in January 1998, reflecting the mopping up of money market liquidity by the Reserve Bank to squelch the

pressure in the foreign exchange market. During 1999-2000, the inter-bank call money rates ruled steady within a narrow range, excepting few bouts of volatility, primarily attributable to the unanticipated demand for reserves by commercial banks.

6.98 Thus, excepting a few episodes of volatility, conditions in the call money market remained stable in the 1990s. The full-fledged Liquidity Adjustment Facility (LAF), which was introduced on June 5, 2000, with a view to modulating short-term liquidity under diverse market conditions, has emerged as an effective instrument to provide a corridor for the overnight call rate movement. This has resulted in stability and orderly market conditions through clear signalling (Chart VI.11). The LAF (as explained in Chapter V) combined with strategic open market operations (OMOs) has since been used to signal the monetary stance by removing shortfalls and excesses of liquidity in the system so as to keep the short-term interest rates reasonably stable.

6.99 The level of weighted average call money borrowing rates declined from around 7.5 per cent in April 2001 to 5.7 per cent in February 2003. The LAF has also enabled a reduction in the volatility in call rates (measured by coefficient of variation) from 85.7 per cent during 1997-98 to 7.6 per cent during 2002-03 so far (April to February).

6.100 The call/notice money market essentially serves the purpose of equilibrating the short-term liquidity position of banks and other participants. The turnover in the call/notice money market depends on the amount of surplus funds available with some participants and the requirements of funds by some other participants. Over the years, the number of participants in the market has gradually increased to include banks and Primary Dealers both as lenders and borrowers, and select

Chart VI.10: Behaviour of Call Rates (Monthly Average)

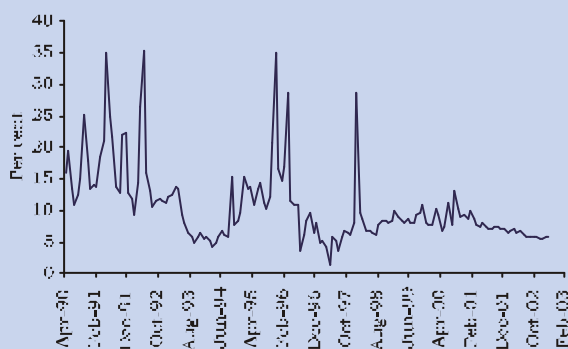
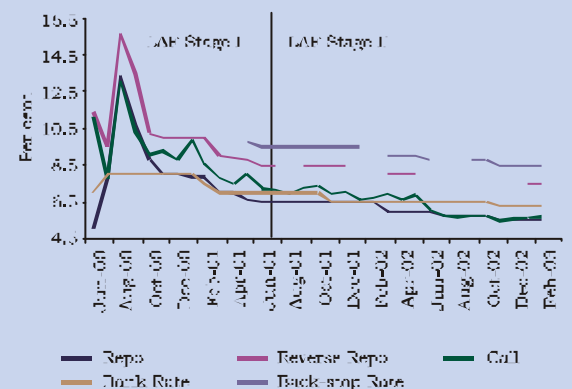


Chart VI.11: Evolution of Liquidity Adjustment Facility



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mutual funds, insurance companies, development financial institutions and corporates through Primary Dealers (as lenders).

6.101 The supply of and demand for funds in the market arise on account of (i) compliance with cash reserve requirement of banks as mandated by the Reserve Bank, (ii) as a funding source to build up assets, (iii) temporary surpluses that are available with lenders, (iv) foreign exchange flows and (v) seasonal factors such as festival, election, harvesting, advance tax payments, etc. Over the years, a few banks tended to be overly exposed to the call/notice money market. Such banks relied excessively on the call money market for carrying out banking operations and long-term asset creation. The Narasimham Committee II recommended that there must be clearly defined prudent limits beyond which banks should not be allowed to rely on the call/notice money market and that access to this market should essentially be for meeting unforeseen mismatches and not as regular means of financing banks' lending operations. With the progressive regulations, asset liability management system was put in place, which kept the mismatches in cash flows in the 1-28 days bucket under check. As part of streamlining the Liquidity Adjustment Facility and improving the transmission channel of monetary policy, the phasing out of non-bank participants from the call money market commenced from May 2001. Furthermore, recognising that building up of substantial exposure to the call/notice money market relative to the balance-sheet size by some participants on a continuous basis has the potential not only for default and the consequent systemic instability but also impeding other segments of the money market, participants are now operating within limits on both lending and borrowing operations. Thus, the call/notice money market is evolving as a pure inter-bank market with ALM discipline for participants and prudential limits for borrowing and lending.

6.102 With the establishment of the Clearing Corporation and the enhanced liquidity in the repo market both in Government and non-Government securities, it is envisaged that eventually both the call market and the repo market combined with other money market instruments, would constitute an integrated market for equilibrating short-term funds for both banks and non-banks.

6.103 During the first half of the 1990s, volumes in the call money market at Mumbai remained more or less steady. However, the turnover increased sharply and fluctuated widely during the last few years. The average daily turnover rose from Rs.23,221 crore in 1999-2000 to Rs.30,320 crore in 2000-01 and further to Rs.35,144

crore in 2001-02, before falling to Rs.29,857 crore in 2002-03 so far (up to February 2003). The turnover in the call/notice market should also be seen alongside the repo amount accepted by the Reserve Bank on a daily basis where one can observe substantial volatility. LAF has been effective in reducing the volatility in the call/notice money market.

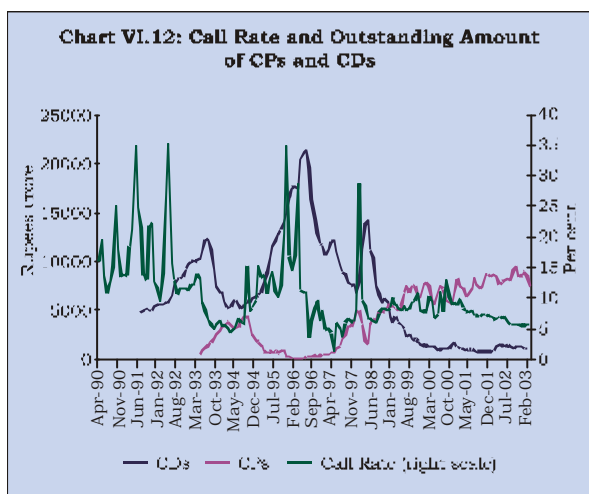
Commercial Paper

6.104 Commercial Paper (CP) was introduced as a money market instrument in January 1990 with a view to enabling corporates to diversify their sourcing of short-term borrowings as well as for providing investors with an additional instrument for investment. It was made broad-based with the lowering of the minimum issue size to Rs.5 lakh and the widening in the maturity period from 91 days-6 months to 15 days-1 year in July 2000 to make it compatible with instruments of comparable maturities. The Indian CP market is driven by swings in bank liquidity. Banks prefer investing in CPs, especially in times of easy liquidity as they can park funds at interest rates higher than call rates and at the same time avoid higher transaction costs associated with bank loans. The effective discount rate of CP usually lies between representative money market rate and the bank lending rate. On the other hand, companies are able to raise funds through CPs at a lower rate than the lending rates of banks under easy liquidity conditions. The amount of CPs outstanding increased significantly from Rs.577 crore in March 1993 to a high of Rs.4,511 crore in August 1994 accompanied by a decline in the average discount rate from 15.9 per cent to 10.5 per cent during this period. As the call rates firmed up, the average discount rate touched a peak of 20.2 per cent in April 1996 with the concomitant decline in outstanding amount to Rs.71 crore. The subsequent easing of liquidity conditions and institution of a series of reforms including dematerialisation of issuances and alignment of minimum maturity period boosted the CP market taking the outstanding amount to Rs.7,622 crore in February 2003 (Chart VI.12).

Certificates of Deposit

6.105 Certificates of Deposit (CDs) were introduced in 1989 as a money market instrument to mobilise large value deposits. CDs were freed from the interest rate regulation in 1992, thus, providing banks with an option to meet their liquidity needs through CDs issued at a premium during tight phases of liquidity. Thus, in its early stages of development, as and when the market faced tight liquidity conditions, banks found CDs as an appropriate instrument to raise funds, thereby taking the outstanding amount of CDs from Rs.2,000

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crore in July 1990 to Rs.12,557 crore in July 1993. However, as liquidity conditions eased, the CDs outstanding amount declined to Rs.5,218 crore in July 1994. A credit pick-up again spurred the outstanding amount of CDs to a historical peak of Rs.21,503 crore in June 1996. Another phase of liquidity tightness during the South East Asian crisis in the fourth quarter of 1997-98 led to a pick-up in the CDs issuances. The subsequent easing of liquidity conditions enabled banks to reduce borrowing through CDs leading to a decline in the outstanding amount of CDs to Rs.1,212 crore in January 2003. Interest rates on CDs softened in the recent period in line with other short-term interest rates (Chart VI.13).

