Chapter-II

Review of Literature

2.0. Introduction

There has been enormous growth in capital flows over the 1990’s. The integration of international financial markets entails an increase in financial flows between the economies. Deeper integration into international financial markets can provide benefits: such as access to foreign capital financing investment in different projects and thus increase economic growth. Capital flows often have positive externalities such as spillovers of managerial and technical know-how, especially in case of FDI. Capital inflows can have inflationary effects and increase the vulnerability of economy’s financial system. International capital flows are an important means of financing investment (Montiel: 1996, Mckinnon: 1999), it has became clear in the past decade that the sudden disappearance (or worse, reversal) of capital flows can result in a tremendous crisis (Calvo and Reinhart: 1998).

A major of economic reforms in India since 1991 has been a progressive liberalization of external capital flows. The non-debt flows such as Foreign Institutional Investment (FII) and Foreign Direct Investment (FDI) has led to surge of capital inflows and has strengthened the country’s balance of payments situation. Capital flows are controlled by lot of controls and regulations. Such flows can be volatile and make the financial system vulnerable.

This chapter attempts to review the earlier literature into four sections:

(1) Studies on the interrelationship between capital flows and economic growth.
(2) Studies relating to the volatility of international capital flows, risk and financial crisis.
(3) Studies concerning the inter-relationship between capital flows and financial markets.
(4) Studies linking capital flows, integration of financial markets and economic growth.

2.1. Studies on the Interrelationship between Capital Flows and Economic Growth

Taylor and Sarno (1999) focus on the determinants of the large portfolio flows from the United States to Latin American and Asian countries during 1988-92. Cointegration techniques reveal that both domestic and global factors explain bond and equity flows to developing countries and are significant long-run determinants of portfolio flows. They also investigate the dynamics of portfolio flows by estimating seemingly unrelated error-correction models. Global and country-specific factors are equally important in determining the long-run movements in equity flows for both Asian and Latin American countries, while global factors are much more important than domestic factors in explaining the dynamics of bond flows. U.S. interest rates are a particularly important determinant of the short-run dynamics of portfolio, especially bond, flows to developing countries.

In particular, they investigated whether bond and equity inflows were induced by push or pull factors, differentiating between short- and long-run determinants. They also examined the long-run determinants of portfolio flows by employing two complementary cointegration techniques. The results provided by their study unequivocally indicates that long-run equity and bond flows are equally sensitive to global and country-specific factors and, therefore, both sets of variables help to explain U.S. portfolio flows to the developing countries considered.

Lensink et al (1999) examine the impact of uncertain capital flows on the growth of 60 developing countries during the 1990’s. They distinguished between total capital flows, official capital flows and private capital flows. For the three types of capital flows, they derived a yearly uncertainty measure. They have used the yearly uncertainty measures in Ordinary Least Square (OLS) as well as Generalized Method of Moments (GMM) estimates, to explain the impact of uncertain capital flows on growth. They conclude that
both types of estimates suggest that uncertain capital flows have a negative effect on financial markets and growth in developing countries.

Bailliu (2000) points out that an important issue in the debate over the desirability of freer capital mobility for developing countries is whether capital flows have significant effects on economic growth. Proponents of capital account liberalization cite the growth-promoting attributes of capital inflows as a key benefit of financial integration for developing countries. Unfortunately, there is little empirical evidence to confirm or refute this claim, except for several studies that establish a positive link between inflows of foreign direct investment (FDI) and economic growth. The paper attempts to fill the gap in the literature by investigating the role of private capital flows in the determination of economic growth using panel data for 40 developing countries from 1975 to 1995. Unlike existing empirical works, his paper focuses on the effects of a broad measure of capital flows on economic growth, rather than on a more specific category, such as FDI, and it emphasizes the role played by the domestic financial sector in the process linking capital flows and growth. A dynamic panel data methodology is used that controls for country-specific effects and accounts for the potential endogeneity of the explanatory variables. The study finds evidence that capital inflows foster higher economic growth, above and beyond any effects on the investment rate, but only for economies where the banking sector has reached a certain level of development. The results, thus, suggest that the domestic financial sector plays a pivotal role in ensuring that international capital flows do, promote economic growth in developing countries.

Shibuya (1999) presents a model of unstable international capital flows. Production exhibits increasing returns in the early stage of economic development. Increasing returns lead to strategic complementarities among the actions of international investors. The result is Pareto-ranked multiple Nash equilibrium, which indicates low and high foreign investment equilibrium. Sudden switches between two equilibrium represent economic takeoff and capital flight. The model identifies the basic factors that can trigger the sudden reversal of capital flows. The mechanism of capital inflow and outflow turns out to be asymmetric. The model also suggests numerous implications on economic
development, exchange rate policy, uncovered interest rate parity, home bias, herd behavior, crisis contagion, capital control, government guarantee, coordination failure, and emerging markets.

White (2000) attempts to investigate the changing attitude of policymakers towards international capital flows into a broader economic and historical context. The paper, then, goes on to suggest that policymakers today wish, on the one hand, to achieve the benefits of freer capital flows while trying to minimize the risks they pose on the other. Various suggestions for achieving the second objective are then critically evaluated. While most seem to have merit, no single suggestion would seem sufficient in itself to avoid all problems. As in many areas having to do with crisis prevention, incremental progress across a broad front would seem warranted.

Even if a proper assessment of compliance could be made in the area of international capital flows, how could enforcement is assured? One possibility is the withdrawal of funding for noncomplying countries, but this presumes that were receiving money from the IFIs in the first place. Another possibility which might be envisaged is that non-compliance might be brought to the attention of the FSF or some other international body or grouping. In this case, some variant on the “name and shame” approach seemingly favored by the Financial Action Task Force might or might not be deemed appropriate. Another possibility is that the FSF might bring these results to the attention of the G7 or the G20. Ministers and Governors who are members of these groups might then try to apply peer pressure to improve behaviour. Ultimately, these groups might even apply collective sanctions to non-performers, though the track record in this regard is not very promising. Indeed, collective action would seem the less probable given that the individual country receiving the capital inflows would be the most likely one to be directly hurt by such flows.

Durham (2000) examines the effects of cross-border flows – FDI, FPI, and FBL – on growth and savings rates using data on 56 countries from 1969 to 1998. More generally, few flow measures are significant determinants of real variables. However, consideration
of the initial level of financial depth – including measures of private credit, bank lending, and stock market development – seems to produce more significant results, as some data indicate that flows have a more deleterious (benevolent) effect in countries with lower (higher) levels of development. Moreover, extreme bound analysis (EBA) of significant results indicates that these findings are robust.

His econometric study examines three general issues – temporal out-of-sample tests of previous findings using data through 1998, explicit consideration of financial system related absorptive capacity, and specification bias. The empirical literature on the real effects of international capital flows is hardly conclusive. Therefore, the study attempts to extend previous studies in three respects. Addenda include a temporal out of sample test that covers the notable experience of the 1990s, evaluation of proxies for the overlooked consideration of initial financial development, and extensive sensitivity analyses with respect to macroeconomic volatility, alternative data sources, and of economic growth and gross savings.

Alfaro et al. (2002) examine the various links among FDI, financial markets and economic growth. They explored the efficient exploitation of FDI by better financial systematization in India. The empirical analysis using cross-country data between 1975 to 1995 shows that FDI alone plays an ambiguous role in contributing to economic growth. However, countries with well-developed financial market gain significantly from FDI. The results are robust to financial market development, the inclusion of other determinants of economic growth, and consideration of endogeneity. Although the empirical analysis on FDI and economic growth is ambiguous, the interaction between financial market and growth itself has been studied extensively and has reached more positive conclusion namely, that well developed financial market promote economic growth.

Odedokun (2003) attempts to rectify some of the problems that characterize most earlier studies that seek to explain private capital flows to developing countries or, at least, to examine the subject from a different and complementary perspective. To accomplish this,
he proposes a model framework that approaches the issue from the perspective of a capital-exporting developed country and which also takes cognizance of developments in other industrialized countries that could be competing with developing countries for private capital flows. The model is operationalized and estimated with annual panel data over 1970-2000 for 19 capital-exporting developed countries. Specifically, he estimates equations for total private flows, FDI, total portfolio capital flows (PCF) and various categories of PCF. He also tests for the effects of a number of factors, each of which has its own ‘push’ and ‘pull’ components. The specific explanatory factors are the level of per capita income, interest rate, economic growth, the prevailing phase of economic cycle, the degree of openness of the economy in the balance-of-payment capital account, macroeconomic imbalances, and external debt burden. The empirical findings confirm the positive effects of the ‘push’ and/or ‘pull’ component of each of the above factors.

He proposes a model framework which identifies the effects of various pull-factors on the volume of private capital flows and which also permits testing for the effects of various source country-specific or push factors as well as those relating to the generality of developed countries. The model is then estimated with annual panel data over 1970-2000 for about 20 DAC members.

Neumann (2003) examines the effects of capital controls on the volume and composition of international capital flows in the presence of asymmetric information. In the two-period, small open economy model, stochastic second-period output depends on the level of first-period investment, which cannot be verified by international investors. Domestic agents obtain external funding by borrowing on international capital markets and by selling equity to international investors. The paper investigates the effects of various capital controls on the debt-equity choice, domestic investment, and welfare. Controls on capital inflows are shown to shift the composition of flows from fixed income instruments towards equity and to reduce the overall volume of inflows.

