During the past seven years, like other Emerging Market Economies (EMEs), India has been experiencing consistently strong capital flows, barring the crisis year of 2008-09. During the crisis year of 2008-09, net capital flows plummeted to US$ 6.8 (0.5 per cent of GDP) from US$ 106.6 billion (8.7 per cent of GDP) in 2007-08. The net capital flows again surged to US$ 53.6 billion (4.1 per cent of GDP) during 2009-10. During the first half of 2010-11 (April-September 2010), the net capital flows were US$ 36.7 billion, which was 59.6 per cent higher than the net flows during the same period of the previous year (US$ 23.0 billion). Thus, India has experienced both floods and sudden declines of capital flows. This has sparked serious macroeconomic issues and challenges before the policymakers. The present chapter discusses India’s approach to management of foreign capital and also highlights various policy challenges posed by volatility of capital flows. In the end, policy options towards successful management of foreign capital are presented.

International capital investment can play a useful role in development by adding to the savings of low and middle-income developing countries (Michael and Menkhoff, 2003; Mody et al, 2001) in order to increase their pace of investment. However, foreign investment can also prove unproductive to developing economies by exposing them to disruptions and distortions from abroad, and by subjecting them to surges of capital inflows or massive outflows of capital flight (Dodd, 2004). Thus, foreign capital has several implications for any economic system. But, implications of foreign capital largely depend on many factors like absorption capacity of host country, size of investment and above all nature of investment. For the long-term investment there is little reason for worry, but short-term traders are adversely getting affected by the role of FIIs. Rakshi (2006) have argued that, far from being healthy for the economy, FIIs inflows have actually imposed certain burdens on the Indian economy. Sudden fall and sudden increase in FIIs in India has raised several issues before the policy makers regarding the real implications of FIIs.

India’s Approach to Manage Flow of Foreign Capital

India has experienced both “floods” and “sudden declines” of capital flows. Net capital flows to India increased from as low as US$ 7 billion in 1990–91 to US$ 45 billion in 2006–07, and further to US$ 107 billion during 2007–08, the year just before the crisis. They dropped to as low as US$ 7 billion in 2008–09 at the height of the crisis. Capital flows are estimated to have recovered to around US$ 50 billion in 2009-10. India has followed a consistent policy on allowing capital inflows in general
and on capital account management in particular. In case of India, capital account convertibility is not a stand alone objective but a means for higher and stable growth. Indian policymakers believe that economy should traverse towards capital convertibility along a gradual path-the path itself being recalibrated on a dynamic basis in response to domestic and global developments.

Among the components of capital flows, India prefers long term flows to short-term flows and non-debt flows to debt flows. India’s policy on equity flows has been quite liberal, and in sharp contrast to other EMEs which liberalized and then reversed the liberalization when flows became volatile, India’s policy has been quite stable. Historically, India has used policy levers on the debt side of the flows to manage volatility. Contrary to popular perception, we have used both quantity and price based variables to moderate debt flows. There is a ceiling on the extent of FII investment in sovereign and corporate debt (quantity variable) and there is also a withholding tax (price variable). External commercial borrowings (ECB) by corporates come in through both an automatic route and an approval route. ECB flows under both the automatic and approval routes are moderated by interest rate ceilings (a price variable) and those under the automatic route through an additional ceiling on total quantity (a quantity variable). Non-Resident Indians (NRI) deposits are monitored through an interest rate ceiling, a price variable. India’s exchange rate policy is not guided by a fixed or pre-announced target or band. India’s policy has been to intervene in the market to manage excessive volatility and disruptions to the macroeconomic situation. This “volatility centric approach” to exchange rate also stems from the source of volatility which is capital flows. Despite not having a fully open capital account, India has experienced large volatility in capital flows as the data for last four years suggests. The exchange rate of the Indian rupee vis-à-vis US dollar appreciated when there were large capital inflows; and it depreciated when the capital inflows thinned out. The two way movement is a clear demarcation of India’s flexible exchange rate policy.

Although India does not have a deliberate strategy of building up reserves for self insurance, our reserves got built up as a result of our relatively flexible exchange rate policy. The reserves so built up have been used to contain volatility in the event of capital flow reversals. There has been much discussion post-crisis on the cost effectiveness of self-insurance. The main refrain has been that accumulation of reserves by EMEs as a safety-net entails domestic costs while also leading to global imbalances. Be that as it may, in evaluating the level of reserves and the quantum of self insurance, it is important to distinguish between countries whose reserves are a consequence of current account surpluses and countries with current account deficits.
whose reserves are a result of capital inflows in excess of their economy’s absorptive capacity. India falls in the latter category. India’s reserves comprise essentially borrowed resources, and therefore Indian economy is more vulnerable to sudden declines and reversals as compared with countries with current account surpluses.

MACROECONOMIC CHALLENGES IN INDIA

The East Asian crisis of 1997-98 and the Mexican crisis of 1994 generated much concern among policy analysts regarding the role of macroeconomic policies in the management of capital inflows. A series of economic reform measures including liberalization of foreign capital inflows were initiated in India since the early nineties. After the liberalization of the exchange rate regime in the mid-1990s, the Reserve Bank had, therefore, to chart its own course of exchange rate management, learning from the contemporary experiences. There is now a well-laid out policy response to sudden changes in capital flows so as to stabilize markets: on demand-side, including monetary tightening and changes in the cost of import finance as well as on supply-side, including the Reserve Bank’s operations in the foreign exchange market and changes in the cost of delaying export proceeds (Figure 5(A).1. The Reserve Bank has been prepared to make sales and purchases of foreign currency in order to even out lumpy demand and supply in the relatively thin forex market and to smoothen jerky movements. However, such intervention is not governed by a predetermined target or band around the exchange rate (Jalan, 1999).

Figure 5 (A).1: Foreign Exchange Market Operations of the RBI

The broad principles that have guided India after the Asian crisis of 1997 are: (i) careful monitoring and management of the exchange rate without a fixed or pre-announced target or a band; (ii) flexibility in the exchange rate together with ability to intervene, if and when necessary; (iii) a policy to build a higher level of foreign exchange reserves which takes into account not only anticipated current account deficits but also ‘liquidity at risk’ arising from unanticipated capital movements; and (iv) a judicious management of the
capital account (Jalan, 2002). India’s exchange rate policy of focusing on managing volatility with no fixed rate target while allowing the underlying demand and supply conditions to determine the exchange rate movements over a period in an orderly way has stood the test of time (Kohli, 2003). As a result of these timely and coordinated measures, India was successful in containing the contagion effect of the Asian crisis. In addition, safeguards developed over a period of time also helped in limiting the contagion; these included: low current account deficit; comfortable foreign exchange reserves; low level of short-term debt (Gupta and Sahay, 2003); and absence of asset price inflation or credit boom (Rangarajan, 2000). These positive features were the result of prudent policies pursued over the years notably, cap on external commercial borrowings with restrictions on end-use, low exposure of banks to real estate and stock market, insulation from large intermediation of overseas capital by the banking sector, close monitoring of off-balance sheet items and tight legislative, regulatory and prudential control over non-bank entities (RBI, 2004). But, the incomplete sterilization2 in the post-2004 period has led to a pronounced acceleration of reserve money growth. During that period real interest rates have been very low when compared with other Asian countries. With low real rates, the stance of monetary policy has been expansionary. While the wholesale Price Index is widely watched in India, the Consumer Price Index is a better measure of inflation. It has risen after 2004, and has remained stubbornly high when compared with the aspirations of politicians and policymakers (Shah and Patnaik, 2008). Thus, even though capital inflows are supplying much-needed financing to Indian corporates and banks, they are also making monetary and exchange rate policy more challenging. In the recent period, in India, one of the most serious challenges to the conduct of monetary policy emerge from capital flows in view of the significantly higher volatility of such flows as well as the fact that capital flows in gross term are much higher than those in net terms. Largely due to the bourgeoning foreign capital inflows, the rupee, during April 07-January 08, appreciated against the dollar by anywhere between 11-15 per cent in comparison with the same period last year (Table 5 (A).1.