Forward Rate Agreements (FRAs) / Interest Rate Swaps (IRS)

6.106 With interest rate deregulation and the consequent flexibility in the market-determined rates,

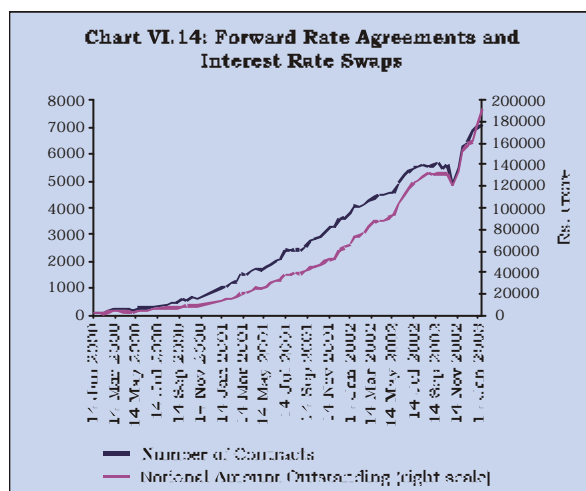
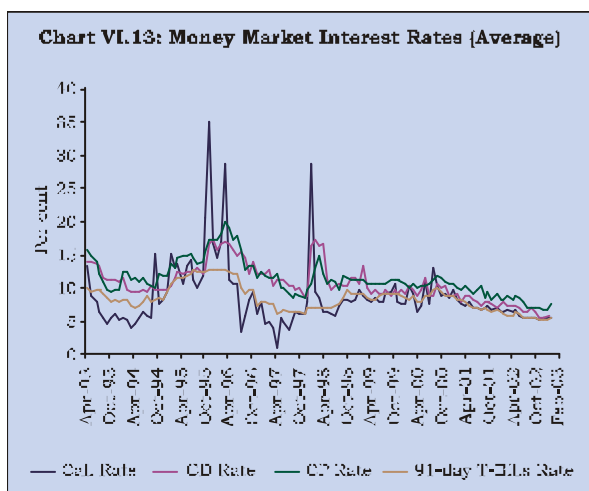
the associated risk factor for market participants also increased. This necessitated the development of derivative products for hedging risks by participants. Accordingly, banks and financial institutions were allowed in July 1999 to adopt risk management tools such as forward rate agreements (FRAs) and interest rate swaps (IRS) for their balance sheet management and hedging of interest rate risks by using the implied rates from any market segment such as money, debt or foreign exchange segment, for their own benchmarking.

6.107 The market has developed with successive rounds of interest rate deregulation in the economy. The notional principal amount under FRA/IRS contract moved up from Rs.2,065 crore during the fortnight ended January 14, 2000 to Rs.1,92,170 crore by January 24, 2003 (Chart VI.14).

Repos

6.108 Repo (Repurchase Agreement) instruments enable collateralised short-term borrowing through sale operations in debt instruments. Under a repo transaction, the holder of securities sells them to an investor with an agreement to repurchase it at a predetermined date and rate. Reverse repo is a mirror image of repo, and represents acquiring of the debt securities with a simultaneous commitment to resell.

6.109 The Reserve Bank has been emphasising expansion and diversification of the repo market under regulated conditions so that repos become very active in enabling smooth adjustment of liquidity in the system. The essential reason to promote the repos as against the call/notice money market is the collateralised nature of the former. It is mandatory to actually hold the securities in the portfolio before



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undertaking repo operations. To further develop and widen the repos market, the Reserve Bank introduced regulatory safeguards such as delivery *versus* payments (DvP) system in April 1999. The operationalisation of the Negotiated Dealing System (NDS) and the Clearing Corporation of India Ltd. (CCIL) combined with placement of prudential limits on borrowing and lending in the call/notice market for banks are also expected to provide further boost to this market. The phase-out process of non-banks from the call/notice money market as also laying down of prudential restrictions on exposure limits of banks and PDs to this uncollateralised market segment is being followed up with the concomitant development of the repo market. Thus, the supply of funds of non-banks to the repo market picked up in the recent months. While the turnover in the call/notice money declined, the turnover in the repo market (outside RBI) increased from Rs.11,311 crore in April 2001 to Rs.27,712 crore in May 2001, when the non-bank phasing out process commenced. The turnover further moved up to Rs.34,503 crore in November 2002.

6.110 To sum up, the money market in India, which traditionally consisted largely of call/notice money market, now comprises many other instruments such as CP, CDs, Repos and FRAs/IRS. Various reform measures have helped in improving the depth and efficiency of the money market operations. The operationalisation of the LAF has provided an informal corridor for overnight call money borrowing rate, which has further imparted stability and flexibility in the interest rate structure and to the market. The other money market instruments such as, CP and CDs have also been developed through alignment in maturity (with deposit instruments like term deposits) and easing of issuance norms. With the proper development of other money market segments, non-banks have been able to smoothly switch over from the call/notice money market to the other segments.

6.111 Though significant progress has been made through initiation of various reforms, there are several issues, which need to be addressed. While the overnight market is reasonably developed, the term-money market is yet to develop necessitating large rollover of short-term funds in the overnight market. This is mainly on account of the inability of participants to form appropriate interest rate expectations in the medium-term due to which there is a tendency on their part to lock themselves into short-term period. Besides, the absence of a proper yield curve at the shorter end of the market also renders pricing of intra-fortnight money difficult. Furthermore, corporates' overwhelming preference for "cash" credit rather than for "loan" credit

generally forces banks to deploy a large amount in the call/notice money market rather than in the term money market.

6.112 Another issue relates to the avenues available to deploy short-term funds to non-bank corporates. A critical issue in transforming the call/notice money market to a pure inter-bank market is the availability of some other avenue for short-term funds for non-bank participants. The commercial bill market at the present stage continues to be limited especially as few participants are willing to bear the concomitant risk of default. Thus, the repo trade at this stage offers a quick medium for developing a market for short-term funds especially as the transactions are collateralised in the case of non-banks. While the Reserve Bank has taken several steps to develop a repo market for non-bank participants, a vibrant repo market is, however, yet to develop. There is also a need to develop uniform accounting and documentation procedures in this regard. Besides, there is a need to explore the possibility of expanding an array of repo-able instruments in terms of both the type of paper and the investment category.

Government Securities Market

6.113 Existence of a well-developed government securities market is essential for the pursuit of a market-based monetary policy. Well-developed government securities market is also required to develop a domestic rupee yield curve, which could provide a credible benchmark for pricing of securities in other markets.

6.114 The major objective of reforms in the government securities market was to impart liquidity and depth to the market by broadening the investor base and by ensuring market-clearing interest rate mechanism. Keeping this in view, a number of reform measures were initiated in this segment (Box VI.4), which had a positive impact on both the primary and the secondary markets.

Primary Market

6.115 After the switchover to auction-based system for issuing securities, the amount of market-based primary issuance of Government securities increased by more than ten-fold from about Rs.12,000 crore in 1991-92 to about Rs.1,40,000 crore in 2001-02. This was accompanied by a sharp decline in primary subscription by the Reserve Bank from 45.9 per cent in 1992-93 to 1.45 per cent in 1993-94 and to mere 0.74 per cent in 1994-95. However, in the recent years, devolvement/private placement on the Reserve Bank

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was higher at around 30 per cent in 1999-2000 and 25 per cent in 2001-02, essentially reflecting the liquidity management operations undertaken by the Reserve Bank. These securities are, however, off-loaded in the market to contain the monetary impact.

6.116 The switchover to the system of borrowing at market-related rates provided the flexibility to modulate the maturity structure according to the needs. In the initial years of reforms, the maturity structure was shortened to reduce the cost, apart from making the government securities attractive to investors in terms of their tenor. Consequently, the weighted average maturity, which was around 16 years in 1990-91, was reduced to 6.59 years in 1997-98. This, in turn, resulted in significant bunching of redemptions. Consequently, it was considered desirable to elongate the maturity profile of the Government debt. Accordingly, during 1998-99, longer dated securities with tenors of 11, 12, 15 and 20 years were issued. Reflecting this, the weighted average maturity of dated securities went up from 7.71 years in 1998-99 to 14.3 years in 2001-02 (Chart VI.15). The average maturity of the Government debt in India compares favourably with other countries (Table 6.27).

6.117 Despite the increase in maturity, the average cost of issuance of dated securities declined substantially during 2001-02 to 9.44 per cent from 13.69 per cent in 1996-97 (Table 6.28).