In the model, capital controls are shown to be effective at changing the composition of international capital flows. As a result, they also change the volume of international flows
and the level of domestic investment. Taxing equity at a higher rate than debt implies a smaller volume effect than do uniform taxes or tax rates weighted towards debt. Therefore, controls designed to limit capital inflows must tax debt at a higher rate than equity, leading to a decline in overall capital flows as equity inflows only partially substitute for debt inflows. Subsidies to capital are shown to be an alternative to the tax combinations considered. Subsidizing equity at a higher rate than debt reduces the amount of capital inflows the most, albeit at a cost of a lower equilibrium level of domestic investment.

Kaminsky (2003) examines the characteristics of international capital flows since 1970 and summarizes some of the findings of the research conducted in the 1990’s on the effects of globalization. Even if international capital flows do not trigger excess volatility in domestic financial market, it is still true that large capital flows can spark off inflation in the presence of fixed exchange rate. He said globalization allows capital to move to its more attractive destination, fueling higher growth. He suggests that in the short run, globalization triggers bankruptcy of the financial system and protracted recession. The exploration of capital flows to emerging markets in the early and mid 1990’s and the recent reversal following the crises around the globe have ignited once again a heated debate on how to manage international capital flows. He finds out that capital outflows worry policy makers, but so do capital inflows as they may trigger bubbles in asset market and foster an appreciation of the domestic currency and a loss of competitiveness.

He concludes there is not an optimal policy to deal with the risks of volatile international capital flows, with policies that may work in the short run having adverse effect on long run. Moreover, the ability of Government’s to control international capital flows or to sterilize them diminishes with globalization.

Penalver (2004) explains how the IMF programmes can catalyze private capital flows following a financial crisis, a concept that was at the heart of the IMF’s strategy for dealing with capital account crises in the late 1990s. In his model, the IMF lends funds below the prevailing market interest rate and it is this subsidy that induces the borrowing
country to exert adjustment effort to avoid default. By preventing default, future marginal rates of return on investment are kept high, thereby encouraging private capital flows. He says IMF may also have a signaling role if it has superior information about debtor type and can affect the interest rate charged in the immediate aftermath of a crisis. In practice, however, IMF programmes based on the catalytic approach have been disappointing and actual private capital flows have been considerably below those projected. The paper also considers how capital flows derived from the model are sensitive to the assumptions made. The paper concludes by discussing the policy implications of the analysis for IMF programme design.

Alfaro et al. (2005) examine the empirical role of different explanations for the lack of flows of capital from rich to poor countries, the “Lucas Paradox.” The theoretical explanations include deference’s in fundamentals across countries and capital market imperfections. They show that during 1970-2000 low institutional quality is the leading explanation. For example, improving Peru's institutional quality to Australia's level implies a quadrupling of foreign investment. Recent studies emphasize the role of institutions for achieving higher levels of income, but remain silent on the specific mechanisms. The results indicate that foreign investment might be a channel through which institutions affect long-run development.

Goldstein and Razin (2005) develop a model of foreign direct investments (FDI) and foreign portfolio investments (FPI). The model describes an information-based trade off between direct investments and portfolio investments. Direct investors are more informed about the fundamentals of their projects. The information enables them to manage their projects more efficiently. However, it also creates an asymmetric-information problem in case they need to sell their projects prematurely, and reduces the price they can get in that case. As a result, investors, who know they are more likely to get a liquidity shock that forces them to sell early, are more likely to choose portfolio investments, whereas investors, who know they are less likely to get a liquidity shock, are more likely to choose direct investments. FDI is characterized by hands-on management style which enables the owner to obtain relatively refined information about the productivity of the
firm. The superiority of FDI relative to FPI comes with a cost: a firm owned by the relatively well-informed FDI investor has a low resale price because of “lemons” type asymmetric information between the owner and potential buyers. The model can explain several stylized facts regarding foreign equity flows, such as the larger ratio of FDI to FPI inflows in developing countries relative to developed countries, and the greater volatility of FDI net inflows relative to FPI net inflows.

Prasad and Rajan (2005) develop a proposal for a controlled approach to capital account liberalization for economies experiencing large capital inflows. The proposal essentially involves securitizing a portion of capital inflows through closed-end mutual funds that issue shares in domestic currency, use the proceeds to purchase foreign exchange from the central bank and then invest the proceeds abroad. This would eliminate the fiscal costs of sterilizing those inflows, give domestic investors opportunities for international portfolio diversification and stimulate the development of domestic financial markets. More importantly, it would allow central banks to control both the timing and quantity of capital outflows. The proposal could be part of a broader toolkit of measures to liberalize the capital account cautiously when external circumstances are favorable. It is not a substitute for other necessary policies such as strengthening of the domestic financial sector or, in some cases, greater exchange rate flexibility. But it could in fact help create a supportive environment for these more important reforms.

One of the main attractions of this proposal is that it could satisfy any pent-up demand for capital outflows (arising from diversification motives) in a manner that the government would be more easily able to calibrate and control in the short term. Alternatives such as allowing qualified investors to invest abroad typically do not allow the government to control the quantity or timing of external flows as easily.

Prasad and Wei (2005) examine the evolution of capital flows into China, both in terms of volumes and composition. China’s inflows have generally been dominated by foreign direct investment (FDI), a pattern that appears to be favorable in light of the recent literature on the experiences of developing countries with financial globalization. They
provide a detailed documentation of the evolution of China’s capital controls, a proximate determinant of the pattern of capital inflows. They also discuss a number of other intriguing hypotheses that attempt to capture the “deeper” causes underlying China’s approach to capital flows. In particular, they argue that some popular mercantilist-type arguments are inconsistent with the facts. They also analyze the recent rapid rise of China’s international reserves and discuss its implications. Contrary to some popular perceptions, the dramatic surge in foreign exchange reserves since 2001 is mainly attributable to non-FDI capital inflows, rather than current account surpluses or FDI.

They have provided an overview of developments in China’s capital inflows and analyzed the composition of these inflows in the context of a rapidly burgeoning literature on financial globalization. They have also examined a number of hypotheses for explaining China’s success in attracting FDI inflows. Further research will be needed to disentangle the competing explanations for this phenomenon, but there is little evidence that mercantilist stories are the right answer. Understanding the reasons for China’s success in tilting inflows toward FDI is important, especially as China continues its integration into world financial market and becomes more exposed to the vagaries of these markets. China has done well so far in managing the risks associated with financial globalization, but major challenges remain to ensure that continued integration with financial markets does not worsen the risk-return trade-off.

Ralhan (2006) examines the two basic approaches to identify the determinants of capital flows viz the traditional and the portfolio approach. He tries to identify the determinants of capital flows using the conventional approach and based on a cross sectional study of countries viz, Australia, India, Indonesia, Argentina, Brazil, Chile, Colombia and Mexico during the period 1970-95. He identifies the determinants of capital flows, especially in the wake of economic liberalization and deregulation. International capital flows are recorded in the non reserve capital account of the Balance of Payments (BoP) Non linear seemingly uncorrelated regression analysis has been used to allow for cross country effects in the error structure. He finds there is stable empirical relationship between
capital flows and their determinants provided that the fundamentals of the economy are fairly stable. Some of the other empirical findings are that gross foreign exchange reserves are one of the important factors affecting capital flows and GDP is another factor influencing capital flows.

Lensink and Morrissey (2006) estimate the standard model using cross-section, panel data, and instrumental variable techniques. Whilst all results are not entirely robust, there is a consistent finding that volatility of FDI has a negative impact on growth. The evidence for a positive effect of FDI levels on growth is not robust, nor is that for any effect of human capital.

Their paper contributes to the literature on FDI and economic growth, by incorporating effects of the volatility of FDI inflows. The model shows that volatility increases the expected costs of innovation, and in this way has a negative effect on growth. They estimate the type of model that is quite common in the FDI growth literature, adding FDI volatility as an explanatory variable, using cross-section, panel data, and instrumental variable techniques. There is quite a consistent finding that FDI has a positive effect on growth, although this result is somewhat weaker for developing countries, whereas volatility of FDI has a significant negative impact (in almost all specifications). Volatility of FDI is an important negative influence on growth, but is not as important a determinant of growth as other factors such as the level of FDI and initial income. In this sense, they find reasonably robust evidence to support their hypothesis that FDI volatility has a direct negative effect on growth.

Prasad, Rajan and Subramanian (2007) document the recent phenomenon of "uphill" flows of capital from non-industrial to industrial countries and analyze whether this pattern of capital flows has hurt growth in non-industrial economies that export capital. Surprisingly, they find that there is a positive correlation between current account balances and growth among non-industrial countries, implying that a reduced reliance on foreign capital is associated with higher growth. The result is weaker when they use panel data rather than cross-sectional averages over long periods of time, but in no case do we
find any evidence that an increase in foreign capital inflows directly boosts growth. What explains these results, which are contrary to the predictions of conventional theoretical models? They provide some evidence that even successful developing countries have limited absorptive capacity for foreign resources, either because their financial markets are underdeveloped, or because their economies are prone to overvaluation caused by rapid capital inflows.

