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Letter from the Chairman, Editorial Committee

Dear Readers,

Owing to unavoidable circumstances, the issues for the year 2005 have been omitted. In order to bring out the publication in a timely manner, it has been decided to combine the Summer and Monsoon issues 2006. Following this Summer and Monsoon 2006 issue, the Winter 2006 issue of the Journal would be published in the first quarter of 2007.

Yours Sincerely,

(Ramalinga Kannan)
Chairman, Editorial Committee

A Review of Cross-Country Experience in Capital Account Liberalisation

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The paper reviews the experience of select countries - both advanced and emerging markets - in regard to capital account liberalisation (CAL). The advanced countries' experience with regard to CAL is analysed with special focus on the sequencing of CAL. The move towards CAL by many of the emerging market economies (EMEs) during the 1980s and the circumstances that led to some policy reversals and the subsequent change in the mainstream thinking during the 1990s have also been analysed. The paper also presents some of the extant capital account restrictions in select advanced countries and EMEs, emanating from security and prudential considerations that have come to be accepted as being consistent with a framework of full capital account liberalisation. Finally, the paper draws some lessons from the cross-country experience, particularly in regard to the need for sound economic policies and effective risk management strategies, prudential supervision and proper reporting standards to meet the emerging challenges of CAL.

Introduction

Capital account liberalisation (CAL) was undertaken over a period of years in advanced countries, including the euro area, particularly after the breakdown of the Bretton Woods system of fixed exchange rates in the mid-1970s. During the 1980s and 1990s, many of the emerging market economies (EMEs) also undertook capital account liberalisation. This

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was followed by episodes of huge capital inflows into some of these countries, the magnitude of which became unmanageable and destabilising for many EMEs. Based on the cross-country experience in capital account liberalisation, especially since the East Asian crisis of 1997, the mainstream thinking both at academic and policy levels has changed in the recent years. Against this backdrop, the purpose of the paper is to examine the experience of select major countries which went in for CAL and draw lessons from their experience with particular focus on (i) the nature of capital controls by advanced countries during the phase of run up to capital account liberalisation; (ii) the kind of controls and safeguards retained by even fully liberalised regimes; and (iii) the circumstances leading to policy reversals by some EMEs in the post-1997 build-up of the crisis-ridden international economic and financial markets scenario. Section I gives a brief account of the evolution of capital account liberalisation in the global context. Section II elaborates upon the advanced countries' experience with regard to capital account liberalisation with special focus on the sequencing of CAL. Section III analyses the experience of emerging market economies (EMEs). Section IV attempts a presentation of extant capital account restrictions in select advanced countries and EMEs. Section V draws some important lessons from the cross-country experience.

Section I

Evolution of Capital Account Liberalisation

Tracing out the history of capital account liberalisation, one observes that the period since 1870s till the outbreak of the World War I, was a period of *laissez faire,* with no capital controls. This period was marked by a boom in international flows of goods, labour and capital across nations, both developed and developing. Most of the foreign investment during this period was long-term and was mainly directed towards infrastructure, especially utilities and railroads. The boom ended with the onset of World War I. The ensuing years from 1920 to 1931 saw a modest revival of capital flows, mostly to emerging market economies to meet their developmental needs.

The post-World War II period from 1945 was marked by imposition of capital controls by most economies. Even the developed countries

maintained controls for prolonged periods after World War II driven by a range of motives including exchange rate policy, monetary policy and tax policy considerations. As a result, capital flows remained marginal. Capital controls, till the early 1970s, were rather considered as an integral element of the fixed exchange rate regime of the Bretton Woods system.

Capital account liberalisation became more common after the breakdown of the Bretton Woods system of fixed exchange rates in the mid-1970s. In tandem with several countries gradually switching over to varied forms of floating exchange rates, these countries also liberalised their controls on capital flows. The generalised move towards CAL in the 1980s in the advanced countries coincided with a general shift towards more market-oriented economic policies aimed at achieving non-inflationary growth together with a gradual move towards multilateral frameworks such as the Organisation for Economic Cooperation and Development (OECD) and the European Union (EU). Notwithstanding certain periods of market disruption and speculation in the post-CAL period, there were no cases of serious policy reversals leading to reimposition of capital controls by the advanced economies.

Many EMEs in Latin America as also Asia embarked upon capital account liberalisation from the early 1980s. This period was, in general, oriented positively towards opening the capital account and in a world fast integrating through both trade and financial flows, capital controls were increasingly perceived as ineffective and even distortionary. Consequently the volume of capital flows into the developing economies accelerated till the mid-1990s. The general fear associated with CAL is the outflow of capital, but the opposite has also been the case in certain economies, *viz.*, Chile and Malaysia. With the magnitude of capital flows becoming unmanageable and destabilising for the EMEs and sterilisation operations getting increasingly ineffective, some of the EMEs backtracked from the liberal capital account measures and imposed restrictions – both price and non-price based measures. While some EMEs faced the challenge of managing increased inflows, some other EMEs experienced sudden stops and reversal of flows that led to a series of crises during the mid-1990s. This opened a whole new debate and a plethora of literature on the timing, sequencing and the pace of CAL globally.

As a result of these developments, the mainstream thinking in both

academic and policy-making circles turned somewhat less enthusiastic about the benefits of capital account liberalisation, particularly before meeting several prerequisites in terms of strong macroeconomic policy framework and soundness and efficiency of the financial system and markets. The IMF also shelved its proposal of 1997 for making capital account convertibility as an obligation for its members, and has been following the practice of appropriately advising its members in a country-specific context to follow generally a cautious, gradual and carefully sequenced process of capital account liberalisation.

The advanced countries had, no doubt, some intermittent controls on capital flows during the phase of liberalisation, but did not substantially reverse policies away from a liberal regime, whereas a widely observed feature about EMEs was the reversal of policy towards CAL and reintroduction of controls in the wake of capital account crises. Nevertheless, some forms of capital controls are prevalent even in liberalised regimes, more prominently in respect of direct investment, real estate transactions, and transactions in capital and money market securities. Such regulatory safeguards, emanating more from security and prudential considerations, have come to be accepted as being consistent with a framework of full capital account liberalisation.

Section II

Experience of Advanced Countries

Most advanced countries liberalised their capital account over a period of about two decades from 1974 to 1994. The period of transition, however, varied between countries ranging from a number of years in respect of France and Japan to a few months in the case of United Kingdom. Australia and New Zealand are also examples of speedy transition from a rather restrictive to open regimes. Experience of these countries reveals that accompanying macroeconomic policies and domestic financial sector reforms were critical for successful liberalisation. In particular, the need for developing adequate prudential supervision standards has been underscored. In most cases, direct investment flows were formally liberalised ahead of portfolio flows. On the other hand, restrictions on cross-border bank lending and foreign investment opportunities by the residents were among the last to be lifted.

The US was the first country that went in for complete capital account liberalisation (CAL) in 1974. Between 1979 till 1991, most of the European countries, Japan, Australia and New Zealand also adopted full capital account liberalisation although patterns as well as the time taken varied between the countries.

United States

The United States, that had generally adopted liberal policies with regard to capital account in the post-war period, introduced capital controls on account of speculative outflows in the 1960s. Controls in the form of Interest Equalisation Tax (1963), Voluntary Guidelines limiting foreign lending and investment (1965) and Voluntary Guidelines limiting foreign direct investment (1968) were introduced. Most of these controls were eliminated from 1974 onwards after the breakdown of the Bretton Woods system. Since then, the United States has followed a liberal capital regime with limited controls mainly pertaining to security concerns (Bakker & Chapple, 2002).

Europe

Unlike the United States, the move towards capital account liberalisation amongst European countries was marked by alternate phases of controls and relaxations and has ranged over one and a half decade (UK liberalised in 1979, while Greece in 1994). Most of the European countries tried to limit the inflows during the late 1960s, first by indirect measures aimed at discouraging non-residents from acquiring domestic assets and eventually through direct capital controls. Even some of the liberal European countries such as Germany and Switzerland tightened their exchange control regimes. Most controls on inward flows were lifted in 1970s, when the appreciation of European currencies and Japanese yen *vis-à-vis* dollar was eventually accepted and the Bretton Woods fixed exchange rate system gave way to a regime of flexible exchange rates. In the period subsequent to the first oil crisis of 1973, many of these countries experienced downward exchange rate pressures and, hence, imposed restrictions on outward capital flows. These restrictions continued throughout the 1970s. In the 1980s, many of the European countries again developed strategies to dismantle their control systems. This coincided

with significant progress towards European integration, which later culminated in monetary unification.

Other Countries

Outside Europe, Japan, Australia and New Zealand have also imposed controls on short-term capital flows for extended periods. Japan's approach towards capital account remained inconsistent till 1979, with controls imposed and subsequently eased in 1967, 1973 and 1979. As a result, investment inflows generally remained low. Subsequently, Japan followed a very gradual approach towards liberalisation ranging over a decade from 1979 to 1991. Australia and New Zealand, on the other hand, are examples of rapid move to capital account liberalisation. On the back of the foreign exchange crisis of 1984, New Zealand liberalised all restrictions within a year (mid-1984 to mid-1985). Prior to the move, New Zealand followed a regime of pervasive capital controls, exchange rate peg and import controls on a wide range of products. The chronological pattern of CAL in advanced countries is presented in Table 1.

Table 1: Abolition of Capital Controls – Developed Countries

Country	Year of abolition of capital controls
United States	1974
European countries	
United Kingdom	1979
Germany	1981
Netherlands	1986
Denmark	1988
France	1990
Sweden	1989
Italy	1990
Belgium	1990
Austria	1991
Finland	1991
Spain	1992
Portugal	1992
Ireland	1993
Greece	1994
Japan	1991
Australia	1985
New Zealand	1985

Source: Bakker and Chapple (2002) and IMF *Annual Report on Exchange Arrangements and Exchange Restrictions,* various issues.

The process of CAL is covered in some detail for two countries, *viz.*, France and the United Kingdom, in the following paragraphs[2].

France

Background

France followed a very gradual approach towards CAL during the 1980s. In 1979, France joined the European Monetary System (EMS) while maintaining a relatively tight set of capital controls. Subsequent to the second oil price shock later in the year, France entered into a recessionary phase. The Government resorted to expansionary policies. The nationalisation of the financial sector and the subsequent increase in the government control of the banking sector up to 85-90 per cent eroded the confidence of the markets resulting in considerable outflows. A series of speculative attacks on the exchange rate forced devaluation of French franc by over 25 per cent during 1981 to 1983. Capital controls were further tightened. Measures included prohibiting all forward transactions by importers and exporters and steps to prevent evasion by using leads and lags in current account transactions. However, controls failed to be effective especially with large external imbalances. Besides, controls involved real economic costs.

Policy Response

A major reorientation occurred in French economic strategy in 1983. This involved deregulation in the financial sector, which was brought about in stages. The public debt market was reformed to enhance the investors' interest. Quantitative credit control mechanism was abolished in 1985. While this well-planned liberalisation of financial sector was being implemented, France continued to maintain capital controls. When the French macro-economic situation strengthened, current account stabilised in 1984 and the financial sector was considered to be able to withstand foreign competition, capital controls were withdrawn gradually. The details of the capital account liberalisation process in France are given in Table 2.

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[2] The discussion is based on Bakker and Chapple (2002).

Table 2: Chronology of Key Changes in Capital Account Controls in France

1980 July	L Relaxation of restrictions on inward and outward direct investment.
1981 May	T D*evises-titres* market, limitations on leads and lags in trade settlements, and limitations on direct investment abroad reintroduced.
1982 March	T Further restrictions on surrender of export proceeds and on direct investment abroad introduced.
1983 March	T Further foreign travel allowances reduced, a ban on use of personal credit cards abroad, and *carnet de change* (a booklet in which foreign exchange purchases were recorded) introduced.
December	L Limits on foreign travel allowances and foreign direct investment eased. L C*arnet de change* abolished.
1984 July	L Ban on use of personal credit cards abroad abolished.
November	L Controls on direct investment abroad eased.
1985 February	L Inward direct investment originating from non-EEC countries eased.
April	L Eurobond issues denominated in French francs authorised.
September	L Financing rules for outward direct investment outside the European Community eased.
December	L Regulations for outward portfolio and direct investment eased.
1986 January	L Foreign travel allowances eased.
April	L Requirement of prior authorisation of direct foreign investment eliminated.
May	L D*evises-titres* market abolished, purchases of secondary residences abroad liberalised, forward foreign exchange operations eased, and authorisation procedures for direct investment abroad eased.
November	L Bank lending in French francs to non-residents partially liberalised. L Administrative control through commercial banks of import and export settlements abolished (*domiciliation* regime).
1987 May	L Exchange controls for commercial enterprises substantially eased. L Trade in gold liberalised.
July	L Limits on tourist travel allowances abolished.
1988 June	L Domestic enterprises permitted to operate foreign currency accounts. L Restrictions on borrowing abroad abolished.
1989 March	L Bank lending in French francs to non-residents fully liberalised.
June	L Commercial banks' foreign exchange positions liberalised. L All residents were granted permission to open ECU-denominated accounts.
1990 January	L All remaining exchange control regulations abolished (Decree 89/938).

T: Tightening of controls; L: Loosening of controls
Source: Bakker and Chapple (2002)

Assessment

The overall liberalisation process spanned over a period of 6 years – 1984-1990. During 1986-87, there was some disruption in the forex market, which led to some realignment when the French franc was devalued by about 3 per cent. There were sizable increases in portfolio flows into France (from below 0.5 per cent of GDP in early 1980s to close to 4 per cent of GDP by late 1980s). Yet, the liberalisation efforts continued uninterrupted till 1990 when France adopted complete CAL. The French exchange rate was again tested by the markets during the 1992-93 EMS crisis. It led to decisive interest rate hikes, heavy interventions and broadening of the EMS fluctuation margins, though the central rate of the French franc was not adjusted. There was no reversal with regard to capital account measures. Eventually, French franc joined the Euro on January 1, 1999. Notwithstanding the fact that peer pressure (in terms of the prospect of further European economic and financial integration) has been a major driving force behind French liberalisation of capital movements, the experience of France remains commendable with respect to its integrated approach to reform involving macroeconomic stabilisation and institutional strengthening. Deregulation of financial markets, abolition of quantitative credit controls, industrial policy reforms and discontinuation of subsidies were undertaken before adopting full CAL. The French approach to strengthen the domestic economy before liberalising the volatile items in the capital account was the key element behind the French attempt at CAL.

United Kingdom

Background

United Kingdom's experience is a classic case of rapid liberalisation of capital controls. Since World War II till 1979, UK operated one of the most extensive system of capital controls along with tight domestic financial regulation. Despite controls, UK faced frequent exchange rate crises and poor economic performance. The first such crisis was in 1967 when sterling came under downward pressure on account of unloading of official sterling balances with pound sterling becoming less important as a reserve currency. A second sterling crisis in November 1976 led to additional tightening of

capital controls (Table 3). The second oil price shock in 1979 resulted in considerable upward pressure on sterling.

Table 3: Chronology of Key Changes in Capital Account Controls in UK

1958 December	L Convertibility of sterling introduced.
1961 July	T Introduction of restrictions on direct investment outside sterling area.
1967 April	L Restrictions on repatriation of non-residents' capital eased.
1971 August	T Controls on portfolio inflows introduced.
December	L Controls on portfolio inflows abolished.
1975 July	T Postponement of capital controls *vis-à-vis* EEC members.
1976 November	T Imposition of restrictions on banks' financing trade between countries other than the United Kingdom, conversion of foreign currency bills into sterling by banks no longer permitted.
December	T Tightening of the monitoring of sales of foreign currency for sterling.
1977 October	L Restrictions on sterling borrowing to fund inward direct investment and also on travel allowances for residents eased.
December	L Capital outflows to other EEC countries eased.
1978 June	L Restrictions on resident institutional investors investing in foreign currency securities eased.
1979 January	L Abolition of restrictions on sterling lending to non-resident–controlled companies operating in the United Kingdom.
June	L Restrictions on outward capital flows eased.
July	L Abolition of all restrictions on outward direct investment and significant liberalisation of outward portfolio investment.
October	L Suspension of the Exchange Control Act of 1947 and removal of all remaining barriers to inward and outward flows of capital. L Remaining exchange controls abolished.

T: Tightening of controls; L: Loosening of controls
Source: Bakker and Chapple (2002)

Policy Response

The initial response was to intervene in the market to counter upward pressure, but because of the overshooting of domestic monetary aggregate targets, the exchange rate was allowed to seek its own level. The sterling appreciated substantially during 1979 in nominal effective terms, thus raising concerns about competitiveness and deterioration of non-oil current

account. These developments, together with comfortable foreign exchange reserves, nullified the arguments favouring capital controls and created the platform for CAL. The government also recognised that the abolition of capital controls had to be accompanied by domestic deregulation and macro-economic policies oriented towards stabilisation. High level of domestic cost increases was a cause of concern enunciating the need to break the wage price spiral to ensure that benefits are not lost through loss of competitiveness.

Partial relaxation was undertaken in June 1979. This also marked the beginning of further domestic deregulation and enhancement of market forces. Remaining restrictions were abolished in one step in October 1979. Measures were undertaken to remove direct credit control measures and improve the functioning of the labour market.

Assessment

Though the process of liberalisation of capital controls in UK was one of the fastest, it was part of a broader policy framework aimed at improving the functioning of the overall UK economy in late 1970s. While inflows increased marginally, the immediate post-liberalisation period saw a substantial hike in capital outflows from UK. Economic growth in UK improved during the 1980s and inflation fell. Towards the end of 1980s, UK witnessed a period of industrial unrest and an asset price bubble developed. The exchange rate remained volatile at times though there was no backtracking towards capital control measures. UK at present has no restrictions on capital transactions in money, capital and derivatives market and with respect to personal capital transactions and institutional investors. The authorities have, however, retained the power to impose restrictions on inward direct investment if it hinders national interest.

A chronology of key changes in capital controls in the United States, Japan, Australia and Italy is provided in Annex 1.

Section III

Emerging Market Economies' Experience

The decade of 1980s and 1990s saw a range of pressures on developing countries to open up to foreign capital flows triggered by the

fast global integration of trade and finance. Many emerging market economies like Malaysia, Indonesia and Thailand maintained unrestricted capital accounts in the 1980s and till the mid-1990s. This was followed by episodes of huge capital inflows into these countries particularly in the 1990s, the magnitude of which became unmanageable and destabilising. Sterilisation operations were usually the first policy response, but, such operations typically entailed costs to the central banks and attracted further inflows as they tended to keep interest rates high. Recognising the limitations of sterilisation operations beyond a point and succumbing to the appreciation pressures due to huge inflows, some of these emerging economies reversed from the liberal capital account and re-imposed restrictions – both price and non-price based – around the crisis periods.

The literature on crisis experiences of EMEs shows that the risks of CAL arise mainly from inadequate preparedness before liberalisation in terms of domestic and external sector policy consolidation, strengthening of prudential regulation and development of financial markets, including infrastructure, for orderly functioning of these markets (Kawai *et al,* 2003). In this context, the East Asian experience and that of some Latin American countries is of relevance.

Mexican Crisis

The Mexican crisis in 1994-95 first drew attention to the volume and velocity of the flows involved in capital account crises in emerging market economies. From the late 1980s to the early 1990s, Mexico liberalised its capital account as part of a larger program of economic stabilisation and reform, internationalisation of the stock market and liberalisation of FDI. During 1987-93, Mexico achieved reduction in inflation from 160 per cent to 8 per cent (partly through a wage and price freeze), economic growth which stagnated in the 1980s rose to 3 per cent in 1989-93, external debt was restructured and private capital inflows surged, contributing to a large increase in international reserves. Between 1990 and 1993, Mexico received more than $ 91 billion in net capital inflows; 67 per cent of this or $ 61 billion was portfolio investment (Folkerts-Landau and Ito, 1995). There were, however, weaknesses in Mexico's economic position including current account deficit at 6.5 per cent of GDP in 1993, financed largely by short-term capital inflows, a steep real

appreciation of the *peso* and a major deterioration in the private sector's saving performance. Mexico's weak external position was exacerbated in 1994 by a substantial rise in world interest rates, which prompted international investors to reassess the share of their portfolios invested in emerging markets. All these developments tended to weaken the *peso*. The *peso* was allowed to depreciate within its band, but the vulnerability of the economy was increased by the replacement of *peso*-denominated government debt by Tesobonos, instruments indexed to the U.S. dollar. The current account deficit widened further to 8 per cent of GDP for 1994. All these factors contributed to the eruption of the crisis in December 1994. Though a devaluation of the *peso* occurred immediately and the *peso* was allowed to float after a massive loss of international reserves, it did not restore confidence and the *peso* continued to depreciate sharply, as financial markets were suspicious about Mexico's ability to service its short-term debt (Martinez, 1998).

East Asian Crisis

The East Asian region was characterised by high rates of growth since the 1980s which had accelerated to a range of 7 to 10 per cent in the 1990s accompanied by high investment rates which averaged around 30 per cent through the 1980s (except in the Philippines) and kept well above 30 per cent of GDP and above 40 per cent in Malaysia and Thailand in the 1990s. There were moderate deficits in the general government budget ranging between 0.3 per cent of GDP and 3 per cent of GDP. Malaysia recorded deficit of 4 per cent of GDP during the 1980s, but rapidly consolidated its position and moved into fiscal surplus since 1994. Thailand recorded fiscal surpluses all through the 1990s (Rangarajan and Prasad, 1999, Patra *et al*, 1999 and Bhalla, 1998).

The East Asian economies faced a serious currency crisis during 1997-1999. It began in Thailand without much early warning signals in late June 1997 and afflicted other countries such as Malaysia, Indonesia and South Korea, and lasted upto the last quarter of 1998. It came as a surprise, not only because of the large number of countries affected and the speed of the spreading crisis from one country to another, but also because of the fact that before the crisis many countries had been showing healthy signs: long periods of impressive growth rates, responsible

government fiscal policies, and steady investment in human and physical capital. Prior to the crisis, there was a boom in private capital flows to emerging markets in the 1990s, which rose to around $ 300 billion at the time of the East Asian crisis in mid-1997. Some countries allowed entry of this inflow in a completely controlled manner (China, India) while others (e.g. Thailand, Malaysia, Indonesia) had varying degrees of controls. The restrictions on outflows also varied among the countries. None of the emerging markets, however, had a fully floating exchange rate. Central banks intervened to restrict movements in exchange rates and most of them sought to keep the exchange rate under an implicit or explicit peg or a band. The choice of fixed exchange rate regimes was predicated by the costs and ineffectiveness associated with sterilisation, the lack of scope for any further fiscal consolidation, the limit on monetary tightening that would have encouraged further inflows and the erosion in competitiveness which would have occurred under greater exchange rate flexibility.

The saving rate which had stabilised around 30 per cent in most of the countries in the 1990s was not sufficient to finance the high rates of investment. As foreign borrowing rates were almost 3 to 5 per cent less than risk-free domestic deposits, excess borrowing occurred. The widening saving-investment gap was reflected in large and persistent current account deficits (CAD) during the 1990s when Thailand and Malaysia had CAD at 8 per cent of GDP and 10 per cent of GDP, respectively, in 1995. In Indonesia, there was a worsening of the current account deficit in 1995 to 3.3 per cent, after the relatively modest levels during the immediately preceding years. In the Philippines, the current account deficit stabilised at a high of around 4 to 5 per cent. There was a marginal upward movement in inflation during the 1990s in all the economies although the rates remained modest. Philippines experienced a reduction in its inflation rate from over 15 per cent during the 1980s to around 8 per cent in 1995-96.

Fixed nominal exchange rates acted in conjunction with worsening current account imbalances and positive inflation differentials to produce real appreciation of the currencies. Other factors also contributed to currency overvaluation and loss of competitiveness such as the rapid appreciation of the US dollar after 1995, the nominal devaluation of 50

per cent of the Chinese yuan in 1994 and the slump in external demand. Taking 1990 as the base year, the real exchange rate appreciated by 19 per cent in Malaysia, 23 per cent in the Philippines, 12 per cent in Thailand and 8 per cent in Indonesia in 1997. The ratio of debt stock (including short-term debt) to reserves, indicating solvency, showed that except Indonesia and the Philippines for whom this ratio was 267 per cent and 166 per cent, respectively, other Asian economies were well below 100 per cent. The share of short-term debt to total debt varied between 13 per cent (in Philippines) and 32 per cent (in Thailand). In retrospect, the key weaknesses were the large inflow of short-term capital, and the fact that most of the affected countries had high current account deficits and overvalued exchange rates.

The crisis left a trace of heavy economic and social costs. These Asian economies saw an overall decline in 1998. Gross Domestic Product (GDP) in 1998 contracted almost 6 per cent in Korea, 8 per cent in Thailand and 7 per cent in Malaysia. Social unrest and political uncertainty compounded the economic and financial dislocations in Indonesia to reduce real GDP by almost 14 per cent. Excepting Indonesia, all the economies showed a positive growth rate in 1999 as they recovered with international support and domestic policy improvements. This episode was, however, a major shock to countries embarking upon rapid capital account liberalisation and raised doubts about the benefits of liberalisation of capital account without certain macroeconomic and prudential policy prerequisites. The major macroeconomic causes for the crisis were identified as: current account imbalances with concomitant savings-investment imbalance, overvalued exchange rates, high dependence upon potentially short-term capital flows and huge portfolio flow composition of foreign investment. These factors were exacerbated by maturity mismatches, currency mismatches, moral hazard behaviour of lenders and borrowers, excessive leveraging, herd behaviour of markets and predatory speculation, and the sharp appreciation of the US dollar. The crisis period witnessed reversals of policies towards capital account by these countries. Such policy changes in select countries are discussed in some detail in the succeeding paragraphs.

Malaysia[3]

Malaysia, which had generally been an open economy, saw a temporary episode of imposition of controls and its subsequent elimination during 1994. A substantial backtracking from capital account liberalisation occurred during 1997. To avoid appreciation of the ringgit, the initial policy response to heavy inflows in Malaysia in 1994 was for the central bank to intervene in the forex market by buying up foreign exchange and thereafter to sterilise the excess domestic liquidity. With sterilisation becoming costly (with shortage of government paper) and ineffective (sterilisation operations kept interest rates high, which in turn attracted capital inflows), the authorities introduced a number of direct and regulatory capital control measures in early 1994. The measures were specifically designed to limit short-term capital inflows. Specific measures were:

- Residents were prohibited from selling Malaysian money market securities to non-residents;

- Commercial banks were prohibited from engaging in non trade-related bid-side swaps or forward transactions with non-residents;

- Asymmetric open position limits, that is, ceilings on banks' net liability positions excluding trade-related and foreign direct investment flows, were imposed, aimed at curtailing bank foreign borrowing to engage in portfolio or non-trade transactions; and

- Commercial banks were required to place with the central bank the ringgit funds of foreign banking institutions maintained in non-interest-bearing accounts; these funds were subsequently included in the eligible liabilities base of commercial banks.

The immediate market reaction to the 1994 measures was negative, resulting in a depreciation of the ringgit and a correction in the stock market. The controls were, however, very temporary. By the end of 1994, most of the controls were lifted. Following the onset of the Asian crisis, the ringgit came under significant pressure again in 1997. After substantial amounts of capital outflows, the authorities imposed a number of exchange and capital control measures in September 1998, aimed at containing ringgit

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[3] The Malaysian experience is based on Bank Negara Malaysia Annual Report, various issues and Ariyoshi *et al*, (2000).

speculation and the outflow of capital to eliminate the offshore ringgit market and to stabilise short-term capital flows:

- The authorities closed all channels for converting ringgit funds into foreign exchange held abroad, required repatriation of foreign exchange held abroad by residents, blocked the repatriation of portfolio capital held by non-residents for 12 months, and imposed restrictions on transfers of capital by residents.

- The controls were supported by additional measures to eliminate potential loopholes (prohibiting the trading of ringgit assets offshore, announcing demonetisation of large denomination ringgit notes, and amending the Companies Act to limit dividend payments).

- The authorities replaced the policy of a managed float by pegging the ringgit to the U.S. dollar, relaxed monetary and fiscal policies to support economic activity, and accelerated financial and corporate sector reforms that had commenced in early 1998 to deal with the weak financial institutions and the banking system.

- On February 4, 1999 the authorities replaced the 12-month holding restriction on repatriation of portfolio capital with a declining scale of exit levies.

According to the Malaysian central bank, these rules were meant to encourage existing portfolio investors to take a longer view of their investments in Malaysia, attract new funds into the country, while at the same time discouraging destabilising short-term flows and penalising early withdrawals. In addition, they were designed to allow smoother outflow of funds, rather than a sudden and massive outflow upon the expiry of the one year holding period.

The Malaysian experience reflects the potential effectiveness of controls on inflows when the controls are accompanied by steps to strengthen prudential regulations and an appropriate monetary policy. The controls were effective in eliminating the offshore ringgit market, which was the locus of much of the speculative activity. In conjunction with the 12-month holding period and restrictions on resident outward investments, the suppression of the offshore ringgit market effectively constrained capital outflows.

Thailand[4]

Thailand went in for capital account liberalisation before reforming the financial sector. Capital inflows were actively promoted in Thailand since 1985 till the mid-1990s. Inflows through portfolio and equity investments were permitted freely, though portfolio and foreign direct investment outflows were subject to restrictions. Banks' foreign borrowing was unrestricted other than by net open position limits, while that by residents could be contracted freely except that proceeds needed to be repatriated to authorised banks or placed in foreign currency accounts. The Thai economy started showing signs of overheating in mid-1993. The liberalisation of short-term flows, combined with high domestic interest rates and an implicit exchange rate guarantee, led to a substantial and unsustainable build-up of short-term liabilities by banks and non-banks during early 1995.

Not willing to give up the fixed exchange rate regime, the authorities attempted to cope with capital inflows through a combination of monetary, prudential and market-based capital control measures. The policy rate was raised in March 1995. Sterilisation measures were stepped up. In addition, some measures designed to target capital flows more directly were introduced in August 1995:

● Asymmetric open position limits for short and long positions (with smaller limits on short foreign currency positions in an attempt to discourage foreign borrowing abroad);

● Reporting requirement for banks on risk control measures in foreign exchange and derivatives trading; and

● A seven per cent reserve requirement (held at the central bank) on non-resident baht accounts with less than one-year maturity and on finance companies' short-term foreign borrowing.

The persistent growth in net total and short-term capital inflows in 1995 prompted the authorities to introduce a second round of measures in April-June 1996. The seven per cent reserve requirement was extended to non-resident baht borrowing with a maturity of less than one year and to new short-term offshore borrowing of maturities of less than one year by commercial banks.

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[4] The Thai experience has been drawn mainly from Ariyoshi *et al* (2000) and Johnston *et al*, (1997).

The Thai baht came under speculative pressure by mid-1997. To stabilise the foreign exchange market and stem speculative attacks on the baht, the authorities imposed a series of measures to limit capital outflows in June 1997:

- Financial institutions were asked to refrain from, and then suspend (June 1997), transactions with non-residents that could facilitate a build-up of baht positions in the offshore market (including baht lending through swaps, outright forward transactions in baht, and sales of baht against foreign currencies).

- Any purchase before maturity of baht-denominated bills of exchange and other debt instruments required payment in U.S. dollars.

- Foreign equity investors were prohibited from repatriating funds in baht (but were free to repatriate funds in foreign currencies).

These measures gave rise to a two-tier currency market, with separate exchange rates for investors who bought baht in domestic and overseas markets. With the persistent expectations of baht devaluation driving capital outflows, foreign exchange reserves remained under pressure and the authorities eventually abandoned their pegged exchange rate regime and floated the baht on July 2, 1997.

Thailand's capital controls provided temporary relief. Circumvention was facilitated because of presence of offshore market with arbitrage opportunities. Re-imposition of controls along with weak economic fundamentals undermined investor confidence and reduced inflows. Once the economic situation showed signs of improvement and the Bank of Thailand lifted controls in 1998 unifying the two-tier market, baht appreciated and stock prices improved.

South Korea

Over the course of the late 1980s, South Korea pursued a policy of gradually liberalising the domestic financial system and the capital account, although this was accelerated in 1993. In 1988, South Korea accepted Article VIII obligations ensuring full convertibility for current account transactions. In the early 1980s, capital inflows were liberalised and capital

outflows restricted to assist the financing of current account deficits. Later in the decade, when Korea began to run substantial current account surpluses, controls were reimposed on inflows and controls on outflows were eased. This position was reversed in early 1990s as a consequence of the strong won. Liberalisation of the capital account was gradual and selective and a comprehensive liberalisation plan was not adopted until 1993. Policy thereafter was oriented towards gradually liberalising capital account transactions. Korea's policy towards capital account transactions was, thus, guided by developments in the current account. Financial sector reform, including efforts to improve regulation and supervision, was pursued concurrently (Coe and Se-jik, 2002 and IEO, 2003).

As part of the reform process, Korea moved from pegging the won to a basket of currencies to the Market Average Exchange Rate (MAER) system in order to allow exchange rates to be determined more by market forces. One key consequence of the increased access of Korean financial institutions to external financing was a rapid expansion of foreign debt, which nearly trebled from $ 44 billion in 1993 to $120 billion in September 1997. While this level of foreign debt accounted for only 25 per cent of GDP in 1997, which was considerably lower than that of other comparable countries, a critical dimension was the maturity structure of the debt. The share of short-term debt rose from an already high 43.7 per cent in 1993 to an extremely high 58.3 per cent at the end of 1996. Newly-licensed merchant banks, most of them owned by *chaebols* assumed a very large share of this short-term debt. The policy of liberalising short-term flows before long-term flows and restricting direct raising of capital by non-financial firms gave the merchant banks a profitable niche. The merchant banks were required to keep their currency exposures in balance, but there were many loopholes in these rules and supervision was poor. Thus, although measures were undertaken in the 1990s to liberalise and strengthen the financial sector, persistent weaknesses of oversight and regulation remained.

Korea was hit by the Asian financial crisis of 1997 as the sharp rise in the short-term debt to reserves ratio and concerns about the stability of the financial sector (especially the finance companies) encouraged continual pressure against the won. When the won was forced out of its trading band, its value collapsed.

Korea adopted financial and corporate restructuring policies following the crisis and recovered fast, and is currently showing robust growth rates. In recent years, Korean won was allowed to appreciate but at the same time, the country attempted to maintain export competitiveness of the country. While currency value is allowed to be determined by market fundamentals, interventions ensure smoothing of the currency path.

Experience of other EMEs

Russia

Russia started slowly liberalising its capital account in the early 1990s, but in 1998, Russia faced a serious currency crisis due to its fiscal situation. In August 1998, Russia introduced a series of emergency measures, including re-intensification of capital controls and the announcement of a debt moratorium. The unilateral debt restructuring and moratorium was reflected in a downgrading of sovereign credit ratings in early 1999 and a complete halt in access to international capital markets. FDI declined sharply. The exchange rate band was abandoned and the currency depreciated sharply. Russia recovered with the help of subsequent reforms and has recorded an average growth of 7 per cent in the last three years. Russia lifted the last remaining capital restrictions effective July 1, 2006 clearing the way for making the currency fully convertible. Such restrictions included a 7.5 per cent mandatory reserve requirement for non-resident holders of sovereign debt. They also involved an obligation to hold proceeds from the sale of sovereign debt temporarily in a special rouble account before converting the roubles into foreign currency. Earlier in the year, the central bank abolished the compulsory sale of 10 per cent of foreign earnings by Russian entities. Foreigners were also permitted better access to the Russian bond market. The move to full capital account convertibility is expected to make the domestic Russian debt market more attractive to foreign investors, but little immediate impact is expected on the rouble's exchange rate that is currently linked to a bi-currency basket. It is estimated that Russia has the second largest amount of dollar bills in circulation after the US. With convertibility, Russians who keep their savings in US dollar are likely to opt for rouble, speeding up 'de-dollarisation' of the country's economy (Humber, 2006 and Mosnews, 2006).

Brazil

Brazil was impacted by both the East Asian and the Russian crisis and was taking steps to avert its intensity when inflows of private foreign capital suddenly dried up. At the time of financial crisis in 1999, Brazil suffered from both fiscal and balance of payments weaknesses: in mid-1998, the bulk of the government's domestic debt - which amounted to 40 per cent of GDP - consisted of short-term financing. The current account deficit was approaching 5 per cent of GDP. In August 1998, capital flows to Brazil came to a halt. These events forced Brazil to float the *real* which led to a sharp depreciation in February 1999 and threatened to fuel inflation while driving the economy into a deep recession. The *real* was allowed to continue to float and Brazil adopted inflation targeting in two steps to enhance the credibility of its macro-economy. Interest rates were as high as 39 per cent and had to be raised further, given the inflationary potential due to sharp depreciation. Subsequently, a remarkable turnaround in the fiscal situation to a surplus helped Brazil in resolving the crisis as the debt-to-GDP ratio stabilised. The central bank started the practice of lowering rates between meetings of the MPC which reduced the inflationary expectations. This measure, coupled with greater information disclosure, helped in stabilising international financial flows and the exchange rate and the interest rate. Dependence on short-term credit (other than trade finance) to finance the balance of payments was reduced and maturities of the government's domestic debt were lengthened. Brazil was broadly able to adhere to the announced inflation targets and witnessed a return to growth thereafter (Fraga, 2000 and IEO, 2003).

Argentina

In the mid-1990s, Argentina displayed strong economic performance: the hyperinflation of the 1980s came down to low single digits, output growth was impressive, and the economy had successfully weathered the Mexican crisis of the mid-1990s. The current and capital account transactions were both liberalised simultaneously in 1991, and Argentina embarked on a currency board arrangement pegged to US dollar from April 1991. Major weaknesses however, emerged during the boom years of the 1990s, including the build-up of public debt and the failure to tackle serious structural weaknesses in fiscal institutions, labour markets, and

external trade. These weaknesses came into play with the onset of a prolonged depression beginning in mid-1998 on account of several factors: cyclical correction, domestic political uncertainties, financial contagion from the 1998 Russian crisis, and Brazil's 1999 crisis and the subsequent devaluation of Brazil's currency. Once the downturn had started, the currency board arrangement limited the Argentine authorities' ability to manage macroeconomic policies in a counter-cyclical manner. In 2001-02, Argentina experienced one of the worst economic crises in its history. Output fell by about 20 per cent over three years, inflation came back, the government defaulted on its debt, the banking system was largely paralysed, and the Argentine *peso* depreciated sharply. When the economy slid into recession, the currency board became a liability in the context of a build-up of sizable foreign currency-denominated public debt. The currency board was abandoned in January 2002, and the *peso* was first devalued and later floated, thereby totally backtracking from the hard peg combined with re-imposition of several current and capital account restrictions. In the early months of 2003, the economy began to recover and in 2005, after three years of around 9 per cent growth, real GDP has surpassed its 1998 peak by some 6 per cent, led by strong investment and consumption. The economy has benefited from a favourable terms of trade, significant reduction in the debt burden following the 2005 debt restructuring, and a competitive currency. However, inflation after touching a low of 3 per cent in 2003 has risen steadily to 12.3 per cent in 2005. The external accounts have improved remarkably aided by favourable global commodity prices and the emergence of Asia as a key export destination which have increased earnings from primary and agro-industrial exports. At the same time, net private capital flows turned positive in 2005 for the first time since 1999. In a nutshell, the adverse interaction between currency board arrangement and fiscal dynamics played the central role in Argentine crisis of 2001-02, combined with adverse external developments (Daseking *et al*, 2004; IMF, 2006)

Turkey

Huge requirements for public sector borrowing in 1993 and early 1994, combined with major policy errors in financing the deficit, led to Turkey's currency crisis in 1994. As a result, output fell by 6 per cent, inflation rose to three-digit levels, the central bank lost half of its reserves,

and the exchange rate (against the U.S. dollar) depreciated by more than half in the first three months of the year. Again, Turkey faced a serious currency crisis during November-December 2000 when the overnight inter-bank interest rates climbed as high as 1700 per cent while domestic interest rates reached 60 per cent and fearing an impending liquidity crisis, foreign investors immediately took their money out from Turkey. This was followed by another crisis which began on February 19, 2001 due to domestic political dissensions and the foreign investors and creditors started panic buying of Euro to cover their exposure from impending economic and political crisis. There has been a sharp decline of the Turkish lira over the past few months due to a massive sale of Turkish assets by international investors - as in other emerging markets - due to external factors, including the tightening of monetary policy in the United States, the euro zone and Japan coupled with the domestic political uncertainty caused by the forthcoming elections, a large government debt, a growing current account deficit and dependence on short-term capital inflows (Celasun, 1998; Bibbee, 2001).

Chile

Chile faced a surge in private capital inflows beginning 1989. With monetary policy adhering to a domestic inflation target and exchange rate geared towards achieving an external current account target, complete deregulation of capital flows resulted in a classical monetary policy dilemma. The initial policy response was sterilised foreign exchange intervention and a tightening of fiscal policy. With sterilisation costs becoming sizable, the authorities in June 1991 introduced selective controls on capital inflows (Schneider, 2000):

- A 20 per cent unremunerated reserve requirement (URR) on foreign borrowing. The URR, an indirect/price-based capital control, was designed to indirectly tax short-term capital inflows (a form of Tobin tax). Initially, the URR covered foreign loans (except for trade credit), but over time its coverage was extended to non-debt flows that had become a channel for short-term portfolio inflows (i.e., foreign currency deposits in commercial banks, and even foreign direct investments of a potentially speculative nature). The rate of the URR was raised from 20 per cent to 30 per cent, until a decline in capital

inflows, reflecting contagion from the Asian crisis, motivated a reduction of the rate. In September 1998, the URR was suspended by reducing its rate to zero per cent.

