

## Financial Stability

6.1 Globalisation, advances in information technology and deregulation of the financial sector in emerging market economies have brought the issue of financial stability to the forefront of public policy. Several episodes of financial fragility that have occurred in the latter half of the 1990s across the globe, which entailed enormous costs for the financial system of several countries, have further underlined the need for a safe and sound financial sector. Traditionally, it is believed that monetary stability leads to financial stability. While there are complementarities between these two objectives in the long run, the relationship can be very different in the short-run. In this regard, a stable macroeconomic environment can often downplay the risks posed to the financial system. Accordingly, episodes of financial instability often follow periods of protracted macroeconomic booms.

6.2 Financial stability refers to the smooth functioning of financial markets and institutions without experiencing any serious disruption. The relevant legal, institutional and policy frameworks are varied and policy instruments at the disposal of the authorities are wide ranging. In a way, the financial stability objective is shared with a set of public policy bodies and professional bodies. However, the primary responsibility for overall financial sector efficiency and stability generally rests with the monetary authority – the central bank. The reasons for such a responsibility are the major functions that a modern central bank perform, besides maintaining monetary stability, *viz.*, issuer of currency and lender of the last resort. Some central banks are also responsible for the oversight of the financial infrastructure, particularly the payment systems, and crisis management. Historically, central banks have been concerned with both price stability and financial stability. However, in view of the recent episodes of turmoil and the realisation that financial stability and macroeconomic stability are mutually reinforcing in the process of economic development, central banks have begun to bestow a more focussed attention to the objective of

maintaining financial stability. This is in recognition of the weakness in the financial system that triggered recent episodes of economic crises (Frenkel, 2005)<sup>1</sup>. As a result, central banks have included financial stability as one of their core functions, although differences persist at a more fundamental level on the degree of activism that central banks should adopt in pursuing this objective.

6.3 The basic factors affecting financial stability are the rapid pace of technological innovation across the globe, increasing diversity of financial instruments and the emergence of a large number of financial conglomerates, cutting across not only various financial sectors, but also across countries. The role of financial intermediaries is also getting redefined with their ability to effectively compete by appropriate transformation of risk. Further, the source of financial disturbances has become more unpredictable mainly due to integration of financial markets across national boundaries, thereby exacerbating the possibility of contagion. The progressive dismantling of capital controls since the 1990s has led to substantial cross-border capital flows and volatile exchange rates. Sharp movements in exchange rates can have an adverse impact, particularly in emerging market economies, and can be a potential source of instability.

6.4 Globalisation entails several challenges for financial stability. First, although globalisation has led to productivity gains for the world economy, it has also been a source of some episodes of financial instability. These crises indicated that rapid movements of capital could be detrimental to economies with weak institutional frameworks. Second, the institutional backdrop has become more complex over the past twenty years as the hedge fund industry, which is relatively opaque in operation, has significantly grown in size. Such a large industry carries the risk of herd behaviour and with high concentration of assets, this could

<sup>1</sup> Frenkel, J.A., (2006): Concluding remarks on the Symposium "Productivity, Competitiveness and Globalisation" Financial Stability Review No.8, Banque de France, May.

clearly pose a threat to financial stability. Third, risk bearers are of two categories: (i) institutional, in the form of insurers or re-insurers; and (ii) the household sector. The re-insurers are a bit opaque with regard to the composition of their balance sheets and their risk exposures, while there are some concerns about the leverage that exists on households' balance sheets.

6.5 Going by the experience of Latin American countries, the trigger points of financial instability were: (i) a boom in credit to the private sector (Mexico, 1994; and Colombia, 1999); (ii) wholesale liberalisation in the absence of an appropriate and effective prudential regulatory framework (Mexico, 1994; Chile, 1984); (iii) direct effects of fiscal pressures on the domestic banking system (Argentina, 2001); (iv) contagion and spillovers where a crisis in one country impacts other countries (Argentina, 1995, Uruguay, 2001); (v) terms of trade shocks and movements in real exchange rates (Venezuela, 1994; Ecuador, 1998); and (vi) political instability, unrest, and in some cases, civil conflict. In this regard, deficiencies in key economic and social infrastructure are some of the factors that increased financial vulnerability in these countries. These include: (a) inappropriate

and ineffective prudential regulation and supervision; (b) inefficacy of bank intervention and resolution; (c) policy-induced distortions such as administered interest rates and weak government finances; (e) inadequate accounting practices, property rights and corporate governance; and (f) lack of institutional framework and adequate provisions, especially in the legal system.

6.6 The importance of financial stability emanates from four major trends in the financial systems, which have become evident in recent years. These are: (i) an imbalance of growth between the financial sector and the real economy; (ii) a change in the mode of financial operations due to financial deepening (credit/debit cards, *etc.*); (iii) emergence of a globally integrated financial system; and (iv) an evolution of sophisticated financial instruments and attendant risks. Consequently, the sources of crises have multiplied, necessitating the coordination of a number of authorities, both within and outside the country (Box VI.1).

6.7 Central banks pursue a multifaceted approach for ensuring financial stability. This includes: (i) payments system oversight;

#### Box VI.1: International Co-operation in Financial Stability among Regulators

In order to preserve domestic financial stability, central banks co-operate with other government agencies, *viz.*, banking and securities regulators, treasury department and other agencies, within a complex array of regulatory and supervisory arrangements. International attempts of ensuring financial stability may also be viewed as such. However, the role of other factors, especially that of private sector in providing impetus for international co-operation is of critical importance. In this regard, banks compliant with higher capital adequacy norms may seek to enforce international standards for capital adequacy to reduce competitive advantage gained out of regulatory arbitrage. International co-operation in such a context can be conceptualised as the product of power and purpose of bank supervisors to provide their home markets with greater financial stability while also addressing the competitive concerns of their domestic firms (Kapstein, 2006).

It needs to be recognised, however, that the power of any single country or authority is limited in ensuring co-operation across countries. Such co-operation is attributed to two factors: (i) the desire of supervisors to provide public goods such as financial stability; and (ii) that financial supervisors act mainly at the behest of private interest. This model of co-operation can be viewed from two standpoints. First, regulators attempt to resolve conflicting public and private sector interests. Second, international co-operation among regulators can be seen as an attempt to chart the future

course of international financial architecture.

In the current context, some trends on international co-operation in financial stability are clearly discernible. Currently, the concerns of central bankers arise out of what has been described as stable disequilibrium where the perceived risks arise mainly out of global imbalances and outlook for oil prices, particularly in view of the current geo-political situation. The macro policies in emerging markets in particular have to factor in these risks while continuously balancing the objectives of reforms and financial stability. More importantly, monitoring the sources of risk by the regulators has become very difficult due to emergence of large financial conglomerates, sophisticated market instruments such as derivatives and presence of international players like hedge funds. There has, however, emerged greater international co-operation among central bankers to mitigate the impact of such risks with full involvement of national treasuries in the Financial Stability Forum of the BIS.

#### References :

Kapstein, E.V (2006): "Architects of Stability? International Co-operation among Financial Supervisors" BIS Working Paper No. 199, February.

Reddy, Y.V (2006): "Financial Sector Reforms and Financial Stability", Reserve Bank of India Bulletin, April.

(ii) contingency planning against market disruption; (iii) lender of last resort (LOLR); (iv) financial regulation; and (v) transparent analysis and communication policy aimed at minimising information asymmetry. In this context, Financial Stability Reports/Reviews (FSR) being prepared by central banks/supervisory authorities in several countries generate public awareness on various aspects of financial stability such as macroeconomic situation, the health of the financial system and the risks and vulnerabilities faced by the financial sector. The purpose of FSRs, in general, is to identify at an early stage any trends of vulnerability that could lead to a crisis in the financial system. While the Bank of England and the *Sveriges Riksbank* of Sweden started publishing FSR in 1997, many central banks, at present, regularly publish FSR with the European Central Bank being a recent addition. At the global level, IMF also publishes a bi-annual report on global financial stability and conducts the Financial Sector Assessment Programme

(FSAP), which is jointly undertaken with the World Bank.

6.8 In emerging market economies such as India, while financial stability is crucial for achieving sustained economic growth, it cannot be achieved without reforming the financial system (Box VI.2).

6.9 In India too, financial stability has emerged as a key consideration in the conduct of monetary and financial policy in recent years. In the Indian context, financial stability implies (a) ensuring uninterrupted settlements of financial transactions (both internal and external); (b) maintenance of a level of confidence in the financial system amongst all the participants and stakeholders; and (c) absence of excess volatility that unduly and adversely affects real economic activity. The Reserve Bank has taken a three-pronged approach to maintain financial stability, *viz.*, maintenance of overall macroeconomic balance; improvement in the macro-prudential functioning of institutions

### Box VI.2: Financial Sector Reform and Financial Stability

Central banks have tailored the design of financial sector reforms to country-specific situations, taking cognisance of the threats to financial stability. The relevant considerations are: (i) the recognition that there exist strong complementarities between financial stability and macroeconomic stability; (ii) the pace of reforms to be adopted, *i.e.*, whether a shock therapy approach or a more cautious and gradualist strategy; (iii) deciding the optimal sequencing of reforms in case the gradualist approach is adopted; and (iv) the credibility of reforms. In this regard, the issue of credibility is inter-related with the choice of the pace of reform. A graduated pace wins credibility since it avoids disruptions and roll-backs in the short-run, while building a consensus in favour of continuing reforms in the medium to long-run.

In the pursuit of financial stability, effective regulatory and supervisory initiatives along with a calibrated approach to financial sector liberalisation are critical. Surveillance of the institutions in the financial sector and their interactions, both amongst themselves and with lenders and borrowers outside the financial sector, strengthening of the financial infrastructure and crisis management are also crucial. Financial crises, however, do not necessarily involve just banks and other deposit-taking financial institutions. There is an increasing overlap and interaction between banks and other segments of the economy. Some segments may not have the same rigorous risk management systems or regulatory oversight as banks. There are also market segments, particularly over the counter, which are not tightly supervised but could be of systemic importance such as hedge funds. In this scenario, the financial risks have a tendency to be shifted from well regulated to weakly or less regulated segments.

In emerging market economies, financial sector reforms have greatly helped in strengthening and reinforcing financial stability. It needs to be emphasised, however, that the existing international financial architecture is not adequate to prevent or mitigate the domestic and external effects of a financial crisis in large economies. The impact of instability in times of crisis appears largely to be borne by the domestic public sector rather than the global private sector. The issue of setting the pace of financial liberalisation is important in order to minimise the risks of instability. International experience shows that a faster pace of financial liberalisation was often followed by financial instability and crises. Therefore, in framing public policies, the approach to managing the financial sector, the choice of instruments and the timing and sequencing of policies are issues of crucial importance.

The financial sector reforms in India were initiated early in the reform cycle. In this regard, while prudential regulation of banks was introduced in the early phase of reforms, independent regulatory framework for other entities has been a recent phenomenon where new regulatory bodies for securities markets and insurance sector have been set up.

#### References :

Reddy, Y.V., (2006): 'Financial Sector Reforms and Financial Stability', Reserve Bank of India Bulletin, April.

Mohan, R., (2006): 'Financial Sector Reforms and Monetary Policy: The Indian Experience' Reserve Bank of India Bulletin July.

Mohan, R., (2005): 'Financial Sector Reforms in India: Policies and Performance Analysis' in Economic and Political Weekly, March 19.

and markets; and strengthening of micro-prudential institutional soundness through regulation and supervision.

6.10 Given the above backdrop, this Chapter reviews the stability of the financial system in India in terms of financial institutions, financial markets and financial infrastructure. Section 2 reviews key policy measures initiated with a view to strengthening the financial institutions (commercial and co-operative banks), financial institutions (FIs) and non-banking financial companies (NBFCs). Section 3 analyses the key developments in financial markets in recent years with a special focus on 2005-06 and 2006-07 (up to mid-October) from the perspective of financial stability. Major developments in the payment and settlement systems from the viewpoint of financial stability are set out in Section 4. Section 5 assesses the risks posed by global and domestic factors to financial stability in India. The last section presents an overall assessment of the Indian financial system over the short to medium-term from the point of view of financial stability.

## 2. Strengthening of Financial Institutions

6.11 The Indian financial system is a complex network of institutions having a variety of functions and governed by different regulations. Besides commercial banks, which are the predominant intermediaries of the financial system, there are co-operative banks, development finance institutions, non-banking financial companies, insurance companies, provident funds and mutual funds. The Reserve Bank exercises its supervisory role over the banking system encompassing commercial and co-operative banks (UCBs) by virtue of powers provided under the Banking Regulation Act, 1949 and the Reserve Bank of India Act, 1934. The Reserve Bank also regulates select all-India financial institutions under the Reserve Bank of India Act, 1934. Consequent upon amendments to the RBI Act in 1997, a comprehensive regulatory framework in respect of NBFCs was also introduced. In respect of State and district central co-operative banks, and regional rural banks, while the Reserve Bank is the regulator, the supervision is vested with the National Bank for Agriculture and Rural Development (NABARD). Insurance companies and mutual funds are regulated by the Insurance Regulatory

and Development Authority (IRDA) and the Securities and Exchange Board of India (SEBI), respectively.

6.12 With a view to promoting a safe and sound financial sector from financial stability perspective, the Reserve Bank has taken several initiatives to strengthen financial institutions under its purview.

### Scheduled Commercial Banks

#### *Macro-level Measures*

6.13 The statutory pre-emptions on resources of banks in the form of cash reserve ratio (CRR) and the statutory liquidity ratio (SLR) have been substantially reduced. The SLR was reduced to its statutory minimum level of 25.0 per cent in 1997 from the peak of 38.5 per cent in 1992. The CRR was also reduced to 4.5 per cent by 2004 from 15.0 per cent in 1992. Although the medium-term objective is to bring down the CRR, in view of rising inflation, the CRR was increased by 0.5 percentage point to 5.0 per cent of the net demand and time liabilities (NDTL) during September-October 2004. The CRR has remained unchanged since then.

6.14 The amendments to Section 42 of the Reserve Bank of India Act, 1934 in June 2006, vests the Reserve Bank with the powers to prescribe CRR for scheduled banks without any floor rate or ceiling rate. Under the earlier provisions, the Reserve Bank could prescribe CRR for scheduled banks between 3.0 per cent and 20.0 per cent of their NDTL. The amendments remove the statutory minimum CRR of 3.0 per cent. In terms of the amended Act, the Reserve Bank also cannot pay interest on any portion of CRR balances of banks once the Act comes into force. Prior to the amendment of the Act, the Reserve Bank had been paying interest on scheduled banks' eligible cash balances, *i.e.*, above the statutory minimum of 3.0 per cent and up to the prescribed level of 5.0 per cent at an interest rate determined by the Reserve Bank, which was set at 3.5 per cent with effect from September 18, 2004.

6.15 Before initiation of financial sector reforms in the early 1990s, the Indian financial system was characterised by financial repression as reflected in the administered interest rate structure, which thwarted the price discovery process in the absence of a well functioning

market mechanism. After the initiation of reforms, both the lending and deposit rates were gradually deregulated. In order to foster greater transparency in lending rate determination, the benchmark prime lending rate (BPLR) was prescribed for scheduled commercial banks, which provided them the flexibility to offer floating rate products by using market benchmarks in a transparent manner. Since deregulation of interest rates exposed market participants to interest rate risk, instruments such as forward rate agreements (FRAs) and interest rate swaps (IRS) were introduced in 1999 to facilitate the hedging of interest rate risk in the balance sheet of banks.

6.16 In a globalised world, smaller entities find it extremely difficult to compete with large banks, which enjoy enormous economies of scale and scope. The Reserve Bank, therefore, has been encouraging the consolidation process, wherever possible. The consolidation of the domestic banking system in both public and private sectors has been combined with measures to increase the level of competition in the banking system by increasing the presence of foreign banks in a calibrated manner consistent with India's commitment to the WTO.

6.17 Mergers and amalgamations are a common strategy adopted to restructure/strengthen banks internationally. Although the consolidation process through mergers and acquisitions of banks in India has been going on for several years, it gained momentum towards the late 1990s. Since 1999, there have been, in all, 12 mergers/amalgamations. Of these, one bank was amalgamated in 2005-06 and two banks in 2006-07 (up to mid-October, 2006). The Bank of Punjab Ltd. was amalgamated with Centurion Bank Ltd. on October 01, 2005. The Centurion Bank Ltd. subsequently changed its name to Centurion Bank of Punjab Ltd. with effect from October 17, 2005. The Ganesh Bank of Kurundwad Ltd. was amalgamated with the Federal Bank Ltd. on September 2, 2006. On October 3, 2006, the United Western Bank Ltd. was amalgamated with Industrial Development Bank of India Ltd.. With increased liberalisation, globalisation and technological improvements, the consolidation process in the Indian banking sector is likely to intensify in the future, thereby imparting greater resilience to the financial system.

