Capital Flows and Domestic Financial Sector in India

This paper is a preliminary analysis of the impact of capital flows upon the domestic financial sector. We find that an inflow of foreign capital has a significant impact on domestic money supply and stock market growth, liquidity and volatility. The banking sector, however, remains relatively insulated due to policy responses of the central bank and barriers to direct capital inflows into the banking system. The paper concludes with a discussion on the costs of these policies in the event of a heavy inflow of foreign capital into India.

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I Introduction

The last decade has witnessed a tremendous increase in international capital mobility. Cross-country trends in capital flows reveal that private capital flows now dominate with official capital flows reduced to a trickle. Simultaneously, a rise in portfolio capital has tilted the composition of international capital flows towards short-term investments, exposing individual countries to enhanced volatility and sudden withdrawal risks. These trends have been driven by globalisation, which has enabled pursuit of higher returns and portfolio diversification, as well as market-oriented reforms in many countries, which have liberalised access to financial markets. Concurrent with these trends has been the rising incidence of financial crises, raising questions about linkages between the two. Concern has also been expressed as to whether the costs of increased vulnerability to financial fragility might not outweigh the gains from financial integration. Notwithstanding these doubts, most countries continue to progress in dismantling capital controls to integrate their financial markets with the rest of the world, albeit more cautiously.

These developments have stimulated a keen interest in understanding the nature and economic effects of capital flows as well as the appropriate policy responses to safeguard against financial instability that appears to be associated with international capital mobility. Capital flows affect a wide range of economic variables such as exchange rates, interest rates, foreign exchange reserves, domestic monetary conditions and the financial system. Some commonly observed effects of capital inflows that have been documented in recent studies[1] include real exchange rate appreciation, stock market and real estate boom, reserve accumulation, monetary expansion as well as effects on production and consumption. Empirical studies that have begun to appear on the subject assess the impact of capital inflows upon output growth [Gruben and McLeod 1996], differential macroeconomic effects of portfolio and foreign direct investment [Gunther, Moore and Short 1996], effects upon monetary conditions, savings and investment [Kamin and Wood 1998] and the domestic financial sector [Henry 1999, Tesar 1999, Folkerts-Landau et al 1995 and many others].

These issues are significant for India, which has been gradually dismantling capital controls as part of its broader financial liberalisation strategy. Following changes in exchange rate regime as well as trade and investment policies' reform, there was a spurt in capital flows into the country between 1992/93 and 1997/98. The magnitude of these flows is relatively insignificant in a cross-country perspective, for example, the peak level for India is 3.5 per cent of GDP in 1993-94, whereas the peak levels are above 20 per cent for Malaysia, 13 per cent for Thailand, 10 per cent for the Philippines and almost 10 per cent for Singapore between 1990 and 1993 [Glick 1998: 4-5]. However India is a liberalising economy and it is important to document the impact of these flows both from the point of view of behaviour of economic variables, the financial system as well as implications for economic policy.

An earlier study, Kohli (2001) has appraised the effect of capital inflows upon macroeconomic aggregates. This paper focuses exclusively upon the domestic financial sector, i e, the banking system

Table 1: Composition of Capital Flows in India

(Percentage to total [net] capital flows)

	Foreign Investment		NRI Deposits	External Assistance	Commercial Borrowings	Net Capital Account (Per Cent GDP)
	FDI	Portfolio				
1986	4.3	0	16.3	30.3	21.1	1.85
1989	5.9	0	34.4	26.5	25.4	2.39
1990	1.3	0.1	21.4	30.7	31.3	2.27
1991	3.4	0.1	10.6	77.7	40.0	1.46
1992	8.1	6.3	51.3	48.4	-9.2	1.59
1993	6.0	36.8	12.4	19.6	6.3	3.54
1994	14.4	41.8	1.9	16.7	11.3	2.84
1995	46.0	58.9	24.5	21.5	29.2	1.31
1996	24.7	29.0	29.4	9.9	24.7	2.96
1997	35.1	18.0	11.5	9.2	38.9	2.47
1998	29.0	-0.6	11.3	9.9	51.8	2.04
1999	20.7	28.9	14.8	8.6	3.2	2.32
2000	25.7	30.3	25.4	5.8	45.3	1.91
2001	40.8	21.0	28.7	11.8	-11.8	3.63

Source: Author's calculations based on figures from *Report on Currency and Finance, 1998-99* and *RBI Bulletin, July 2001*, Reserve Bank of India, Mumbai.

and the capital market. The analysis is a first pass at the data to examine the response of the financial system to capital inflows, using information made available recently. Section II provides a brief overview of the nature of capital account liberalisation in India. Section III assesses the impact of these flows upon the banking sector and the role of policy response in insulating the banking system, while Section IV takes a look at the stock market. Section V discusses the policy implications and concludes.