6.118 A policy of reissuance/reopenings through price-based auctions (as opposed to earlier yield-based auctions) introduced in 1999 with a view to

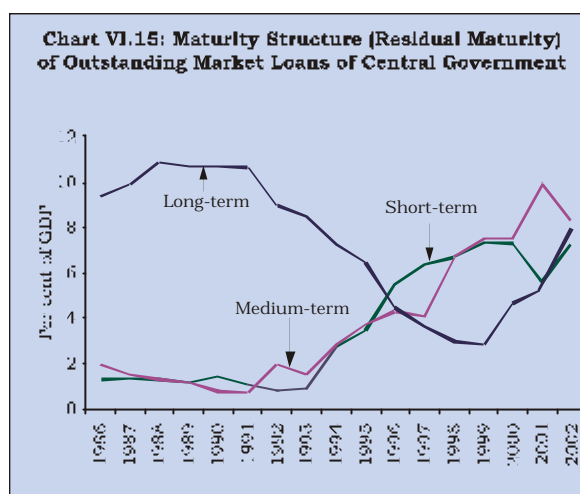


Table 6.27: Maturity Profile of Central Government Debt

(As at end-March 2000)

Country/Region	Average remaining years to maturity
	1
Euro area*	6 years
Japan	5 years 2 months
United Kingdom	9 years 11 months
United States	5 years 10 months
India**	7 years 6 months

* end 1999. ** as at March 31, 2001.

Source : Thorat, 2002.

Table 6.28: Weighted Average Yield and Maturity of Market Loans of Government of India

Years	Range of YTM's at Primary Issues (%)			Weighted Average Yield (%)	Range of Maturity of New Loans	Weighted Average Maturity (WAM) (yrs.)	WAM of Outstanding Stock
	Under 5 years	5-10 years	Over 10 years				
	1	2	3				
	4	5	6	7			
1995-96	13.25-13.73	13.25-14.00	–	13.75	2-10	5.7	–
1996-97	13.40-13.72	13.55-13.85	–	13.69	2-10	5.5	–
1997-98	10.85-12.14	11.15-13.05	–	12.01	3-10	6.6	6.5
1998-99	11.40-11.68	11.10-12.25	12.25-12.60	11.86	2-20	7.7	6.3
1999-2000	–	10.73-11.99	10.77-12.45	11.77	5.26-19.61	12.6	7.1
2000-01	9.47-10.95	9.88-11.69	10.47-11.70	10.95	2.89-20	10.6	7.5
2001-02	–	6.98-9.81	7.18-11.00	9.44	5-25	14.3	8.2
2002-03 (up to March 17, 2003)	–	6.57-8.14	6.06-8.62	7.34	7-30	13.8	8.9

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improving fungibility amongst the securities and facilitating consolidation of the debt greatly improved market liquidity and helped in the emergence of benchmark securities in the market. The process of passive consolidation itself helped in more or less containing the number of bonds to a level that was prevailing at the end of 1998-99. Of the 25 loans issued (excluding private placements) during 2001-02, 12 were new loans and the remaining were reissues of the existing loans. This ability to 'reissue' or 'reopen' loans is limited by the maximum outstanding amount that is perceived as 'manageable' from the viewpoint of redemption.

Secondary Market

6.119 As a result of a series of structural and institutional reforms, a deep, wide and vibrant gilt market has emerged. The secondary market turnover of government securities in India has been rising steadily, reflecting increased liquidity in the market and increased trading activity by market participants. Over the 6-year period ended March 2002, turnover increased 12-fold (Table 6.29). This sharp increase in turnover, particularly in the last 2 to 3 years, in part, was due to a sustained rally in the Government securities market.

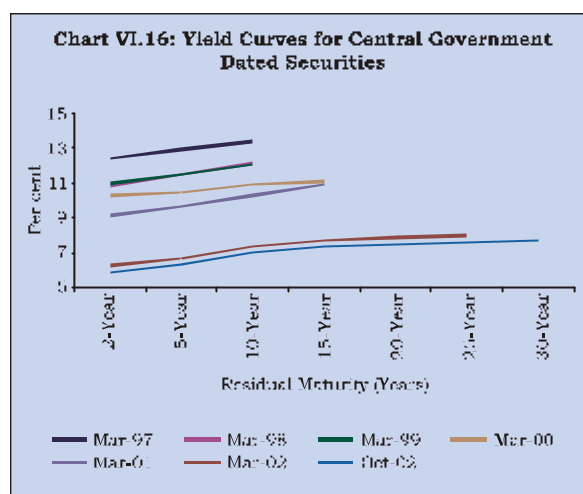
Table 6.29: Secondary Market Transactions in Central Government Securities

(Rs. crore)

Year	Outright	Repo	Total
	1	2	3
1995-96	17,553	92,834	1,27,179
1996-97	59,903	25,415	1,22,942
1997-98	1,18,541	20,811	1,85,708
1998-99	1,43,097	38,076	2,27,228
1999-00	4,05,308	75,723	5,39,255
2000-01	5,09,112	1,09,097	6,98,146
2001-02	11,38,504	3,35,861	14,74,365
2002-03 (April-February)	12,27,426	4,23,233	16,50,659

6.120 There was a sharp decline in the weighted average interest cost of market borrowings by the Government from 13.75 per cent in 1995-96 to 10.95 per cent in 2000-01 and to 9.44 per cent in 2001-02. Real interest rate on government securities [adjusting for the inflation (WPI)] also declined from 5.7 per cent in 1995-96 to 3.7 per cent in 2000-01 before rising to 5.8 per cent in 2001-02. The sharp fall in yields could be partly attributed to increased liquidity and efficiency of the market.

6.121 One of the major objectives of the reforms was the evolution of the yield curve. Chart VI.16 shows



the evolution of the yield curves over the years. Up to 1999, the curve was limited to 10 years. Gradually, with the elongation of maturity of Government bond issuance, the yield curve got extended up to 30 years.

6.122 Thus, a series of institutional and structural reform measures undertaken in the government securities market since the early 1990s with the objective of creating a deep and liquid market have brought about significant improvements. With the aligning of coupons on government securities with market interest rate, market gradually widened with the participation of several non-bank players. Presently, investor base includes, apart from banks and insurance companies, private corporate sectors, private sector mutual funds, finance companies as also individuals. Recent steps to allow retailing of government securities and introduction of trading in government securities at stock exchanges are expected to give a further impetus to this trend. As a result, the market has become more deep and liquid and the Government is able to mobilise adequate funds from the market. The Reserve Bank's absorption of primary issues has come down drastically. Even the limited primary purchases taken as private placement/ devolvement are off-loaded in the market. This, in turn, enabled the elimination of automatic monetisation by the Reserve Bank and reduction in statutory pre-emption of banks. These arrangements provided functional autonomy to the Reserve Bank in the conduct of monetary policy.

6.123 Government securities are emerging as a benchmark for pricing private debt instruments. This would enable market players to appropriately price the securities.

Foreign Exchange Market

6.124 The foreign exchange market in India is a three-tier structure comprising (a) the Reserve Bank at the apex, (b) Authorised Dealers (ADs) licensed by the Reserve Bank, and (c) customers such as exporters and importers, corporates and other foreign exchange earners. Apart from these main market players, there are foreign exchange money changers who bring buyers and sellers together but are not permitted to deal in foreign exchange on their own account. The ADs are governed by the guidelines framed by the Foreign Exchange Dealers Association of India (FEDAI). Dealings in the foreign exchange market include transactions between ADs and the exporters/importers and other customers, transactions among ADs themselves, transactions with overseas banks and transactions between ADs and the Reserve Bank.

6.125 In line with the liberalisation measures undertaken in other areas, various reform measures were also initiated in the foreign exchange market guided mainly by the recommendations of various high level committees with the main objective of making it more deep and liquid, more vibrant, open and market determined (Box VI.4).

6.126 The impact of reforms on the forex market could be assessed by examining the behaviour of the market over the period as also the trends in various market growth related parameters.

Trends and Conditions

6.127 With the gradual opening of current and capital account transactions in the 1990s, the increasing volume of capital flows had a direct bearing on the stability of the exchange rate. There were intermittent periods of excessive capital inflows followed by episodes of ebbing of capital flows and subsequent recovery in capital inflows. From the viewpoint of examining the impact of external transactions on the exchange rate stability, the 10-year period starting from March 1993 (when the exchange rate became market determined) could be divided into three sub-periods as detailed below.

6.128 *March 1993-August 1995:* Reflecting the positive investor confidence, the Indian economy experienced surges in capital inflows during 1993-94, 1994-95 and the first half of 1995-96, which, coupled with robust export growth, exerted upward pressures on the exchange rate. In the face of these inflows, the Reserve Bank absorbed the excess supplies of foreign exchange. In the process, the nominal exchange rate of the Rupee *vis-à-vis* the US dollar remained virtually unchanged at around Rs.31.37

per US dollar over the extended period from March 1993 to August 1995.