- The URR was also supported by restrictive measures such as a minimum stay requirement for direct and portfolio investments from abroad; some regulatory requirements for domestic corporations borrowing abroad; and extensive reporting requirements on banks for capital transactions.

Along with these controls, supporting measures such as liberalisation of capital outflows started in the early 1990s which was expected to relieve the pressure on net capital flows.

The use of capital controls in Chile has been part of a broad program of economic reforms involving a coherent set of macroeconomic and structural policies implemented throughout the 1990s. Chile depicts a successful experience in CAL using judicious controls along with liberalisation and economic reforms. Chile could well recognise the significance of financial reforms (in establishing a sound prudential framework and a strong credit culture) for the success of economic reforms[5].

China

China has been following a policy of gradualist economic reforms since late 1978. A closed economic system was rapidly opened to trade and investment. China allowed yuan to be freely convertible under current account in December 1996. There are, however, extensive restrictions on inflows and outflows of money for capital account transactions (BIS, 2003).

On July 21, 2005 China abandoned its eight-year peg to the dollar and moved to a managed floating exchange rate regime. Since then, the renminbi (RMB) has appreciated, *albeit* marginally. China continues to take steps to create market infrastructure and financial instruments for a floating currency. They introduced an inter-bank foreign currency trading system in early 2005. They also introduced new financial products to hedge against currency appreciation such as forwards. China has taken

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[5] At present, Chile has controls on derivatives and commercial credits. There are provisions specific to commercial banks and other credit institutions and institutional investors.

steps to liberalise controls on capital movements to increase the depth and liquidity in foreign exchange markets. It has continued to expand the program that allows FIIs to buy shares in locally listed companies. Chinese residents and institutional investors have also been increasingly allowed to acquire overseas assets. But, China still maintains extensive controls on outflow of capital than it does on inflows. The country remains reticent to open capital account partly due to its weak financial system and the need to substantially strengthen regulations and prudential supervision. The authorities have recently announced that China will push ahead with yuan convertibility 'step by step'. 'Yuan convertibility' is a systematic project and has to accommodate the nation's macroeconomic and financial reform. The Chinese government realises that capital account liberalisation is in the country's best long-term interests and moving in this direction is inevitable. In the last few years, China has announced the following liberalisation measures on capital flows.

2003

- Chinese authorities introduce measures that promote FDI and other capital flows.
- Qualified Foreign Institutional Investor (QFII) program launched. (QFII: Qualified Foreign Institutional Investor – a foreign entity allowed to invest upto a certain quota amount in China's domestic capital markets).

2004

- July-August: Select Chinese domestic institutional investors (ADII) authorised to invest in overseas assets.
- November/December: Limits raised on amounts emigrants, travellers, and students can take out of China.

2005

- February: Eliminated surrender requirements on certain commercial firms' forex receipts.
- June: Raised quota for QFIIs from $ 4 billion to $ 10 billion.

2006

- April: Liberalised forex regulations allowing Chinese firms/residents to buy more foreign assets. (April 2006: Individuals can convert

more RMB to take out of China, commercial banks can buy foreign bonds; securities firms can buy foreign assets).

- April: 54 foreign and domestic banks operating in China allowed to trade forex swaps.

China also had record current account surplus and its official external debt was modest. The focus on attracting certain forms of FDI on an integrated, geographically-targeted basis, and gradual opening up of financial sector has also helped in attracting stable capital inflows into China.

China has committed to open the external sector to foreign investment as part of WTO accession with substantive liberalisation to be completed by 2007 (Lu, 2006). This looming deadline has forced Chinese government to accelerate steps to strengthen reforms in the banking system.

Section IV

Extant Capital Account Restrictions

The 2005 *Annual Report on Exchange Arrangements and Exchange Restrictions* records that the changes in exchange rate regimes indicated a move towards more flexible regimes by several countries and the general thrust of changes affecting the regulatory framework of foreign exchange transactions was towards the easing of controls including capital account transactions. Changes in the prudential measures of many countries were also directed towards the easing of requirements. The category in which several countries appear to have become restrictive pertains to the regulation of the inflow of foreign direct investments. However, the limitations in this category are often motivated by reasons other than economic factors – similar to the regulation of real estate investments by non-residents. Of late, however, there has been a significant increase in notifications to the IMF involving the enforcement of restrictions for security reasons. These restrictions were introduced consequent to the emphasis on preventing the financing of terrorism.

Based on the reporting by member countries, the IMF report for 2005 shows that only 16 countries do not have restrictions on payment for capital transactions (Italy, Spain, Luxemburg, Israel and Hong Kong among the advanced countries and Gambia, Zambia, Kiribati, Iraq, Bolivia,

Guatemala, Haiti, Nicaragua, Panama, Peru and Uruguay among the EMEs and developing countries).

Though, the Article 56 (1) of the EC Treaty holds that 'all restrictions on the movement of capital between Member States and between Member States and third countries' stand prohibited, Articles 57 to 60 of the Treaty provide for certain qualifying restrictions which would not be construed as violation or arbitrary discrimination or disguised restriction on the free movement of capital and payments. These qualifying restrictions are summarised below:

Article No.	Qualifying restrictions
57	Restrictions which exist on 31st December 1993 under national or community law adopted in respect of movement of capital involving direct investment - including in real estate - establishment, the provision of financial services or the admission of securities to capital markets.
58(1)(a)	Application of tax law distinguishing between taxpayers on the basis of residence or with regard to the place where the capital is invested.
58(1)(b)	Requisite measures to prevent infringements of national law in the fields of taxation, prudential supervision of financial institutions, lay down procedures for statistical information or measures on the grounds of public policy and public security.
58(2)	Restrictions on the right of establishment.
59	In exceptional circumstances, movement of capital to or from third countries cause, or threaten to cause, serious difficulties for the operation of economic and monetary union (by qualified majority, the Council after consulting ECB, may take safeguard measures with regard to third countries for a period not exceeding six months, if such measures are strictly necessary).
60(1)	For serious political reasons and on grounds of urgency in the light of common foreign and security policy, Member States may take unilateral measures with regard to capital movement and payments.
60(2)	In the event of serious internal disturbances affecting law and order or in the event of war to take urgent measures on the movement of capital and payments.

Source: Courtesy - Shri U.S. Das, IMF, Washington

Thus, most countries are observed to retain a variety of capital controls with specific provisions relating to banks and credit institutions and institutional investors. The position is summarised in Table 4 below.

Table 4: Summary of Features of Controls on Capital Transactions in IMF Member Countries

(Total number of countries: 184)

Features of Controls on Capital Transactions	Total no. of
Countries with this feature	
1. Capital Market Securities	126
2. Money Market Transactions	103
3. Collective Investment Securities	97
4. Derivatives and Other Instruments	83
5. Commercial Credits	98
6. Financial Credits	109
7. Guarantees, Sureties and Financial backup Facilities	87
8. Direct Investment	143
9. Liquidation of Direct Investment	54
10. Real Estate Transactions	135
11. Personal Capital Transactions	97
Provisions specific to	
(a) Commercial banks and Other Credit Institutions	157
(b) Institutional investors	91

Note: India figures under all these items.

Source: IMF, *Annual Report on Exchange Arrangements and Exchange Restrictions, 2005*

Section V

Lessons from Country Experiences

The experience of the countries recounted above with respect to capital account liberalisation and lessons drawn therefrom are summarised below:

- Liberalisation of the capital account was gradual in most of the advanced economies in the run up to full convertibility, combined with strengthened financial systems and prudential regulations. Even after "fully" liberalising the capital account these countries continue to maintain certain capital controls.

- Experience of some of the Asian and Latin American economies, which liberalised their capital account in the 1980s and later backtracked by imposing controls, shows that even after full capital account convertibility, there is a need for safety valves in the form of regulatory safeguards to meet potential capital account crises.

- Gradual liberalisation should not be used as a shield for weak economic policies by continuing to retain several controls. Instead, gradual liberalisation should be used as a tool for furtherance of sound macroeconomic and prudential policies prior to full CAL (France).

- Gradual process of CAL does not eliminate the risks of crisis or pressures in the foreign exchange market (France, Japan). These risks, however, get minimised when an integrated approach to reform is taken involving macroeconomic stabilisation and institutional strengthening.

- Along with other reform measures, exchange rate flexibility is important while undertaking CAL. Fixed exchange rate regime reduces the incentive to hedge foreign currency borrowing. Floating exchange rates reduce such incentives. Under a flexible exchange rate scenario, monetary policy flexibility can be a useful tool to help maintain macro-economic stability.

- Capital controls could temporarily relieve the pressures on the balance of payments but they cannot provide lasting protection when the fundamental causes of the imbalances remain unaddressed.

- Partial system of capital control that seeks to discriminate between types of flows or destinations provides incentives for circumvention and is vulnerable to diversion of capital flows to unregulated financial markets.

- Limiting fiscal imbalances and preventing excessive build-up of domestic debt is essential to avoid chances of backtracking subsequent to CAL. Though fiscal consolidation may not by itself be a sufficient condition to prevent crises, it has been a necessary component of liberalisation and its absence can lead to instability (Brazil).

- Emerging market economies have managed heavy inflows subsequent to liberalisation through sterilisation, though later most of them have

reimposed capital controls faced with the limitations of sterilisation.

- Avoiding real exchange rate misalignment could minimise effects of crisis. This also gives room for pursuing autonomous monetary policy. It would force market participants to hedge their positions which would be beneficial for forex market development. Most of the developing countries have opted for greater flexibility in their exchange rate regimes as CAL has progressed.

- Given the increased risks that are prevalent in a deregulated environment, it is important to focus on effective risk management strategies, improve prudential supervision and develop proper reporting standards to meet the emerging challenges.

Most of the advanced economies used capital controls extensively during the phase of run up to full convertibility. Once these economies went in for CAL in the late 1970s and 1980s, cases of reintroduction of controls were rare. The financial environment in which countries operate today has however changed dramatically from the 1960s and 1970s when the advanced countries were able to use controls. Liberalisation and deregulation, combined with advancement of information and communications technology, has increased the complexity and sophistication of the global financial markets. The range of financial instruments being used by market participants has increased. Financial markets react swiftly to new information and changed circumstances and also exhibit higher risks and volatility. Under such circumstances, use of controls for a prolonged period may not be very effective. At the same time, rapid easing of capital controls and subsequent backtracking seen in the case of many Asian and Latin American countries, clearly indicate the need for a more cautious and calibrated approach, and ensuring enough regulatory and prudential safeguards before moving towards capital account liberalisation, if risks of substantial backtracking are to be minimised.

Chronology of Key Changes in Capital Account Controls in Select Advanced Countries

1. United States

1963 July	T Announcement of introduction of Interest Equalisation Tax (enacted 1964).
1965 March	T Introduction of voluntary guidelines limiting foreign lending and investment.
1968 January	T Guidelines limiting foreign direct investment made mandatory.
1974 January	L Abolition of capital controls, including voluntary guidelines.
	2. Japan
1960 June	L Controls on foreign direct investment eased.
July	L Introduction of non-resident free yen accounts.
1967 July	L Further easing in foreign direct investment regulations.
1971 July	L Restrictions on outward direct and portfolio investment eased.
September	T Restrictions on yen conversion of advance export receipts.
1972 June	T Marginal reserve requirement imposed on non-resident free yen accounts.
October	T Restrictions on the purchase of Japanese securities by non-residents.
November	L Restrictions on portfolio outflows eased further.
1973 November	L Easing of restrictions on the advance receipt export payments.
November	T Acquisition of foreign short-term (maturity less than 6 months) securities by residents restricted.
December	L Easing of restrictions on the purchase of Japanese securities and lowering of the marginal reserve requirement of non-resident free yen accounts.
1974 January	T Tightening of portfolio outflow restrictions, including voluntary restraints on institutional investors.
April	T Japanese banks instructed to no finance "non-urgent" foreign direct investment.
September	L Marginal reserve requirement on non-resident free yen accounts abolished.

1977 March	L Abolition of "voluntary restraints" on banks' purchase of foreign securities.	
June	L Restrictions on foreign currency accounts of residents eased.	
June	T Reserve requirements introduced on foreign currency liabilities of foreign exchange banks, residents' external foreign currency deposits and non-resident free yen accounts.	
1978 March	T Marginal reserve requirement on non-resident free yen accounts increased, further restrictions on portfolio inflows.	
1979 February	L Marginal reserve requirement on non-resident free yen accounts abolished.	
February	L Restrictions on non-resident purchase of bonds eased.	
May	L Easing of restrictions on portfolio flows.	
1980 March	L Easing of restrictions on portfolio inflows.	
December	L Revision of the Foreign Exchange and Foreign Trade Control Law.	
1983 April	L Abolition of requirement to link forward exchange transactions to trade.	
May	L Publication of the "Report on yen/dollar exchange issues".	
June	L Further easing of portfolio flows.	
June	L Liberalisation of short-term euro/yen lending by Japanese banks.	
1985 May	L Abolition of prior notification requirement for residents borrowing short-term euro/yen.	
1986 August	L Easing of limits on off-shore investment by institutional investors.	
December	L Japanese Off-shore Market (JOM) opened.	
1989 April	L Easing in restrictions on flows of funds between JOM and domestic markets.	
1991 April	L Restrictions on inward foreign direct investment eased.	
1998 April	L Introduction of new Foreign Exchange and Foreign Trade Control Law.	
	3. Australia	
1972 September	T Short-term overseas borrowing restricted.	
December	T Those undertaking long-term overseas borrowing required to hold a non-interest bearing deposit with the Reserve Bank.	

1973 March	T Restrictions on inward investment in real estate imposed.
1977 July	L Requirement to hold a non-interest bearing deposit with the Reserve Bank when borrowing overseas suspended (and not reintroduced).
1981 July	L Monetary limits on overseas investment in equity or real estate abolished.
1983 December	L Restrictions on interest-bearing investments by non-residents abolished.
December	L The exchange rate was floated.
1985 January	L A range of portfolio controls abolished.
October	L Restrictions on inward direct investment eased.
1992 February	L Restrictions on inward direct investment eased further.
	4. Italy
1972 June	T Introduction of measures aimed at restricting capital outflows; ban on net external credit position of banks; suspension of external convertibility of Italian banknotes.
1973 January	T Establishment of a dual exchange market.
July	T Introduction of a 50 per cent compulsory non-interest bearing deposit scheme with respect to most capital outflows.
1974 March	L Abolition of the dual exchange market.
May	T Introduction of a temporary compulsory non-interest bearing deposit scheme with respect to imports, excluding raw materials, oil and investment goods. Italy is authorised by the Commission to invoke safeguard measures.
1976 March	T Reintroduction of compulsory bank financing in foreign exchange for advance settlement of imports.
May	T Reintroduction of the non-interest bearing import deposit scheme.
October	T Imposition of a temporary special tax on purchases of foreign currency and payments abroad. Extension of the compulsory import deposit scheme.
1977 February	L Expiration of the special tax on foreign currency purchases.
April	L Abolition of the compulsory import deposit scheme.
1981 May	T Reintroduction of the non-interest-bearing deposit scheme with respect to purchases of foreign currency by residents.

1982 February	L Abolition of the advance deposit scheme.
1983 December	L Certain direct investment abroad is exempted from the 50 per cent non-interest-bearing deposit requirements.
1984 December	L Reduction of compulsory zero-deposit requirements on portfolio investment abroad.
1985 October	L Abolition of the compulsory deposit requirement for direct investment abroad. Residents' foreign exchange deposits are freely convertible into other currencies and the ban on transfer of foreign securities and loans between residents is lifted. Reduction of compulsory deposit requirements on other transactions.
1986 August	L Restoration of external convertibility of Italian banknotes.
1987 March	T Introduction of reserve requirement on bank deposits in foreign currency.
May	L Abolition of the non-interest-bearing deposit requirement for investment abroad in securities and real estate.
September	T Shortening of holding periods of foreign currencies.
1988 June	L Restrictions on tourist spending are eased.
October	L Introduction of a positive system of exchange control. Significant relaxation of controls.
1990 January	L Abolition of restrictions on purchases of foreign securities by residents.
May	L Abolition of all remaining exchange control regulations.

T: Tightening of controls; L: Loosening of controls
Source: Bakker and Chapple (2002).

CONTROLS ON CAPITAL ACCOUNT TRANSACTIONS

Feature	Extant Capital Restrictions
United States	
On capital market securities Shares or other securities of a participating nature	*Purchase locally by non-residents* – Laws on inward direct investment apply to purchases in the United States by non-residents of securities. There are also some restrictions specific to state legislative jurisdiction in the banking, securities, and insurance sectors.
	Sale or issue locally by non-residents – Public offers in the United States or to U.S. residents by foreign investment companies are prohibited.
On Money market instruments	*Sale or issue locally by non-residents* – Foreign mutual funds are restricted.
On collective investment securities	*Sale or issue locally by non-residents* – The regulations governing shares and other securities of a participating nature apply.
Controls on credit operations	*Financial Credits – by residents to non-residents* – The Johnson Act prohibits, with certain exceptions, persons within the United States from dealing in financial obligations or extending loans to foreign governments (other than IMF/World Bank members) that have defaulted.
Controls on direct investment	*Outward direct investment* – Controls for security reasons to certain countries.

Note: Compiled from *Annual Report on Exchange Arrangements and Exchange Restrictions,* IMF, 2005.

Feature	Extant Capital Restrictions
Inward direct investment	Laws on inward direct investment apply to purchases in the United States by non-residents. Also, controls on investment transactions for security reasons from some countries.
Controls on real estate transactions	*Purchase locally by non-residents* – Ownership of agricultural land by foreign nationals or by corporations in which foreign owners have an interest of at least 10 per cent or substantial control must be reported to the Department of Agriculture. Certain states in the United States impose various controls on foreign nationals' purchases of land within their borders.
Provisions specific to commercial banks and other credit institutions	*Investment regulations* – Banks are subject to prudential oversight in these areas.
	Open foreign exchange position limits – Banks are subject to prudential oversight and reporting requirements.
China	
On capital market securities Shares or other securities of a participating nature	*Purchase locally by non-residents* – Qualified foreign institutional investors (QFIIs) may invest domestically in A shares, subject to certain limitations. B shares denominated in U.S. dollars or Hong Kong dollars and are listed on the Chinese Securities Exchange may be bought by foreign and domestic investors. Domestic investors may purchase B shares with new or existing foreign currency deposits.
	Sale or issue locally by non-residents – These transactions are limited to B shares. Foreign institutional investors, however, can invest in treasury bonds, convertible bonds, and corporate bonds listed on domestic security exchanges.

Feature	Extant Capital Restrictions
	Purchase abroad by residents – Overseas listed domestic companies may repurchase the shares issued by them provided that the SAFE verifies the source of the fund and approves payment abroad.
	Sale or issue abroad by residents – restricted.
Bonds or other debt securities	*Sale or issue locally by non-residents* – These transactions are not permitted.
	Purchase abroad by residents – Banks authorised by the China Banking Regulatory Commission (CBRC) and insurance companies authorised by the China Regulatory Commission and the SAFE may purchase foreign bonds.
	Sale or issue abroad by residents – Following authorisation. Foreign exchange earnings from bond floatation must be repatriated.
On money market instruments	*Purchase locally by non-residents* – Non-residents are not allowed to purchase money market instruments.
	Sale or issue locally by non-residents – Non-residents are not allowed to sell or issue money market instruments.
	Purchase abroad by residents – The regulations governing bonds or other debt securities apply.
	Sale or issue abroad by residents – These transactions are subject to SAFE approval.

Feature	Extant Capital Restrictions
On collective investment securities	*Purchase locally by non-residents* – Qualified foreign institutional investors may invest in domestic closed-end and open-end funds.
	Sale or issue locally by non-residents – These transactions are not allowed.
	Purchase abroad by residents – The regulations governing purchases of money market instruments apply.
	Sale or issue abroad by residents – The regulations governing the sale or issue of money market instruments apply.
Controls on derivatives and other Instruments	*Purchase locally by non-residents* – These transactions are not allowed.
	Purchase locally by non-residents – These transactions are not allowed.
	Sale or issue locally by non-residents – These transactions are not allowed.
	Purchase abroad by residents – Only financial institutions that are approved by the CBRC and carry out foreign exchange trading operations for their own account or on behalf of customers may purchase without SAFE approval, both transactions are subject to SAFE approval and restrictions.
Controls on credit operations	Purchases of foreign exchange for advance repayment of foreign debt require SAFE authorisation.

Feature	Extant Capital Restrictions
Commercial credits	*By residents to non-residents* – Financial institutions authorised by the CBRC may lend to overseas institutions or contract overseas credits.
	To residents from non-residents – Medium – and long-term international commercial borrowing by Chinese institutions must be incorporated in the state plan for the use of foreign capital and undergo transaction based examination.
	FFEs may borrow from non-residents without obtaining prior approval but must register the borrowing with the SAFE.
	Financial credits – The regulations governing commercial credits apply.
	By residents to non-residents: Restricted.
	To residents from non-residents: Restricted.
Guarantees, sureties, and financial backup facilities	*By residents to non-residents* – Financing guarantees provided by domestic Chinese banks and other domestic institutions (with the exception of wholly foreign-owned enterprises) require prior SAFE approval.
	To residents from non-residents – Domestic institutions may accept guarantees from foreign institutions.
Controls on direct investment	A three-tier classification system is in effect, defining activities in which foreign exchange investment is encouraged, restricted, or banned.

Feature	Extant Capital Restrictions
Outward direct investment	Outward direct investment is permitted only after examination of the source of the foreign exchange funds and approval of the authorities concerned. In some provinces and regions, the limit on outward investment is the equivalent of US $ 3 million.
Inward direct investment	Non-residents are free to invest in China as long as they meet requirements under Sino foreign joint-venture laws and other relevant regulations, and are approved by the Ministry of Commerce. For environmental and security reasons, inward direct investment in some industries is prohibited.
Controls on liquidation of direct Investment	Prior approval is required.
Controls on real estate transactions	The regulations governing direct investment apply.
Purchase abroad by residents	Restricted.
Purchase locally by non-residents	Restricted.
	Sale locally by non-residents – With SAFE approval.
Controls on personal capital Transactions Loans	*By residents to non-residents:* Restricted.
	To residents from non-residents: Restricted.

Feature	Extant Capital Restrictions
Gifts, endowments, inheritances, and Legacies	*By residents to non-residents* – Restricted and subject to complex procedures.
	To residents from non-residents – Restricted and subject to complex procedures.
Transfer of assets	*Transfer abroad by emigrants* – Routine foreign exchange revenues, including retirement and pension funds, may be remitted abroad.
Provisions specific to commercial Banks and other credit institutions	The limits and restrictions are set by the Monetary Authority for prudential reasons.
	Borrowing abroad – The regulations governing commercial credits apply. Effective June 27, 2004, domestic banks that are foreign funded may not convert proceeds from debt contracted abroad into renminbi and are not allowed to purchase foreign exchange to service these debts.
	Maintenance of accounts abroad – Registration with the SAFE is required for domestic banks to open foreign exchange accounts abroad. Domestic nonbank financial institutions and nonfinancial enterprises require prior approval by the SAFE.
	Lending to non-residents (financial or commercial credits) – The regulations governing commercial credits apply.
	Lending locally in foreign exchange – Lending is subject mainly to review of qualifications by the PBC and to asset–liability ratio requirements.
	Purchase of locally issued securities denominated in foreign exchange: Securities denominated in foreign currency are not currently issued.

Feature	Extant Capital Restrictions
Differential treatment of deposit accounts in foreign exchange	*Liquid asset requirements* – The ratio of all liquid foreign exchange capital to all liquid foreign exchange liabilities may not be less than 60%.
	Credit controls – The ratio of the credit balance for a single borrower to a bank's net capital may not exceed 10%.
	Investment regulations – Bank equity investment should not exceed the difference between bank capital and mandatory paid–in capital. Nonbank financial institutions' total equity investment (excluding trust accounts) should not exceed the difference between their capital and mandatory paid-in capital.
	Abroad by banks – Investment in foreign securities other than equities on foreign securities markets by banks is subject to quarterly approval by the PBC.
	In banks by non-residents – PBC approval is required.
	Open foreign exchange position limits – For financial institutions trading foreign exchange on their own behalf, the daily total amount traded (total open foreign exchange position) should not exceed 20% of the foreign exchange working capital. As authorised by the highest level of management, financial institutions trading foreign exchange on their own behalf may retain a small amount of overnight open position, but this should not exceed 1% of the foreign exchange working capital or foreign exchange operating funds.
	On resident assets and liabilities : Restricted.
	On non-resident assets and liabilities : Restricted.

Feature	Extant Capital Restrictions
Argentina	
Controls on capital transactions	Inward and outward foreign exchange transactions must be registered. Foreign exchange that enters the domestic market may be transferred out 365 days after its entry, except in the case of foreign trade operations and direct investment.
	New financing in the form of financial credits to or bond issues by private borrowers must be matched by foreign exchange sales to the MULC.
	The prior approval requirement for servicing nonfinancial and financial private debt is applicable only for debts of financial institutions that have opted for the BCRA's refinancing mechanism (matching).
	Monthly ceiling for purchases of foreign exchange by residents for various transactions, across all financial institutions apply.
	Also, a monthly cap is applied on purchases of foreign exchange by non-residents for various transactions.
Controls on capital and money Market instruments	Non-resident portfolio investors are required to deposit 30% of their investment in an unremunerated account for one year.
On capital market securities Shares or other securities of a Participating nature	*Sale or issue locally by non-residents* – Under the regulations of the National Securities Commission (CNV), foreign and Argentine issuers must meet the same requirements to make a public offering of securities in Argentina.

Feature	Extant Capital Restrictions
	Purchase abroad by residents – Although there are no specific controls on residents' purchases of foreign securities abroad, their purchases may be limited as a result of restrictions on capital flows from Argentina to foreign jurisdictions.
Bonds or other debt securities	*Sale or issue locally by non-residents* – The regulations governing the sale or issue of shares or other securities of a participating nature apply.
	Purchase abroad by residents : Restricted.
	Sale or issue abroad by residents : Restricted.
On money market instruments	The regulations governing the foreign exchange aspects of bonds or other debt securities apply.
	Purchase locally by non-residents : Restricted.
	Sale or issue locally by non-residents – The regulations governing domestic issuers also apply.
	Purchase abroad by residents – The regulations governing bonds or other debt securities apply.
	Sale or issue abroad by residents : Restricted.
On collective investment securities	*Purchase locally by non-residents* : Restricted.
	Sale or issue locally by non-residents – Approval by the CNV is required for public offerings.

Feature	Extant Capital Restrictions
	Purchase abroad by residents – The regulations governing bonds or other debt securities apply.
	Sale or issue abroad by resident: Restricted.
Controls on derivatives and other Instruments	Without approval by the BCRA, authorised foreign exchange dealers may engage in arbitrage and swaps only with foreign banks or holding companies located in a Bank for International Settlements member state and that have at least an A rating from one of the rating agencies registered with the BCRA, or with institutions owned by foreign governments. (Subject to complex procedures).
	Purchase locally by non-residents: Restricted.
	Sale or issue locally by non-residents: Approval by the CNV is required for public offerings.
	Purchase abroad by residents – Access to the foreign exchange market for forward and other derivatives contracts – except for currency, interest rate, and commodity swaps – is subject to BCRA approval.
	Sale or issue abroad by residents: Restricted.
Commercial credits	*By residents to non-residents* – Residents may make advance payments on imports to their foreign suppliers of up to 360 days. Exporters may allow their customers to pay in installments. (Subject to complex procedures).
Financial credits	*By residents to non-residents* – Residents may extend credits to non-residents within the limit for the accumulation of external assets.

Feature	Extant Capital Restrictions
	To residents from non-residents: Restricted
Guarantees, sureties, and financial backup facilities	*By residents to non-residents* – Non-financial private sector residents may provide financial backing within the current limits on accumulation of foreign assets.
Controls on direct investment	*Outward direct investment* – Residents may access the MULC for direct investments within the limits for accumulation of external assets.
Inward direct investment	Restricted.
Controls on liquidation of direct investment	Non-residents may access the MULC to purchase foreign exchange to transfer to their foreign bank accounts the proceeds collected in the country from sales of direct investments in the non-financial private sector and the final sale of direct investments in the country in the non-financial private sector (subject to limits).
Controls on real estate transactions	The rules governing direct investments apply.
	Purchase abroad by residents : Restricted
	Purchase locally by non-residents: Purchases of real estate in border areas by foreign investors require prior approval.
	Sale locally by non-residents: Restricted.
Controls on personal capital transactions	The rules governing legal entities apply.

Feature	Extant Capital Restrictions
Loans	*By residents to non-residents*: Restricted.
	To residents from non-residents: Restricted.
Provisions specific to commercial banks and other credit institutions	*Lending to non-residents (financial or commercial credits)* – Credits granted by financial intermediaries must be used in the country and must finance investment, production, commercialisation, or consumption of goods and services for internal consumption or export.
	Purchase of locally issued securities denominated in foreign exchange – There are limits on the maximum amount of securities a bank may hold from a particular issuer.
	Differential treatment of deposit accounts in foreign exchange – Reserve requirements Minimum cash requirements apply separately to each currency in which liabilities are denominated.
Investment regulations	*Abroad by banks* – Transactions are prohibited by policies on general lending.
	Open foreign exchange position limits – Complex restrictions apply.
	The limit on banks' U.S. dollar exposure is 10% of a bank's net worth.
	The absolute value of the overall net position in foreign exchange – as a monthly average of daily balances converted to pesos at the reference exchange rate – may not exceed 30% of the net liabilities of the preceding month.
	When the net foreign exchange position is positive, the amount may not exceed that proportion of liquid own resources.

Feature	Extant Capital Restrictions
Provisions specific to institutional investors	*Limits (max.) on securities issued by non-residents* – Mutual funds may invest 25% in publicly offered securities issued by non-residents; pension funds may invest up to 10%.
	Limits (max.) on investment portfolio held abroad – There is a 25% limit on investment for mutual fund portfolios, but this limit does not apply to MERCOSUR countries and Chile. For diversification, no more than 10% of pension funds may be invested in securities issued by a foreign sovereign, or in securities of foreign corporations issued abroad.
	Limits (min.) on investment portfolio held locally – When a mutual fund consists of negotiable securities, a minimum of 75% of the investment must be made in assets issued and traded in Argentina, including those issued by MERCOSUR countries and Chile.
Currency-matching regulations on assets/ liabilities composition	Apply.
Japan	
Controls on capital transactions	Apply.
Controls on direct investment	Outward direct investment: Outward direct investments by residents in a limited number of industries, such as the manufacture of arms, require prior notice. Inward direct investment : Inward direct investments by foreign investors in a limited number of industries, such as the manufacture of arms, require prior notice.

Feature	Extant Capital Restrictions
Provisions specific to institutional investors	*Limits (max.) on investment portfolio held abroad* –The limits are (1) 30% of total assets for insurance companies purchasing foreign currency– denominated assets; and (2) 20% of the reserve funds issued by non-residents for bond holdings by the Post Office Insurance Fund.
Other controls imposed by securities laws	Apply.
France	
Controls on capital transactions	Apply.
Controls on direct investment	Direct investments by companies not listed publicly are defined as those in which foreign investors together hold more than one-third of the capital. However, there are no controls on investments in a company whose capital is more than 50% foreign owned. In the case of firms whose shares are listed on the stock exchange, the threshold is also 50% of capital; this applies to each individual foreign participation but not to total foreign participation. To determine whether a company is under foreign control, the Ministry of Economy and Finance (MINEFI) may take into account any special relationships resulting from stock options, loans, patents, licenses, or commercial contracts. Inward direct investment: An authorisation is required for investments in areas pertaining to public order, public health, and defence.
Controls on liquidation of direct investment	The liquidation proceeds of foreign direct investment in France may be freely transferred abroad; the liquidation must be reported to the MINEFI within 20 days of its occurrence.

Feature	Extant Capital Restrictions
	The liquidation of direct investments abroad is free from any prior application, provided that the corresponding funds have been reported to the Bank of France.
Provisions specific to institutional investors	Currency-matching regulations on assets/liabilities composition: Insurance companies in the EU are required to cover their technical reserves with assets expressed in the same currency.
Italy	
Controls on capital and money market instruments	Apply.
On collective investment securities	*Sale or issue locally by non-residents* – The offering of securities issued by mutual funds that are not covered by EU directives is subject to authorisation.
Provisions specific to institutional investors	*Limits (max.) on securities issued by non-residents* – Portfolio investments abroad by life insurance and pension funds are subject to prudential regulations. Currency-matching regulations on assets/liabilities composition: Apply.
Other controls imposed by securities laws	The public offering in Italy of financial products is to be reported to the supervisory authority, and the corresponding prospectuses should be attached.
Australia	
Controls on capital transactions	The purchase of shares and other securities of a participatory nature, which may be affected by laws and policies on inward direct investment, may require notification to the Australian authorities. Detailed guidelines apply.

Feature	Extant Capital Restrictions
Controls on capital and money market instruments. On capital market securities, shares or other securities of a participating nature.	*Purchase locally by non-residents*: Restricted.
	Sale or issue abroad by residents: Restricted.
Bonds or other debt securities	*Sale or issue locally by non-residents*: Restricted.
On money market instruments	The regulations governing bonds or other debt securities apply.
Controls on derivatives and other instruments	An AFSL is required to purchase or sell foreign currency, except when one of the following conditions is met: (1) the transaction is settled immediately; (2) the person is not a dealer in foreign currency; (3) the person is dealing on his or her own account; or (4) it is a foreign company that is a counterparty to derivatives of foreign exchange contracts, where it is dealing or making a market in foreign exchange contracts.
	Sale or issue locally by non-residents : Restricted.
Controls on credit operations Commercial credits	*By residents to non-residents* : Restricted.

Feature	Extant Capital Restrictions
Controls on direct investment	*Inward direct investment*: Prior authorisation is required for (1) acquisitions by foreign investors of a substantial interest in an Australian business, (2) all investments subject to special restrictions (i.e., in the banking, civil aviation, airports, shipping, media, telecommunications, and real estate sectors), (3) direct investments by foreign governments or their agencies, irrespective of size; and (4) proposals to establish new business when the total amount of the investment is $A 10 million or more.
Controls on real estate transactions	*Purchase locally by non-residents* – All acquisitions of residential real estate, including vacant land, must be documented, unless exempt by regulation. Acquisitions of non-residential commercial real estate for development are normally approved, as are acquisitions of developed non-residential commercial real estate. Foreign acquisitions of established residential real estate are normally approved only in cases involving temporary residents who acquire the property as their principal place of residence for a period in excess of 12 months subject to resale of the property upon departure.
Controls on personal capital transactions – Gifts, endowments, inheritances, and legacies	*By residents to non-residents* – Transfers may be subject to approval of the authorities in cases where the gift involves a foreign person obtaining an interest in Australian urban land.
Provisions specific to commercial banks and other credit institutions Investment regulations	Authorised deposit–taking institutions are subject to prudential requirements, e.g., liquidity management and credit concentration. *In banks by non-residents* – Prior approval from the Treasurer is required for any person or group – domestic or foreign – to acquire a 15% or larger share in a financial sector company.

Feature	Extant Capital Restrictions
Provisions specific to institutional investors	*Limits (max.) on securities issued by non-residents* – Foreign-owned life insurance companies may operate only in the form of locally incorporated subsidiaries.
Other controls imposed by securities laws	The rules of the Australian Stock Exchange require that, to be a participating organisation of the exchange, a majority of the directors must be Australian residents.
Korea	
Controls on capital transactions	Controls on capital transactions are based on a negative list system. Proceeds from capital transactions in excess of $100,000 or its equivalent must be repatriated to Korea within six months of accrual. These funds, however, may be held abroad and used for overseas transactions in accordance with the regulations on foreign exchange transactions. Non-residents may borrow stocks from residents through brokerage houses up to the value of W 5 billion without approval from or reporting to the authorities.
Controls on capital and money market instruments	*Sale or issue locally by non-residents:* Foreign institutions are eligible to list their shares on the Korean Stock Exchange in the form of depository receipts.
On capital market securities Shares or other securities of a participating nature	Foreign Institutions are eligible to list their shares on the Korean Stock Exchange in the form of Depository Receipts.
Bonds or other debt securities	*Sale or issue locally by non-residents* – Foreign institutions may issue won-denominated bonds in the domestic capital market. However, the issuer must submit a prior report to the MOFE and the Financial Supervisory Council (FSC).

Feature	Extant Capital Restrictions
	Sale or issue abroad by residents – The sale or issuance of foreign currency–denominated bonds abroad by residents must be reported to a designated foreign exchange bank. The sale or issuance of won–denominated bonds abroad by residents must be reported to the MOFE.
On money market instruments	*Sale or issue locally by non-residents* – Only the issuance of won-denominated securities with a maturity of less than one year requires MOFE approval.
	Purchase abroad by residents – Purchases of short-term securities abroad denominated in won require BOK approval.
	Sale or issue abroad by residents – There are no controls for foreign exchange banks to issue money market instruments denominated in foreign currency in foreign money markets.
	Residents may issue money market instruments denominated in won in the foreign money markets with the approval of the MOFE.
On collective investment securities	*Sale or issue locally by non-residents* – Foreign institutions may issue collective investment securities in the domestic market, provided that they establish themselves in Korea and submit a prior report to the FSC. *Sale or issue abroad by residents* – According to the Foreign Exchange Transaction Regulation, residents may issue collective investment securities denominated in foreign currency in foreign markets. However, the issuer must submit a prior report to the designated exchange bank. Residents may issue collective investment securities denominated in domestic currency in foreign markets with the approval of the MOFE.

Feature	Extant Capital Restrictions
Controls on derivatives and other instruments	There are no controls on the trading of over the counter–related derivatives if the transactions are made through domestic foreign exchange banks. However, transactions in credit derivatives with domestic foreign exchange banks and those directly related to specific capital transactions require BOK notification. Security companies may carry out freely transactions in derivatives.
	Purchase locally by non-residents: Restricted.
	Sale or issue locally by non-residents – There are controls on all derivative transactions by non-residents involving the use of wonde nominated financing.
	Purchase abroad by residents: Restricted.
	Sale or issue abroad by residents: Restricted.
Controls on credit operations Commercial credits	*By residents to non-residents* – Commercial credits in domestic currency of more than W 1 billion, a lender requires BOK approval. In addition, commercial credits in foreign currency of more than $10 million or its equivalent by companies require BOK approval.
	To residents from non-residents – Only commercial credits with maturities of one year or less, granted to enterprises with unsound financial structures, require MOFE approval.
Financial credits	*By residents to non-residents* – Credits and loans denominated in domestic currency of more than W 1 billion, a borrower require BOK approval. In addition, commercial credits in foreign currency of more than $10 million or its equivalent by companies require BOK approval.

Feature	Extant Capital Restrictions
	To residents from non-residents – Only financial credits with a maturity of one year or less, granted. Guarantees, sureties, and financial backup facilities *By residents to non-residents*-Residents, other than banks, must notify or obtain approval from the BOK.
Controls on direct investment	*Outward direct investment* – Under current regulations, notification to and approval by a foreign exchange bank is required.
	Inward direct investment – All foreign direct investments, except those in industries on the negative list, are subject to a notification requirement. A notification is deemed accepted by a foreign exchange bank unless it advises to the contrary. Equity participation is possible by increasing the amount invested in newly established or existing enterprises. Direct investment by means of mergers and acquisitions is also allowed.
Controls on real estate transactions	*Purchase abroad by residents* – The acquisition of real estate for business activities and for the establishment of hospitals, schools, and religious institutions requires notification to and approval by the BOK. However, neither approval nor notification is required for the acquisition of overseas real estate by foreign exchange banks or residents if given as gifts or received through inheritance from non-residents.
	Purchase locally by non-residents – Notification to the BOK is required for the acquisition of real estate. *Sale locally by non-residents* – No controls apply if the real estate was acquired in compliance with foreign exchange regulations.

Feature	Extant Capital Restrictions
Controls on personal capital transactions Loans	*By residents to non-residents* – BOK approval is required for all lending by residents to non-residents. *To residents from non-residents* – Notification to the BOK is required for all lending to residents by non-residents.
Provisions specific to commercial banks and other credit institutions.	There are prudential regulations on the assets/liabilities compositions of foreign exchange banks.
Differential treatment of deposit accounts held by non-residents	*Reserve requirements* – The reserve requirements on foreign currency deposit accounts are 1%–5% for resident accounts and 1% for non-resident accounts.
	Investment regulations *In banks by non-residents* – Non-residents may acquire up to 10% of stocks without restrictions; acquisition exceeding 10% requires approval of the FSC.
	Open foreign exchange position limits – The overall net open position (short-hand position) of foreign exchange banks measured by the sum of the net short positions or the sum of the net long positions, whichever is greater, is limited to 20% of the total equity capital at the end of the previous month.
	On resident assets and liabilities: Restriction apply.

Feature	Extant Capital Restrictions
	On non-resident assets and liabilities – Effective January 15, 2004, the overbought or long positions of nondeliverable forwards between domestic and foreign financial institutions could not exceed 110% of the positions as of January 14, 2004.
Other controls imposed by securities laws	Controls imposed by the Securities Laws established by the FSC are as follows: (1) *domestic securities* – investments by non-resident foreign nationals are regulated by the Regulations on Securities Business, which also regulate investment ceilings, investment procedures, and the management of foreign investors; (2) *overseas securities investments* by residents are regulated by the Regulations on Securities Business, which also regulate securities' eligibility for investment and transaction procedures; and (3) *issuance of overseas securities* by residents is regulated by the Regulations on Securities Issuance and Disclosure, which also regulate the eligibility of issuers, the use of funds raised by issuance, and the obligations of issuers on reporting.
Singapore	
Controls on capital and money market instruments On capital market securities Shares or other securities of a Participating nature	*Sale or issue locally by non-residents* – Non-residents may issue equity shares. Whenever the Singapore dollar proceeds of an initial public offering by non-resident financial institutions are to be used offshore, these proceeds are no longer required to be converted into foreign currency Before their remittance abroad.