I
Capital Account Liberalisation in India

India had a closed capital account before 1991, restricting capital mobility through administrative controls and outright prohibition. Following the balance of payments crisis in 1991, and the institution of market-oriented economic reforms, it shifted to a flexible exchange rate regime in 1993 after a brief transition period of dual exchange rates in 1991-92. Financial liberalisation and reform of domestic and external sector was attempted simultaneously. The timing and sequencing of domestic and external financial sector reforms indicates that access to, and improvement in, inflows of foreign capital was a major objective of initial capital account liberalisation. The sequencing pattern of liberalisation followed has been resident and non-resident corporate sector, followed by bank/non-bank financial institutions, and then individual residents, for whom capital mobility is still severely restricted. Inflows came first in the sequencing pattern, followed by outflows associated with inflows and last of all, outflows.

Direct investment flows were the first to be liberalised, followed by portfolio equity flows within a year and bond flows after four years. Investment outflows by resident companies were next (1992-93), followed by equity inflows by residents.[2] Initial liberalisation measures increased existing foreign investment limits, removed technology transfer requirements and simplified procedures. Equity inflows by non-resident investors were initially restricted to a 1 per cent ceiling on individual acquisition of shares and debentures of Indian companies through stock exchanges and 10 per cent of the total paid-up capital of a company. These were gradually raised and presently stand at 10 and 40 per cent respectively. Liberalisation measures related to sale/transfer of shares, disinvestment through stock exchanges, removal of price and quantity restrictions on disinvestment and the lock in period for issue of shares followed. Towards the end of the decade, foreign investors were allowed to obtain forward cover, buy/sell derivatives and contracts, and trade in derivatives. By the end of the millennium, reforms focused specifically upon deepening the domestic financial markets and provision of hedging against different risks.

Liberalisation of direct investment as well as equity flows as far as the banking and non-banking financial sector is concerned came relatively late in the liberalisation process. Foreign participation was initially allowed in new private operations in banking up to 40 per cent by NRIs and 20 per cent by other foreign investors, subsequently increasing to 49 per cent in all private sector banks in 2001. Banks were allowed to borrow/invest in overseas markets subject to a 15 per cent ceiling of their Tier I capital in 1997 and to offer forward cover to foreign investors.

Portfolio bond inflows were liberalised relatively late in 1996-97 when foreign investors were allowed to invest as 100 per cent debt funds in corporate and government bonds. In 1997-98, foreign institutional investors were allowed to invest in government bonds though such investments were restricted to 30 per cent of their overall investments in the country. After 1997, foreign investors were allowed to buy/sell treasury bills within the overall debt ceilings. Liberalisation of external commercial borrowings (ECBs) has been extremely selective and subject to annual ceilings decided on the basis of the country's external debt and balance of payments position. While all corporates (instead of only manufacturing firms) and institutions were permitted to borrow up to ceiling and minimum maturity by 1995, the ceilings and maturities of foreign debt as well as end-use restrictions have been gradually relaxed over several years. Foreign currency (non-resident Indian) deposits, which traditionally constituted approximately 35 per cent of the net capital account prior to the 1991 crisis, were restructured during the liberalisation process to minimise cost of these funds to the banking sector, stabilise these inflows and reduce the external debt liability of the country.[3]

These changes are reflected in the composition of the capital account shown in Table 1. Following liberalisation there was a spurt of capital inflows between 1992-95 and 1996-1997 into the country. Table 1 shows a sharp increase in foreign investment, direct and portfolio, after 1992. The substantial contribution of aid towards the capital account in the 80s dwindles steadily by the 90s (excluding the IMF loan in 1991 and 1992) and is replaced by private flows. Commercial borrowing abroad drops during the crisis years, resuming thereafter. Migrants' remittances retained their buoyancy after a short decline in 1993-94; these are attributable to the conscious efforts by the authorities to boost foreign exchange reserves when risk perceptions about foreign capital inflows have turned negative.

Portfolio investment flows exceed direct investment (FDI) in the early years of liberalisation. FDI catches up later, peaking in 1995, falling thereafter and recovering only in 2001. A departure from the Asian and Pacific Region's experience is the excess of portfolio over FDI inflows in the initial years after liberalisation. In the former, foreign capital was dominated by FDI after the opening of markets. This is partly explained by global trends in the early 1990s when portfolio capital flows registered a sharp increase. The process of liberalisation in India also partly accounts for this deviation, as most FDI approvals remained discretionary even though they were placed under the automatic approval route.[4] Comparatively, a one-time entry-point registration for portfolio investments in financial markets made it faster and simpler. This might have tilted the composition of flows in favour of portfolio investments.