Table 5 (A).1: Movements of Indian Rupee

<table>
<thead>
<tr>
<th>Year</th>
<th>Range (Rs. per US$)</th>
<th>Average (Rs. per US$)</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1993-94</td>
<td>31.21-31.49</td>
<td>31.37</td>
<td>0.05</td>
</tr>
<tr>
<td>1995-96</td>
<td>31.37-37.97</td>
<td>33.45</td>
<td>0.56</td>
</tr>
<tr>
<td>1996-97</td>
<td>34.14-35-96</td>
<td>35.50</td>
<td>0.21</td>
</tr>
<tr>
<td>1997-98</td>
<td>35.70-40.36</td>
<td>37.36</td>
<td>0.37</td>
</tr>
<tr>
<td>1998-99</td>
<td>39.48-43.42</td>
<td>42.07</td>
<td>0.24</td>
</tr>
<tr>
<td>1999-00</td>
<td>42.44-43.64</td>
<td>43.33</td>
<td>0.10</td>
</tr>
</tbody>
</table>
Table indicates that buoyant capital inflows have pushed up the value of the rupee, despite significant intervention by the Reserve Bank of India. This has raised concerns about India's competitiveness, particularly in the labor-intensive textile, garment, and leather industries (Sumanjeet, 2007). Capital inflows have also increased the money supply, which then raised inflationary pressure.

In short, India is facing the policy challenges of the "impossible trinity": when there is free movement of capital, it is impossible to both target the exchange rate and maintain an independent monetary policy (Richter, 2008; Hutchison, et al., 2009). The other major macroeconomic problem caused by capital inflows is that they may build up a level of debt that the country finds it difficult to service on the contractually agreed terms, as happened throughout Latin America in 1982 (and again in Mexico in the early 1990s). This raises two issues: identifying how much debt a country can prudently take on and limiting borrowing to a prudent level when the market wants to lend more. A number of other problems are sometimes also mentioned as possible undesirable consequences of large capital inflows (Becker, et al., 2007). Inflows may, for example, lead to a speculative bubble in the stock market. One undesirable consequence of such a bubble is typically a decline in the local savings rate, as individuals discover that their asset accumulation objectives are being achieved without the need for anything so tedious as abstaining from consumption. Another undesirable consequence can be a financial crisis, and the danger of a recession, when the bubble bursts. Capital inflows may also involve the loss of local control over economic decision-making: this is clearest in the case of majority-owned direct investment, although direct investment carries offsetting benefits in terms of access to technology and markets, and the loss of control can in any event often be avoided through joint ventures. Problems may also arise to some degree in the case of portfolio equity investment, if concentrated shareholding is allowed, and even loans, where powerful foreign creditors (notably the IMF when times get difficult) expect to be consulted about the course of economic policy. Further, large capital inflows, can impact macroeconomic aggregates not only through the exchange rate, but also trade and monetary variables, according to Report of Reserve Bank of India. On the domestic front, the biggest challenge is the management of capital flows and the attendant implications.
for liquidity and overall stability. If there is a slowdown in capital inflows then it create many difficulties to the developing countries like lower growth rate, loss of forex reserves, low employment opportunities etc. So, the large increase or decrease in capital inflows has generated the need of management of capital inflows in developing countries.

**POLICY OPTIONS FOR INDIA**

To manage capital inflows, emerging market economies choose among three policy options:

1. A larger current account deficit through trade liberalization or exchange rate appreciation;
2. Restrictions on the capital inflows either through direct controls, a tax or a widening of exchange rate band;
3. Offsetting capital outflows either through reserve accumulation or the promotion of private sector outflows.

On the basis of above discussion on the issues relating to capital inflows, the authors suggest that management of capital inflows in India should be done through the following policy options:

- A related issue is whether there should be sterilized intervention. Sterilization-i.e. the exchange of (domestic) bonds for foreign exchange has been far the most popular policy option (Schadler et al, 1993). This policy aims at insulting the money supply and/or the exchange rate from the effect of exchange rate from the effect of inflows; the intent is to mitigate inflationary pressures, the real exchange rate appreciation, and avoid the loss of control over the domestic money stock. It is not clear that this policy can provide a lasting solution to inflation, and it can be costly (Ostry, 1988). In addition, sterilization can results in an increase in public debt and entails costs, to the extent that the interest rate on domestic bond is higher than that on foreign exchange reserves.

- Managing capital flows has been a key policy challenge for emerging economies like India in the aftermath of the global financial crisis. Regulation of capital flows has certainly moved to the centre-stage. Perhaps one of the reasons why the crisis hit the US economy was because regulation fell behind innovation. Regulation and derisking the system have to be one step ahead of innovation and human inventiveness. India cannot afford shocks, (and) to avoid shocks regulations must stay one step ahead of innovation. But international experiences shows that capital controls only altered the composition of flows. Short term flows declined, but long term flows increased, with aggregated level not being affected. Further, it is also important to
understand that long term regulation will hit the sentiments of investors and reduce the level of foreign investment in India. Therefore, India needs to put in place appropriate regulation at appropriate time and also need to lead how to absorb “capital inflow”. The government announced regulations for foreign investments through the mechanism of participatory notes in an attempt to regulate the capital flows.

- Various countries, such as Chile and Mexico imposed taxes on capital on short term borrowing abroad with the intent of discouraging inflows that are thought to be speculative. For example, Chile chose to tax inflows by imposing a minimum requirement on international loans intermediated through the banking system (Dooley, 1988; Krugman, 1988). The main advantage is that flows are likely to be re-routed through other channels (e.g., over/under invoicing of imports and exports).

- As far as the exchange rate is concerned, the large inflow of remittances and major and sustained growth in software exports coupled with capital inflows have the potential for possible overvaluation of the currency and the resultant erosion of long term competitiveness of other traditional goods sectors- a problem popularly known as Dutch disease. So, Exchange rate protectionism should be gradually eliminated and the currency should be allowed to appreciate in response to capital inflows. Protectioning the exchange sensitive sector should not be overriding concern of policy.

- For improving the position of foreign capital in India, trade liberalization should continue to stimulate absorption of foreign exchange. But the process should be carefully managed and monitored; otherwise surge in consumption imports will render CAD (Current Account Deficit) unsustainable.

- Shed the reluctance to check the torrent of FII, explore effective methods of restricting this flow rather than novel methods of sterilization. Due to the thinness of market (and its susceptibility to manipulation) large portfolio flows may cause equity bubbles. Reduction in non-FDI flows will reduce the need for large unproductive reserves.

- At most, capital controls should be seen as just one of many tools that can be used to manage capital inflows, and one to be used only in particularly challenging situations (Binici et al., 2009). The IMF work concludes that capital controls may be appropriate in conjunction with other policy tools as long as countries meet certain conditions. Foreign currency reserves should already be adequate, and exchange rates should
not be undervalued. Controls should not be used as a substitute for necessary macroeconomic policy adjustments; for example, if the economy is overheating, controls should only be used along with a suitable monetary-fiscal policy mix. Moreover, controls should be lifted once these prerequisites no longer apply. Further, setting up an adequate financial policy framework takes significant time and resources. Moreover, putting such a framework in place before liberalizing capital flows is not a guarantee that countries will capture the full gains to financial openness without any attendant stresses. However, though effective regulation and supervision are not a panacea, they doubtless increase the chance that economies will benefit from financial innovation and openness.

- Investment in infrastructure in general (and not only in telecom) must increase to boost domestic investment and attract FDI in manufacturing.
- A further challenge for policy in the context of fuller capital account openness will be to preserve the financial stability of the system as greater deregulation is done on capital outflows and on debt inflows. So, the approach to capital account convertibility should continue to be cautious until the crucial preconditions are fulfilled.
- Another aspect of greater capital market openness concerns the presence of foreign banks in India. With fuller capital convertibility and greater presence of foreign banks over time, a number of issues will arise. First, if these large global have emerged as a result of real economies of scale and scope, how will smaller national banks compete in countries like India, and will themselves need to generate a larger international presence? Second, there is considerable discussion today on overlaps and potential conflicts between home country regulators of foreign banks and host country regulators: how will these be addressed and resolved in the years to come? Third, given that operations in one country such as India are typically small relative to the global operations of these large banks, the attention of top management devoted to any particular country is typically low. Consequently, any market or regulatory transgressions committed in one country by such a bank, which may have a significant impact on banking or financial market of that country.
- Following the advice of Feldstein (1998), a part of the reserves may be invested in higher-yield (higher-risk) securities.
- On the fiscal front, further consolidation remains important to sustain growth and manage financial globalization. Despite India's impressive
revenue performance, fiscal consolidation has stalled and public debt remains high, squeezing the fiscal space needed for public investment in physical and social infrastructure. Both expenditure and revenue measures are needed, including rationalizing subsidies, cutting tax exemptions, enhancing tax administration, and broadening the tax base. A tighter fiscal stance could also limit the inflationary impact of capital inflows.