Feature	Extant Capital Restrictions
Bonds or other debt securities	*Sale or issue locally by non-residents* – Non-residents may issue bonds. Effective May 28, 2004, whenever the Singapore dollar proceeds are to be used offshore by non-resident financial institutions, these proceeds are no longer required to be swapped or converted into foreign currency before their remittance abroad. All rated and unrated foreign entities are allowed to issue Singapore dollar bonds. In the case of unrated foreign entities, the investor base is restricted to sophisticated investors only.
Controls on credit operations	
Financial credits	*By residents to non-residents* : Restricted.
Controls on real estate transactions	*Purchase locally by non-residents*: Foreign investment in residential and other properties, including vacant land, landed residential property, and residential property in a building of less than six floors, requires government approval. Foreigners may, however, freely purchase residential units in buildings of six or more floors and in approved condominium developments, excluding public housing. Development of land for residential purposes that has been zoned or approved for industrial or commercial use also requires government approval.
Provisions specific to commercial banks and other credit institutions	*Lending to non-residents (financial or commercial credits):* Financial institutions in Singapore may not extend Singapore dollar credit facilities exceeding S$5 million to any non-resident financial entity for speculative activities in the foreign exchange market.
Differential treatment of deposit accounts in foreign exchange	*Reserve requirements* – Foreign currency deposits of ACU member banks accepted by domestic banks are not subject to reserve requirements.

Feature	Extant Capital Restrictions
	Liquid asset requirements – Foreign currency deposits of ACU member banks accepted by domestic banks are not subject to liquid asset requirements.
Open foreign exchange position limits	No limits are set by the MAS, but it reviews the internal control systems of banks to ensure that adequate limits and controls are established for treasury activities.
Provisions specific to institutional investors	Effective August 23, 2004, risk requirements under Insurance (Valuation and Capital) Regulations 2004, which is based on the Risk Based Capital Framework, apply. The total risk requirement includes a foreign currency mismatch risk requirement of 8% on the foreign currency risk exposure. The risk requirement applies only when foreign assets are at least 10% of the total value of insurance fund assets. Insurers are also required to hold a concentration risk requirement if the foreign currency risk exposure exceeds 50% of total assets.
	Limits (max.) on securities issued by non-residents: Apply.
	Limits (max.) on investment portfolio held abroad: Apply.
	Currency-matching regulations on assets/liabilities composition: Apply.
United Kingdom	
Controls on direct investment	*Inward direct investment* – The Secretary of State for Trade and Industry may prohibit a proposed transfer of control of an important U.K. manufacturing undertaking to a non-resident when the transfer of a substantial part is considered contrary to the interests of the United Kingdom in terms of public policy, public security, or public health. If it is considered that the national

Feature	Extant Capital Restrictions
	interest cannot appropriately be protected in any other way, property in such a proposal or completed transfer may be compulsorily acquired against compensation. Both prohibition and vesting orders are subject to parliamentary approval. These powers have not been used to date.
Provisions specific to commercial banks and other credit institutions –	*Open foreign exchange position limits:* Net spot liabilities in foreign currencies (i.e., the net amount of foreign currency resources funding sterling assets) form part of a bank's eligible liabilities that are subject to a 0.15% non–interest bearing deposit requirement with the Bank of England. Effective June 1, 2004, the level of the required deposit is based on the average of reported eligible liabilities over a six-month period in excess of the equivalent of £500 million (previously, £400 million). This rule applies to building societies as well as to banks.

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Identifying Asset Price Bubbles in the Housing Market in India - Preliminary Evidence

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Devoted to the analysis of housing market in India, the paper employs a special decomposition scheme for the structural VAR proposed by Blanchard and Quah (1989) to study the impact of permanent shocks to housing prices attributed to monetary variables and income growth - and, in the process, attempts to identify speculative price bubbles in the housing market. Based on the monthly data, the empirical evidence obtained in the paper suggests that the housing market in India at present remains fairly well equilibrated if seen in terms of the proximity of the actual housing prices and the estimated long run equilibrium housing prices. This implies that the risk of speculation in the market is not yet materially significant. However, as a mark of caution, since the empirical results indicate that housing prices are significantly much more sensitive to permanent interest rate shocks than shocks to credit growth, the stance of monetary policy particularly that reflected by the setting of the policy rate appears to be the single most important arbiter of the future growth of the housing market. Needless to mention, it is therefore necessary to take this factor into due account while developing policy approaches in relation to the housing sector. Besides, as income growth explains quite little about variations in housing prices, the possibility of some adverse selection in overall bank financing of the housing sector cannot be completely ruled out.

JEL Classification : E58, R31

Keywords : Structural VAR, decomposition, forecast error variance, asset prices, permanent shocks.

Introduction

The rapid growth of the housing market in India in the recent years has raised concerns about its sustainability and implications for financial and macroeconomic stability. In the history of economic development, housing price bubbles have been recorded and studied with great interest.

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With the hindsight of documented experience, the bursting of asset bubbles in the housing market has often been associated with severe economic crises, especially, recessions caused by sharp reduction in spending as a result of loss in the consumers' power to leverage against capital gains. International Monetary Fund (IMF) research reported in the World Economic Outlook (April, 2003) indicated that output losses after house-price crashes in developed countries have, on average, been twice as large as those after stock market crashes, usually resulting in lasting recessions. The pace of housing sector growth can be gauged by the fact that the total value of residential property in developed economies increased by an estimated US $ 20 trillion to over US$ 60 trillion in the last three years which is even higher than the increase in global share values (Vedpuriswar, 2005). The surge in value of the stock of housing supported by an equally strong upturn in prices has led analysts to wonder if this boom is really sustainable or is merely a large financial bubble ready to burst. The recent surge in housing prices globally has gone hand-in-hand with a much larger jump in household debt than in previous booms. It is understood that not only that new buyers engaged bigger mortgages, but even existing owners increased their mortgages to turn capital gains into cash thereby causing a rally in housing prices.

Although the surge in the housing market in India is relatively a recent phenomenon, the rapid growth in bank financing in this sector requires attention in the light of the experience in other countries. The paper is divided into five sections. Sections I and II provide a review of international experience and the development of the Indian housing market, respectively. Section III discusses data and methodology. Sections IV and V include empirical evidence and concluding observations, respectively.

Section I

Housing Markets: An International Perspective

In a recently released review of the housing market, OECD Economic Outlook No.78 (2005) offers a detailed analysis of recent house price developments in the OECD countries in the backdrop of the experience of the past 35 years and in the context of the role of fundamentals. The OECD Outlook mentions that of the 37 large upturn phases between 1970

and the mid-1990s, 24 ended in downturns in which anywhere from one-third to well over 100 per cent of the previous real term gains were wiped out. This, in turn, had negative implications for activity, particularly consumption. It also observed that the current upswing in OECD countries is more generalised than in the past with a combination of factors, such as, low interest rates coupled with development of new and innovative financial products playing an important role. In regard to fundamental determinants of housing prices, while price-to-income ratio is considered a ready measure of affordability, it is by itself not a reliable measure since the cost of carrying mortgages varies over time. An assessment of a more useful measure namely, the debt servicing ratio for the OECD countries indicates that the general increase in indebtedness has been mostly offset by the decline in borrowing rates, and with the exception of Australia, the Netherlands and New Zealand, households do not seem to devote greater share of their income to debt service than in the recent past. According to the OECD Economic Outlook another approach to evaluating housing prices is based on asset pricing which uses measures, such as, price-to-rent ratio and user cost of housing. Taking these two measures, the review reports that housing prices in the UK, Ireland, the Netherlands, Spain, Australia and Norway were considered overvalued while those in France, Canada, Denmark, Sweden, Finland, Italy and New Zealand were not significantly overvalued. Housing prices are also impacted by other factors such as supply conditions, demographic changes and speculative pressures. Furthermore, housing cycles can influence economic activity through wealth effects on consumption and private residential investment due to changes in the profitability and the impact on employment and demand in property related sectors. Shocks to housing prices also have implications for financial stability as financial institutions with large exposures in the housing sector could find themselves with inadequate cushions to absorb the losses leading to deterioration in overall credit delivery. In regard to policy implications, views differ on how the monetary authorities should respond to housing price developments. The choice between using regulatory/tax actions or monetary policy actions is contextual but useful so long as the measures are appropriately designed with reference to the size of the actual shock.

In the United States economy, which is at present experiencing a strong cycle in the housing market, prices in certain regions have risen sharply if measured against the yardstick of affordability calculated as the

ratio of housing prices to annual income reflecting a build up of the asset bubble. In fact, at present, the median price of new house in the US is almost five times the median household income. More importantly, even as housing prices have risen, the rental values have remained subdued suggesting presence of speculative forces. Thus, with the rise in house prices relative to rental rates, the house price/rental ratio in the US moved above its long run average, suggesting that house prices were indeed high relative to rents (Krainer, 2003). The strong upsurge in the housing market in the US is a source of concern, especially, for the global financial stability should the market suffer a sharp downturn.

In the context of the present conditions in the global housing markets where the mortgage financing rates have fallen significantly since the last few decades, the IMF has cautioned that, just as the upswing in house prices has been an international phenomenon, so any downturn is likely to be synchronised, causing widespread effects.

Section II

Development of Housing Market in India : A Review

In a country with a vast population, the problem of providing shelter to all has been an issue of great concern to the civil society and the governments of various times. It has, therefore, generally been subsumed that state intervention is necessary to meet the housing requirements of the vulnerable sections and to create an enabling environment to achieve the providing of shelter for all on a self-sustainable basis. Concrete governmental initiatives began in the early 1950s as a part of the First Five Year Plan (1951-56) with a focus on institution-building and housing for weaker sections of society. In the subsequent five year plans, government action ranged from strengthening the provision of housing for the poor and the introduction of several schemes for housing in the rural and urban regions of the country. During the early years of housing development in India, initiatives were taken mostly by the government, and it is only in the recent years that private construction activity has made significant contributions mainly in urban or semi- urban regions in the area of housing/real estate development. It may be mentioned that the current surge in housing demand is generally limited to large urban

metropolitan regions, although smaller towns near these centers have also seen some good growth alongside. In the history of housing development, the Second Five Year Plan (1956-61) saw the enactment of legislations for orderly town and country planning including the setting up of relevant organisations and for the preparation of master plans for important towns. In 1959 the central government announced a scheme to offer assistance in the form of loans to state governments for a period of 10 years for acquisition and development of land in order to make available building sites in sufficient numbers. During this period master plans for major cities were also prepared. The Third Plan (1961-66) led to the coordination of various programmes to help housing for low-income groups. The Fourth Plan (1969-74) took a pragmatic view on the need to prevent the growth of population in large cities and decongestion and dispersal of population through the creation of smaller townships. The Housing & Urban Development Corporation (HUDCO) was established to fund housing and urban development programmes. A scheme for improvement of infrastructure was also undertaken to provide basic amenities in cities across the country. In order to reduce the pressure of urbanisation the Fifth Plan (1974-79) yet again reiterated the policy of promoting smaller towns in new urban centres, while emphasising on the improvement of civic amenities in urban and metropolitan regions. The Urban Land (Ceiling & Regulation) Act was enacted to prevent concentration of land holdings in urban areas and to make urban land available for construction of houses for the middle- and low-income groups. The Sixth Plan (1980-85) refocused attention on the provision of services along with shelter, particularly for the poor. The programme of Integrated Development of Small and Medium Towns was launched in small towns for development of roads, pavements, minor civic works, bus-stands, markets, shopping complexes, *etc*. Positive incentives were offered for setting up new industries and commercial and professional hubs in small, medium and intermediate towns.

The Seventh Plan (1985-90) made a marked departure in the focus given to the government-led housing development stressing on the need to place major responsibility of housing construction to the private sector. To augment the flow of institutional finance to the housing sector and promoting and regulating housing finance institutions, the National Housing Bank (NHB) was set under the aegis of the Reserve Bank of India in

1988. The Seventh Plan clearly also recognised the problems of the urban poor and for the first time an Urban Poverty Alleviation Scheme known as Urban Basic Services for the Poor (UBSP) was introduced. This was also the period when private builders were offered incentives to participate and contribute in building mass housing projects.

The Eighth Plan (1992-97), for the first time, recognised the role and importance of the urban sector for the national economy. The Plan identified the key issues in the emerging urban areas, *viz.*, the widening gap between demand and supply of infrastructural services, the increased growth of urban population and deterioration of city environments. The new Housing and Habitat Policy unveiled in 1998 aimed at ensuring "shelter for all" and better quality of life to all citizens by using the unused potential in public, private and household sectors. The key objective of the policy was on creating strong public–private partnership for tackling the housing. Under the new policy, government proposed to offer fiscal concessions, carry out legal and regulatory reforms and create an enabling environment for the development of the housing sector. The policy emphasised the role of the private sector, as the other partner, to be encouraged to take up the land assembly, housing construction and invest in infrastructure facilities.

Ever since the added emphasis was given to private initiative in housing development, there has been a rapid growth in private investment in housing with the emergence of real estate developers mainly in metropolitan centres and other fast growing townships. The growth has been fuelled by rising business opportunities in new and emerging enterprises, increasing income levels, low interest rates, employment generation and demographic changes. However, even as significant changes in laws, regulations have encouraged housing development, policy analysts believe that further reforms such as tax/stamp duty rationalisation that provide a level playing field to the housing sector may need to be carried forward to tap the unmet demand for housing stock. In the recent years for example, the scrapping of the Urban Land (Ceiling & Regulation) Act by the central government, amendment of the NHB Act to provide for easy foreclosure and permission for foreign direct investment to make investments in real estate have provided an encouraging investment climate. An Advisory Board with professionals has also been constituted to advice the government on matters relating to the development of the housing sector.

In any case, introduction of measures mentioned above, the easing of monetary policy stance and the priority given to the housing sector in RBI's credit policies and the recent Union Budgets have all provided incentives to both financial institutions and buyers of residential property.

Housing market in India, as evidenced by the growth in bank exposures to the sector took off mainly since the year 2001. For example, the retail loan portfolios of banks including housing and real estate advances expanded at rates ranging between 22-41 per cent since 2001-02 and accounted for 26.7 per cent of the incremental non-food credit in 2005-06. As per the RBI's Annual Policy Statement for the year 2006-07, the incremental growth in the loans to commercial real estate and housing clocked rates of 84.4 per cent and 29.1 per cent, respectively, in 2005-06. The rapid growth in housing loan market has been supported, *inter alia*, by the growth in the middle class population, favourable demographic structure, rising job opportunities in the metropolitan centres, emergence of a number of second tier cities as upcoming business centres, IT and ITES related boom and rise in disposable incomes. Furthermore, attractive tax advantages for housing loans make them ideal vehicles for tax planning for salary earners. The real estate market has also grown rapidly recording an annual price appreciation in excess of 10 per cent or more depending on regional importance. The real estate market has been boosted by the proposal to permit 100 per cent FDI in the sector. For banks and other housing finance institutions, the regulatory framework enabled expansion in house loan portfolios given the helpful prescriptions on risk weights for housing exposures and the benefit of compliance with the targets mandated for priority sector lending. Besides, housing loans growth by financial institutions has been assisted by the comfort of relative safety of such assets given the tangible nature of the primary security and the comfort obtained from the SARFAESI Act, 2002.

As alluded to earlier**,** one of the most significant factor that drove the growth of housing market in India in the recent years was the easy availability of bank finance at affordable interest rates owing to surplus liquidity with the banking sector coupled with the softening of interest rate environment on the back of lower inflationary expectations. It may be mentioned that the reductions in interest rates in the housing market have been far more noteworthy as has been the case of in respect of

other retail and corporate advances because of low risk perception and favorable fiscal and regulatory dispensations.

Concerns regarding the sustainability of increasing growth in housing and other retail financing by financial institutions now appear to be arising given the increasing load of household debt as reflelected by the wide gap between borrowings and repayments as reported by the latest round of decade-wise NSSO survey. The situation calls for caution on the dangers of building up of systemic credit risk and the instability of the financial system as a whole.

The sharp growth in the housing and the real estate markets has nevertheless been of concern to policy makers especially in the context of its implications for macroeconomic and financial stability in the event of a sudden downturn. Being a recent phenomenon, the recorded history of financial markets in India has so far not experienced the pangs caused by bursting of bubbles in the housing sector, although the need to take pre-emptive policy actions can hardly be overemphasised in the light of the experience in other countries. It may be mentioned that as a part of calibrated policy response, the Reserve Bank has been gradually nudging financial institutions to exercise due diligence in the assessment of credit risks for exposures in the housing sector, while increasing the regulatory risk weights/ provisioning for housing and real estate loans. As a preemptive measure the Reserve Bank in its Annual Policy Statement for the year 2006-07 increased general provisioning for residential housing beyond Rs 20 lakh and commercial real estate from 0.40 per cent to 1.0 per cent. The risk weight on bank exposure to commercial real estate has also been increased from 125 per cent to 150 per cent.

While all round development of the housing sector is a welcome objective, it is also important to take note of the pace of the cyclical growth in recognition of the risks of build up of asset price bubbles. Of the several factors that contribute to the occurrence of bubbles, high credit growth backed by low interest rates is considered equally more important. It may, therefore, be useful to have some empirical analysis devoted to the assessment of the current conditions in the housing market from the point of view of developing policy choices in regard to the housing market.

The empirical research on housing market in India is scarce due to the paucity of information. With the objective of filling the void, this paper attempts a technical analysis of housing price bubbles in India - particularly aiming at separating the real from speculative price elements by focusing on the relevant monetary aggregates that have a bearing on the growth of the housing market. There are a number of factors which appear to be important for the growth of housing market consisting of income growth, mix of monetary policy, tax and regulatory incentives and procedural ease of loan disbursals, *etc*. The speculative factors, on the other hand, may depend on the hype built around advertising, asymmetric information and speculative or herd behavior causing prices to rise to unsustainable levels and beyond that determined by relevant factors mentioned above. Although it is difficult to identify a house price bubble which occurs due to a deviation of market price from the fundamental value of the house, a number of eclectic approaches for identification have been used.

Section III
Data and Empirical Methodology

Although the housing sector of the economy has received considerable attention in the recent years given its core importance in the developmental goals of the Indian economy, its significance in sustaining financial stability has been recognised rather recently following the significant credit growth at low rates of interest in the recent past. The data in respect of aggregate credit disbursed to the housing sector and national price index for housing output is not easily available on monthly frequency at which data is used in this study for the period from April 2001 to June 2005. As a result, this study is based on data which may be considered good proxies although this might be considered as an extent of limitation. However, given the fact that housing credit has formed a dominant share of overall non-food growth in the recent years, the actual annual growth in housing credit can be expected to be highly correlated with that of growth in non food credit which can be considered a good measure of the former. In fact the choice of proxy for housing credit is also supported by the fact that for the time sample under consideration, the correlation coefficient between available annual outstanding housing credit and non food credit is quite high. The price of housing is represented by the index of housing prices for major metropolitan centres compiled and provided by a bank. Although the price

index for metropolitan centres does not capture the country wide pricing conditions, the index nevertheless provides a good guide to price developments since most of the price increase in housing output in the recent years has been observed in metropolitan regions. As for interest rate on housing finance, the weighted average call money rate is taken as the proxy for interest rate on housing loans as the lack of information on higher frequency weighted lending rate on housing loans limits the use of such data. It may, however, be pointed out that among all other sector specific interest rates, the movement in the interest rates on housing loans whether fixed or floating have been by and large synchronous with the short term money market rate in the recent years, as evidenced by the reduction of interest rate on housing loans for a 20-year tenure from a high of 13-14 per cent per annum in 2000 to about 7-8 per cent in 2006 following the progressive reduction in RBI's policy interest rate. Finally, it is also necessary to include the income variable in the system for assessing the impact on housing prices. The income variable is taken as the annual growth rate in real GDP.

The experimental design is based on deflating all nominal variables by the rate of inflation based on wholesale price index (1993-94=100) in order to have the system defined fully in real terms.

The interpretation of the structural VAR considered here is made in terms of four shocks, *viz*., interest rate (ε_{int}), non food credit ($\varepsilon_{nfoodcredit}$), GDP growth ($\varepsilon_{gdpgrowth}$) and housing prices ($\varepsilon_{hsgprice}$) shocks related to system equations for changes in interest rate, housing credit, GDP growth and housing prices. The analytical results from this experimental design would, therefore, throw light on how the housing market could be affected by the monetary conditions, especially, given the prevailing high growth in credit accompanied by low interest rates as well as GDP or income growth. The specification is also meaningful as the increase in housing prices are observed to have been noticed mainly in select metropolitan centres and other urban regions where borrowers have easier access to bank credit and those who gain relatively more from a rise in economic growth. The algebraic form of the VAR model is based on the representation proposed by Blanchard and Quah (1989) which enables the characterisation and study of the impact of permanent shocks with respect to each of the variables included in the model.

Including stationary variables in the structural VAR, and ordering the vector as $z_t = (\Delta int, \Delta nfoodcredit, \Delta gdpgrowth, \Delta hsgprice)$, the model is as follows :

$\Phi(L)z_t = e_t$

pre-multiplying by its inverse

$[\Phi(L)^{-1}] \Phi(L) z_t = [\Phi(L)^{-1}]e_t$

Let $\Phi(L)^{-1} = K(L)$, then we have

$[I_n - \Phi(L)L - \dots.\Phi(L)_p L_p][I_n + K1(L) + \dots.] = I_n$

$z_t = K(L)e_t$ (1)

where $K(L)$ is of a finite order and where e_t is the vector of reduced form independent white noise errors corresponding to the individual equations in the structural VAR with a covariance matrix Ω. Assuming that the orthogonal structural shocks(ε_t below) can be written as linear combinations of the structural errors (1) especially, $e_t = R^o \varepsilon_t$ where R^o is a non singular matrix. The moving average representation (MAR) of system (1) containing the original residuals then can be written down terms in the orthogonal disturbances with each of the ε_t normalised to have unit variance.

$z_t = R(L)\varepsilon_t$ (2)

where $K(L)R^o = R(L)$ and for positive definite matrix $\Omega = R^o R^{o'}$. Equation (2) forms the basis for obtaining Blanchard and Quah decomposition. In particular if R^o is identified then the MA representation can be directly derived from (2). However, since R^o is a four by four matrix, a total of ten restrictions are required for identification. Since $\Omega = R^o R^{o'}$ and var(ε_t) are normalised to unit variance, matrix R^o requires only six additional restrictions for identification which can be obtained by imposing restrictions on the long run multipliers in the matrix $R(L)$. Each component of the long run matrix $R(L)$ namely $R_{ij}(1)$ represents the corresponding dynamic long run multiplier (or the permanent component) which would need to be subjected to economically meaningful restrictions for identification.

The following restrictions needed for the identification of R(L) matrix are placed on the long run multipliers to identify the structural shocks, *viz*., interest rate, nonfood credit, GDP and housing price shocks.

(a) policy interest rate shock is the only shock that can itself have a long run effect on the interest rate.

(b) in the long run credit conditions will be determined by supply conditions, namely, aggregate credit supply and interest rate.

(c) GDP growth is affected by permanent shocks attributed to itself, interest rate and credit growth, presuming in the monetarist tradition, that easy credit availability in a low interest rate environment played a crucial role in stimulating economic activity in the recent years.

(d) and finally, housing prices are affected in the long run by permanent shocks in interest rate, credit and GDP shocks and own innovations in housing prices.

With these identifying restrictions on the permanent effects, the long run matrix R(L) appears as follows

$$
\begin{bmatrix}
\Delta \text{int} \\
\Delta nfood \\
\Delta gdpgrowth \\
\Delta hsgprice
\end{bmatrix}
=
\begin{bmatrix}
R11(L) & 0 & 0 & 0 \\
R21(L) & R22(L) & 0 & 0 \\
R31(L) & R32(L) & R33(L) & 0 \\
R41(L) & R42(L) & R43(L) & R44(L)
\end{bmatrix}
\begin{bmatrix}
\varepsilon_{\text{int}} \\
\varepsilon_{nfoodcredit} \\
\varepsilon_{gdpgrowth} \\
\varepsilon_{hsgprice}
\end{bmatrix}
\quad ......(3)
$$

From the above, it is straightforward to recover R^o as both $K(1)$ and Ω are known. As $R(1)$ is lower triangular, it is also a unique Choleski factor of the long run representation $R(1)\Omega R(1)$.

The structural VAR is also used for obtaining forecast error variance decompositions alongside a measure of the real equilibrium housing price index which is exhibited in the form of a graph. Measure of misalignment is computed by comparing the actual housing price index with the estimated trajectory for the housing price index obtained from the model.

Section IV

Empirical Evidence

Table (I) presents the forecast error variance decompositions for housing prices. According to Table I, the majority of the explanation for the forecast error variance of housing prices is explained by interest rate, implying that the interest rate conditions have a significant role to play in determining housing prices. The impact of non food credit is lesser than interest rate but taken together credit growth and interest rate explain almost 72.3 percent of the forecast error variance of annual change in housing prices.

Table I : Forecast Error Variance Decomposition of Housing Prices
(per cent, average for 12 months)

Accounted for by Interest Rate	Accounted for by Non Food Credit	Accounted for by Housing Prices themselves	Accounted for by GDP
45.51	26.81	17.84	7.59

However as mentioned earlier, from the point of view of the analysis, the objective of this paper is to distinguish between the real and speculative price increases in the housing market. From expression (3), it is straight forward to estimate the fundamental or long term equilibrium housing prices given the monetary fundamentals especially, interest rate and credit growth which are taken as the explanatory variables in the model and GDP growth which captures changes in income. Chart 1 depicts the relative positioning of actual (flagged 'HOUSING' in the graph) and long run equilibrium housing price (flagged 'BQESTHSG') indices. From Chart 1 it is noted that because of the close proximity of the actual and equilibrium housing price indices, there is only a very a small extent of misalignment.

Chart 1: Equilibrium Housing Price Index and Actual House Price Index
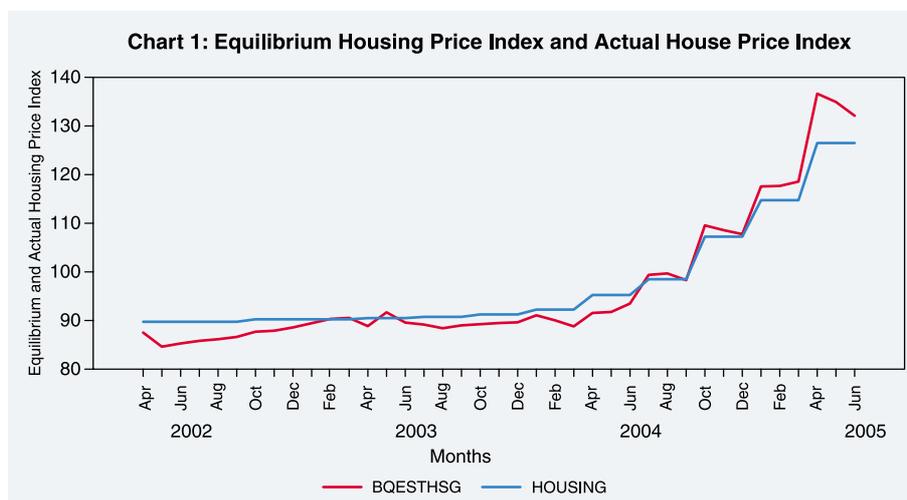
Section V

Concluding Observations

The empirical findings recorded in the study support the inference that amongst the various factors that have a bearing on housing prices, monetary conditions, *viz.*, interest rate and credit growth play a critical role. Together they explain a very large part of the forecast error variance of housing prices and can be considered as primary drivers of growth. It is, however, somewhat alarming to find that real income growth played only a minor role in determining housing prices, reflecting an extent of adverse selection in overall bank financing. Another notable factor is the low order of persistence of housing prices in India as borne out by the little explanation offered in the model by own innovations in housing prices. This finding is in contrast to the stylised feature of housing markets in other parts of the world where housing prices display strong persistence because of the time taken in clearing the market in the aftermath of a shock. Lower persistence implies that the risk of relatively quicker reversal in housing prices in the event of a shock cannot be completely ruled out.

The results of forecast error variance decompositions also indicate that housing prices are significantly much more sensitive to interest rate changes than credit supply. Therefore, as advised by Bernanke (2002), there is a need to carefully evaluate the consequences of monetary policy actions especially when the housing market is seized

by price bubbles, since a pre-emptive hike in interest rates (over and above what is judged necessary for overall price stability purposes), may well be counterproductive. Moreover a tighter policy to prick a housing bubble (if one could be safely identified) could also be potentially damaging for other sectors.

In the recent period, as the graphical analysis shows, the long run equilibrium housing prices are observed to closely trail the actual level of prices implying that the extent of misalignment between the actual and long run equilibrium housing prices has remained low during the period under consideration. This means that the extent of speculation in the market is subdued, and the market is primarily supported by the existing configuration of monetary variables, *viz.*, lower interest rates and easy availability of credit.

Taken together the key implication of the these findings is that monetary policy is expected to exert a significant impact on the housing market as monetary conditions undergo changes either in the form of a rise in interest rates or a reduction in supply of credit. Since the variance decompositions show that changing monetary conditions especially interest rate, have particularly large impact on housing prices, it is necessary that measured policy adjustments are taken to avoid adverse effects on the balance sheet of banks, particularly of those having large exposures to the housing/real estate sector. The empirical inference in regard to the role of monetary policy is also consistent with the international evidence as reported in the IMF's World Economic Outlook (2003) suggesting that housing price bursts during the late 1970s and the early 1980s actually followed the tightening of monetary policy which was aimed at reducing inflation. It, therefore, appears that sectoral measures in the regulatory domain that help in soft landing, such as, for example, withdrawing or reducing regulatory accommodation may be more worthwhile than direct measures taken for demand compression. According to the OECD's Economic Outlook, while the monetary authorities can have many choices to respond to asset price developments including housing prices, the policy response to housing prices should be related only to the extent that they contain information about future output growth and inflation, and that, if desired, it would be more appropriate to use alternative policy instruments (taxes and regulations) to stabilise housing cycles.

On the future prospects of housing market, it may be considered that while the market has been working close to its potential as elicited from the convergence of the actual housing prices and long term equilibrium prices during the time sample under consideration, its performance nevertheless would continue to be tightly governed by monetary conditions defined predominantly in terms of configuration of interest rates and ease/tightness of credit supply.

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The Performance of Regional Rural Banks (RRBs) in India:Has Past Anything to Suggest for Future?

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Since their inception, regional rural banks (RRBs) have taken deep roots and have become a sort of inseparable part of the rural credit structure in India. The financial viability of the RRBs has, however, been a matter of concern since the 1980s, just five years after their existence. A number of committees have gone into the issue of their financial viability and possible restructuring. This study follows a deductive approach. First the extent of the problem of the loss making RRBs has been studied to analyse if the problem is confined to some particular sponsor banks or States. Subsequently, an attempt is made to enquire as to factors that influence the performance of the RRBs and the role-played by the sponsor banks. The empirical analysis has been couched in terms of profit and loss making RRBs for a reasonably long (10-year) period to draw robust policy inferences.

JEL Classification : G21, C23, R12

Keywords : RRBs, Restructuring Strategy, Panel GMM

Introduction

Regional Rural Banks have been in existence for around three decades in the Indian financial scene. Inception of regional rural banks (RRBs) can be seen as a unique experiment as well as experience in improving the efficacy of rural credit delivery mechanism in India. With joint share holding by Central Government, the concerned State

Government and the sponsoring bank, an effort was made to integrate commercial banking within the broad policy thrust towards social banking keeping in view the local peculiarities. The genesis of the RRBs can be traced to the need for a stronger institutional arrangement for providing rural credit. The Narsimham committee conceptualised the creation of RRBs in 1975 as a new set of regionally oriented rural banks, which would combine the local feel and familiarity of rural problems characteristic of cooperatives with the professionalism and large resource base of commercial banks. Subsequently, the RRBs were set up through the promulgation of RRB Act[1] of 1976. Their equity is held by the Central Government, concerned State Government and the Sponsor Bank in the proportion of 50:15:35. RRBs were supposed to evolve as specialised rural financial institutions for developing the rural economy by providing credit to small and marginal farmers, agricultural labourers, artisans and small entrepreneurs.

Over the years, the RRBs, which are often viewed as the small man's bank, have taken deep roots and have become a sort of inseparable part of the rural credit structure[2]. They have played a key role in rural institutional financing in terms of geographical coverage, clientele outreach and business volume as also contribution to development of the rural economy[3]. A remarkable feature of their performance over the past three decades has been the massive expansion of their retail network in rural areas. From a modest beginning of 6 RRBs with 17 branches covering 12 districts in December 1975, the numbers have grown into 196 RRBs with 14,446 branches working in 518 districts across the country in March 2004. RRBs have a large branch network in the rural area forming around 43 per cent of the total rural branches of commercial banks. The rural orientation of RRBs is formidable with rural and semi-urban branches constituting over 97 per cent of their branch network. The growth in the branch network has enabled the RRBs to expand banking activities in the unbanked areas and mobilise rural savings.

The mandate of promoting banking with a rural focus, however, would be an enduring phenomenon only when the financial health of

the RRBs is sound. With built-in restrictions[4] on their operations, it is common to expect that the financial health of the RRBs itself would be a matter of concern. As regards their financial status, during the year 2003-04, 163 RRBs earned profits amounting to Rs.953 crore while 33 RRBs incurred losses to the tune of Rs.184 crore. Ninety RRBs had accumulated losses as on March 31, 2004. Aggregate accumulated loss of RRBs amounted to Rs. 2,725 crore during the year 2003-04. Of the 90 RRBs having accumulated loss, 53 RRBs had eroded their entire owned funds as also a part of their deposits. Furthermore, non-performing assets (NPAs) of the RRBs in absolute terms stood at Rs.3,299 crore as on March 31,2004. The percentage of gross NPAs was 12.6 during the year ending March 31, 2004. While 103 RRBs had gross NPAs less than the national average, 93 had NPAs more than it.

Given the multi agency share holding, this study makes an attempt to enquire into such factors that influence the performance of the RRBs and the role played by sponsor bank in a broader scenario. The problem has been approached in a deductive pattern. First, an attempt is made to identify the extent of the problem of loss making RRBs and see if they are confined to some particular sponsor banks or States. If the problem banks and States could be identified that would help in focussing the attention for an enduring solution. Subsequently, a model-based approach has been pursued to identify the factors that are responsible for the problems faced by the RRBs. This study contributes to the literature on RRBs primarily in two ways. First, the issues concerning RRBs are an area that is less visited empirically (econometrically) compared to the vast literature on commercial banks. Whatever studies have emerged on the topic, they have primarily relied on exploratory analysis done for a particular year or on a group of RRBs to draw inferences. This kind of an approach has a serious limitation in that the findings are guided by the choice of the year of analysis or the particular RRB(s) in question. To overcome this problem, one needs to consider, as attempted in this paper, a reasonably long period for analysis where extreme observations would be evened out so that one gets results that are more dependable. This study is an attempt

in that direction. The present study considers the entire population rather than a few RRBs and a ten-year period for empirical analysis so that results are broad based and robust. Second, given the attention at the policy level to restructure the RRBs, it is necessary that the behaviour of RRBs be analysed separately for the profit and loss making ones, than all RRBs bunched together so that it helps in policy formulation. Such an approach has been followed in this study.

The rest of the paper is organised in six segments. Section I provides a brief review of the course for restructuring and financial viability of RRBs suggested by different committees over the years. Section II reviews briefly the different factors identified in the literature that affects the financial performance of commercial banks and also the extant literature on factors affecting performance of RRBs. A bird's eye view of the spatial distribution of the performance of RRBs across the States and sponsor banks is given in section III. The methodology of the empirical analysis is discussed in Section IV. Section V discusses the empirical results. Concluding observations are set out in Section VI.

Section I
Restructuring Strategies

The financial viability of RRBs has engaged the attention of the policy makers from time to time. In fact, as early as 1981, the Committee to Review Arrangements for Institutional Credit for Agriculture and Rural Development (CRAFICARD) addressed the issue of financial viability of the RRBs. The CRAFICARD recommended that 'the loss incurred by a RRB should be made good annually by the shareholders in the same proportion of their shareholdings'. Though this recommendation was not accepted, under a scheme of recapitalisation, financial support was provided by the shareholders in the proportion of their shareholdings. Subsequently, a number of committees have come out with different suggestions to address the financial non-viability of RRBs. For instance, the Working Group on RRBs (Kelkar Committee) in 1984

recommended that small and uneconomic RRBs should be merged in the interest of economic viability. Five years down the line, in a similar vein, the Agricultural Credit Review Committee (Khusro Committee), 1989 pointed out that 'the weaknesses of RRBs are endemic to the system and non-viability is built into it, and the only option was to merge the RRBs with the sponsor banks. The objective of serving the weaker sections effectively could be achieved only by self-sustaining credit institutions'. The Committee on Restructuring of RRBs, 1994 (Bhandari Committee) identified 49 RRBs for comprehensive restructuring. It recommended greater devolution of decision-making powers to the Boards of RRBs in the matters of business development and staff matters. The option of liquidation again was mooted by the Committee on Revamping of RRBs, 1996 (Basu Committee).

The Expert Group on RRBs in 1997 (Thingalaya Committee) held that very weak RRBs should be viewed separately and possibility of their liquidation be recognised. They might be merged with neighbouring RRBs. The Expert Committee on Rural Credit, 2001 (Vyas Committee I) was of the view that the sponsor bank should ensure necessary autonomy for RRBs in their credit and other portfolio management system. Subsequently, another committee under the Chairmanship of Chalapathy Rao in 2003 (Chalapathy Rao Committee) recommended that the entire system of RRBs may be consolidated while retaining the advantages of regional character of these institutions. As part of the process, some sponsor banks may be eased out. The sponsoring institutions may include other approved financial institutions as well, in addition to commercial banks. The Group of CMDs of Select Public Sector Banks, 2004 (Purwar Committee) recommended the amalgamation of RRBs on regional basis into six commercial banks - one each for the Northern, Southern, Eastern, Western, Central and North-Eastern Regions. Thus one finds that a host of options have been suggested starting with vertical merger (with sponsor banks), horizontal merger (amongst RRBs operating in a particular region) to liquidation by different committees that have gone into the issue of financial viability and restructuring strategies for the RRBs.

More recently, a committee under the Chairmanship of A.V Sardesai revisited the issue of restructuring the RRBs (Sardesai Committee, 2005). The Sardesai committee held that 'to improve the operational viability of RRBs and take advantage of the economies of scale, the route of merger/amalgamation of RRBs may be considered taking into account the views of the various stakeholders'. Merger of RRBs with the sponsor bank is not provided in the RRB Act 1976. Mergers, even if allowed, would not be a desirable way of restructuring. The Committee was of the view that merging a RRB with its sponsor bank would go against the very spirit of setting up of RRBs as local entities and for providing credit primarily to weaker sections. Having discussed various options for restructuring, the Committee was of the view that 'a change in sponsor banks may, in some cases help in improving the performance of RRBs. A change in sponsorship may, *inter alia*; improve the competitiveness, work culture, management and efficiency of the concerned RRBs'. Against this backdrop, a number of issues need empirical probing. Such as, which are the RRBs that need focus and whether for them the sponsor bank has really to be made accountable. All these issues fall under the broader questions of what factors drive the performance of RRBs? and do the sponsor banks have a role to play? Section II reviews the literature on factors affecting performance of a commercial bank in general and also in the context of RRBs.

Section II

Review of Literature

RRBs though operate with a rural focus are primarily scheduled commercial banks with a commercial orientation. Beginning with the seminal contribution of Haslem (1968), the literature probing into factors influencing performance of banks recognises two broad sets of factors, *i.e.*, internal factors and factors external to the bank. The internal determinants originate from the balance sheets and/or profit and loss accounts of the bank concerned and are often termed as micro or bank-specific determinants of profitability. The external determinants are systemic forces that reflect the economic

environment which conditions the operation and performance of financial institutions. A number of explanatory variables have been suggested in the literature for both the internal and external determinants. The typical internal determinants employed are variables, such as, size and capital [Akhavein *et al.* (1997), Demirguc-Kunt and Maksimovic (1998) Short (1979) Haslem (1968), Short (1979), Bourke (1989), Molyneux and Thornton (1992) Bikker and Hu (2002) and Goddard *et al.* (2004)]. Given the nature of banking business, the need for risk management is of crucial importance for a bank's financial health. Risk management is a reflection of the quality of the assets with a bank and availability of liquidity with it. During periods of uncertainty and economic slow down, banks may prefer a more diversified portfolio to avoid adverse selection and may also raise their liquid holdings in order to reduce risk. In this context, both credit and liquidity risk assume importance. The literature provides mixed evidence on the impact of liquidity on profitability. While Molyneux and Thornton (1992) found a negative and significant relationship between the level of liquidity and profitability, Bourke (1989) in contrast, reports an opposite result. One possible reason for the conflicting findings may be the different elasticity of demand for loans in the samples used in the studies (Guru, Staunton and Balashanmugam, 2004). Credit risk is found to have a negative impact on profitability (Miller and Noulas, 1997). This result may be explained by taking into account the fact that more the financial institutions are exposed to high-risk loans, the higher is the accumulation of unpaid loans implying that these loan losses have produced lower returns to many commercial banks (Athanasoglou, Brissimis and Delis, 2005). Some of the other internal determinants found in the literature are funds source management and funds use management (Haslem, 1968), capital and liquidity ratios, the credit-deposit ratio and loan loss expenses [Short (1979); Bell and Murphy (1969); Kwast and Rose (1982)]. Expense management, a correlate of efficient management is another very important determinant of bank's profitability. There has been an extensive literature based on the idea that an expenses-related variable should be included in the cost part of a

standard microeconomic profit function. In this context, Bourke (1989) and Molyneux and Thornton (1992) find that better-quality management and profitability go hand in hand.