6.129 *September 1995-December 1996:* The period from September 1995 to February 1996 witnessed large capital inflows. The real appreciation of the Rupee resulting from surges in capital inflows triggered off market expectations and led to a depreciation of the Rupee in the second half of 1995-96, *i.e.*, between September 1995-mid-January 1996. In response to the upheavals, the Reserve Bank intervened in the market to signal that the fundamentals were in place and to ensure that market correction of the overvalued exchange rate was orderly and calibrated. The interventions in the forex market were supported by monetary tightening to prevent speculative attacks. These decisive and timely measures brought stability to the market lasting till mid-January 1996. In the first week of February 1996, another bout of uncertainty led the Rupee to overshoot to Rs.37.95 per US dollar. The monetary and other measures succeeded in restoring orderly conditions and the Rupee traded in a range of Rs.34-35 per US dollar over the period March-June 1996. The Rupee remained range bound during the second half of 1996.

6.130 *1997 onwards:* The foreign exchange market since 1997 had to cope with a number of adverse internal as well as external developments. The important internal developments included the economic sanctions in the aftermath of nuclear tests during May 1998 and the border conflict during May-June 1999. The external developments included, *inter alia*, the contagion due to the Asian financial crisis and the Russian crisis during 1997-98 and the sharp increase in international crude prices in the period since 1999, especially from May 2000 onwards. Movements in interest rates in the industrialised countries as well as the cross-currency movements of the US dollar *vis-à-vis* other major international currencies were some of the other external developments impacting the foreign exchange market. These developments created a large degree of uncertainty in the foreign exchange market leading to excess demand, which was reflected in the spot market gap in the merchant segment, increasing from US \$ 3.2 billion in 1997-98 to US \$ 4.4 billion in 1998-99 (Table 6.30). The Reserve Bank responded through timely monetary and other measures like variations in the Bank Rate, the repo rate, cash reserve requirements, refinance to banks, surcharge on import finance and minimum interest rates on overdue export bills to curb destabilising speculative activities during these episodes of volatility while allowing an orderly

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Table 6.30: Merchant Transactions in the Foreign Exchange Market

(US \$ billion)

Year	Spot			Forward			Merchant Turnover
	Purchases	Sales	Net	Purchases	Sales	Net	
	1	2	3	4	5	6	
1997-98	54.7	57.9	-3.2	20.0	28.4	-8.4	209.6
1998-99	54.3	58.8	-4.4	16.0	33.5	-17.5	246.1
1999-2000	67.1	67.0	0.1	19.9	31.0	-11.1	244.0
2000-01	80.8	80.6	0.2	21.0	41.7	-20.7	269.4
2001-02	77.2	75.8	1.5	19.6	39.0	-19.3	256.8
2002-03 (April-January)	74.1	71.1	3.0	32.5	30.5	2.0	260.1

Table 6.31: Inter-bank Transactions in the Foreign Exchange Market

(US \$ billion)

Year	Spot			Forward / Swap			Inter-bank Turnover
	Purchases	Sales	Net	Purchases	Sales	Net	
	1	2	3	4	5	6	
1997-98	124.3	118.2	6.1	230.0	216.5	13.5	1095.9
1998-99	116.2	109.5	6.7	221.5	217.2	4.3	1057.3
1999-2000	123.1	121.8	1.3	184.1	177.2	6.9	898.1
2000-01	150.4	141.0	9.3	282.3	261.5	20.8	1117.7
2001-02	138.5	137.3	1.2	327.1	334.9	-7.8	1165.3
2002-03 (April-January)	132.1	140.0	-7.9	271.5	268.2	3.3	1031.4

correction in the value of the Rupee. Reappearance of uncertainty in the foreign exchange market between mid-May to mid-August 2000 reflected hardening of international oil prices, successive interest rate increase in industrial countries and the withdrawal of portfolio flows. This resulted in widening of the excess demand gap in the spot segment of merchant transactions and compensating activity built up in the inter-bank segment (Table 6.31). Tight monetary measures adopted during May-June 2000 coupled with inflows in respect of the Indian Millennium Deposits during October-November 2000 eased market tightness and brought stability to the foreign exchange market. In the aftermath of September 11, 2001 incident in the US, once again the pressure was felt

in the forex market as the Rupee depreciated against the US dollar, but the RBI tackled the situation through quick responses in terms of a package of measures and liquidity operations.

6.131 Except for a brief period of instability on account of border tensions in May 2002, the Rupee remained broadly stable during the current financial year (April-February). The Rupee gained strength against the US dollar during July 2002-February 2003 on account of excess supply resulting both from current and capital account transactions. The Reserve Bank made net purchases of US \$ 9.7 billion during April-December 2002 (Table 6.32). A steady supply of dollar in the foreign exchange market kept the

Table 6.32: Purchases and Sales of the US Dollar by the Reserve Bank

(US \$ billion)

Year	Purchases	Sales	Net	Outstanding Net Forward Sales/Purchases (As at end-March)
	1	2	3	4
	1997-98	15.1	11.2	3.8
1998-99	28.7	26.9	1.8	-0.8
1999-2000	24.1	20.8	3.2	-0.7
2000-01	28.2	25.8	2.4	-1.3
2001-02	22.8	15.8	7.1	-0.4
2002-03 (up to December)	21.1	11.4	9.7	—

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Rupee range-bound during the period and in terms of monthly average exchange rate, the Rupee appreciated by 2.2 per cent during the eight-month period from Rs.48.76 per US dollar in July 2002 to Rs.47.73 per US dollar in February 2003.

6.132 While the Rupee depreciated against the US dollar and the Pound Sterling by 35.3 per cent and 36.9 per cent, respectively, it depreciated by 26.7 per cent against the Japanese Yen during the 10-year period 1993-94 to 2002-03 (up to February 2003). Against the Euro, the Rupee depreciated by 6.3 per cent between 1999-2000 and 2002-03 (up to February 2003) (Chart VI.17). Depreciation of the Indian Rupee, however, was lower than that of some other emerging market economies. A cross-country analysis involving select Asian and Latin American emerging market economies reveals that the currencies of Korea, Malaysia and Chile depreciated against the US dollar during the 7-year period 1995-2001. The US dollar appreciated by 67 per cent, 60 per cent and 52 per cent against the Korean Won, Chilean Peso and the Malaysian Ringgit, respectively, as compared to a 46 per cent appreciation against the Indian Rupee during the same period (Chart VI.18).

6.133 The coefficient of variation of the Indian Rupee against the US dollar, which is a measure of volatility, moved in a narrow range, except for two occasions in 1995-96 and 1997-98 (Table 6.33 and Chart VI.19).

6.134 Thus, the foreign exchange market witnessed fairly stable conditions during the 1990s. Even during the period when the market came under pressure,

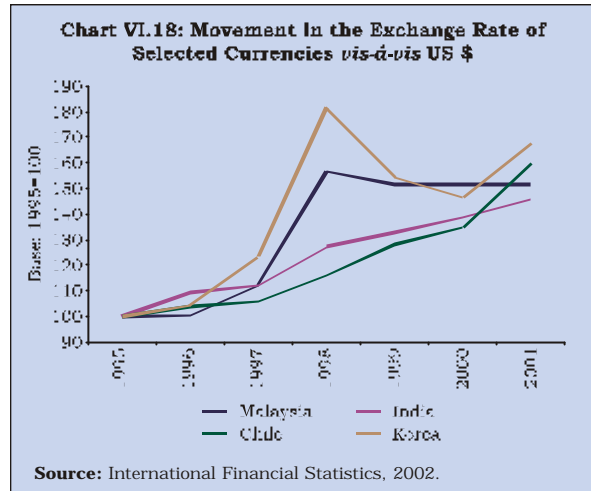
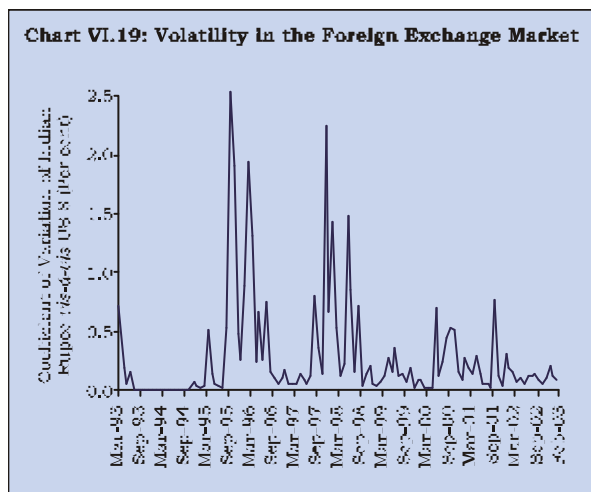
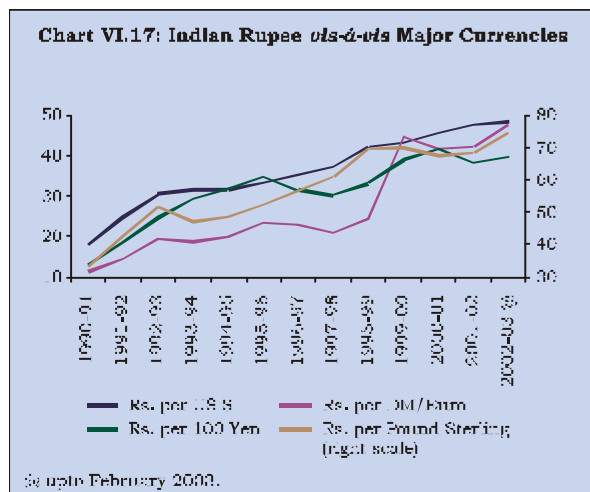


Table 6.33: Movements in the Exchange Rate of the Rupee per US Dollar

Year	Range	Average Exchange Rate	Average of the daily (absolute) variation	Coefficient of Variation (%)
	1	2	3	4
1993-94	31.21-31.49	31.37	0.01	0.1
1994-95	31.37-31.97	31.40	0.01	0.3
1995-96	31.32-37.95	33.45	0.10	5.8
1996-97	34.14-35.96	35.50	0.04	1.3
1997-98	35.70-40.36	37.16	0.07	4.2
1998-99	39.48-43.42	42.07	0.05	2.1
1999-2000	42.44-43.64	43.33	0.03	0.7
2000-01	43.61-46.89	45.68	0.04	2.3
2001-02	46.56-48.85	47.69	0.04	1.4



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effective measures were initiated and orderly conditions in the market were restored quickly.