CONCLUSION

International experience shows that the more open the country’s capital account and the more volatile the capital flows in the global economy, the more binding is the constraint on national policymakers (see what happened with policymakers in Southeast Asian countries in the 1997 financial crisis as currencies collapsed on the back of massive capital outflows). The impossibility of this trinity stems from the fact that if CAC (Capital Account Convertibility) is accepted, according to theory, you either have the choice of giving up monetary independence or giving up the stable currency objective and letting the exchange rate float freely so that monetary policy can then be directed to inflation control. India has a managed float with no fixed rate targets for rupee movements. Daily movements are, however, watched very closely by the RBI (Ghosh et al, 2010). Our markets are relatively thin and the declared policy of the RBI is to meet temporary demand supply imbalances that arrive from time to time. The RBI’s objective is also to keep market movements orderly and ensure that there is no liquidity problem or rumor or panic induced volatility. In such a case, whether to go for full convertibility makes sense for an emerging market like India is a case that requires deeper discussion. However, we still believe that the partial move towards full convertibility on the capital account is a step in the right direction towards aligning with the globalization mantra that we have practiced so closely. But, once full convertibility is achieved, investors in all asset classes (debt, equity, real estate) might have to bear additional bouts of volatility as the Indian currency will then be more aligned to the world financial markets and thus be more prone to ‘jerks’ in the global system.

END NOTES

1 Capital flight, in economics, occurs when assets and/or money rapidly flow out of a country, due to an economic event (such as an increase in taxes on capital and/or capital holders or the government of the country defaulting on its debt) and that disturbs investors and causes them to lower their valuation of the assets in that country, or otherwise to lose confidence in its economic strength. This leads to a disappearance of wealth and is usually accompanied by a sharp drop in the exchange rate of the affected country (depreciation in a variable exchange rate regime, or a forced devaluation in a fixed exchange rate regime).

2 To ease the threat of currency appreciation or inflation, central banks often attempt what is known as the "sterilization" of capital flows. In a successful sterilization operation, the domestic component of the monetary base (bank reserves plus currency) is reduced to offset the reserve inflow, at least temporarily. In
theory, this can be achieved in several ways, such as by encouraging private investment overseas, or allowing foreigners to borrow from the local market. The classical form of sterilization, however, has been through the use of open market operations, that is, selling Treasury bills and other instruments to reduce the domestic component of the monetary base. The problem is that, in practice, such sterilization can be difficult to execute and sometimes even self-defeating, as an apparently successful operation may raise domestic interest rates and stimulate even greater capital inflows. Unfortunately, many developing countries also lack the tools available to run a classical sterilization policy, or find it simply too costly to do so. This is often the case wherever the financial system is not fully liberalized.

3 On 27th February rupee plunged to a record low of 51.17 per dollar, hit by importers demand for dollar and share market losses after data showed to its weakest in nearly six years at the end of 2008. The partially convertible rupee closed at 51.10/12 per dollar, 1.3 per cent weaker than 25th February close of 50.45/47 tackling its losses in 2009 to 4.7 per cent.

4 According to data released by RBI, forex reserves dipped $165 million during the week ended February 20, 2009 to $249.5 billion largely because of revaluation of non-dollar assets such as Euro, Sterling Pound and the Japanese Yen vis-à-vis the US dollar. While foreign currency assets dipped $165 million, the value of gold and SDR—the currency with the IMF—remained unchanged during the week. The reserve with the IMF dipped $9 million during the week.

5 A number of studies, which consider this issue include – although not limited to – those by Jones (1984); Beladi and Marjit (1992); Chao and Yu (1994 and 1995); Marjit and Beladi (1996); Olarreaga (1996); Marjit et al. (1997); etc.

6 Dutch disease is an economic concept that tries to explain the apparent relationship between the exploitation of natural resources and a decline in the manufacturing sector combined with moral fallout. The theory is that an increase in revenues from natural resources will de-industrialize a nation’s economy by raising the exchange rate, which makes the manufacturing sector less competitive and public services entangled with business interests. However, it is extremely difficult to definitively say that Dutch disease is the cause of the decreasing manufacturing sector, since there are many other factors at play in the very complex global economy. While it most often refers to natural resource discovery, it can also refer to "any development that results in a large inflow of foreign currency, including a sharp surge in natural resource prices, foreign assistance, and foreign direct investment"

7 Feldstein considers traditional austerity measures as sufficient to end the crisis in Indonesia. In particular, he denies the need for a comprehensive restructuring of the Indonesian economy to restore access to international capital markets. As safeguard against inappropriate interference into the domestic affairs of developing countries, Feldstein proposes three questions that the IMF should ask when deciding whether to insist on a particular measure. Is this reform really needed to restore the country’s access to international capital markets? Is this a technical matter that does not interfere unnecessarily with the proper jurisdiction of a sovereign government? If the policies to be changed are also practiced in the major industrial economies of Europe, would the IMF think it appropriate to force similar changes in those countries if they were subject to a fund program? (Feldstein 1998). Feldstein answers no to all three questions: the reforms are not needed to restore access to international capital markets; they interfere with Indonesia’s sovereignty; and the IMF is biased, pushing for structural reforms in developing countries without promoting similar measures in Europe.

8 The Asian currency crisis was originated in the private sector. Among others, the most critical factors were over-expansion of corporate credit with un-hedged short-term borrowing from abroad; large amounts of unproductive capital investments; and speculation on overvalued assets and large trade deficits. July 2, 1997 marked the devaluation of the Thailand baht, triggered by a series of banking bail-outs by the central government. The central bank was forced to mobilize its resources to cover for excessive property lending by commercial banks. The increasing financial pressure stemming from the country’s exceptional infrastructure building programs had finally damaged confidence in the baht. The IMF moved in with a $17.2 billion rescue program. The danger was that with Thailand’s currency crashing against the dollar, the rest of the rapidly growing Asian tigers would also be affected. Following Thailand’s baht, Malaysia, Indonesia and the Philippines’ currencies all hit as well. Furthermore, even South Korea and Taiwan were affected. The perception is that the ‘new tiger’ economies are financially overleveraged. In actuality, starting in 1996, a mix of domestic and external shocks revealed weaknesses in the Thai economy that until then had been masked by their rapid economic growth and the weakness of the US dollar to which the Thai currency was pegged. To an extent, Thailand’s difficulties resulted from its earlier economic success.
Strong growth and generally prudent macroeconomic policy had attracted large capital inflows, much of them short-term and many of them attracted by the establishment of the Bangkok International Banking Facility in 1993. While these inflows had permitted faster growth, they had also allowed domestic banks to rapidly expand lending, generating imprudent investments and unrealistic increases in asset prices. Past success also may have contributed to a sense of ignorance by the Thai authorities about the seriousness of Thailand’s problems and the need for policy action. Finally, without the convincing policy action and after a desperate defense of the currency by the central bank, the crisis broke.

REFERENCES


CHAPTER 5 (B)

SUMMARY

In this chapter, an attempt has been made to highlights the summary of results and further concludes it by suggesting the strategies or policies on the basis of problems identified by the present study for the successful management of capital inflows in India.

Capital flows have significant role for every national economy regardless of its level of development. For the developed countries it is necessary to support sustainable development. For the developing countries, it is used to increase accumulation and rate of investments to create conditions for intensive growth. For transition countries, it is useful to carry out the reforms and cross to open economy, to cross the past long term problems and to create conditions for stable and continuous growth for GDP, as well as integration in the world economy. But capital flows from developed to developing countries are worth studying for a number of reasons. Capital inflows can help developing countries with economic development by furnishing them with necessary capital and technology. Capital flows contribute in filling the resource gap in countries where domestic savings are inadequate to finance investment. Neoclassical economists support the view that capital inflows are beneficial because they create new resources for capital accumulation and stimulate growth in developing economies with capital shortage. Foreign capital can finance investment and stimulate economic growth, thus helping increase the standard of living in the developing world. Capital flows can increase welfare by enabling household to smooth out their consumption over time and achieve higher level of consumption. Capital inflows facilitate the attainment of millennium development goals and the objective of national economic, empowerment and development goals. As the economy becomes more open and integrated with the rest of the world, capital flows contribute significantly to the transformation of the developing economy. Added to this, capital flows are necessary for macroeconomic stability. Capital inflows affect a wide range of macroeconomic variables such as exchange rates, interest rates, foreign exchange rates, interest rates, foreign exchange reserves, domestic monetary conditions as well as saving and investments.