As far as the external determinants of bank profitability are concerned the literature distinguishes between control variables that describe the macroeconomic environment, such as inflation, interest rates and cyclical output, and variables that represent market characteristics. The latter refer to market concentration, industry size and ownership status. Among the external determinants which are empirically modeled are regulation [Jordan (1972); Edwards (1977); Tucillo (1973)], bank size and economies of scale [Benston, Hanweck and Humphrey (1982); Short (1979)], competition [Phillips (1964); Tschoegl (!982)], concentration [Rhoades (1977); Schuster (1984)], growth in market [Short (1979)], interest rates as a proxy for capital scarcity and government ownership (Short, 1979). The most frequently used macroeconomic control variables are the inflation rate, the long-term interest rate and/or the growth rate of money supply. Revell (1979) introduced the issue of the relationship between bank profitability and inflation. He notes that the effect of inflation on bank profitability depends on whether banks' wages and other operating expenses increase at a faster pace than inflation. Perry (1992) in a similar vein contends that the extent to which inflation affects bank profitability depends on whether inflation expectations are fully anticipated. The influence arising from ownership status of a bank on its profitability is another much debated and frequently visited issue in the literature. The proposition that privately owned institutions are more profitable, however, has mixed empirical evidence in favour of it. For instance, while Short (1979) provides cross-country evidence of a strong negative relationship between government ownership and bank profitability, Barth *et al.* (2004) claim that government ownership of banks is indeed negatively correlated with bank efficiency. Furthermore, Bourke (1989) and Molyneux and Thornton (1992) find ownership status is irrelevant in explaining profitability. While many of the above factors would be relevant, it would be instructive to scan the literature that has exclusively focussed on the RRBs.

The literature on RRBs recognises a host of reasons responsible for their poor financial health. According to the Narasimham Committee, RRBs have low earning capacity. They have not been able to earn much profit in view of their policy of restricting their operations to target groups. The recovery position of RRBs is not satisfactory. There are a large number of defaulters. Their cost of operation has been high on account of the increase in the salary scales of the employees in line with the salary structure of the employees of commercial banks. In most cases, these banks followed the same methods of operation and procedures as followed by commercial banks. Therefore, these procedures have not found favour with the rural masses. In many cases, banks have not been located at the right place. For instance, the sponsoring banks are also running their branches in the same areas where RRBs are operating. The issue whether location matters for the performance has been addressed in some detail by Malhotra (2002). Considering 22 different parameters that impact on the functioning of RRBs for the year 2000, Malhotra asserts that geographical location of RRBs is not the limiting factor for their performance. He further finds that 'it is the specific nourishment which each RRB receives from its sponsor bank, is cardinal to its performance'. In other words, the umbilical cord had its effect on the performance of RRBs. The limitation of the study is that the financial health of the sponsor bank was not considered directly to infer about the umbilical cord hypothesis. Nitin and Thorat (2004) on a different note provide a penetrating analysis as to how constraints in the institutional dimension[5] have seriously impaired the governance of the RRBs. They have argued that perverse institutional arrangements that gave rise to incompatible incentive structures for key stakeholders such as political leaders, policy makers, bank staff and clients have acted as constraints on their performance. The lacklustre performance of the RRBs during the last two decades, according to the authors can be largely attributed to their lack of commercial orientation. An appropriate restructuring strategy would require to identify the problems leading to the non-satisfactory performance of the RRBs. The performance of the RRBs under the aegis of their sponsor banks in the spatial dimension has been dealt in some detail in Section III.

Section III

Performance of RRBs in the Spatial Dimension: Some Stylised Facts

The RRBs, over the years have made impressive strides on various business indicators. For instance, deposits of RRBs have grown by 18 times and advances by 13 times between 1980 and 1990. Between 1990 and 2004, deposits and advances grew by 14 times and 7 times, respectively (Table 1). Between the year 2000 and 2004, loans disbursed by RRBs more than doubled reflecting the efforts taken by the banks[6] to improve credit flow to the rural sector. The average per branch advances also increased from Rs.25 lakh in March 1990 to Rs.154 lakh in March 2003. When one considers the deployment of credit relative to the mobilisation of resources, the credit-deposit (C-D) ratio of RRBs were more than 100 per cent during the first decade of their operations up to 1987. Though the C-D ratio subsequently became lower, of late, it has shown an improvement and went up from around 39 per cent in March 2000 to 44.5 per cent in March 2004[7].

Table 1: Evolution of RRBs: Select Indicators

(Rs. Crore)

Parameter	1980	1985	1990	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004
No. of RRBs	85	188	196	196	196	196	196	196	196	196	196	196	196
Capital	21	46	91	166	358	705	1,118	1,380	1,959	2,049	2,143	2,141	2,221
Deposits	222	1,315	4,023	11,141	14,171	17,976	22,191	27,059	32,226	38,294	44,539	49,582	56,295
Investments	20	164	60	1,348	2,879	3,891	5,280	6,680	7,760	8,800	9,471	17,138	21,286
Advances	262	1,405	3,384	5,987	7,057	7,908	9,021	10,559	12,427	15,050	17,710	20,934	25,038
Total Assets	426	2,320	6,081	14,886	18,969	24,376	29,468	35,820	42,236	49,596	56,802	62,500	70,195
Interest Earned	NA	NA	480	1,158	1,421	2,033	2,624	3,281	3,938	4,619	5,191	5,391	5,535
Other income	NA	NA	113	72	89	103	136	151	207	240	370	430	697
Total Income	NA	NA	593	1,230	1,511	2,136	2,760	3,432	4,145	4,859	5,561	5,821	6,231
Interest expended	NA	NA	326	851	1,065	1,462	1,773	2,131	2,565	2,966	3,329	3,440	3,363
Operating expenses	NA	NA	254	657	726	804	845	982	1,056	1,165	1,459	1,667	1,825
Provisions and contingencies	NA	NA	NA	120	171	673	72	99	96	128	163	132	289
Total expenses	NA	NA	581	1,509	1,791	2,265	2,617	3,113	3,621	4,130	4,787	5,107	5,187
Operating Profit	NA	NA	12	-279	-280	-129	143	319	524	729	774	714	1,044

Note : Total expenses are excluding provisions and contingencies.
Source : Reserve Bank of India.

The presence of RRBs shows wide variation both across States and sponsor banks. Although RRBs are spread over twenty-six States, they have most of their presence in seven States, *i.e.*, Andhra Pradesh, Bihar, Karnataka, Madhya Pradesh, Maharastra, Rajasthan and Uttar Pradesh. Uttar Pradesh has the highest number of RRBs, *i.e.,* thirty-six and Kerala has got only two amongst the major States of the country (Table 2). The north-eastern States like Manipur, Meghalya, Mizoram and Nagaland have got only one RRB. Like-wise, seven sponsor banks amongst twenty-eight, *viz.,* Bank of Baroda, Bank of India, Central Bank of India, Punjab National Bank, State Bank of India, United Bank of India and UCO bank account for more than three fifths of the RRBs. More than 160 RRBs earned profit in March 2004 while 150 RRBs were found to be earning profits for three consecutive years beginning with the year 2000-01. More than half of these loss-making RRBs are found to be operating in four States, *i.e.,* Bihar, Madhya Pradesh, Maharastra and Orissa. Seen at the level of sponsor banks, three banks, *i.e.,* Bank of India, Central Bank of India and State Bank of India accounted for more than half of the loss making RRBs.

As a number of sponsor banks have promoted RRBs in more than one State, it becomes natural to ask whether the presence of RRBs sponsored by a few banks whose area of operation is confined to some specific States is camouflaging the performance of better run RRBs. There can be three possibilities in such a situation. One, irrespective of the State, the RRBs sponsored by some banks are incurring losses; second, irrespective of sponsor banks, certain States are simply not conducive to better performance for RRBs; and third, there is nothing inherent either with a sponsor bank or a particular State in which the RRBs operate to contribute towards the performance of RRBs and it is a combination of some other factors. To answer these possibilities, one needs to assess the presence of RRBs sponsored by different banks across the States and their performance. Such an attempt is made in Table 3 where performance of sponsor banks across regions is depicted.

Seen from the perspective of the State in which they are operating, five out of the eight-loss making RRBs in Bihar are

Table 2: State and Sponsor Bank-wise Distribution of RRBs

Sr No	State	RRBs		Sr No	Sponsor Bank	RRBs	
		No.	Profit Making			No.	Profit Making
1	Andhra Pradesh	16	15	1	Allahabad Bank	7	7
2	Arunachal Pradesh	1	0	2	Andhra Bank	3	3
3	Assam	5	4	3	Bank of Baroda	19	15
4	Bihar	16	8	4	Bank of India	16	10
5	Chhattisgarh	5	3	5	Bank of Maharastra	3	1
6	Gujarat	9	8	6	Bank of Rajasthan	1	0
7	Haryana	4	4	7	Central Bank of India	23	15
8	Himachal Pradesh	2	2	8	Canara Bank	8	8
9	Jammu & Kashmir	3	1	9	Corporation Bank	1	0
10	Jharkhand	6	3	10	Dena Bank	4	4
11	Karnataka	13	12	11	Indian Overseas Bank	3	2
12	Kerala	2	2	12	Indian Bank	4	4
13	Madhya Pradesh	19	14	13	J&K Bank	2	1
14	Maharashtra	10	5	14	Punjab & Sind Bank	1	1
15	Manipur	1	0	15	Punjab National Bank	19	17
16	Meghalaya	1	1	16	State Bank of Bikaner and Jaipur	3	2
17	Mizoram	1	1	17	State Bank of Hyderabad	4	4
18	Nagaland	1	0	18	State Bank of India	30	18
19	Orissa	9	3	19	State Bank of Indore	1	1
20	Punjab	5	5	20	State Bank of Mysore	2	2
21	Rajasthan	14	10	21	State Bank of Patiala	1	1
22	Tamil Nadu	3	3	22	State Bank of Saurashtra	3	3
23	Tripura	1	0	23	Syndicate Bank	10	10
24	Uttar Pradesh	36	34	24	United Bank of India	11	9
25	Uttaranchal	4	4	25	UCO Bank	11	7
26	West Bengal	9	8	26	Uttar Pradesh State Co-operative (U.P.S.C.) Bank	1	0
				27	Union Bank of India	4	4
				28	Vijaya Bank	1	1
	Total	196	150		Total	196	150

Note   :   Based on three consecutive years performance beginning with the year 2000-01
Source :   Statistical Tables relating to banks in India (Various Issues)

Table 3: Performance of Sponsor Banks Across Regions

Sponsor Bank	No of RRBs	State	Loss Making
Allahabad Bank	7	Uttar Pradesh (6), Madhya Pradesh (1)	
Andhra Bank	3	Andhra Pradesh (2), Orissa (1)	
Bank of Baroda	19	Uttar Pradesh (9), Rajasthan (5), Gujarat (3), Madhya Pradesh (1), Uttaranchal (1)	Gujarat (1), Madhya Pradesh (1), Rajasthan (2)
Bank of India	16	Uttar Pradesh (3), Madhya Pradesh (4), Maharastra (4), Jharkhand (4), Orissa (1)	Jharkhand (1), Madhya Pradesh (2) Maharastra (3)
Bank of Maharastra	3	Maharastra (3)	Maharastra (2)
Bank of Rajasthan	1	Rajasthan (1)	Rajasthan (1)
Central Bank of India	23	Bihar (8), Chattisgarh (1), Madhya Pradesh (7), Maharastra (3), Rajasthan (1), Uttar Pradesh (2), West Bengal (1)	Bihar (5) Madhya Pradesh (1) Uttar Pradesh (1) West Bengal (1)
Canara Bank	8	Uttar Pradesh (3), Karnataka (4), Kerala	
Corporation Bank	1	Karnataka (1)	Karnataka (1)
Dena Bank	4	Gujarat (3), Chattisgarh (1)	
Indian Overseas Bank	3	Orissa (2), Tamil Nadu (1)	Orissa (1)
Indian Bank	4	Andhra Pradesh (2), Tamil Nadu (2)	
J&K Bank	2	Jammu & Kashmir (1)	Jammu & Kashmir (1)
Punjab & Sind Bank	1	Punjab (1)	
Punjab National Bank	19	Uttar Pradesh (6), Punjab (3), Rajasthan (2) Bihar (4), Himachal Pradesh (1), Haryana (3)	Bihar (1), Uttar Pradesh (1)
State Bank of Bikaner and Jaipur	3	Rajasthan (3)	Rajasthan (1)
State Bank of Hyderabad	4	Andhra Pradesh (4)	
State Bank of India	30	Andhra Pradesh (5), Arunachal Pradesh (1), Assam (1), Bihar (1), Chattisgarh (3), Himachal Pradesh (1), Jammu & Kashmir (1), Jharkhand (2), Karnataka (1), Madhya Pradesh (3), Meghalaya (1), Mizoram (1), Nagaland (1), Orissa (3),	Andhra Pradesh (1), Arunachal (1), Assam (1), Uttar Pradesh (2), Uttaranchal (3) Bihar (1), Chattisgarh (1), Jammu & Kashmir (1), Jharkhand (2), Nagaland (1), Orissa (3)
State Bank of Indore	1	Madhya Pradesh (1)	
State Bank of Mysore	2	Karnataka (2)	
State Bank of Patiala	1	Punjab (1)	
State Bank of Saurashtra	3	Gujarat (3)	
Syndicate Bank	10	Andhra Pradesh (3), Haryana (1), Karnataka (4), Kerala (1), Uttar Pradesh (1)	
United Bank of India	11	West Bengal (5), Assam (4), Manipur (1), Tripura (1)	Manipur (1), Tripura (1)
UCO Bank	11	West Bengal (3), Bihar (3), Orissa (2), Rajasthan (2), Madhya Pradesh (1) Orissa (2)	Bihar (1) Madhya Pradesh (1),
Uttar Pradesh State Co-operative (U.P.S.C.) Bank	1	Uttar Pradesh (1)	Uttar Pradesh (1)
Union Bank of India	4	Uttar Pradesh (3), Madhya Pradesh (1)	
Vijaya Bank	1	Karnataka (1)	

Note : The figures in parenthesis indicate the number of RRBs by the Sponsor banks. Performance relates to the period 2000-01 to 2002-03

Source : Statistical Tables Relating to Banks in India (Various Issues) and Annual Accounts of Scheduled Commercial Banks in India 1989-2001, Reserve Bank of India

sponsored by the Central Bank of India and one each by the Punjab National Bank, SBI and the UCO bank. Of the five-loss making RRBs found in Madhya Pradesh, two are sponsored by Bank of Baroda and one each by the Bank of India, the Central Bank of India and the UCO Bank. Like wise, of the five-loss making RRBs found in Maharastra, three are sponsored by Bank of India and two by Bank of Maharastra. From the sponsor bank's perspective one finds that the RRBs in which they have a stake and which are not earning profits, are not confined to a single State. It is spread across the States in which they have a presence. For instance, the eight loss making RRBs for which the Central Bank of India is the sponsor bank, are spread over Bihar, Madhya Pradesh, Uttar Pradesh and West Bengal. Similarly, the twelve loss making RRBs sponsored by the SBI are spread across Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh, Jharkhand, Nagaland and Orissa. The same is the case with the RRBs sponsored by Bank of India and UCO bank. Hence, one finds no strong systematic pattern so as to infer whether or not the peculiarities of any particular sponsor bank or a specific State in which they operate drives the performance of RRBs. In such a situation, financial performance of the RRBs has been modeled based on balance sheet information of the RRBs for a ten-year period to decipher, what all factors that contribute to their financial health. The modalities of the econometric estimation have been taken up in the next section.

Section IV

Data and Methodology

Net income as a percentage to total assets (NITA)[8] is taken to be the indicator of financial performance of the RRBs. NITA measures how profitably and efficiently the RRB is making use of its total assets. Deflating the net income by total assets also takes account of the variation in the absolute magnitude of the profits, which may be size related. The performance of RRBs is postulated to depend upon two broad sets of factors, internal to the RRBs as well as external to them. The internal factors are represented through the balance sheet information of the individual RRBs. RRBs are scheduled commercial

banks whose source of income arises primarily from lending and investment. Balance sheet management on part of RRBs requires a judicious mix between lending and investment. As such, loans and advances of each RRB as a percentage of total assets (LOTA) and investments in securities of each RRB as a percentage of total assets (INTA) are included as explanatory variables. In terms of liquidity management, since banks are involved in the business of transforming short-term deposits into long-term credit, they would be constantly faced with the risks associated with the maturity mismatch. In order to hedge against liquidity deficits, which can lead to insolvency problems, banks often hold liquid assets, which can be easily converted to cash. However, liquid assets are often associated with lower rates of return. Hence, high liquidity is expected to be associated with lower profitability (Molyneux and Thornton, 1992). The impact of liquidity on profitability is captured through the variable LIQ, which is represented through Cash in Hand of the RRBs as a proportion of their Assets. Another internal factor that can be expected to have a significant effect on the financial health of the RRBs is their efficiency in expense management. The 'total expenses' shown in profit & loss account of the RRBs is the sum of 'interest expenses' and 'operating expenses'. While rising operating costs to support increasing business activities is natural, increasing operating costs relative to non operating expenses is a matter of concern and reflects poor expense management. To judge the impact of expense management on balance sheet health, the variable operating expenses as a percentage of total expenditure (OE) has been taken as another independent variable.

Apart from the internal factors, the literature recognises the influence of the sponsor bank on a RRB's health through what is termed as the *umbilical cord* (Malhotra, 2002)*.* According to the umbilical cord hypothesis, given the very close relationship[9] between the RRB and its sponsor bank, the attitude of the sponsor bank would have a bearing on the performance of the RRB. As it is quite complex to quantify the attitude of the sponsor bank towards the concerned RRB, the impact of the sponsor bank has been subsumed under a single indicator and it is the financial health of the sponsor bank. Financial health of the sponsor bank reflected through its net income

as a percentage of its total assets (NITASPON) has been included as one of the regressors. Based on the above discussion, to ascertain the impact of the internal and the external factors on bank profitability, panel data regression models have been used. Equation (1) describes the general specification of the model. Equation (1) can be estimated either by least squares or through a procedure that accounts for fixed/random effects.

$$NITA_{i,t} = \eta_1 LOTA_{i,t} + \eta_2 INTA_{i,t} + \eta_3 LIQ_{i,t} + \eta_4 OE_{i,t} + \eta_5 NITASPON_{i,t} + \varepsilon_{i,t} \qquad (1)$$

Where,

$\eta_1, \eta_2, \eta_3, \eta_4,$ and η_5 are parameters to be estimated.

NITA=Net Income to Assets

LOTA = Loan as a proportion of Total Assets.

INTA =Investment as a proportion of Total assets.

LIQ=Cash in Hand as a proportion of Total Assets

OE= Operating Expenses as a proportion of Total Expenditure

NITASPON= Net Income to Assets of the Sponsor Bank.

$\varepsilon_{i,t}$= Error Term

The subscripts i and t refer to the year and cross section (RRB); respectively.

In addition to the above factors, an environmental factor that may affect both the costs and revenue of the RRBs is the inflationary conditions in the economy. The impact of inflation rates on bank profitability depends on its effect on a bank's costs and revenues. The effect of inflation on bank performance depends on whether the inflation is anticipated or unanticipated (Perry, 1992). If inflation is fully anticipated and interest rates are adjusted accordingly resulting in revenues rising faster than costs, then it would have a positive impact on profitability. However, if the inflation is not anticipated and the banks are sluggish in adjusting their interest rates then there is a possibility that bank costs may increase faster than bank revenues and hence, adversely affect bank profitability. Interest rates in India

were administered for a long time till the onset of financial liberalization. In the post liberalisation phase though banks have greater freedom to price their products, maneuverability on part of banks in adjusting the interest rates are rather limited on account of the preference for fixed rate deposits, administered savings, etc. Furthermore, as all the variables in (1) are expressed as ratios, inflation is already accounted for in the model. Hence, inflation as an additional variable has been excluded from the regression model. It is quite possible that past year's performance has a bearing on today's performance and non-incorporation of the same in the econometric estimation would blur the impact of other variables on NITA. To account for the past year's performance, lagged value of NITA has also been considered in an extended model. The extended model assumes specification as laid down in equation (2)

$$NITA_{i,t} = \eta_0 NITA_{i,t-1} + \eta_1 LOTA_{i,t} + \eta_2 INTA_{i,t} + \eta_3 LIQ_{i,t} + \eta_4 OE_{i,t} +$$

$$\eta_5 NITASPON_{i,t} + \varepsilon_{i,t} \qquad\qquad (2)$$

Where, ηs are the parameters to be estimated.

The extended model (2) is a dynamic panel data model. A dynamic panel model poses a number of econometric issues. The major problem that arises when lagged dependent variable is introduced as an explanatory variable is that the error term and the lagged dependent variable are correlated, with the lagged dependent variable being correlated with the individual specific effects that are subsumed into the error term. This implies that standard estimators are biased, and as such an alternative method of estimating such models is required. The standard procedure to provide consistent estimates is to adopt an instrumental variable procedure, with different lags of the dependent variable used as instruments. Although a number of candidates are possible, the Arellano and Bover (1995) approach is adopted as this generates the most efficient estimates. While using lagged dependent variables as instruments, overall instrument validity is examined using a Sargan test of over identifying restrictions.

The study covers the period 1994-2003. The choice of end points for the period of analysis is essentially governed by two

considerations. Based on the recommendations of the Narasimham Committee Report (1992), reforms were initiated in 1993 to turn around the failing RRBs. To enhance financial viability, a new set of prudential accounting norms of income recognition, asset classification, provisioning, and capital adequacy were implemented. Banks were also required to make full provisioning for bulk of their non-performing assets. Furthermore, they were permitted to lend to non-target group borrowers up to 60 per cent of new loans beginning in 1993-94. Permission was also granted to introduce new services, such as loans for consumer durables. As such, year 1993-94 has been taken as the initial year for estimation when the RRBs were given the opportunity to operate in a more liberal framework. The choice of the terminal year for the empirical study is guided by the availability of balance sheet information on both RRBs as well as the sponsor bank from the various issues of Statistical Tables Relating to Banks in India brought out by the Reserve Bank of India. Balance sheet information was available till 2002-03 for RRBs when the study was carried out. The study deals with all the 196 RRBs except one[10]. To get a deeper insight into the factors contributing to the financial performance of RRBs, the empirical analysis has been carried out separately for the profit and the loss making RRBs apart from for all the RRBs taken together. Those RRBs that earned profits consecutively for three years during 2000-01 till 2002-03 have been categorized as the profit making RRBs and the rest as loss making RRBs.

Section V

Empirical Results

To choose the appropriate model for estimating specification (1), Hausman test is employed. The very low p-value obtained for Hausman Statistics indicates a preference for fixed effects over random effect model. The fixed effect estimation results indicate that investments contributed positively to net income of both profit and loss making RRBs. On the other hand, advances had a positive impact on the financial health of the profit making RRBs only; the impact is found to be negative, although insignificant, for the loss making

Table 4: Fixed Effects Estimation Results

Independent Variables	Profit Making RRBs		Loss Making RRBs		All RRBs	
	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value
LOTA	0.013	0.02	-0.01	0.36	0.003	0.56
INTA	0.029	0.00	0.031	0.00	0.028	0.00
LIQ	0.034	0.62	-0.206	0.21	-0.037	0.56
OETOTE	-0.232	0.00	-0.217	0.00	-0.226	0.00
NITASPON	0.053	0.40	0.132	0.42	0.09	0.12
Adjusted R^2	0.80		0.75		0.82	

RRBs. Liquidity also turned out to be insignificant in the statistical sense to affect the net income of any category of RRBs. Operating expenses have an across-the-board negative and significant impact on the RRBs' financial performance. Furthermore, sponsor bank's health turns out to be insignificant in having an impact on the concerned RRBs irrespective of whether it is making profits or incurring losses. Thus, going by the fixed effect estimation results, the umbilical cord hypothesis appears to be on a weak footing.

However, estimation of the extended model (2), which employs more rigorous estimation procedures, provides strikingly different results (Table 5). The dynamic panel data estimation reveals that performance in the past years had a significant[11] impact for the current year for both categories of RRBs. Advances contributed negatively

Table 5: Dynamic Panel Data (GMM) Estimation Results

Independent Variables	Profit Making RRBs		Loss Making RRBs		All RRBs	
	Coefficient	P-Value	Coefficient	P-Value	Coefficient	P-Value
NITA(-1)	0.454	0.00	0.490	0.00	0.410	0.00
NITA(-2)	0.033	0.07	0.039	0.01	0.040	0.00
LOTA	-0.074	0.00	0.097	0.00	-0.069	0.01
INTA	0.016	0.01	-0.002	0.82	0.020	0.00
LIQ	0.064	0.82	-1.682	0.00	0.51	0.12
OETOTE	-0.110	0.00	-0.149	0.00	-0.129	0.00
NITASPON	0.304	0.00	-0.747	0.00	0.200	0.0.04
P-Value of Sargan Test	0.18		0.10		0.08	

to the health of the profit making RRBs. This is in contrast to the
fixed effects estimation result where advances had a positive impact
for the profit making RRBs. For the loss making RRBs, the negative
and insignificant coefficient for advances in the fixed effects
estimations turns out to be positive and significant in the dynamic
model. For all RRBs taken together, advances are found to adversely
affect the bottom line. As far as investments are concerned, they
contributed positively and significantly to the performance of the
profit making RRBs. Again in sharp contrast to the fixed effects
results, investments seem to be inconsequential in influencing the
bottom line of loss making RRBs. For all RRBs taken together, impact
of investments turns out to be positive and significant. The relative
importance attached to investment vis-a-vis advances in their portfolio
management by the profit and loss making RRBs, can be seen from
Chart 1, which depicts yearly average figures. As can be seen from
Chart 1, investments over the years have assumed increasing
importance in the asset portfolio of profit making RRBs. Income from
investments relative to advances has also contributed a higher
proportion to income for profit making RRBs in the recent years
compared to the loss making ones (Chart 1). For instance, investment
income in total income while increased from 6 per cent to 9 per cent
for the loss making RRBs, it increased from 2 per cent to 14 per cent
for the profit making RRBs between the period 1994-99 and 2000-

Chart 1: Relative Importance of Investments for Profit and Loss making RRBs
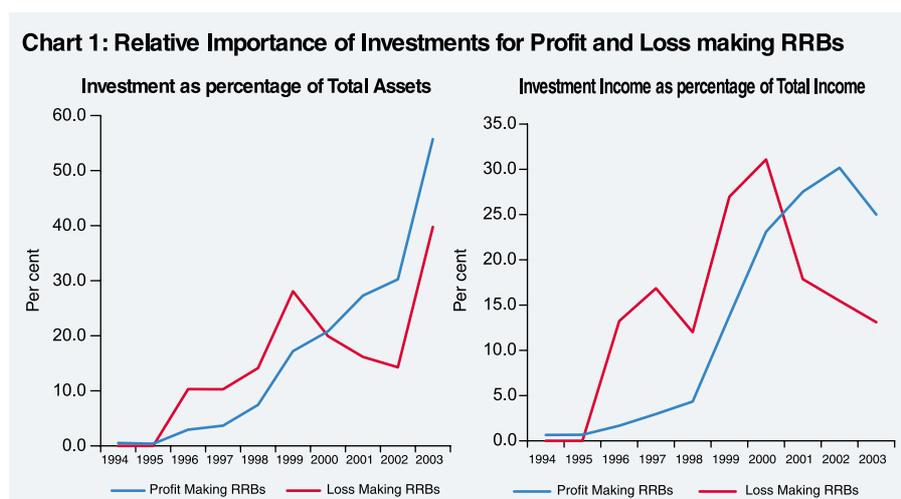
03. Compared to the period 1994-99, there has been a relative shift towards investments in the portfolio management of both profit and loss making RRBs during the period 2000-03. The shifting away from advances, however, has been sharper for the profit making RRBs. While the proportion of loans to assets declined from 41.5 percent to 35 per cent for the loss making RRBs, the decline was more pronounced from 59 per cent to 48 per cent for the profit making RRBs over the sub periods 1994-99 and 2000-03.

Operating expenses had a negative impact on the profitability of both profit and loss making RRBs. A more interesting finding from the panel GMM estimations in contrast to the fixed effect estimations concerns to the umbilical cord hypothesis. One would be tempted to say that the umbilical cord hypothesis does not hold good going by the fixed effect estimation results. The GMM estimation[12] results, however, indicate that while the sponsor bank acted as a positive force for the profit making RRBs, the impact was negative for the loss making RRBs. For all RRBs taken together, the impact of the sponsor bank's health on the financial health of the concerned RRB turns out to be positive and statistically significant. The profit making RRBs are able to reap the synergy from their association with the sponsor bank. The sponsor bank, on the other hand, is found to act, as a drag on the financial health of the loss making RRBs. The literature (Malhotra, 2002 etc.) recognises a host of reasons for the drag. It could be due to competition for business rather than co-operation between the RRB and the sponsor bank, which are co-present in a particular geographical area. Else, it could simply be, because of the apathetic attitude of the sponsor bank towards the RRBs when it requires a supporting hand. Support could be in the form of advice on financial decisions, or meeting skill requirements of the RRBs or management of the affairs of the RRB. This finding is significant in the present milieu where a number of options are being considered to restructure the RRBs. The results indicate that different strategies need to be thought of keeping in view whether the RRB under consideration is making profits or incurring losses. While going into the details of the modalities of the restructuring process of RRBs is beyond the scope of this study, it can be held that a one size fits all prescription (be it for horizontal or vertical merger

of the RRBs) for the restructuring of the RRBs needs to be revisited. Very recently, 28 RRBs sponsored by nine banks[1] in six States have been amalgamated into nine new RRBs, bringing down the number of RRBs to 177. The consolidation exercise mostly involved merger of profit making RRBs of the same sponsor bank within a State. It is much easier (as they are in any case financially viable) to decide about the course of restructuring of the RRBs that are making profits. The approach to the restructuring of the loss making RRBs is an area, which would require deeper analysis. Merger of loss making RRBs operating in a contiguous area has the possibility of bringing some rewards in terms of house keeping, better administrative control, etc. The other possibility is that by merging two RRBs that are financially unviable, the inefficiencies are compounded and the merged entity falls under its own dead weight. With the umbilical cord hypothesis operational, it may be suggested that for the loss making RRBs, the sponsor banks need to play a more proactive role.

Section VI

Conclusion

The study made an attempt to examine whether the problems associated with the RRBs are specific to certain sponsor banks or States in which they operate. To get a deeper insight, all the RRBs were categorised either as profit making or loss making ones. RRB earning profits consecutively for the past three years from the terminal year of the study have been classified as profit making and the rest as loss making. Such a classification led to 150 RRBs falling in the profit making category and rest 46 as loss making. The exploratory analysis revealed that the problem of the loss making RRBs is neither confined to some specific States nor to a group of sponsor banks. In the absence of any strong systematic pattern so as to suggest that the performance of RRBs is driven by the peculiarities of any particular sponsor Bank or a specific State in which they operate, econometric estimation was employed so as to decipher the factors that contribute to their financial health. Based on the balance sheet information on individual RRBs for the past ten years, this study has approached the issue primarily form the asset side of the RRBs balance sheet. Given the

linkage between the RRBs and their sponsor bank, an attempt was also made to infer whether or not the umbilical cord hypothesis is operational. Both fixed effect and panel GMM estimations were carried out.

The more appropriate GMM estimation results indicated that the loan portfolio management for the profit making RRBs is an area of concern. Investments contribute positively to the financial performance of the profit making RRBs. Advances while had a positive impact, investments, however, turned out to be inconsequential for the performance of loss making RRBs. The results further indicated that the umbilical cord hypothesis is operational. The sponsor bank contributes positively to the financial health of the profit making RRBs. For the loss making RRBs, the sponsor bank acts as a drag on their performance. The income from investments coupled with synergy from the sponsor bank's association could mitigate the negative impact flowing from the loan portfolio for the profit making RRBs. The loss making RRBs on the other hand, could have done better had the sponsor banks played a proactive role, especially in their investment portfolio management. The loss making RRBs need focused attention of the all the stake holders, in general, and of the sponsor bank, in particular, so as to transform them into profitable ventures. In view of the intricacies involved, some critical thinking is called for at the policy level in restructuring the loss making RRBs are concerned. The sponsor bank for the loss making RRBs could be given a time frame and if within this period, significant improvement is not made, the possibility of changing the sponsor bank as suggested by the Sardesai Committee may be a worthwhile option.

Notes

1. RRBs were established "with a view to developing the rural economy by providing, for the purpose of development of agriculture, trade, commerce, industry and other productive activities in the rural areas, credit and other facilities, particularly to small and marginal farmers, agricultural labourers, artisans and small entrepreneurs, and for matters connected therewith and incidental thereto"(RRBs Act, 1976).

2. Debate in the XV Lok Sabha on Regional Rural Bank (Amendment Bill, 2004).

3. RRBs alone have organised roughly 12 lakh self-help groups, 45 per cent of the total self-help groups in the country. RRBs have also issued over 40 lakh Kisan Credit Cards to the farmers and organised over 5,000 out of 11,000 farmers' clubs under NABARD scheme.

4. Following the recommendations of the Narasimham Committee (1991), there have been gradual relaxations in their choice of clientele and area of operations.

5. Lack of a single owner with clear ownership and control, and no prospects for profits, diffused accountability and weakened oversight of the RRBs.

6. Though the growth in credit when seen in isolation gives an impression of the impressive strides made by RRBs in disbursing credit, they account for a very small proportion (around 3 per cent) of the total assets of the Indian banking sector, despite their significant branch network.

7. While C-D ratio for 50 RRBs was more than 60 per cent that for 87 banks was less than 40 per cent in March 2004.

8. Net Income has been defined as the excess of total income over total expenditure.

9. Specifically, the sponsor bank contributes thirty-five per cent of issued capital of a RRB, appoints its chairman, advises on decisions regarding investments, monitor its progress and suggest corrective measures to be taken by the RRB. More on the relationship between the sponsor bank and their RRBs is discussed in Annex 2.

10. The left out RRB is the Kshetryia Kisan Gramin Bank due to lack of information on the Sponsor Bank for the entire period of 1994-2003. This RRB is sponsored by U.P.S.C.B., a Cooperative Bank.

11. This in a way testifies the appropriateness of employing the extended dynamic model for estimation. Guided by statistical significance, two lags of the dependent variable have been used in the GMM estimation.

12. The p-values for the Sargan test are 0.18, 0.10 and 0.08 for the profit making, loss making and all RRBs, respectively.

13. The Government of India (Ministry of Finance), issued nine notifications on September 12, 2005 for amalgamation of 28 RRBs into nine new RRBs sponsored by nine banks in six States. These amalgamations have become effective from September 12, 2005.

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Annex-1
The Basis for the Umbilical Cord Hypothesis

1. Section 3 of Chapter II of RRB Act, 1976 stipulates that only *on request* of a Sponsor Bank, Central Government would consider establishment of a RRB.

2. Duties of the Sponsor Bank have been spelled out in Section 3 (3) of RRB act as:

a. Subscribing to the share capital of RRB,

b. Training the personnel of RRB,

c. Providing such managerial and financial assistance during the first five years as mutually agreed upon.

3. Under Section 4 of RRB Act, 1976, the RRB will have its Head Office at such place as decided by the Central Government in consultation with NABARD and the Sponsor Bank.

4. Section 6(2) of RRB Act stipulates that the Sponsor Bank will contribute thirty-five per cent of issued capital of its RRB.

5. Under Section 9(d) of RRB Act, two directors, who are officers of the Sponsor Bank, shall be nominated on the Board of RRB.

6. Under Section 11 of Act, the Sponsor Bank shall appoint the Chairman of a RRB and specify the period of appointment. The appointment, however, would not exceed a period of five years.

7. The Sponsor Bank has the right to remove the Chairman at any time (Section 11(4)).

8. The Sponsor Bank shall depute officers or other employees to RRB as may be necessary or desirable (Section 17 of RRB Act, 1976).

9. Amalgamation of RRBs under Section 23-A can be done by Central Government in consultation with NABARD, State Government and the Sponsor Bank.

10. Section 24-A of RRB Act stipulates that the Sponsor Bank are required to monitor the progress of RRBs and carry out inspection, internal audit and scrutiny and suggest corrective measures to be taken by the RRB.

11. Interest rate on SLR deposits of all maturity held by RRB with the sponsor bank would be at 0.5 per cent over the maximum term deposit rate of the sponsor bank.

12. Governments of India and Reserve Bank of India have further issued the directives that, 'for overall management of the RRB it would be the responsibility of the Sponsor Bank to guide the RRB in various matters on human resource management, computerization, business development, branch expansion, etc.'

13. Many RRBs have an agency arrangement with their Sponsor Bank for issue of Demand Drafts.

14. Sponsor Bank also directly helps RRB in matters of daily cash remittances, over draft facility, decisions on investments, etc.

The relationship between the sponsor bank and its RRBs as evolved over the years can further be assessed in terms of summary and descriptive statistics as laid out below:

Summary Characteristics of the Determinants of RRB Profitability

(Per cent)

Year	Net Income to Assets (NITA)		Loans to Assets (LOTA)		Investment To Assets (INTA)		Liquidity (LIQ)		Operating Expenses to Total Expenses (OETOTE)		Net Income to Assets of Sponsor Bank (NITASPON)		Inflation
	Profit	Loss	Profit	Loss	Profit	Loss	Profit	Loss	Profit	Loss	Profit	Loss	Inf
1994	-4.22	-6.98	61	36.5	0.3	0	0.89	1.22	49.3	43.8	0.36	2.71	8.4
1995	-2.89	-3.97	59.9	34.2	0.2	0	1.14	1.49	46.6	44.1	0.48	2.49	12.5
1996	-0.07	-5.46	63.8	39.3	1.9	4.1	0.89	1.39	36.1	39.8	-1.26	2.55	8.1
1997	1.84	-5.95	57.7	51.1	2.1	5.2	1.19	1.49	30.7	34.4	-0.81	2.06	4.6
1998	3.4	-3.85	58	49.9	4.3	7.1	0.95	1.32	35	31.2	-1.08	1.76	4.4
1999	4.33	-2.23	51.5	37.9	8.9	10.6	1.07	1.34	34.4	30.6	-0.76	1.81	5.9
2000	3.26	-2.04	51.8	35.2	10.8	7	1.54	1.27	32.8	28.2	0.1	1.79	3.3
2001	2.89	-2.45	46.2	33.1	12.6	5.3	1.77	1.17	30	27.4	0.23	1.64	7.2
2002	2.95	-0.22	46.4	34.1	14	4.9	1.22	1.14	28.1	29.6	1.01	1.85	3.6
2003	2.78	0.04	46.1	38.8	25.7	15.4	0.65	1.11	30.1	31.2	1.67	2.25	3.5

Source: Statistical Tables Relating to India (Various Issues).

Descriptive Statistics of Variables Employed

(Per cent)

Bank Category	Measure	NITA	INTA	LOTA	LIQ	OETOTE	NITASPON	Inflation
Profit	Mean	0.2	15.9	33.9	1.3	34.0	1.4	6.1
	Median	0.9	13.4	32.2	1.1	32.9	1.5	5.9
	SD	2.5	13.5	13.6	0.7	8.9	0.9	2.8
	Skewness	-1.3	1.0	0.5	1.3	0.6	-0.8	1.0
	Kurtosis	5.3	4.0	2.5	5.1	3.5	3.9	3.1
	CV	1227.2	85.1	40.0	56.5	26.0	62.1	45.3
Loss	Mean	-2.6	31.5	9.3	1.3	34.0	1.4	6.1
	Median	-2.1	30.9	5.5	1.3	31.2	1.5	5.9
	SD.	3.2	12.3	11.3	0.1	6.0	0.8	2.8
	Skewness	-0.7	0.5	1.6	0.2	0.7	-0.9	1.0
	Kurtosis	3.2	2.8	5.3	1.8	1.9	4.2	3.1

What Drives Forward Premia in Indian Forex Market?

Anil Kumar Sharma and Anujit Mitra[*]

This paper explores the behaviour of the forward premia for US$ *vis-à-vis* INR during the five-year period of September 2000 to September 2005. Indian forex market experienced a peculiar phenomenon in the years 2003 and 2004 where the forward premia on US$ spot (cash) *vis-à-vis* Indian rupee became negative. This phenomenon was somewhat uncommon to Indian forex market wherein Indian rupee was always at discount to US$ in the past. The paper tests hypothesis of uncovered interest rate parity in the context of Indian market. The paper also tries to find out the factors that drive the forward premia in the Indian forex market during this period. It is observed that forex premia of US$ *vis-à-vis* Indian rupee is driven to a large extent by the interest rate differential in the inter bank market of the two economies combined with FII flows, current account balance as well as the changes in the exchange rate of US$ *vis-à-vis* Indian rupees.

JEL Classification : G13, G15.

Keywords   : Forward Premia, Uncovered Interest Rate Parity

Introduction

Indian forex market experienced a peculiar phenomenon in the years 2003 and 2004 where the forward premia on US dollar spot (cash) *vis-à-vis* Indian rupee became negative. This phenomenon was somewhat uncommon to the Indian forex market wherein Indian rupee has *always* been at discount to the US dollar in the past, in conformity with the theory

which says that currency of the country where inflation rate/interest rate is more than that of the other country, its currency should be at discount *vis-à-vis* other country's currency. However, years 2003 and 2004 experienced the Indian rupee gaining strength against US dollar despite of India having higher inflation rate / interest rate *vis-à-vis* US economy. This generates a question as to what drives forward premia in Indian forex market. This also raises question on how deep is the Indian forex market, especially the forward market.