6.18 The primary objective of the policy of the Reserve Bank/Government is to ensure that

merger is not detrimental to the public interest, banks concerned, their depositors or their controlling companies. The Reserve Bank and the Government have to keep in view that such mergers do not impinge on the stability of the financial system as a whole. The guidelines issued by the Reserve Bank on May 11, 2005, *inter alia*, laid down the process of merger and determination of the swap ratio.

6.19 The foreign investment limit from all the sources in private banks was raised from a maximum of 49 per cent to 74 per cent in March 2004. In consultation with the Government of India, the Reserve Bank released the roadmap on February 28, 2005, detailing the norms for the presence of foreign banks in India. At the same time, the Reserve Bank laid down a comprehensive policy framework on governance and ownership of private sector banks. These measures were intended to further enhance the efficiency of the banking system by increasing competition.

6.20 Corporate governance has assumed crucial significance for ensuring the stability and soundness of the financial system in recent years. In order to protect the interest of depositors and integrity of the financial system, it is necessary that owners and managers of banks are persons of sound integrity. Keeping these considerations in view, the Reserve Bank initiated several measures to enhance transparency and strengthen corporate governance practices in the financial sector in India.

#### *Prudential Measures*

6.21 In order to facilitate raising of capital for smooth transition to Basel II, banks were allowed to augment their capital funds by issue of innovative and hybrid instruments in January 2006. These were: (i) innovative perpetual debt instruments (IPDI) eligible for inclusion as Tier 1 capital; (ii) debt capital instruments eligible for inclusion as Upper Tier II capital; (iii) perpetual non-cumulative preference shares eligible for inclusion as Tier 1 capital; and (iv) redeemable cumulative preference shares eligible for inclusion as Tier II capital.

6.22 The Basel Committee on Banking Supervision (BCBS) had issued the 'Amendment to the Capital Accord to Incorporate Market Risks' containing comprehensive guidelines to provide

explicit capital charge for market risks in 1998. As an initial step towards prescribing capital charge for market risk, banks were advised in January 2002 to build up investment fluctuation reserve (IFR) up to a minimum of 5 per cent of investment in 'HFT' and 'AFS' categories in the investment portfolio. Subsequently, banks were advised in 2004 to maintain capital charge for market risk in a phased manner over a two year period ended March 31, 2006. Banks were allowed to treat the entire balance held in investment fluctuation reserve (IFR) as Tier I capital, provided they have maintained capital of at least 9 per cent of the risk weighted assets for both credit risk and capital charge for market risk as prescribed above.

6.23 The Committee on Banking Sector Reforms (Chairman: Shri M. Narasimham, 1998) had recommended that, as a prudential measure, a general provision of one per cent of standard assets would be appropriate and this should be implemented in a phased manner. During high credit growth, there is a tendency on the part of financial institutions to lower the appraisal standards, thereby exposing themselves to increased credit risk. Therefore, to maintain asset quality in the light of high credit growth during 2005-06, provisioning requirements were tightened in two stages. In November 2005, the provisioning requirement on standard assets, with the exception of direct advances to agricultural and SME sectors, was raised from 0.25 per cent to 0.40 per cent of the funded outstanding on a global loan portfolio basis. In May 2006, the provisioning requirement on standard advances in specific sectors, *i.e.*, personal loans, loans and advances qualifying as capital market exposures, residential housing loans beyond Rs.20 lakh and commercial real estate loans was raised from 0.40 per cent to 1.0 per cent. These provisions are eligible for inclusion in Tier II capital for capital adequacy purposes up to the permitted extent. The increase in provisioning requirements for specific sectors was to enable banks to build up cushion against unexpected loan losses should they arise in the wake of high credit growth.

6.24 Further, risk weights were increased during the year for some sensitive sectors with a view to ensuring that banks maintain capital commensurate with the underlying risk. In view of the sharp growth in bank credit to commercial

real estate, the risk weight on banks' exposure to the commercial real estate was increased from 100 per cent to 125 per cent in July 2005 and further to 150 per cent in April 2006. Furthermore, banks were advised that while appraising loan proposals involving real estate, they should ensure that the borrowers have obtained prior permission from government/local governments/other statutory authorities for the project, wherever required. In order to ensure that the loan approval process is not hampered on account of this, it was advised that while the proposals could be sanctioned in the normal course, the disbursements should be made only after the borrower has obtained the requisite clearances from the Government authorities.

6.25 The risk weight for credit risk on certain capital market exposures was also increased from 100 per cent to 125 per cent with effect from July 26, 2005. Capital market exposures subject to higher risk weights include: (i) direct investment by a bank in equity shares, convertible bonds and debentures and units of equity oriented mutual funds; (ii) advances against shares to individuals for investment in equity shares (including initial public offerings (IPOs)/employee stock option plans (ESOPs), bonds and debentures and units of equity oriented mutual funds; and (iii) secured and unsecured advances to stock brokers and guarantees issued on behalf of stock brokers and market makers.

6.26 The market for securitisation of standard assets has grown significantly in recent years. In order to ensure orderly development of the market, the Reserve Bank issued draft guidelines on securitisation of standard assets in April 2005. The final guidelines applicable from February 1, 2006 include, *inter alia*, the criteria for true sale, the criteria that should be met by the special purpose vehicle (SPV) to enable the originator to avail off-balance sheet treatment for the assets securitised, policies on provision of credit enhancement/liquidity/underwriting facilities and services, prudential norms for investment in securities issued by SPV, and accounting treatment of the securitised transactions and disclosures.

6.27 Venture capital funds (VCFs) play an important role in encouraging entrepreneurship. While banks' involvement in financing venture capital funds is necessary, there is also a need

to recognise the relatively higher risks inherent in such exposures. In the absence of adequate public disclosures with regard to performance/asset quality of VCFs, prudence demands that the exposures to VCFs be treated as 'high risk'. Accordingly, in April 2006, it was decided that a bank's total exposure to venture capital funds will form a part of its capital market exposure. Accordingly, banks were required to assign a higher risk weight of 150 per cent to such exposures.

6.28 The Financial Intelligence Unit-India (FIU-IND) set up by the Government of India in November 2004 is the central, national agency responsible for disseminating information relating to suspect financial transactions to enforcement agencies in India and abroad. It is responsible for strengthening efforts of national and international agencies against money laundering and related crimes. It was set up to collect, compile, collate and analyse the cash and suspicious transactions reported by banks and financial institutions. In this context, the Reserve Bank advised banks that while Cash Transaction Report (CTR) for each month should be submitted to FIU-IND by the first fortnight of the succeeding month, the Suspicious Transaction Report (STR) should be furnished within 7 days of arriving at a conclusion that any transaction, whether cash or non-cash, is of suspicious nature. Cash transactions of Rs.10 lakh and above or a series of integrally connected transactions aggregate of which, in a month, exceed Rs.10 lakh are required to be reported in CTR. Individual cash transactions below Rs.50,000 have been excluded from the purview of reporting to FIU-IND. Banks have been advised to report all other cash transactions where forged or counterfeit bank notes have been used and any forgery of a valuable security has taken place. These measures would ensure the sanctity of banking transactions and make the banking system less vulnerable to frauds and money laundering.

6.29 In order to increase the options available to banks for resolving their non-performing assets and to develop a healthy secondary market for non-performing assets, where securitisation companies and reconstruction companies are not involved, the guidelines on sale/purchase of non-performing assets were issued to banks/FIs/NBFCs in July 2005.

6.30 A Special Group (Chairperson: Smt. S. Gopinath) was constituted in 2004 to undertake a review of the scheme on corporate debt restructuring (CDR). Based on the recommendations of the Group, guidelines were issued to all commercial banks/FIs (excluding RRBs) in November 2005. The salient features of the revised guidelines are: (i) the scheme has been extended to entities with outstanding exposure of Rs.10 crore or more; (ii) it is now required to have the support of 60 per cent of creditors by number in addition to the support of 75 per cent of creditors by value with a view to making the decision making more equitable; and (iii) the restoration of asset classification has been linked to the implementation of the CDR package. In order to improve flow of credit to small and medium enterprises, detailed guidelines were issued to banks to ensure restructuring of debt of all eligible small and medium enterprises at terms, which were, at least, as favourable as the existing corporate debt restructuring mechanism. These guidelines would further strengthen the process of credit delivery.

6.31 The guidelines relating to one-time settlement scheme for recovery of NPAs below Rs.10 crore for small and medium enterprises (SME) accounts issued to public sector banks were extended to FIs in November 2005. The Reserve Bank is also encouraging banks to set up an advisory mechanism for individuals in the form of credit counselling (Box VI.3).

6.32 Deposit insurance provides safety to small depositors and reduces the probability of bank runs and bank failures. Countries have several objectives in establishing the deposit insurance system, the principal reason being to protect small depositors and avoid systemic crises. However, full deposit insurance often conflicts with the need to develop a sound banking system in the long run. Therefore, it is essential to design an incentive compatible system that discourages moral hazard, adverse selection and agency problem. Several countries in recent years have switched to the differential premium system (Box VI.4).

6.33 The Reserve Bank of India (Amendment) Bill, 2006 was enacted to provide greater operational flexibility to the Reserve Bank in the conduct of monetary policy. The Act provides the Reserve Bank with greater autonomy in the use of policy instruments. Consequent upon the

### Box VI.3: Credit Counselling

The need for financial education is felt both in the developed and the developing countries. In the developed countries, the increasing number and complexity of financial products, the continuing shift in responsibility for providing social security from the Governments and financial institutions to individuals, and the growing importance of retirement planning by the individuals, make it imperative that financial education be provided to all. Similarly, in emerging economies, the increasing participation of a growing number of consumers in developing financial markets necessitates the promotion of financial education. With changing growth dynamics, certain segments of the population could become susceptible to excessive borrower optimism or even to vicissitudes in the economic environment. In such a scenario, it is necessary to establish credit counselling institutions for educating individuals to assess their credit demand and debt management in order to mitigate bankruptcy risk. Furthermore, credit counselling institutions can also remove asymmetric information in rural credit and can help individuals by guiding them to access credit from various available sources. From the perspective of a regulator, financial education delivered through credit counselling can empower the common person and, thus, reduce market failure attributable to information asymmetries.

The first well known credit counselling agency was created in 1951 in the United States when credit agencies created the National Foundation for Credit Counselling (NFCC). Their stated objective was to promote financial literacy and help consumers to avoid bankruptcy. In 1993, the Association of Independent Consumer Credit Counselling Agencies (AICCCA) was founded in the United States, considering the need for industry-wide standards of excellence and ethical conduct. The concept caught the attention of other countries and over the last several years, a number of countries have undertaken significant initiatives towards credit counselling. The Consumer Credit Counselling Service (CCCS) in the UK, established in 1993, helps consumers with budgeting and better money management as also their debt repayment plans. In fact, the Banking Code in the UK provides that member banks shall discuss financial problems with customers and together evolve a plan for resolving these problems. Canada

established a non-profit counselling organisation in 2000 called Credit Counselling Canada (CCC), which seeks to enhance the quality and availability of not-for-profit credit counselling for all its citizens. The Bank Negara Malaysia has established a Credit Counselling and Debt Management (CCDM) agency to provide advice to individuals on credit counselling and loan restructuring. The arrangement is expected to be a prompt and cost-effective means of debt settlement based on the repayment plan between creditors and the debtor without intervention of courts. In view of rising personal bankruptcies, primarily on unsecured debt, Credit Counselling of Singapore (CCS), established in 2003, is meant to assist financially distressed consumers.

In India, Corporate Debt Restructuring (CDR) mechanism exists whereby large corporates in genuine cases of difficulty are provided the facility of restructuring the debt extended by banking and development finance institutions. A framework, for small and medium enterprises has also been evolved recently. In the case of agriculture loans and small borrowers, however, only broad guidelines have been issued to banks from time to time on parameters for restructuring. In this context, there are a number of issues that need to be recognised to initiate and popularise credit counselling for individual borrowers. These are: (i) combining credit counselling with some elements of financial literacy; (ii) credit counselling to be *ex ante* or only *ex post* or some combination of both; (iii) devising differential mechanisms to take into account different credit segments as well as different categories of individual borrowers; (iv) accrediting credit counsellors through industry associations; (v) providing a training and institutional framework to develop credit counsellors to make them effective; and (vi) examining the viability of non-governmental organisations and consumer organisations in order to expand the outreach of counselling practices.

#### References :

Y.V. Reddy (2006), "Credit Counselling: An Indian Perspective" Reserve Bank of India Bulletin, October.

ó ó (2006), "The Role of Financial Education: The Indian Case" Reserve Bank of India Bulletin, October.

amendment, the Reserve Bank, with a view to securing monetary stability, can prescribe the cash reserve ratio (CRR) without any floor rate or ceiling rate. Further, the Reserve Bank cannot pay interest on CRR balances once the Act comes into force. The amendments also give legal sanctity to over-the-counter (OTC) derivatives, if at least one of the parties to the transaction is the Reserve Bank or any agency falling under its regulatory purview. Prior to the amendment, only exchange traded derivatives were deemed to be valid.

#### Risk Containment Measures

6.34 Although derivative instruments are used for hedging risks by banks and financial institutions, overexposure in derivatives and other off-balance sheet instruments could itself aggravate the risks posed to the balance sheet of banks (Box VI.5). Considering the inherent risks in the derivatives segment, the Reserve Bank advised market participants in 2005 to carry out due diligence regarding customer appropriateness and suitability of products, including verification



**Box VI.4: Differential Premium System ñ The International Scenario**

Policy makers have a choice between adopting a flat-rate premium system or a premium system that is differentiated on the basis of risk profiles of individual banks. The primary advantage of a flat rate premium system is the relative ease with which assessments can be calculated and administered. As flat-rate premiums do not reflect the level of risk that a bank poses to the deposit insurance system, it may be perceived as encouraging excessive risk taking by some banks. Risk-adjusted differential premium systems can mitigate such risks and develop more prudent risk-management practices by member banks. Many countries are considering modifications in their existing deposit insurance systems and have expressed interest in eventually transiting to differential premium systems.

One of the greatest challenges to developing a differential premium system is finding appropriate methods for differentiating the risk profiles of banks. As per the guidelines of International Association of Deposit Insurers, a number of approaches are available for moving towards differential premium system, which combines both quantitative and qualitative factors. Most countries employing differential premium system use such an approach. Quantitative criteria approaches generally try to use measures that are factual or data based to categorise banks for premium assessment purposes. For example, Argentina, Canada, France, Taiwan and the United States utilise this approach in their differential premium system methodologies (Table 1).

An important consideration in systems, which combine both quantitative and qualitative factors, is the relative weights assigned to these factors. In some systems [(for instance, the Federal Deposit Insurance Corporation (FDIC)], quantitative criteria receive an equal weight to a more subjective criteria such as examination ratings. In other countries such as Canada, qualitative criteria have lower weights than quantitative criteria. In general, there is a tendency to assign higher weights to quantitative elements than qualitative factors.

Most newly established systems initially adopt a flat-rate system given the difficulties associated with designing and implementing a risk-adjusted differential premium system. It is difficult to (i) find appropriate and acceptable methods of differentiating risk; (ii) obtain reliable resources to administer the system; (iii) ensure consistent and timely flow of information; and (iv) ensure that the rating criteria are transparent. Therefore, before establishing a differential premium system, it is important to review the state of the economy, structure of the banking system, public attitudes and expectations, the strength of prudential regulation and supervision, the legal framework and the soundness of accounting and disclosure regimes.

of genuineness of underlying exposure. Market participants have been advised to have a proper risk management policy with regard to counterparty credit risks. As Indian derivatives market is predominantly over the counter (OTC), the use of risk mitigation techniques such as

**Table 1: Differential Premium System Adopted by Select Countries**

Country	Methodology
US	3x3 matrix based on capital adequacy and supervisory ratings with equal weightage.
Canada	A score card incorporating 14 individual quantitative and qualitative measures with 60 per cent weightage to quantitative indicators and slotting banks into 4 premium categories.
Argentina	All institutions contribute a basic premium to the deposit insurer with additional premium determined by a combined qualitative/quantitative differential premium system.
France	A combination of prudential and financial risk analysis ratios which are applied to the amount of deposits held by each member bank.
Taiwan	3x3 matrix based on capital adequacy and an examination data rating composite score which incorporates the CAMEL(S) framework.
Turkey	Based on various measures of capital adequacy, foreign exchange positions, asset quality and provisioning.

A well-managed transition process should, *inter alia*, include (i) a clear plan setting out the transitioning objectives, responsibilities, resource requirements, time table and deliverables; and (ii) communication of the transition plan to all interested parties and provision for a consultative process to accompany changes to the policy or legislative framework affecting the scheme. Canada introduced a transitional mechanism for the first two years of the scheme.

**References :**

Financial Stability Forum, (2001) "Guidance for Developing Effective Deposit Insurance Systems", Final Report of the Working Group on Deposit Insurance, Bank for International Settlements, Basel.

Garcia, G. (1999), "Deposit Insurance: A Survey of Actual and Best Practices", IMF Working Paper, April.