India is a developing country, like many other developing countries, international capital flows has significant potential benefit for the Indian economy. The problems of foreign investment in India have been an issue of outstanding importance even since the days of the East India Company and added significance after Indian Independence in 1947. In the 1950s and 1960s, the dominant form of foreign capital was foreign aid, mainly through the government-to-government transfers of resources. In the late 1960s and early 1970s,
foreign direct investment came into prominence, the dominant form portfolio loan. In the late 1970s there was hardly any new foreign investment in India. Indeed some firm left the country. Inflows of private capital remained meager in 1980s: they average less than US$0.2 billion per year from 1985 to 1990. In the 1990s, as part of wide ranging liberalization of the economy, fresh foreign investment was invited in a range of industries. Capital inflows in India rose steadily through the 1990s, exceeding US$6 billion in 1996-97. The fresh inflows were primarily as portfolio capital in the early years (that is diversified equity holdings not associated with managerial control). But increasingly, they have come as foreign direct investment (equity investment associated with managerial control).

The year 1998 witnessed a marginal outflow from the Indian stock market but soon the inflows went back to the US $ 2.3 billion per year level. Foreign capital inflows were highly volatile in 2004-05 fiscal. However, net inflows were almost same as 2003-04. But in the next three years net capital inflows increased significantly. In the year 2007-08, FDI reached at $32435 million. FPI and FII, which were at slide in the year 2006-07, reported a significant increase in the year 2007-08, after that, in 2008-09 net capital inflows decreased to US $1406 million because of global financial crisis. During the period (2008-09), net capital flows plummeted to 0.5 per cent of GDP from 8.7 per cent in 2007-08. As the adverse impact of credit crisis in US ebbed, the capital flows into India again accelerated. During the first half of 2011, the net capital flows were US$ 36.7 billion, which was 59.6 per cent higher than the net inflows during the same period of previous year. From the above discussion it is clear that India has experienced both sudden surge and sudden declines of capital flows. This has sparked various macroeconomic issues and challenges before the Indian policymakers.

Volatile foreign capital creates instability in capital inflows. The instability of capital inflows may retard economic growth and structural development, when there is a sudden increase in capital flows; it leads to increase in real exchange rate, inflationary pressures and deterioration in current account. But the sudden declines of capital inflows could push the country into insolvency or drastically lower the productivity of existing capital stocks and affect many macroeconomic variables like exchange rates, interest rates, foreign exchange reserves and domestic monetary conditions etc. When there is sudden reversal of capital flows then it reduces the growth rate of an economy, increases the interest rates and depreciates the currency and others. Both excess and sharp withdrawal of capital inflows is harmful for an economy. Thus, sudden declines in capital inflows are more harmful than an increase in capital inflows. Therefore, the study of various aspects of sudden declines of capital inflows is very important for India policy framework.

The review of literature also highlights that this particular field need comprehensive study regarding many aspects of foreign capital pertaining to sudden declines of capital inflows and policy implications in India. Most of the studies examined the importance of
capital inflows in India, also examines the impact of foreign direct investment on the growth rate of India and impact of FIIs on Indian stock market. But these studies do not focus on the impact of total capital flows on the growth rate of India and siphoning off (sudden declines) of capital inflows in India. In fact, sudden declines aspect of capital flows have been little discussed in the Indian context. However, there are some studies exploring the sudden declines aspect of capital flows in the context of East Asian Financial Crisis and Argentina Crisis. There are number of studies highlighting the impact of FDI on economic growth of India. But there is hardly any study, to explore the impact of aggregate foreign capital on India’s economic growth. To explore the real impact of Total Foreign Capital (as FPI contributes significantly in total foreign capital), it is imperative to consider FPI as a part of total capital inflows. FPI is more volatile than FDI, FIIs are the major part of FPI, the study of the impact of FIIs on Indian stock market is also necessary. Therefore, the main focus of the present study is to examine the impact of the capital flows on the growth rate of India, and impact of sudden declines of capital inflows in India and to find out the causes, consequences and policy options to overcome the impact of sudden declines of capital inflows. Therefore, the researcher has decided to work under the title “Siphoning-off of Capital Inflows: Causes, Consequences and Policy Options for India”. The present study has made an attempt to overcome almost all the limitations of the existing studies. The study aims to attain the following objectives.

**OBJECTIVES OF THE STUDY**

The study examines the impact of sudden declines of international capital flows on the economic growth of India and also makes an attempt to study various causes behind sudden declines of capital inflows in India. Further, the study is aimed to explore various macroeconomic challenges posed by sudden declines of capital inflows. Keeping in view the main objective of the study; an attempt has been made to attain the following objectives:

- To examine the trends and composition of capital flows in India.
- To examine the impact of capital flows on economic growth of India.
- To study the impact of Foreign Institutional Investment (FIIs) on the Indian Stock Market.
- To examine the causes and consequences of the sudden declines of capital flows in India.
- To study main concepts and issues surfaced in the current policy debate and suggest policy implication thereof.
HYPOTHESES OF THE STUDY

A. Testing the casual relationship between foreign capital inflows (FCIs), capital formation (GDCF) and GDP
   a. Ho: FCIs does not Granger cause GDP.
   b. Ho: GDP does not Granger causes FCIs.
   c. Ho: GDCF does not Granger cause GDP
   d. Ho: GDP does not Granger cause GDCF.
   e. Ho: GDCF does not Granger cause FCIs.
   f. Ho: FCIs does not Granger cause GDCF.

B. Testing the relationship between FIIIs and Stock Market (BSE National Index)
   a. Ho: There is no relationship between FIIIs and Indian stock market (BSE).

C. Testing the Casual relationship between FIIIs and stock market (BSE).
   a. Ho: FIIIs does not Granger cause BSE.
   b. Ho: BSE does not Granger cause FIIIs.

RESEARCH METHODOLOGY

The present research is mainly of quantitative nature, as most of the findings of the present study are based on quantified measures. However, the researcher also manipulates the causality and consequences, which also represents a sign of qualitative research. In the present study, mainly exploratory research design has been adopted, as the main purpose of this study is to gain familiarity with the various aspects of foreign investment and to achieve new insights into it. Further, the study formulates more precise research problem by developing hypothesis. Since the scope of the study is very vast, the present study also represents some characteristics of descriptive research design. The present study is entirely based on the secondary data pertaining to flows of foreign capital and some macroeconomic variables of the Indian Economy. Secondary data has been collected from various reports, books, journals, magazines and websites. Websites of NSE and BSE has also been used for data collection. The main source of secondary information was RBI Bulletin and SEBI Bulletin. Added to this websites like www.rbi.org.in, www.tradingeconomics.com, www.moneycontrol.com and yahoo finance has been highly used to collect various other information. Some important information has also been compiled from the different newspapers.

For analyzing the data, both simple and advanced statistical tools have been used. In some cases simple statistics like average, standard deviation and Correlation have been applied. The study also utilizes descriptive analysis to explain the selected various variables and tabulation to examine the relationship between variables. Exploratory Research, requires some advanced tools; therefore to test the various hypotheses of the study and to achieve various objectives of the study, OLS (Ordinary Least Square
Method), multiple regression models and other advanced statistical and econometrics tools like Unit Root Test, Co-integration test, Granger Causality Test etc. have been used. Analysis has also been done by using SPSS version 12, MS-Excel and E-Views 6 {for details please see Chapter 2 (B)}.

**SUMMARY OF RESULTS**

The present study provides a comprehensive view of various aspects of capital inflows in India. The study provides policy implications regarding the management of capital inflows in India that guides the policy makers while framing the policies. It also provides a picture of trends, magnitude and compositions of capital flows in India. The study also aims to establish the impact foreign capital on economic growth of India. It also shows the relationship between foreign institutional investment and Indian stock market (BSE). Further, the study investigates the causes (factors), which increase the probability of sudden declines of capital inflows in India. An attempt has also been made to study the implications of sudden declines of capital inflows in India. The major strength of the present study is the way it has put together everything one might wish to know about the capital inflows in India. The present study carried 5 objectives and 9 hypotheses. A summary of results (objective-wise) obtained is given as under:

I

**Trends and composition of Capital Inflows in India**

**Objective 1. To examine the trends and composition of capital inflows in India**

- **Trends:**

  Since the introduction of the reform process in the early 1990s, India has witnessed a significant increase in cross-border capital flows. Study shows (see Figure 1.1 of Chapter 1) that capital inflows increased extensively since 2005. However, capital inflows declined during 2007-08 to 2008-09 as a consequence of a global system awash with liquidity. Presently, while most “emerging markets” in Latin America and Asia are expressing concern about and responding with capital controls to the surge in foreign capital inflows into their financial markets, policymakers in India are more sanguine and are declaring that the country can absorb far more than the net capital inflows it currently attracts. India needs to increase the long-term investments to expand the economy more strongly, foreign direct investment (FDI), although short-term capital inflows from foreign institutional investor investments (FII) are rising quickly. The net FII recorded US$34 billion in the 10 months period since January 2010.