Growth of the Forex Market

6.135 As a result of various liberalisation measures, the foreign exchange market in India grew rapidly during the 1990s. The total turnover (merchant *plus* inter-bank) increased more than two-fold to US \$ 129 billion in 2002-03 (up to January) from US \$ 38 billion in 1990-91. The average monthly merchant turnover increased by around 550 per cent from a meagre US \$ 4 billion in 1990-91 to US \$ 26 billion in 2002-03 (up to January). The average inter-bank turnover, on the other hand, increased by around 200 per cent from US \$ 34 billion in 1990-91 to US \$ 103 billion over the same period. Reflecting the same, the inter-bank to merchant turnover ratio declined from 8.5 in 1990-91 to 4.0 in 2002-03 (up to January) (Chart VI.20). The merchant segment is dominated by spot transactions and the inter-bank segment is dominated by forward transactions.

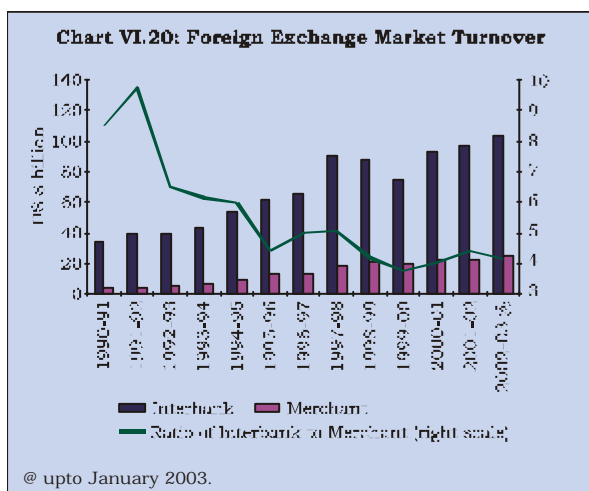
6.136 To sum up, various reforms measures initiated have resulted in significant growth of the foreign exchange market. Also, despite liberalisation of capital account and introduction of market determined exchange rate, the foreign exchange market in India remained stable during the 1990s barring a few episodes of volatility.

6.137 India's current exchange rate policy of managing volatility without fixed target, while allowing the underlying demand and supply conditions to determine the exchange rate, has yielded satisfactory results. Various reforms measures in the foreign

exchange market have also led to the widening and deepening of the forex market in India. This is reflected in the substantial increase in the foreign exchange market turnover particularly in the inter-bank segment. A recent Bank for International Settlements survey of the foreign exchange market turnover during April 2001 in which 43 countries including India participated reveals that while foreign exchange market turnover declined the world over considerably as compared to 1998, it increased in India.

6.138 Although reforms in the forex market have yielded good results, there are some issues, which need to be addressed to enhance its stability and ensure further growth.

- Although the turnover in the market increased considerably over the years, it still remains small. The Triennial Central Bank Survey of the Bank for International Settlements on Foreign Exchange and Derivatives Market Activity in 2001 revealed that the share of India in total global daily turnover of the foreign exchange market remained insignificant at 0.2 per cent during 2001. Since the market lacks depth, the Reserve Bank has to actively intervene in the market to absorb/ provide liquidity. There is, therefore, need to take steps to further develop the market so that the need for intervention by the Reserve Bank is minimised.
- The market is presently skewed with a few public sector banks accounting for the major share of the merchant transactions. For development of the market on healthy lines, it is necessary to have large number of players participating in the market.
- Derivatives are an important instrument of risk hedging. Although a few derivative products have been introduced, there has not been much activity in some of them such as FRAs. There is a need to further develop a range of derivative products like forex options.



Capital Market

6.139 The capital market provides an alternative mechanism for allocating resources; it channelises household savings to the corporate sector and allocates funds among firms. In this process, it allows both firms and households to share risk. The capital market enables the valuation of firms on an almost continuous basis and it plays an important role in the governance of the corporate sector. The reforms in the capital market were aimed at enhancing the efficiency, safety, integrity and transparency of the market. The key reform measures for the capital market are provided in Box VI.4. The impact of various

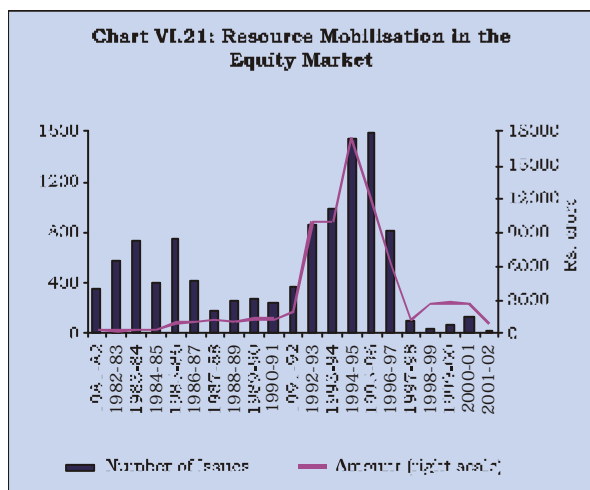
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reform measures could be seen in the primary as well as secondary segments of the capital market.

Primary Market

6.140 Notwithstanding depressed conditions in the capital market in the last few years, significance of the capital market in meeting the financing requirements of the corporates has generally improved. Since the initiation of the reforms, the reliance of the corporate sector on the capital market for funds increased markedly. The resources raised by the private sector companies from the primary equity market rose sharply in the first half of the 1990s to touch a peak of Rs.17,414 crore in 1994-95 (Chart VI.21). The resource mobilisation from the primary market, however, tapered off in the second half of the 1990s due to a variety of reasons such as tightening of disclosure norms and subdued secondary market⁶. The ratio of resource mobilisation by the private sector to GDP almost trebled from an average of 0.4 per cent during the period 1970-92 to 1.1 per cent of GDP during 1992-2000.

6.141 Reflecting the growing importance of market-based financing, the share of capital market-based instruments in total funds raised by non-Government non-financial public limited companies increased to 22.3 per cent during the period 1991-92 to 2000-01 from 17.3 per cent in the period 1985-86 to 1990-91 (Table 6.34). During the period 1992-93 to 1996-97, the share of capital market instruments in total external financing worked out to 37.3 per cent, with a peak of 51.3 per cent in 1993-94. The share of shares and debentures in financial savings of households rose,



6 Although the public issues market for last few years witnessed depressed conditions, corporates were able to mobilise sizeable funds from the private placement market.

Table 6.34: Sources of Funds for Non-Government Non-Financial Public Limited Companies

Item	1985-86 to 1990-91	1991-92 to 2000-01
	1	2
Share of Internal Sources	34.1	35.7
Share of External Sources	65.9	64.3
Share of Capital Market-related Instruments in Total Funds (Debentures and Equity Capital)	17.3	22.3
Share of Financial Intermediaries in Total Funds	20.9	19.5
Debt-Equity Ratio (including debentures and long-term borrowings)	89.5	72.3

Source : Finances of Public Limited Companies, Reserve Bank of India Bulletin (various issues)

on an average basis, to 9.0 per cent during the 1990s from 6.0 per cent during the 1980s, with a peak at 13.5 per cent in 1993-94.

Secondary Market

6.142 In the secondary market, the move to an electronic trading system has resulted in transparency in trades, better price discovery and lower transaction costs. The efficiency of the market has improved through faster execution of trades. The operational efficiency of the stock market has also been strengthened through improvements in the clearing and settlement practices and the risk management process. Almost the entire delivery of securities now takes place in dematerialised form. During the last four years or so, there has been no instance of postponement or clubbing of settlements at two main stock exchanges (BSE and NSE) despite defaults by brokers. The cases of bad deliveries have become almost nil. The setting up of trade/settlement guarantee funds in most of the exchanges has considerably reduced the settlement risk for investors. The corporate governance practices and disclosure norms have led to transparency in information flows, which, in turn, have improved the price discovery process.