Their analysis makes clear that non-industrial countries that have relied on foreign capital have not grown faster than those that have not. Indeed, taken at face value, there is a growth premium associated with these countries not relying on foreign finance. Equally clearly, though, the reliance of these countries on domestic rather than foreign saving to finance investment comes at a cost: investment and consumption are less than they would be if these countries could drawn on foreign capital on the same terms as industrial countries’ or on the same terms as they can use their own domestic capital.

Alfaro and Hammel (2007) study the relation between equity market liberalization and imports of capital goods, they examine one channel through which international financial integration can promote growth. For the period 1980–1997, they find that after controlling for other policies and fundamentals, stock market liberalizations are associated with a significant increase in the share of imports of machinery and equipment. They hypothesize that, this can be attributed to the consequences of financial integration, which allows access to foreign capital, and provide evidence consistent with this channel. Their results suggest that increased access to international capital allows countries to enjoy the benefits embodied in capital goods.

They look at a broad sample of 79 countries for which data on both imports of machinery and stock market liberalization in the period between 1980 and 1997. They also analyze if the liberalization of the stock market is associated with changes in the composition of imports towards capital goods and an overall increase in machinery imports. The regression analysis shows that equity liberalization episodes are followed by both an increase in the share of capital goods imports to total imports by 9% and an increase in
the share of total machine imports to GDP by 13% in their preferred estimations. These results are robust for controlling for other policies and fundamentals such as trade liberalization and the world business cycle. They also study the dynamics of adjustment in the 79 country sample and in a smaller sample of the 25 machine importing country’s that liberalized their equity markets within their sample period. Finally, they look at direct evidence of possible channels through which stock market liberalizations are hypothesized to operate. The results are suggestive of the fact that stock market liberalizations have been associated with firm incentives to increasingly buy more machinery.

Debelle and Galati (2007) examine episodes of current account adjustment in industrial countries over the past 30 years. They find that, it is typically associated with a sizable growth slowdown and large exchange rate depreciation. There is no discernible change in the nature of capital flows just prior to an adjustment. Hence, adjustments may be responding to the resolution of domestic imbalances rather than being an exogenous event. They show that global developments triggered the adjustment, possibly by triggering the unwinding of the domestic imbalances. Most of the ex post adjustment of the financial account was in private sector flows, primarily by foreign investors.

Their paper found that, current account reversals were associated with a notable slowdown in domestic growth and large exchange rate depreciation. However, whether the current account adjustment was exogenous or endogenous to these developments is not clear. A plausible explanation is that the evolution of the current account deficit in such episodes purely reflects the development and unwinding of domestic economic imbalances.

Kharroubi (2007) examines how volatility does and liquidity crises affect growth? When credit is constrained, a bias toward short-term debt can arise in financing long-term investments, generating maturity mismatches and leading potentially to liquidity crises. The frequency of liquidity crises (“abnormal” volatility) and the volatility of growth (“normal” volatility) are found to have independent negative effects on growth. Financial
development however dampens the growth cost of volatility, but only in the case of normal volatility. The growth cost of volatility therefore depends critically on the composition of normal and abnormal volatility, the latter being more costly for growth.

Empirical evidence, based on a large international data set, confirms that the two volatility sources have autonomous negative effects on growth. Financial development tends to dampen the growth cost of normal volatility (when volatility is measured as the standard deviation of GDP growth). But it does not seem to affect the growth cost of abnormal volatility (measured as the frequency of growth collapses). These results show that distinguishing different volatility sources is important for economic policy because the growth cost of volatility depends on the relative weights of normal and abnormal volatility.

One of the important studies on this subject is made by Agarwal (1997). He examines the determinants of Foreign Portfolio Investment (FPI) and its impact on the national economy in six developing Asian countries such as India, Korea, Malaysia, Indonesia and Thailand during 1987 to 1993. He analyzes the Foreign Portfolio Equity Investment (FPEQI) flows to a country in the form of off shore mutual funds floated abroad by domestic companies through Global Depository Receipt (GDR) and investment made by the Foreign Institutional Investors (FII’s) in the host of country’s stock market. Regression result shows that, inflation rate, real exchange rate, index of economic activity and the share of domestic capital market in the world stock market capitalization are four statistically significant determinants of Foreign Portfolio Investment (FPI). He viewed the foreign Portfolio Equity Investment (FPEQI) is just one of the components being in the management of Balance of Payments (BoP) of a country. The other components being the supply factors (loan and FDI) and demand factors for current account deficit, mainly, caused by imports and exports and demand sufficient foreign exchange reserves. The determinants of Foreign Portfolio Investment (FPI) include factors, which increase the demand for foreign exchange, and factors, which motivate the Foreign Institutional Investor’s (FII’s) to invest their capital in the developing countries.
Regarding the impact of FPI on the national economies, it is found that the index of economic activities and inflation rate show an upward trend.

Schneider (1999) examines the evidence on saving-investment correlations in developing economies to gauge the degree of capital mobility in and out of these economies. An error correction model is used to capture the dynamics of the saving-investment relationship and the current account. A non-stationary current account and low saving-investment correlations provide evidence of capital mobility. The role of official foreign borrowing is explored by adding foreign borrowing to savings and studying the correlations. The analysis shows that for majority of the countries the results for capital mobility do not change even after taking foreign borrowing into account. The role of unrecorded capital flows in India is separately examined in the study. The evidence suggests that unrecorded capital flows do perform arbitrage operations between domestic and foreign financial markets.

A surprising result for developing countries is that many developing countries have low saving-investment correlations compared to the OECD countries, which in the FH framework indicates capital mobility. In order to take care of the reasoning that non-market foreign borrowing may be driving the coefficient down, this variable was added to the savings series and the relationship between savings and investment was re-estimated both with the OLS estimating procedure and the ECM model. The results changed from mobility to immobility in the FH criterion only in the case of four countries. The ECM model results changed only in the case of Turkey and the Philippines. In some countries it improved the results and shifted some countries in the conclusive evidence category.

Athreye and Kapur (1999) examine private foreign capital, whose presence in Indian industry was long regarded with concern and suspicion, is now touted as a panacea for India’s economic problems. The paper compares the relative performance of domestic and foreign-controlled firms in India, and evaluates the contribution of foreign investment over the last five decades. They assess the impact of government policy towards foreign capital, and outline policy implications for the future.
Should India adopt a more open stance to private capital flows? Some commentators believe that foreign investment can play a crucial role in removing infrastructural bottlenecks, and thereby increase productivity of existing capital. Infrastructure has largely been a state-monopoly in India. In view of the poor performance of public sector enterprises, and the reluctance or inability of the domestic private sector to invest in these sectors, the hope is that foreign investment will take care of power generation, highways, ports, roads, etc. However, the principal reasons that make these sectors unattractive for domestic investors, namely the low levels of anticipated return on investments, hold for foreign investors too. Does it make sense to use direct incentives to attract foreign investment in infrastructure, say, as in the provision of profit guarantees to attract Enron Corporation in power generation? Evidence suggests that the net pay-off to such sweeteners is negative in the long run; they often encourage ‘roundtrip’ capital flows and may even prove counter-productive if they generate hostility towards foreign capital. The frequent calls for a ‘level-playing field’ between Indian and foreign-controlled firms are indicative of this hostility. The creation of a broad political consensus is a crucial to maintaining inflows.

Rangrajan (2000) investigates the capital flows and its impact on the capital formation and economic growth taking into the variable as net private capital flows, net direct investment, net official flows, net portfolio investment and other net investments in 22 countries during 1992 to 2000. If capital inflows were volatile or temporary, the country would have to go through an adjustment process in both the real and financial market. Inflows, which take the form of direct foreign investment, are generally considered more permanent in character. Capital flows can be promoted purely by external factors which may tend to be less sustainable than those induced by domestic factors. Both capital inflows and outflows when they are large and sudden have important implication for economies. When capital inflows are large, they can lead to an appreciation of real exchange rate. He concludes that the capital account liberalization is not a discrete event.
Saha (2000) examines the foreign investment inflows into India increased sharply in the 1990s, especially in comparison to the pre-reform period, as a response to liberal policy regime in this decade. The paper tries to analyze through empirical evidence, the effect of the financial inflows on the domestic financial system. The Reserve Bank of India, during this period intervened aggressively in the foreign exchange market as a net purchaser of the greenback, resisting the absorption of the capital inflow and building up its reserves. It also indulged in sterilization measures to offset the expansionary impact of its forex market intervention on the monetary system, by discontinuing traditional credit lines available to various domestic agents. The adverse supply side shock affected domestic economic agents, including the Government, but the effect was more pronounced on the private commercial sector, whose leveraging capability declined during the 1990s. The significance of these changes from the perspective of building the competitiveness of domestic firms and implementing a successful ‘national industrialization’ strategy is also briefly raised.

The surge in inflow, though significant in comparison to the pre-1990s trend in India, was not as high as in some of the Latin American and South East Asian economies that also experienced substantial capital inflow in the 1990s. Moreover, the surge in foreign investment inflows in India did not lead to an equivalent surge in the total capital account surplus, mainly due to a reduction in other components of the capital account. However, the economy could not absorb the foreign capital inflow by running a current account deficit, larger than it used to run in the 1980s. RBI’s aggressive intervention in the foreign exchange market, as a net buyer over the period 1992-99, prevented a nominal appreciation of the domestic currency and led to the accumulation of substantial foreign exchange reserves with the RBI. Moreover, the dynamics of the foreign exchange market was significantly influenced by the level and direction of the capital flows; particularly portfolio flows by FIIs.