How has this liberalisation affected the banking sector and the capital market? As documented above, the sequencing pattern of deregulation initially concentrated upon the capital market, with banking sector following relatively late in the liberalisation process. While at first sight this may appear a departure from the liberalisation process in most emerging market economies, where portfolio equity flows are liberalised relatively late in the liberalisation process, it is not surprising in the Indian context. Unlike most of these economies, at the start of the economic reforms, India had a relatively well developed stock market. It was therefore ready to receive foreign equity inflows into the country, which explains the deviation in sequencing from the established pattern.

The next two sections examine the impact of these flows upon the banking sector and

the stock market. This impact will be determined by the channels through which the inflows are intermediated within the domestic economy as well as the policy response of the monetary authorities to expansion in monetary base due to accretion of foreign currency assets. There are two channels through which inward capital can be intermediated – the stock market or the banking system. The level of intermediation through either channel will depend on the relative size of the two sectors, the pattern of liberalisation and the policy response. For instance, if capital inflows and outflows through the banks remain restricted, then the impact on banking sector will be limited. Similarly, if policy is targeted towards insulating intermediation through the banks, then the expansionary effects on their balance sheets will be limited.

The structure of intermediation within the Indian financial system reveals that the banking sector occupies a central place with a 52 per cent share in the total financial assets of the economy. The capital market, with a steadily rising share in intermediation (31 per cent) is also an important segment of the financial system. Both components are therefore important as far as intermediation of capital inflows is concerned.

II
Impact upon the Banking Sector

Considering the predominance of the banking sector in financial intermediation, a significant proportion of capital inflows will be intermediated through these institutions. In theory, if there is no policy intervention, a capital inflow will impact the banks' balance sheets through an expansion in foreign liabilities, exposing the banks to new risks linked to interest rates, currency, country, maturity as well as asset-liability mismatches. Secondary effects of inflows could impact the banking system through a rise in the growth of private domestic credit, lending boom and risky loans. However, policy intervention could either offset or limit the extent of intermediation through the banking system. One, a net inflow could be offset by running a matching current account deficit, in which case capital outflow would balance the inflow, resulting in no permanent effect on the banks' balance sheets. Alternately, the central bank could sterilise the inflows deposited within the banking system, which would curb the exposure of banks and limit their risks. Both these interventions will prevent an expansion of domestic credit and related effects mentioned earlier.

A commonly observed effect of rise in net capital inflows is a rapid expansion of the commercial bank sector. This has been true of Thailand and Indonesia, where bank assets expanded rapidly from 73 and 45 per cent of GDP in 1988 to 102 per and 74 cent of GDP respectively in 1993 [Folkerts-Landau et al 1995]. Table 2 below gives some indicators of banking activity before and after capital account liberalisation in India. Column 2 reveals that total assets of banks in India do not display an extraordinary expansion but a modest 3 per cent increase between 1990 and 2000. Private domestic credit in relation to GDP (column 3) does not show a rapid expansion either, though some comovement with a surge in net capital inflow can be detected during the boom periods, 1993-95 and 1999-2000. In reverse, investments of banks in government securities are observed to be steadily increasing, almost doubling between 1990 and 2001. Standing at 15.6 per cent of GDP in 2001, they represent an increasing transfer of risk to the public sector, i e, the central bank, during a period of increasing deregulation of capital account restrictions.

The share of NRI deposits in relation to GDP remains constant at 0.5 per cent, the level obtaining in 1990, mainly because foreign currency deposits still remain restricted to non-resident Indians only. Statistics regarding foreign currency assets and liabilities of the banking system, available only from 1998-99 onwards show foreign currency liabilities of the banks have more than doubled between 1998-99 and 2000-2001. At 1.65 per cent of GDP in March 2001, these are fairly modest in comparison to the levels observed in some east Asian countries during the capital inflow boom of early 1990s. For instance, foreign liabilities rose from 7 to 19 per cent in Malaysia between 1990 and 1993 and from 3 to 11.2 per cent in Thailand between 1987 and 1993. Both the cautious pace of reform and its sequencing have ensured that the increase in foreign liabilities is kept within limits in India.

Several factors account for this muted impact upon the commercial banks. For one, the magnitude of net capital inflows in India is small in comparison to the Asia-Pacific region, as already underlined earlier. Two, the sequencing of capital account liberalisation has been ordered such that liberalisaton of capital account items directly concerning the banking sector followed relatively late in the process, with many important items still partially or completely restricted, for e g, foreign currency deposits.