- **Magnitude:**

  India’s strong capital flows reveal sustained economic growth of India, positive investment climate, favorable liquidity and interest rates in the global markets. Furthermore, higher domestic interest rates coupled with stable growth rate had created a lower risk perception that attracted higher capital flows. Net capital flows as percentage of GDP increased from 2.2% in 1990-91 to around 9.0% in 2007-08. However, if we see
gross capital inflows as a percentage of GDP, then it increased from around 7.2% in 1990-91 to around 36.6% in 2007-08. While capital outflows as a percentage of GDP increased from 5% in 1990-91 to around 27.4% in 2007-08. Most of the capital outflows were on account of FII portfolio transactions, Indian investment abroad and repayment of ECBs. All this has offset a lot of increase in capital inflows. However, India has large excess of capital flows over the amount required to finance current account deficit and that resulted in accretion of foreign exchanges reserves to the tune of around US$308 billion by July 2008. During the period of this systemic sudden stop in capital inflows, the domestic financial system also suffered from risk aversion. Cost of capital spiked up and capital market with good business fundamental suddenly lost access to capital, turning them into non-performing borrowers in the banking system. The added to banks’ risk aversion. Bank credit growth decelerated sharply. Private corporate capex to GDP declined to 12.7% of GDP in 2008-09 from 16.1% of GDP in 2007-08. Discretionary private consumption also suffered. During the crisis year of 2008-09, net capital flows tumbled to 0.5 per cent of GDP from 8.7 per cent in 2007-08. The net capital flows again surged to US$ 53.6 billion (4.1 per cent of GDP) during 2009-10.

- **Composition:**
The composition of capital flows has undergone a complete change from official debt flows to non debt flows as a result of thrust of policy reform after the balance of payment crisis in 1990s that encouraged non debt creating flows instead of short term debt flows. The official flows got replaced by private equity and external commercial borrowings (ECBs). Non-debt flows, particularly private foreign investments witnessed a significant rise. The composition of capital inflow has changed significantly over the years. Dependence on aid has vanished and foreign direct investment (FDI), foreign portfolio investment (FPI), external commercial borrowings (ECB) and nonresident Indians (NRI) deposits dominate the capital flows. Among these again, there has been a gradual shift away from debt components to equity flows (The proportion of non-debt has gone up from about 5% in the second half of the 1980). But, the period of 1990s show a radical transformation in the nature of capital flow into India. From a mere absence of any capital flow till 1992 (expect those by Non Residents Indian), today such inflows represent a dominant proportion to total flows. The official flows show an external assistance, i.e. grants and loans from bilateral and multilateral sources represented 75-80 percent flow till 1991. By 1994, this has come down to about 20 percent and has further fallen to below by 5 percent by late 1990’s. About 460 FIIIs have been allowed to enter the Indian market and together have brought in more than US $ 14 billion GDR and ADR floated by Indian corporate sector brought in the remaining portfolio inflows. By the end of year 2004, India has attracted more than US $ 40 billion of foreign investment (see table 1.2 of Chapter 1). Foreign capital inflows were highly volatile in the 2004-05 fiscal. However net inflow was almost same as 2003-04. But in next three years net capital
inflows were increased significantly. In the year 2007-08, FDI reached at US$ 32435 million. FPI and FII, which were at slide in the year 2006-07, reported a significant increase in the year 2007-08. In the fiscal year of 2006-2007, FDI inflows reported sharp and significant increase. During the crisis ridden year of 2008 to 2009, foreign institutional investors pulled out $9.77 billion of portfolio investment from Indian equity markets. Yet they have been quick to return in 2010. In just the first four months of the fiscal year, they have nearly made up for the exit, reinvesting 87% of the amount they pulled out. But while this might interpreted as a revival of confidence in the Indian market, this segment of capital inflows, along with short-term foreign currency borrowings of Indian banks, represents the most volatile component of capital inflows into India.

Study also highlights that among the components of capital flows, India prefers long term flows to short-term flows and non-debt flows to debt flows. The logic for that is self-evident. India’s policy for the equity flows has been quite liberal, and in sharp contrast to other emerging market economies, which liberalized and then reversed the liberalization when flows became volatile, India’s policy has been quite stable.

II

Impact of Capital Inflows on Economic growth of India

Objective 2. To examine the impact of Capital Inflows on Economic growth of India.

To examine the impact of capital inflows on economic growth of India, the researcher applied co-integration and Error-Correction model. First, the researcher developed a model, to measure the impact of capital inflows on economic growth of India. This model took into consideration the main source of financing for an economy (i.e. foreign capital and Domestic capital). The final model developed by the researcher is as follow (see Chapter 3):

\[ \text{LGDＰ}_t = \alpha_0 + \alpha_1 \text{LFCl}_t + \alpha_2 \text{LGDCF}_t + \epsilon_t \]

- Before applying the co-integration test and Error Correction Model, the researcher first established the maximum integration order (dmax) of the variables by carrying out an Augmented-Dickey Fuller(ADF) test and Dickey-Fuller(DF) test on the FCIs, GDP and GDCF series at their log levels and their log differentiated forms. It was found (see table 3.1 of Chapter 3 (A)) that all the variables i.e. GDP, FCI and GDCF are non-stationary at their level without trend values whereas FCI was found to be stationary when the trend is allowed in the series. But all the variables are found to be stationary at their first difference and GDP is becomes stationary when the trend is allowed in the series. This represent that all the series are integrated of order one \([i.e. \ I (1)]\) and trend is allowed in the co-integrating series. Hence, it confirms the possibility of long run relationship between the variables.
To explore the long run (co-integrating) relationship among the variables the researcher applied the Johansen and Juselius approach of Co-integration. Both the dependent and independent variables in the co-integrating regression model was in the natural logarithmic form, which means that this kind of regression is of double-log or log-linear form. The results of co-integration test were particularly eigen-value; and trace statistics and presented in table 3.2 of Chapter 3 (A). The results of co-integration test has been given in the two panels i.e. panel 3.2 (a) shows the results of Trace statistics and panel 3.2 (b) shows the results of Max-Eigen statistics. Both the testing strategies begins with r=0. Using both the Trace and Max-Eigen test statistics, one can reject r=0 against the alternative r=1 and r=2 but fails to reject the hypothesis of existence of more than one stationary linear combination. In other words, these tests indicate the presence of long run equilibrium relationship among variables.

To determine the direction of causality error correction model was constructed. It was found {see table 3.3 of Chapter 3 (A)} that there was an existence of long run relationship between FCI, capital formation (GDCF) and GDP. The changes in lagged domestic capital formation have positive significant effects on real GDP growth. However, FCI exerts significant negative, but diminishing effect on the economic growth rates. This is revealed from the negative sum of the coefficients of subsequent lagged FCI values. The reason behind the negative relationship between FCI and economic growth rate is probably due to high amount of Foreign Institutional Investments (FII) in foreign capital inflows and FII is highly volatile in case of India. The numeric of adjusted R² at 0.6979 shows a high explanatory power of the model. The F statistics at 3.1256 suggest that a moderate interactive feedback effect exists within the system. The significance of F statistics further indicates Granger causality among variables.

To find out the direction of causality and to test the different null hypothesis, the researcher applied Granger Causality Test. The results of Granger causality test (different hypothesis) are as follow:

\[ H_0: \text{(FCIs does not Granger cause GDP)} \]

- **F-Statistics**: 72.4491
- **p-value**: 0.0000

Result: Since the F-statistics of Granger causality test is significant at 1% level of significance, therefore the null hypothesis is rejected and it is concluded that: FCIs granger cause GDP. Or in simple words, any change in FCIs affects the GDP in Indian economy.

Similarly, to find out the direction of causality between GDP and FCIs, the researcher applied granger causality test. The result is given as under:
Hypothesis 2: (H₀) GDP does not Granger cause FCIs

F-Statistics : 3.32409  
p-value : 0.0705  

Result: Since the F-statistics of Granger causality test is significant at 10% level of significance, therefore the null hypothesis is rejected and it is concluded that: GDP granger cause FCIs. Or in simple words, any change in GDP affects the FCIs in Indian economy.

It is also concluded from the above hypothesis that there exists bidirectional causality between FCI and GDP.

