Synopsis
Of Ph.D. Thesis Titled

ECONOMIC REFORMS, CAPITAL FLOWS AND MACRO ECONOMIC IMPACT ON INDIA

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Study Background

The recent wave of financial globalization and its aftermath has been marked by a surge in international capital flows among the industrial and developing countries, where the notions of tense capital flows have been associated with high growth rates in some developing countries. Some countries have experienced periodic collapse in growth rates and financial crisis over the same period. It is true that many developing economies with a high degree of financial integration have also experience higher growth rate. Low Developing Countries (LDCs) are eager to welcome any kind of foreign capital inflows to overcome the debt crisis situation. They are facing the challenges from the foreign capital and the invisible resource. From the supply side also there are some strong inducing factors, which led the international investors towards the financial market of the developing countries. The correlation between the movements in developed and developing countries financial market, the deceleration in industrial economy markets and high growth prospects of the less developed market are some of the important reasons, which made them an attractive option for portfolio diversification.

International capital flows have increased dramatically since the 1980s. During the 1990s gross capital flows between industrial countries rose by 300 per cent, while trade flows increased by 63 percent. Much of the increase in capital flows is due to trade in equity and debt markets, with the result that the international pattern of asset ownership. The integration of debt and equity markets should have been accompanied by a short period of large capital flows as investors re-allocated their portfolios towards foreign debt and equity. After this adjustment period is over, there seems little reason to suspect that international portfolio flows will be either large or volatile. With this perspective, the prolonged increase in the size and volatility of capital flows we observe suggests that the adjustment to greater financial integration is taking a very long time, or that integration has little to do with the recent behavior of capital flows. The volume of cross border capital flows has risen substantially in the last decade. Not only there is much greater volume of flows among industrial countries but there has also been a surge in flows between industrial and developing countries. The surge in international capital flows to developing countries is the outcome of both ‘pull’ and ‘push’ factors arise from changes
in policies and other aspects of opening up by developing countries. It includes liberalization of capital accounts and domestic stock markets and large scale of privatization programs. From the longer term of perspectives, it includes the rise in the importance of institutional investors in industrial countries. Another important feature of international capital flows is that the component of these flows differs markedly in terms of volatility. In particular, bank borrowing and portfolio flows are substantially more volatile than foreign direct investment. In spite of a caveat that accurate classification of capital flows is not easy, evidence suggest that the composition of capital flows can have significant influence on a country’s vulnerability of financial crisis.

Capital flows have particularly become prominent after the advent of globalization that has led to widespread implementation of liberalization programme and financial reforms in various countries across the globe in 1990’s. This resulted in the integration of global financial markets. As a result, capital started flowing freely across national border seeking out the highest return. During 1991 to 1996 there was a spectacular rise in net capital flows from industrial countries to developing countries and transition economies. This development was associated with greatly increased interest by international asset holders in the emerging market economies to find trend toward the globalization of financial markets (Singh, 1998; 2002). The global financial markets can gradually create a virtuous circle in which developing and transitional economies strengthen the market discipline that enhances financial system soundness. At present, however, there are important informational uncertainties in global market as well as major gaps and inefficiencies in financial system of many developing countries.

It is fact that international capital flows on financial market can be very volatile. However, different countries experienced different degree of volatility of financial market and this may be systematically related to the quality of macro economic policies and domestic financial governance. In this context high volatility of capital flows has affected the macro economic variables such as exchange rate, interest rate, money stock ($M_3$) and inflation negatively. Even in countries where a conducive atmosphere is created for the free flow of capital and authorities don’t operate with any current account deficit
complicates the assessment of integration in financial market. Capital flows have significant potential benefits for economies around the world. Countries with sound macroeconomic policies and well-functioning institutions are their best to reap the benefits of capital flows and minimize the risks. Countries that permit free capital flows must choose between the stability provided by fixed exchange rates and the flexibility afforded by an independent monetary policy.

Therefore, an understanding of current capital market and the prevailing volatiles with regard to the foreign investment and its implications on market economy have been an important arena to be probed, for a comprehensive understanding of the capital market. Thus in the proposed study an attempt has been made to underscore the capital market in the developing countries in the light of recent heavy inflow of foreign direct investment.

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**Objectives of the Study**

In the light of the above background the objectives of the present study are:

1. To analyze the trends and composition of capital flows into India
2. To examine the effect of private foreign capital inflows on macroeconomic variables such as exchange rate, money supply, export, import, foreign exchange reserve, rate of interest, index of industrial production and wholesale price index as a consequence of economic reforms in India.
3. To examine the effect of volatility of international oil price and international interest rate on private foreign capital inflows in India.
4. The study also examines the impact of volatility of capital flows on exchange rate in India.
5. To examine the impact of international capital flows on India’s economic growth.
Nature and Sources of Data