Last but not the least, is the insulation offered by the policy response of the monetary authorities. Much of the net capital inflow into the country has been absorbed as foreign currency reserves. Figures 1 and 2 plot foreign exchange reserves and the current account deficit (per cent GDP) for India over 1970-2001. The current account deficit is seen to be narrowing after touching 3.2 per cent of GDP in 1991, the year of crisis and recently turning into a surplus in 2000-2001. The steep increase in foreign exchange reserves (Figure 1) is concomitant with this decline, indicating absorption of foreign currency inflows by the central bank. In 1993, the first year of the capital surge, almost the entire net capital inflows were absorbed

Table 2: Banking Activity Indicators, 1990-2000

(Per cent GDP)

Year	Total Assets	Bank Credit to Commercial Sector	Investment in Govt Securities	Net Capital Account	Net Foreign Currency Assets of the Banking Sector	Foreign Currency Assets	Non-resident Indian Deposits	Overseas Foreign Currency Borrowing
1990-91	56.3	30.2	8.8	2.3		0.77	0.5	
1991-92	51.6	28.8	9.6	1.5		2.23	0.2	
1992-93	50.3	29.4	10.1	1.6		2.69	0.8	
1993-94	50.7	27.7	11.8	3.5		5.50	0.4	
1994-95	50.4	28.9	11.6	2.8		6.52	0.1	
1995-96	50.4	29.0	11.1	1.3		4.92	0.3	
1996-97	49.1	27.5	11.6	3.0		5.87	0.9	
1997-98	52.3	28.5	12.3	2.5		6.73	0.3	
1998-99	54.1	28.2	12.7	2.0	-0.75	7.13	0.2	0.08
1999-2000	56.7	30.0	14.2	2.3	-1.20	7.81	0.3	0.09
2000-01	59.4	30.9	15.6	1.9	-1.65	8.46	0.5	0.07

Source: Handbook of Statistics, 2001 and *Report of Trend and Progress of Banking in India*, RBI, various issues.

Figure 1: Foreign Exchange Reserves

(Excluding SDRs and Gold)

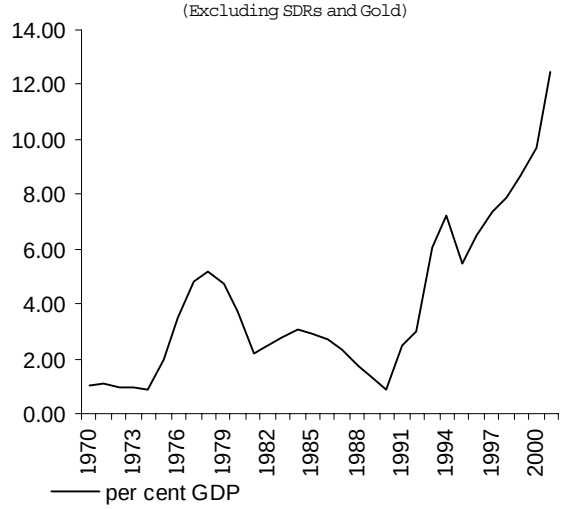
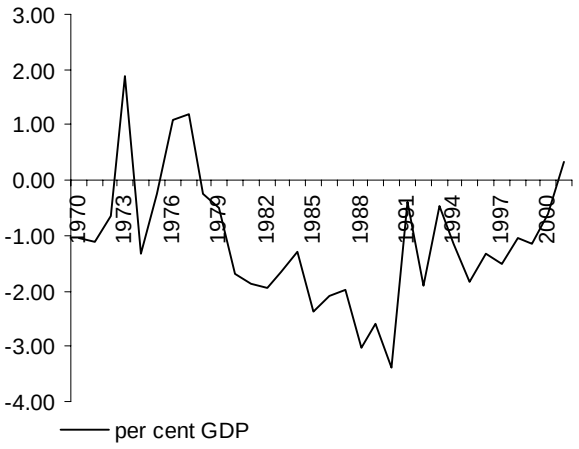


Figure 2: Current Account Balance



Source: *Handbook of Statistics, 2000*, Reserve Bank of India.

as foreign exchange reserves. In 1994, almost one-third of net capital inflows were utilised so; from 1996 onwards, the Reserve Bank has typically absorbed 50 per cent of net capital inflows as international reserves [Kohli 2000a,b]. Between 1991 and 2001, the rate of growth of foreign exchange reserves in India averaged 25.2 per cent against a negative average of 7.06 per cent for 1985-90.[5]