International Association of Deposit Insurers (IADI) (2005), General Guidance for Developing Differential Premium Systems, Basel, Switzerland, February.

collaterals and netting is desirable for the purpose of not only reducing the counterparty credit risks but also for the purpose of reducing systemic risks. However, the use of collateral in Indian markets is not very common. As regards setting limits on market risks, participants were advised

### Box VI.5: Trends in Off-Balance Sheet Exposures of Banks

Off-balance sheet (OBS) exposures of the financial system across the globe have recorded a significant increase in recent years. Global over-the-counter derivative products doubled from a notional outstanding of US\$ 142 trillion in December 2002 to US\$ 285 trillion in December 2005 (BIS, 2006). Similarly, total notional principal amount of OBS exposures in India increased from Rs.8,41,884 crore at end-March 2002 to Rs.43,99,908 crore at end-March 2006. As a percentage of total on-balance sheet assets, total OBS exposure, which accounted for 57 per cent at end-March-2002, shot up to 163 per cent at end-March 2006. Greater need for risk management, deregulation of interest rates, squeeze on margin on conventional balance sheet items, greater competition, and new opportunities arising out of technological advancements have contributed towards the phenomenal growth in OBS exposures, especially derivatives.

OBS exposures essentially take the form of contingent liabilities and derivatives. Contingent liabilities are the more traditional off-balance-sheet exposures, while derivatives, except for traditional forward exchange contracts, have come into prominence recently. The growth in OBS exposures in India has been fuelled by the phenomenal increase in the derivative segment. Between end-March 2002 and end-March 2006, contingent liabilities of the banking system recorded an annual compound growth rate of 23.6 per cent, while contracts and derivatives increased at an annual compound growth rate of 55.5 per cent. Consequently, the share of contracts and derivatives (notional principal) in total OBS exposures of the banking system increased from 82.5 per cent to 92.7 per cent during the same period. While the notional amount of OBS exposures, including derivatives has grown exponentially, the number of banks which are actively involved in these

activities in India are only 15, most of which are foreign banks. The combined share of these 15 banks in total off-balance sheet exposures steadily increased from 73.8 per cent in March 2002 to 82.3 per cent in March 2006.

While the notional amount is a proxy for the amount of derivatives activity, it does not measure the riskiness of the activity. A measure of assessing the risk is the credit equivalent, which is the monetary value of the credit risk exposure. Credit equivalent is the potential cost replacing the contract's expected net cash flows in the event of default by the counterparty. At the system level, total credit equivalent of outstanding derivatives constituted 1.9 per cent of notional principal at end-March 2006.

The proliferation of derivatives exposures inevitably poses a challenge to financial stability on account of the immense downside risks associated with them. While derivative activities facilitate risk hedging and risk transfer, some other inherent risks are also involved. One important source of vulnerability in the Indian derivatives market relates to high concentration risk since the number of counterparties (both banks and corporates) are limited. The concentration of activity and knowledge among a small number of players raises the potential risk of systemic market crisis due to default by a few counterparties. Thus, both market participants and policymakers need to be aware of the risk management challenges associated with the use of derivatives to transfer risk, both within and outside the banking system.

#### Reference:

Bank for International Settlements, (2006), BIS 76th Annual Report, Basel, June.

to use only domestic rupee benchmarks for rupee interest rate derivatives. Subsequently, market participants were advised in December 2005 that the gross present value of all non-option rupee derivative contracts should be within 0.25 per cent of the net worth of the bank as on the last day of the balance sheet from March 2006.

#### *Supervisory Measures*

6.35 The macro approach to financial supervision has helped the Reserve Bank to refine its regulatory as well as monetary policy stance so as to achieve the fine balance between growth and financial stability.

6.36 Several initiatives have been taken for a gradual roll out of the risk based supervision (RBS) process since the announcement made in the Monetary and Credit Policy of April 2000. On-site pilot study (third in series) was taken up in four banks in 2005-06 under the revised RBS framework. On the basis of three rounds of pilot

run of RBS covering public sector, private sector and foreign banks, the templates have been revised to assess for five business risks and two control risks. The new methodology for risk assessment being formulated would enable the supervisors to separately assess the risk for inherent/control risk areas and domestic/overseas operations in respect of all the business risk areas. This would facilitate area-specific supervisory action. The revised risk-rating framework is number driven. It provides granularity to the supervisory risk-rating process (*i.e.*, assessing degrees of risk and whether the risk is in the upper band or lower band), enabling preparation of specific supervisory programme/action for individual banks which strengthens the supervisory system.

6.37 The Reserve Bank had instituted a Off-site Monitoring and Surveillance (OSMOS) system for banks in 1995 as part of crisis management framework for Early Warning System (EWS) and as a trigger for on-site inspections of vulnerable

institutions. The scope and coverage of off-site surveillance has since been widened to capture ongoing changes in regulatory and supervisory requirements as also various facets of efficiency and risk management of banks. The Reserve Bank remains continuously in touch with the banks with a view to enhancing data quality.

6.38 With the increase in the complexities of banking business and consequent exposure of their balance sheets to the various risks, particularly market risks, it has become imperative for banks to rely on various techniques to manage these risks. While the principal technique used by most of the banks for quantification of market risk is Value at Risk (VaR), there are certain inherent weaknesses/deficiencies of this technique. Therefore, stress testing has emerged as an important complementary technique to VaR. Stress testing not only helps in understanding the impact of extreme events on the performance of a portfolio,

but it also helps in identifying key areas where the vulnerability of the portfolio is higher. Establishing risk limits relating to the capital resources of the firm may also be possible through stress testing results. In effect, the capital buffer (solvency capital) that is required to ensure that the firm survives an extremely adverse set of market conditions can also be defined through this test. The Reserve Bank also conducts periodic sensitivity analysis of banks' balance sheets in view of their significant exposure to market risk.

6.39 The Annual Policy Statement for 2006-07 had noted that in the present liberalised environment, banks need to have a robust and sound stress testing process for assessment of capital adequacy. Stress tests enable banks to assess the risk more accurately, thereby facilitating their planning for appropriate capital requirements (Box VI.6). It would also form a part of preparedness for Pillar 2 of the Basel II framework. In this context, the draft guidelines for

#### Box VI.6: Financial Stability and Stress Testing

Stress testing to adverse macroeconomic shocks is an important tool in assessing financial stability. A stress test is performed to measure the sensitivity of the portfolio of assets and liabilities of an individual institution or a financial system to changes in one of the risk factors such as interest rate or exchange rate. It provides an estimate of the change in the value of the portfolio due to a sudden change in the risk factors.

The stability of a financial system depends on a large number of factors. The first step in a stress testing process is to identify the important risk factors and understand what is a normal state for the financial system. After identifying the potential shocks to the financial system, the next step is to develop a macro econometric model that can be used to understand the behaviour of the system with respect to the main vulnerabilities. Once the model is developed, the idea is to decide upon the time horizon for measuring the shock, the variables subjected to the shock and the size of the shock. Finally, the shocks need to be mapped into their impact on the balance sheet of financial institutions.

The key indicator used for measuring the interest rate risk is duration. Duration is a measure of the percentage change in the value of the portfolio for a unit change in the interest rate and is a good measure only for small changes in the interest rate. Stress testing normally involves large changes in interest rates. Therefore, in addition to duration, convexity should also be included in the calculations. In practice, often maturity gap analysis, which is a simplified measure of interest rate sensitivity, is used by banks in place of duration analysis.

Exchange rate risk is the impact of changes in exchange rate on the value of assets and liabilities of financial institutions.

The change in net open position due to a change in exchange rate can help determine the sensitivity of the position to exchange rate risk. The net open foreign exchange position is relatively easy to measure and, therefore, banks may be in a position to manage the exchange rate risk to a great extent.

Credit risk is the risk that counterparties will default on their contractual obligations. The data that are required for credit risk stress testing relate to different categories of performing loans and non-performing loans (sub-standard, doubtful and loss). A set of different types of variables can be used for stress testing of credit risk like changes in the price of collateral, increase in non-performing loans (NPLs) and increase in provisioning ratio.

Stress tests can be performed for other types of risks (liquidity risk, commodity risk, equity price risk) in a similar manner. Stress tests can also be performed for the second-round effects by using contagion models. These models estimate the impact of failure of one institution on the other institutions in the system. These types of models have already been applied to inter-bank markets but can also be adopted for other types of markets.

#### References :

Basel Committee on Banking Supervision, (2004) 'Principles for the Management and Supervision of Interest Rate Risk', BIS, July.

International Monetary Fund, 'Global Financial Stability Report', various issues.

The World Bank and International Monetary Fund, (2005) 'Financial Sector Assessment: A Handbook', September.

implementation by banks were placed in the public domain by the Reserve Bank on July 3, 2006, soliciting feedback and comments from the banks.

6.40 With a view to maintaining the integrity of the financial sector and enhancing public confidence in the financial system, the Reserve Bank prepared a draft scheme called 'Protected Disclosures Scheme for Private Sector and Foreign Banks' on the lines of Government of India resolution in January 2006. The public sector banks are already covered under a similar scheme. The scheme provides a mechanism for lodging complaints against corruption, misuse of offices and suspected/actual frauds in private sector and foreign banks.

6.41 It is imperative for banks to prepare for business disruptions and system failures and ensure continuity of operations. Such plans would provide resilience to banks to tide over natural calamities. The unprecedented floods in recent times in a few cities and the resultant reports of electronic delivery channels of some of the banks being affected has further reinforced the need for robust business continuity plan (BCP) in banks. In recognition of such eventualities, detailed guidelines were issued by the Reserve Bank in April 2005 requiring commercial banks to put in place business continuity measures within a fixed time frame.

6.42 In view of increasing globalisation and integration of global markets, conflict of interest within the financial sector can have a negative impact on investor confidence, efficacy of the regulatory framework and, above all, the credibility of the financial service providers. The Reserve Bank had constituted a Working Group on Conflicts of Interest in the Indian Financial Services Sector (Chairman: Shri D. M. Satwalekar) in September 2004 to identify the sources and nature of potential conflicts of interest in the financial sector and possible measures/actions to be taken in this regard for mitigating them (Box VI.7). The Report submitted by the Group examined the various situations of conflicts of interest, both nationally and internationally, and attempted to provide an integrated framework of forward-looking measures to mitigate/prevent such situations.

6.43 Various measures initiated by the Reserve Bank have brought about refinement in regulatory norms and supervisory process, while providing increased operational flexibility to financial institutions. It has been the endeavour of the Reserve Bank to implement best prudential risk management practices comparable to global standards through a transparent and consultative process.

#### **Box VI.7: Conflicts of Interest in the Financial Sector**

The Working Group (Chairman: Shri D. M. Satwalekar) suggested that in the case of Public Sector Enterprises (PSEs), improvement in governance mechanism could be brought about by transferring the actual governance functions from the concerned administrative ministries to the boards, specialised agencies (trusts, SPVs, *etc.*) formed for the purpose, professionalising and streamlining the appointment process of directors, besides suitably revamping the compensation and remuneration structures. In the case of private sector, control structures and disclosure practices should be so devised as to be consistent with the interests of all stakeholders, keeping in view the fact that control is often exercised through a complex pattern of cross holdings involving subsidiaries.

It also suggested that a Conflict Management Policy (CMP) for managing conflicts should be developed by each institution/profession, by which a commensurate premium/discount is placed on the ethical/unethical behaviour of individuals or the institutions. The Group observed that the Government has an important role in ensuring that the politico-judicial reforms are calibrated to meet the enhanced needs of an increasingly complex financial sector. Stating that defining financial crime and crafting technology neutral laws are the imperatives, the Group, pointed out that

financial services is too crucial an industry in a country's economy to be left solely in the hands of the institutions and the regulators. In the Group's view, an enlightened public, who are aware of their rights and obligations, are the best safeguard for ensuring non-exploitation of conflicts of interest by the financial intermediaries. In the Indian conditions, the Government and the regulators have an important role in enlightening the public of their rights and obligations. The society at large should send a strong message through all possible means available that pro-consumer behaviour would be rewarded, while anti-consumer behaviour would be appropriately punished.

While pointing out that it is tempting to prescribe more detailed 'Rules of the Road' to mitigate the myriad varieties of conflicts of interest, the Group opined that the principles/rules enunciated are by no means substitutes for the overriding importance of the time-honoured basics of managerial competence, sound judgement, common sense and presence of a highly disciplined system of corporate governance, of which mitigation of conflicts of interests is an integral part. Regulatory environment should be based on principles rather than rules and should actively promote transparency, market discipline, public awareness and education.

### Other Financial Institutions

6.44 Several measures were initiated by the Reserve Bank during 2005-06 to strengthen other financial institutions such as regional rural banks (RRBs), co-operative banks, financial institutions (FIs) and non-banking financial companies (NBFCs).

#### *Regional Rural Banks and Rural Co-operative Banks*

6.45 The regional rural banks (RRBs) have been playing an important role in purveying rural credit. With a view to strengthening them, banks were encouraged to amalgamate State-wise, the RRBs sponsored by them. In this context, the Government of India, after consultation with NABARD, the concerned State Governments and sponsor banks initiated the process of amalgamation of RRBs in September 2005. As a result of this initiative, 137 RRBs were amalgamated till October 31, 2006 to form 43 new RRBs (sponsored by 18 banks in 15 States). This has brought down the total number of RRBs from 196 to 102. Some more amalgamation proposals are under consideration of the Government of India. This process would result in further consolidation of RRBs, thereby strengthening the rural credit sector.

6.46 In order to reposition RRBs as an effective instrument of credit delivery, the Reserve Bank has allowed RRBs to enhance their resource base, issue credit/debit cards and set up ATMs. They were also allowed to open (on a case by case basis) currency chests and handle pension and other government businesses as sub-agents of banks, thereby expanding their sphere of operations.

6.47 The rural co-operative banks have served an important vehicle for extending credit to the rural and agricultural sector. In this regard, the separation between short and long-term institutions has enabled specialisation in credit delivery. In view of the increasing need to strengthen credit delivery in rural areas, two separate reports of the Task Force (Chairman: Prof. A. Vaidyanathan) set up to suggest measures to revive short-term and long-term rural cooperative banking institutions are under implementation/active consideration of the Government of India. The implementation of the recommendations of the Task Force would make the co-operative banks truly democratic, autonomous, vibrant, member-driven,

professionally managed, technologically sound and financially strong.

#### *Urban Co-operative Banks*

6.48 It has been the endeavour of the Reserve Bank that the urban co-operative banks (UCBs) emerge as a sound and healthy network of jointly owned, democratically controlled and ethically managed banking institutions, so that they can provide need-based quality banking services, essentially to the middle and lower middle classes and marginalised sections of the society. During 2005-06, the Reserve Bank undertook several initiatives to strengthen the urban co-operative banking sector.

6.49 As UCBs are subject to dual control by the Reserve Bank and the State Governments, continuous efforts are being made to harmonise the regulation and supervision over UCBs to facilitate their orderly development. In order to address issues/difficulties relating to dual control within the existing legal framework, a working arrangement in the form of Memorandum of Understanding (MoU) has been evolved. Accordingly, the Reserve Bank has so far signed MoUs with eight State Governments, viz., Andhra Pradesh, Gujarat, Karnataka, Madhya Pradesh, Uttaranchal, Rajasthan, Chhattisgarh and Goa. Other States with a sizeable presence of UCBs have also been approached for entering into a MoU.

6.50 In order to facilitate emergence of strong entities and also provide an avenue for non-disruptive exit of unviable entities, the Reserve Bank issued guidelines on merger/amalgamation of UCBs in February 2005. General permission was given to the acquirer UCB to amortise the losses taken over from the acquired UCB over a period of not more than five years, including the year of merger. The Reserve Bank has since indicated its concurrence to 17 merger proposals of which, 14 mergers have already taken effect. This would result in further consolidation of the UCBs.

6.51 In order to revitalise and rehabilitate the scheduled UCBs with negative net worth, the Reserve Bank began a consultative process with the concerned State Governments and banks. The emphasis is on a time bound programme for restructuring of such UCBs by demarcating the contours of their rehabilitation plan and setting up monitorable milestones. During the year, 10 scheduled UCBs were placed under the

restructuring plan. The Reserve Bank has been closely monitoring their progress with a view to protecting depositors' interest and avoiding systemic problems.

6.52 In the case of urban co-operative banks, share capital can be withdrawn. Therefore, the share capital of UCBs does not have all the characteristics of equity. Co-operative banks are also not permitted to issue shares at a premium. In order to explore various options for raising capital, a Working Group (Chairman: Shri N.S. Vishwanathan) was constituted in September 2005 comprising representatives of the Reserve Bank, the State Governments and the UCBs to examine the issue of share capital of UCBs and identify alternate instruments/avenues for augmenting the capital funds of UCBs. The Working Group is expected to submit its Report in November 2006.

6.53 The Reserve Bank, in April 2006, permitted UCBs in States where MoU have been signed and those registered under the Multi-State Co-operative Societies Act to offer mutual fund products, as agents to their customers, subject to certain conditions. The Reserve Bank also allowed well-managed UCBs – both scheduled and non-scheduled – to open select off-site/on-site ATMs, thereby facilitating banking transactions.