Kohli (2001) examines trends in movement and composition of capital flows into India in a comparative perspectives and the impact of flows upon the key macro economic variables during the period 1985 to 2000. The macro variable, she took as foreign
investment (both direct and portfolio), NRI deposits, external assistance, External Commercial Borrowings (ECB), and money growth and interest rate. She explores portfolio flows are more volatile than the direct investment flow and because of their short term nature and more difficult to intermediate smoothly. It is significantly that the distributions of capital flows between portfolio and FDI flows into India tilts drastically towards the former in most years after liberalization portfolio flows also render the stock market more volatile through increased linkage between the local and foreign financial market. In India the regulatory, institutional and policy changes impact on the external environment during the period were the switch to a flexible exchange rate, external debt, full convertibility of current account transaction and trade reform liberalization of investment policies relating to FDI and financial sector reforms. She concludes that capital flows financed more investment than consumption and in the face of capital inflows surges is absorbed by external sector through encouraging capital outflows.

Chakraborty (2001) explains the effects of inflows of private foreign capital on some major macroeconomic variables in India using quarterly data for the period 1993-99. She analyses of trends in private foreign capital inflows and some other variables indicate instability. She has taken the net inflows of private foreign capital as well as macro economic variables foreign currency assets, wholesale price index, money supply, real and nominal effective exchange rates and exports. The Cointegration test confirms the presence of long-run equilibrium relationships between a few pairs of variables. But the dependence of each variable on private capital flows invalidates such cointegration except in two cases: cointegration exists between foreign currency assets and money supply and between nominal effective exchange rate and exports, even after controlling for private capital flows. The Granger causality test shows unidirectional causality from private capital flows to nominal effective exchange rates- both trade-based and export-based-, which raises concern about the RBI strategy in the foreign exchange market. Finally, instability in the trend of foreign currency assets could be partially explained by the instability in private capital flows with some lagged effect.
She analyzes the recent experiences of Asian and Latin American countries and reveals that financial liberalization led to severe macro-economic instability in several of those countries and no unique pattern emerged in this respect. She made a modest attempt to analyze the dynamics of some major macroeconomic variables during the post-reform period in India. The main focus of her study lies in analyzing the behaviour of some selected macro-economic indicators in relation to the surge in inflows of private foreign capital in India since 1993, the year in which several major reform programmes were initiated. A review of the analytical literature shows that macroeconomic consequences of financial liberalization are the results of the combined effect of monetary, fiscal as well as trade and exchange rate policies followed by the government of a country. So, there is no straightforward way of predicting the resulting macroeconomic effects of financial liberalization in any country.

Singh (2002) examines the theoretical and empirical case for and against full capital account liberalization and free capital flows in 16 developing countries during the period of 1970 to 1998. Capital flows themselves don’t stand in the way of attaining full employment and macro economic stability. The analytical case against are subject to asymmetric information, agency problems, adverse selection and moral hazard. Empirically he examines the effects of capital flows and their volatility on growth per capita for large sample of developing countries over successive year 1970 to 1998 as the variable capital flows, volatility, GDP per capita, population growth rate, investment policy and inflation rate. He concludes there is significant negative relationship between capital flow volatility and GDP growth rate for the whole period. The negative relationship becomes weaker over time with value of relevant co-efficient rising from a statistically significant minus -322 during 1970 to 79 to minus -124 in 1990 to 98 when coefficient was also statistical insignificant. Why the capital flows are so volatile? Analysis and evidence suggest that internal e.g. weak domestic financial system, frequent economic shock and external factor particularly the animal spirit of foreign investors are involved in making these flows volatile.
Kohli (2003) examines how capital flows affect a range of economic variables such as exchange rates, interest rates of foreign exchange reserves, domestic monetary condition and financial system in India during the period 1986 to 2001. She has examined how capital inflows induce real exchange rate appreciation, stock market and real estate boom, real accumulation and monetary expansion as well as effects on production and consumption. She investigates the impact of capital flows upon the domestic financial sector in India. Inflows of foreign capital have a significant impact on domestic money supply and stock market growth, liquidity and volatility. Correlation between domestic and foreign financial market highlights India’s vulnerability to external financial shocks. For India, on the relationship between portfolio flows and some stock market indicators suggest that market price are not unaffected by capital inflows. So far the difference between net capital inflows and current account deficit has been positive in India.

Kohli (2003) examines the composition of capital flows and trend in movements into India in international perspectives taking the country as from Asia and Pacific region as the comparators and the impact of capital flows upon key macro economic variables on the financial sector in India during the period 1986 to 2001. She perceives a regime shift in the determinants of FII following the Asian crisis and found that the pre-Asian crisis period, any change in FII have a positive impact on equity returns. The evidence for India on the relationship between portfolio flows and some indicators suggest that market prices are not affected by international capital flows. The Correlation between domestic and foreign financial market in India can affect liquidity and market volatility. The regression model of FII investment flows on monthly returns on the Bombay Stock Exchange (BSE) national index is significant. She concludes that the presence of integrated financial markets also exposes the economy to correlated risk which makes it necessary to distinguish between different types private flows on develop and efficient domestic financial market and institution with the capacity of intermediate inflows.

series of economic reform measures including liberalization of foreign capital inflows were initiated in India since the early nineties. She uses the vector autoregression (VAR) method to examine how the external shock generated by capital inflows led to appreciation in the real exchange rate as observed in the East Asian and Latin American countries in the 1990’s. The role of monetary and fiscal policies in managing the effect of capital inflows on the real exchange rate is also analyzed in this context. Based on the quarterly data from 1993.2 to 2001.4 and incorporating the variables such as the real exchange rate, capital inflows, the rate of growth of domestic credit and the rate of inflation, three important observations emerge from the VAR analysis: (a) unlike the East Asian and Latin American countries, the real exchange rate depreciates with respect to one standard deviation innovation to capital inflows, (b) the dynamic impact of random disturbances generated by capital inflows on the real exchange rate is persistent, and (c) the dynamic response of the real exchange rate to capital inflows shock has largely been influenced by monetary policy and not by fiscal policy. She argues that the monetary policy was effective in avoiding any serious distortion in the real exchange rate following the liberalization of capital inflows in India while sacrificing its long-term objectives. It addresses two limitations in the existing macroeconomic policies i.e. (a) lack of fiscal consolidation and (b) lack of capital control instruments which seems to have created undesirable pressure on the monetary policy to realize its long-term objectives in the regime of liberalized capital inflows. The paper identifies the crucial role played by the monetary policy in macroeconomic management in India during the nineties.

She finds from the impulse response of the analysis which reflect the fact that the impact of inflows of foreign capital on the real exchange rate during the liberalized regime in India was different from that observed in East Asia and Latin America. As the finding based on the Indian data contradicts the established belief, it may be taken by some policy analysts as indicative of efficient management of capital inflows during the nineties. In the same vein, therefore, one may be praising the monetary and fiscal policies pursued in India during the liberalized regime. However, it calls for a more in-depth analysis of the effect of the monetary and fiscal policies on the dynamics of the real exchange rate in India.
Sikdar (2006) provides a comprehensive review of the issues related to external capital flows into India during the post-liberalization period. It then delineates the major policy issues arising out of the various concerns. Finally, it puts forward some policy recommendations.

Reduce sterilization and concentrate on improving the credit pass-through of monetary policy. The credit starvation of small and medium enterprises must be eliminated. Adequate absorption of foreign capital cannot be ensured by growth in service exports alone. 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 the 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. Exchange rate protectionism should be gradually eliminated and the currency should be allowed to appreciate in response to capital inflow. Protecting the exchange-sensitive sectors should not be the overriding concern of policy. 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 unsustainable. There should be no let-up in financial reforms that will strengthen the currency and capital markets. This will promote the participation of domestic investors. Investment in infrastructure in general (and not only in telecom) must increase to boost domestic investment and attract FDI in manufacturing. The approach to capital account convertibility should continue to be cautious until the crucial preconditions are fulfilled.

Sethi and Patnaik (2007) examine the impact of international capital flows on India’s financial markets and economic growth. The study also examines trends and composition of capital inflows, changing pattern of financial markets in view of globalization and suggests policy implication thereof. By using monthly time series data, it is observed that Foreign Direct Investment (FDI) is positively affecting the economic growth, while Foreign Institutional Investment (FII) has negatively affected.
They found the trends of total international capital flows into India are positive, where portfolio investment flows are negative in the year of 1998-99. The Foreign Direct Investment (FDI) does not reveal stable trend so far in India. The composition of capital inflows in India makes a significant size both in terms of impact and smooth management. The impact of total capital flows on economic growth is positive in India. The Foreign Direct Investment (FDI) that has huge contribution to influence the economic behaviour is also positively affecting the economic growth. The Foreign Portfolio Investment (FPI) is indirectly affecting the economic growth, which has less impact on economy. The Foreign Institutional Investment (FII) has negative impact on growth, but it is very negligible.