Thus monetary policy response has been directed at containing the impact of capital inflows. Table 3 presents a profile of monetary and fiscal indicators from 1985 and offers a perspective via the transmission channel of net capital inflows, changes in net foreign currency assets, the monetary base and broader monetary aggregates. Some stylised facts can be established about policy response of the authorities through changes in the movements of monetary aggregates in the tables. First, net foreign exchange assets of the central bank account for most of the increase in the monetary base (reserve money) in the nineties. As a percentage share of M3, the monetary aggregate targeted by the central bank, net foreign exchange assets have grown from an average of 3.7 per cent in the 1980s to 12.1 per cent in 1990s. Second, while fiscal policy induced increases in money supply have declined somewhat in the post-liberalisation period, it still remains an important exogenous source of monetary expansion. Third, private sector credit appears to be the only policy variable that is manipulated by the central bank via interest rate and reserve requirement changes to adhere to monetary targets.

During the capital surge episode in 1993-95, for example, the central bank's monetary target (M3 growth rate of 15-16 per cent) was overshot. The monetary base expanded in nominal as well as real terms (cols 2 and 4, Table 3). As a result of this growth and the pass-through between the exchange rate and domestic prices, the rate of inflation rose to 10.8 per cent.[6] Though monetary variables are partly influenced by money demand, prima facie monetary policy appears to have responded to counter the impact of capital inflows. For instance, interest rate movements (cols 5 and 6, Table 3), which reflect both monetary as well as fiscal changes, provide evidence of monetary tightening. Nominal interest rates rose with inflation, while the real interest rate rose in 1993-94 and fell in 1994-95. Nominal interest rates appear to have been raised to prevent the real rate of interest from declining.

Between 1993 and 1995, reserve requirements (col 8, Table 3) were steadily raised to limit the impact of money supply via the banking system. A sharp contraction in nominal and real base money growth (cols 1-4) observed in 1995-96 and 1996-97 appears to have brought about the fall

Table 3: Money Growth and Interest Rates

	Nominal Money Growth (M_3) (1)	Real M_3 Growth (2)	Nominal Monetary Base Growth (3)	Real Monetary Base Growth (4)	Nominal Interest Rates (Per Cent pa) (5)	Real Interest Rates[a] (Per Cent pa) (6)	Cash Reserve Ratio (7)	Consolidated Govt Deficit (8)
1985-88	17.1	8.6	18.2	10.0	-	-	9, 9.5, 10, 10.5, 11	-
1989-91[b]	17.9	5.6	13.2	4.5	-	-	15.0	-
1992-93	14.8	4.3	11.3	1.2	17	6.2	15.0	7.2
1993-94	18.4	9.3	25.2	15.5	14	7.8	14.5, 14,	8.0
1994-95	22.3	10.4	22.1	10.1	15	5.1	14.5, 14.75,15	6.8
1995-96	13.5	5.5	14.9	6.7	16.5	6.9	14.5, 14	6.5
1996-97	16.1	9.2	2.8	-3.3	14.8	6.0	13.5, 13, 12, 11.5, 11, 10.5, 10	6.3
1997-98	18.0	12.6	13.2	8.0	14	6.8	9.75,9.50, 10.0,10.50, 10.25	7.2
1998-99	19.4	11.7	14.6	7.2	12.5	3.5	10.0,11.0, 10.5	8.9
1999-2000	14.6	11.3	8.2	5.1	12.2	7.8	10.0,9.50,9.0,8.5	9.8
2000-01	16.7	9.0	8.1	0.9	11.5	6.1	9.0,8.5,8.0,8.25,8	8.6
2001-02	14.0	8.8	11.4	6.3	11.5	7.8	7.50,5.75, 5.50	-

Notes: [a] = nominal interest rates minus CPI inflation rates; [b] = averages.

Sources: Cols 2-4, *Handbook of Statistics on the Indian Economy*, RBI, 1999; Col 5, *Indian Public Finance Statistics*, MoF, DEA, Economics Division, GOI