The Indian rupee is still not fully convertible on capital account except for certain transactions carried out by foreign institutional investors, within certain limits, and liberalisation on Investment abroad by Indian Individuals/ companies wherein they can freely convert their foreign currency/rupee assets into Indian/foreign currency assets by way of investment in Indian/ foreign capital market. Recently, Indian companies have also been permitted to invest, up to 25 per cent of its net worth, in shares of foreign companies, having a minimum of 10 per cent of the share capital of a company listed in a recognized stock exchange in India. Mutual Funds are permitted to invest in ADRs/GDRs of the Indian companies, rated debt instruments and also invest in equity of overseas companies with an overall cap of USD 1 billion. Furthermore, under the Liberalised Remittance Scheme of USD 25,000, resident individuals are free to acquire and hold immovable property, shares or any other asset outside India without prior approval of RBI, enabling them to convert their rupee denominated assets into foreign currency denominated assets. These are steps closer to full convertibility of rupee. As all these measures do have an impact on exchange rate of rupee as well as forward premia of US dollar *vis-à-vis* Indian rupee, developments on these fronts are worth noticing for players active in the Indian forex market. Further, banks can hold both rupee as well as foreign currency deposits and can transmit their influence on interest rates as well as on forward premia.

However, with convertibility of Indian rupee on current account, India's increasing share in world exports (i.e. 0.84 per cent in 2004 as against only 0.52 per cent in 1990), liberalisation on investment abroad by Indian individuals and Indian companies, as well as almost full convertibility of Indian rupee as regard transactions carried out by non-resident Indians, exchange rate of Indian rupee is largely market

determined. Still the share of Indian rupee in the forex market was only 0.15 per cent of global turnover in the year 2004. This was even less in the earlier years, as indicated by the Triennial Central Bank Survey of Foreign Exchange and Derivatives Market Activity by Bank for International Settlements (refer Table 1). With the US dollar still dominating the invoicing pattern of India's exports, this paper concentrates on forward premia on US dollar *vis-à-vis* Indian rupee only. As the market decides forward premia in advance after taking into account all the information available in the market at that time it also raises question on whether Indian forex market satisfies the hypothesis of uncovered interest rate parity or not.

During the last twenty-five years, the majority of studies have rejected the hypothesis of uncovered interest rate parity, which states that the (nominal) expected return to speculation in the forward foreign exchange market conditioned on available information is zero. These empirical studies have regressed *ex post* rates of depreciation on a constant and the forward premium, and have rejected the null hypothesis that the slope coefficient is one. In particular, a robust result in these studies is that this slope is negative, and significantly different from one. This phenomenon is known as the "forward premium puzzle" and implies that, contrary to the theory, high domestic interest rates relative to those in the foreign country, predict a future appreciation of the home currency. Different explanations have been given to this issue. First, rejection of the null hypothesis can be related to the existence of a rational risk premium in the foreign exchange market. Second, other authors have claimed the existence of a "peso problem", or even the existence of irrational market participants.

To understand the behaviour of forward premia in respect of the Indian forex market, an exploratory analysis is carried out using data available in *Database on Indian Economy (culled out from Central Database Management System (CDBMS)* of Reserve Bank of India's Data Warehouse) and other data series available in Telerate. The paper tests the hypothesis of uncovered interest rate parity in the context of Indian market in Section I. Section II discusses the various theoretical explanations that are supposed to determine the forex premia in any market. The paper also tries to find out the factors that drive the forward premia in the Indian forex market in Section III. Section IV concludes the paper.

Section I

This paper has tried to test the UIP hypothesis, in the Indian context. Empirical work on the relation between the forward premia in the foreign exchange market to the expected change in the spot exchange rate has been an area of active research for the last twenty years. In particular, an important building block of this relationship has been the UIP, which states that the (nominal) expected return to speculation in the forward foreign exchange market conditioned on available information is zero:

$$E_t [s_{t+\delta t} - s_t] = f_t - s_t \qquad (1)$$

where s_t is the logarithm of the spot exchange rate S_t, f_t is the logarithm of the forward rate F_t contracted at t and matures at t $+\delta$t. As a consequence, the (log) forward exchange rate is an unbiased predictor of the δt -periods ahead (log) spot exchange rate. For this reason, UIP is also known as "Unbiasedness Hypothesis".

Although one main criticism made against UIP is that it pays no attention to issues of risk aversion and inter-temporal allocation of wealth, Hansen and Hodrick (1983) have given the following formulation, which is consistent with a model of rational maximising behaviour. The conditions needed are that the spot and forward exchange rates and the stochastic discount factor have a lognormal distribution with constant conditional second moments. This proposition is known as "Modified Unbiasedness Hypothesis" (Hodrick (1987), Engel (1996) and Wang and Jones (2002).

Assuming rational expectations (RE) in foreign exchange markets:

$$s_{t+\delta t} - s_t = E_t [s_{t+\delta t} - s_t] + \mu_{t+\delta t, \delta t} \qquad (2)$$

where $\mu_{t+\delta t, \delta t}$ is a rational expectation error with zero mean and uncorrelated with any variable in the time t.

Combining equations (1) and (2)

$$s_{t+\delta t} - s_t = f_t - s_t + \mu_{t+\delta t, \delta t}$$

which has motivated the following OLS regression, as in Geweke and Feige (1979), as the usual starting point to test UIP:

$$s_{t+\delta t} - s_t = \beta_0 + \beta_1 (f_t - s_t) + \mu_{t+\delta t, \delta t} \qquad (3)$$

as a test of $\beta_0 = 0$ and $\beta_1 = 1$.

However, the RE assumption implies that errors are not auto-correlated as long as the sampling interval is equal or larger than δ_t. For

this reason, different authors, as Frenkel (1977) among others, have sampled data to produce a data set with non-overlapping residuals with the corresponding waste of degrees of freedom.

On the other hand, Hansen and Hodrick (1980) showed how to use overlapping data in order to increase the sample size, which will be reflected in corresponding gains in the asymptotic power of tests. Using Hansen's Generalised Method of Moments, they obtain asymptotic standard errors that take into account the serial correlation induced into the regression error when the prediction horizon is higher than the sampling interval of the data. In the same way, standard errors robust to conditional heteroscedasticity can also be computed.

Nonetheless, some points with respect to the single equation approach have to be emphasised. First, the asymptotic covariance matrix is very sensitive to the selection of the bandwidth and the kernel chosen in its estimation. Secondly, the construction of the covariance matrix is infeasible if we want to use high-frequency data in order to test UIP, given that the degree of overlapping tends to infinity.

In order to test the UIP in the case of India, this paper has used monthly interval data on forward premia and exchange rate to avoid above-mentioned problems. Accordingly, let $s_{t+\delta t}$ =log (spot exchange rate of US\$ *vis-à-vis* the Indian rupee at time t+δt), δt = 1 month f_t = log (one month forward exchange rate of US\$ *vis-à-vis* Indian rupee).

To test UIP for Indian forex market:

$$s_{t+\delta t} - s_t = \beta_0 + \beta_1 (f_t - s_t) + \mu_{t+\delta t, \delta t} \qquad \text{using (3)}$$

If UIP holds good, i.e. β_0= 0 and β_1 = 1, we estimate error terms and work out its variance-covariance matrix.

From Chart 1, it is clear that spot rate of Indian rupee *vis-à-vis* US dollar started appreciating in as early as June 2002, however, one month forward premia became negative for the first time only in October 2003. To smoothen the volatile movements of Indian rupee, RBI absorbed almost US \$ 10 billion from the market in November, December 2003 and January 2004 (refer Table 2). While carrying out regression as suggested in equation (3) above, it can be observed from the results presented below that UIP hypothesis do not hold good for Indian market as the slope coefficient is significantly different from one and is negative. The negative slope coefficient

Chart 1: One Month Forward Premia vs Difference of Spot rates During September 2000 to December 2005
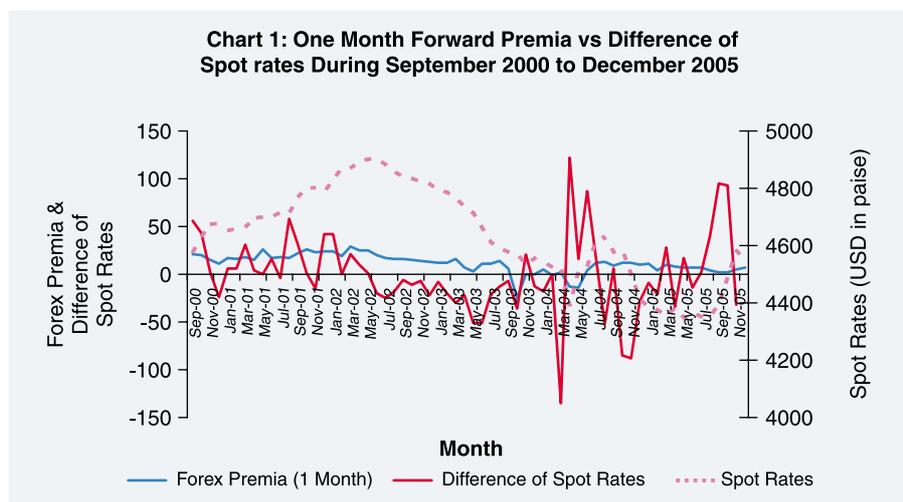
means market is expecting a steady appreciation of Indian rupee *vis-à-vis* US dollar irrespective of the positive forward premia and in spite of higher domestic interest rate in Indian market as compared with US market. Further, the relationship with spot exchange rate and forward premia in Indian market is found to be very weak. This means future spot rate of US dollar *vis-à-vis* Indian rupee is driven by some other factors in addition to forward premia. Based on equations (1), (2) and (3) above with μ=0 (i.e. assuming rational expectation) for the period September 2000 to December 2005, the regression equation in Indian context takes the following form

$$s_{t+\delta t} - s_t \;=\; 0.00005 - 0.0583 * (f_t - s_t)$$
$$\phantom{s_{t+\delta t} - s_t \;=\;} (0.028) \; (-0.102)$$

$R^2 = 0.0002$; t-statistic are give in parenthesis.

Question then arises is what does forward premia in Indian forex market represent and what factors are accounted for by the market players while determining the forward premia itself. The paper endeavoured to analyse these factors in Section II in general and in section III in respect of Indian forex market in particular.

Section II

Forward Market for foreign exchange is extremely important particularly for importers and exporters. This is so because international trade results in exposure in foreign currencies. Forward Market helps the traders in hedging the risks of this inevitable exposure in foreign currency. On the other side there are players in foreign exchange market who offer the forward rates for the foreign currency. A well-developed market helps in getting the better rates for the traders promoting international trade and consequently the general economic development.

Offering forward rates for any commodity always involve trying to forecast the future price of the commodity keeping in view the opportunity cost. It may require knowledge about how the price of the underlying product is determined in the market. One also needs to be aware about the factors influencing the price of the product. Countries are free to decide the type of exchange rate arrangements, which could be described to vary in different degrees from fixed to flexible exchange rate. It is practically impossible to strictly follow either a completely fixed or flexible exchange rate. International Monetary Fund publishes an annual report listing the different regimes followed by its member countries. There are many countries that are following 'pegged exchange rate' mechanism whereby their domestic currencies are fully pegged with some other major foreign currency like USD. Forecasting the exchange rate and thereby working out the forward rates for currencies following different regimes would be different.

From the perspective of the economists there are three classes of explanatory variables, *viz.*, price level, interest rates and the balance of payments to explain the behaviour of the exchange rate. The Purchasing Price Parity or PPP hypothesis tries to explain how the price levels affect the exchange rates. It says the relative exchange rate $S = kP/P^*$, where P is the price level in the domestic economy, P^* is that in the other country and k is a constant parameter. Taking differences after taking logarithms gives us $\Delta s = \Delta p - \Delta p^*$ giving us the idea how the forward rates could be influenced by the change in the level of prices in the two economies. However, it is noted that over a short or medium term, PPP hypothesis is conclusively rejected.

Though, it cannot be said that the price levels have no impact on exchange rate movement or the forward rates.

In the earlier section the paper has already talked about the influence of interest rates on the exchange rates. Both the major Interest Rate Parity hypotheses, *i.e*., Covered Interest Rate Parity (CIP) and Uncovered Interest Rate Parity (UIP) have drawn lot of attention of the researchers, but UIP is more interesting in the context of this paper because it involves the variable, expected future spot rate, unlike CIP.

That the trade imbalances would have a bearing on the behaviour of exchange rates has been recognised very early. However, the earliest models to relate the current account to the exchange rate followed the Marshallian tradition of treating the exchange rate as a relative price to clear the market with the "elasticities approach". The limitations of this approach led to the emergence of "absorption approach" in the 1950s. Among the series of subsequent models, the Mundell– Fleming model is most referred. The Mundell-Fleming Model adds a balance of payments equilibrium condition to the IS-LM Model. This extends the closed economy IS-LM framework to examine the interplay between monetary policy and exchange rate policy. In particular, the model emphasises the differences between fixed and floating exchange rates.

It is very apparent that the forward rate is supposed to be arrived at from the expectations on the future exchange rates, which is expected to get influenced by the sets of variables mentioned above as well as all of the "news". This news could indicate change in the economic conditions or even political stability. The price of the crude oil in the international market is found to impact the forex market. The forward premia is particularly sensitive to any news having financial bearing and reacts or over-reacts instantly. Coming back to the Indian context where the exchange rate regime currently followed is *largely market determined*, the intervention by the regulator may also play important role at least over short to medium term. Over the years, internationally, the central banks are found to intervene through the Forward Market in conjunction with the spot market for making larger impact. In the next section the paper looks at the behaviour of forward premia on US dollar *vis-à-vis* Indian rupee.

Section III

As observed in Section I, UIP hypothesis does not hold good for the Indian market, as the slope coefficient is significantly different from one. Furthermore, there are other factors, which also influence the forward market in India. This section has tried to identify the factors that affect forward premia in Indian forex market, *i.e*., "What drives forward premia in Indian forex market?"

- Is it inflation-differential?

- Is it interest-rate differential?

- Is it FII flows?

- Is it the current account balance in BoP?

To answer this question, an attempt is made to carry -out some exploratory exercise based on Forward Premia - annualized (INR *vis-à-vis* US\$), Inflation differential between Indian and US economy (i.e. WPI for India[*] – CPI for US economy) (Chart 2), Interest Rate differential between 91 Day Treasury Bills in India and US (Chart 3); Interest Rate differential between MIBOR - one month and LIBOR-one month (Chart 4), FIIs inflows and Current Account Balance (Chart 5).

Chart 2 indicates that forward premia has a *weak relationship* with Inflation-differential in US and Indian Economy.

Chart 3 indicates the relationship between 3 months forward premia (annualised) and interest rate differential in Government of India and the US T Bills is also *not strong,* though there is good co-movement some of the time. Hence the variable is considered for further analysis.

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[*] In the case of India, a representative CPI is not available at present.

Chart 2: Annualised Premia vs Inflation Differential
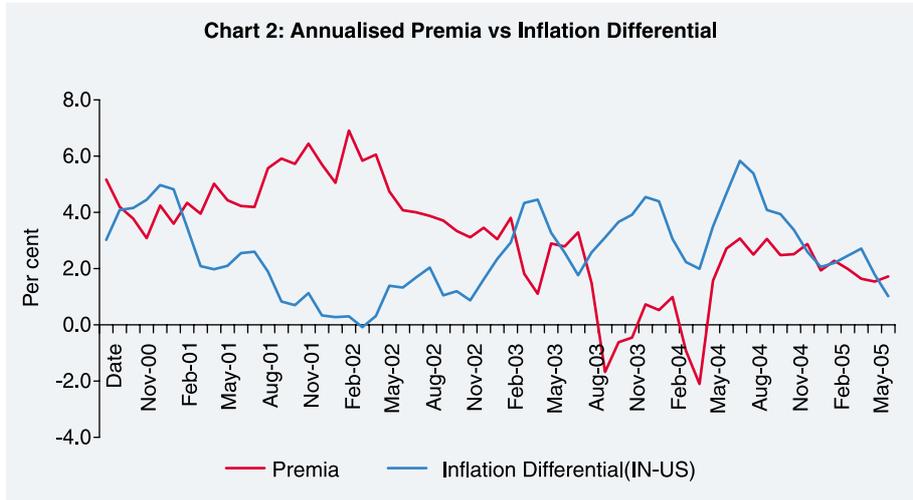
Chart 4 indicates that relationship between forward premia - 1 month (annualised) and interest rate differential between one month MIBOR and 1 month LIBOR, is stronger than the above two.

However, there are other factors (supply side as well as demand side), *viz.*, fresh flows by Foreign Institutional Investors (FIIs) and current account balances play important roles in determining the forward premia as can be seen from the respective regression equation and its analysis given below. In Chart 5 below the premia is shown with the

Chart 3: Monthly Annualised Forex Premia vs 91 Day T.Bill Rate Differential

Chart 4: Forward Premia vs Interest Rate Differential
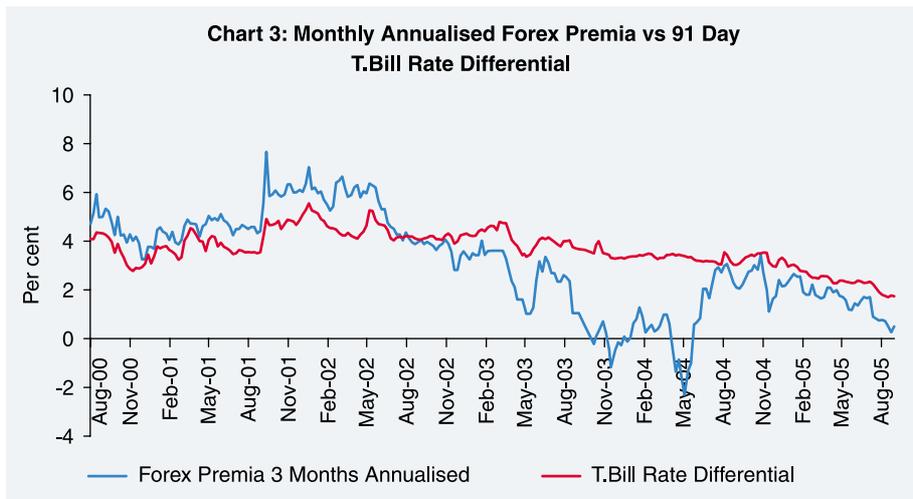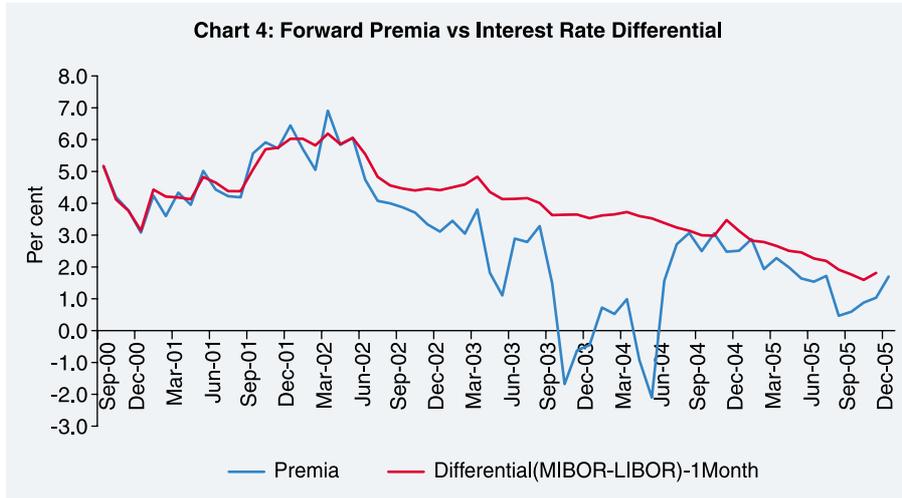
current account balance (USD 100 million) and FII net investment (in USD 100 million).

Performing the regression of one month Forward Premia for USD *vis-à-vis* INR (Annualised) *vs* Inflation Differential, Interest Rate Differential (one month MIBOR – one month LIBOR), FII Portfolio Investment (net flows) and India's current account balance (CAB) over the entire period September 2000 to September 2005, it is observed that the coefficient for Inflation differential is not statistically significant, thereby prompting us to drop from final analysis. Since, the information

Chart 5: Forward Premia vs CAB and FII inflow
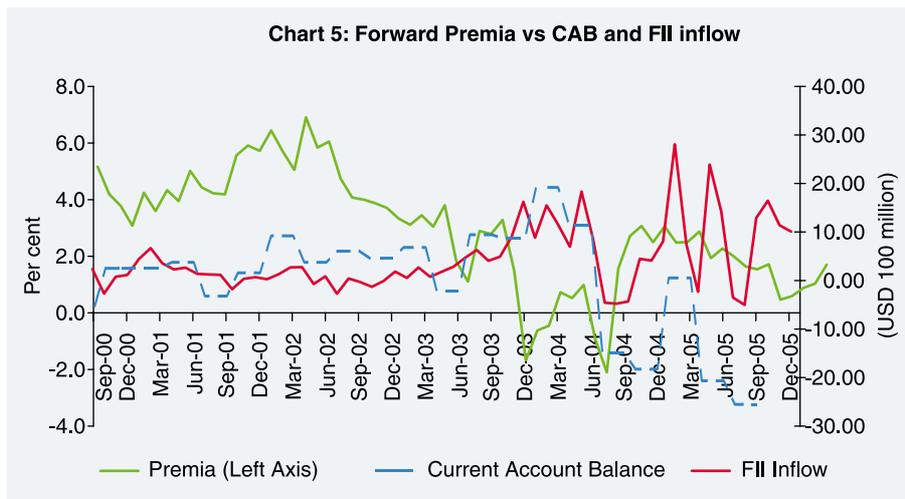
on current account balances is available to the market with a lag, introduction of lagged value of current account balance (1 quarter lag) showed improvement. Furthermore, balance of payments (BoP) current account quarterly balance is distributed equally for intervening months for regression analysis, due to non-availability of monthly CAB data. In this connection, instead of CAB, trade balance data, which is available on monthly frequency was also tried, but did not show good result.

Equation:

Forward Premia (Y) = f (Interest rate differential (IRD), Current Account Balance –lagged (CAB), FIIs Net flows (FIINF))

(Period : September 2000 to September 2005)

	Coefficients	Standard Error	t Stat	P-value
Intercept	-2.3166	0.5822	-3.9788	0.0002*
IRD	1.4393	0.1316	10.9339	0.0000*
CAB	-0.1039	0.0145	-7.1897	0.0000*
FIINF	-0.0917	0.0212	-4.3220	0.0001*

* : Siginificant at 5 per cent.

Regression Statistics	
R Square	0.7695
Adjusted R Square	0.7574
Standard Error	0.9870
Durbin-Watson D	1.084

Furthermore to check the influence of RBI intervention on forward premia, RBI's Intervention (Net Purchase of USD) has also been tried as regressor and it was found that the variable is not statistically significant indicating that RBI intervention in forex market does not make significant impact in determination of forward premia and it only helps in smoothing the volatility in forex premia. Similarly

Chart 6: Actual vs Predicted Forward Premia (Sep 2000 to Sep 2005)
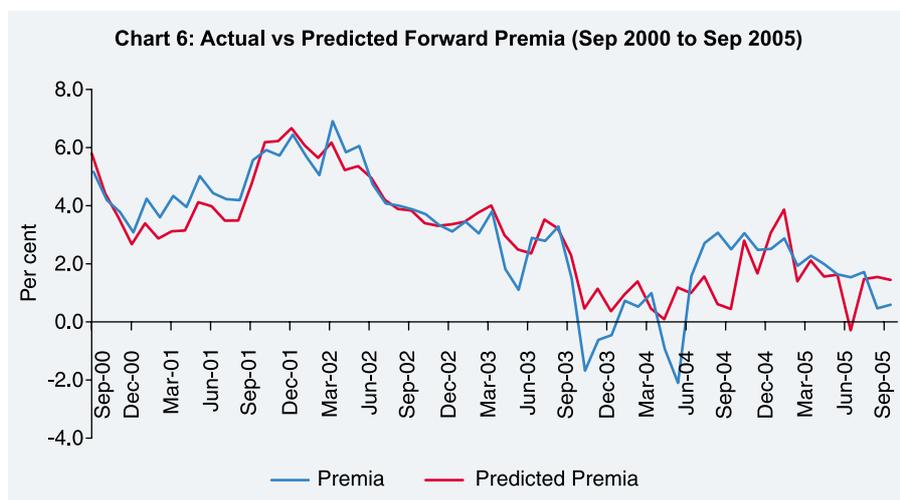
inclusion of Trade Balance as regressor in place of Current Account Balance has not resulted in improvements.

Though the regression above shows a reasonable fit with expected signs, in the actual and estimated premia plot in Chart 6 some change in pattern is observed over the period. This motivated breaking the period of observation into two parts, *i.e.*, September 2000 to March 2003 and April 2003 to September 2005 and explores the behaviour separately.

For the September 2000 to March 2003 period, the regression gives the following result:

	Coefficients	Standard Error	t Stat	P-value
Intercept	-1.3441	0.5754	-2.3357	0.0272
IRD	1.2402	0.1164	10.6567	0.0000*
CAB	-0.0610	0.0198	-3.0746	0.0048*
FIINF	-0.0076	0.0452	-0.1678	0.8680*

* : Siginificant at 5 per cent

Regression Statistics	
R Square	0.8135
Adjusted R Square	0.7928
Standard Error	0.4800
Durbin - Watson D	0.980

Chart 7: Actual vs Predicted Forward Premia (September 2000 to March 2003)
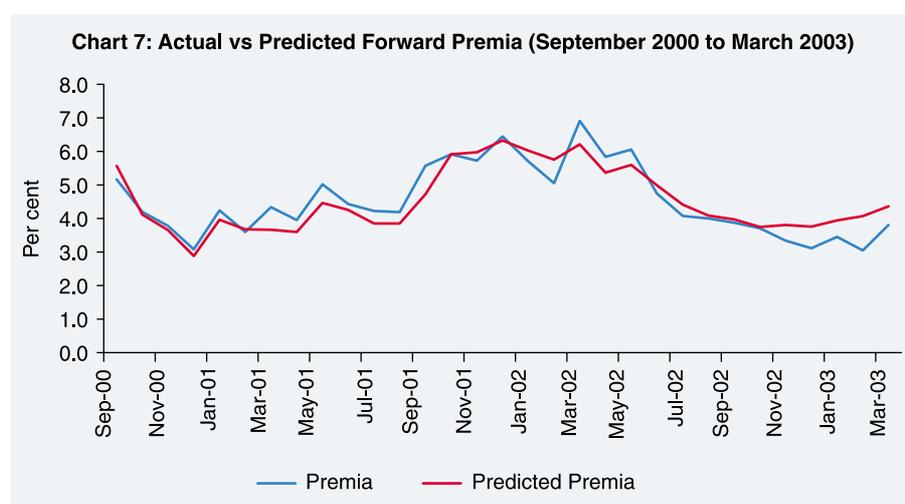
For the period April 2003 to September 2005 period, the regression gives the following result:

	Coefficients	Standard Error	t Stat	P-value
Intercept	-0.5304	1.3627	-0.3892	0.7003
IRD	0.7686	0.4251	1.8081	0.0822*
CAB	-0.0842	0.0240	-3.5074	0.0017*
FIINF	-0.0682	0.0309	-2.2041	0.0366*

* : Siginificant at 5 per cent

Regression Statistics	
R Square	0.3324
Adjusted R Square	0.2554
Standard Error	1.2429
Durbin - Watson D	1.121

Chart 8: Actual vs Predicted Forward Premia (April 2003 to Sep 2005)
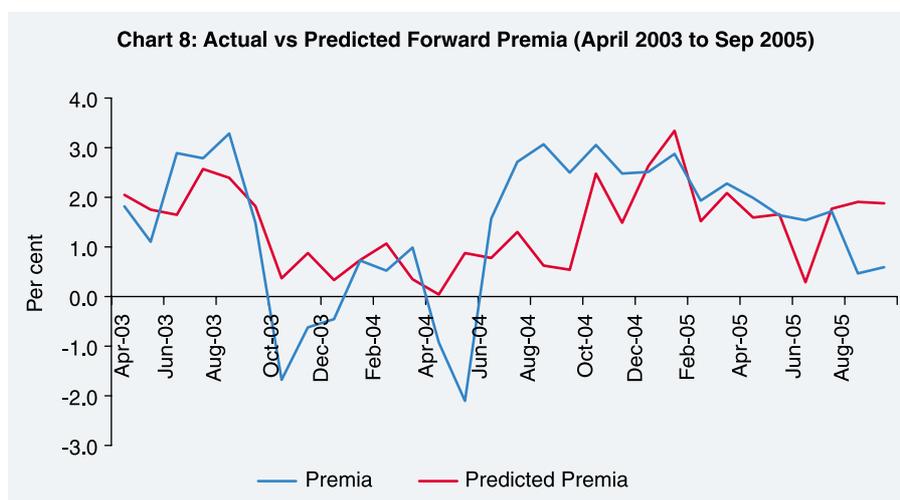
As observed there is a marked difference in the regression results in the two periods. Also, the Durbin Watson D statistics, for the regression run for the full study period, indicates the possible presence of first order autocorrelation. One way to deal with the autocorrelation is to include the lagged value of the dependent variable as a regressor. However, it is felt that the past forward premia might have less influence on the current forward premia compared to the observed change in the exchange rate in the immediately preceding period. It was indeed found out that introducing the lagged forward premia was not improving the regression. Therefore, another variable AOCER : Annualised observed change in exchange rate of USD vis-à-vis INR was introduced. This variable captures the immediate trend in the exchange rate. Further, this also goes well with self-fulfilling nature as observed during the times of volatility in any financial market. The regression results based on the four variables for the period of October 2000 to September 2005 are as follows:

	Coefficients	Standard Error	t Stat	P-value
Intercept	-2.0894	0.5210	-4.0107	0.0002*
IRD	1.3955	0.1186	11.7658	0.0000*
CAB	-0.1109	0.0130	-8.5095	0.0000*
FIINF	-0.0889	0.0187	-4.7451	0.0000*
AOCER	0.0477	0.0113	4.2146	0.0001*

* : Siginificant at 5 per cent.

Regression Statistics	
R Square	0.8236
Adjusted R Square	0.8108
Standard Error	0.8702
Durbin-Watson D	1.144

Chart 9: Actual vs Predicted Forward Premia (Oct 2000 to Sep 2005)
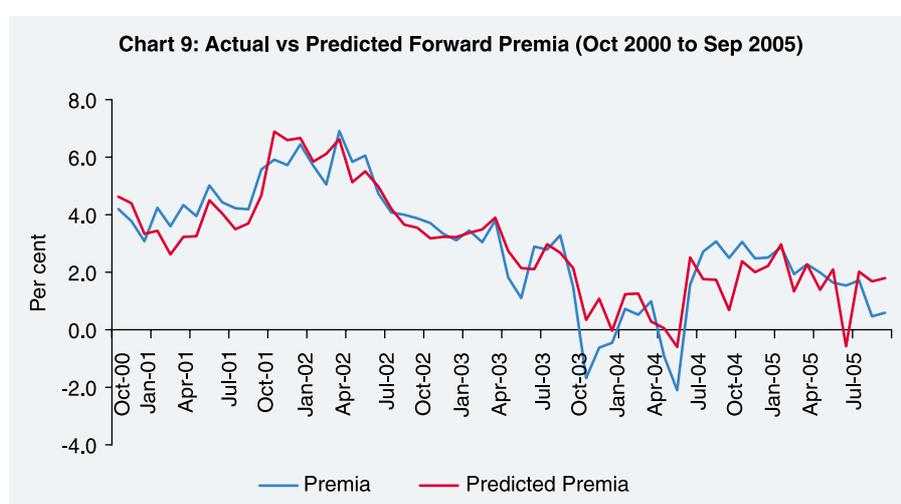
It is observed that the incorporation of the exchange rate variable, i.e, AOCER has improved the fitness in terms of the Adjusted R Square (0.75 to 0.81) and other parameters. More importantly, it is observed that the fit is good uniformly and in particular much better in the second half of the study period, which experienced volatile movements in forward premia. It is also observed that the first order autocorrelation has come down though its presence cannot still be ruled out. This leaves further scope for exploratory analysis in this area especially in respect of Indian forex market, which is still emerging.

Section IV

Conclusion

In Section I, we have seen that the UIP hypothesis does not hold good for Indian market. It has been explored that individually no single factor is able to explain the behaviour of the forex premia in Indian

forex market. From the analysis carried out above, we could see that in specific time window one of the factors may have dominated in determining the movement of the forex premia. The paper has also explored the movement of the forex premia by dividing the study period in two parts and observed that in the first part (September 2000 to March 2003) of the study period the coefficient of the interest rate differential was much higher than the second part (April 2003 to September 2005). The role of foreign institutional investment in driving the forward premia is observed to be more dominant in second part than the first. This vindicates the perception that the premia is more and more being influenced by demand and supply factors rather than the interest rate differential in recent times. Though these two variables along with the interest rate differentials were able to explain the behavior of the premia in the first part of the study period, the relationships have weakened considerably in recent times.

In a longer time horizon, differential between interest rates (i.e. LIBOR-MIBOR differential) together with foreign institutional investment in Indian market, current account balance and the change in the observed Exchange rate are largely able to explain the behaviour of the forex premia in Indian forex market. The findings suggest that forex premia of US$ *vis-à-vis* Indian rupee is driven to a large extent by the interest rate differential in the inter bank market of the two economies coupled with capital receipts and excess of current accounts payments on accounts of imports in relation to exports as well as the change in the exchange rate of USD *vis-à-vis* Indian rupees.

Table 1 : Currency distribution of reported foreign exchange market turnover[1]

Percentage shares of average daily turnover in April

Currency	1989	1992	1995	1998	2001	2004
US dollar	90	82.0	83.3	87.3	90.3	88.7
Euro	.	.	.	.	37.6	37.2
Deutsche mark[2]	27	39.6	36.1	30.1	.	.
French franc...	2	3.8	7.9	5.1	.	.
ECU and other EMS currencies.............	4	11.8	15.7	17.3	.	.
Japanese yen	27	23.4	24.1	20.2	22.7	20.3
Pound sterling..	15	13.6	9.4	11.0	13.2	16.9
Swiss franc	10	8.4	7.3	7.1	6.1	6.1
Australian dollar	2	2.5	2.7	3.1	4.2	5.5
Canadian dollar......................................	1	3.3	3.4	3.6	4.5	4.2
Swedish krona[3]	...	1.3	0.6	0.4	2.6	2.3
Hong Kong dollar[3]..................................	...	1.1	0.9	1.3	2.3	1.9
Norwegian krone[3]	...	0.3	0.2	0.4	1.5	1.4
Korean won[3]	...	...	...	0.2	0.8	1.2
Mexican peso[3]	...	...	...	0.6	0.9	1.1
New Zealand dollar[3]...............................	...	0.2	0.2	0.3	0.6	1.0
Singapore dollar[3]	...	0.3	0.3	1.2	1.1	1.0
Danish krone[3]	...	0.5	0.6	0.4	1.2	0.9
South African rand[3]................................	...	0.3	0.2	0.5	1.0	0.8
Polish zloty[3]	...	...	...	0.1	0.5	0.4
Taiwan dollar[3]	...	...	...	0.1	0.3	0.4
Indian rupee[3]	**...**	**...**	**...**	**0.1**	**0.2**	**0.3**
Brazilian real[3]..	...	...	...	0.4	0.4	0.2
Czech koruna[3]	...	...	...	0.3	0.2	0.2
Thai baht[3]	...	...	...	0.2	0.2	0.2
Hungarian forint[3]	...	...	...	0.0	0.0	0.2
Russian rouble[3]	...	...	...	0.3	0.4	0.7
Chilean peso[3]	...	...	...	0.1	0.2	0.1
Malaysian ringgit[3]..................................	...	...	...	0.0	0.1	0.1
Other currencies	22	7.7	7.1	8.2	6.5	6.1
All currencies	**200**	**200.0**	**200.0**	**200.0**	**200.0**	**200.0**

1   Because two currencies are involved in each transaction, the sum of the percentage shares of individual currencies totals 200% instead of 100%. The figures relate to reported "net-net" turnover, *i.e.,* they are adjusted for both local and cross-border double-counting, except for 1989 data, which are available only on a "gross-gross" basis.
2   Data for April 1989 exclude domestic trading involving the Deutsche mark in Germany.
3   For 1992-98, the data cover local home currency trading only.

Source : Triennial Central Bank Survey 2004, BIS

Table 2 : Reserve Bank's Sale and Purchase of USD (in Million)

Month	Sales in US Dollar	Purchase in US Dollar	Net in US Dollar
2000:09 (SEP)	1,015.1	728.0	-287.1
2000:10 (OCT)	1,004.5	510.5	-494.0
2000:11 (NOV)	4,392.5	8,078.6	3,686.1
2000:12 (DEC)	2,204.5	2,049.4	-155.1
2001:01 (JAN)	1,334.7	2,166.3	831.6
2001:02 (FEB)	456.5	1,080.4	623.9
2001:03 (MAR)	1,138.7	1,745.0	606.3
2001:04 (APR)	1,626.8	1,608.5	-18.3
2001:05 (MAY)	613.5	1,082.3	468.8
2001:06 (JUN)	1,169.2	1,205.5	36.3
2001:07 (JUL)	1,130.7	859.0	-271.7
2001:08 (AUG)	1,052.0	1,733.8	681.8
2001:09 (SEP)	2,326.1	1,432.0	-894.1
2001:10 (OCT)	1,043.4	1,280.8	237.3
2001:11 (NOV)	1,435.0	2,977.1	1,542.1
2001:12 (DEC)	1,341.2	2,381.6	1,040.4
2002:01 (JAN)	1,390.5	2,781.7	1,391.2
2002:02 (FEB)	1,202.5	1,769.3	566.8
2002:03 (MAR)	1,428.0	3,710.6	2,282.5
2002:04 (APR)	1,605.5	2,082.0	476.5
2002:05 (MAY)	1,146.5	1,232.5	86.0
2002:06 (JUN)	571.3	812.0	240.8
2002:07 (JUL)	685.0	2,514.1	1,829.1
2002:08 (AUG)	1,459.0	2,637.8	1,178.8
2002:09 (SEP)	1,956.4	2,921.5	965.1
2002:10 (OCT)	1,422.5	2,593.5	1,171.0
2002:11 (NOV)	972.0	3,086.5	2,114.5
2002:12 (DEC)	1,551.5	3,230.5	1,679.0
2003:01 (JAN)	1,046.0	2,830.5	1,784.5
2003:02 (FEB)	1,171.0	3,505.5	2,334.5
2003:03 (MAR)	1,339.1	3,188.5	1,849.4
2003:04 (APR)	1,511.0	2,942.5	1,431.5
2003:05 (MAY)	1,636.0	3,978.0	2,342.0
2003:06 (JUN)	982.1	1,878.5	896.4
2003:07 (JUL)	2,950.0	6,095.5	3,145.5
2003:08 (AUG)	1,360.0	3,711.5	2,351.5
2003:09 (SEP)	4,229.4	6,574.0	2,344.6
2003:10 (OCT)	5,227.7	6,821.0	1,593.3
2003:11 (NOV)	580.0	4,029.0	3,449.0
2003:12 (DEC)	484.4	3,372.5	2,888.1
2004:01 (JAN)	1,028.0	4,321.5	3,293.5
2004:02 (FEB)	2,163.0	5,519.5	3,356.5
2004:03 (MAR)	2,789.0	6,170.5	3,381.5
2004:04 (APR)	3,332.9	10,758.5	7,426.5
2004:05 (MAY)	3,439.5	3,219.5	-220.0
2004:06 (JUN)	1,383.0	969.5	-413.5
2004:07 (JUL)	1,179.5		-1,179.5
2004:08 (AUG)	880.5	5.0	-875.5
2004:09 (SEP)	124.0	143.0	19.0
2004:10 (OCT)	104.0	5.0	-99.0
2004:11 (NOV)		3,791.5	3,791.5
2004:12 (DEC)	108.2	1,501.5	1,393.3
2005:01 (JAN)			0
2005:02 (FEB)		4,974.0	4,974.0
2005:03 (MAR)		6,030.0	6,030.0
2005:04 (APR)			0
2005:05 (MAY)			0
2005:06 (JUN)	103.6		-103.6
2005:07 (JUL)		2,473.0	2,473.0
2005:08 (AUG)	451.0	2,003.0	1,552.0
2005:09 (SEP)			0
2005:10 (OCT)			0

Source : Reserve Bank of India Bulletin.

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State Finances and Effectiveness of Policy Measures: An Analysis of Indian States

Rajmal*

This paper provides a phase-wise analytical review of the fiscal situation of the Indian major States over the previous two and half decades and examines the effectiveness of the policy measures to strengthen the State finances. The analysis reveals that the States' fiscal position showed imbalances, *albeit* in a varied degree, since the mid-1980s which deepened in the second half of the 1990s. The effectiveness of policy measures has remained largely inadequate. Most of the Policy measures were exigency-driven rather than being structured. As the States face large resource gap, they require effective and time-bound policy measures to enhance revenues particularly non-taxes and shift in expenditure pattern towards economic infrastructure and social sectors to facilitate acceleration in growth.