6.54 The Vision Document for UCBs highlighted the heterogeneity of the UCB sector in terms of their geographical spread, size, strength, levels of professionalism and performance. Application of uniform regulatory standards affected the performance of several UCBs, especially the smaller ones which operated more closely on co-operative principles. Steps have been initiated to rationalise the one size fits all approach to regulation and supervision of UCBs keeping in view the heterogeneous character of the group.

6.55 As a part of the announcement made by the Union Finance Minister for improving the flow of credit to small and medium enterprises, certain guidelines were issued for restructuring of debt of SMEs. UCBs were advised to formulate the debt restructuring scheme with the approval of concerned State/Central Registrar of Co-operative Societies and give adequate publicity to the scheme among the customers for greater customer awareness.

6.56 On-site inspection has been strengthened through integration with off-site surveillance. The

database contains all regulatory and supervisory returns submitted by banks, including the off-site surveillance returns as also the on-site inspection data submitted by inspecting officers. This integration of data from different sources supports the concept of central point of supervision (CPOS). It has helped in strengthening the Reserve Bank's supervision over UCBs.

#### *Financial Institutions*

6.57 Financial Institutions (FIs) in India have traditionally been the major source of medium and long-term funds. In recent years, however, the role of FIs has diminished with the conversion of two major FIs into banks. In this regard, an Internal Working Group on Future Role of Financial Institutions (Chairman: Shri P. Vijay Bhaskar) was constituted in the Reserve Bank. The report of the Group is being finalised and is expected to be submitted in October 2006.

6.58 To ensure convergence of the norms applicable to banks and FIs as also to move closer towards international best practices, several prudential and regulatory measures have been initiated in recent years. A minimum framework for disclosures on risk exposures in derivatives of FIs, including both qualitative and quantitative aspects, was prescribed with a view to providing a clear picture of the exposure to risks in derivatives, risk management systems, objectives and policies. FIs are required to make these disclosures as a part of the 'Notes on Accounts' to the balance sheet with effect from March 31, 2005 (June 30, 2005 in the case of National Housing Bank). General provisioning requirement for standard advances other than direct advances by FIs to the agriculture and the SME sectors was increased from 0.25 per cent to 0.40 per cent.

#### *Non-Banking Financial Companies*

6.59 The Reserve Bank continued its efforts to strengthen the non-banking financial companies. The periodicity of returns on important financial parameters of NBFCs not accepting/holding public deposits and having an asset size of Rs.500 crore or above was changed in September 2005 from quarterly to monthly to facilitate a macro level assessment of large non-deposit taking companies at more frequent intervals. The threshold asset size of such companies was also reduced from 'Rs.500 crore and above' to 'Rs.100 crore and above' to widen the coverage. Further, the

reporting format was amended to incorporate additional information relating to capital market exposure covering financing of IPOs, gross sales and purchases in various segments and guarantees issued on behalf of share brokers.

6.60 In order to protect the depositors' interest and to enhance transparency in their operations, all deposit-taking NBFCs were advised in October 2005 to put in place a system to ensure that agents/brokers authorised by them to collect deposits are properly identifiable and their books of accounts are available for audit and inspection. Earlier in December 2004, the residuary non-banking companies (RNBCs) were advised to put in place such system in respect of their agents/brokers.

6.61 All deposit taking NBFCs/RNBCs were advised in October 2005 that all individual cases of frauds involving Rs.1 lakh and above have to be reported to the Reserve Bank.

6.62 In order to protect depositors' interest, RNBCs were advised in June 2004 that from April 2006, no discretionary investments would be permitted. However, on a review, the Reserve Bank subsequently decided to modify the pattern of their investments. Accordingly, RNBCs were advised that effective April 1, 2006 they should invest not less than 95 per cent of their aggregate liabilities to the depositor (ALD) as on December 31, 2005 and 100 per cent of the incremental deposits (accrued after December 31, 2005) in the prescribed manner. It was also advised that on and from April 1, 2007, the entire amount of ALD would be invested in directed investments only and no discretionary investments would be allowed to be made by RNBCs.

### 3. Financial Markets

6.63 A stable financial system requires sound financial institutions, well-functioning financial markets and robust financial infrastructure. Operations and performance of commercial banks, co-operative banks and non-banking financial institutions during 2005-06 have been detailed in Chapter 3, 4 and 5, respectively. This and the following section analyse the developments in the financial markets and the payment and settlement systems in India during 2005-06 from the point of view of financial stability.

6.64 Financial markets play an important role in allocating resources in an efficient manner.

They also facilitate the price discovery process in financial instruments and are the conduit of transmitting policy signals to the real economy. Financial markets offer a mechanism of diversifying risk within the financial system. Volatile movements in financial markets have serious implications for macroeconomic performance. Hence, stability in the financial markets is an important pre-requisite for the stability of the financial system.

6.65 As wide fluctuations in financial markets could have adverse effects on market sentiments and pose a major threat to financial stability, developments in financial markets need to be continuously monitored in order to identify potential risks. Financial market data also indicate expectations about future developments, which contain information about potential risks to the financial system. Market indicators, therefore, could be used to complement traditional analysis of fundamentals based on balance sheets of financial entities.

6.66 The Reserve Bank closely monitors financial market developments, while simultaneously taking measures that further develop various segments of the financial market under its purview, *viz.*, the money, the Government securities and the foreign exchange market. The SEBI regulates the capital market. Various reforms initiated in the financial markets since the early 1990s have focussed on (i) removing the restrictions on pricing of assets; (ii) building of institutional and technological infrastructure; (iii) strengthening the risk management practices; (iv) fine-tuning of the market microstructure; (v) changes in the legal framework to remove structural rigidities; and (vi) widening and deepening of the market with new participants and instruments.

6.67 The Reserve Bank, in July 2005, set up a separate Financial Markets Department (FMD) for exclusively monitoring developments in the financial markets. The Department integrates the Reserve Bank's operations in the money, the Government securities and the foreign exchange markets with a view to moving towards functional separation of debt management and monetary operations of the Reserve Bank.

6.68 Since the early 1990s, various reform measures have imparted greater depth and liquidity to various segments, which is important

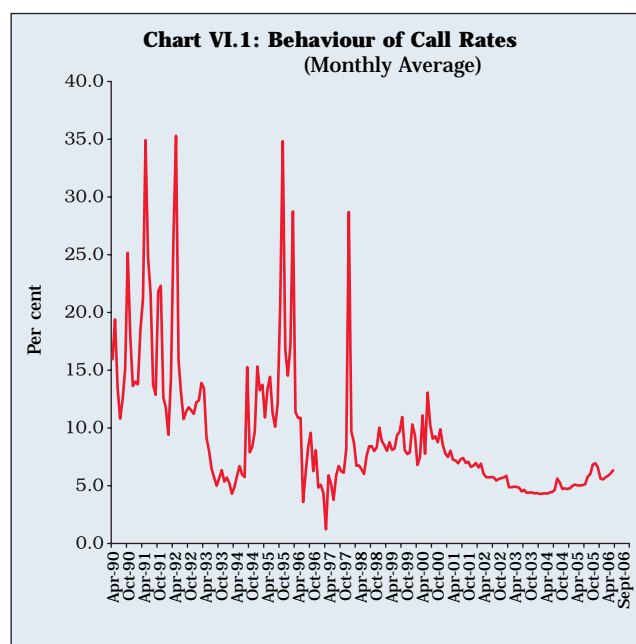
from the perspective of financial stability. The key developments in financial markets in India during 2005-06 are analysed in this section.

### Money Market

6.69 The money market provides a focal point for the central bank's operations in influencing liquidity and thereby transmitting monetary policy impulses. The broad policy objectives being pursued for the development of the money market are ensuring stability/avoiding volatility, minimising default risk and achieving a balanced development of various segments. The Reserve Bank has been playing a proactive role in developing the money market through introduction of new instruments, broadening of participants' base and strengthening of institutional infrastructure. In recent years, the focus of the Reserve Bank's efforts has been on implementation of many of the recommendations of the Technical Group on Money Market (May 2005). Non-banks have been phased out of the uncollateralised call money market. The policy thrust given to the growth of the collateralised segment has improved options for liquidity management while reducing risks. Associated developments in institutional and technological infrastructure have also helped in improving transparency, facilitating price discovery process and providing avenues for better liquidity and risk management.

6.70 Following the Annual Policy Statement for 2005-06, a screen-based negotiated quote-driven system for dealings in the call/notice and the term money markets (NDS-CALL) has been developed by the Clearing Corporation of India Ltd. (CCIL). The introduction of NDS-CALL will make the deals transparent, enable better price discovery and improve the market microstructure. The system was launched in September 2006 with participation by market constituents on a voluntary basis.

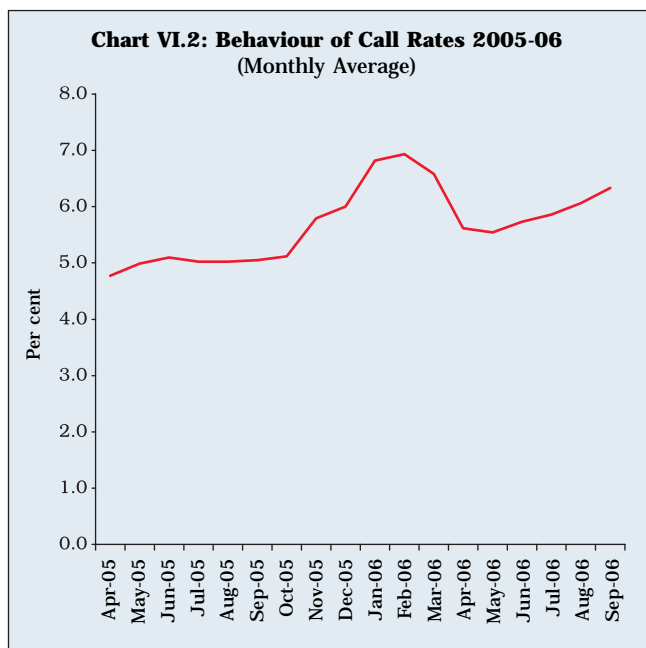
6.71 Various reform measures initiated since the early 1990s have resulted in more orderly conditions and increased liquidity in the money market, which are important from financial stability perspective. The call/notice money market remained orderly during the 1990s, barring a few episodes of volatility (May 1992, November 1995 and January 1998). The decline in volatility was particularly noticeable from May 2001 following the introduction of the second stage of the Liquidity Adjustment Facility (Chart VI.1).



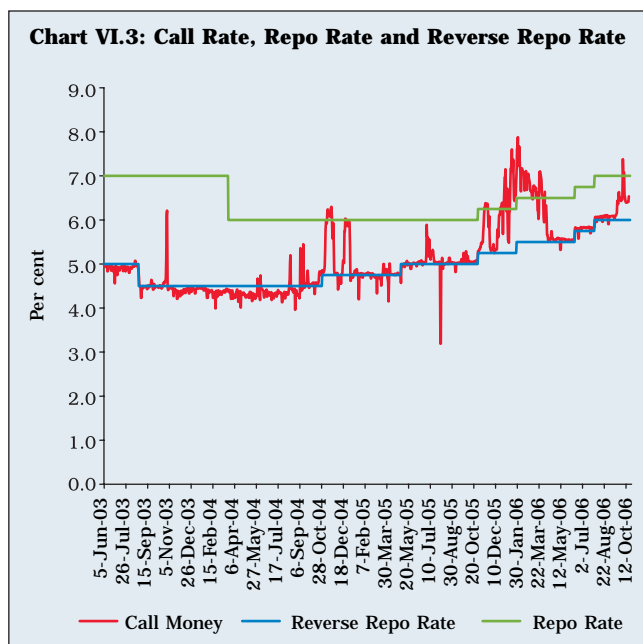
6.72 Money market conditions remained largely comfortable during 2005-06, except the period from mid-December 2005 to end-February 2006. Monthly average call rates, which were at 4.77 per cent in April 2005, inched upwards thereafter steadily to reach 5.79 per cent in November 2005. In December 2005, the call rate increased further to 6.00 per cent on account of India Millennium Deposits (IMD) redemption. It reached a peak of 6.93 per cent in February 2006, before softening to 6.58 per cent in March 2006. Between April and July 2006, call rates hovered below 6.00 per cent but subsequently firmed up to above 6.00 per cent during August and September 2006 (Chart VI.2).

6.73 During the first half of 2005-06, call money rates were closer to the reverse repo rate, the lower bound of the liquidity adjustment facility (LAF) corridor, reflecting comfortable liquidity conditions. Average daily call money borrowing rates hovered around the reverse repo rate for a major part of the period. With the increase in the fixed reverse repo rate by 25 basis points on April 29, 2005, call rates also edged up by a similar magnitude. Towards the end of June 2005, call rates rose above the reverse repo rate under liquidity pressures on account of advance tax payments and scheduled Treasury Bills auctions. Call rates, however, edged lower towards the reverse repo rate by mid-July 2005 as liquidity conditions improved due to cancellation of some scheduled Treasury Bills auctions, return of advance tax payments to the banking system and





large foreign currency purchases from the authorised dealers during July-August 2005. Call rates remained broadly stable between August 2005 and October 2005, except for transitory mild pressure during the second half of September 2005. During November 2005, call money rate remained generally above the reverse repo rate. On a few occasions, call rate exceeded the repo rate, reflecting liquidity pressures emanating from sustained credit demand, festival demand for currency and scheduled auctions (Chart VI.3). The



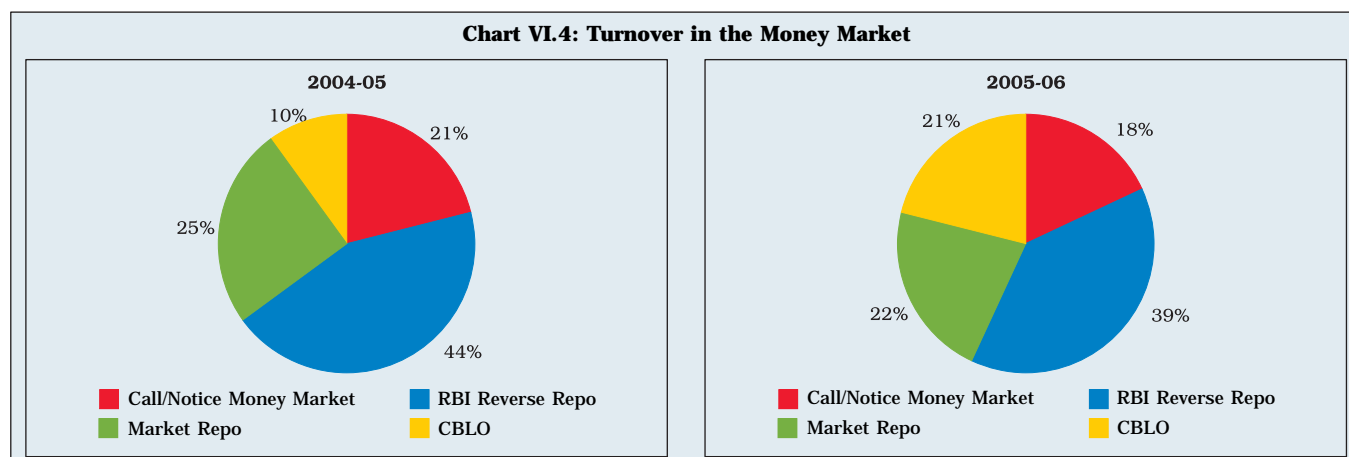
Reserve Bank, therefore, injected liquidity into the system through LAF repos on seven occasions during the month. The notified amount of Treasury Bills auctions under the MSS was also cancelled from November 9, 2005. To fine-tune the management of liquidity and in response to suggestions from the market participants, the Reserve Bank introduced a Second Liquidity Adjustment Facility (SLAF), with effect from November 28, 2005. Beginning with the second half of December 2005, call money rates again edged up and remained generally above the repo rate, reflecting frictional liquidity pressures emanating from IMD redemptions amidst sustained large credit offtake and quarter-end advance tax payments. The Reserve Bank, accordingly, injected liquidity through LAF operations, unwinding of MSS, purchase of foreign currency and daily refinance window. Call rates eased during the second half of March 2006, reflecting improvement in liquidity conditions.

6.74 During 2006-07, call rates initially eased up from the rate prevailing at end-March 2006 and remained close to the reverse repo rate, reflecting comfortable liquidity conditions. The call money rate, however, hardened during August-September 2006 on account of transient liquidity pressures emanating from advance tax outflow amidst sustained credit demand and festival season currency demand. Call rates remained within the informal corridor in the second week of October 2006.

6.75 In pursuance of the recommendations of the Committee on Banking Sector Reforms (Chairman: Shri M. Narasimham) (1998), the process of transforming the call/notice money market into a pure inter-bank market was completed in August 2005. Scheduled commercial banks, co-operative banks and primary dealers (PDs) now participate in the uncollateralised call/notice money market in accordance with prudential limits placed on their borrowings and lendings. In the collateralised segment of the overnight market, eligible non-bank entities also participate. With the imposition of prudential limits on the borrowings and lending of banks and PDs in the uncollateralised segment, the risks in the money market have been mitigated to a large extent.