Figure 3: BSE Share Price Index and P/E Ratio

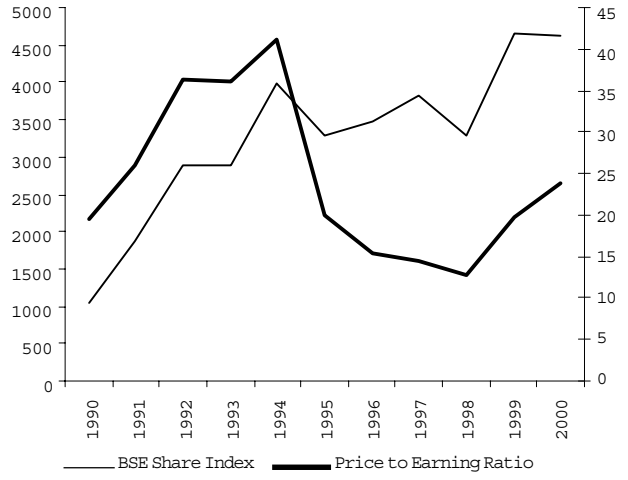
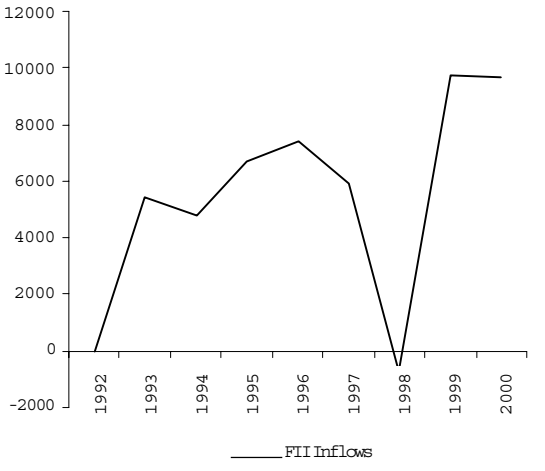


Figure 4: FII Inflows, 1992-2000



Source: Handbook of Statistics, 2000, RBI.

in the rate of broad money growth. Finally, government credit, which had declined between 1991 and 1993, and has traditionally been a major source of monetary expansion, also contributed to the monetary base as the fiscal deficit rose sharply in 1993-94. Much of this inflow would potentially represent an increase in domestic credit, were it not to be sterilised. While it is difficult to collect evidence on the magnitude of sterilisation in India during the capital inflow surge, various sources suggest that the magnitude is quite high. Kletzer and Kohli (2001) estimate that for the period August 1995-December 2000, correlation between monthly increases in commercial bank credit to government and reserve inflow for the previous month is 0.48, while correlation between contemporaneous changes is –0.29. This indicates sterilisation of reserve inflows by the Reserve Bank through increase in public debt held by the financial sector. As shown in Table 2 investments by banks in government securities have risen steadily, confirming this trend.

IV
Impact of Portfolio Capital Flows on Capital Market

To recall, equity inflows were liberalised at an early stage of reform. When capital started to flow into India, portfolio flows played an important role, exceeding FDI inflows for several years (Table 1). As share of net capital account, portfolio flows contributed as much as 58.9 per cent in 1995 in a span of four years. As a share of GDP, net investments of foreign investors in the equity market hovered in the range of 0.5-0.7 per cent during the 1993-96 boom period, slackening thereafter. What has been the impact of portfolio equity flows upon the capital market in India following liebralisation?

In theory, capital market integration will result in a lower cost of funds due to diversification and an increase in the supply of capital. Other benefits of liberalisation of trade in financial assets include expansion in the size of the market as the number of potential investors increase, improved liquidity and market depth and increased efficiency in allocation of investments. As the link between local and foreign markets strengthens, the progressive integration of financial markets can potentially increase the risk of volatility spillovers. Even if spillover effects are excluded, market volatility can increase as the frequency of inflows and outflows out of the country increases. A rise in volatility can have a potentially destabilising effect especially if financial markets are thin, which is very often the case in developing countries. This can also lead to large variations in market liquidity, which can lead to higher volatility. Subsequent real effects of capital market liberalisation documented in the literature relate to lending and investment booms.

Are any of the above effects visible in the case of Indian financial markets? As documented earlier, the opening of financial markets to foreign investors attracted significant amounts of private portfolio capital, which exceeded FDI in the early years. Figures 3 and 4 track movements in equity prices and net equity inflows. The stock market index shows a sharp increase over the 1990 levels, and the peaks in price-earnings ratio display a co-movement with the high inflow period of 1993-95 and 1999-2000. This suggests that entry of foreign investors possibly led to sharp increases in equity prices through a rise in demand for domestic equities.

This is similar to the liberalisation experience of other emerging markets. For instance, the price-earnings ratio for Mexico rose five times between 1988 and 1993 and doubled in Hong Kong and Thailand between 1990 and 1993 [Folkerts-Landau et al 1995] following liberalisation of equity flows.

Table 4 shows indicators of stock market growth, liquidity, turnover and prices in the stock market from 1990. Market capitalisation measures the size of the capital market in relation to GDP whereas the volume of domestic equities traded on the domestic exchange divided by GDP is a measure of market liquidity [Levine and Zervos 1998].