Similarly, to find out the direction of causality between GDCF and GDP, the researcher applied Granger causality test. The result is given as under:

Hypothesis 3: (H₀) GDCF does not Granger cause GDP

F-Statistics : 23.4609  
p-value : 0.0001  

Results: Since the F-statistics of granger causality test is significant at 1% level of significance, therefore the null hypothesis is rejected and it is concluded that: GDCF granger cause GDP. On in other words, any change in GDCF affects the GDP in Indian economy.

Similarly, to find out the direction of causality between GDP and GDCF, the researcher applied Granger Causality test. The result is given as under:

Hypothesis 4: (H₀) GDP does not Granger cause GDCF

F-Statistics : 1.57726  
p-value : 0.2618  

Results: Since the F-statistics of granger causality test in not significant, therefore the null hypothesis is accepted and it is concluded that: GDP does not granger cause GDCF. Or in other words, any change in GDP does not affect the GDCF in Indian economy.

It is also concluded from the above hypothesis 3 and 4 that there is unidirectional causality between GDCF and GDP. It means that any change in GDCF affects the GDP but any change in GDP does not affect the GDCF in Indian economy.

Similarly, to find out the direction of causality between GDCF and FCIs, the researcher applied Granger Causality test. The result is given as under:

Hypothesis 5: (H₀) GDCF does not Granger cause FCIs

F-Statistics : 3.48973  
p-value : 0.0632  

Results: Since the F-statistics of granger causality test is significant at 10% level of significance, therefore the null hypothesis is rejected and it is concluded that: GDCF granger cause FCIs. On in other words, any change in GDCF affects the FCIs in Indian economy.
Similarly, to find out the direction of causality between FCIs and GDCF, the researcher applied Granger Causality test. The result is given as under:

**Hypothesis 6: (H₀) FCIs does not Granger cause GDCF**

- **F-Statistics**: 3.85165
- **p-value**: 0.0503

Results: Since the F-statistics of granger causality test is significant at 10% level of significance, therefore the null hypothesis is rejected and it is concluded that: FCIs granger cause GDCF. On in other words, any change in FCIs affects the GDCF in Indian economy.

It is also concluded from the above hypothesis 5 and 6 that there exists bidirectional causality between FCIs and GDCF.

### III

**Relationship between Foreign Institutional Investments (FIIs) on Indian Stock Market**

**Objective 3. To examine the relationship between FIIs and Indian Stock Market.**

To examine the relationship between Foreign Institutional Investment and Indian Stock Market, the researcher applied Granger causality test. Before going to use the Granger causality test one should test the normality and stationary properties of the variable in case of time series data. As the data used in the present study is time series in nature, first one has to test normality by using Jerque-Bera test and then stationarity of variables using different unit root tests.

To test the normality of variables, the researcher applied Jerque-Bera test. It was found that the variables FIIs and BSE national Index (given in Table 3(B).1 and 3(B).2 of Chapter 3 (B)) are not normal. After that, the researcher applied unit root test, to check the stationarity of variables.

It was found that the variable BSE averages are non-stationary at their level (Table 3(B).3). But the series of BSE becomes stationary at their first difference. Therefore, for applying Granger Causality test, the researcher used log-differentiated forms of BSE averages. It was also found that (table 3(B).4) the variable FIIs are stationary at 1% level of significance.

Since both the variables are stationary at their first difference, as the researcher could applies granger causality test on their log-differentiated forms.

To find out the relationship between FIIs and Indian Stock market, the researcher applied Correlation test and Granger Causality test. The results are as follow:

**Hypothesis 7: (H₀) There is no relationship between FIIs and Indian Stock Market.**

<table>
<thead>
<tr>
<th>Symbol</th>
<th>BSE</th>
<th>FII</th>
</tr>
</thead>
<tbody>
<tr>
<td>BSE</td>
<td>1.00000</td>
<td>0.43482</td>
</tr>
<tr>
<td>FII</td>
<td>0.43482</td>
<td>1.00000</td>
</tr>
</tbody>
</table>
Results: Since the correlation between the BSE and FII (r_{FB}) are 0.43482, it means there is an existence of moderate degree of correlation between the variables. As the R^2=0.189, was not high, it means FII does not strongly influence market movement. The researcher further verified the direction of influence between the variables by applying Granger Causality test. The result is as follow:

**Hypothesis 8: (H_o) FIIs does not Granger cause BSE**

\[ \text{F-Statistics} : 6.12012 \]
\[ \text{p-value} : 0.0001 \]

Results: Since the F-statistics of granger causality test is significant at 1% level of significance, therefore the null hypothesis is rejected and it is concluded that: FII granger cause BSE. On in other words, any change in FII affects the market movements in Indian economy.

Similarly, to find out the direction of causality between BSE and FII, the researcher applied Granger Causality test. The result is given as under:

**Hypothesis 9: (H_o) BSE does not Granger cause FIIs**

\[ \text{F-Statistics} : 2.28553 \]
\[ \text{p-value} : 0.0613 \]

Results: Since the F-statistics of granger causality test is significant at 10% level of significance, therefore the null hypothesis is rejected and it is concluded that: BSE granger cause FIIs. On in other words, any change in BSE affects the FIIs in Indian economy.

It is also concluded from the above hypothesis 8 and 9 that there exists bidirectional causality between BSE and FIIs. In other words, any change in market movements (BSE averages) affects the decision of Foreign Institutional Investment and vice-versa.

**IV**

**Causes of Sudden Declines of Capital Inflows in India**

**Objective 4. To investigate the causes (factors) of Sudden Declines of Capital Inflows in India.**

To examine causes of sudden declines, the researcher used regression analysis to explore factors that are significant in making the economy more vulnerable to sudden declines. Specifically, the researcher used Logit model of regression to investigate, which factors increases, the probability that the economy experiences sudden declines. Illustrated by equation (1), the regression specification is as follow:

\[ \text{SD} = \alpha + \sum \beta_i X_i + \epsilon \]  

(1)

Where, SD is incidences of sudden decline, Xi’s are factors that determine sudden declines, \( \alpha \) are a constant and \( \beta_i \) is the coefficient and \( \epsilon \) is the error term.

The value of SD is equal to one if a sudden decline happens, and zero otherwise. The explanatory variables \( X_i \) include all factors that determine sudden declines as suggested
by the review of literature. All variables $X_i$ are lagged by one period in order to prevent endogeneity, since sudden declines can affect almost all explanatory variables $X_i$.

- Before going to apply Logit regression one should test the stationary properties of the variables in case of time series data. As the present study used the time series data, the researcher applied different unit root test to check the stationarity of variables. The results of unit root test {given in table 4.2 of Chapter 4 (A)} show that all the variables are stationary at their first difference. Therefore, the researcher used first differences of the variables for Logit regression.

- The results of Logit regression model have been presented in Table 4.3 {Chapter 4(A)}. It was found that there are nine variables that are statistically significant at the 10% level. These variables tend to represent capital market movement, bank deposits with commercial banks, foreign exchange reserves, growth of high-powered money, inflation rate and interest rate prevailing in India and the growth of output. These variables contribute significantly to sudden declines and other variables not significantly contribute to the sudden declines. The numeric of R-squared at 0.94 shows the high explanatory power of the model. There is statistical evidence that the nine non-italic variables (given in table) significantly cause sudden declines in India. In other words, there is a statistical evidence that non-italic variables i.e. BANKDEP, BSE, FOREX, HIGHPM, IIP, INFLATION, INTERESTRATE, MONEYRATE, OUTPUT significantly causes sudden declines in India.

V

Consequences of Sudden Declines of Capital Inflows in India

Objective 4: To study the consequences of Sudden Declines of Capital Inflows in India.

Sudden declines of capital flows have harmful effects on any economic system in both the terms i.e. qualitative as well as quantitative terms. In quantitative terms, sudden declines of capital flows increase the current account deficit and reduce the accumulation of foreign reserves. In qualitative terms, sudden declines reduces the growth rate of India and affect a wide range of macroeconomic variables such as real exchange rate, inflation rate, interest rates and others. In the present study the researcher has made an attempt to identify both quantitative and qualitative effects of sudden declines of capital flows into India.

Effect of Sudden Declines in Quantitative (monetary) Terms

The effect of capital inflow sudden declines can be measured through the following equation:

$$CI = CAD + AR$$

Where, CI stands for capital inflows slowdown, CAD stands for current account deficit and AR stands for accumulation reserves. Effect of sudden declines can be measured
through the increase in current account deficit and decrease in accumulation of foreign exchange reserves.