6.76 A noteworthy development during the year from the financial stability perspective was the substantial migration of money market activity

Chart VI.4: Turnover in the Money Market



from the uncollateralised call money segment to the collateralised market repo and CBLO (Chart VI.4). This migration of activity has been largely the result of the policy of phasing out non-bank participants from the call money market. Volumes in the market repo (outside the Reserve Bank LAF) more than doubled from Rs.12,174 crore in April 2005 to Rs.31,964 crore in March 2006, while those in the CBLO market more than trebled from Rs.10,370 crore to Rs.35,775 crore, resulting in a decline in the share of the uncollateralised call market to the total overnight market transactions in March 2006. The increase in volumes in the collateralised segment is important from the point of view of financial stability as it reduces the risk exposure of market participants. The CBLO market has been gradually becoming more significant. By March 2006, 152 members with 79 active members had registered in the CBLO segment. Initially, only one insurance company and a few co-operative banks supplied funds in this segment, but now mutual funds have emerged as the largest suppliers of funds. For the borrowing banks, the CBLO is attractive since it offers anonymity and provides funds at lower costs. However, the structure of the segment is undergoing a change with corporates becoming more significant borrowers in the CBLO segment.

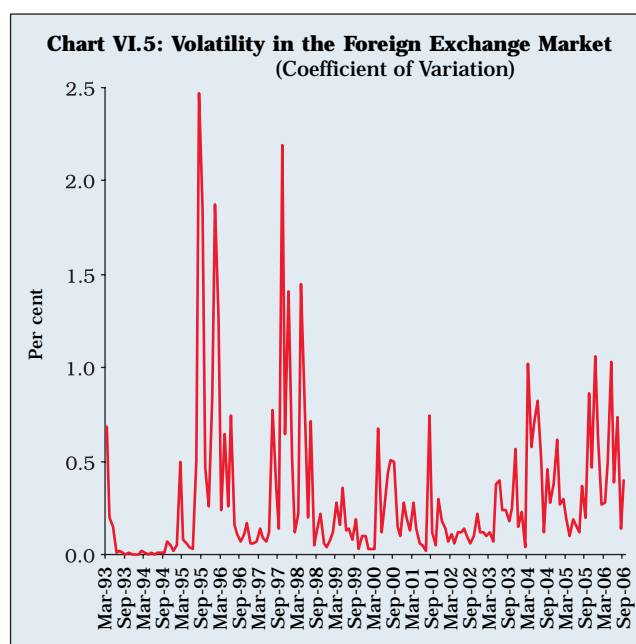
6.77 A sharp increase was also observed in volumes in the FRAs/IRS market. The notional principal amount under FRA/IRS contracts moved up to Rs.21,94,637 crore in March 2006 from Rs.13,58,487 crore in April 2005.

#### Foreign Exchange Market

6.78 With the gradual opening of current and capital account transactions in the 1990s, capital

flows have had a direct bearing on the stability of the exchange rate. There have been intermittent periods of excessive inflows, followed by episodes of drying up of capital flows. On the whole, the foreign exchange market witnessed fairly stable conditions during the 1990s, especially from 2000-01 onwards, barring some occasions when the market came under pressure. Effective policy responses, however, were able to quickly restore the orderly conditions in the market. The coefficient of variation of the Indian Rupee against the US dollar, which is a measure of volatility, moved in a narrow range, except on a few occasions, *i.e.*, between September 1995-February 1996 and again in mid-October 1997 to April 1998 (Chart VI.5).

Chart VI.5: Volatility in the Foreign Exchange Market (Coefficient of Variation)



6.79 The Indian rupee exhibited a two-way movement *vis-à-vis* the US dollar in a range of Rs.43.30-46.33 per US dollar during 2005-06 (Chart VI.6). The rupee, which remained range-bound during the first quarter of 2005-06, appreciated somewhat following the revaluation of the Chinese renminbi on July 21, 2005 and moved up to Rs.43.56 per US dollar on August 18, 2005. The rupee, however, came under pressure from end-August 2005 under the impact of rise in oil prices, sharp increase in the current account deficit and strong US dollar. As a result, the exchange rate depreciated to Rs.46.33 per US dollar on December 8, 2005. With the revival of FII inflows and weakening of the US dollar in the international markets, the rupee strengthened from the second half of December 2005, despite IMD redemptions.

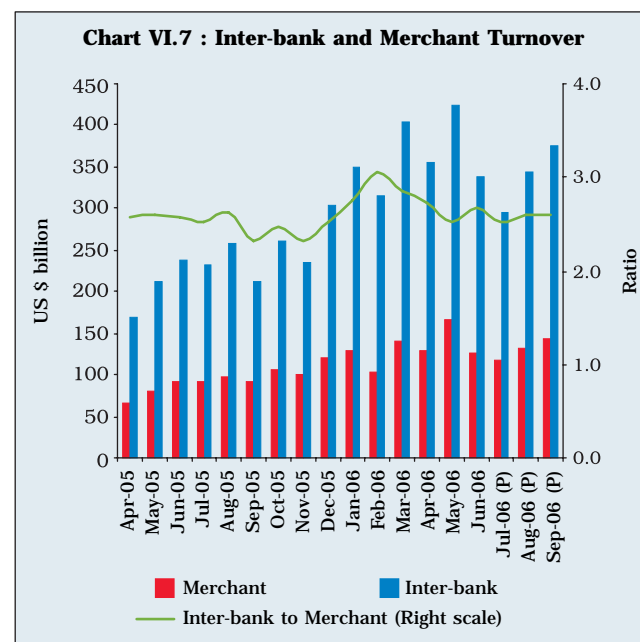
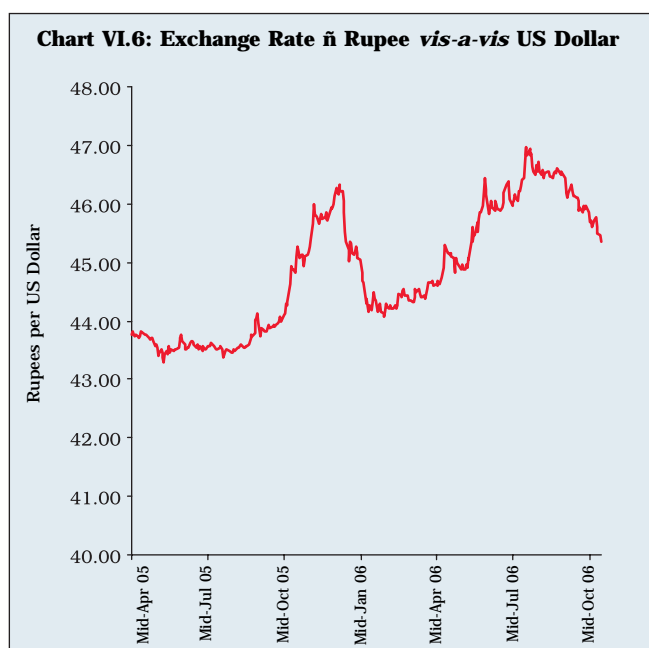
6.80 The exchange rate was Rs.44.61 per US dollar as on March 31, 2006 at which level it was lower by 1.9 per cent over the level as on March 31, 2005. On an annual average basis, the rupee, however, appreciated by 1.5 per cent against the US dollar. Based on daily data, the standard deviation of rupee-dollar exchange rate declined from 1.03 during 2004-05 to 0.79 during 2005-06, reflecting relatively stable conditions in the forex market from financial stability perspective. In this regard, the Reserve Bank's exchange rate policy continues to be guided by the broad principles of careful monitoring and management of exchange rates with flexibility,

without a fixed target or a pre-announced target or a band, coupled with the ability to intervene, if and when necessary. Reflecting cross-currency movements, the rupee appreciated by 4.4 per cent against the Euro, 5.5 per cent against the Pound sterling and 7.3 per cent against the Japanese yen between end-March 2005 and end-March 2006. On an annual average basis, the rupee appreciated by 5.0 per cent each against the Pound sterling and the euro and by 6.8 per cent against the Japanese yen.

6.81 The turnover in the inter-bank as well as merchant segments of the foreign exchange market increased sharply during 2005-06, reflecting strong growth in underlying transactions relating to current and capital account of balance of payments. The turnover in both the segments nearly doubled. While inter-bank turnover increased from US \$ 237 billion during March 2005 to US \$ 405 billion in March 2006, the merchant turnover increased from US \$ 89 billion to US \$ 141 billion. The ratio of inter-bank to merchant turnover ranged between 2.3-3.1 during 2005-06 (Chart VI.7). The ratio suggests low speculative activity in the foreign exchange market.

#### Government Securities Market

6.82 Various reform measures initiated by the Reserve Bank have imparted liquidity and depth to the Government securities market. With the aligning of coupons with market interest rate, the



gilt-edged market has gradually widened with the participation of several non-bank players. Presently, apart from banks and insurance companies, investor base includes the private corporate sector, mutual funds, finance companies as also individuals. Introduction of Order Matching segment on NDS (NDS-OM) gave a further impetus to the development of the government securities market. Currently, 134 members operate on NDS-OM. In order to increase the number of participants in NDS-OM, access has been allowed to insurance companies, mutual funds and pension and provident funds. Further, extending indirect access to all gilt account holders to NDS-OM through constituent subsidiary general ledger (CSGL) option is under active consideration.

6.83 There is now a wide range of securities available to market participants for investment and hedging of financial risk. These include 364-day, 182-day and 91-day Treasury Bills through auctions. In the long-term segment, the *vanilla* or the fixed coupon bonds are the most commonly used instruments, although floating rate bonds (FRBs) were introduced in September 1995 but not followed up until 2002 due to lack of interest from market participants. The Reserve Bank is also actively pursuing the creation and development of the Separate Trading of Registered Interest and Principal of Securities (STRIPS) market. The enabling legal provisions for STRIPS will come into effect with the finalisation of regulations relating to the Government Securities Act, 2006 and STRIPS can then be introduced once the appropriate system development is complete.

6.84 The FRBM Act prohibits the Reserve Bank from participating in the primary auctions of Government securities from April 1, 2006. Although this is a positive development, it could have some adverse impact on the market in the short run. The Reserve Bank, therefore, took several structural and developmental measures for the Government securities market. These included: (i) phased introduction of short sale to increase turnover and improve liquidity in the secondary market; (ii) phased introduction of trading in 'When Issued' market in respect of Central Government dated securities for better price discovery in the primary market; (iii) revised scheme for underwriting of Central Government securities auctions requiring 100 per cent underwriting by PDs accompanied by performance

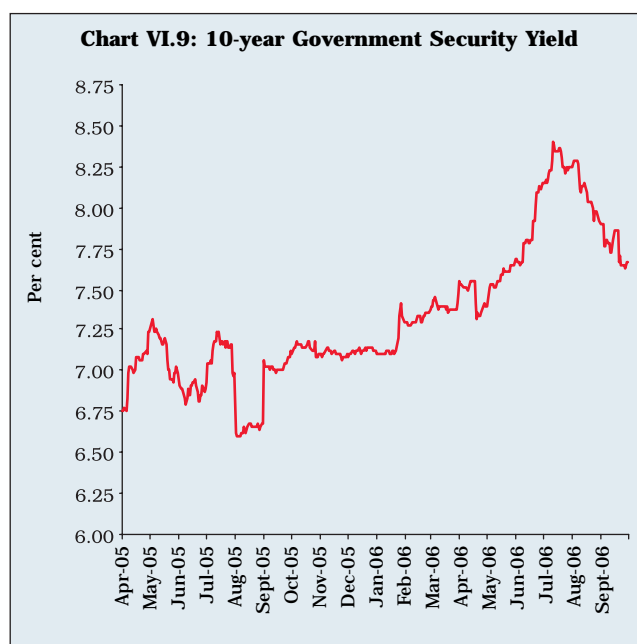
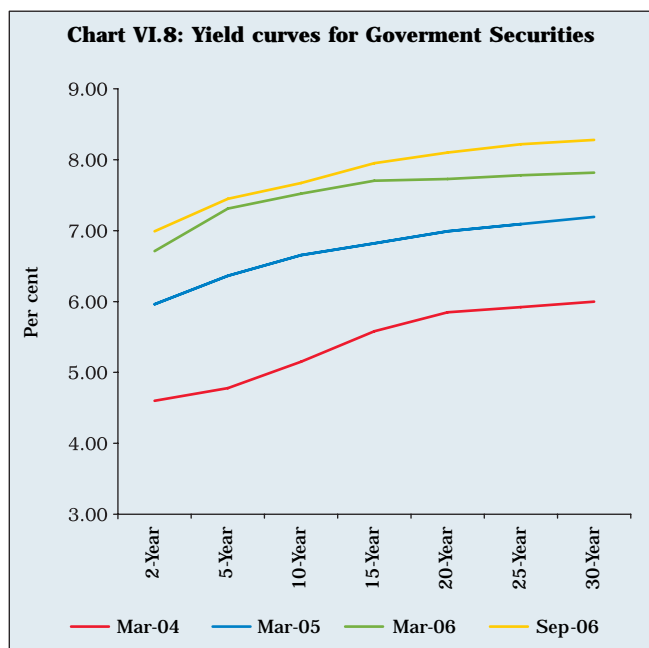
based liquidity support to PDs; (iv) allowing stand alone PDs to diversify their business to mitigate risk arising from concentration of business in one activity; and (v) allowing banks to conduct PD business departmentally by merging their respective PD subsidiaries that would serve to mitigate the business risks of stand alone PDs. These measures would make the Government securities market more vibrant and thereby help in strengthening financial stability.

6.85 The Reserve Bank's absorption of primary issues declined sharply in 2005-06 as compared with the previous year. The increased depth and liquidity of the Government securities market has enabled the Reserve Bank to pursue its monetary policy through market-based instruments. During 2005-06, outright transactions in the Government securities market declined sharply in an environment of rising interest rates (Table VI.1). Total turnover (outright and repo), which increased marginally during 2004-05, declined during 2005-06. The decline in turnover could adversely affect liquidity in certain segments of the yield curve and impact the process of efficient price discovery. Average daily turnover declined from Rs.4,826 crore during 2004-05 to Rs.3,643 crore during 2005-06. The ratio of turnover to outstanding stock of Government securities also declined from 2.0 to 1.5. It is observed that the markets remain active and liquid when the rates are falling, but turn lacklustre and illiquid when the rates rise as market players, governed by strong risk averse behaviour, prefer not to take a view on interest rates. As low volumes render markets shallow and prone to price manipulations, a number of measures, such as permitting short selling, have been taken to enable participants to

**Table VI.1: Secondary Market Transactions in Central Government Securities**

(Rs. crore)

Year	†Outright	†Repo	†Total
1 †	2	3	†4
1999-2000	4,56,493	†82,739	†5,39,232
2000-01	†5,72,145	1,25,976	†6,98,121
2001-02	†12,11,941	3,61,932	†15,73,873
2002-03	†13,78,160	†5,63,515	†19,41,675
2003-04	16,83,711	†9,55,533	†26,39,244
2004-05	†11,60,632	†15,62,990	†27,23,622
2005-06	†8,81,632	†16,98,770	†25,80,401
2006-07(Apr-Sept)	4,74,694	†13,70,349	†18,45,043



manage their interest rate risk more efficiently and also to impart liquidity to the markets, even in a rising interest rate scenario.

6.86 The yield curve has also evolved over the years. Till 1997-98, the curve was limited up to 10 years. Gradually, with the elongation of maturity of Government bond issuance, the yield curve got extended up to 30 years (Chart VI.8). Government securities are now emerging as a benchmark for pricing private debt instruments.

6.87 Yields in the Government securities market hardened during 2005-06 (Chart VI.9). The increase in yield was higher at the short-end of the maturities than at the long-end, reflecting relatively stable inflation expectations. Intra-year movements in yields were influenced by domestic liquidity conditions, inflationary expectations, volatility in crude oil prices and movements in the US yields. On April 30, 2005, yield on 10-year paper firmed up sharply by 70 basis points to 7.35 per cent over end-March 2005 on fears of higher inflation in the backdrop of rising global crude oil prices and announcement of hike in the reverse repo rate by 25 basis points in the Annual Policy Statement released on April 28, 2005. Yields, however, softened during May and June 2005 to reach 6.89 per cent on June 30, 2005 amidst comfortable liquidity position, benign inflation and fall in the US treasury yields. The markets rallied briefly in July 2005 and yields softened as the reverse repo rate was left

unchanged in the First Quarter Review of the Annual Policy Statement on July 26, 2005. Yields, which remained broadly stable between August and December 2005, edged up in the last week of January 2006 following the increase of 25 basis points in both the reverse repo and repo rates in the Third Quarter Review of the Annual Policy Statement on January 24, 2006. The 10-year yield hardened to 7.41 per cent on January 27, 2006 before declining to 7.28 per cent on January 31, 2006. For most part of February-March 2006, yields were range-bound. However, towards end-March, rise in US yields had an impact on the domestic market, with the 10-year yield reaching 7.52 per cent on March 31, 2006.