6.143 There has been an appreciable increase in liquidity as reflected in the traded value and turnover ratios (Table 6.35). The traded value ratio, *i.e.*, the ratio of turnover to GDP, increased from 23.2 per cent in 1993-94 to about 136.9 per cent in 2000-01. At the same time, the turnover ratio, *i.e.*, the ratio of turnover to market capitalisation, increased from 50.9 per cent in 1993-94 to 139.0 per cent in 2001-02.

6.144 The transaction cost in the Indian stock markets declined sharply as a result of measures such as automated trading, compression of settlement cycle, and introduction of dematerialisation. The transaction

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Table 6.35: Indicators of Liquidity

Year	(Per cent)	
	Traded Value Ratio	Turnover Ratio
	1	2
1993-94	23.2	50.9
1994-95	15.7	34.4
1995-96	18.7	39.7
1996-97	45.8	132.3
1997-98	58.1	154.1
1998-99	58.1	178.3
1999-2000	107.1	215.1
2000-01	136.9	478.9 #
2001-02	39.0	139.0 #

Market capitalisation is estimated assuming that the BSE accounts for 95 per cent of all-India market capitalisation.
Source: Compiled from BSE data.

costs⁷ in terms of the brokerage, regulator's fees, custody, safekeeping and clearing is estimated at about 0.31 per cent (0.40 per cent for foreign institutional investors), which compares favourably with international standards (Raju, 2000).

6.145 The volatility in the Indian stock markets has declined in the recent years. The coefficient of variation of the BSE Sensex declined to 14.9 per cent during the 2-year period April 2000 to March 2002 from 25.9 per cent during the 10-year period from April 1991 to March 2000 and 33.6 per cent during the 6-year period from April 1985 to March 1991.

6.146 Thus, the various parameters, such as liquidity, volatility and transaction cost, point towards the

Box VI.5

Informational Efficiency of Stock Markets

Informational arbitrage efficiency is of three types. In the "weak" form, efficiency means that current prices reflect all information that can be derived by examining the history of past prices. This implies that future prices cannot be predicted from past changes and markets follow a random walk. In the semi-strong form of efficiency, all publicly available information is reflected in the current stock prices. In the strong form, the efficient market hypothesis states that stock prices reflect all information, including information available to insiders.

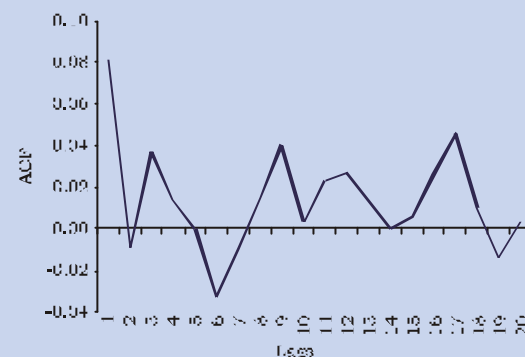
A large number of studies conducted for the Indian market supported the weak efficiency hypothesis during the 1980s (Barua and Varma, 2000). However, most of the recent research, using more sophisticated time series techniques, such as tests of stationarity and variance ratio tests do not support the hypothesis that Indian stock markets follow a random walk suggesting that markets are not efficient (Madhusoodan, 1998; Pattnaik and Chatterjee, 2000).

However, some studies conducted in the Indian context report that markets respond to news such as political developments, announcements of bonus/rights issues and dividends (Barua and Varma, 2000). There is also some recent evidence in terms of leading indicator properties in respect of macroeconomic variables such as real money balances, inflation rate and industrial activity and the lack of integration between the BSE national index and individual securities in terms of causality tests (Amanulla and Kamiah, 2000). These studies, therefore, concluded that markets are efficient in the semi-strong form.

Most of the studies on efficiency in the Indian context were conducted with data up to the late 1990s. However, since then, several measures have been initiated, which were expected to have further improved the market efficiency. In view of this, information efficiency hypothesis was tested by estimating the autocorrelation function using data up to December 2002. In conformity with earlier research, the result of the exercise carried out for the purpose shows that the Indian stock markets do not satisfy the hypothesis of weak efficiency in view of the persistence in stock returns. A test of stationarity of the daily returns in respect

of the BSE Sensex with a one-period lag in terms of the autocorrelation function (ACF) reveals that the daily returns can be predicted by past values and therefore do not follow a random walk¹ (Chart VI. 22).

Chart VI.22: Autocorrelation Function of Daily Returns of the BSE Sensex - April 1990-December 2002



Source: Based on the data from the BSE.

1 A positive and significant first order autocorrelation coefficient (estimated as the slope of the regression of the daily returns on the BSE Sensex on the one period lagged return) indicates that BSE returns are autocorrelated and, therefore, time dependent, i.e.,

$$dBSES = 0.06 + 0.08 \text{ dBSES}(-1) *$$
(0.08) (0.0)

(* Significant at 1.0 per cent level.)

where, dBSES is daily percentage returns and figures in brackets are p values.

The autocorrelation coefficients for 20 lags show that the series is not stationary and the Box Pierce Q statistics reject the null hypothesis that all autocorrelation coefficients are zero.

7 Measured as percentage of the value of trade.



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improvements in the efficiency of the capital market. The impact of various reform measures on two critical aspects of efficiency, *viz.*, the information efficiency (*i.e.*, whether all market information is reflected in the prices) and allocative efficiency (whether resources are being allocated efficiently) of the capital market, has been explored further.

Informational Efficiency

6.147 Efficiency test conducted using data up to December 2002 reveals that in terms of informational efficiency the Indian stock markets are not efficient (Box VI.5). However, it is significant to note that many studies conducted in the context of advanced economies also suggest that most markets are not informationally efficient, *i.e.*, markets do not as such follow a random walk especially as they seldom satisfy the stringent criteria of stationary, independent, identical and normally distributed stock returns.

Allocative Efficiency

6.148 Reforms in the Indian capital market during the 1990s fostered a steady process of financial disintermediation, with corporates increasingly accessing the equity route, while on the supply side, investors earmarked an increasing portion of their savings in risk capital. Although the stock market has gained in importance in terms of channellisation of resource flows, the key macroeconomic issue is whether this has led to an increase in the allocative efficiency of the system. This assumes added significance as the recent literature has emphasised that the contribution of the financial system to economic growth comes as much through the efficiency of investment as the increase in saving and investment (De Gregario and Guidotti, 1995; Levine and Zervos, 1998).

6.149 The allocative efficiency of the Indian capital market was tested using two measures⁸, *viz.*, synchronicity of equity prices and R². The results indicate that market-wide factors (as against company-specific factors) play a predominant role in determining the behaviour of stock markets in India. In a select sample

8 The allocative efficiency can be tested using a measure of synchronicity of equity prices (calculated as the fraction of stocks traded moving in the same direction). This measure signifies the relative importance of the market-related factors *vis-à-vis* company-specific factors, and the explanatory power (*i.e.*, the R² measure) of market returns (taken as a proxy for market factors) in a set of individual return generating functions (Roll, 1988; Morck *et al.*, 2000). The allocative efficiency would be higher if investors pay greater attention to company-specific factors rather than market specific factors.

of 66 scrips in the BSE-100 list during 1995-96 to 2001-02, about 70 per cent of stocks moved in the same direction. Although this would suggest that the stock markets in India do not allocate resources efficiently, the allocative efficiency of the Indian stock market compares well with several emerging market economies. In many emerging market economies, the synchronicity was much higher, *i.e.*, 80 per cent in China, 82.9 per cent in Poland and 75.4 per cent in Malaysia (Chart VI.23). The proportion of stocks moving together in the case of Brazil (64.7 per cent) and Indonesia (67.1 per cent) were more comparable with the results for India. Similar results were obtained in respect of the R² measure (Chart VI.24).

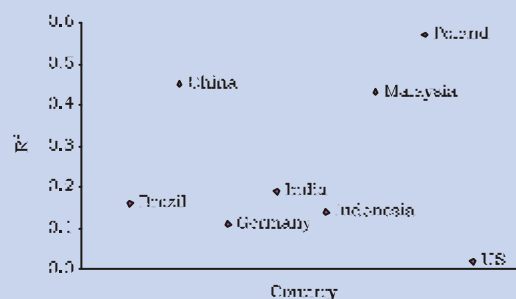
6.150 Thus, reforms in the capital market have had a multi-dimensional impact. Notwithstanding the recent depressed conditions, the significance of the capital market has improved in providing a mechanism for allocation of resources as is reflected in increase in

Chart VI.23: Synchronicity of Stock Prices - India vis-à-vis Select Economies



Source: Morck *et al.* (2000).