Some apparent associations revealed by the time series are noteworthy. One, the growth of the stock market as measured by the market capitalisation to GDP ratio reveals a positive correspondence with net equity flows, indicating an expansion in the size of the equity market during periods of high inflows as in 1993-95 and 1999-2000. The price-earning ratio also displays a similar co-movement in these two periods indicating that a surge in foreign capital inflow leads to a rise in equity prices. Illustratively, the price earning ratio jumps to 22.7 in 1999-2000 from a low of 14.7 in 1998-99, which is also a period when there is a net capital outflow from the country. Sharp swings in price movements can also cause large variations in market liquidity, though the volume of

equities traded on the exchange in relation to GDP does not move with these price swings. Market liquidity in fact increases steadily over the 1992-2001 time span indicating no adverse effects of booms and reversals in capital inflows.

How has liberalisation affected market prices, volatility and spillovers? Table 5 shows the unconditional correlations between monthly stock prices and returns over the 1992-2001 time horizon to provide some indication of how the correlation structure has changed over time. These movements indicate that opening of the capital account has made the stock markets more vulnerable to the vagaries of cross-border movements of capital. The table also shows that correlation between markets (Indian and US) has risen over time and tends to be higher during periods of higher volatility. Increased correlation across markets is consistent with, though not definitive, evidence of greater integration of financial markets.

Absolute volatility, as measured by the standard deviation of total returns on the monthly BSE index, rises during periods of high inflows, viz, 1993-94 and 1999-2000, indicating an association with excessive price fluctuations. Volatility of stock prices also increases relative to that of the US when portfolio flows are excessively volatile, which is consistent with the view that volatility of portfolio flows into a country magnifies the sensitivity of stock prices to fluctuations in stock prices of larger equity markets. This reflects that the vulnerability of the local stock market to surges and reversals has increased after liberalisation.

V
Policy Implications and Conclusion

As the Indian economy gets increasingly integrated with the rest of the world, a reasonable expectation would be that foreign capital inflows would increase, perhaps even to match levels reached by other emerging markets. In such a scenario, it is of critical importance to monitor the composition of inflows. It is well known that the composition of flows makes a significant difference, both in terms of impact[7] and smooth management. Portfolio flows are more volatile than direct investment flows and because of their short-term, uneven nature, more difficult to intermediate.[8] Thus they have a greater impact upon stock markets and domestic money supply and can lead to consumption, stock market and real estate booms via sudden expansions in liquidity in financial markets. FDI, on the other hand, is long-term in nature. Being embedded in plant and equipment investment, it is less susceptible to sudden withdrawals and leads to productive uses of capital and economic growth. Short-term flows therefore, need to be matched by foreign capital inflows of a longer duration. It is therefore important that FDI flows are encouraged to impart stability to capital inflows. Therefore, this is a critical area for economic policy to concentrate upon.

Correlation between domestic and foreign financial markets highlights India's vulnerability to external financial shocks. Preliminary evidence for India on the relationship between portfolio flows and some stock market indicators suggests that market prices are not unaffected by capital inflows. This exposes the potential vulnerability of the economy to sudden withdrawals of foreign investors from the financial market, which will affect liquidity and market volatility. India's financial markets, which are still relatively thin and underdeveloped, could pose a severe constraint on intermediating heavy volumes of volatile, short-term capital, necessitating excessive intermediation through the domestic banking sector.

So far, the difference between net capital inflows and the current account deficit has been positive in India, as a consequence of which the impact upon the banking system has been small. Banks however, account for 52 per cent of the total financial assets of the Indian economy. Heavy inflows in many countries have been associated with sudden expansion in banks' liabilities, domestic monetary expansion, unscrupulous loans and real estate and/or consumption booms. Moral hazard risks thus increase the likelihood of financial instability, as transpired during the Asian crisis. In such a scenario, a sound banking system is an essential prerequisite.

The state of the Indian banking system, particularly the public sector banks, is fragile. Many of them are under-capitalised, with large levels of non-performing loans on their balance sheets. This reveals the fragile nature of the banking sector and is reflected, for example, in the recent failures of some urban cooperative banks

Table 4: Liquidity and Growth Indicators

Year	Net FII Investment in the Indian Capital Market[1]	Growth of the Stock Market[2]	Liquidity in the Stock Market[3]	Price/Earnings Ratio	No of Listed Companies
1990-91	-	16.0	6.3	19.7	2245
1991-92	-	49.5	11.0	44.3	2514
1992-93	-	25.1	6.1	29.3	2861
1993-94	0.6	42.8	9.8	46.8	3585
1994-95	0.5	43.0	6.7	30.4	4702
1995-96	0.6	44.3	4.2	17.3	5603
1996-97	0.5	33.9	9.1	14.6	5382
1997-98	0.4	36.8	13.7	15.2	5853
1998-99	-0.04	31.0	17.7	14.6	5848
1999-2000	0.5	46.7	35.0	22.7	5889
2000-01	0.4	26.2	45.9	19.7	5955

Notes: (1) Net equity investments (per cent GDP); (2) Market capitalisation (per cent GDP); (3) Turnover (per cent GDP).
Source: Handbook of Statistics, 2001, RBI and the Stock Exchange, Mumbai.