Sethi (2008) explains the effects of private capital inflows (FINV) on some macro economic variables in India using the time series data between April 1995 to Dec. 2006. The studies also examine the impact of international capital flows on economic growth, trends and composition and suggest policy implication thereof. Cointegration test confirms the presence of long-run equilibrium relationships between a few pair of variables like private capital inflows (FINV) and economic growth (IIP as proxy of GDP) and FINV and Exchange Rate (EXR). The Granger causality test shows unidirectional causality from FINV to Exchange Rate (EXR) and bi-directional causality from FINV and growth (IIP). Finally study found that Foreign Direct Investment (FDI) is positively affecting the economic growth, while Foreign Institutional Investment (FII) is negatively affecting the growth. The empirical analysis shows that FDI plays unambiguous role in contributing to economic growth. It concludes that capital inflows have not contributed much towards industrial production or economic growth. There are two reasons for this, one the amount of capital inflows to the country has not been enough. Two, the amount of capital that does flow in, is not utilized to its full potential

2.2. Studies Relating to the Volatility of International Capital Flows, Risk and Financial Crisis

Yoo (1994) presents a model of economic growth based on the life-cycle hypothesis to determine the path of international capital flows as the baby boom passes through the
U.S. economy. The model predicts that a baby boom causes a temporary increase in capital flow into the U.S. but the increase in capital is not sufficient to maintain the capital-labor ratio in the U.S. The baby boom increases saving in the U.S. but decreases the saving abroad due to the higher world interest rates. The model predicts that a baby boom causes a temporary increase in the demand for capital due to the rapid growth of labor. Increase in domestic saving and importation of capital offset the increased demand, but only partially. The model predicts that the increased saving and capital inflow is not sufficient to maintain the pre-baby boom capital-labor ratio. The temporary drop of the capital-labor ratio increases world interest rates, which reduces saving abroad. The increase in the world interest rate and lower saving abroad are not the only effects of the U.S. baby boom; the model also predicts that the impact of the U.S. baby boom will affect the capital-labor ratio and standards of living abroad.

The model presented in this paper suggests that a domestic baby boom has consequences for the rest of the world, and the domestic and foreign economies share most of the effects of the baby boom. The primary difference between open and closed economy simulations is that the resources of the rest of the world damp the magnitudes of the effects. The model also suggests that the baby boom may create large capital flows between countries, specifically capital moves to the country experiencing the baby boom. While the effects of the baby boom on output and factor prices are small, its impact on saving and capital flows is quite large.

Reisen (1996) aims at deriving lessons for macroeconomic policy in developing countries in response to heavy temporary capital inflows as witnessed in the early 1990s. First, after spelling out the major reasons why policymakers should be concerned about cyclical inflows, the volatility of different capital-account items (bank lending, foreign direct investment, and portfolio flows) is assessed. Second, the recent capital flows are compared between Asia and Latin America, for similarities and differences. Third, the paper discusses about 13 heavy capital importers in Asia and Latin America the extent to which they met the prerequisites postulated by the sequencing literature to avoid macroeconomic complications of heavy capital inflows, and how they used these external
savings in light of the debt cycle theory. Finally, the paper draws five policy lessons for the episode of heavy capital inflows: identify the origin of rising foreign exchange reserves; identify the limits of foreign debt; discourage above-limit, short-term inflows; observe the tradeoff between price stability and competitiveness; and design policies to target monetary aggregates and exchange rates, including fiscal policy, sterilized intervention, reserve requirements, and exchange rate management.

Kamin and Wood (1997) explain the balance-of-payments and banking crises of 1994-95 that erupted in Mexico, observers have pointed to various effects of the substantial capital inflows that took place in the preceding half decade. It has been argued that these inflows contributed to rapid monetary growth, real appreciation of the peso, and the widening of Mexico’s current account deficit. In addition, by making available credit for consumption loans at a time when investment spending in Mexico was not yet ready to grow rapidly, these inflows may have contributed to the fall in Mexico’s savings rate.

The paper looks at the effect of capital flows on macroeconomic and financial variables in Mexico during the 1980s and 1990s and compares Mexico’s experience with that of a cross-section of Pacific Basin countries. In particular, they attempt to gauge the effect of capital flows on money growth, interest rates, consumption and investment. They find the evidence of an independent effect of capital flows on monetary conditions and domestic demand, controlling for certain other domestic factors. However, these inflows appear not to have altered substantially the basic trajectories of money, consumption, and investment in the recipient countries.

Beck (2000) empirically examines the relationship between the volatility of capital flows, foreign penetration and a liberal trade regime with regard to financial services during the period 1990’s over a cross countries with the variables such as inflation, foreign bank asset and economic freedom. He argues that such a relationship should be tested for total net capital flows, and not for specific components. He finds some evidence for foreign bank penetration to rather increase the volatility of capital flows. The volatility of capital flows to emerging market was not primarily caused by a lack of transparency and
information with regard to the liberalization of cross border supply. The positive effects of financial sector development are likely to enhance growth. He took four aspects of financial liberalization, which might have different impacts on stability of capital flows and financial stability in general, capital account liberalization, liberalization of trade in financial services, domestic deregulation and introduction of new financial instruments. The trade regime variables are not significant in explaining cross-country variations in the volatility of capital flows.

Warnock and Mason (2001) analyze the accuracy of U.S. data on international equity transactions, and compare estimates of U.S. holdings of equities in over 40 countries with actual holdings given by comprehensive U.S. benchmark surveys. If the rate of return used to revalue U.S. holdings in a given country is accurate, accurate holdings estimates imply accurate transactions data. For some countries, such as Canada and much of Latin America, the holdings estimates are quite accurate. For the majority of countries, however, there is a likelihood of great disparity between our estimates and actual amounts, likely because U.S. data on international equity transactions record the country of the transactor, not the country of the issuer. The estimates are far too high for financial centers--because many U.S. transactions that go through these countries involve securities issued in other countries--and far too low in most other countries, particularly in Europe and Asia. To illustrate the potential pitfalls of using estimated country-specific holdings data, we briefly present two cases in which the use of actual data leads to different conclusions. One case examines the determinants of U.S. equity holdings across countries; the other concerns the turnover rate of foreign equity portfolios.

Chang (2002) studies a small open economy in which electoral uncertainty affects and is affected by the volatility of capital inflows. Two candidates run for office; the winner chooses tax policy, which affects investment returns. A pro labor electoral victory results in a "sudden stop" in investment and capital flows, reflecting that the pro labor government suffers from a capital levy problem. The pro business candidate does not suffer from time inconsistency; however, a pro business government becomes less attractive if the costs of external credit and the foreign debt are larger. Hence the
probability distribution of the electoral outcome depends on the size of the external debt, which itself depends on that probability distribution. He characterizes the model’s politico economic equilibrium and finds several implications. Politico economic links exacerbate the responses of financial variables to exogenous shocks. Self fulfilling equilibrium may exist. Policies that alleviate the pro labor candidate’s commitment problem, such as pre electoral policy agreements, contribute not only to financial stability but also, and perhaps more surprisingly, to the chances of a pro labor victory in the elections.

The analysis is consistent with the belief that financial instability is most likely to be observed in emerging economies. A country in which investment prospects are too poor or the political structure too adverse to markets will not receive any foreign funds. At the other extreme, if there is enough political stability, in the sense that policy is expected to be favorable to investment regardless of electoral outcomes; capital inflows will be strong and stable. The model thus suggests that financial flows may display marked volatility as a country develops politically. In turn, the political development process may be affected by financial volatility. One interesting avenue for research may be to study such a politico-economic interaction in a truly dynamic model of development and growth.

Carlson and Leonardo (2002) analyze whether policies can affect the composition of capital inflows and whether different compositions aggravate crises. The Mexican, Asian, and Russian crises of the mid- and late 1990s, have renewed the interest among policymakers in the determinants and effects of private capital flows. They explain that, while fundamentals matter, capital controls can affect the mix of capital inflows that countries receive. They also explain that during the Asian crisis countries with more Yen denominated debt faired worse, while during the Mexican crisis larger short-term debt stocks increased the severity of the crisis.

Their evidence of the balance of capital inflows during non-crisis times may be different than the conventional view. Usually short-term debt and portfolio equity are grouped together. They find, however, that portfolio equity flows respond to policies in a manner
similar to that of FDI and in a manner opposite to that of short-term debt. It may be that portfolio equity is not of a short-term nature after all. It may be, as suggested by the 2001 Global Development Finance Report (World Bank, 2001), that equity investors are concerned with fundamentals and have longer time horizons than debt holders. Thus, it is a mistake to always group short-term debt and portfolio equity. It may also be that short-term debt and portfolio equity are substitutes. Investors may choose one or the other depending on the incentives created by different government policies. Because this question has important implications for the impacts of government policy, further investigating and resolving this question is an important line of future research.

Gibson and Tsakalotos (2003) examine the capital flow experience of transition economies who are also prospective EU members with a view to shedding light on the likely problems they might encounter with exchange rate policy in the run up to euro area membership. They show that they have been experiencing fairly sizeable capital flows since the early 1990s. They explain these flows using two separate models. The first explains the level of capital flows using panel data from the prospective EU members. The second concentrates specifically on estimating the probability of a country experiencing downward speculative pressure. In both cases, the contribution of domestic factors and contagion is explored. The results suggest that while domestic factors have some role to play, it is rather limited. Moreover there is clear evidence of contagion effects, suggesting that macroeconomic policy in the prospective EU members will be complicated by capital flows in the run up to euro area membership.