6.88 The spread between 1-year and 10-year yields narrowed to 98 basis points at end-March 2006 (from 114 basis points at end-March 2005), mirroring tight liquidity conditions in the money market. The spread between 10-year and 30-year yields narrowed to 30 basis points (from 54 basis points at end-March 2005), reflecting increased appetite for long-term securities by non-bank participants such as insurance companies and pension funds. Yields further hardened during April-July 2006, reflecting further monetary policy tightening in the US and in other economies, high and volatile crude oil prices, hike in domestic policy rates, expected issuance of oil bonds and higher Government expenditure in the first quarter of 2006-07. The 10-year yield peaked to

8.40 per cent on July 11, 2006 on account of rising inflation and expectation of rate hike. Thereafter, the yields eased on account of rally in US Treasury bonds following a pause in the US Federal Funds Rate hikes and decline in global crude oil prices beginning August 2006. The announcement of the issuance calendar for the second half of the fiscal, which was as per market expectations, also helped in further easing of yields. The 10-year yield was placed at 7.67 per cent by end-September 2006.

### Capital Market

6.89 The capital market in India, which remained on the periphery of the financial system despite a long history, witnessed a structural transformation beginning early 1990s as a result of a series of reforms. The market witnessed increased activity in the initial phase of reforms. However, it turned lacklustre until 2004-05, when the activity picked up again with the corporates raising sizeable resources from the market (Chart VI.10).

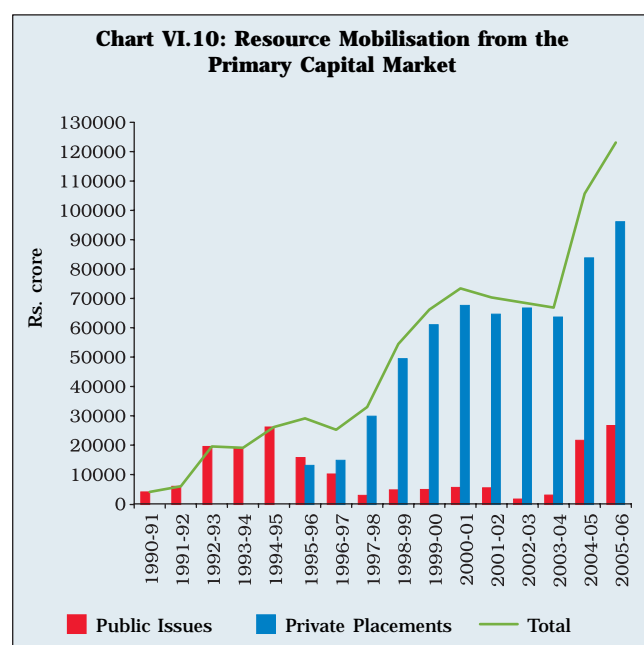
6.90 The financing conditions in the capital market remained conducive during 2005-06. Resource mobilisation from the primary market through public issues (excluding offers for sale) increased by 23.1 per cent to Rs.26,940 crore during 2005-06. The increase was entirely on account of private sector companies as resources raised by public sector companies were lower as

compared with the previous year. Banks and financial institutions, in both public and private sectors, mobilised 48.8 per cent of total resources by public issues in 2005-06.

6.91 The Indian corporate sector continued to rely heavily on domestic private placement market during 2005-06 (Table VI.2). However, mobilisation of resources through the private placements grew at a lower rate of 15.5 per cent during 2005-06 as compared with 30.5 per cent during 2004-05. This is significant as the private placement segment lacks the transparency of the public issues segment.

6.92 Mutual funds have played an important role in the development of the capital market. Growing investor interest in the equity market over the years could also be gauged from the resource mobilisation by mutual funds. Net funds mobilised by mutual funds (net of redemptions) increased sharply to Rs.52,538 crore during 2005-06 as against Rs.2,260 crore during 2004-05 mainly due to resources mobilised under equity-oriented schemes, which is an indicator of growing investor confidence. Net resources mobilised under the equity-oriented schemes increased by about five times during 2005-06 to Rs.35,231 crore from Rs.7,100 crore in the previous year, driven by attractive returns from these schemes in view of buoyant secondary market conditions. Gross mobilisation of funds by mutual funds also grew by 30.6 per cent during 2005-06. Net assets under management of the mutual fund industry increased by 54.7 per cent during 2005-06 (Table VI.3).

6.93 In line with the general hardening of yield on Government securities and firming up of other interest rates, corporate yields firmed up. The yield on 5-year triple A corporate bond hardened from 7.14 per cent at the beginning of April 2005 to 8.36 per cent by end-March 2006 and further



**Table VI.2: Mobilisation of Resources from the Primary Capital Market**

Item	(Rs. crore)	
	2004-05	2005-06
1	2	3
Prospectus and Rights Issues*	21,892	26,940
Private Placements	83,405	96,368
<b>Total</b>	<b>1,05,297</b>	<b>1,23,308</b>

\* : Excluding offers for sale.

**Table VI.3: Funds Mobilised by Mutual Funds - Type of Scheme**

(Amount in Rs. crore)

Scheme	2004-05				2005-06			
	No. of Schemes	Gross Mobilisation	Net Mobilisation@	Net Assets*	No. of Schemes	Gross Mobilisation	Net Mobilisation@	Net Assets*
1	2	3	4	5	6	7	8	9
<b>A. Income/Debt Oriented Schemes</b>	<b>227</b>	<b>7,98,674</b>	<b>-5,244</b>	<b>1,06,250</b>	<b>325</b>	<b>10,08,130</b>	<b>16,621</b>	<b>1,24,913</b>
Liquid/ Money Market	39	6,38,594	10,348	54,068	45	8,36,859	4205	61,500
(i) Gilt	30	4,361	-1,345	4,576	29	2,479	-1,560	3,135
(ii) Debt (other than assured return)	158	1,55,719	-14,247	47,605	251	1,68,791	13,977	60,278
<b>B. Growth/Equity Oriented Schemes</b>	<b>188</b>	<b>37,280</b>	<b>7,100</b>	<b>38,484</b>	<b>231</b>	<b>86,014</b>	<b>35,231</b>	<b>99,456</b>
(i) ELSS	37	155	-194	1,727	37	3,935	3,592	6,589
(ii) Others	151	37,126	7,294	36,757	194	82,079	31,639	92,867
C. Balanced Schemes	35	3,755	345	4,867	36	4,006	927	7,493
D. Fund of Funds Scheme	12	1,827	59	980	13	845	-241	1,012
<b>Total</b>	<b>462</b>	<b>8,41,535</b>	<b>2,260</b>	<b>1,50,581</b>	<b>605</b>	<b>10,98,995</b>	<b>52,538</b>	<b>2,32,874</b>

@ : Net of redemptions. \* : As at the end of March.

Source : Securities and Exchange Board of India.

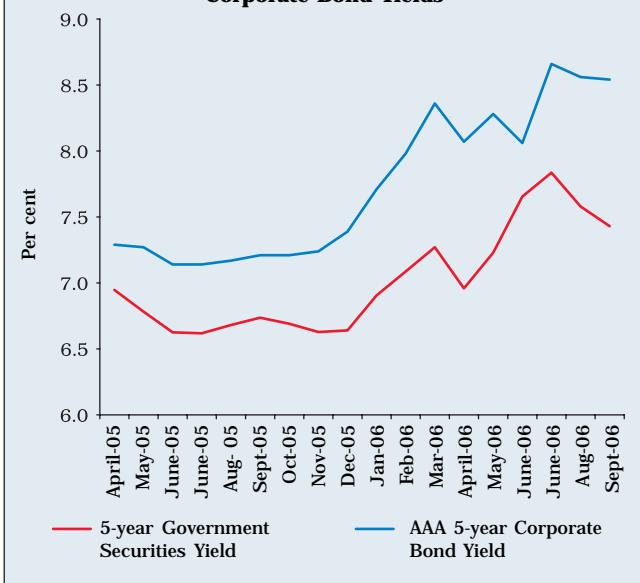
to 8.54 per cent by end-September 2006. The yield spread between 5-year triple-A rated corporate bond and 5-year Government security also widened significantly between December 2005 and March 2006 (Chart VI.11).

6.94 A similar trend was also observed between the spread of 10-year triple-A rated corporate bond and 10-year Government security (Chart VI.12). The widening of spread suggests some uncertainty at the short-end. However, in the long run, expectations continued

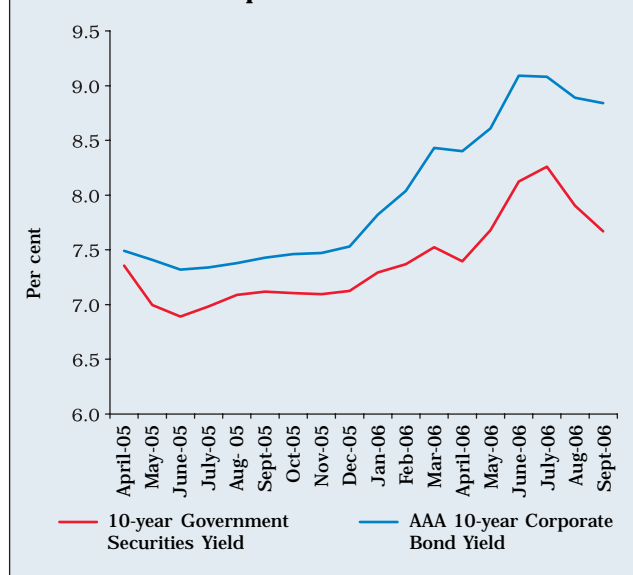
to be stable as reflected in the marginal increase in long-term yields.

6.95 Conditions in the secondary market remained extremely buoyant during 2005-06 with the stock indices reaching new highs. The rally in the secondary market was widespread encompassing mid-cap and small-cap companies from all sectors. The hardening of interest rates did not have any impact on the equity valuations as investors focussed on improved growth prospects and expected increase in corporate

**Chart VI.11: 5-year Government Security and Corporate Bond Yields**

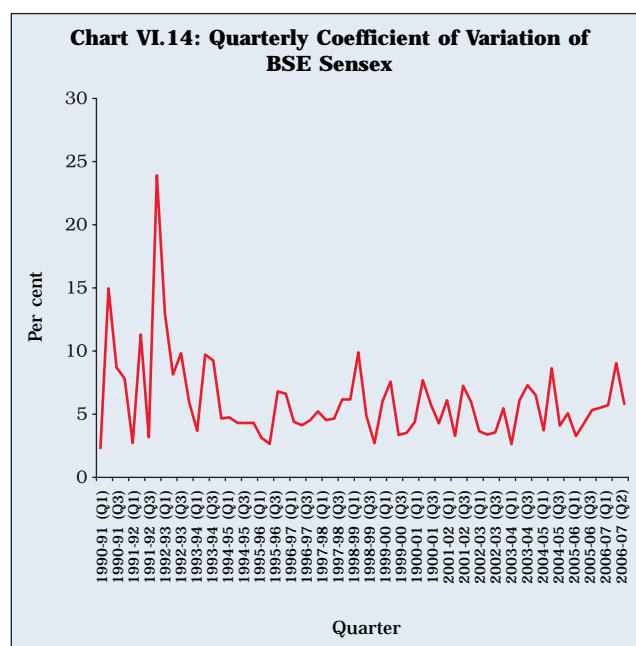
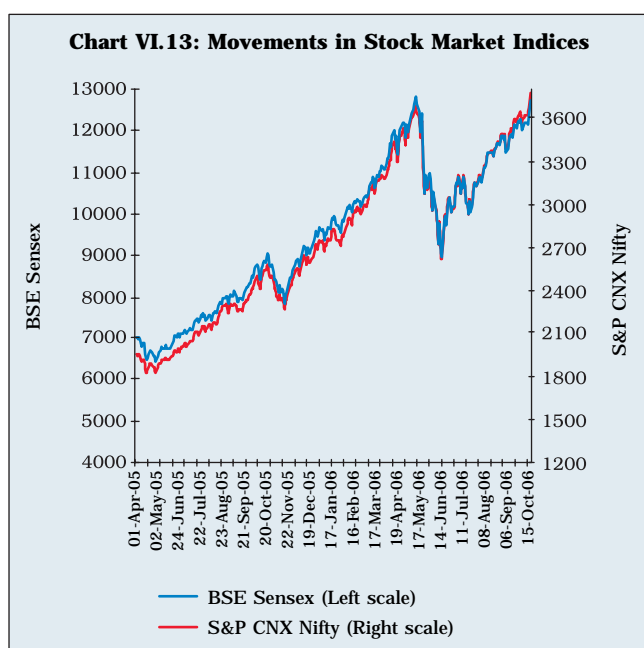


**Chart VI.12: 10-year Government Security and Corporate Bond Yields**



earnings. FIIs and domestic institutional investors invested large funds encouraged by strong macroeconomic fundamentals, encouraging business outlook and robust corporate earnings. Positive measures such as increase in financial institutional investment (FII) investment limit in Government securities and corporate debt, treating open-ended and close-ended equity-oriented schemes at par for dividend distribution tax, rationalisation of excise duties and relaxation in fringe benefit tax (FBT) also aided the market sentiment. During 2005-06, the BSE Sensex rose by 73.7 per cent over end-March 2005 level, while the S&P CNX Nifty increased by 67.1 per cent (Chart VI.13).

6.96 The domestic stock markets remained firm till May 10, 2006 when both the BSE Sensex and the S&P CNX Nifty closed at a high level of 12612 and 3754, respectively. However, the market witnessed a sharp correction beginning from May 11, 2006 mainly due to net heavy sales by FIIs caused by a fear of rise in global interest rates, sharp fall in base metal prices at London Metal Exchange, rise in global crude oil prices, weakness in rupee *vis-à-vis* the US dollar and fear of higher domestic inflation. The weak trend continued till June 14, 2006 when the BSE Sensex touched 8,929. Sharp volatility in the stock prices did not spill over to other segments of the financial market. The payment and settlement system also continued to function smoothly during times of stress. The stock markets started recovering again



from mid-June 2006 and the BSE Sensex touched an all-time high level of 13,131 on November 3, 2006. This reflected fresh buying by FIIs on expectation of better growth prospects and recovery in major international equity markets.

6.97 The volatility in the Indian stock markets has declined after 1992-93. Increase in volatility in the stock markets during 2006-07 (Q1) was mainly due to a sharp decline in share prices during May-June 2006. However, volatility has come down subsequently in the second quarter (Q2) (Chart VI.14).

6.98 The Reserve Bank closely monitored the developments when the stock markets declined sharply. The Reserve Bank got in touch with major settlement banks and stock exchanges and intervened in the forex market to assuage market sentiments. It also announced its readiness to provide sufficient liquidity to banks to enable them to meet their payment obligations and intra-day requirements so that the payment transactions were carried out smoothly.

#### 4. Payment and Settlement Systems

6.99 The smooth functioning of the payment and settlement system is a pre-requisite for financial stability. Any assessment of financial stability, therefore, needs to be examined from the perspective of the functioning of the payment and settlement systems. In this context, large-value



payments, which involve systemic risk, are particularly important as they link various financial institutions through intra-locking of claims. Any glut arising out of transaction failure in one leg of the financial system could trigger off a chain of successive failures, which could pose a serious systemic risk to the stability of the financial system.

6.100 It has been the endeavour of the Reserve Bank to reduce the risks associated with payment and settlement systems. The Reserve Bank, therefore, has taken several measures from time to time to develop the payment and settlement system along sound lines. The initiatives taken during 2005-06 relate to: (i) enhancing usage of the real time gross settlement system (RTGS) system; (ii) providing incentives and guidelines for reducing transaction costs associated with payment system dependent on technology; (iii) improving legal infrastructure for the payment system; (iv) introducing nationwide payment system for retail payment; (v) improving international remittance services; and (vi) facilitating newer channels of payment and settlement.

6.101 The Board for Regulation and Supervision of Payment and Settlement Systems (BPSS), set up in March 2005, as a committee of the Central Board of the Reserve Bank, is the apex body for giving policy direction in the area of payment and settlement systems. The BPSS gave important policy directions/decisions including: (i) setting target for usage of the RTGS system; (ii) publishing a list of frequently asked questions (FAQ) on payment systems; (iii) publishing the charges levied by banks for electronic payment systems;

(iv) setting up of an umbrella organisation for all retail payment systems in the country; (v) finalising the Payment and Settlement Systems Bill; and (vi) preparing the Electronic Funds Transfer Regulations under the Reserve Bank of India Act.

6.102 With introduction of RTGS, whereby a final settlement of individual inter-bank fund transfers is effected on a gross real time basis during the processing day, a major source of systemic risk in the financial system has been reduced substantially. RTGS transactions, both in terms of volume and value, have increased sharply in a short span of its operation (Table VI.4).