Chart VI.24: R² - India vis-à-vis Select Economies



Source: Morck *et al.* (2000).

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its share in the sources of finance for the corporates. Various indicators such as reduced volatility are pointers in the direction of increase in the safety of the market. The safety of the market has also been considerably enhanced by adoption of risk management practices and the setting up of settlement guarantee funds and investor protection funds. The integrity and transparency of the market has also gone up with the wider availability of information regarding the corporates' performance. The trading and settlement framework in the Indian stock exchanges now compares favourably with the international best practices. The liquidity in the market has improved considerably.

6.151 While reforms in the capital market have had a significant impact, there are some issues which need to be addressed. A major concern has been the depressed state of the primary capital market. Resources raised from the primary capital market have declined sharply in comparison with the first half of the 1990s. The subdued environment in the primary market in the second half of the 1990s stands in sharp contrast to the buoyant first half. Another major area of concern is the primary corporate debt market, which is yet to develop. The secondary market for corporate debt is virtually non-existent. Though some debt securities are listed on the stock exchanges, there is not much trading in these securities. In the secondary market for equity, there is concentration of liquidity among few prominent scrips. Although as a result of electronic trading, investors are able to trade in the securities listed on the premier exchanges from any location in the country, this has reduced the significance of regional stock exchanges, which have witnessed a sharp decline in volumes rendering them financially vulnerable. The truthful compliance of listed companies with the corporate governance standards is another issue, which needs to be addressed.

Integration of Markets

6.152 Before initiation of reforms, the Indian financial sector remained largely segmented due to an administered interest rate regime and directed credit controls, which prevented proper pricing of instruments. At the shorter end, the inter-bank market, with caps on the interest rate, was the only avenue for trading short-term funds. Since the Government raised resources from the banking system at interest rates, which were not market-related, there was hardly any trading in the government securities. Also, participants could not move freely from one market to another with most of the financial intermediaries confining themselves to markets in their own area of operations.

Furthermore, banks' exposures in foreign currency in their *nostro* accounts abroad were extremely restricted, prohibiting any interplay between their domestic and foreign currency assets.

6.153 Various financial sector reforms initiated in the 1990s included, among others, deregulation of interest rates, introduction of new products, relaxation in investment norms for financial intermediaries, especially banks, emergence of new institutions such as primary dealers and mutual funds. These coupled with the gradual deepening of the foreign exchange market, easing of restrictions in respect of banks' foreign currency investments, withdrawal of reserve requirements on inter-bank borrowings (which facilitated pricing of 14-day money), the process of emergence of a yield curve and other policy measures paved the way for increasing integration among various segments of the financial market, such as money, foreign exchange, debt and equity markets. The correlation results for some key rates/instruments for the period April 1993 to September 2002 are presented in Table 6.36.

Table 6.36: Correlation Coefficient Matrix - April 1993 - September 2002

Instrument	Call	FR3	T-91	BSES
	1	2	3	4
Call	1.000	0.662	0.617	-0.051
FR3	0.662	1.000	0.448	-0.314
T91	0.617	0.448	1.000	-0.083
BSES	-0.051	-0.314	-0.083	1.00

Call: Call money rate. FR3: 3-month forward rate.
T-91: 91-day treasury bill rate. BSES: BSE Sensitive index.

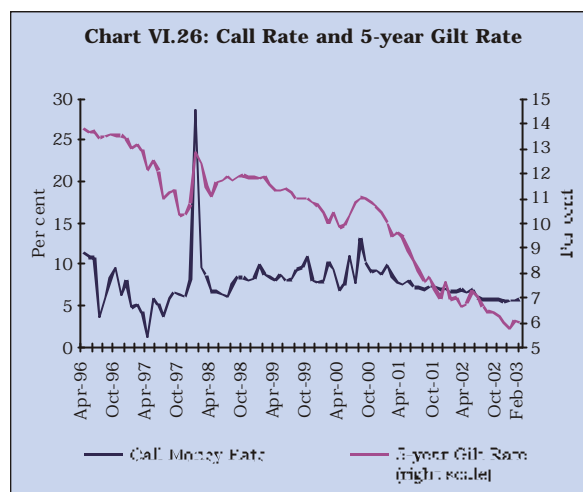
6.154 Interest rates in the inter-bank market (call rate) and the government securities market (proxied by 91-day treasury bill rate) displayed a high degree of positive correlation between April 1993-September 2002. As commercial banks often arbitrage between their balances with the Reserve Bank in view of reserve requirements on an average basis and their investments in gilts, especially after the introduction of daily repo/reverse repo auctions under LAF, this, in turn, creates an informal corridor of interest rates created by the lending (reverse repo) and deposit (repo) rates of the Reserve Bank. Positive correlation is registered between the foreign exchange market (proxied by the forward premia) and the money market (proxied by call money rate) especially as the gradual flexibility accorded to banks in respect of their *nostro* investments allowed them to operate across the two markets

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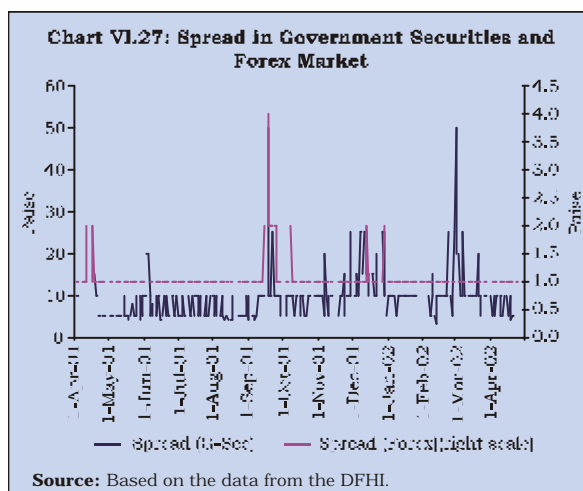
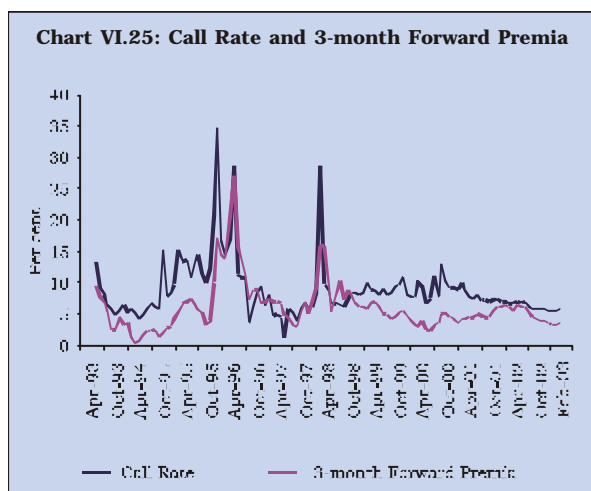
(Chart VI.25). An increase (decrease) in the forward premia typically pushes up (pulls down) the call rates, especially if banks fund foreign exchange positions through call borrowings.

6.155 There is a negative correlation between movements in the equity prices and the forward premia, partly reflecting the operations of foreign institutional investors. The portfolio allocations of FIIs are guided by returns earned in the Indian *vis-à-vis* foreign markets. The money market and the equity market were found to be negatively correlated. The relationship, however, was found to be weak.

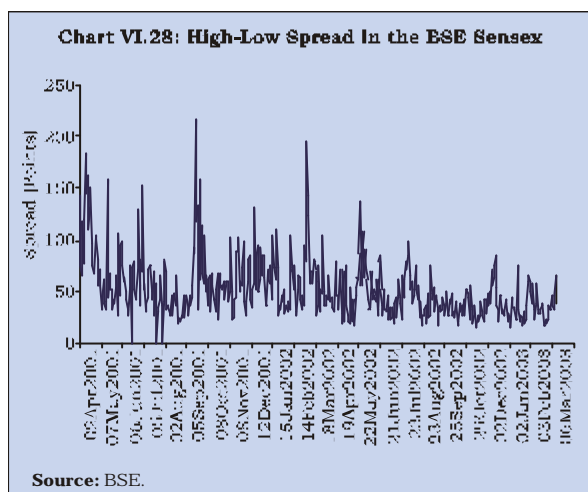
6.156 Thus, analysis of correlation coefficients suggests that various market segments are integrated in varying degrees. Integration of financial markets was found to be more pronounced during the episodes of volatility in the financial markets, which began during the mid-1990. For example, sharp changes in overnight interest rates tend to impact longer-run gilt prices, especially in the case of sharp movements (Chart VI.26). It was also observed that excess returns emerged contemporaneously across market segments – call money, treasury bills and forwards – in the first half of 2000-01 during the extended bout of financial market volatility. The excess returns tended to vanish with the restoration of stability during October-November 2000. Furthermore, there was a close correlation between the movements in the bid-ask spread in the foreign exchange market and the Government securities market and the high-low spread (of the BSE Sensex) in the equity markets during 2000-01, especially during times of uncertainty such as the terrorist attacks in the US (on September 11, 2001) and at the Indian Parliament (on December 13, 2001) (Charts VI.27 and VI.28).