The results suggest that while what it called domestic factors play a role, contagion is also important, especially from other countries in the area. Contagion may come about because of economic linkages within a region. However, it might also reflect the fact that transition economies are classified as emerging markets. Recent experience suggests that problems in one emerging market can spread quickly to others not least because international financial institutions tend to have targets for the proportion of their portfolio invested in emerging markets as a group. Problems in one emerging market can lead to a reduction in this targeted proportion as the risks of the whole group are reassessed and
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hence, it will lead to a withdrawal of funds from other emerging markets. Additionally, funds can be withdrawn from other emerging markets as investors seek to cover their losses in one market by realizing gains in another.

Hoti (2004) explains the flows of international capital to developing countries have fluctuated substantially over the last three decades. Empirical evidence concerning the main causes of international capital flows is, in general, mixed. There is strong support for the ‘push’ view that external factors have been important in driving capital inflows to emerging markets. However, the apparent importance of ‘push’ factors does not preclude the relevance of ‘pull’ phenomena. ‘Pull’ factors may be necessary to explain the geographic distribution of capital flows over time. The paper compares trends and volatilities in international capital flows for nine representative developing countries. During the 1970-90, international capital flows were mainly in the form of bank lending directed to governments and/or to the private sector. In the 1990s, capital flows took the form of foreign direct investment and portfolio investment, including bond and equity flows. The purpose of the paper is to examine the nature of foreign direct investment and portfolio investment, both of which help to finance investment and stimulate economic growth in the developing.

His paper evaluated the significance of 30 published empirical papers in the international capital flows literature according to established statistical and econometric criteria. Trends and volatilities in international capital flows for nine representative developing countries for 1977-2002 were compared. Such an evaluation permits a critical assessment of the relevance and practicality of the economic, financial and political theories pertaining to international capital flows.

Calvo and Reinhart (2005) examine how the issue of "spillover or contagion" effects has acquired renewed importance in light of the Mexican crisis in December 1994 and the effect that the event has on other emerging market economies. Relatively little empirical analysis exists on how small open economies are affected by economic developments in their neighbors and what role financial markets play in the transmission of disturbances.
The paper attempts to fill that gap by examining recent developments in emerging equity markets in Asia and Latin America and longer term trends and cycles in capital flows to Latin American economies and their sensitivity to events in the larger countries in the region.

Sound macroeconomic management is advisable, irrespective of whether the capital account is in deficit or surplus (or whether the country is large or small). However, the main policy implication that emerges from this analysis is that policymakers are advised to be extra cautious in protecting the domestic financial system against the vagaries of international capital flows, as these appear to respond to a contagious element that may be unrelated to domestic macroeconomic fundamentals.

Fitzgerald (2005) examines tenor and instability of capital flows from global financial markets towards developing countries is a major source of concern for macroeconomic managers. Country ‘fundamentals’ as sources of investment risk have been the main focus of economic research and policy prescriptions from international financial institutions. However, recent empirical findings indicate that much of these three problems derive from asset demand, credit rationing and trading behaviour in global markets themselves, which create in turn large negative externalities for developing countries. The paper explores the implications of this work for the future of development economics in terms of our understanding of investor risk tolerance and macroeconomic instability on the one hand and for policy intervention in imperfect financial markets on the other.

In his paper he argued that a large part of the low level of capital flows to emerging markets, and their instability, is due to the nature of the asset demand schedule for home investors, independently of the underlying quality of those assets (‘fundamentals’). The same is undoubtedly true of the ‘tenor’ of these investments. The empirical evidence presented has been of two kinds: first, the influence of home wealth and interest rates, changing risk tolerance, and trading behaviour of home investors; and second, the
existence and persistence of home bias despite numerous attempts to explain it in terms of information costs and other barriers.

Goldfajn and Minella (2005) analyze the relationship between capital account liberalization and macroeconomic volatility using Brazil as a case study. The paper provides several stylized facts regarding the evolution of capital flows and controls in Brazil in the last three decades. They conclude that, notwithstanding the financial crises and macroeconomic volatility of the recent past, capital account liberalization and the floating exchange regime have led to a more resilient economy. Further liberalization of the capital account is warranted and should be accompanied by a broad range of reforms to improve and foster stronger institutions.

Notwithstanding the financial crises and macroeconomic volatility of the recent past, financial liberalization has led to reduced external vulnerability. Balance of payments patterns have changed. Recent growth has been accompanied by a more favorable trade balance position. The profile of external financing has improved after the floating of the currency. The private sector has decreased significantly its issuance of external debt and FDI has replaced portfolio investment as the main financing source. Liberalization of the capital account in the last fifteen years has provided more convertibility to the currency. The new rules, however, coexist with an old legislation that was established in a more control-prone environment. Therefore, the result is a complex web of regulations and rules that require consolidation and a mentality that still associates transfers abroad with illicit or antipatriotic practices (based on the capital flight legislation period).

Warnock and Warnock (2005) examine foreign flows have an economically large and statistically significant impact on long term interest rates. Controlling for various macroeconomic factors we estimate that had there been no foreign flows into U.S. bonds over the past year, the 10-year Treasury yield would currently be 150 basis points higher; even a step-down to average inflows would imply an increase of 105 basis points. The impact of the headline-making foreign official flows—a relatively small subset of total foreign accumulation of U.S. bonds—is also significant but markedly smaller.
The paper represents a first attempt at analyzing the impact of foreign flows on a large developed economy. Past work has taught us much about the role of foreign investors in emerging market. The results in his paper suggest that large foreign purchases of U.S. bonds have contributed importantly to the low levels of U.S. interest rates observed over the past two years. They present a range of estimates of the impacts of foreign flows, depending on different assumptions of what the “normal” level of flows is. The most extreme comparison is with the hypothetical case of zero foreign accumulation of U.S. bonds over the course of an entire year, which we show would leave long rates 150 basis points higher.

Levchenko and Mauro (2006) have debated on whether some forms of financial flows offer better crisis protection than others. Using a large panel of advanced, emerging, and developing countries during 1970–2003, the paper analyzes the behavior of various types of flows: foreign direct investment (FDI), portfolio equity investment, and portfolio debt investment, other flows to the official sector, other flows to banks, and other flows to the non-bank private sector. Differences across types of flows are limited with respect to volatility, persistence, cross-country co movement, and correlation with growth at home or in the world economy. However, consistent with conventional wisdom, FDI is found to be the least volatile form of financial flows when taking into account the average size of net or gross flows. The differences are striking during “sudden stops” in financial flows (defined as drops in total net financial inflows by more than 5 percentage points of GDP compared with the previous year): in such episodes, FDI is remarkably stable; portfolio equity also seems to play a limited role; portfolio debt experiences a reversal, though it recovers relatively quickly; and other flows (including bank loans and trade credit) experience severe drops and remain depressed for a few years.

Ciprani and Kaminsky (2006) have studied the pattern of volatility of gross issuance in international capital market since 1980 taking the 110 countries. The study focuses on the behaviour of volatility issuance in international financial markets over the last three decades. Markets are more stable than they were at the beginning of the 1980’s, this
providing a rationale for the elimination of controls on capital flows. Using VAR analysis, they show that the time varying volatility of issuance in international market can be explained in part by the behaviour of macro economic and financial fundamentals in the developing countries. Volatility of United States issuance in international bond markets sharply increased during the 1981-82 which is twice as volatile as in the mid 1980’s. In the long run, volatility of issuance has significantly declined in all the markets and regions such a decline, however, has been more pronounced for mature economies.

They find several short-live episodes of high volatility over the long run; however volatility has declined, suggesting that international financial integration has not made financial markets more erratic. They use VAR analysis to examine the determinants of time varying pattern of volatility, focusing in particular on the role of financial centers. The result suggests that a significant portion of the decline in volatility of issuance in international capital market can be explained by the reduction in the volatility of US interest rates.

Sebastian (2007) analyzes whether restrictions to capital mobility reduce vulnerability to external shocks and more specifically, whether countries restricting the free flow of international capital have a lower probability of experiencing a large contraction in net capital flows. He uses three new indexes on the degree of international financial integration and a large multi-country data set for 1970-2004 to estimate a series of random-effect probit equations. He finds that the marginal effect of higher capital mobility on the probability of a capital flow contraction is positive and statistically significant, but very small.

Having a flexible exchange rate greatly reduces the probability of experiencing a capital flow contraction. The benefits of flexible rates increase as the degree of capital mobility increases. A higher current account deficit increases the probability of a capital flow contraction, while a higher ratio of FDI to GDP reduces that probability. A complete policy evaluation of the effects of capital controls would also analyze their costs in the form of distortions, misallocated investment and others.
In contrast, the results presented in his paper indicate that higher capital mobility has a positive, statistically significant and small direct effect on the probability of a country experiencing an abrupt contraction of net capital inflows. Two factors explain these differences in results: first, he focused on rather broad definitions of capital account contractions, while previous papers have tended to focus on more stringent (and thus less frequent) situations of sudden stops. Second, he used more general and complete indexes of capital mobility. In principle these indexes capture better the granularity and texture of capital account restrictions across countries.