- To measure the impact of sudden declines of capital inflows quantitatively, the researcher used the above equation and results calculated on the basis of the above equation is shown in the table 4.1.1 of Chapter 4 (B). Table 4.1.1 indicates the impact of sudden declines of capital flows in quantitative terms. The results present in the above table shows that the amount of SD of capital inflows increases in the time of crises but up to the last quarter of 2009 the value of SD is not decreased so much. Therefore, the table shows that the impact of SD of capital flows are US $ 35052 million in the third quarter of 2008 and in the 3rd quarter of 2009 the amount of sudden declines of capital inflows amounts to US $ 20455 million. Sudden declines may also have severe consequences like collapse in output, employment reduction, and decline in the value of domestic currency etc.

**Qualitative effect of sudden declines of capital Inflows**

When there is a sudden decline of capital inflows then it will lead to economy into insolvency and affect many macroeconomic variables like exchange rates, interest rates, foreign exchange reserves and domestic monetary and capital market conditions etc. When there is sudden reversal of capital inflows then it reduces the growth rate of an economy, increases the interest rates and depreciates the currency and others. Some qualitative effects of sudden declines of capital flows are given as under:

- Figure 4 (B).2 of Chapter 4 (B) shows that the movement of foreign capital and Indian rupee in terms of Dollar. It shows that the sudden Declines of capital inflows hit the exchange rate. The figure also shows that the value of Indian rupee moves with the movement of FDI mainly. The liquidity crisis along with FII sell off has forced the Indian Rupee to devaluate like never before and in a span of 9 months the Indian Rupee has slipped from around Rs 40/US $ to Rs 47/ US $. And up to December 2010, the value of Indian rupee not strengthening so much; it shows that the impact of SD is not yet over.

- There are number of studies exploring the relationship of surging capital inflows with forex reserves. Most of the studies revealed that there is direct relationship between capital inflows and forex reserves. However forex reserves are also affected by number of other factors such as international trade and most importantly exchange rate. Figure 4 (B).3 of Chapter 4 (B) shows the relationship of capital inflows with forex reserves. The figure clearly shows that forex reserves moves with the movement of total capital flows. If there is sudden decline in capital inflows, it leads to decline in forex reserves. India’s foreign exchange reserves have grown significantly since 1991. The reserves, which stood at US$ 5.8 billion at end-March 1991, increased gradually to US$ 25.2 billion by end-March 1995. The growth continued in the second half of the 1990s with the
reserves touching the level of US$ 38.0 billion by end-March 2000. Subsequently, the reserves rose to US$ 113.0 billion by end-March 2004, US$ 141.5 billion by end-March 2005, US $ 151.6 billion by end March 2006, US$ 199.2 billion by end-March 2007 and further to US$ 309.7 billion by end-March 2008. Thereafter, the reserves declined to US $ 286.3 billion by end September 2008. Thereafter the reserves declined to US$ 252.0 billion by end March 2009.

- As a general rule, sudden decline of capital flows reduces the industrial production {see figure 4 (B).5 of Chapter 4 (B)}. Reduced industrial production leads to shortage of goods and services in the market, which basically affects the prices of commodities in the markets. Further, inflationary pressure depletes consumer’s sentiments in the market. Depleted consumer sentiment leads to a fall in consumer spending consequently leading to lower demand in the economy. If people are not buying more then why would companies produce more? This leads to lower growth or sometimes even a de growth in IIP. Thus, usually the immediate impact of poor IIP figures is falling stock prices {see 4 (B).8 of Chapter 4 (B)}. Over the long term, continuous lower consumption leads to lower producer confidence. Negative sentiment about future demand further leads to reduction in investment activity & hence slows down the capital spending. This has an adverse impact on future sales and profits of the companies {see figure 4 (B).7 of Chapter 4 (B)}. Thus, the negative sentiment leads to an adverse investment atmosphere for both institutional and retail investors. Lower supply coupled with lower demand can have catastrophic impact on stock market and was one of the main reasons for drop in Sensex from 20000 to 8000 in 2008. Thus, lower IIP is bad news for the Stock Market as well as for the growth of the economy.

- The sudden declines of capital inflows and liquidity crises have slowed India’s economic growth. GDP started decelerating in the first quarter of 2007-08, nearly six months before the outbreak of US financial crises and considerable ahead of the surge of recessionary tendencies in all developed countries from August-September 2008. That was just the beginning of slowdown impact on “India’s GDP growth. GDP growth for 2008-09 was estimated at 6.7% as compared to the growth of 9.0% posted in the previous year. Growth rate of India i.e. growth in GDP dropped to 5.8 per cent (year-on-year) during the second half of 2008-09 from 7.8 per cent in the first half {see figure 4 (B).4 of Chapter 4 (B)}. 

Policy Responses and Policy Options for India

Objective 5: To study main concepts and issues surfaced in the current policy debate and suggest policy implication thereof.

India has followed a consistent policy on allowing capital inflows in general and on capital account management in particular. In case of India, capital account convertibility is not a stand-alone objective but a means for higher and stable growth. Among the components of capital flows, India prefers long term flows to short-term flows and non-debt flows to debt flows. The logic for that is self-evident. India’s policy on equity flows has been quite liberal, and in sharp contrast to other EMEs which liberalized and then reversed the liberalization when flows became volatile, India’s policy has been quite stable. India’s exchange rate policy is not guided by a fixed or pre-announced target or band. India’s policy has been to intervene in the market to manage excessive volatility and disruptions to the macroeconomic situation. This “volatility centric approach” to exchange rate also stems from the source of volatility which is capital flows. Contrary to popular perception, India has used both quantity and price based variables to moderate debt flows. There is a ceiling on the extent of FII investment in sovereign and corporate debt (quantity variable) and there is also a withholding tax (price variable). India’s reserves comprise essentially borrowed resources, and therefore Indian economy is more vulnerable to sudden declines and reversals as compared with countries with current account surpluses.

Some Issues: India is facing the policy challenges of the "impossible trinity": when there is free movement of capital, it is impossible to both target the exchange rate and maintain an independent monetary police. The other major macroeconomic problem caused by capital inflows is that they may build up a level of debt that the country finds it difficult to service on the contractually agreed terms, as happened throughout Latin America in 1982 (and again in Mexico in the early 1990s). This raises two issues: identifying how much debt a country can prudently take on and limiting borrowing to a prudent level when the market wants to lend more. A number of other problems are sometimes also mentioned as possible undesirable consequences of large capital inflows. Inflows may, for example, lead to a speculative bubble in the stock market. One undesirable consequence of such a bubble is typically a decline in the local savings rate, as individuals discover that their asset accumulation objectives are being achieved without the need for anything so tedious as abstaining from consumption. Another undesirable consequence can be a financial crisis, and the danger of a recession, when the bubble bursts. Capital inflows may also involve the loss of local control over economic decision-making: this is clearest in the case of majority-owned direct investment, although direct investment carries offsetting benefits in terms of access to technology and markets, and the loss of control can in any event often be avoided through joint ventures. Problems
may also arise to some degree in the case of portfolio equity investment, if concentrated shareholding is allowed, and even loans, where powerful foreign creditors (notably the IMF when times get difficult) expect to be consulted about the course of economic policy. Further, Large capital inflows, can impact macroeconomic aggregates not only through the exchange rate, but also trade and monetary variables, according to Report of Reserve Bank of India. On the domestic front, the biggest challenge is the management of capital flows and the attendant implications for liquidity and overall stability. If there is a slowdown in capital inflows then it create many difficulties to the developing countries like lower growth rate, loss of forex reserves, low employment opportunities etc. So, the large increase or decrease in capital inflows has generated the need of management of capital inflows in developing countries.

Policy Options for India: To, manage capital inflows, emerging market economies choose among three policy options:

1. A larger current account deficit through trade liberalization or exchange rate appreciation;
2. Restrictions on the capital inflows either through direct controls, a tax or a widening of exchange rate band;
3. Offsetting capital outflows either through reserve accumulation or the promotion of private sector outflows.

On the basis of above discussion on the issues relating to capital inflows, the author suggest that management of capital inflows in India should be done through the following policy options:

- A related issue is whether there should be sterilized intervention. Sterilization-i.e. the exchange of (domestic) bonds for foreign exchange has been far the most popular policy option (Schadler et al, 1993). This policy aims at insulating the money supply and/or the exchange rate from the effect of exchange rate from the effect of inflows; the intent is to mitigate inflationary pressures, the real exchange rate appreciation, and avoid the loss of control over the domestic money stock. It is not clear that this policy can provide a lasting solution to inflation, and it can be costly (Ostry, 1988). In addition, sterilization can results in an increase in public debt and entails costs, to the extent that the interest rate on domestic bond is higher than that on foreign exchange reserves.