Table 5: Volatility, Spillover and Effects on Prices

Year	Equity Flows and Price/Earnings Ratio (Correlation)	BSE Sensex and Lag of Dow Jones Industrial Average (Correlation)	Absolute Volatility of the Returns on the BSE Sensex	Relative Volatility
1992-93	-	-0.43	10.6	1.8
1993-94	0.77	0.95	9.6	3.1
1994-95	0.72	-0.36	5.4	1.8
1995-96	-0.44	-0.19	7.2	2.9
1996-97	0.82	-0.19	7.7	2.1
1997-98	0.69	0.15	8.9	1.9
1998-99	0.05	0.33	7.8	1.2
1999-2000	0.08	0.49	8.6	1.6
2000-01	-0.38	0.17	8.0	1.8
2001-02@	0.67	0.53	6.8	1.2

Note: @ Period is April 2001 to December 2001.
Sources: Handbook of Statistics, 2001, RBI; Dow Jones website www.dowjones.com and author's calculations.

and threats to systemic stability from the involvement of some public banks, financial institutions and India's largest mutual fund in financial scams. Though India's financial reforms have consistently emphasised strengthening of prudential regulation and supervisory standards, sector as well as borrower-specific exposure limits exist and liquidity requirements are in place, the capacity of these institutions to assess, price and manage risk is doubtful. Moreover, regulatory reforms need to be supplemented with an appropriate incentive environment, which does not at present exist. These capacities can be created through structural changes and institutional reform of these institutions, progress on which is still to gain momentum. For instance, privatisation and operational autonomy to public banks are two spheres of financial sector reform that would address these features but where progress has been very limited.

Finally, in managing capital inflows so far, sterilisation has been regularly used to limit the impact upon domestic money supply. Familiar arguments against sterilisation relate to effects upon interest rates. Since it involves an exchange of foreign currency assets for domestic currency assets, the interest rate on the latter has to be kept high to limit central bank losses arising out of interest differentials. This however, would serve to attract further capital inflows, which could be potentially detabilising in some situations. A more pertinent argument against sterilisation in the Indian context is its fiscal implication. It leads to an increase in public debt, and these costs, termed as quasi-fiscal costs in the literature, due to a favourable interest differential for domestic bonds, can be substantial. Economic policy therefore needs to be reappraised in managing capital inflows so as to minimise the associated costs. A combination of policy responses like limited sterilisation, exchange rate flexibility and short-term use of selective capital controls to specifically address the causes of capital inflow surge, would be most appropriate strategy in managing capital movements. EPW

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Notes

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1 See Calvo, Leiderm and Reinhart (1993), Corbo and Hernandez (1994), Khan and Reinhart (1995) and Koenig (1996), amongst others.

2 Reputed corporates were allowed to access international markets abroad through issue of GDRs. These were initially restricted to reputed corporates and subject to monetary limits, number of issues and end use restrictions covering import requirements, retiring debt, etc. Many of these were relaxed in 1995.

3 Exchange rate guarantees by resident banks to non-resident Indians were phased out by 1994, short-term deposits were discontinued and/or reoriented towards longer maturity, deposits where resident banks bore the exchange risk were exempted from reserve and priority sector lending requirements as an incentive to attract and advance these funds at free market rates, interest rates on these deposits were gradually aligned with international rates and their composition tilted towards rupee denominated accounts.

4 Some projects required mandatory clearances from the Foreign Investment Promotion Board (a government body) for some projects.

5 Conscious efforts made by the authorities to boost foreign exchange reserves through mobilisation of funds from non-resident Indians, viz, the Resurgent India Bonds (1998) and the India Millennium Deposit Bonds (2000) are also to be noted at this point. These were targeted exclusively at NRIs and overseas corporate bodies predominantly owned by NRIs.

6 We acknowledge that real money stock is an ex post variable and thus cannot really be used to explain price level movements.

7 Some studies have shown both categories to hold equivalent time-series properties though. See Claessens, Dooley and Warner (1995).

8 Tentative evidence for India supports this hypothesis. Portfolio flows are more volatile than FDI, as measured by the standard deviation of the two series.

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