Introduction

In the Indian federal set up, the States play an important role in accelerating and sustaining growth. The Indian Constitution assigns important responsibilities to States in many sectors such as agricultural development, infrastructure, poverty alleviation, water supply and irrigation, public order, public health and sanitation. Furthermore, they have concurrent jurisdiction in several areas like education, electricity, economic and social planning and family planning. In view of the larger responsibilities

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assigned to the States, their expenditure accounts for a substantial portion of the Government sector expenditure (Centre *plus* States) in India. The comparative position across countries reveals that in India the share of aggregate States' expenditure in Government sector expenditure is higher than that in several other countries such as Australia, Denmark, Argentina, USA and Germany (World Bank, 2005). The composition of receipts and expenditure of the Government sector in India reveals that while the State Governments collect about one-third of the total Government sector receipts, they incur more than three-fourth of the total expenditure on social services and more than half of the total expenditure on economic services. The States' ability to undertake and perform the developmental functions adequately and effectively is critically determined by their fiscal position.

A State specific assessment of fiscal position assumes importance in view of the wide disparities that exist among the Indian States and their increasing role in the development. The policy measures and prescriptions which are suggested for aggregate State finances may not be appropriate and effective for drawing out strategies for an individual State. It is worth noting as stated in the Economic Survey, (2004-05), Government of India, *"Though the fiscal deterioration of States began much later than that of the Centre, the fiscal stress of some of the State Governments is more acute and an important constraint in their development."* The analysis of State finances in historical perspective since the mid 1980s reveals: (i) steady deterioration in revenue receipts-GSDP ratio, (ii) stagnating social sector expenditure, (iii) inadequate investment for basic infrastructure sectors, (iv) pre-emption of high cost borrowed funds for financing current expenditure, (v) large and persistent resource gap, and (vi) accumulation of high debt stock and debt service payments.

Many States undertook various policy measures to strengthen their finances mainly in the late 1990s. Given the size of the problem, the effectiveness of such policy measures, however, remained largely inadequate. Most of the policy measures were *ad hoc* in nature and were guided by the exigency rather than being structured.

Against the above background, the paper provides an analytical review of fiscal situation at State level during the previous two and a half decades. The paper examines the policy measures undertaken and their effectiveness to improve the State finances. The entire period under review is divided into four phases based on the emerging fiscal developments. The structure of the remaining paper is as follows. Section I provides an analytical framework to study the public finance at State level. Section II presents an analytical review and assessment of fiscal situation at State level. Section III sets out the review of policy measures. The details of effectiveness of the policy measures are provided in Section IV. The concluding observations are outlined in Section V.

Section I

Analytical Framework

In a federal system, the sub-national governments are assigned certain sources of revenues and expenditure responsibilities. In the Indian context, the State Governments have their own independent sources of revenue as well as transfers from the Central Government. Accordingly, the level of resource flow at State level in India is determined by both (i) endogenous factors (*i.e.,* States' own efforts in generating resources) and (ii) exogenous factors (*i.e.,* the resource transfers from the Central Government). The details of various sources of revenues and expenditure responsibilities of State Governments are set out below.

Sources of Revenues

States' own Revenues

(i) *States' own tax revenues:* States' own taxes can be grouped into three parts, *viz.,* (i) taxes on commodities and services such as sales tax, State excise, taxes on vehicles and taxes on goods and passengers, (ii) taxes on property and capital transactions such as stamps and registrations and land revenue, and (iii) taxes on income such as profession, trade and agricultural income. Among the above, the principal

sources of States' tax revenue are sales tax, State excise and stamps and registration fees. Sales tax alone accounts for nearly two-thirds of the total States' own tax revenue. Realising the need for tax reforms, many States have switched over to a Value Added Tax (VAT) regime on the basis of the recommendations of the Empowered Committee of State Finance Ministers with effect from April 1, 2005. VAT may be defined as a tax on the value added at each stage of production and distribution of a commodity.

(ii) States' own non-tax revenues: These include (i) interest receipts, (ii) dividend and profits,(iii) user charges on account of social and economic services, and (iv) general services which mainly include State lotteries. The major part of revenues comes from interest receipts, State lotteries and user charges on account of economic services.

Current Transfers and Devolution from the Centre

The current transfers and devolution from the Centre include States' share in the Central taxes and grants. The provision for these transfers to States aims at addressing the vertical imbalance or fiscal gap that stems from asymmetric devolution of functions and tax powers among different Government levels. Furthermore, such transfers aim to secure fiscal equalisation among the States which is necessary and imperative in the interest of equity and efficiency.

Expenditure Responsibilities of States

State Governments incur considerable expenditure towards provision of various social and economic services in addition to expenditure requirements towards maintenance of various organs and general administration. The total expenditure comprises of revenue and capital components. Broadly the expenditure which does not result in creation of assets is treated as revenue expenditure. Capital expenditure mainly includes expenditure on acquisition of assets like land, building, machinery *etc*. and also loans and advances by States mainly to Public Sector Undertakings (PSUs). Under revenue expenditure, certain items of expenditure, *viz.*,

interest payments, pensions outgo, wages and salaries and expenses towards administrative services have downward rigidity.

Financing Pattern of Gross Fiscal Deficit (GFD)

The analysis of the State Government finances during previous two and half decades reveals that invariably almost all the States incur more expenditure than the revenues they mobilise. Consequently, the States undertake borrowings from a number of sources to finance their resource gap/GFD. The financing pattern of resource gap indicates that, historically, loans from the Centre have been the most important source of borrowings for the States. However, with the changes in accounting system in respect of small savings since April 1, 1999 and operationalisation of Debt Swap Scheme (during 2002-03 to 2004-05), the share of this source in financing GFD has declined significantly. The small saving receipts [(*i.e.,* Special Securities issued to National Small Saving Fund (NSSF)] are emerging a major source to finance the resource gap – constituting over two third of GFD in the recent period (RBI, 2005). The other major sources of financing available to the States include: (i) market borrowings, (ii) loans from banks and financial institutions (FIs) and (iii) public account borrowings.

Scheme of Presentation of States' Fiscal Analysis

Taking into account the fiscal developments on both front, *viz.,* (i) endogenous factors (within States' control) and (ii) exogenous factors (States' dependence on Central transfers), the period under review has been divided into four phases.

(i)   ***Revenue Account in Surplus Position***: This phase covers the period 1980-81 to 1985-86. The buoyant growth in States taxes particularly sales tax led to the higher growth in revenues than the expenditure - resulting in surplus in the Revenue Account.

(ii) ***Emergence of Fiscal Imbalances***: This phase deals with the period 1986-87 to 1997-98. The growth in revenues remained sluggish on account of low/negligible user charges and dividends and profits coupled with stagnation in States' share in Central taxes. The liberalisation of trade and investment

policies providing various incentives and concessions to attract private investment impacted the States' finances.

(iii) *Deepening and Persistent Fiscal Imbalances[1]*: This phase pertains to the period 1998-99 to 2003-04. The major reasons behind the worsening of fiscal imbalances were the significant increase in revenue expenditure due to Fifth Pay Commission award and growing interest payments on the past high cost borrowed funds. The growth in revenues remained sluggish due to stagnation in States' tax-GSDP ratio and decline in States' own non-taxes and Central transfers, particularly, grants to States.

(iv) *Recent Fiscal Developments and Challenges Ahead:* This phase takes into account the period since 2004-05 onwards. Implementation of VAT with effect from April 1, 2005, recommendations of Twelfth Finance Commission (TFC) for the period 2005-10 and the States' continued emphasis on the on-going fiscal reforms with statutory backing such as fiscal responsibility legislations (FRLs) which got further boost on account of TFC's recommendations are the major recent developments. The fiscal position of States would be largely influenced in the medium term by these developments. This phase also highlights the major challenges for the States in the medium term.

The details of major fiscal indicators to examine the fiscal situation of States include: (i) trends in revenue receipts, States' own revenues and share in the Central taxes and grants, (ii) pattern and trends in major components of expenditure, (iii) available resources for financing resource gap, and (iv) movement in major deficits and debt stocks[2].

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Section II

Finances of Major States: Analytical Review and Assessment[3]

</div>

An Overview

A quick overview of the fiscal position of major States reveals that they were generating surpluses in their revenue account in the

first phase. The fiscal position of States, however, had started to show signs of stress in the second phase and fiscal imbalances deepened and persisted during the third phase. The factors responsible for the widening fiscal inbalances include: (i) growing interest burden, (ii) increasing wages and salaries (iii) pension liabilities, (iv) losses incurred by State Public Sector Undertakings, (v) inadequate user charges/cost recoveries and (vi) deceleration in the Central transfers (RBI, 2004). In the recent years, interest payments alone constitutes over one-fourth of the revenue expenditure and absorbs between 30-50 per cent of revenue receipts in many States (West Bengal, Orissa, Punjab, Rajasthan, Gujarat, Uttar Pradesh). Notably, during 2002-03 to 2003-04, interest payments and pensions outgo taken together absorbed as high as around 70 per cent of revenue receipts in case of West Bengal and nearly 50 per cent of revenue receipts in Kerala.

The fiscal stress experienced by the States has seriously constrained their ability to discharge major responsibility of developing social and economic infrastructure. The expenditure for developmental activities, which are directly related to growth, has suffered. On the other hand, expenditure on non-developmental purposes, largely committed in nature, has witnessed a steady rise. The problem was exacerbated by low productivity of capital expenditure. The proliferation of projects spread the resources thinly and inadequate financial allocations cause severe cost and time over runs (Rao, 2002).

The Planning Commission, while stressing the need for fiscal and other reforms at the State level, observed that "… *a joint effort by the Centre and States is needed to fulfill the Tenth Plan objectives. Along with the Centre, States need to reform more and much faster, and raise substantially higher levels of their own resources to mobilise the financial resources essential for the much needed productive investments. ..*" *(*Mid Term Appraisal, Tenth Five Year Plan*).*

Phase-wise Analysis of State Finances: Major Features

The analytical framework developed in section I has been used to analyse the fiscal position of States. The major features of each phase are set out below.

Phase 1: *Revenue Account in Surplus Position*

All the major States except West Bengal[4] were generating surplus in the Revenue Account. The major features of this phase include: (i) growth in revenue receipts was mainly led by States own taxes particularly, sales tax, (ii) the revenue expenditure of major States in terms of GSDP, on an average remained at 12.8 per cent, (iii) the revenue receipts of States were placed at 13.2 per cent of GSDP thus leaving surplus of 0.4 per cent of GSDP under revenue account, and (iv) GFD-GSDP ratios in case of all the States except Punjab and Orissa was below 4 per cent.

Phase 2: *Emergence of Fiscal Imbalances*

The major highlights of this phase are: (i) Revenue Account of the States turned into deficit from surplus, (ii) the deceleration in the States' own non-tax revenues coupled with stagnation in States' share in Central taxes resulted in sluggish growth in the revenue receipts, (iii) revenue expenditure in terms of GSDP, on an average, increased by more than two percentage points, (iv) the revenue receipts-GSDP ratio increased less than one percentage point in this phase over the previous phase, (v) many States started utilising the high cost borrowed funds to finance the current expenditure, (vi) total expenditure-GSDP ratio increased marginally over the first phase - reflecting the impact of cutback of capital expenditure which declined to 3.8 per cent from 5.6 per cent of GSDP in the previous phase, (vii) the liberalisation of trade and investment policies in the economy impacted State finances as they provided various incentives and concessions to attract private investment, and (viii) the increasing share of the services in States' GSDP, which were not covered under the tax net, also affected adversely their fiscal health.

Phase 3: *Deepening and Persistent Fiscal Imbalances*

The major features include: (i) the increasing fiscal imbalances in the previous phase had started deepening and persisted, (ii) revenue receipts-GSDP ratio decelerated by 0.8 per cent while revenue expenditure-GSDP ratio increased by around 2 percentage points over the previous phase, (iii) deceleration in revenue receipts

was due to decline in States own non-tax revenues, which reflected low/negligible user charges, dividends and profits, and central grants, (v) revenue expenditure grew significantly mainly due to increase in salaries and wages bill on account of the Fifth Pay Commission recommendations coupled with high interest payments on past loans and pensions outgo, (vi) interest payments and pension outgo of major States absorbed as high as 37 per cent of revenue receipts (varying from 26 per cent in Madhya Pradesh to 58 per cent in West Bengal) as against 21 per cent in the previous phase (varying from 15 per cent in Maharashtra to 28 per cent in Kerala), (vii) total expenditure-GSDP ratio increased to around 21 per cent due to significant increase in revenue expenditure, (viii) a sharp increase in revenue expenditure accompanied by inadequate growth in revenues constrained the States ability for releasing adequate resources for capital expenditure which remained almost stagnated at the level of the previous phase (3.8 per cent of GSDP), (ix) the large and persistent resource gap resulted in a vicious cycle of deficit, debt and debt service payments.

Phase 4: *Recent Fiscal Developments and Challenges Ahead*

The recent major fiscal development, *viz.,* implementation of VAT, TFCs recommendations and States' FRLs, are expected to largely impact the State finances in the medium term. There are some signs of improvement in the State finances as reflected in their recent budgets. However, given the past track record of weak fiscal marksmanship of State Governments, the high level of fiscal corrections appears to be difficult to achieve in a short span of time. For a durable fiscal discipline and realistic fiscal correction path, States would have to place continuous emphasis on timely and effective measures towards on both revenue enhancement and expenditure reprioritisation. In this regard, the fiscal correction path as spelt out by the TFC provides a new direction and motivatation to the States to undertake the appropriate policy measures.

TFC's Impact on State Finances

The TFC's recommendations for fiscal consolidation in the States will have far-reaching implications for the federal-state fiscal

relationship. The States' fiscal imbalances are likely to ease on account of higher tax devolution, enhanced grants as well as the debt relief schemes by the TFC. The critical aspect of the recommendations of the TFC is the linking of certain resource transfers to enhance the fiscal prudence on the part of the States, in general, and the enactment of FRLs by the States, in particular. The increase in transfers recommended through tax devolution and grants are expected to facilitate the States to undertake fiscal correction even while undertaking social and infrastructure expenditure required to move on an accelerated growth path.

A New Borrowing Regime for States

Following the TFC's recommendations that the Centre should not act as an intermediary for future lending and allow the State Governments to approach the market directly, a new borrowing regime for the States was put in place[5]. Accordingly, in the Union Budget 2005-06, there was no provision made for Central loans for State Plan Schemes. The Union Budget indicated an amount of Rs.29,003 crore which was to be raised by the States and Union Territories with Legislature directly from the market. Furthermore, as per the TFC's recommendations (also accepted by the Government of India), external assistance would be transferred to the States on the same terms and conditions as attached to such conditions by external funding agencies (making Centre a financial intermediary - without any gain or loss). The States would get the same maturity, moratorium and amortisation schedule as the Centre gets from the external lender.

The past experience of some States reveals that the weaknesses in their finances invited adverse reaction from the financial markets as manifested in the widening spread on State Government securities and under-subscription to market loans. The under-subscription to the State market loans also brings to the fore various factors that impact State Governments liquidity. These factors include: (i) the fiscal health of the State Governments, (ii) the credibility of their prospective policy actions and, (iii) transparency of their budgets (RBI, 2004).

In view of the new borrowings regime, States would need to improve the market perception about their fiscal position by exhibiting adequate will and action for fiscal rectitude by actively considering the fiscal reforms measures. The better fiscal performing States would get the benefit relatively more than the fiscally weak States from the market.

Challenges Ahead

In the process of fiscal correction in the medium term, the allocation of adequate resources towards productive sectors, which is essential to accelerate the growth and to increase the revenues particularly through non-taxes by increasing user charges, cost recovery, dividends and profits, *etc.,* would be major challenges for the States.

The large repayment of market borrowings (from Rs. 6,274 crore in 2005-06 to increase two-fold by 2007-08, three-fold by 2010-11 and nearly six times by 2014-15) would have a bearing on the fiscal health of the States (RBI, 2005).

Furthermore, the impact of the Sixth Pay Commission on fiscal health, if followed by the State Governments, also needs to be taken into account[6]. Although the Pay Commission, is meant to cover only the Central Government employees, its recommendations, as the past experience reveals, are generally adopted by the State Governments as well. The Commision is expected to submit the report within eighteen months from the date of its constitution.

A State-wise Analysis

A State-wise analytical review of the fiscal position based on select fiscal indicators is set out below.

Trends in Major Deficits and Financing pattern

Revenue Deficit

The degree of deterioration in the revenue account varied significantly across the States (Chart 1 and Exhibit 1). States like Orissa and West Bengal showed substantial increase in their revenue deficit-GSDP ratio in the third phase as compared to the

Chart 1 : Phase-wise Surplus (-)/Deficit (+) in the Revenue Account

Note : During the first phase, West Bengal revenue account was in surplus only in 1985-86.
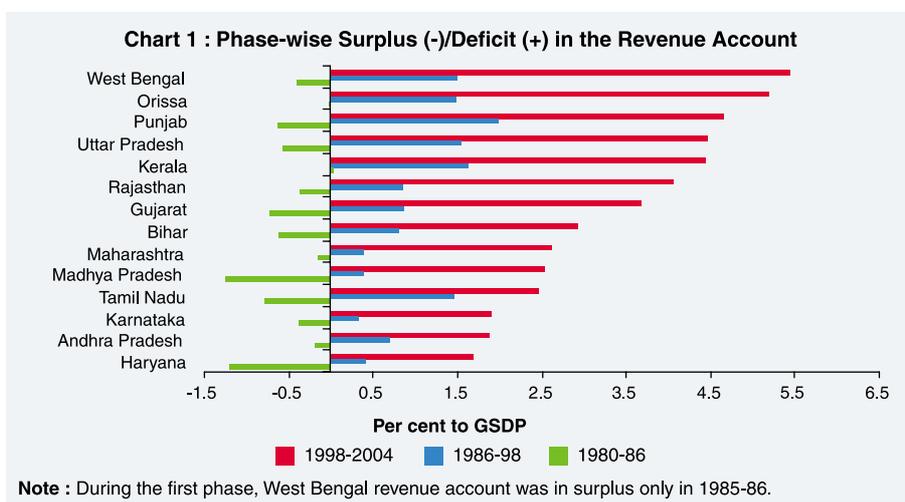
second phase. The deterioration in the revenue account led to significant increase in the overall resource gap.

Revenue Deficit Accounts for Sizeable Portion of GFD

The revenue deficit of State Governments such as West Bengal, Punjab, Kerala and Uttar Pradesh showed substantial increase and accounted for over 70 per cent of GFD in the third phase. The significant deterioration in Revenue Account of States led them to

Exhibit 1 : States' Revenue Surplus/Deficit-GSDP Ratio: A Comparative Position

Per cent	Phase 1 : 1980-86 (Revenue Surplus)
Above 1	Haryana, Madhya Pradesh
0.5 to 1	Uttar Pradesh, Bihar, Punjab, Gujarat, Tamil Nadu
Below 0.5	Kerala, Orissa, Maharashtra, Andhra Pradesh, Rajasthan, Karnataka, West Bengal *
* : During the first phase, West Bengal revenue account was in surplus only in 1985-86.	
	Phase 2: 1986-98 (Revenue Deficit)
Above 1.5	Punjab, Kerala, Uttar Pradesh, West Bengal
0.5 to 1.5	Orissa, Tamil Nadu, Gujarat, Rajasthan, Bihar, Andhra Pradesh
below 0.5	Haryana, Maharashtra, Madhya Pradesh, Karnataka
	Phase 3 : 1998-2004 (Revenue Deficit)
Above 4	West Bengal, Orissa, Punjab, Uttar Pradesh, Kerala, Rajasthan
2.5 to 4.0	Gujarat, Bihar, Maharashtra, Madhya Pradesh, Tamil Nadu
Below 2.5	Karnataka, Andhra Pradesh, Haryana

**Exhibit 2 : States' Revenue Surplus/Deficit-GFD Ratio:
A Comparative Position**

Per cent	Phase 1 : Revenue Surplus/ GFD Ratio
Above 40	Madhya Pradesh, Haryana
20 to 35	Tamil Nadu, Karnataka, Gujarat, Bihar, Uttar Pradesh, Punjab, West Bengal *
Below 20	Kerala, Andhra Pradesh, Maharashtra, Rajasthan, Orissa
* : During the first phase, West Bengal revenue account was in surplus only in 1985-86.	
Phase 2 : Revenue Deficit/GFD Ratio	
Above 40	Kerala, West Bengal, Tamil Nadu
20-40	Andhra Pradesh, Orissa, Uttar Pradesh, Punjab
below 20	Karnataka, Haryana, Maharashtra, Madhya Pradesh, Rajasthan, Gujarat, Bihar
Phase 3 : Revenue Deficit/GFD Ratio	
Above 70	Kerala, Punjab, West Bengal, Uttar Pradesh
60 to 70	Gujarat, Tamil Nadu, Orissa, Rajasthan, Maharashtra
Below 60	Madhya Pradesh, Bihar, Karnataka, Haryana, Andhra Pradesh

use a substantial portion of the borrowed funds to finance their current expenditure in the third phase (Exhibit 2).

GFD of State Governments

The substantial increase in GFD was evident in case of many States such as Orissa, West Bengal, Rajasthan, Bihar, Punjab, Uttar Pradesh (Chart 2 and Exhibit 3).

Financing Pattern of GFD

State Governments access funds from a number of sources to finance their resource gap *viz.,* (i) loans from the Centre, (ii) market borrowings, (iii) loans from banks and financial institutions (FIs) (such as SBI and other banks, NABARD, LIC, GIC) and (iv) Public Account Borrowings (PAB) (such as State provident funds, reserve funds and deposits and advances). To meet the temporary mismatches in receipts and expenditure, the States also avail ways and means advances from the Reserve Bank of India. A quick analysis of the

Chart 2 : Gross Fiscal Deficit of State Governments
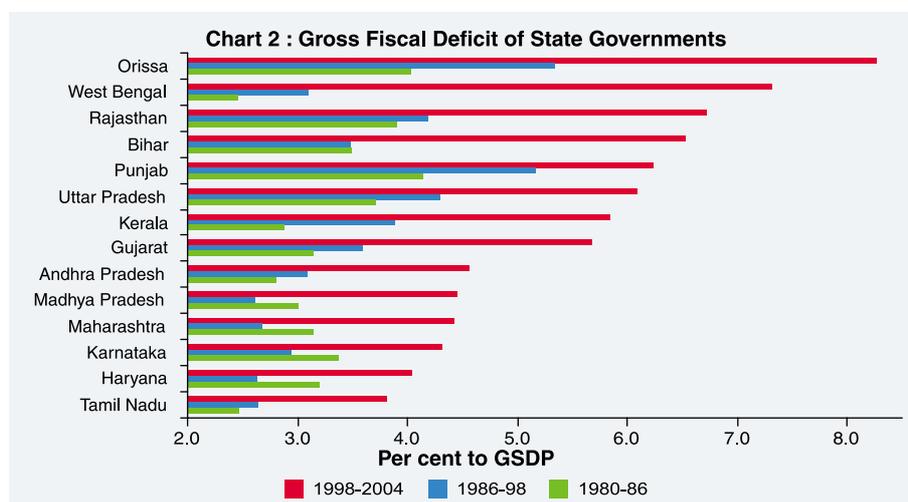
borrowed funds by the States reveals that during the 1990s loans from the Centre was a dominant source of financing States' deficit followed by State Provident Funds and other PAB, market loans and banks and FIs.

The States dependence on the Centre to finance their deficit, however, showed significant decline due to introduction of NSSF

Exhibit 3 : States' GFD-GSDP Ratio: A Comparative Position

Per cent	Phase 1 : 1980-86
Above 3.5	Punjab, Orissa, Rajasthan, Uttar Pradesh, Bihar
3.0-3.5	Karnataka, Haryana, Maharashtra, Gujarat, Madhya Pradesh
Below 3.0	Kerala, Andhra Pradesh, Tamil Nadu, West Bengal
	Phase 2: 1986-98
Above 4	Orissa, Punjab, Uttar Pradesh, Rajasthan
3.5- 4.0	Kerala, Gujarat, Bihar
Below 3.5	West Bengal, Andhra Pradesh, Karnataka, Maharashtra, Tamil Nadu, Haryana, Madhya Pradesh
	Phase 3 : 1998-2004
Above 6	Orissa, West Bengal, Rajasthan, Bihar, Punjab, Uttar Pradesh
4.5 to 6.0	Kerala, Gujarat, Andhra Pradesh, Madhya Pradesh
Below 4.5	Maharashtra, Karnataka, Haryana, Tamil Nadu

**Exhibit 4 : Financing Pattern of GFD of States:
A Comparative Position**

(Per cent to GFD)

State	Phase 2 : 1986-1998			Phase 3 : 1998-2004			
	CL	MB	OT *	CL	MB	NSSF #	OT *
Andhra Pradesh	51	23	26	24	31	26	19
Bihar	65	34	1	24	19	41	16
Gujarat	57	10	33	16	24	61	-1
Haryana	50	15	35	10	21	51	18
Karnataka	46	16	38	21	27	34	18
Kerala	33	23	44	8	21	18	53
Madhya Pradesh	40	17	43	18	25	34	23
Maharashtra	52	8	40	9	14	42	35
Orissa	38	25	37	23	28	18	31
Punjab	76	7	17	1	18	54	27
Rajasthan	39	19	42	12	26	48	14
Tamil Nadu	49	21	30	9	24	35	32
Uttar Pradesh	50	17	33	10	24	40	26
West Bengal	60	18	22	17	16	56	11

CL : Central Loans, MB: Market Borrowings, OT : Others, NSSF : Loans from National Small Saving Fund.

*   : Includes negotiated loans from Banks and FIs and public account borrowings.

\#   : Came into existence on April 1, 1999.

since April 1, 1999. During 2002-05, States have made substantial repayment of Central Loans under Debt Swap Scheme. Consequently, the share of Central loans in financing the States' GFD has declined significantly while the share of market loans, small savings and other loans has increased. In the recent years, a number of States have financed over 50 per cent of their GFD through loans from NSSF (Exhibit 4).

Revenue Performance of States

Revenue receipts showed sluggish growth in case of many States in the third phases. Inadequate growth in revenue receipts was due to near stagnation in States' tax-GSDP ratio with no perceptible change in the contribution of States' non-tax revenue to GSDP and deceleration in resource transfers from the Centre to the States. Revenue receipts-GSDP ratio was above 15 per cent in case of five States during the second phase, however, in the third phase only two States could manage their revenue-GSDP ratio at this level (Exhibit 5).

**Exhibit 5 : States' Revenue Receipts-GSDP Ratio:
A Comparative Position**

Per cent	Phase 1 : 1980-86
Above 14	Andhra Pradesh, Karnataka, Tamil Nadu, Orissa
13 to 14	Kerala, Rajasthan, Bihar, Madhya Pradesh, Maharashtra, Haryana
Below 13	Gujarat, Punjab, Uttar Pradesh, West Bengal
	Phase 2: 1986-98
Above 15	Orissa, Bihar, Haryana, Karnataka, Rajasthan
14 to 15	Andhra Pradesh, Kerala, Tamil Nadu
Below 14	Madhya Pradesh, Uttar Pradesh, Gujarat, Punjab, Maharashtra, West Bengal
	Phase 3 : 1998-2004
Above 15	Bihar, Orissa
13 to 15	Madhya Pradesh, Karnataka, Rajasthan, Andhra Pradesh, Punjab, Uttar Pradesh, Tamil Nadu
Below 13	Kerala, Gujarat, Haryana, Maharashtra, West Bengal

Many State Governments showed deterioration in their revenue receipts-GSDP ratio in the third phase (Chart 3). The component-wise performance of revenue receipts of State Governments is set out below.

Trends in States' Own Revenue

States' own taxes

States' own taxes remained almost stagnant at 7 per cent of GSDP during the second and third phase. Under State taxes, the poor performance has been mainly marked in the case of taxes on sales tax, state excise and

Chart 3: Trends in Revenue Receipts of State Governments
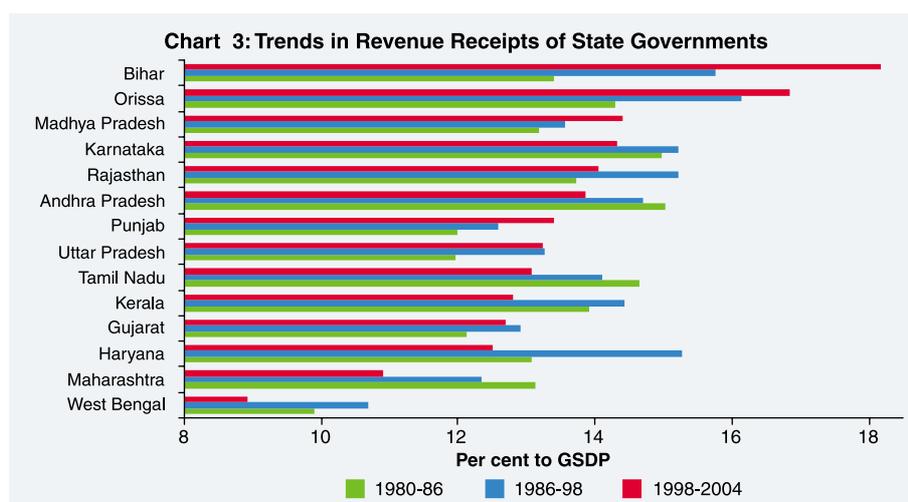
stamps and registrations. The major reasons behind the inadequate growth in States taxes over the years are (i) narrow tax base, (ii) greater dependence on indirect taxes mainly the sales tax, (iii) lack of harmonised inter-state tax structure which allowed distortions and rigidities to creep in, (iv) competitive tax reductions by the States to attract trade and industry. The competitive reduction in taxes led to a mere redistribution of existing capital among the States at the cost of significant revenue foregone, (v) States inabilty to levy taxes on services and agricultural income, and (vi) tax evasion and slackness in the recovery of arrears.

States' own non-tax revenue

The States' own non-tax revenue in terms of GSDP showed deterioration in the second and third phases. A major reason underlying the sluggish growth in non-tax revenue is the levy of inadequate user charges/cost recoveries. The cost recovery in the case of education and health services has hovered around 1 per cent and 5 per cent, respectively, in the recent period (RBI, 2005). Apart from inappropriate user charges, low or negative returns from investment have adversely affected the growth of States' own non-tax revenues over the years.

The trends in States' own revenue receipts (comprising State' own taxes and own non-taxes) indicate that the many States such as West Bengal, Karnataka, Haryana, Gujarat and Maharashtra showed deterioration in the third phase as against the second phase (Chart 4).

Chart 4 : Trends in States own Revenue Receipts
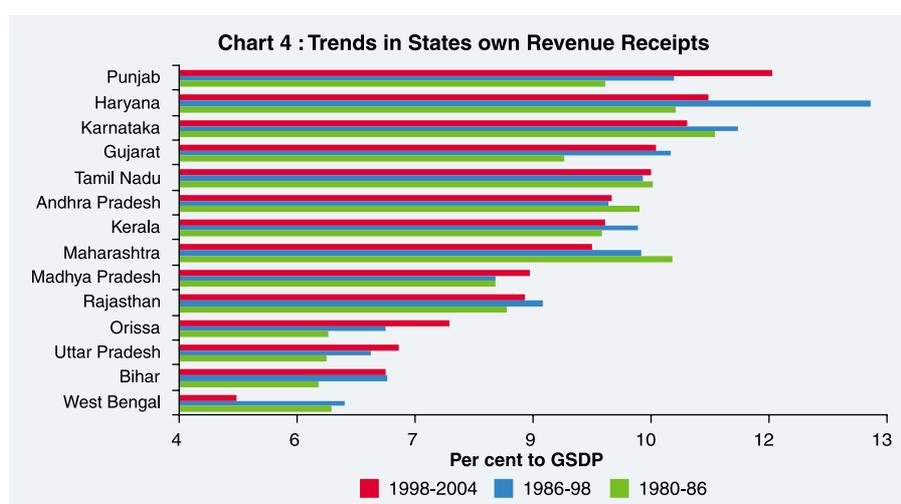
Exhibit 6 : States' Own Revenue-GSDP Ratio: A Comparative Position

Per cent	Phase 1 : 1980-86
Above 10	Karnataka, Haryana, Maharashtra, Tamil Nadu
8 to 10	Andhra Pradesh, Punjab, Kerala, Gujarat, Rajasthan, Madhya Pradesh
Below 8	West Bengal, Orissa, Uttar Pradesh, Bihar
	Phase 2: 1986-98
Above 10	Haryana, Karnataka, Punjab, Gujarat
8 to 10	Tamil Nadu, Maharashtra, Kerala , Andhra Pradesh, Rajasthan, Madhya Pradesh
Below 8	Bihar , Orissa, Uttar Pradesh, West Bengal
	Phase 3 : 1998-2004
Above 10	Punjab, Haryana, Karnataka, Gujarat, Tamil Nadu
8 to 10	Andhra Pradesh, Kerala, Maharsahtra, Madhya Pradesh, Rajasthan
Below 8	Orissa, Uttar Pradesh, Bihar, West Bengal

The near stagnation in States taxes and deterioration in States' own non taxes resulted in decline in States' own revenue from 8.9 per cent of GSDP in second phase to 8.6 per cent of GSDP in the third phase. The degree of variation, however, varied across the States (Exhibit 6).

It is worth noting that many States could finance less than 50 per cent of their total expenditure from own revenue receipts (Exhibit 7).

Exhibit 7 : Financing of Total Expenditure through States' Own Revenues: A Comparative Position

Per cent	Phase 1 : 1980-86
Above 55	Maharashtra, Haryana
50-55	Karnataka, Gujarat, Andhra Pradesh, Tamil Nadu, Punjab
Below 50	Kerala, Madhya Pradesh, West Bengal, Rajasthan, Uttar Pradesh, Bihar, Orissa
	Phase 2: 1986-98
Above 55	Haryana, Maharashtra, Gujarat, Karnataka
50-55	Tamil Nadu, Punjab, Kerala
Below 50	Andhra Pradesh, Madhya Pradesh, West Bengal, Rajasthan, Uttar Pradesh, Bihar, Orissa
	Phase 3 : 1998-2004
Above 55	Haryana, Maharashtra, Tamil Nadu
50-55	Karnataka, Punjab
Below 50	Gujarat, Kerala, Andhra Pradesh, Madhya Pradesh, Rajasthan, Uttar Pradesh, West Bengal, Orissa, Bihar

Chart 5 : Current Transfers from the Centre to States
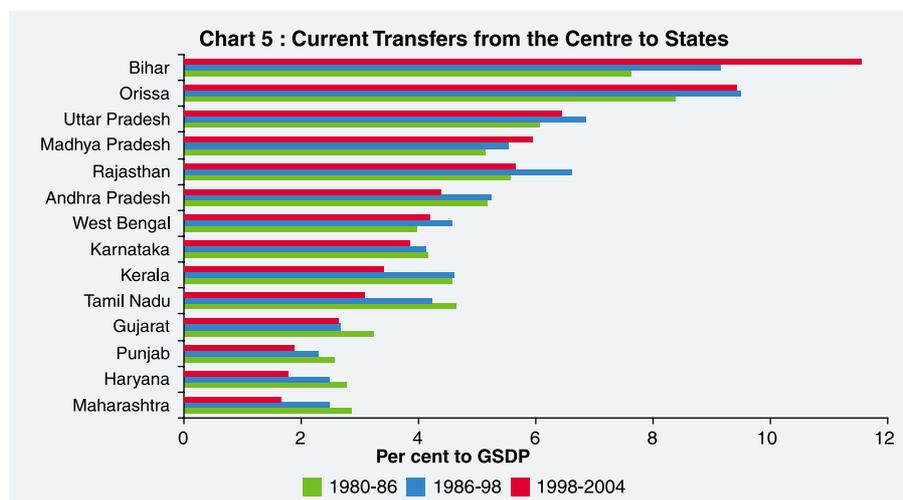
Trends in current transfers and devolution from the Centre

The trends in central transfers indicate stagnation in terms of GSDP in the second phase and decline in the third phase due to lower central grants. Bihar, Orissa, Uttar Pradesh and Rajasthan continued to receive the highest level of current transfers while Punjab, Haryana and Maharashtra occupied the lowest positions (Chart 5).

Pattern and Trends in Total Expenditure

The pattern of expenditure reveals that revenue expenditure accounted for a significant proportion (about three-fourth) of the total expenditure of the States over the years. Total expenditure showed a significant increase in many States such as Orissa, Bihar, Uttar Pradesh, Rajasthan and Punjab (Exhibit 8).

Trends in Revenue Expenditure

Interest payments, expenses towards administrative services, wages and salaries, pensions and subsidies given by the States led the revenue expenditure to grow significantly. Interest payments alone constitute more than one-fifth of the total revenue expenditure. The major components of revenue expenditure, *viz.,* interest payments and pensions absorbed as high as over 45 per cent, on an average, of revenue receipts in the third phase as against 25 per

**Exhibit 8 : Total Expenditure-GSDP Ratio of States:
A Comparative Position**

Per cent	Phase 1 : 1980-86
Above 20	Karnataka, Orissa, Rajasthan
18 to 20	Bihar, Tamil Nadu, Andhra Pradesh, Punjab, Kerala, Haryana
Below 18	Madhya Pradesh, Maharashtra, Uttar Pradesh, Gujarat, West Bengal
	Phase 2: 1986-98
Above 20	Orissa, Rajasthan, Bihar
18 to 20	Kerala, Karnataka, Haryana, Andhra Pradesh, Punjab, Uttar Pradesh, Tamil Nadu
Below 18	Gujarat, Madhya Pradesh, Madhya Pradesh, Maharashtra, West Bengal
	Phase 3 : 1998-2004
Above 20	Orissa, Bihar, Rajasthan, Uttar Pradesh, Punjab, Gujarat, Andhra Pradesh
18 to 20	Karnataka, Kerala, Tamil Nadu, Madhya Pradesh
Below 18	Haryana, West Bengal, Maharashtra

cent in the second phase (Exhibit 9 and Chart 6). In fact, in some years (during 2002-03 and 2003-04) these two components of expenditure absorbed around 70 per cent of revenue receipts in case of West Bengal and nearly 50 per cent of revenue receipts in case of Kerala.

**Exhibit 9 : Interest Payments and Pensions as per cent to
Revenue Receipts: A Comparative Position**

Per cent	Phase 1 : 1980-86
Above 14	Rajasthan, Kerala
12 to 14	Punjab, West Bengal, Orissa, Karnataka
Below 12	Bihar, Haryana, Gujarat, Andhra Pradesh, Uttar Pradesh, Tamil Nadu, Maharashtra, Madhya Pradesh
	Phase 2: 1986-98
Above 25	Kerala, Orissa, Punjab
22 to 25	West Bengal, Uttar Pradesh, Bihar, Rajasthan
Below 22	Gujarat, Andhra Pradesh, Karnataka, Tamil Nadu, Madhya Pradesh, Haryana, Maharashtra
	Phase 3 : 1998-2004
Above 45	West Bengal, Kerala, Punjab
35 to 45	Orissa, Rajasthan, Uttar Pradesh, Bihar
Below 35	Gujarat, Tamil Nadu, Andhra Pradesh, Haryana, Maharashtra, Karnataka, Madhya Pradesh

Chart 6: Interest Payments and Pension Payments of States
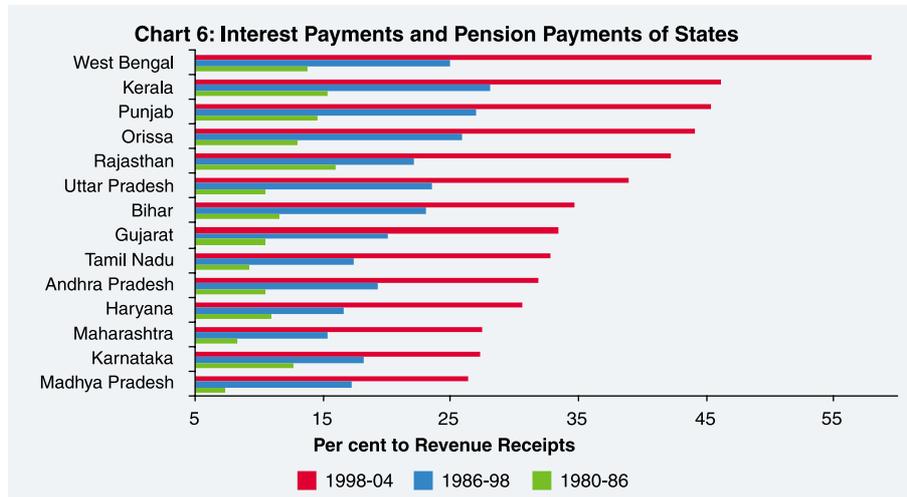
The significant increase in revenue expenditure was observed in States such as Orissa, Bihar, Punjab, Madhya Pradesh, Gujarat, Kerala and Rajasthan in the third phase over the second phase (Chart 7 and Exhibit 10).