6.157 To sum up, financial sector reforms have been successful in bringing significant improvements in various market segments. Reforms have helped in improving the depth, liquidity and efficiency of markets. The money market is now reasonably developed with an array of instruments. The character of the Government securities market has changed from a captive market to a broad-based market. It has also become deep and liquid, which has enabled the Reserve Bank to pursue its monetary policy through market-based instruments. Various reform measures have resulted in sharp growth of the foreign exchange market. Reforms have also been successful in creating, by and large, orderly conditions in the market. The capital market has become a safer place for investors as various risks involved at various stages of trading and settlement have been either completely eliminated or reduced considerably. Liquidity in the stock market has improved



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considerably. Various market segments have also become inter-linked. However, it needs to be noted that various market segments are still developing and there are some deficiencies, which need to be removed. In the case of money market, the term money market segment has not yet developed. Depth and liquidity of the government securities market and the foreign exchange market need to be improved further. The capital market has yet to show signs that it is processing the information more efficiently than before reforms. Various market segments also need to be integrated further.

IV. CONCLUDING OBSERVATIONS

6.158 Financial sector reforms introduced in the early 1990s in a gradual and sequenced manner, were directed at the removal of various deficiencies from which the system was suffering. The basic objectives of reforms were to make the system more stable and efficient so that it could contribute in accelerating the growth process.

6.159 The most significant achievement of financial sector reforms has been a marked improvement in the financial health of the commercial banking sector, which constitutes the most important segment of the Indian financial system. Asset quality of commercial banks, which before the initiation of reforms was at a very precarious level, improved significantly even as the norms were tightened over the years and the economy slowed down. Capital position of commercial banks also improved significantly and was somewhat higher than the prescribed level. Profitability of the commercial banking sector improved despite decline in spread, which itself is a measure of efficiency. Although commercial banks still face the problem of overhang of NPAs, high spread and low profitability

in comparison with banks in other emerging market economies, reforms have been successful in enhancing the performance of commercial banks in terms of both stability and efficiency parameters.

6.160 The empirical evidence suggests that public ownership impinged on the efficiency of the banking sector as old private sector banks and those PSBs, which divested their equity recently, outperformed fully Government-owned banks. However, significant improvement was observed in the performance of fully Government-owned banks in the recent years and their performance tended to converge with that of other bank groups. In the context of the Indian banking sector, it was found empirically that various measures introduced to enhance the stability of the Indian banking system have not adversely affected their efficiency. In fact, stability and efficiency measures were found to be mutually reinforcing and complimentary.

6.161 While commercial banking sector showed significant improvement, the impact was not so evident in respect of other financial intermediaries operating in the system. Co-operative banking sector as a group did not show any improvement in either the stability or efficiency parameters. The state co-operative banks and district co-operative banks, which were incurring losses, turned around and made profits. However, asset quality and profitability of scheduled urban co-operative banks deteriorated in the recent years. Although one reason for this appears to be late start of the reform process for the co-operative banks in comparison with commercial banking sector, the condition of co-operative banks remains a cause of concern. DFIs, which traditionally played an important role in financing investment activity, find themselves at the crossroad. In the initial phase of reform, DFIs were able to sustain their business and profitability due to several factors, which worked to their advantage. However, on the whole, they have not been able to sufficiently reposition themselves in the changed operating environment. While all DFIs are able to maintain adequate CRAR, the profitability and asset quality of some of them are becoming a cause of concern.

6.162 NBFCs have been witnessing significant changes. While the capital adequacy position of most of the NBFCs improved in the recent years, their profitability was adversely affected due mainly to rise in the cost of funds. This, in turn, was due to decline in the share of public deposits and rise in the share of borrowings. In the coming years, the importance of deposits in their sources of funds is expected to

decline further. This, however, should not be a cause of concern as in several other countries, borrowings is the main source of funds for NBFCs.

6.163 Reforms have been able to create competition in the insurance sector and give customers a wide choice not only in the matter of insurance companies but also in terms of insurance products. However, impact of increased competition is yet to be felt on the insurance penetration. In the case of mutual funds, although the competition has increased with increase in the number of mutual funds, their growth slowed down sharply in the recent years. This should be a cause of concern as mutual funds in several countries play an important role in the development of the capital market.

6.164 Thus, insofar as intermediaries are concerned, reforms have had a mixed impact. Improvement in the stability and efficiency parameters of the commercial banks has been the major achievement of the reform process. Reforms have also been able to enhance stability of other intermediaries, in general, as reflected in their increased capital position. Reforms have, however, not been so successful in bringing improvement in the efficiency as profitability of some intermediaries such as co-operative banks, NBFCs and DFIs declined in recent years due to various sector-specific reasons. Decline in the asset quality should be a matter of concern as this could also have adverse impact on the capital position of these intermediaries in future. Reforms in future would need to focus on efficiency and soundness of co-operative banks, DFIs and NBFCs.

6.165 The 1990s saw the significant development of various segments of the financial market. At the short end of the spectrum, the money market saw the emergence of a number of new instruments such as CP and CDs and derivative products including FRAs and IRS. Repo operations, which were introduced in the early 1990s and later refined into a Liquidity Adjustment Facility, allow the Reserve Bank to modulate liquidity and transmit interest rate signals to the market on a daily basis. The process of financial market development was buttressed by the evolution of an active government securities market after the Government borrowing programme was put through the auction process in 1992-93. The development of a market for Government paper enabled the Reserve Bank to modulate the monetisation of the fiscal deficit. The foreign exchange market deepened with the opening up of the economy and the institution of a market-based exchange rate regime in the early 1990s. Although there were occasional episodes of volatility in the foreign

exchange market, these were swiftly controlled by appropriate policy measures. The capital market also deepened during the 1990s. While the sharp increase in resource mobilisation through equity in the mid-1990s could not be sustained, there was a steady increase in the turnover in the secondary market. In terms of trading and settlement practices, risk management and infrastructure, capital market in India is now comparable to the developed markets. The development of the financial markets was well supported by deregulation of balance sheet restrictions in respect of financial institutions, allowing them to operate across markets. This resulted in increased integration among the various segments of the financial markets.

6.166 Apart from increasing integration of various segments of financial markets, the distinctions between banks and other financial intermediaries are also getting increasingly blurred. Another important aspect of reforms in the financial sector has been the increased participation of financial institutions, especially banks, in the capital market. These factors have led to increased inter-linkages across financial institutions and markets. While increased inter-linkages are expected to lead to increased efficiency in the resource allocation process and the effectiveness of monetary policy, they also increase the risk of contagion from one segment to another with implications for overall financial stability. This would call for appropriate policy responses during times of crisis. Increased inter-linkages also raise the issue of appropriate supervisory framework.

6.167 In India, while the banking system continues to play a predominant role, it is significant to note that, as a result of various reform measures, the relative significance of financial markets has increased. This augurs well for the overall stability of the financial system. The recent East Asian crisis underlined the need for a balanced financial system wherein financial markets also play an important role in providing necessary liquidity, especially during times of crisis. Banking system may also require liquidity in times of stress, which only deep and liquid financial markets can provide.

6.168 Financial sector reforms have supported the transition of the Indian economy to a higher growth path, while significantly improving the stability of the financial system. In comparison of the pre-reform period, the Indian financial system today is more stable and efficient. However, the gains of the past decade have to be consolidated, so that these could be translated to drive the institutions, markets and

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practices into a mature financial system that can meet the challenges of sustaining India on a higher growth trajectory. The financial system would, therefore, not only need to be stable but would also need to support still higher levels of planned investments by channelling financial resources more efficiently from deficit to surplus sectors. The banks would need to reassess their core banking business to view how best they could undertake maturity transformation to step up the lendable resources in support of real economic activity. Competitive pressures as well as prudential regulatory requirements have made banks risk-averse and their investment in relatively risk-free gilt instruments have far exceeded the stipulated requirements. The behaviour and strategies of bank business would need to change from the present so that they can factor in their own risk assessment even while performing their core activities. There is a need

to ensure long-term finance to support development and growth in the economy, even as restructuring takes place through mergers and universal banking. Also, the functioning of the capital markets requires to be toned up so that the levels of primary resource mobilisation seen in the early years of reform period are reached and perhaps surpassed. The key to attaining higher levels of investments by way of direct finance routed through capital markets lie in bringing about institutional improvement. Improved corporate governance practices can go a long way in bringing the retail investors back to capital markets. Institutional reforms supporting risk capital is important in broad-basing the entrepreneurship culture in the economy. While financial sector reforms till date have been helpful, more needs to be done so that greater gains from the financial sector reforms could be realised for the real economy.