6.103 The use of Electronic Clearing Service (ECS), both debit and credit, has been on the increase. The reach of ECS has increased, which is now available at 52 centres. In November 2005, banks were advised to develop appropriate delivery channels of electronic payment services using the payment systems developed by the Reserve Bank such as RTGS, ECS, Electronic Fund Transfer (EFT), and National Electronic Fund Transfer (NEFT) with no further delay. In order to start a robust state-of-the-art nationwide ECS covering more branches and locations with centralised data submission system, banks (including co-operative banks) were advised to furnish certain information indicating their level of preparedness for the project as on June 27, 2006. To take the effort further, all banks were directed on July 4, 2006 to initiate steps for incorporating an appropriate mandate management routine for handling ECS (Debit) transactions.

**Table VI.4: Paper-based versus RTGS Transactions**

(Value in Rs. crore)

Quarter Ended	Instrument-based Inter-bank transactions		RTGS Inter-bank transactions		RTGS Customer transactions		Total RTGS transactions	
	Volume	Value	Volume	Value	Volume	Value	Volume	Value
1	2	3	4	5	6	7	8	9
June 2004	2,61,796	4,74,268	23,996	2,05,806	955	3,370	24,951	2,09,175
September 2004	2,14,921	2,41,786	86,744	7,13,990	6,258	29,148	93,002	7,43,138
December 2004	1,69,298	1,83,600	1,30,223	13,46,674	20,455	67,334	1,50,678	14,14,008
<b>March 2005</b>	<b>1,63,397</b>	<b>1,50,482</b>	<b>1,50,968</b>	<b>15,50,051</b>	<b>40,824</b>	<b>1,49,811</b>	<b>1,91,792</b>	<b>16,99,862</b>
June 2005*	ñ	ñ	2,04,290	18,39,311	67,504	2,06,796	2,71,794	20,46,107
September 2005	ñ	ñ	2,54,498	21,18,816	1,29,678	5,46,397	3,84,176	26,65,213
December 2005	ñ	ñ	2,89,314	26,11,144	1,97,719	7,71,219	4,87,033	33,82,363
<b>March 2006</b>	<b>ñ</b>	<b>ñ</b>	<b>3,05,838</b>	<b>24,01,353</b>	<b>3,18,157</b>	<b>10,45,801</b>	<b>6,23,995</b>	<b>34,47,153</b>
June 2006	ñ	ñ	3,14,472	27,30,945	4,89,106	14,27,971	8,03,578	41,58,916

\* : Instrument-based inter-bank clearing was discontinued at all the centres by June 30, 2005.

6.104 The operationalisation of the NEFT in November 2005 was a major step in the direction of operating/achieving payment systems at the national level. The NEFT is a secured network, which uses the SFMS messaging format with public key infrastructure (PKI) enabled digital signatures having a nation-wide network. All the SEFT clearing banks were advised to migrate to NEFT system by December 15, 2005. With the implementation of NEFT, the SEFT system was discontinued from February 2006. The Reserve Bank has also advised banks to adopt the centralised funds management system (CFMS), which enables banks to transfer funds across its accounts with various offices of the Reserve Bank. At present, the system is available at six centres with two more centres likely to be included in the near future.

6.105 For further improving the efficiency of the paper-based system, a plan has been drawn up for computerisation of clearing operations at centres where there are more than 30 banks. A few centres have already computerised the clearing house operations using the magnetic media based clearing system (MMBCS). Under this system, the member banks present their claims in the form of an electronic file, which gets processed on the computer. This enables arriving of settlement figures within 15 minutes as compared with three or four hours under the manual system.

6.106 A set of Minimum Standards of Operational Efficiency for MICR cheque processing centres was framed in order to ensure smooth operations at cheque processing centres. The standards mainly relate to encoding of instruments, time schedule, operational procedures, speed and accuracy of on-line reject repair (OLRR), checking of settlement reports for supervisory signals, enabling banks to download reports/data on-line, reconciliation and business continuity plans.

6.107 The implementation of Cheque Truncation System (CTS) is another effort for bringing in efficiency of paper-based system. To be introduced on a pilot project basis in the national capital region of Delhi, the CTS would be rolled out across the country in phases. Apart from reduction in transaction costs for banks as well as customers, it has the additional advantage of much reduced reconciliation problems and incidents of clearing frauds.

6.108 The Clearing Corporation of India Limited (CCIL) set up by banks is the central counter party (CCP) for the clearing of transactions in Government securities and foreign exchange. The CCIL operates the G-Sec clearing, while the settlement for both the securities and funds takes place in the Reserve Bank. The CCIL acts as the CCP for all the transactions and guarantees both the securities and funds legs of the transaction. Another large value segment operated by the CCIL is the forex clearing. The settlement through CCIL has reduced the gross US dollar requirement by more than 90 per cent.

## 5. Risks to Financial Stability

6.109 The Annual Policy Statement of the Reserve Bank in April 2006 warned of three key risks from global developments for India and other emerging market economies. These are: (a) potential escalation and volatility in international crude oil prices; (b) hardening of international interest rates along with uncertainty about the future course of monetary policy; and (c) disorderly unwinding of the global imbalances. Since then, however, the outbreak of the *Avian Flu* has become a major issue of concern. In addition, the turnaround in the credit cycle brought about by rising international interest rates in advanced economies could also pose a risk to financial stability.

6.110 If any of the above risks materialise, global financial market conditions could react in a way that could increase the risks to financial stability. In particular, concerns have been raised about the potential for illiquidity to emerge in credit markets in emerging market economies such as India. The volatility in international financial markets would also spill over to the domestic financial markets.

6.111 This section examines the main sources of risks that could affect financial stability in India in the near future. It needs to be noted that drawing attention to sources of risk for financial stability differs from seeking to identify the most probable outcome. It vividly outlines potential and plausible sources of downside risk, even if chances of their occurring are relatively remote.

### (i) *Risks from Rising Oil Prices and Increasing Inflationary Pressures*

6.112 Inflation entails high cost for society as a high inflation environment often leads to rapid investment in the financial sector which can be

the genesis of an asset bubble (Mishkin, 2006)<sup>2</sup>. At this juncture, the major risk to inflation is from high and volatile crude oil prices. International crude prices firmed up to more than US \$ 78 per barrel in July-August 2006 on account of seasonal demand for heating fuel and disturbances in key producing countries. Oil markets are currently characterised by high inventories co-existing with high prices and other uncertainties about future supply. Global oil demand is expected to accelerate from the levels of 2005 while global spare oil production capacity is projected to increase only modestly during 2006 and 2007. On the whole, the outlook for the oil economy in the near term appears to be tilting in favour of greater volatility.

6.113 Consumer price inflation in the advanced economies accelerated in the second quarter of 2006, mainly on account of oil price increases. In addition, risks loom large in the form of lagged second order effects of oil price increases in view of the geo-political tensions. Inflation expectations have also been reflected in the increasing gap between nominal and inflation-indexed bonds in the global financial markets. The pre-emptive monetary tightening by major central banks during the earlier part of 2006 helped abate the second round effects of soaring oil prices. Accordingly, although headline inflation remained at elevated levels, inflationary expectations continued to be modest in most economies. Consequently, there has been a pause in monetary tightening by many central banks during August-October 2006 such as the Federal Reserve in the US, the Bank of Japan and the Bank of Canada.

6.114 In the Indian context, the renewed hardening of international crude prices from an average level of US \$ 57 per barrel at end-2005 to above US \$ 78 per barrel by July 2006 resulted in an increase of 6-9 per cent in domestic administered prices of petrol and diesel. The changes in administered prices of petrol and diesel in India in June 2006 imparted a direct effect of 45 basis points on headline inflation. Given that pass-through from international oil prices to domestic POL product prices remains incomplete, there remains an upside risk to inflation. However, the recent decline in oil prices has somewhat eased the pressure. Besides inflation, the rise in oil prices threatens to widen the current account deficit of the country through higher import bill.

Furthermore, the rise in domestic cost of production would also have an adverse impact on the domestic terms of trade, thereby affecting export performance. The increase in domestic food prices, occurring in an environment in which international food prices were also hardening, was another significant factor.

6.115 Average international crude oil prices increased from US \$ 38.9 per barrel in 2004-05 to US \$ 55.3 per barrel in 2005-06. As a result, while total imports increased from US \$ 118.9 billion in 2004-05 to US \$ 156.3 billion in 2005-06 (increase of 31.5 per cent), oil imports increased from US \$ 29.8 billion in 2004-05 to US \$ 44 billion (increase of 47.3 per cent). Consequently, the trade deficit widened during 2005-06, reflecting the cumulative impact of high level of international crude oil prices and growth in imports emanating from strong industrial activity. The sustained rise in invisibles surplus from buoyant software exports, workers' remittances and various professional and business services, however, moderated the impact of increase in trade deficit on the current account. In addition, net capital inflows continued to remain large supported mainly by non-debt inflows. Thus, on the whole, balance of payments position remained comfortable with foreign exchange reserves increasing by US \$ 10.1 billion during 2005-06, despite an outgo of US \$ 7.1 billion on account of IMD redemption.

6.116 In the absence of any further increase in domestic oil prices since July 2006, headline inflation in India was contained (5.4 per cent as on October 21, 2006), despite pressures from primary food articles. Against the backdrop of limited pass-through, pre-emptive monetary and fiscal measures have helped in containing inflation expectations in India. However, the risks to inflation have somewhat receded with decline in international oil prices, reflecting lower global demand and easing of geo-political tensions. Furthermore, if the current level of international oil prices is sustained, then it may not call for further pass-through to domestic prices.

#### (ii) *Rising International Interest Rates and Global Turnaround in the Credit Cycle*

6.117 As a result of risks to inflation emanating partly from higher international oil prices, a large number of central banks had raised their official

<sup>2</sup> Mishkin, F. S., 2006: 'Monetary Policy Strategy: How Did We Get Here?' NBER Working Paper No.12515, NBER, September.

interest rates during 2005-06 and 2006-07 (up to October 2006). These include the US Federal Reserve, the European Central Bank (ECB), the Bank of England, the Bank of Japan, the Bank of Canada, and the Reserve Bank of Australia.

6.118 From the point of view of financial stability, the main cause for concern for rapid increase in interest rates is that it renders a large number of markets more vulnerable to risk reappraisal and abrupt asset price adjustments. Mature markets have so far proved resilient. However, in the period ahead, asset valuations could be vulnerable to drying up of global liquidity conditions. It could bring about significant portfolio losses for banks and non-bank financial firms. For financial markets, large and potentially correlated asset

price adjustments could cause liquidity to dry up and undermine the hedging of financial risks.

6.119 The tightening of interest rates could have significant implications for credit markets the world over, which are currently witnessing an unprecedented boom. One of the issues that has drawn considerable attention is the surge in credit offtake, both in developed and emerging market economies. There were a number of episodes in the last century when many developed countries had also experienced rapid growth in credit (and booming asset prices) resulting in a surge in aggregate demand as in the last two years. Such credit and asset market booms then were a precursor to financial instability (Box VI.8). These conditions were

### Box VI.8: Are Bank Credit Booms Indicators of Financial Instability?

In bank-based financial systems such as India, bank credit plays a critical role in facilitating the growth process; hence credit booms are often positively correlated with a high-growth phase of the economy. Credit booms are often followed by dilution of risk assessment criteria by banks and financial institutions, which may trigger episodes of financial instability. In this regard, financial instability that might result from credit booms, can, in fact, threaten price stability (White, 2006). Therefore, credit booms need to be carefully monitored by the policy makers.

The 1990s was a decade of generally low and stable interest rates in many countries. Accommodating credit and accelerating productivity growth fuelled increases in property prices and encouraged rapid increase in securities prices. It is, now, conventional wisdom that the East Asian crisis was due to an inefficient banking system that failed to set adequate risk management standards during the credit boom, which was directed for speculative investments in real estate ventures. These factors heighten the vulnerability of financial systems and economies to a sudden reversal of sentiment and engender financial instability. Empirical evidence suggests that credit booms turn out to be the best predictor of future banking crises, a key indicator of financial instability. While banking crises *vis-à-vis* currency crises are more difficult to forecast, the adverse impact of banking crises on economic activity is more enduring (Goldstein, Kaminsky and Reinhart, 2000).

Among the consequences of credit booms resulting in financial instability, there has been a renewed interest in the role of credit dynamics in post-World War I cyclical developments. The consequences then, as in the 1990s, included property booms, increasing consumer debt, surging investment and rising securities prices. They fuelled concern about the stability of financial institutions and markets and culminated in the global financial meltdown during the Great Depression. This characterisation of the Great Depression as a credit boom having gone wrong has many lessons for policy makers, particularly in the context of large and rapid capital flows. The failure of domestic monetary authorities to quickly install stable policy rules is an important reason for explaining the fragilities that set the stage for the Great

Depression (Eichengreen and Mitchener, 2003). The credit boom view suggests that the inter-war gold standard also played a role in the expansion phase, when credit was allowed to expand more rapidly. In addition, focusing on the role of credit conditions in the expansion of the 1920s and slump of the 1930s directs attention to two factors: the structure of domestic financial systems and the interplay of finance and innovation. It was precisely the experience of the 1920s and the 1930s that provided the backdrop for Schumpeter's characterisation of the cyclical aspect of capitalism as innovation financed by credit.<sup>1</sup> The present surge in global credit is reminiscent of the development and effects of credit conditions in the 1920s and the fact that the interaction of credit with innovation may generate business cycles (Eichengreen and Mitchener, 2003).

One possible implication is that policy makers should act pre-emptively to prevent the growth of unsustainable credit booms that might have adverse macroeconomic and financial consequences later. It is, however, felt that monetary policy measures are inadequate in containing credit booms and may actually trigger a recession in the economy. The growing consensus seems to be that financial market regulators should resort to increases in capital requirements to prevent the credit boom from being unsustainable.

#### References :

- Eichengreen, B., and K. Mitchener, (2003), 'The Great Depression as a Credit Boom Gone Wrong'. BIS Working Paper, No.137.
- Goldstein, M., G.L. Kaminsky and C.M. Reinhart, (2000), 'Assessing Financial Vulnerability: An Early Warning System for Financial Markets', Institute for International Economics, Washington DC.
- Mohan, Rakesh (2006), 'Financial Sector Reforms and Monetary Policy: The Indian Experience', Reserve Bank of India Bulletin, July.
- White, W., (2006), 'Is Price Stability Enough?' Working Paper No. 205, Bank for International Settlements.
- Reserve Bank of India (2006), Annual Policy Statement for 2006-07; April.

sharply reversed later as the growth in credit decelerated causing meltdown of asset prices and low economic activity.

6.120 The rising interest rates could bring about a downturn in the corporate credit cycle. The credit cycle refers to fluctuations in the financial health or the balance sheet quality of the corporate sector that affects firms' access to and cost of credit. In this regard, the turning of the credit cycle brings about an increase in non-systematic risk reflected in the widening of credit spreads. The use of credit derivatives has facilitated the distribution of credit risk across a broader group of investors, which is believed to enhance financial stability (Box VI.9).

6.121 From a financial stability viewpoint, a deterioration in corporate sector credit quality would not only lead to greater loan losses for banks, but also an asset price readjustment in the

credit markets, especially if the frequency of unexpected corporate defaults were to rise. Although still low, this risk appears to have increased somewhat over the past six months, given higher short-term interest rates and oil prices.

6.122 Like many other economies, credit extended by banks in India has increased sharply in recent times. Credit growth, though more pronounced in the housing and retail sectors, is now more broad-based with increased demand from both agriculture and industry. This has been facilitated by large capital inflows through operations of FIIs and Indian corporates raising funds abroad. Tightening of liquidity in the global market has not had any significant impact so far and capital flows continue, although there has been some slowdown. There has already been a pause in the further tightening of liquidity by the US. With oil prices easing significantly and

#### Box VI.9: The Use of Credit Derivatives and International Experience

Credit derivatives are instruments that transfer a part or all of the credit risk of an obligation (or a pool of obligations), without transferring the ownership of the underlying asset(s). The credit derivative and structured credit markets have grown rapidly in the past few years during a relatively benign environment and in the absence of a severe or prolonged credit downturn. Credit derivative markets are most active where credit quality measurement and rating systems are transparent and have widespread adoption as in North America and Europe. Outstanding credit derivative contracts rose from about \$4 trillion at the end of 2003 to over \$17 trillion in end 2005, at which level, they now exceed the stock of corporate bonds and loans (IMF, 2006). In addition, there appears to be growing demand for structured credit products in Asia and the Middle East, and foreign banks often meet this demand with repackaged European and US credits. While banks continue to represent most credit derivative market activity, insurance companies, pension funds, and other asset managers are becoming increasingly active in structured credit markets, including newer credit derivative products. The growth of hedge funds, particularly credit-oriented hedge funds, has accelerated market development and credit risk dispersion.

While credit derivative markets increasingly facilitate the primary transfer of credit risk, secondary market liquidity is still lacking within some segments, creating the potential for market disruptions. As such, these markets are subject to increased attention from supervisors and policymakers. While the credit derivative markets raise some supervisory concerns, the information they provide is very useful for supervision and market surveillance. First, by enhancing the transparency of the market's collective view of credit risk, credit derivatives provide valuable information about broad credit conditions. Therefore, such activity improves market discipline. Second, supervisors and other public authorities

also may be able to use such market-based information to detect deteriorating credit quality, and to better monitor regulated institutions and other market participants. Finally, with the broadening of the product base (for instance, the development of mortgage and other asset-backed derivative instruments), these markets may also provide an early warning mechanism about economic stress in sectors beyond banking (for instance, the household sector).