Trends in Capital Expenditure

The impact of resource crunch and the need for fiscal correction has more often been in form of a compromise in the capital expenditure. Amidst the fiscal consolidation process in the 1990s,

Chart 7 : Trends in Revenue Expenditure of States
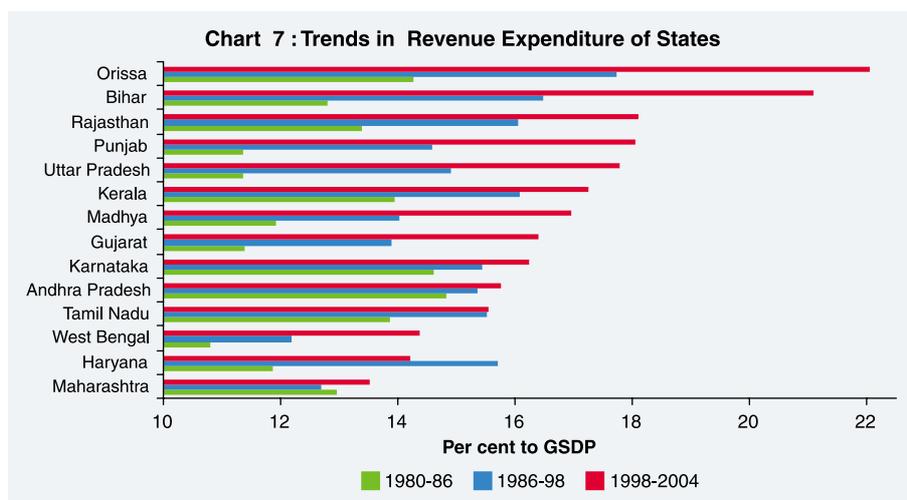
Exhibit 10 : States' Revenue Expenditure-GSDP Ratio:
A Comparative Position

Per cent	Phase 1 : 1980-86
Above 14	Andhra Pradesh, Karnataka, Orissa, Kerala
12 to 14	Tamil Nadu, Rajasthan, Maharashtra, Bihar
Below 12	Madhya Pradesh, Haryana, Gujarat, Uttar Pradesh, Punjab, West Bengal
	Phase 2: 1986-98
Above 16	Orissa, Bihar, Kerala, Rajasthan
14 to 16	Haryana, Tamil Nadu, Karnataka, Andhra Pradesh, Uttar Pradesh, Punjab, Madhya Pradesh
Below 14	Gujarat , Maharashtra, West Bengal
	Phase 3 : 1998-2004
Above 18	Orissa, Bihar
16 to 18	Rajasthan, Punjab, Uttar Pradesh, Kerala, Madhya Pradesh, Gujarat
Below 16	Andhra Pradesh, Tamil Nadu, West Bengal, Haryana, Maharashtra, Karnataka

the capital expenditure of many States started to show declining trend (Chart 8 and Exhibit 11).

Debt Stocks of Major States

Persistenee of large deficits of State Governments has resulted in accumulation of large debt stocks. The growth in debt stocks varied across States. Debt-GSDP ratio was higher by 19 per cent in case of Orissa, 15 per cent for West Bengal, 14 per cent for Rajasthan and 12

Chart 8 : Trends in Capital Expenditure of State Governments
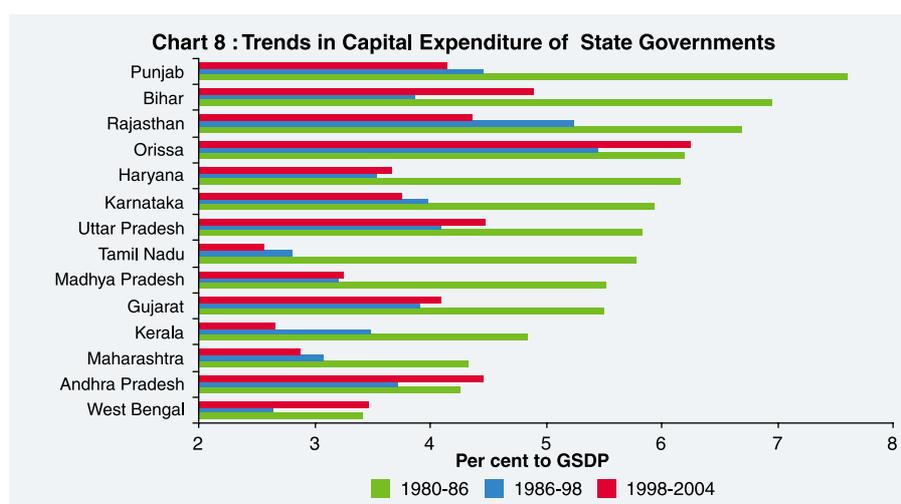
**Exhibit 11 : States' Capital Expenditure-GSDP Ratio:
A Comparative Position**

Per cent	Phase 1 : 1980-86
Above 6.0	Haryana, Orissa, Rajasthan, Bihar, Punjab
5.5 to 6.0	Gujarat, Madhya Pradesh, Tamil Nadu, Uttar Pradesh, Karnataka
Below 5.5	West Bengal, Andhra Pradesh, Maharashtra, Kerala
	Phase 2: 1986-98
Above 4.0	Orissa, Rajasthan, Punjab, Uttar Pradesh
3.5 to 4.0	Karnataka, Gujarat, Bihar, Andhra Pradesh, Haryana, Kerala
Below 3.5	Madhya Pradesh, Maharashtra, Tamil Nadu, West Bengal
	Phase 3 : 1998-2004
Above 6.0	Orissa
4.0 to 6.0	Bihar, Uttar Pradesh, Andhra Pradesh, Rajasthan, Punjab, Gujarat
Below 4.0	Karnataka, Haryana, West Bengal, Madhya Pradesh, Maharashtra, Kerala, Tamil Nadu

per cent for Uttar Pradesh in the third phase over the second phase (Chart 9).

In addition to budgetary debt, states have also increasingly resorted to off-budget borrowings through guarantees. With States increasingly accessing the market for resources, those with poor fiscal position may find financial markets unwilling to absorb their securities. Recognising the magnitude of the problem, the Comptroller and Auditor General of India (CAG) and the Finance Commissions

Chart 9 : Debt Stocks of State Governments
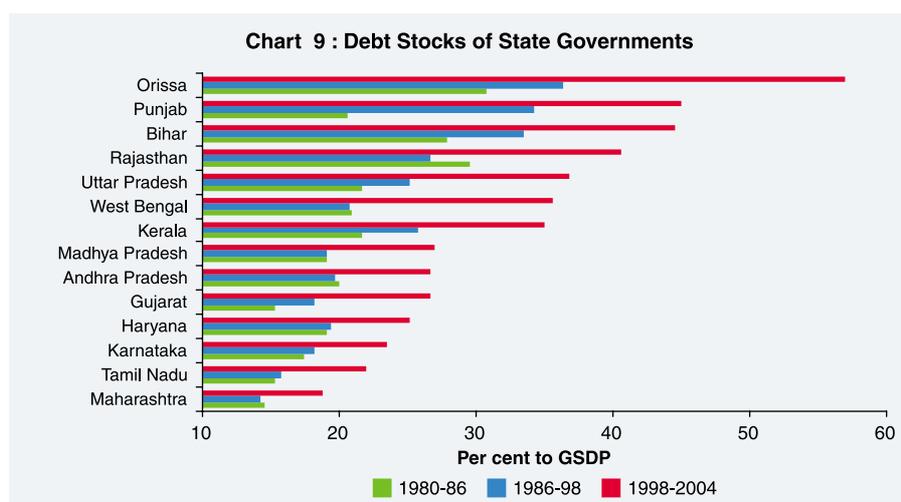
in their various reports have sounded warnings about the unsustainability of finances of State Governments. During 2003-04, the outstanding State Government' Guarantees in terms of GSDP were above 15 per cent in a number of States such as Maharashtra, Kerala, Punjab and Rajasthan.

Section III
A Review of Policy Measures

The growing fiscal imbalances of the States called for structured policy initiatives to address the problem. These initiatives had to be operationalised by the States when the Eleventh Finance Commission set binding preconditions for undertaking reforms to get the fiscal assistance. The policy initiatives include preparation of Medium-Term Fiscal Reform Programmes (MTFRPs). Adjustment programme had also been undertaken in some of the States which were linked to borrowings from multilateral agencies. Major landmark in co-ordinated tax reforms were simplification and rationlisation of the sales tax system since the beginning of the current decade and the introduction of VAT from April 1, 2005, in place of the existing cascading type sales (Rao, *et al.,* 2005). Incentive based fiscal reforms recommended by the TFC are also an important policy step towards bringing fisal discipline at State level.

Supplementing the States efforts, the Central Government introduced measures to encourage and facilitate fiscal reforms at the State level. These mainly include: (i) introduction of Fiscal Reforms Facility, (ii) one time settlement of State Electricity Boards, (iii) introduction of Debt Swap Scheme and debt relief measures. The Reserve Bank of India, as debt manager and banker to the State Governments has also initiated measures towards strengthening their fiscal position. The major initiatives include: (i) constitution of various Group/Committees on State finances, (ii) managing Market Borrowings Programme of States, (iii) organising conferences on State Finances, (iv) policy initiatives towards cash management, (v) policy initiatives towards off-budget borrowings[7].

The policy measures initiated by the States may be grouped under three categories, *viz.,* (i) Policy measures towards State taxes

and non-taxes, (ii) Expenditure Management, and (iii) Institutional Reforms. The detatils of these policy measures are set out below.

Policy Measures towards States' taxes and non-taxes

States' taxes

The general approach of the States has been to rationalise and simplify the tax structure, broaden the tax base and impose moderate rates of taxation. States have initiated policy measures towards fiscal empowerment mainly through States own taxes and showed intention to increase the magnitude and efficiency of tax revenue mobilisation over the years. The initiated measures by States include enhancement/ restructuring of various taxes such as land revenue, vehicle tax, entertainment tax, sales tax, electricity duty, tax on trades, professional tax and luxury tax. The major policy initiatives are as under:

(i) *Expert Committees/Commissions:* A number of States have appointed committee/commission to review the structure of their tax and non-tax revenues (Exhibit 12). The efforts were also initiated towards computerisation of tax/budget departments, treasuries and check-posts in view of the VAT as implemented by the States.

Exhibit 12 : Policy Initiatives by Major States

Policy Measures	Name of the State
1. Expert Committee/Commissions	Andhra Pradesh (*Revenue Reforms Committee*), Karnataka (*Tax and Revenue Reforms Commission, Fiscal Policy and Analysis Cell*), Tamil Nadu (*Taxation Reforms and Revenue Augmentation Commission, Staff and Expenditure Reforms Commission, Disinvestment Commission*), Haryana *(Committee to Mobilise Additional Resources),* Maharashtra *(Consultative Committee of Trade and Industry),* Uttar Pradesh *(Resource and Expenditure Commission)*
2. Introduction of VAT	All the States have introduced VAT except Tamil Nadu and Uttar Pradesh. Haryana was the first State to introduce the VAT in April 2003.
3. One-time settlement/amnesty schemes for recovery of tax arrears.	A number of States including those of Maharashtra, Karnataka and Kerala

(ii)   Introduction of VAT: Realising the need for tax reforms, most of the States have switched over to a VAT regime on the basis of recommendations of the Empowered Committee of State Finance Ministers with effect from April 1, 2005. VAT may be defined as a tax on the value added at each stage of production and distribution of a commodity. VAT is inherently efficient than the sales tax or excise duty or any turnover tax. Operationally, application of VAT at a particular stage implies payment of tax by the producer or distributor on the value of his output but with a rebate (or credit) on the taxes paid by him on the inputs.

States' non-tax revenues

The policy measures towards non-taxes include reviewing/ rationalising the royalties, including those on major and minor minerals, forestry and wildlife, revision of tuition fees, medical fees, irrigation water rates and tariffs on urban water supply. The States have prepared MTFRPs and have emphasised on the cost effectiveness and raising user charges of services rendered by them.

Expenditure Management

The major policy initiatives on expenditure front include containing unproductive expenditures and reorienting spending towards developmental purpose, restrictions on fresh recruitment/ creation of new posts, review of manpower requirements, cut in establishment expenses and reduction in non-merit subsidies through better targeting. In their recent budgets, some State Governments, such as Punjab, have called for restructuring of the staff position in each government department and have indicated that future employment in the government would be project-specific and need-based.

Tamil Nadu took initiatives to constitute an *Expenditure Review Committee* to review, on an on-going basis, the expenditure in respect of each department. States, like Punjab, have initiated measures towards disinvestment on a select basis in respect of loss-making Public Sector Undertakings. Many States including those of Andhra Pradesh, Gujarat, Rajasthan, Tamil Nadu, Uttar Pradesh and Madhya Pradesh have introduced the new pension scheme based on the defined contribution system.

Institutional Reforms

The institutional reforms facilitating the fiscal consolidation process are set out below:

Rule based fiscal policy measures: Recognising the need for providing statutory backing to the fiscal reforms, many States have initiated measures to enact the FRLs targeting to eliminate revenue deficit and reduce GFD (Exhibit 13).

Other Institutional Reforms: These include setting up of the Guarantee Redemption Fund, Consolidated Sinking Fund and Ceiling on Guarantees (Exhibit13).

State Public Sector Undertakings Reforms

Several States have shown interest in undertaking a comprehensive review of the functioning of the State Public Sector Undertakings (SPSUs), including the possibility of closing down of non-viable units after providing for suitable safety-nets to the employees including voluntary retirement scheme (VRS). States such as Tamil Nadu, Kerala, Haryana, Karnataka and Orissa have encouraged private sector participation in the transport and power generation sectors. Karnataka's initiatives towards Policy Paper on restructuring of SPSUs and Maharashtra's initiatives towards setting up a Board for Restructuring of the SPSUs are noteworthy.

A notable development has been the initiation of power sector reforms which include the constitution of State Electricity Regulatory Commissions (SERCs) for determining the tariff structure,

Exhibit 13 : Initiatives towards Institutional Reforms by Major States

Institutional Reforms	Name of the State
1. Fiscal Responsibility Legislation	All the major States (except Bihar and West Bengal) have enacted FRLs.
2. Guarantee Redemption Fund	Andhra Pradesh, Gujarat, Haryana, Karnataka, Orissa, Rajasthan
3. Ceiling on Guarantees	Gujarat, Karnataka, Kerala, Punjab, Rajasthan, Tamil Nadu, West Bengal
4. Consolidated Sinking Fund	Andhra Pradesh, Gujarat, Haryana, Maharashtra, Orissa, West Bengal

unbundling of electricity boards into separate entities for power generation, transmission and distribution, increasing power tariffs and measures for reducing transmission and distribution losses.

Section IV

Effectiveness of Policy Measures

The effectiveness of policy measures to strengthen the State finances remained largely inadequate keeping in view of the size of the problem. Most of the policy measures were *ad hoc* in nature and were guided by the exigency rather than being structured and well planned to put the State finances on the right path. The component-wise details of various policy measures and their effectiveness to strengthen the State finances are set out below.

Effectiveness of Revenue Mobilisation Measures

The policy initiatives towards revenue mobilisation remained inadequate to keep pace with the growing expenditure requirements. These are discussed below.

States' Tax Revenues

Taking into account the past trends of State finances and the literature available on State finances, it seems that there was not much progress on restructuring of State finances. Many State Governments continued to carry their business as usual. There has been some progress in reforming the tax system, although the leakages in tax base through exemptions continue to pose problems (RBI, 2005). States took initiatives towards setting up Committees/ Groups and prepared MTFRPs to suggest the ways to enhance revenues. However, the implementation part of these measures remained weak as evident with the near stagnation in States taxes-GSDP ratios in the 1990s.

Despite the States' efforts towards enhancing revenues, the factors, such as, narrow States' tax base, greater dependence on indirect taxes and lack of control on populist measures (such as free electricity) taken by States continued to persist. Furthermore, the

increased competition among the States to attract the investment by providing tax concessions and other fiscal incentives has only resulted in a race to the bottom (Rastogi, 2004). Competitive reduction in taxes led to a mere redistribution of existing capital among the States at the cost of significant revenue foregone, while taxes could not be levied on services and agricultural income (Rao, 2002).

States' Non-Tax Revenues

The effectiveness of various non-tax reforms to improve cost recovery for major social and economic services provided by States has remained below the expectations. This is reflected in very low user charges/cost recovery from various services and low/negative returns from investment in PSEs. User charges remained inadequate because of the perception of availing government services as free. Furthermore, with the inferior quality of services, the public is loath to pay higher charges for public services. Cost recovery in the case of a number of social services, such as education and health, have hovered around 1 per cent and 5 per cent, respectively, in the recent period. The cost recovery in respect of economic services such as irrigation, roads and power is found to be higher than that of social services but still remains quite low (RBI, 2005). It seems that there is no link between capacity to borrow and the return on services provided by the Government. Since there is not enough incentive for the government to undertake appropriate levy of user charges, states are encouraged to become fiscally irresponsible and to subject user charges to populist considerations (Mohan, 2000; Acharya, 2002).

Over the years, States have initiated a number of measures to improve the functioning of State public sector enterprises (PSEs). There has, however, not been adequate generation of revenues in the form of dividends and profits received from the PSEs. There is a need to take a relook of the functioning of PSEs in order to ensure the viability of running State level PSEs in long run. Around one-fourth of the total State public sector enterprises are profit making while the rest are the largest drain on the system. Most State PSEs are unlikely to yield significant resources from privatisation proceeds, but privatisation could at least help avoid recurring losses which are otherwise a burden on the budgets. The power sector remains the

worst affected by the populist measures announced by a number of States. The average tariff rate for electricity provided to agriculture remained 25 paisa per kwh for all States (even some States have actually made it free) while average cost of supplying power remained Rs.2.81 per unit. Irrigation charges cover only around one fifth of the maintenance costs of the system, to say nothing of capital charges (Ahluwalia, 2001).

The reforms initiated in the power sector in recent years at State level are encouraging. However, keeping in view of the past record of populist measures such as free electricity, for certain sectors requires a close monitoring on the effectiveness of these reforms. In view of the large investment made by States in the public sector enterprises, state level fiscal strategy should be designed in a manner which ensures that these returns in the form of user charges and profits from commercial activities be adequate and augment fiscal discipline.

Effectiveness of Expenditure Management Measures

The effectiveness of policy measures towards expenditure management could be seen in the light of the fact the non-developmental expenditure (comprising, *inter alia*, interest payments, pensions and administrative services) has shown noticeable increase and stood at around 7 per cent of GSDP in the third phase higher by over 3 per cent and 2 per cent than the first phase and second phase, respectively. A sizeable reduction in non-developmental expenditure may not be feasible in the short-term, given the committed nature of many of its constituent items.

Notwithstanding the downward rigidity, the Debt Swap Scheme has brought about definite savings on interest costs as far as interest payments are concerned. Here again the question arises what about the higher interest cost in case of those loans negotiated from banks and FIs. Furthermore, the high interest cost on small saving receipts used by States to finance the resource gap also assume importance.

The States initiatives towards containing the subsidies were also not much effective and the subsidies given to various sectors including those of power sector and State road transport corporations continued to increase. Over the years, the inability to contain consumption

expenditure due to explicit and implicit subsidies, which are mostly cornered by the influential segments of the society, and the reluctance to raise additional resources on the part of the States have been the main causes for the deterioration of fiscal situation in States (Kurian, 1999). Direct and indirect subsidies provided by State Governments, most of which are not well targeted, have become unsustainable (Ahluwalia, 2001). The power subsidies have increased manifold over the years and even after subventions (financial support) from State Governments and cross-subsidisation, the magnitude of the 'uncovered' subsidy leaves little scope for the State Electricity Boards (SEBs), but to default on payments (RBI, 2004).

The States efforts to enhance desired allocations towards developmental expenditure could not materalise with the fact that in terms of GSDP this component of expenditure in the third phase showed decline around one percentage point from the earlier phases. The share of developmental expenditure in total expenditure also continued to show deterioration in the second and third phase.

To sum up, it is worth noting as stated in the Draft on *"Towards Faster and More Inclusive Growth: An Approach to the Eleventh Five Year Plan",* Planning Commission, Government of India, *"….Fiscal discipline also requires control in non-Plan expenditure by both the Centre and the States. Some of what is non-Plan expenditure is essential for effective delivery of public services. Another part is pre committed such as interest payments and pensions. Effective control must be exercised in the rest of non-Plan expenditure if ambitious plan targets are to be met. In practice this means control of subsidies and also levy of rational user charges to keep the demands on budgetary expenditure within limits"*.

Section V

Concluding Observations

The fiscal imbalances at State level appeared in the second phase had deepened and continued to persist in the third phase. The States took policy measures which helped to some extent to avoid further worsening of their fiscal position; however, these have not been

significant. The recent fiscal developments at State level put emphasis on the on-going fiscal and institutional reforms and seem to follow the path of reforms as suggested by the TFC. As the States face large resource gap, they would have to explore new avenues apart from utilising the traditional resources effectively and efficiently. States need to set priorities in their expenditures to reap the benefits and operate their economy in its full capacity.

Notwithstanding some moderation in fiscal imbalances in recent years, the low and stagnant revenues particularly non taxes and large component of non developmental expenditure requires the States to take corrective measures. Interest payments account a major portion of the revenue expenditure and absorb a sizeable portion of revenue receipts in case of many States. The increasing liabilities from the NSSF need to be addressed as they involve high interest cost. Furthermore, the loans contracted from banks and financial institutions in the past also carry high interest rate. The upturn in interest rate cycle, currently underway, is likely to put further pressure on interest burden of the States

In view of the large and persistent resource gap, the cornerstone of the fiscal strategy pursued at State level needs to be examined as per the changing requirements. As rightly stated in the Mid Term Appraisal of the Tenth Five Year Plan 2002-07, Government of India, *"Improving resources of States on a sustainable basis, providing incentives for developmental performance, fiscal prudence and accountability and putting in place successful and flexible mechanisms for intergovernmental transfer are key issues, not only in the remaining period of the Tenth Plan but even more for the Eleventh Plan".*

To sum up, the fiscal policy pursued at State level needs to be mainly focussed on (i) to broaden tax base including those of agriculture income and to reduce exemptions/concessions, (ii) administrative and legislative reforms in taxation, (iii) increase in cost recovery/user charges and returns from public investment, (iv) public sector undertakings restructuring, (v) rationalisation and containment of both explicit and implicit subsidies, (vi) expenditure reprioritisation towards social and productive sectors and, more

importantly, (vii) institutional reforms. These initiatives would go a long way to bring fiscal discipline and sustainability in the public finance at State level.

Notes

[1] Major deficits of States revealed marginal improvement during 2000-03; however, States' fiscal health again deteriorated in 2003-04. Notwithstanding some moderation in major deficits, the low and stagnant revenues particularly non tax and large component of non developmental expenditure remained cause of concern.

[2] The data have been sourced from the State finances articles, various issues published by the RBI and the Budget Documents of the State Governments. The GSDP data have been sourced from the Central Statistical Organisation website.

[3] The analytical review is based on the fiscal position of 14 major States of India. These States account for about 90 per cent of aggregate budget of all States. Uttar Pradesh, Madhya Pradesh, and Bihar are taken as undivided States for purpose of comparison. North Eastern and other special category States have been excluded from the analysis because of special features and also gaps in the data for some of these States. The small States of Goa and Delhi have also been excluded, the latter having the additional feature of being the capital.

[4] West Bengal's Revenue Account was in surplus (0.4 per cent of GSDP) only in 1985-86 and the rest of the period State's Revenue Account was in deficit (on an average at 1.2 per cent of GSDP).

[5] The TFC also recommended, if, however, some fiscally weak States are unable to raise funds from the market, the Centre could resort to lending, but the interest rate should remain aligned to the marginal cost of borrowings for the Centre.

[6] The constitution of the Sixth Pay Commission has been approved by the Union Cabinet on July 20, 2006.

[7] For further details of these policy measures, please see RBI's publication : *State Finances: A Study of Budgets*", various issues, published by the RBI annually.

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Banking Sector Developments in India, 1980-2005: What the Annual Accounts Speak?

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Banking sector in India is currently passing through an exciting and challenging phase. The reform measures have brought about sweeping changes in this vital sector of the country's economy. This paper is an attempt to study the trends in important banking indicators for the 25-year period from 1980 to 2005. Analysing the data from balance sheets of banks, the paper draws some important conclusions for the banking sector as a whole as well as for different bank groups.

Introduction

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

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"Many bank failures and crises over two centuries, and the damage they did under *laissez faire* conditions; the needs of planned growth and equitable distribution of credit, which in privately owned banks was concentrated mainly on the controlling industrial houses and influential borrowers; the needs of growing small scale industry and farming regarding finance, equipment and inputs; from all these there emerged an inexorable demand for banking legislation, some government control and a central banking authority, adding up, in the final analysis, to social control and nationalisation" (Tandon, 1989).

Post nationalisation, the Indian banking system registered tremendous growth in volume. Despite the undeniable and multifold gains of bank nationalization, it may be noted that the important financial institutions were all state owned and were subject to central direction and control. Banks enjoyed little autonomy as both lending and deposit rates were controlled until the end of the 1980s. Although nationalisation of banks helped in the spread of banking to the rural and hitherto uncovered areas, the monopoly granted to the public sector and lack of competition led to overall inefficiency and low productivity. By 1991, the country's financial system was saddled with an inefficient and financially unsound banking sector. Some of the reasons for this were (i) high reserve requirements, (ii) administered interest rates, (iii) directed credit and (iv) lack of competition (v) political interference and corruption. As recommended by the Narasimham Committee Report (1991) several reform measures were introduced which included reduction of reserve requirements, de-regulation of interest rates, introduction of prudential norms, strengthening of bank supervision and improving the competitiveness of the system, particularly by allowing entry of private sector banks. With a view to adopting the Basel Committee (1988) framework on capital adequacy norms, the Reserve Bank introduced a risk-weighted asset ratio system for banks in India as a capital adequacy measure in 1992. Banks were asked to maintain risk-weighted capital adequacy ratio initially at the lower level of 4 per cent, which was gradually increased to 9 per cent. Banks were also directed to identify problem loans on their balance sheets and make provisions for bad loans and bring down the burgeoning problem

of non-performing assets. The period 1992-97 laid the foundations for reform in the banking system (Rangarajan, 1998). The second Narasimham Committee Report (1998) focussed on issues like strengthening of the banking system, upgrading of technology and human resource development. The report laid emphasis on two aspects of banking regulation, *viz.*, capital adequacy and asset classification and resolution of NPA-related problems.

Commercial banks in India are expected to start implementing Basel II norms with effect from March 31, 2007. They are expected to adopt the standardised approach for credit risk and the basic indicator approach for operational risk initially. After adequate skills are developed, both at the banks and at the supervisory levels, some banks may be allowed to migrate to the internal rating based (IRB) approach (Reddy 2005).

At present, banks in India are venturing into non-traditional areas and generating income through diversified activities other than the core banking activities. Strategic mergers and acquisitions are being explored and implemented. With this, the banking sector is currently on the threshold of an exciting phase.

Against this backdrop, this paper endeavours to study the important banking indicators for the last 25-year period from 1981 to 2005. These indicators have been broadly grouped into different categories, *viz.*, (i) number of banks and offices (ii) deposits and credit (iii) investments (iv) capital to risk-weighted assets ratio (CRAR) (v) non performing assets (NPAs) (vi) Income composition (vii) Expenditure composition (viii) return on assets (ROAs) and (ix) some select ratios. Accordingly, the paper discusses these banking indicators in nine sections in the same order as listed above. The paper concludes in section X by drawing important inferences from the trends of these different banking parameters.

Section I

Number of Banks and Offices

The number of offices of all scheduled commercial banks almost doubled from 29,677 in 1980 to 55,537 in 2005. This rapid increase

**Table 1: Number of Scheduled Commercial
Banks- Bank Group-wise**

Year	SBI & its Associates		Nationalised Banks		Foreign Banks		Domestic Private Sector Banks		All Scheduled Commercial Banks	
	Number of Banks	Number of Offices	Number of Banks	Number of Offices	Number of Banks	Number of Offices	Number of Banks	Number of Offices	Number of Banks	Number of Offices
1980	8	7745	20	18083	13	NA	34	3849	75	29677
1985	8	10568	20	25061	20	NA	32	4833	80	40462
1990	8	12074	20	29800	22	148	25	3961	75	45983
1995	8	12947	19	31817	27	157	32	4213	86	49134
2000	8	13589	19	33905	42	237	33	5437	101	53168
2005	8	13896	20	35075	31	245	29	6321	88	55537

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

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

in the number of bank offices is observed in the case of all the bank groups. However, the number of banks in the case of foreign bank group and domestic private sector bank group decreased from 42 in 2000 to 31 in 2005 and from 33 in 2000 to 29 in 2005, respectively. This fall in the number of banks is reflective of the consolidation process and, in particular, the mergers and acquisitions that are the order of the banking system at present (Table 1).

Section II

Deposits and Credit

II.1 Credit Deposit Ratio

The credit-deposit ratio (C-D ratio) provides an indication of the extent of credit deployment for every unit of resource raised in the form of deposits. The C-D ratios of all scheduled commercial banks decreased gradually from 63.3 per cent in 1980 to 49.3 per cent in 2000. This declining trend has been reversed in the recent years, with the ratio increasing to 62.7 per cent in 2005. The foreign bank group recorded the highest C-D ratio (87.1 per cent) and State Bank Group the lowest (56.3 per cent) in 2005. The C-D ratios of all the bank groups had fallen drastically in 2000, except for foreign banks. With respect to domestic private sector banks group, this ratio

Table 2: Credit Deposit Ratios of Scheduled Commercial Banks

(Per cent)

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

Note   : Ratio includes the impact of the conversion of two non-banking entities into banking entities.
Source : Base data are taken from Annual Accounts of Scheduled Commercial Banks 1979 to 2004
         and Statistical Tables Relating to Banks in India 2004-05.

was high at 70.5 per cent in 2005. With respect to State Bank Group and nationalised bank group, the C-D ratios were lower at 56.3 per cent and 61.3 per cent, respectively, which were less than the C-D ratio of all scheduled commercial banks at 62.7 per cent in 2005. There has been a significant increase in the C-D ratios in 2005 across all the bank groups. (Table 2 and Chart 1).

II.2 Per Office Deposits and Credit

The overall business of foreign banks per office is higher than the per office business of other bank groups. Across the board, the

Chart 1: Credit Deposit Ratios of Scheduled Commercial Banks
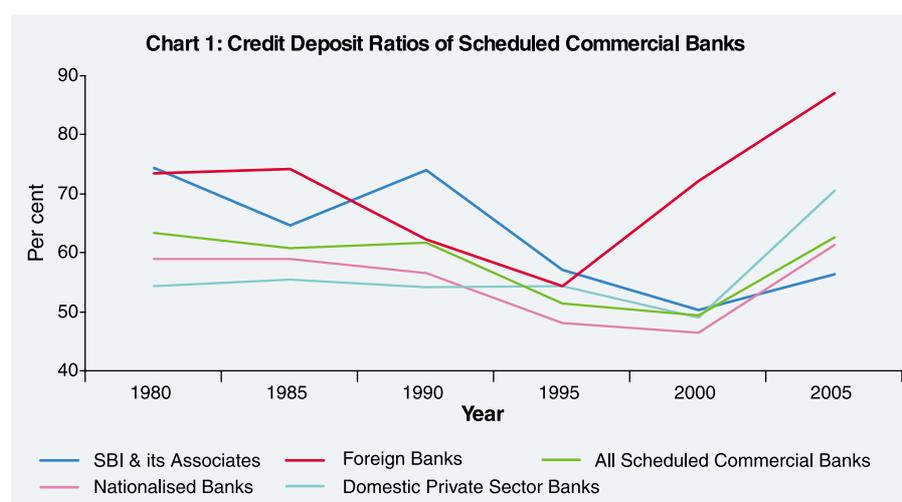
per office deposits are more than the per office credit as expected. With respect to all scheduled commercial banks, deposits per office increased from Rs.1.4 crore in 1980 to Rs. 33 crore in 2005 and credit per office also increased from Rs. 0.9 crore to Rs. 20.7 crore during the same period (Table 3).

II.3 Type-wise Deposits

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

Table 3: Per Office deposits and credit of Scheduled Commercial Banks

(Rs. crore)

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

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

service offered by foreign banks. In the case of domestic private sector bank group, while the composition of demand deposits did not vary much over the 25-year period, the share of savings deposits fell from 26.8 per cent in 1980 to 16.0 percent in 2005, whereas term deposits increased from 56.7 per cent to 69.5 per cent over the same period. Even though bank deposit rates are low, people prefer to park major portion of their funds in the form of term deposits because of the risk free returns and assured returns it provides. We can infer that the interest rate structure has definitely influenced the maturity structure of bank deposits. For example, since the year 2000, the share of term deposits to total deposits declined across bank groups except for State Bank group. The deposit rates of 1 to 3 yrs maturity show that there is a clear fall in the rates since 2000. This could be the major reason for decline in term deposits after 2000 (Table 4 and Chart 2).

Table 4: Bank Group-wise Deposits of Scheduled Commercial Banks: Type-wise

(Per cent)

Year	SBI & its Associates			Nationalised Banks			Foreign Banks		
	Demand Deposits	Savings Bank Deposits	Term Deposits	Demand Deposits	Savings Bank Deposits	Term Deposits	Demand Deposits	Savings Bank Deposits	Term Deposits
1980	24.6	23.3	52.1	17.6	26.1	56.3	25.7	21.5	52.8
1985	24.7	23.4	52.0	16.5	24.9	58.6	33.7	16.9	49.4
1990	26.7	22.9	50.4	16.7	22.2	61.1	26.9	9.3	63.8
1995	22.5	22.5	55.0	15.8	23.5	60.7	15.5	8.3	76.2
2000	17.7	21.5	60.7	11.9	24.1	64.0	21.6	9.9	68.5
2005	14.1	25.0	60.9	9.9	27.2	63.0	30.1	17.9	51.9

Year	Domestic Private Sector Banks			All Scheduled Commercial Banks		
	Demand Deposits	Savings Bank Deposits	Term Deposits	Demand Deposits	Savings Bank Deposits	Term Deposits
1980	16.5	26.8	56.7	19.7	25.2	55.1
1985	16.9	27.3	55.8	19.4	24.3	56.2
1990	16.9	25.1	58.0	19.9	22.0	58.1
1995	16.0	15.0	69.0	17.6	21.6	60.8
2000	14.3	11.0	74.7	14.4	20.9	64.7
2005	14.4	16.0	69.5	12.8	24.2	63.0

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

Chart 2: Deposit Composition of Scheduled Commercial Banks
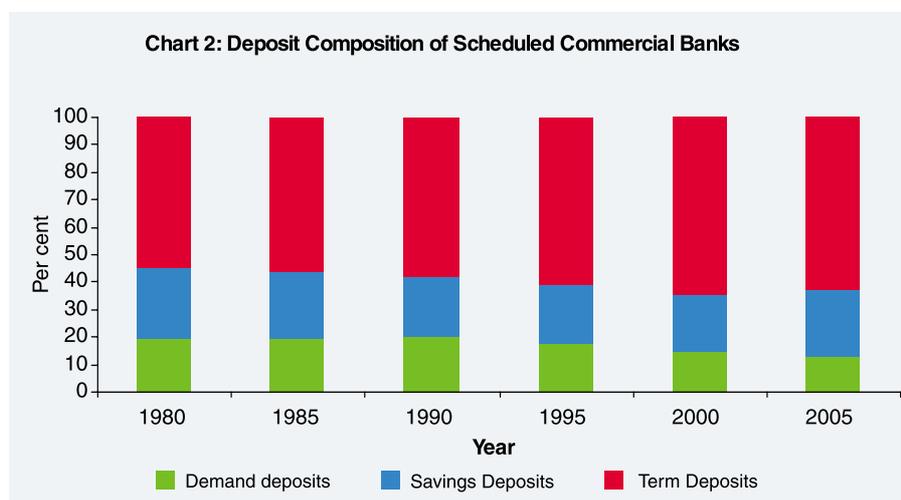
II.4 Bank Group-wise Share in Deposits

The bank group-wise share in deposits of scheduled commercial banks depicts that nationalised bank group contributed more than 50 per cent in the total deposits mobilised by all scheduled commercial banks in the year 2005. This share dropped from 64.4 per cent in 1980 to 50.7 per cent in 2005. The share of deposits of State Bank group remained more or less constant during the 25-year period constituting a little more than one fourth of the total deposits by all scheduled commercial banks. State Bank group is successful in holding on to its percentage share of deposits in total deposits of all scheduled commercial banks. However, nationalised bank group is seen to be slipping in this area. The share of foreign bank group in total deposits is showing increasing trend. The share of foreign banks increased from 2.9 per cent to 4.7 per cent and in the case of domestic private sector banks, it increased from 5.3 per cent in 1980 to 17.0 per cent in 2005. This shows that banks in the private sector have taken a head start in the deposit mobilisation after the liberalisation measures adopted with regard to entry of new private sector banks in 1995 (Table 5).

II.5 Security-wise Advances

The advances secured by tangible assets in the case of all scheduled commercial banks increased from 73.2 per cent in 1992 to

**Table 5: Bank Group-wise Share of Deposits of
Scheduled Commercial Banks to Total**

(Per cent)

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

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

76.4 percent in 2005. For all the bank groups, with the exception of foreign bank group, advances secured by tangible assets were more than 70 per cent for the period 1992 to 2005. In the case of foreign banks, such secured loans increased from 54 per cent in 1992 to 57.9 per cent in 2005. Advances covered by government / bank guarantees with respect to all scheduled commercial banks decreased from 15.1 per cent to 5.9 per cent during the same period. Such type of advances declined for each of the bank groups. It is interesting to note here that unsecured loans granted by foreign banks group was more than a third of the total advances for all the years from 1992 to 2005. For all other bank groups, unsecured loans were less than 21 per cent. It is also noteworthy that unsecured advances granted by State Bank of India and its Associates increased sharply from 15.4 per cent in 2004 to 20.9 percent in 2005 (Table 6 and Chart 3).

II.6 Bank Group-wise Share in Advances

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

Table 6: Security-wise Advances of Scheduled Commercial Banks

(Per cent)

Year	SBI & its Associates			Nationalised Banks			Foreign Banks		
	Secured by tangible assets	Covered by Bank/ Govt. Guarantees	Un-secured	Secured by tangible assets	Covered by Bank/ Govt. Guarantees	Un-secured	Secured by tangible assets	Covered by Bank/ Govt. Guarantees	Un-secured
1992	70.8	24.7	4.5	76.4	10.0	13.6	54.0	13.9	32.1
1995	78.3	18.0	3.7	76.0	14.3	9.7	67.2	5.9	26.8
2000	86.0	8.3	5.8	81.6	8.7	9.7	56.1	8.1	35.9
2001	81.0	7.6	11.4	80.0	8.5	11.5	51.9	9.3	38.8
2002	81.4	6.3	12.3	77.2	9.9	12.9	53.1	12.0	34.9
2003	80.4	7.2	12.4	79.9	7.2	12.9	56.2	11.3	32.6
2004	77.3	7.4	15.4	80.1	6.5	13.3	58.7	7.3	34.0
2005	74.7	4.4	20.9	77.6	7.2	15.1	57.9	5.6	36.4

Year	Domestic Private Sector Banks			All Scheduled Commercial Banks		
	Secured by tangible assets	Covered by Bank/ Govt. Guarantees	Un-secured	Secured by tangible assets	Covered by Bank/ Govt. Guarantees	Un-secured
1992	76.2	8.7	15.1	73.2	15.1	11.7
1995	87.0	6.4	6.6	77.2	14.0	8.8
2000	76.7	11.9	11.4	80.2	8.9	10.9
2001	77.6	8.3	14.1	77.7	8.3	14.1
2002	85.9	5.8	8.3	78.0	8.4	13.6
2003	85.5	6.4	8.1	79.4	7.4	13.3
2004	85.1	5.1	9.7	78.9	6.5	14.6
2005	81.7	4.4	14.0	76.4	5.9	17.7

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

This trend may not continue in future as the data reveals that the share of the public sector banks declined from 92.1 per cent in 1980 to 74.3 per cent in 2005. On the other hand, the advances made by foreign banks increased from 3.3 per cent in 1980 to 6.5 per cent in 2005 and that made by private banks in the domestic sector increased from 4.5 per cent in 1980 to 19.2 per cent in 2005. Data supports that in the post reform period, public sector banks

Chart 3:Composition of Advances by Scheduled Commercial Banks (Security wise)
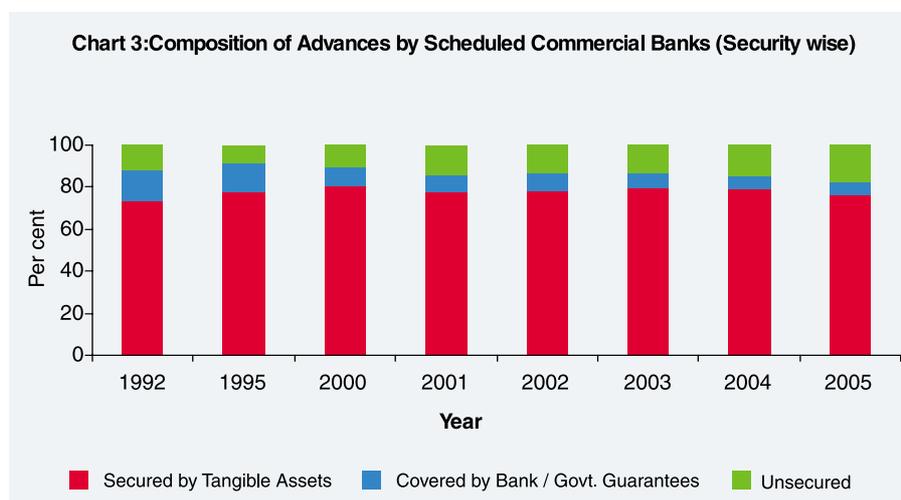
are facing increasing competition from the private sector banks-both foreign and domestic (Table 7).