Ibms (2007) explains that growth and volatility correlate negatively across countries, but positively across sectors. Analytically, whether or not sectoral growth and volatility are correlated positively is irrelevant in the aggregate. Cross-country estimates identify the detrimental effects of macroeconomic volatility on growth, but they cannot be used to dismiss theories implying a positive growth–volatility coefficient, which appear to hold in sectoral data. In particular, volatile sectors command high investment rates, as they would in a mean–variance framework. He also investigates the growth–volatility question within an international sectoral data set covering manufacturing activities at the three-digit level in 47 countries which is used to show that growth and volatility correlate positively at the sectoral level. The positive correlation is significant statistically and sizable economically, particularly in a reduced sample of OECD countries. In addition, once aggregated up, these data confirm the established negative correlation between aggregate growth and aggregate volatility. The reversal is distinct from the classic econometric argument that within- and between groups estimators can imply opposite conclusions. In other words, a negative link between aggregate growth and aggregate volatility could but mean aggregate shocks are large and important in low growth economies. And in fact, his paper shows that aggregate estimations will only capture the covariance between sectoral growth and the country specific component of aggregate variance. That aggregate volatility should correlate negatively with aggregate growth reflects that the country specific component of aggregate variance, for instance fiscal or
monetary policy, is detrimental to aggregate growth. It does not inform the growth–volatility question beyond that.

Kletzer (2004) explains capital account liberalization in financially repressed economies often leads to a period of rapid capital inflows followed by financial crisis. This paper considers the vulnerability of the Indian economy to financial crises with international financial integration and the policy agenda for further liberalization of capital flows. The legacy of financial repression on fiscal and financial policies poses the primary challenge to stable integration of the domestic financial markets of India with international capital markets. Brief overviews of the theory and experience of liberalization elsewhere and of the recent liberalization by India form the top discussion for risks of liberalization and sequencing of policy reforms.

Capital controls play a central role in financial repression in India. These controls provide the government with the opportunity to sustain high levels of domestic debt by limiting competition for domestic financial savings. The closure of the capital account facilitated the taxation of financial intermediation and, hence, reduced incentives for tax reform to enhance tax revenues and promote efficiency in domestic investment. High public debt and repression of domestic financial intermediation are mutually reinforcing. The public debt burden of India poses a risk for capital account liberalization, creating a barrier to financial liberalization. Continued controls on international financial outflows reduce the incentives for deficit reduction.

Financial sector reform has already reduced the imposition of public debt on financial intermediation. Less taxation of financial intermediation contributes to public sector deficits and is beginning to break the link between public finance and financial repression and raise the pressure for deficit reduction. The relaxation of inward capital controls is successful in the sense that capital inflows are rising and gradual liberalization appears to be becoming the status quo.
Although fiscal imbalances pose a risk for capital account liberalization, a capital account crisis could play out slowly in India given the long maturity structure of the public debt denominated in domestic currency and issued at fixed interest rates and the current low proportion of foreign currency debt and short maturity of foreign debt. There are two aspects of the fiscal problem for financial integration. The primary deficit and amortizing public debt comprise the borrowing requirement of the government that would need to be financed on international terms under an open capital account. The second issue is that the banking system holds the overwhelming majority of the public debt. These become risky assets for the banks to hold with international financial integration. Any gain to the government from currency depreciation or rising interest spreads on public debt would be matched by losses by the banks. These holdings pose a threat to the banking system, and a capital account crisis could begin with exit by domestic depositors. In this case, deposit insurance could reduce exposure of the banking system to crisis. Limiting the contingent liability of the government created by deposit insurance so that it just offsets public sector capital gains requires institutional reform to ensure successful prudential regulation.

The potential gains from completing capital account liberalization for India could be significant. India has much to gain from direct foreign investment and access to foreign savings for domestic investment. The liberalization of capital inflows is not complete. Debt reduction may not be necessary before proceeding with the elimination of outward capital controls, but putting fiscal reforms in place to achieve deficit reduction probably is. The vulnerability of the banking sector to crisis implies that institutional reform, both fiscal and prudential, is needed.

Dua and Sen (2006) examine the relationship between the real exchange rate, level of capital flows, volatility of the flows, fiscal and monetary policy indicators and the current account surplus for the Indian economy for the period 1993Q2 to 2004Q1. The estimations indicate that the variables are cointegrated and each granger causes the real exchange rate. The generalized variance decompositions show that determinants of the real exchange rate, in descending order of importance include net capital inflows and their volatility (jointly), government expenditure, current account surplus and the money
supply. A preliminary analysis suggests that a similar analysis can be performed for the foreign exchange reserves held by the RBI.

They find that the real effective exchange rate is cointegrated with the level of capital flows, volatility of the flows, high-powered money, and current account surplus and government expenditure. This relationship is statistically significant and each of the above determinants Granger causes the real effective exchange rate. The generalized variance decompositions show that determinants of the real exchange rate, in descending order of importance include net capital inflows and their volatility (jointly), government expenditure, current account surplus and the money supply. The direction of the generalized impulse responses conform to the signs obtained in the cointegrating vector. Shocks to each of the determinants have a long run impact on the real effective exchange rate that is consistent with economic theory. Turning to the foreign exchange reserves of the RBI, they tried to suggest that one can use a semi-reduced form (that includes the RBI’s unknown reaction function) to get a cointegregating vector. This line of enquiry is fruitful and needs to be examined in detail.

2.3. Studies Relating to the Interrelationship between Capital Flows and Financial Markets

Bacchetta and Wincoop (1998) analyze the impact of financial liberalization and reforms in emerging markets on the dynamics of capital flows during the period of 1990 to 1998. They use the simple model of international investors of international capital flows taking different south Asian countries. They first show that the gradual nature of liberalization, combined with the cost of large capital inflows in emerging economies. They provide numerical estimates of long run capital inflows to emerging market economies and compare them to actual inflows. It gives a good indicator of upcoming crisis situation. The countries that have experienced overshooting and volatility of capital inflows are those who have embarked upon substantial capital account and financial liberalization. Finally, they find in this paper that the interaction of capital flows and real exchange rate movement can generate considerable volatility in presence of capital markets imperfections.
They contribute a global view of capital flows, considering the whole set of industrialized and emerging countries. The model is not necessarily relying on irrational and herding behavior of investors to explain overshooting, volatility and contagion. Finally, it would be useful to distinguish between the various types of liberalization and reforms and more explicitly model the behavior of the Government in this context.

Altinkemer (1998) examines the surge in capital inflows to emerging market economies in the 1990’s led to much research on their causes, appropriate policy-mix in the face of large inflows and their sudden reversals. The financial crisis that started out in Asia in 1997 and spread to other emerging markets later on reinforced further interest in risk associated with capital inflows. Capital inflows, while providing additional finance and enhancing investment opportunities, tend to pose problems in macroeconomic management. Most typically, in the absence of Central Bank intervention, heavy inflows will lead to appreciation of the domestic currency, which will eventually threaten competitiveness; intervention however, will lead to monetary expansion and inflation, unless sterilized. Sterilized intervention in turn, can be costly, since it carries the risk of increasing interest rates and reinforcing further capital inflows, thereby causing quasi-fiscal losses to the Central Bank. The capital inflow episode after the liberalization of capital account in Turkey is examined with special emphasis on the Central Bank policy response. The cause of the inflows and its decomposition into consumption and investment is discussed. Sterilization mechanism, with the help of an intervention equation for the foreign currency market and a domestic credit reaction function for the Central Bank, is analyzed and sterilization cost as share of reserve money is calculated. The results confirm that inflows have been the engine of growth and that it is mostly consumption driven. They also indicate in the direction of high public sector borrowing requirement and the resulting high interest rates and the fact that with a loose fiscal policy the Central Bank can at best try to smooth out the volatility in the financial markets rather than decrease inflation.
Bleaney, Mizen and Senatla (1999) present a model of portfolio capital flows for nine developing countries over the period 1980-96. The results suggest that domestic factors (changes in the investment climate in developing countries as measured by the inflation-adjusted share price index) have been more important than indicated by previous research, particularly in Latin America. Falls in real interest rates in developed countries have had only a very minor impact in driving capital flows to emerging markets, but lower nominal interest rates associated with lower expected inflation have played a significant role by improving creditworthiness. Interaction effects are important: interest rate movements have little impact when the investment climate is poor. Macroeconomic indicators, such as the ratio of foreign exchange to imports and the current account balance, also affect inflows. A Chow test suggests significant differences in model coefficients between Asia and Latin America.

Eicher, Turnovsky and Walz (1999) explain financial market liberalizations are an integral part of economic development. While initial booms in investment and output are commonly seen as signs of successful deregulation, they often reverse at a later stage as international capital flows turn negative and economic growth slows markedly. Such reversals of fortunes have commonly been attributed to incorrect policies that supposedly followed the initial, appropriate measures. It is unclear, however, if capital flow reversals are actually the result of policy reversals, or if they occur as part of the normal transition when financial liberalization is accompanied by a single sub-optimal policy. The latter hypothesis has not been explored in the theoretical literature.