In the Indian context, although derivative instruments were introduced in July 1999 in the money/foreign exchange market in the form of forward rate agreements (FRAs) and interest rate swaps (IRS), credit derivatives are yet to be introduced. This is partly because the credit market, which is mainly used to finance working capital, has lagged in development *vis-à-vis* other financial markets in terms of sophistication and innovative financial engineering. Although currently non-existent, the credit derivatives market holds immense potential, apparent from its growth in world markets. Factors such as improving the depth of the bond market, introduction of new regulations seeking risk weightage commensurate with credit ratings and further consolidation of the banking industry could provide the necessary impetus for development of the credit derivatives market in India.

#### References :

Bank for International Settlements, (2005), BIS 75th Annual Report, Basel, June.

International Monetary Fund, (2006), Global Financial Stability Report, World Economic and Financial Surveys, Washington, April.

Fitch Ratings (2005), Global Credit Derivatives Survey: Risk Dispersion Accelerates, Fitch Ratings Special Report, November.

inflationary pressures receding, the chances of significant further tightening of global liquidity in normal circumstances have receded. However, should there be a sharp tightening of liquidity for unforeseen reasons, such as an abrupt unwinding of global financial imbalances, it would have certain implications for the Indian financial system as detailed subsequently.

(iii) *Risks from Global Financial Imbalances*

6.123 Large and growing global financial imbalances have generally been perceived as constituting a significant threat to global financial system stability. The most fundamental imbalance in the world economy relates to the saving propensities among the major countries. On the one extreme, the United States has a very low savings rate, which is about 10 per cent of GDP in 2005, on the other extreme stands China with a very high savings rate reaching about 50 per cent of its GDP. Hence, with such diversity among national savings rates, the current accounts of the various countries reveal a high degree of imbalance. The financing of the US current account deficit of around 6.5-7.0 per cent has been facilitated by large surplus savings in many Asian countries. In this regard, the significant capital inflows needed to finance US current account deficits have emanated from such surplus economies, especially China and Japan, and, more recently, by several oil-exporting countries, which have benefited from revenue windfalls due to a surge in international oil prices.

6.124 Globally integrated financial markets are becoming increasingly apprehensive about the risks of a disorderly adjustment of the widening global imbalances. Adverse expectations of markets were evident during mid-2006 when equity indices declined sharply across the globe. The main source of vulnerability from a financial stability perspective continues to be the possibility of an abrupt asset portfolio adjustment, or of a sudden deterioration in the risk appetite of global investors for accumulating US securities. While the likelihood of an abrupt unwinding of these imbalances appears to be low, such an event could nevertheless entail sudden and destabilising changes in global capital flow patterns. This could bring with it the possibility of a considerable downward pressure on the US dollar, which could then exert significant upward pressure on US long-

term interest rates. In addition, given the increasing integration of world markets, this would directly impact other financial assets across the financial markets of most economies. Highly correlated asset price movements could, together with spikes in market volatility, impair market liquidity and undermine the hedging of financial risks (ECB, 2006)<sup>3</sup>.

6.125 India, like many other emerging market economies, could be adversely affected by the sudden unwinding of global financial imbalances. However, the impact could be different on different sectors such as the government, the corporate sector and the banking system.

6.126 First, the Government of India does not raise resources from the international capital markets to finance its fiscal deficit. The Government could, however, be affected indirectly through the spill-over impact of external developments on domestic interest rates. To the extent there is a rise in domestic interest rates, there could be an increase in the cost of borrowings undertaken by the Government. However, since most of the outstanding debt is at fixed rates and not on floating rates, the rise in the borrowing cost of the Government will be incremental and, therefore, will not have a significant impact on the interest burden.

6.127 Second, as a result of deterioration in global financial market conditions, spreads on corporate debt might widen suddenly due to a shift in investor confidence in the global financial markets. Indian corporates also raise resources from the international capital markets. Corporates would, therefore, be affected to the extent interest rates firm up in the domestic market, depending on their exposure to debt relative to other liabilities.

6.128 Third, the unwinding of global imbalances may impact banks' balance sheet, through their investment portfolio. Banks in India hold substantial investments in Government and other fixed income securities. To the extent a rise in international interest rates impacts the domestic interest rates, it would entail marked-to-market losses on the investment portfolio of banks. The banking sector in India, however, has acquired some added strength to absorb such probable shocks, largely aided by regulatory actions. The banking sector, on the whole, is comfortably placed with CRAR of 12 per cent. 78 out of 84 banks

<sup>3</sup> European Central Bank, (2006), Financial Stability Review, Frankfurt, June.

have CRAR above 10 per cent. Thus, banks in India, in general, have the resilience to withstand some rise in interest rates.

6.129 Fourth, banks in India have also been extending credit for investment in the asset market. Like many other economies, asset prices in India have also risen sharply in recent years. The possibility of a sharp decline in asset price exposes banks' balance sheets to credit risk. There is a risk that increase in interest rates in general could impact housing prices and expose the balance sheet of the households to interest rate risk, leading to some loan losses for banks. The overall banking sector's exposure to housing loans, at present, is relatively small and may not have serious systemic implications. As a result, the impact on banks' balance sheets might be muted, given their relatively moderate exposure to the asset market.

6.130 Banks are also allowed to lend to resident exporters in foreign currency at internationally competitive rates of interest from their foreign currency lines of credit as well as out of funds available in exchange earners' foreign currency accounts, resident foreign currency accounts and foreign currency non-resident (banks) accounts. These loans are intended to finance domestic and imported inputs for export production. Funds in foreign currency deposits can also be utilised for lending to domestic corporates for working capital requirements in India, import financing, purchase of indigenous machinery, repayment of rupee term loans and external commercial borrowings. To the extent tightening of global liquidity impacts banks' ability to raise foreign currency resources, it could affect on-lending of foreign currency loans by banks. However, as of now, banks' exposure in foreign currency loans is limited.

6.131 Finally, the unwinding of global financial imbalances may lead to readjustment of currencies, which would also have implications for the real sector. Significant readjustment of the currencies and rise in interest rates could deflate spending in advanced economies, which, in turn, could slow down global growth. This would entail a reduction in export opportunities and reduction in investment demand for India. While

readjustment of the currencies may have some impact, the Indian economy is largely domestic demand driven. Also, India's export basket is fairly well diversified. As such, the overall impact on the Indian economy may not be significant.

(iv) *Risks from Avian Flu*

6.132 The economic impact of the epidemic Severe Acute Respiratory Syndrome (SARS) during 2002-03 in East Asia was estimated at around US\$ 18 billion or around 0.6 per cent of their total GDP. The later outbreak of the *Avian Influenza* (H5N1), popularly known as *Avian Flu*, which started in late 2003, has raised concerns about a new global pandemic as the H5N1 virus strain will mutate just enough to allow it to pass easily from person to person, potentially causing a catastrophic pandemic as humans lack immunity to it. According to experts, the *Avian Flu* is more lethal than SARS. While SARS had a mortality rate of around 15 per cent, *Avian Flu*, which has now spread from Asia to Europe, can kill up to a third of the infected people.

6.133 There is a substantial uncertainty about the potential economic impact of *Avian Flu*. It is estimated that a modest pandemic lasting over one year might cause a loss as high as 3 per cent of Asian GDP and 0.5 per cent of world GDP, equivalent to about US\$ 150-200 billion (WHO, 2006)<sup>4</sup>. The financial impact may cost the global economy about 3.1 per cent of world gross domestic product (World Bank, 2006)<sup>5</sup>.

6.134 Though the possible impact of *Avian Flu* is yet to be fully comprehended and assessed, there are certain apparent risks and challenges which a severe pandemic could pose to domestic as well as the global financial system. International attention has focused on the need for all countries to be better prepared, in order to reduce the potential death, illness, social and economic consequences of a pandemic. An important implication of the *Avian Flu* pandemic could be for the insurance sector. As emphasised by the Financial Stability Forum, a flood of claims might strain the capacity of the global insurance and reinsurance sectors. A mild pandemic could lead to a loss of US \$15-20 billion, while a more severe

<sup>4</sup> World Health Organisation (2006), 'Regional Influenza Pandemic Preparedness Plan (2006-2008)', Regional Office for South-East Asia, New Delhi.

<sup>5</sup> World Bank (2006), 'Avian Flu: The Economic Cost', June (available at [www.worldbank.org](http://www.worldbank.org)).

event might total up to US \$200 billion (Standard and Poor, 2005)<sup>6</sup>.

6.135 A pandemic like the *Avian Flu* would pose important risks to the global financial system, particularly the economies of Asia in which the outbreak of the pandemic was first detected. The IMF is encouraging countries to prepare for a possible pandemic and is facilitating cooperation across countries in preparing contingency plans, particularly in the financial sector (IMF, 2006)<sup>7</sup>. In order to restore macroeconomic stability and fiscal sustainability, central banks in many countries may have to adjust monetary policy to prevent a sustained increase in inflation. If required, central banks may have to prepare themselves to act as lenders of last resort. A financial institution's risk assessment and management plans may have to be expanded to cover the possibility of widespread economic disruptions and their impact on loan performance and other assets.

6.136 From the Indian perspective, the first case of bird flu was announced on February 18, 2006 in Maharashtra. Initially, the virus infected 52 poultry farms in northern part of Maharashtra and such reports put authorities in other States on high alert as such a contagious disease could be a source of concern for the Indian economy in general and poultry industry in particular. India is the fifth largest producer of eggs and the livestock and poultry sector is one of the fastest growing sectors in India. It may be noted that outbreak of *Avian Flu* in Maharashtra was a localised one, which has been contained effectively. The major poultry exporting States are located at a considerable distance from Maharashtra. According to the Ministry of Agriculture, Government of India, the export of poultry/poultry products from these States is absolutely safe as the samples tested are negative.

6.137 No case of *Avian Flu* has been reported since April 18, 2006. Prudence, however, demands that all possible precautions are taken in this regard to face any eventuality of any nature. To avoid any large scale *Avian Flu* pandemic, the authorities have already announced various protective measures. Recently, the Indian Council of Agricultural Research (ICAR) has developed an

indigenous vaccine for poultry against the deadly disease. Since the disease has got recurring possibility, the development of the indigenous vaccine and its availability can go a long way in tackling bird flu effectively.

6.138 The impact of *Avian Flu* in India was largely localised to a certain region with limited impact on the domestic poultry industry. Nevertheless, as part of measures to protect domestic poultry industry from any loss on account of *Avian Flu*, in April 2006, the Reserve Bank announced guidelines for relief measures by commercial banks and urban cooperative banks. Keeping in view the loss of income that occurred due to culling of birds as well as steep fall in the demand for poultry products and their prices on account of outbreak of *Avian Flu* in some areas of the country, the Reserve Bank asked banks to consider extending certain facilities to poultry units financed by them. The Reserve Bank has also constituted an Inter-Departmental Committee to look into the details of the impact of *Avian Flu* on the financial sector of the economy. In addition, the Government granted a one-time interest subvention of 4 per cent per annum on the outstanding principal amount as on March 31, 2006 (not including any part of the principal amount that has become overdue) to all poultry units availing loans from banks due to *Avian Flu*.

6.139 The virus has been contained in the Far East. Should there be a further outbreak of the disease and its consequent resurfacing in India, its impact could also be felt on India's export of poultry products.

## 6. Overall Assessment

6.140 The financial system in India has become robust over the last few years. This has been the result of calibrated and well-sequenced measures. The banking framework is now more or less aligned with the international best practices. Financial markets are becoming increasingly deep and liquid. The increasing use of the RTGS system has reduced a major source of systemic risk in the payments and settlement system of the country.

<sup>6</sup> Standard and Poor's (2005), "Determining the Insurance Ramifications of a Possible Pandemic," Ratings Direct, November.

<sup>7</sup> International Monetary Fund, (2006), Global Financial Stability Report, World Economic and Financial Surveys, Washington, September.



6.141 The profitability of the banking sector has remained stable over the years, despite upturn in interest rate cycle in the last 2 years. A significant development during the year was decline in net NPA ratio to below 2 per cent, which is now more or less comparable with international standards. The recovery of NPAs during the year was more than the fresh slippages. The capital position of the banking sector, as a percentage of the risk-weighted assets, continues to be significantly above the stipulated norm of 9 per cent, which itself is above the international norm of 8 per cent. Apart from the credit risk, banks now maintain capital charge for market risk as per Basel I framework (capital charge for market risk has not been modified under Basel II framework). The quantitative impact study QIS 5 reveals that on implementation of Basel II, the capital adequacy ratio of banks, which participated in the exercise, would decline by one per cent, which banks should be able to manage given that 78 of 84 banks have CRAR more than 10 per cent.

6.142 The profitability and asset quality of co-operative banks improved significantly during the year, even as the issue of dual control of this sector remains to be addressed. The regional rural banks are in the process of consolidation. Profitability and asset quality of FIs and NBFCs, in general, also improved. The capital adequacy ratio of most of FIs and NBFCs continued to be well above the stipulated prescription. On the whole, strong balance sheets and comfortable capital position have significantly improved the resilience of the financial system.

6.143 There are, however, some short to medium-term risks to which banks are exposed. Banks face two major risks, *viz.*, credit risk and market risk. While the credit risk environment is expected to be benign over the short-term, banks do face some degree of market risk, although the extent of banking system's exposure to such risk has declined significantly in comparison with the previous year as detailed in the following paragraphs.

6.144 It is expected that the credit risk environment would continue to be favourable in the near-term. Macroeconomic fundamentals of the economy continue to be robust. The economy grew at an average annual rate of over 8.0 per cent during last three years and is also expected to grow at a high rate of around 8.0 per cent during 2006-07. The growth rate of 8.9 in Q1 of

2006-07 was indeed impressive. The industrial sector, in particular, is performing very well and is expected to maintain the growth momentum in the near future. Inflation rate continues to be low in the range of 5.0-5.5 per cent, despite revision in domestic oil prices. Although the absence of complete pass-through was a cause of concern from the future inflation point of view, the recent easing of international oil prices should provide the much needed relief. India's external sector has been a source of major strength. Capital inflows continue despite rise in interest rates by major central banks the world over. There was some upward movement in yield on corporate bonds during the year. The spread between AAA bonds and the sovereign bonds also widened, reflecting some uncertainty. However, the financing conditions remain comfortable. Corporates are also able to raise resources from the international capital market. The profitability of the corporate sector continues to be strong, notwithstanding some slowdown. The deleveraging of the corporates' balance sheets through issuance of equity and internal generation of funds in the past has held them in good stead in a rising interest rate scenario.

6.145 The credit offtake increased sharply in the last two years. However, the credit growth continues to be broad-based. Although banks' exposure to certain sectors, especially the housing sector has been increasing rather rapidly, such exposure in relation to the total loan portfolio remains small and there have not been any major defaults, despite rise in interest rates. With the overall economy doing well, banks are not expected to face a major problem on such exposures. Also, such exposures are small and spread over a large number of borrowers. As such, the credit risk environment, on the whole, is expected to be benign in the near-term.

6.146 Banks, however, are exposed to some degree of market risk in the near-term. The major source of such risk is the continuing large global financial imbalances. Should there be an abrupt asset portfolio reallocation, there is a risk of sharp currency readjustments which could cause heightened volatility in the financial markets through changes in exchange rate and interest rate. In the event of a sharp rise in interest rate, banks may suffer significant marked to market losses on their investment portfolio. Having said that, investment portfolio of banks has declined significantly in comparison with the last year. The

decline, in fact, is more significant in relative terms as share of such investments in total assets declined sharply to 31.1 per cent from 36.9 per cent in the last year.

6.147 In case of a rise in interest rates, banks may also face increased risks on account of their exposure to the asset market. Banks have been extending credit for investment in the asset market. There is a risk that rise in interest rates, in general, could impact the housing prices and expose the balance sheets of households to interest rate risk. This, in turn, could impact banks' balance sheets through increase in loan losses. Reversal of capital flows could impact the equity market and some of the advances extended for investments in the equity market might be impaired. Some banks also have a direct exposure to the equity market. Although decline in asset prices could cause loan losses and

capital losses, they may not have any significant impact on the banks' balance sheets, given their limited exposures to the asset markets.

6.148 To sum up, the macroeconomic environment continues to be quite favourable, which augurs well for credit risk environment. Although the financial system is facing certain degree of market risk, it is resilient enough to withstand such risk should it materialise. Banks have sufficient cushion in the form of strong capital position. While disruptions in global financial markets might have some impact, it is the domestic conditions which impact banking operations the most. In this context, strong growth prospects would continue to have a positive impact on the balance sheets of the corporate sector and households. As such, the banking system should be able to cope with the situation emerging out of any adverse global development.