II.7 Priority Sector Advances

Priority sector advances of scheduled commercial banks showed some marginal decline from 35 per cent in 1992 to 34 per cent in 2005. This declining trend is observed in the case of all bank groups except for foreign banks. In the case of foreign banks, priority sector advances increased over the years since the banking sector reforms started. Of the total advances, nationalised banks advanced loans to priority sectors to the extent of 37.4 per cent and State Bank group to the extent of 35.3 per cent in 2005. Such loans were low

Table 7: Bank Group-wise Share of Advances of Scheduled Commercial Banks to Total

(Per cent)

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

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

Table 8: Percentage of Priority Sector Advances to Total Advances: Bank Group-wise

(Per cent)

Year	SBI & its Associates	Nationalised Banks	Foreign Banks	Domestic Private Sector Banks	All Scheduled Commercial Banks
1992	36.0	38.4	7.9	28.9	35.0
1995	31.1	33.6	20.7	27.0	31.3
2000	32.3	34.1	21.4	26.6	31.5
2001	32.2	333.9	21.1	24.5	31.0
2002	31.4	34.1	21.6	16.9	29.2
2003	31.2	36.2	21.9	22.2	31.1
2004	33.2	38.6	23.2	26.9	33.7
2005	35.3	37.4	25.8	26.5	34.0

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

with respect to domestic private sector banks group at 26.5 per cent and foreign banks at 25.8 per cent. A target of 40 per cent of net bank credit has been stipulated for lending to the priority sector by domestic scheduled commercial banks both in the public and private sectors and a target of 32 per cent has been stipulated for lending to the priority sector by foreign bank groups at present. However, the data presented in this section are percentages of priority sector lending to gross bank credit (Table 8).

Section III
Investments

Bank group-wise investments show that all scheduled commercial banks invested 92.6 per cent of their total investments in government and other approved securities in the year 1980, which declined to 82.4 per cent in 2005; whereas other investments increased from 7.4 per cent to 17.6 per cent during the same period. This could be due to the reduction in SLR requirements. Even though the SLR requirements have been reduced from a high of 38.5 per cent in 1992 to the statutory minimum of 25 per cent, banks still prefer to invest large portion of their investments in approved securities, because of the risk-free and assured returns they

get through such investments. In the case of public sector banks and foreign banks, there was a reduction in investment in government securities and a preference for other investments like shares, bonds and debentures, which are not counted for SLR requirements. However, in 2005, a major reduction was noticed with respect to investments in other securities and a clear preference for government and other approved securities. As against this, in the case of domestic private sector banks, there is a clear preference for investments in other securities after the year 1995 and a reduction of investments in government and other approved securities. Since the year 2000, with the entry of more private sector banks, this group invested more than one third of their total investments in non-SLR securities, which indicates that the private banks of late are currently venturing into more riskier, nonetheless challenging business (Table 9 and Chart 4).

Table 9: Bank Group-wise Distribution of Investments of Scheduled Commercial Banks

(Per cent)

Year	SBI & its Associates		Nationalised Banks		Foreign Banks	
	Govt. & Other Appr. Securities	Other Invest-ments	Govt. & Other Appr. Securities	Other Invest-ments	Govt. & Other Appr. Securities	Other Invest-ments
1980	94.5	5.5	92.2	7.8	97.7	2.0
1985	97.3	2.7	92.2	7.8	94.5	5.5
1990	91.9	8.1	91.6	8.4	85.5	14.5
1995	88.7	11.3	85.8	14.2	71.4	28.6
2000	81.8	18.2	76.4	23.6	63.8	36.2
2005	90.5	9.5	81.7	18.3	80.5	19.5

Year	Domestic Private Sector Banks		All Scheduled Commercial Banks	
	Govt. & Other Appr. Securities	Other Invest-ments	Govt. & Other Appr. Securities	Other Invest-ments
1980	82.6	17.2	92.6	7.4
1985	93.6	6.3	94.0	6.0
1990	94.1	5.9	91.5	8.5
1995	78.5	21.5	85.2	14.8
2000	65.2	34.8	75.7	24.3
2005	69.8	30.2	82.4	17.6

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

Chart 4: Percentage Share of Investments in Approved Securities to Total Investments

Legend:
- State Bank of India and its Associates
- Nationalised Banks
- Foreign Banks
- All Scheduled Commercial Banks
- Domestic Private Sector Banks
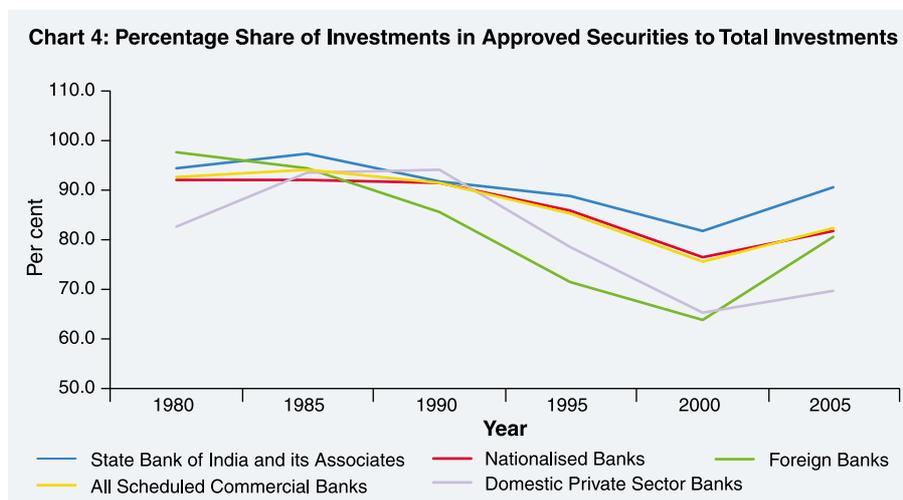
Section IV

Capital To Risk-weighted Assets Ratio (CRAR)

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

Section V

Non-performing Assets (NPAs)

The measure of non-performing assets helps us to assess the efficiency in allocation of resources made by banks to productive

Table 10: Distribution of Scheduled Commercial Banks by CRAR

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

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

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

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

to gross advances, which was the lowest among all the groups at 6.4 per cent in 1998, decreased to 2.9 per cent in 2005. With regard to domestic private sector banks group, gross NPAs decreased from 8.7 per cent to 3.9 per cent during the same period. The ratio of net NPAs to net advances of different bank groups also exhibited similar declining trends during the period from 1998 to 2005. The net NPAs of all scheduled commercial banks declined from 7.3 per cent in 1998 to 2.0 per cent in 2005 (Table 11).

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

The composition of NPAs of public sector banks brings to light certain interesting aspects. It is observed that in 1995 for State Bank group, the share of NPAs was 52.5 per cent for the priority sector, 41.4 per cent for the non-priority sector, and 6.1 per cent for the public sector. These percentages were 47.4 per cent, 51.5 per cent and 1.1 per cent, respectively in 2005. Similarly in the case of nationalised banks also, the NPA composition for non-priority sector

Table 11: NPAs of Scheduled Commercial Banks (Bank Group-wise)

(Per cent)

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

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

Table 11A: Composition of NPAs of Public Sector Banks

(Per cent)

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

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

has increased, whereas, that for priority sector and public sector, there is a marginal reduction. This shows that not only advances to the priority sector are going non-performing, but more than that, non-priority sector lending is the area where the bankers need to cautiously examine the possibilities of loans becoming non-performing. Here the question of moral hazard, adverse selection and credit rationing comes to the fore. These issues are to be addressed face on. This also goes to explode the commonly held myth that the problem of NPAs is caused mainly due to the credit allocation to priority sectors. (Table 11 A).

Section VI

Income Composition

Income composition of scheduled commercial banks shows that across the different bank groups, interest income viz., income from advances and investments are falling and the percentage of other income is increasing. Other income *inter alia* includes income earned in the form of commission, exchange and brokerage and income from profit on sale of investments. In 1980, the share of interest income of all scheduled commercial banks was 89.0 per cent, which decreased to 82.0 per cent in 2005. Other income on the other hand, increased from 11.0 per cent to 18.0 per cent during the same period. This reflects upon the increasing reliance on non-interest income *vis-à-vis* interest

income of commercial banks. This is a welcome trend as it may reduce the risks arising out of the sole dependency on interest as the source of income (Ramasastri, Samuel & Gangadaran, 2004)

Bank group-wise interest and non-interest income shows that in the case of SBI and its Associates, interest income declined from 84.5 per cent in 1980 to 82.3 percent in 2005 and in the case of nationalised banks group, the same declined from 91.4 per cent to 84.0 per cent. In the case of domestic private sector banks also, interest income declined from 90.3 per cent in 1990 to 80.5 per cent in 2005. It is evident from these figures that more than 80 per cent of the income still comes from interest income in the case of public sector banks and domestic private sector banks, which indicates that these banks are seen to be dependent mainly on the traditional way of earning income even though there is a reduction in such dependence. In contrast, foreign banks are seen to be increasingly dependent upon non-interest sources of income. Non-interest income of foreign banks formed about 29.6 per cent of their total income, followed by domestic private sector banks 19.5 per cent, State Bank of India and its Associates 17.7 percent and nationalised banks 16.0 per cent (Table 12 and Chart 5).

A comparison of the break-up of interest income viz., interest on advances and interest on investments shows that with respect to all scheduled commercial banks, interest income on advances has fallen

Table 12: Income Composition of Scheduled Commercial Banks

(Per cent)

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

'_' : Not Available.

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

Chart 5: Income Composition of Scheduled Commercial Banks
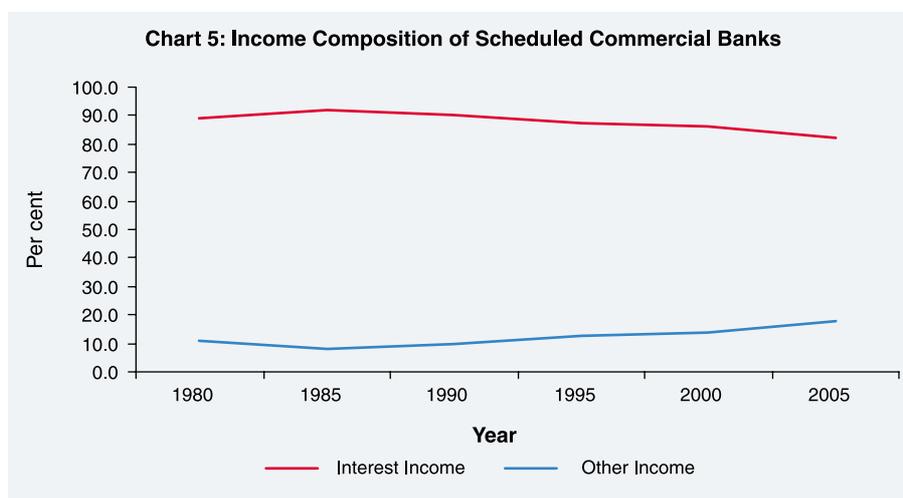
from 60.7 per cent in 1992 to 52.3 per cent in 2005. Whereas, interest income on investments increased from 25.6 per cent in 1992 to 42.2 per cent in 2005. This is true for all the bank groups (Table 12 A) .

Table 12A: Composition of Interest Income of Scheduled Commercial Banks

(Per cent)

Year	SBI & its Associates			Nationalised Banks			Foreign Banks		
	Interest on Advances	Interest on Investments	Others	Interest on Advances	Interest on Investments	Others	Interest on Advances	Interest on Investments	Others
1992	60.8	22.5	16.7	60.9	28.0	11.1	61.1	21.5	17.4
1995	47.4	44.1	8.5	49.6	42.1	8.3	52.8	41.5	5.7
2000	44.3	43.4	12.3	48.3	45.9	5.7	52.1	40.3	7.5
2001	44.2	43.7	12.2	49.1	45.0	5.9	54.4	38.1	7.5
2002	39.5	47.7	12.8	49.4	44.9	5.7	55.0	37.8	7.2
2003	39.1	48.7	12.1	50.1	45.4	4.6	60.1	35.0	4.9
2004	39.7	51.0	9.3	49.1	47.1	3.8	56.1	37.9	6.0
2005	43.0	48.4	8.6	52.8	43.3	3.9	60.4	32.1	7.5

Year	Domestic Private Sector Banks			All Scheduled Commercial Banks		
	Interest on Advances	Interest on Investments	Others	Interest on Advances	Interest on Investments	Others
1992	56.7	27.6	15.6	60.7	25.6	13.7
1995	56.9	36.0	7.2	49.7	42.3	8.1
2000	50.8	42.1	7.1	47.8	44.3	8.0
2001	49.9	43.5	6.6	48.2	43.9	8.0
2002	48.8	44.6	6.6	46.7	45.2	8.1
2003	57.0	37.8	5.3	48.7	44.4	6.9
2004	59.0	36.1	4.9	48.6	45.7	5.7
2005	63.5	32.1	4.5	52.3	42.2	5.5

Note   : 'Others' include interest on balances with RBI and other inter-bank funds and others.
Source : Base data are taken from Annual Accounts of Scheduled Commercial Banks 1979 to 2004 and Statistical Tables Relating to Banks in India 2004-05.

Section VII

Expenditure Composition

The expenditure composition of scheduled commercial banks indicates that the percentage of interest expenses to total expenses of all scheduled commercial banks declined by 2.1 per cent from 66.3 per cent in 1980 to 64.2 per cent in 2005. Percentage of operating expenses to total expenses has increased from 33.7 per cent in 1980 to 35.8 per cent in 2005. In the case of all bank groups, similar trend is noticed except for foreign banks where the interest expenses has decreased from 64.6 per cent in 1990 to 47.9 per cent in 2005. Whereas, percentage of operating expenses to the total expenses of foreign banks increased from 35.4 per cent to 52.1 per cent (Table 13 & Chart 6).

A further break-up of operating expenses reveals that wages, as percentage of operating expenses of public sector banks is more than 60 per cent. These are symptoms of under employment. This situation calls for more apt and pragmatic human resource policies and proper man power planning for the future. The wages of foreign banks increased from 25.9 per cent in 1990 to 30.6 per cent of their

Table 13: Expenditure Composition of Scheduled Commercial Banks

(Per cent)

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

- = Not Available.

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

Chart 6: Expenditure Composition of Scheduled Commercial Banks
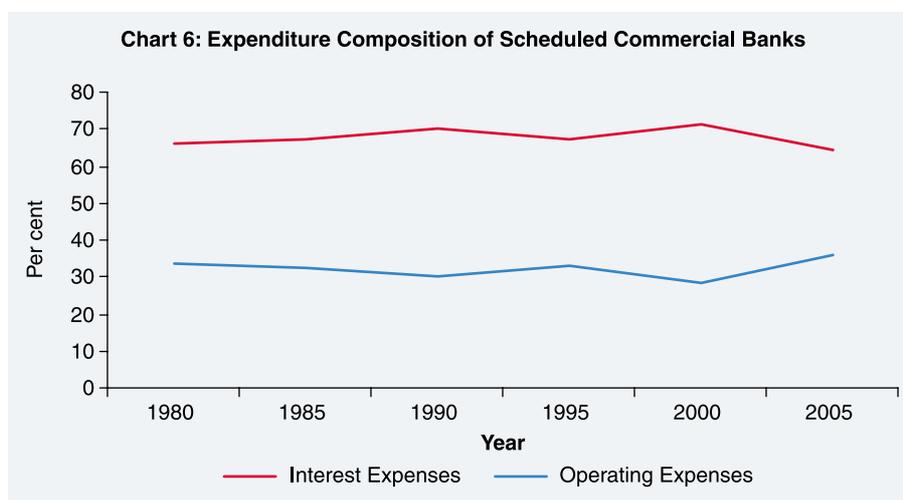
operating expenses in 2005. In the case of domestic private sector banks group, wages as percentage of operating expenses was 73.5 per cent in 1990 and the same decreased drastically to 33.7 per cent. This goes to indicate that banks in the private sector both foreign and domestic are spending for other business boosting measures like image building, software development etc. (Table 13 A and Chart 6 A).

Table 13A: Wages as Percentage of Operating Expenses* of Scheduled Commercial Banks

(Per cent)

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

- = Not Available.

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

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

Chart 6A: Wages as Percentage of Operating Expenses

Legend:
— SBI & its Associates
— Nationalised Banks
— Foreign Banks
— All Scheduled Commercial Banks
— Domestic Private Sector Banks
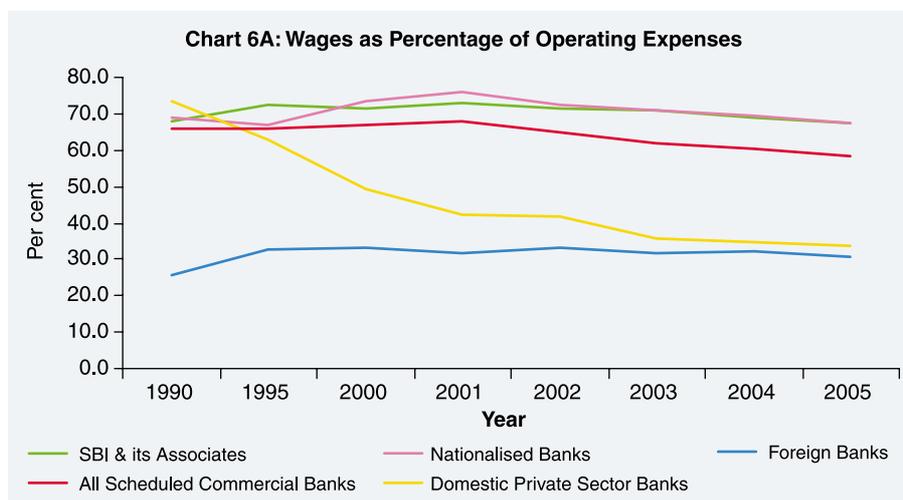
Section VIII

Return on Assets

Return on assets (ROA) is an important performance indicator of banks. Return on assets has been worked out by taking the ratio of net profit or loss to average advances and investments. For all scheduled commercial banks, the ROA increased from 0.1 per cent in 1980 to 1.1 per cent in 2005. Amongst the bank groups, the ROA of foreign banks group is the highest at 1.8 per cent in 2005. All other bank groups recorded a return on assets of 1.1 per cent showing that all banks are making profits and their performances are good. Foreign banks group is on a higher plane with respect to its performance in comparison with other bank groups. Compared to the pre-reform period, the ROA of public sector banks improved significantly after the initiation of reforms. In the case of foreign banks and domestic private sector banks, data are available only from 1995 (Table 14).

The distribution of scheduled commercial banks by ROA reveals that in 1995, with respect to State Bank group, all 8 banks were in the ROA range of up to 1 per cent. This position improved slightly as one bank was in the ROA category of more than 1.5 per cent in 2000 and 2005. This goes to indicate that State Bank group has much potential to enhance their performance. Similarly, majority of the banks in the nationalised group were in the ROA range of less than 1 per cent in

Table 14: Return on Assets (ROAs)* of Scheduled Commercial Banks

(Per cent)

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

'-' = Not Available.

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

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

1995, which exhibited some improvement since 2000. In the case of domestic private sector banks also, there seems to be more scope for improvement as many banks reported negative ROA in 2005. In contrast to all other bank groups, majority of the foreign banks were placed in the category of high ROA of more than 1.5 per cent (Table 14 A).

Table 14 A: Distribution of Scheduled Commercial Banks by ROA

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

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

Section IX

Some Select Ratios

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

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

The ratio of interest on deposits to average deposits of scheduled commercial banks, which is reflective of the deposit rate, declined from 7.5 per cent in 1992 to 4.2 per cent in 2005. These rates are lower than the rates of deposits with 1 to 3 year maturity for all the bank groups. This indicates that banks are able to mobilise deposits at a lower rate than that of the rates for deposits of 1 to 3 years maturity (Table 15 and Chart 7).

**Table 15: Some Select Ratios of Scheduled Commercial Banks**
(Bank Group-wise)

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

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

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

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

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

Chart 7: Select Ratios of Scheduled Commercial Banks

Legend:
- Ratio of Interest on Advances to Average Advances
- Ratio of Interest on Investments to Average Investments
- Ratio of Interest on Deposits to Average Deposits
- Average PLR
- Yield on Central Govt. dated Securities (Weighted average)
- Deposit Rates (1 to 3 yrs.)
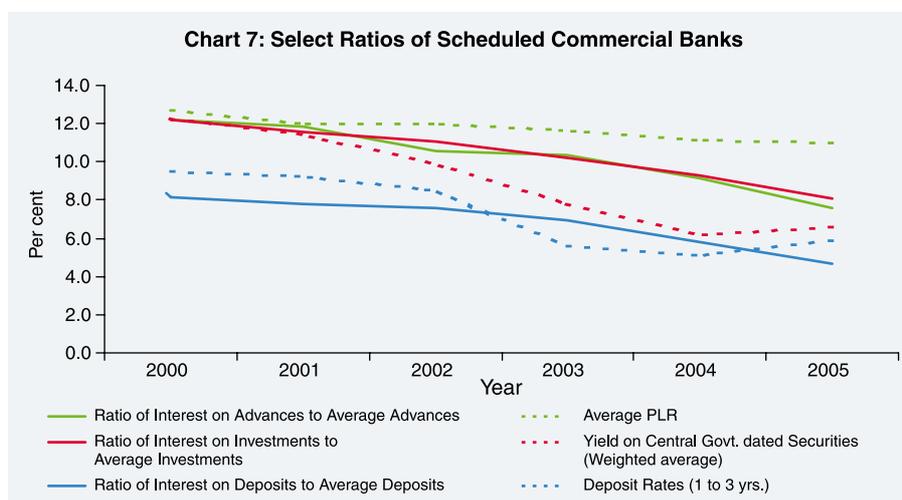
The spread between the lending and deposit rates have reduced over the years from 1992 to 2005. The general fall in interest rates in the recent period is in consonance with the monetary policy stance of a soft and flexible interest rate regime.

Section X

Concluding Observations

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

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

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

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

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

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

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

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

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

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

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Public Finance in Developing and Transitional Countries by Jorge Martinez-Vazquez and James Alm; Edward Elgar, Cheltenham, UK, 2003; pages 357; price £ 65

The book is a collection of essays presented in a conference held in the honour of Richard Bird whose extensive contribution to the fiscal literature emphasised that the unique standards or norms should not be trusted as the simplistic solutions are dangerously insufficient to deal with complications posed by the real world. His contribution to fiscal federalism has moulded the shape of federalism in several economies. He taught that tax reforms should be based on understanding of the country specific conditions. The other areas to which he has contributed profusely are government's expenditure policy and fiscal management process. The essays presented in the book are selected and arranged so as to reflect the contribution of Richard Bird to these specific areas. The book is organised into three sections covering the areas of inter-governmental fiscal relations; tax evasion, tax administration and tax compliance; and the fiscal policy.

The opening chapter offers an interesting discussion on role of middle level government in a federation in the context of equalisation policy of the central government. The pure decentralisation model, as suggested by theory, where a median voter can translate his preferences to the elected officials, is not suitable to explain the findings on intra-provincial equalisation. The sub-national governments may influence the equalisation policies of the centre through distribution of transfers received from the centre, particularly the transfers pattern to local levels by sub-national government may be different than that envisaged in the central government's policy. Similarly on the tax measures, the provisions made by the centre may and may not be passed down to local levels by the provinces. Overall impact of sub-national policy stance on equalisation policy can be judged by the simple rule based on elasticity where a lower cross-section income elasticity of expenditure than that of revenue indicates the presence of intra-province equalisation. The empirical tests in case of China, Russia and USA are indicative of the existence of equalisation mechanism in these countries. From the experience of these countries, it is concluded that the equalisation policies

are driven more by disparities in wealthier states than by the average income level. The policy implication embodied in the analysis is that the centre should allow a liberal sub-national sector if it has already embraced the decentralisation and a relatively controlled sub-national sector if it has not fully embraced the decentralisation.

It is learnt from the experience of China, India and Vietnam that the main challenges in inter-governmental finances are to introduce appropriate institutions, extend fiscal decentralisation to local levels, assign significant powers to sub-national governments, and design appropriate tax policy so as to replace the revenues from public enterprises with taxes. There is a need to establish legal and administrative institutions required for efficient assignments to sub-national levels. It is essential for the evolution of efficient decentralisation that comprehensive budgeting system and an appropriate system for accountability and transparency are set in place.

The local public finances and the inter-governmental transactions are influenced by the spatial allocation of population resulting due to different degree of liberalisation in labour and housing markets. The spatial disequilibrium of population may require the local authorities to take some specific measures. There is a need, for example, to increase spending on public services in a region experiencing in-migration of population. If migrated labour is unskilled, the expenditure requirement may be higher than the revenue contribution made by the migrated labour. The policy response across countries has been different to deal with migration. In Germany, where population migration took place on a large scale after the unification, the central government resorted to indirect fiscal measures like infrastructure spending and investment subsidies to otherwise unprofitable enterprises to prevent the flow of labour from one region to another.

The appropriate measurement of decentralisation is crucial for analytical purposes as the inaccurate measure of the same may lead to wrong conclusions. For example, the higher level of autonomy, defined as a ratio of sub-national governments' own tax revenue to their total revenue, was found to have positive impact on sub-national fiscal situation, whereas the fiscal dependence, measured as a ratio of inter-governmental transfers to total sub-national revenues, was found to have

negative impact on fiscal position of sub-national governments. Regarding the impact of decentralisation on economic growth, the earlier studies have found negative relationship between the two where fiscal decentralisation was defined in terms of share of sub-national expenditure in total expenditure of the government sector. The findings by Robert D. Ebel and Serdar Yilmaz, however, indicate that the fiscal decentralisation, defined in terms of revenue autonomy, has positive impact on economic growth. Another important contrast highlighted by the authors is that the fiscal decentralisation measured in terms of expenditure has led analysts to conclude that the higher fiscal decentralisation does not limit the public sector size. The analysis based on the revenue structure, however, indicates that higher autonomy may lead to smaller public sector.

Vito Tanzi and Tej Prakash discuss the possibility of enhancing efficiency in the use of publicly owned assets. There are numerous examples of public activities like railways, education, health, and military which are usually located in the lands of high commercial values. Many of these activities can be beneficially shifted to the locations of less commercial values. This sort of exercise calls for complete record of public assets and imputing values to the same to carry out cost-benefit analysis of public activities as was done in the Italy. In order to assess the full cost of public activities, it is advisable to see the opportunity cost of assets involved in such activities and also cost of various tax incentives given to these activities by the government. This type of exercise is conspicuous for its absence in most of the countries. Only a few countries like Australia and New Zealand have started to value public assets and also include assets in a comprehensive manner in financial statements.

Discussion on the tax administration and compliance points out that the simple theoretical statement, stating that the high probability of being caught and high amount of penalty for tax evasion improve the tax compliance, is insufficient to address the issue. In practice, there are many other social factors to play a crucial role in the degree of tax compliance in a country. One important institution to affect tax compliance is the social norm, *i.e.,* if people think that it is a norm to pay tax and everybody is paying it, there will be higher tax compliance.

The social norm can be influenced by the government by convincing the tax payers that they have a say in the way tax revenue is being spent. A feeling of strict administration among the people also strengthens the social norm. The approach towards tax administration and the treatment given to tax payers or to tax evaders for that matter is crucial in determining the degree of tax compliance. It is felt that a tax administration, where the role of enforcement is recognised but at the same time the role of tax administration as a facilitator and a provider of services to tax payers is also emphasised, is helpful in improving the tax compliance. Experience of the countries like Jamaica, South Africa and Russia indicates the importance of social norm in better tax compliance. Another problem in taxation, particularly in the transition economies, is the lack of modern system of cash-based transactions. For example, persistence of barter system in some sections of the Ukrainian economy is causing the problem of tax arrears. It is crucial to restructure the old state-owned enterprises which are characterised by chronic non-payment from customers and to suppliers, extensive use of barter system to settle debt, and soft budget constraints.

Globalisation has expanded the range of factors responsible for economic growth. Accordingly, the role of fiscal policy and taxation in influencing economic growth has also widened. It is argued in the book that the consumption tax is more conducive than income tax for growth because it involves no labour market distortions whereas a high income tax may cause distortions between leisure and working hours. Economic growth may be strengthened by promoting innovations either through expenditure or through tax incentives. Due to several procedural impediments involved in expenditure approvals, tax incentive may be seen as a preferred option to promote the innovative activities. Fiscal policy can, however, facilitate both redistribution and economic growth without depending on tax transfers given that the appropriate expenditure programmes like education and child development are put in place.

The fiscal decentralisation is often given partial credit for economic stability in several countries like Switzerland, Germany and United States. In Latin countries, however, fiscal decentralisation is often thought to be responsible for macro-fiscal instability due to lack of adequate institutions – rules and agencies. The econometric evidence suggests

that the decentralisation based on transfers from the centre tends to increase the total size of government sector. Deficits at sub-national level are associated with national expenditure, deficits and macro-economic instability. Thus, it is critical to put in place rule based transfers and borrowing constraints on sub-national governments. The sub-national governments at the same time should have the capacity and autonomy to stay with hard budget constraints. The case studies of some Latin countries show that the institutional reforms on these fronts can help bringing under control the macro-fiscal management problems, which have been found to be associated with fiscal decentralisation. The experience of these countries indicates that the rule based transfers are most crucial in introducing fiscal discipline at sub-national level. Regarding borrowings, *ex ante* controls should be adequately combined with better enforcement of *ex post* consequences.

The book contains two essays on the specific issues dealing with the tax regime for tobacco products in the EU-accession countries and taxation of electronic commerce in developing countries. The low elasticity of demand for tobacco indicates that the high tax regime serves the purpose more of revenue generation and less of putting restraints on its consumption. It is argued that specific tax regime, instead of *ad valorem* rates, are more revenue productive and also more effective in restraining the consumption of tobacco. The discussion on taxation of electronic commerce deals with the digitised products like business services, software, music, games and videos which can be delivered electronically in intangible form. It is possible to tax the electronic transactions through withholding tax, a restricted force of attraction rule, formula apportionment, *etc*. It would, however, call for international co-operation to successfully tax these transactions.

The expositions in the book serve the purpose of a guide to a number of countries which are in process of devolving more powers to lower levels of the government. Discussion on relevance of sub-national governments provides critical insights particularly for developing countries like India where State Governments undertake large part of social sector expenditure. Sub-national government may enhance or impede the process of equalisation envisaged in the central government policies. The issues of tax administration and impact of fiscal policy on

growth are dealt with in the context of the developing countries. The book highlights the need of decentralisation for the efficient delivery of public services as decentralisation brings tax payers closer to the spending authority, thereby enabling the tax payers to reflect their preferences to the elected representatives. The benefit of decentralisation is, however, often limited by the expenditures based on transfers form the centre. The rule based transfers and control on borrowings of the sub-national governments are crucial for the efficiency and fiscal-macro stability. Thus, the book discusses several policy inputs pertinent to developing countries like India. Currently, India is in process of devolving more financial powers to local bodies. The book has discussed various challenges and difficulties, which need to be dealt with to ensure efficient decentralisation. The existence of fiscal stress at the state level in India may have adverse effects on macro-economic stability. In this context, the crucial lesson contained in the book is the importance of rule based transfers and constraints on borrowing of the states. The book underscores the need of complete record of the assets used for the public activities and imputing values to the same. In most of the cases, in the Indian context as well as in the context of other developing countries, public assets like schools and defence establishments could be beneficially shifted to the places of less commercial value and additional resources could be generated. Similarly, the importance of social norm in improving tax compliance is significant lesson to be learnt. It is argued in the book that the fiscal policy can facilitate both redistribution and economic growth without depending on tax transfers given that the appropriate expenditure programmes like education and child development are put in place. In the Indian context, the Government's emphasis on various social sector and infrastructure expenditure in recent years, particularly under *Bharat Nirman,* seems to be a welcome move toward promoting growth and redistribution.

Thus, the book provides valuable inputs for the policy as well as analytical purposes. However, discussion on certain other related issues would have added further value to the book. For instance, it has been discussed in the literature that the fiscal decentralisation to local levels may result into concentration of power with a few wealthy individuals. The resources are often used for the benefit of select groups once the

power is concentrated in a few hands at the local levels. This type of practice provides more opportunities for corruption and marginalises the benefits of decentralisation. The lack of infrastructure and sufficient skills required for budgeting and account keeping is also an impediment in the process of fiscal decentralisation.

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High-Tech Industries in China by Chien-Hsun Chen and Hui-Tzu Shih, Edward Elgar Publishing, Cheltenham UK, Northampton, MA, USA, 2005, pages 155, price £ 45

This book gives the readers a wealth of information on R&D in China. It is said that the rise of India and China as centres of innovation will radically change the technology industry existing today which is based mainly in western countries. This study is exclusively on Chinese high-tech industry but very relevant to India, as India is gradually picking up in technology intensive industries. The book reveals the secrets behind the success of China in developing high-tech industries. China has been good at persuading the MNCs for setting up their operations to train locals. The huge population and scientific manpower gives both India and China the ability to keep doing the low-tech work and at the same time develop more high-tech activities. The Economist magazine (2005) quote Bruce Lehman (former commissioner of America's patent office) "…..in 20 years time India and China will both be responsible for more patents than the US". Furthermore, World Investment Report 2005, indicates that, of the 885 R&D oriented greenfield FDI project announced in the region in 2002-04, 723 were concentrated in China and India.

The book is organized into five chapters. The key issues addressed by the authors' is regarding the growth of high-tech industry in China. The book discusses policy transformation in science and technology, spatial distribution and regional disparities in China's High-tech sector, the role of multinational corporations, emerging trend of commercialisation of research results, *etc.*

In the first chapter, authors mention that, while the Chinese government is continuing to encourage technology-intensive industries in east China by leveraging this region's existing ability to attract foreign investment, it is also adopting measures to encourage foreign investment in central and west China by giving some extra concessions like relaxed rules for bank loans, tax concessions, *etc*. Foreign R&D institutions are permitted to undertake various forms of collaboration with research institutes, universities, colleges, *etc*. Apart from R&D centres, the Chinese government is now encouraging foreign companies to establish operational headquarters, logistic centres, *etc.* with the aim of absorbing

MNC's management experience. However, foreign companies still face entry barriers in terms of restrictions on capitalisation and personnel which includes; clauses like, the persons directly involved in R&D activity must account for at least 80 per cent of the R&D center's total staff *etc*.

The second chapter of book under review points out that, Chinese government initiated reform in science and technology sector in 1985, which includes, autonomy to research institutes, allowing employees to move from one institution to another, establishment of national award *etc*. China also allowed transformation of science and technology research institutes into business enterprises (from non-profit-making research institutes into business enterprises). Mainly as a result of these reforms, in 2001, spending on R&D in China increased by 16.4 per cent. As a percentage of GDP, R&D spending stood at 1.1 per cent. Due to the reforms, China now has become successful in commercialisation of research results. In 2001, China ranked twelfth in the world in terms of the number of patents applied for. In the same year, China's high-tech exports accounted for 17.5 per cent share of total exports. However, the book pointed out that due to, streamlining of operations of R&D institutes, the development of new areas of work, *etc*., the number of technical personnel working for R&D institutes has continued to fall since 1995. The study gives region-wise expenditure on R&D and other details. It gives very micro level details which is not easily available elsewhere.

The third chapter of the book, while pointing out the regional disparity in China indicates that, seven regions account for 70.6 per cent of China's total R&D resources and 53 per cent of its GDP. There is a heavy concentration of R&D resources in the Beijing-Tianjin region. This study points out that, the ratio of R&D spending to GDP provides a good measure of the level of progress in terms of economic and technological development and mentions that, if the ratio of R&D spending to GDP is less than 0.5 per cent, it represents a low level of economic development; if the ratio is in the range of 0.5 per cent to 1.0 per cent, the country in question is a developing nation; if the ratio is between 1.0 per cent to 1.5 per cent, the country is just starting to be transformed into a developed nation; if the ratio is higher than 2.0 per cent, the country is a full-fledged developed nation. The book mentions,

to facilitate the commercialization of R&D results, China has made extensive use of the industrial parks concept. Even though the nomenclature for these parks/zones varies, the overall concept is the same: to provide infrastructure, tax breaks *etc* to stimulate development. However, the book admits that even after more than a decade of development significant disparities have developed between the high-tech zones and in some zones there been no real development.

Regarding electronics sector, the book mentions that, due to the protectionist measures adopted by the Chinese government in the electronics and semi conductor industries, foreign companies that invest in assembly plants in China tend to insist that their upstream component suppliers establish production facilities in China. Investment in the electronics sector has thus gradually expanded from the downstream assembly firms to include upstream component and materials suppliers (where the high technology content is usually significantly higher). Owing to a need to protect intellectual property rights, these business are usually set up as wholly-owned subsidiaries of the foreign company concerned. The book points out that development of the high-tech sector in China has been heavily dependent on the introduction of technology from overseas. The R&D facilities established by MNCs often outsource a substantial part of their research work to local research institutes, thereby helping to raise the overall standard of R&D work in the region. However, the authors' points out that China's innovation capability still are unsatisfactory due to the factors like low funding, restrictions on scientists to engage in commercial activity, legal system which does not give sufficient protection to intellectual property, *etc*.

In the last few years, with the implementation of the government's policy of 'using technology to stimulate trade', the value of China's high-tech imports and exports has grown rapidly. Furthermore, the study points out that in 2002 high-tech products accounted for 22.8 per cent of China's exports of manufactured goods, compared to just 5.9 per cent in 1992. High-tech products have thus played an important role in helping China to maintain high export growth. Computer and communications products account for the bulk (80.4 per cent) of China's high-tech exports, with next highest share being held by electronics products (13 per cent) in 2002.

The book while mentioning about the form of trade taken in high-tech products indicates that processing trade (including processing with supplied material and imported material) accounts for 89.6 per cent of high-tech product exports in 2002, while regular trade accounts for only 7.4 per cent. The negative aspect of this situation is that China's high-tech industries lack intellectual property and competitive brands. This points out that it will take some more time for China's high-tech companies to strengthen their technology innovation and international competitiveness (Lemoine and Unal- Kesenci, 2004). A table presented in the book on methods for the introduction of technology into China is very informative. It indicates that in 2000, technology transfer constitute 8.45 per cent of total value of method of technology introduction, technology licensing 18.68 per cent, technology consulting 2.38 per cent, technical services 11.60 per cent, full turnkey 19.18 per cent and key items of equipment 38.06 per cent.

Chapter 4, mentions that, in 2002 alone the combined production value of all foreign-invested companies in China accounted for 33.4 per cent of Chinese manufacturing industry's total production value. It also accounts for around 11 per cent of the urban labor force and 21 per cent of the Chinese government's total tax revenue. In 2002, the net amount of foreign exchange brought into the country by foreign-invested enterprises accounted for 72.7 per cent of all foreign exchange obtained by China's banks, and accounting for 63.7 per cent of increase in China's foreign exchange reserves in that year. The study highlights an important point, that while the high-tech exports of foreign invested companies has grown, the share of state-owned enterprises of the same has come down.

Regarding policy support, the book points out that, the Chinese government has formulated regulations to make technology transfer compulsory for multinationals investing in China. It is interesting to know that the Peoples Republic of China Law governing the operations of foreign-invested enterprises stipulated that when a foreign-invested enterprise is established in China, it must adopt advanced technology and equipment, or else the whole of its output must be exported. Furthermore, foreign partner must transfer advanced technology to the joint venture and this is one of the criteria for the granting of approval

for such ventures by the Chinese government. WTO accession has given China a better policy environment for attracting foreign investment, while also helping to reduce transaction costs and risk. Following WTO regulations, China has abolished many requirements relating to technology inputs by MNCs.

US companies account for the largest share of MNCs that have set up R&D facilities in China, with Europe and Japan having the next largest shares. In this context, it may be mentioned that according to US Bureau of Economic Analysis data, royalties and license fee receipt of United States (affiliated enterprises) from China has increased from US $ 758 million in 2002 to US $ 842 million in 2003. The need to maintain the secrecy of one's own technology leads MNCs investing in R&D in China to want to keep control over the operation; the more advanced the technology, the more likely it is that the R&D facility will be established as a wholly-owned subsidiary. Regarding the type of R&D activity that MNCs engage in China, statistics indicate that 54.3 per cent of MNC R&D expenditure in China goes on applied research, 31.8 per cent goes on development work and 13.9 per cent goes on basic research. The data indicate that R&D activity of MNC in China is oriented towards pure research rather than development.

Regarding the negative side, the study indicates that, even though China is now a signatory to several of international IPR related treaties, still the level of protection given to IPR in China is significantly lower than in the advanced countries. Violation of IPR are common. China needs to improve its infrastructure also. Furthermore, securing exit visas for technical personnel for overseas travel is still not a smooth process.

Chapter 5, is on commercialisation of High-tech research results in China and points out that, China now has more than 250 venture capital institutions. It is interesting to know that even though initially, venture capital funds were almost run by state-owned enterprises, today funding provided by non-government sources accounts for around 50 per cent of all venture capital funding. Venture capital sector has made a significant contribution towards the commercialisation of research results and thus played an important role in growth of China's high-tech sector. However, venture capital activity suffers from various problems like, lack of exit strategy, poor legal framework, shortage of fund managers, *etc*.

The book is very useful for knowing the technology development strategy followed by China. It is particularly relevant in this age in which ideas and innovations have become the most important resource, replacing land, energy and raw materials. It contains very detailed information about Chinese high-tech enterprises and will be useful for any scholar working in the area of Chinese industrial development. However the book would have been better if the authors gave a comparative picture of development of high-tech industries in other countries. Furthermore, the book uses the currency units RMB and US $ interchanging, a common unit say US $ would have been better. Moreover the book does not discuss much on disadvantage of China in English language. A recent edited book on China, Wen Mei (2004) pointed out that many business people in China regard relationships as more important to their business success than the adoption of new technologies. China's future technological progress will be retarded if market competition is not made fairer and business remains dependent on relationships. Lack of entrepreneurship will also be an obstacle in China's quest to become a technology leader. Methodology of data collection, especially the collection of very micro level information on technology is not mentioned. The book also does not give much information on the role played by Chinese diaspora in the development of industries. Apart from these minor shortcomings the book is really a good addition to the existing literature on China's development strategies.

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