They construct a general equilibrium growth model of a small open economy, in which capital flow reversals are the result of a single, sub-optimal policy imposed at the beginning of the financial liberalization. They show how improper taxation of foreign borrowing initially leads to strong growth fueled by an investment boom and foreign borrowing. Still along the transition, however, the model predicts that capital flows must reverse endogenously at a later stage, as the debt burden rises and the country specific risk premium increases.
Krishnamurthy and Caballero (2005) show that liquidity requirements, sterilization of capital inflows and structural policies aimed at developing public debt markets "collateralized" by future revenues, all have a high payoff in this environment. They also show that domestic financial underdevelopment not only facilitates the emergence of bubbles, but also leads agents to undervalue the aggregate risk embodied in financial bubbles. In this context, even rational bubbles can be welfare reducing. Emerging market economies are fertile ground for the development of real estate and other financial bubbles. Despite these economies' significant growth potential, their corporate and government sectors do not generate the financial instruments to provide residents with adequate stores of value. Capital often flows out of these economies seeking these stores of value in the developed world. Bubbles are beneficial because they provide domestic stores of value and thereby reduce capital outflows while increasing investment. But they come at a cost, as they expose the country to bubble crashes and capital flow reversals.

Kim et al (2002) focuses on the effects of capital flows on financial market in particular business cycle across countries. Vector Auto Regressive (VAR) method used to identify capital flows shocks and examine their effects on cyclical movements of key macro economic variable in each country. They also examine whether these effects are consistent with boom-bust cycle theory. Using the VAR methods, they find empirical evidence that positive capital flows affect output, consumption and investment in most countries which is consistent with the story of boom –bust cycle. Capital flows shocks are highly correlated across the crisis countries. The VAR results imply that capital flows shocks can explain business cycle synchronization among the crisis countries to some extent. They find both theoretically and empirically the relationship between financial integration and co-movement of business cycle is not unambiguous. Business cycle synchronization among the Asian crisis countries in the 1990’s can be at least particularly explained by synchronization of capital flows and ensuring boom-bust cycle after the financial market liberalization. The result explains that financial market liberalization is likely to synchronize business cycles across group of countries.
Samal (1997) analyzes the influence of Foreign Institutional Investors (FII’s) on equity price movement and equity market development in India during 1991 to 1996. He has taken the quarterly data from January 1993 to December 1994 and annual data from 1991 to 1996 to determine the net FII investment taking variable like market capitalization and GDP at factor cost. He observes that in developing countries including India, there has been an increased liberalization of domestic financial and capital market to FII’s. The main emerging feature of India’s equity market is its gradual integration with global market and its consequent problem due to the hot money movement by FII’s. Therefore, policy measures to develop equity market should aid to encourage the small domestic investors to participate in it and counter the tendency of the FII’s to destabilize the emerging equity market.

Pal (1998) examines whether the Indian economy has actually been benefited from the huge influx of the foreign institutional investment (FII) during the period 1980 to 1997 as taking into the variables equity, debenture, bond and preferences. The entry of Foreign Portfolio Investors (FPI’s) will boost a country’s stock market and economy does not seem to be working in India. Portfolio capital flows being entirely a market-based device is susceptible to any kind of market failures. He finds that, instead of lifting the level of domestic saving and investment, financial liberalization in general has rather increased financial instability. The results of correlation coefficient don’t support the view that influx of Foreign Portfolio Investment (FPI) leads to economic development.

Nagaish (1999) explains the how financial markets play a positive role in the process of economic growth during the period 1980 to 1997. He examines the function of domestic savings mobilization and further deregulation of stock market to attract more Foreign Portfolio Inflows (FPI) in India. There seems to be no way to avoid similar problems as Mexico, Thailand and Korea due to more volatile movement of domestic stock prices and unstable Balance of Payment (BoP) position. He also explains bank credit to commercial sector and it has no positive co relationship with indicators of stock market development. The results indicated that, Foreign Portfolio Inflows (FPI) into India has been insignificant compared to Mexico, Korea and Thailand. In Indian context, the functional
relationship between stock market development and economic growth is dubious. Foreign Capital Inflows (FPI) must have a positive impact on the real economy via lowering the cost of capital and asset effects.

Chakrabarti (2001) examines the nature and determinants of Foreign Institutional Investors (FII’s) flows in India during the period 1999 to 2001 taking as the variables as exchange rate, interest rate etc. He analyzes capital flows and their relationship with other economic variables has positive impact on the Indian economy. The FII’s does not seem to be an informational disadvantage in India compared to the local investors. The Asian crisis marked a regime shift in the determinants of FII flows to India with the domestic equity returns becoming the sole driver of the international capital flows. A collection of domestic and international variables which are likely to affect both flows and returns fail to diminish the importance of contemporaneous returns in explaining FII’s flows.

Khanna (2002) examines the macro economic effects of inflows of capital to India and micro economic effects on the capital market during 1989 to 2002. He took the macro variable as FDI, FPI, NRI deposits, external assistance and GDP/GDS/GNP. His analysis reveals that the entry of international capital flows helps to provide greater depth to the domestic capital market and reduce the systematic risk of the economy. He argues that the motives for liberalizing capital market and opening them to foreign investor are to increase the availability of capital with domestic industries and commercial firms. On the other hand, the Indian stock market is today largely dominated by a small group of FII’s, who are able to move the market by large investment. He concludes that in case of India, the microanalysis of stock market also fails to provide any evidence that the entry of FII has reduced the cost of Indian corporate sector.

Rai and Bhanumurty (2004) examine Foreign Institutional Investments (FII) in India with the help of monthly data from January 1994 to November 2002. The study examines whether return and risk in the stock market and other real factors have any impact on the FII inflow into the country taking variables like FII, inflation returns of Bombay Stock
Exchange (BSE) etc. Here they have explored the impact of risk and ex-ante risk instead of realized risk, which is an unpredictable part of risk in the stock market, and other real factors on the FII behavior. Econometric estimates, using ARIMA (0,1), TARCH model procedure show a positive association of FII with return on the BSE, inflation in the U.S. and negative association with inflation in India, return on S&P 500 and ex-ante risk on the BSE. They conclude that stabilizing stock market volatility and minimizing the ex-ante risk would help to attract more FII, an inflow of which has a positive impact on the real economy.


McLean and Shrestha (2002) investigate the link between international financial integration and economic growth. In particular, they ask the following questions. What are the theoretical links between financial integration and growth? Is there any empirical evidence that an increase in financial integration is associated with higher economic growth at a cross-country level? Do different types of capital flows have different implications for growth? Existing empirical evidence suggests that the link between financial openness and economic growth is weak at best. While there is some evidence that financial liberalization positively affects growth, this relationship is not robust. There is also some evidence that the positive impact of foreign investment on growth is conditional upon the existence of relatively developed domestic institutions and sound macroeconomic policy. The result is also not very robust and is sensitive to the measures employed to capture institutional development and the policy environment.

To complement the existing research, they examine this issue with a particular emphasis on the composition of capital flows. Consistent with conventional wisdom, they find that both foreign direct investment and portfolio inflows enhance economic growth. By contrast, the effect of bank inflows is found to be mostly negative.

Henry (2003) investigates the capital flows of different countries reduce the cost of capital, increase investment and raise output. The author tells that stock market
liberalization is usually accompanied by other economic reforms that may increase the expected future growth rate of output and dividends. Because liberalization do not occur in isolation, it is important to think carefully about how to interpret the data. When the developing countries liberalized their stock market, cost of capital falls, investment booms and growth rate of output per worker increases. While the facts, cast doubt on the view that capital account liberalization brings no real benefits; there are many important question to which the evidence does not speak.

Khanna (1999) examines the integration of the domestic financial market with global financial flows in India during the period 1980 to 1999. He describes Indian financial sector reforms have failed to achieve their goal of making the sector more efficient and there has been a hardening of interest rates instead of cheaper credit that was promised. The reforms have disastrous effects in the industrial sector leaving Indian firms vulnerable to the foreign competitors, while Multinational Companies (MNC’s) have been allowed to bring in funds, institutional long-term finance for Indian firms and have been curtailed. Financial sector has no role other than channels are domestic saving to entrepreneurs and managers in the real sector of the economy. Indian financial sector experiences rapid growth and deepening during the first four decades of economic development.

Agarwal (2000) investigates the relationship between financial market and financial intermediaries in India during 1981 to 1997. He studies the interrelationship between the financial sector and capital market development and the growth of real GDP. Well-developed stock market offers a different kind of financial services than banking system and also provides an extra impetus to economic activity. Correlation analysis reveals the banking sector and capital market development indicators are complementary and not substitute to each other. The development indicator for the banking sector and capital market have highly positive correlation coefficient implies that they have developed together. However, the magnitude of all funds mobilized by the commercial sector through the commercial bank development institution, foreign capital flows and new issues has a positive association with the capital market development.
2.5. Conclusion

In the conclusion of the above theoretical and empirical literature, we found that, capital flows between the countries reduce the cost of capital, increase investment and raise output. Free capital flows promote faster long term economic growth in developing countries. Correlation between domestic and foreign financial market affects the liquidity and market volatility by international capital flows. Financial liberalization significantly raises the incomes of liberalizing economies by reducing the cost of capital. The positive effects on financial sector development are likely to enhance economic growth. Entry of international capital flows helps to provide greater depth to the domestic capital market and reduce the systematic risk of the economy. Large capitals inflows allow the developing countries to continue high growth despite current deficit, and then well developed financial market promote growth.