- Managing capital flows has been a key policy challenge for emerging economies like India in the aftermath of the global financial crisis. Regulation of capital flows has certainly moved to the centre-stage. Perhaps one of the reasons why the crisis hit the US economy was because regulation fell behind innovation. Regulation and derisking the system have to be one step ahead of innovation and human inventiveness. India cannot afford shocks, (and) to avoid shocks regulations must stay one step ahead of innovation. But international experiences
shows that capital controls only altered the composition of flows. Short-term flows declined, but long-term flows increased, with aggregated level not being affected. Further, it is also important to understand that long-term regulation will hit the sentiments of investors and reduce the level of foreign investment in India. Therefore, India needs to put in place appropriate regulation at appropriate time and also need to lead how to absorb “capital inflow”. The government announced regulations for foreign investments through the mechanism of participatory notes in an attempt to regulate the capital flows.

- Various countries, such as Chile and Mexico imposed taxes on capital on short term borrowing abroad with the intent of discouraging inflows that are thought to be speculative. For example, Chile chose to tax inflows by imposing a minimum requirement on international loans intermediated through the banking system (Dooley, 1988; Krugman, 1988). The main advantage is that flows are likely to be re-routed through other channels (e.g., over/under invoicing of imports and exports).

- As far as the exchange rate is concerned, the large inflow of remittances and major and sustained growth in software exports coupled with capital inflows have the potential for possible overvaluation of the currency and the resultant erosion of long term competitiveness of other traditional goods sectors- a problem popularly known as Dutch disease. So, Exchange rate protectionism should be gradually eliminated and the currency should be allowed to appreciate in response to capital inflows. Protectioning the exchange sensitive sector should not be overriding concern of policy.

- At most, capital controls should be seen as just one of many tools that can be used to manage capital inflows, and one to be used only in particularly challenging situations. The IMF work concludes that capital controls may be appropriate in conjunction with other policy tools as long as countries meet certain conditions. Foreign currency reserves should already be adequate, and exchange rates should not be undervalued. Controls should not be used as a substitute for necessary macroeconomic policy adjustments; for example, if the economy is overheating, controls should only be used along with a suitable monetary-fiscal policy mix. Moreover, controls should be lifted once these prerequisites no longer apply. Further, setting up an adequate financial policy framework takes significant time and resources.

- A further challenge for policy in the context of fuller capital account openness will be to preserve the financial stability of the system as greater deregulation is done on capital outflows and on debt inflows. So, the approach to capital account convertibility should continue to be cautious until the crucial preconditions are fulfilled.
Last but not the least, international experience shows that the more open the country’s capital account and the more volatile the capital flows in the global economy, the more binding is the constraint on national policymakers (see what happened with policymakers in Southeast Asian countries in the 1997 financial crisis as currencies collapsed on the back of massive capital outflows). The impossibility of this trinity stems from the fact that if CAC (Capital Account Convertibility) is accepted, according to theory, India either have the choice of giving up monetary independence or giving up the stable currency objective and letting the exchange rate float freely so that monetary policy can then be directed to inflation control. India has a managed float with no fixed rate targets for rupee movements. Daily movements are, however, watched very closely by the RBI.
In the present study an attempt has been made to explore the various aspects of sudden declines of capital flows into India. Study highlights that there are several ways in which capital flows and growth are related. Growth expectations drive capital flows. In turn, capital flows accelerate economic growth. Further, capital is likely to be attracted towards the countries with high productivity growth and high productivity of capital. Most importantly, capital flows contribute significantly to diffusion of technology and international knowledge flows. However, the impact of capital flows on growth eventually depends on their being stable and less volatile. The movement of capital inflows clearly indicates that capital inflows in India are highly volatile. In fact, India has experienced both sudden surge and sudden declines of capital flows in the recent decade. Volatile foreign capital creates instability in capital inflows. The instability of capital inflows may retard economic growth and structural development. When there is a sudden increase in capital flows; it leads to increase in real exchange rate, inflationary pressures and deterioration in current account. The main worry from the financial fragility perspective is that large capital inflows may lead to excessive foreign borrowing and foreign currency exposure, possibly fueling domestic credit booms (especially foreign-exchange denominated lending) and asset bubbles (with significant adverse effects in the case of a sudden reversal). But the sudden declines of capital inflows could push the country into insolvency or drastically lower the productivity of existing capital stocks and affect many macroeconomic variables like exchange rates, interest rates, foreign exchange reserves and domestic monetary conditions etc. Further, the balance of payments identity establishes that the current account is equal to the capital account plus the accumulation of international reserves. Therefore, a large slowdown in capital inflows is met either by a loss of international reserves and/or a lower current account deficit, both of which have negative economic effects.

In this background, the present study has come out with some pertinent results. First, the study empirically examines the linkage between Foreign Capital Inflows (FCI), Gross domestic capital formation (GDCF) and GDP growth in context of India by using time series data for a period of 1992-2010. The results show that GDCF contributes positively to the GDP but FCI after liberalization contributes negatively to the GDP because of the increase in highly risky and volatile portfolio investment. Similar results have been presented by Lensik et al (1999). But, that study examined the impact of uncertain capital flows on the growth of 60 developing countries during 1990s. Second, study empirically
investigates the causal relationship between BSE averages and FII flows in Indian economy. Granger Causality test shows that Both FII and BSE Granger cause each other. Study of Babu and Prabheesh (2008) also revealed the same results. Third, study examined the factors, which are significant to sudden declines of capital flows into India. The result of Logit regression suggests that there are nine important causes of sudden declines in India. In other words the probability of sudden declines increases if 1) increase in Bank deposits with commercial banks; 2) volatility in capital market movement; 3) decrease in foreign exchange reserves; 4) increase in inflation rate; 5) decrease in Interest rate; 6) volatility in money market movements; 7) domestic output growth declines; 8) industrial production declines and 9) decline in foreign exchange reserves. Fourth, study explored that sudden declines of capital flows have harmful effects on an economy in both the terms i.e. qualitative as well as quantitative terms. In qualitative terms the amount of sudden declines of capital flows amounts to US $ 35052 million in the third quarter of 2008. Similarly, in the 3rd quarter of 2009, it amounts to US $ 20455 million, which is not very less as compared to 2008. The study also concludes that the impact of sudden declines of capital inflows is not yet over. Added to this, study also investigated qualitative effects of sudden stops on the Indian economy and concludes that sudden declines of capital flows depreciated the value of Indian currency. Depreciation of currency lead to higher cost of imported goods and make some of the capital intensive projects more expensive to execute. The study also explore that sudden declines of capital flow has decreased the level of forex reserves of India. Further, author argues that as a general rule, sudden decline of capital flows reduces the industrial production. Reduced industrial production leads to shortage of goods and services in the market, which basically affects the prices of commodities in the markets. Further, inflationary pressure depletes consumer’s sentiments in the market. Depleted consumer sentiment leads to a fall in consumer spending consequently leading to lower demand in the economy.

Fifth, at the policy front, the question is thus how best to handle sudden declines in capital inflows that may pose both prudential and macroeconomic policy challenges. The tools are well known and include fiscal policy, monetary policy, exchange rate policy, foreign exchange market intervention, domestic prudential regulation, and capital controls. It is also suggested that temporary capital control may need to be considered if the use of three instruments (fiscal, monetary and exchange rate policy) is severely restricted or their effectiveness is limited. However, if capital controls are in place for a long time, they tend to become less effective with respect to flows and may hinder the development of the financial system and undermine the efficiency of resource allocation. Clearly, the appropriate policy mix is likely to depend on the state of the economy (i.e., how close it is to potential); the level of reserves (is further accumulation desirable/appropriate?); the quality of existing prudential regulation (can prudential tools
effectively tackle the boom/bust credit/asset price cycle); the scope to allow the currency to strengthen (is the currency already overvalued?); and the likely persistence of the inflows (with permanent inflows less likely to warrant a policy response than transitory inflows). In the context, researcher argued that the policy options for developing countries like India facing a surge or sudden declines in inflows are limited. Further, there is no surefire one-size-fits-all way to deal with the impact of sudden declines of capital flows. From an individual-country point of view, the usual elements of the toolkit to manage inflows include currency appreciation, reserves accumulation, adjustments in fiscal and monetary policy, and strengthening the prudential framework. Most importantly, capital controls should be seen as just one of many tools that can be used to manage capital inflows, and one to be used only in particularly challenging situations.

In short, this is a substantive research effort. It should provide both quantitative and qualitative insights for those embarking on or working in the field of foreign capital flows.