In order to examine the effects of private foreign capital inflows on macroeconomic variables in India, the following variables are used. These are Call money rate (CMR) as measured as domestic interest rate, Foreign Exchange Reserve (FOREX), Private foreign capital inflows (FINV), classified into FDI and FPI. Index of Industrial Production (IIP) as the proxy of GDP, Money supply (M3), Wholesale Price Index (WPI) as taken for as inflation rate, Exchange rate (EXR) which is rupees (Rs.) against U.S. dollar, Export (EXP) and Import (IMP). The index of industrial production (IIP) has been taken as the proxy of GDP. Though the study is based on monthly time series data, the monthly data of GDP is not available. The choice of IIP as a proxy for economic growth is for two other reasons. First, IIP is significantly correlated with real GDP (0.97 with a significance level of 0.01) as well as with the real output of the services and therefore, is a robust proxy for economic growth. Second, IIP is found to be reliable leading indicator of business cycles in India (Mazumdar, 2005). The variables used to examine the effect of volatility of London Inter Bank Offered Rate (LIBOR) as taken as international interest rate and International Crude oil Price (ICOP) on foreign private capital inflows. The variables used for examining the impact of capital flows on economic growth in India include Foreign Direct investment (FDI), Foreign Portfolio Investment (FPI), Foreign Institutional Investment (FII), Index of Industrial Production (IIP). The variables such as Nominal Effective Exchange Rate (NEER) and Real Effective Exchange rate (REER) are used to find the volatility effect on private foreign capital inflows (FINV).

The data for the study have been collected from the secondary source such as Handbook of Statistics in the Indian Economy, which is a publication of Reserve Bank of India (RBI) and International Financial Statistics (IFS), which is a publication of International Monetary Fund (IMF). The monthly data have been taken for the period from April 1995 to July 2006 as the unit of measure in US million Dollars. The availability of the data on all variables required in the study was from 1992 onwards. The period of study is constrained due to the unavailability of data after the liberalization period from 1991. So, the period of the study has been taken from April 1995 to July, 2006. The period of the study has taken the period after liberalization. Though, there are FDI flows into India
before liberalization, both direct flows (FDI) and portfolio flows (FPI and FII) entered the domestic financial market vastly after 1992.

**Methodology of the Study**

The study makes use of variety of econometric models to carry out the empirical analysis. At the outset, in order to show the effects of private foreign capital inflows on macroeconomic variables namely, wholesale price index, exchange rate, money supply, export, import, foreign exchange reserve, rate of interest, index of industrial production, Vector Autoregressive (VAR) method is employed. In particular, generalized impulse response function and variance decomposition models are used to examine the short-term dynamics and casual relationship between variables. To examine the effect of volatility of international oil price and international interest rate, the study makes use of regression analysis generating volatility series through Generalized Autoregressive Conditional Heteroscedasticity (GARCH 1 1) process and simple variance model generating the volatility series through ten year rolling standard deviation process. Also, to examine impact of volatility of capital flows on exchange rates, regression analysis generating volatility series through Generalized Autoregressive Conditional Heteroscedasticity (GARCH 1 1) process and simple variance model generating the volatility series through ten year rolling standard deviation process have been used. Finally to test impact of capital flows on economic growth, Engel-Granger two-step cointegration procedure (1987) and pair-wise Granger causality test (1969) are used.

**Organization of the Thesis**

The present study is organized into seven chapters including the present one. The present chapter introduces the study, gives an overview idea of the cross border capital flows, financial globalization and liberalization and spells out the scope and objectives, methodology, data sources and the period of study. The second chapter reviews some of the existing theoretical and empirical studies made on the impact and effects of international capital flows on macroeconomic variables including economic growth.
The third chapter discusses the capital flows to developing countries: recent trends and prospects. The fourth chapter deals with economic reform, capital flows and macroeconomic impact in India, which discusses some theory of capital flows. The fifth chapter brings out a detailed discussion about the tools of time series and methodology used for study.

The sixth chapter describes the different type of model used for the study and brings the empirical results. In this chapter, it also discusses the model used for measuring the volatility of capital flows and a model used for examine the effects of capital flows on macroeconomic variables and economic growth in India. The final or the seventh chapter summarizes the study and concludes and suggests some policy implication.

**Major Findings**

This study, therefore, made a modest attempt to analyze the dynamics of some major macroeconomic variables during the post-reform period in India. The main focus of this study lies in analyzing the behavior of some selected macroeconomic indicators in relation to the surge in inflows of private foreign capital in India since 1995, 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 money supply, interest rate, inflation, and exchange rate policies followed by the government of a country. Following are the major findings given below:

We review both theoretical and empirical existing literature in relation between private foreign capital inflows and economic growth. The study 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.

Theoretically we examined capital flows to developing countries, the recent trend and prospects. We found that foreign financial inflows into the developing world rose significantly. The magnitude of the surge of inflows in the 1990s was found to be similar to that in the pre-debt crises period in the late 1970s/early 1980s, in scaled terms. Total capital flows into all developing countries, both in absolute and scaled terms, rose sharply in the 1990s and 2000s compared to inflows in the 1980s, when developing economies lost access to international capital markets in the aftermath of the debt crises in Latin American economies. So, the surge in 1990s can be viewed as a recovery to the levels of capital flows prevailing prior to the debt crises of 1980s.

We theoretically examined the capital flows and their macroeconomic effect in India. The findings here refer to first objective. Since it is not possible to test it empirically, we have analyzed the trends and composition of capital inflows into India. We found that the composition of capital flows in India makes a significant both in terms of impact and smooth management. Portfolio flows are more volatile than direct investment flows and because of their short term in nature. Direct investment flows, on the other hand, are long term in nature and for that reason it is less volatile. It is significant that the distribution of capital flows between portfolio and Foreign Direct Investment (FDI) flows into India tilts distinctly towards the former in most years after liberalization. FDI does not reveal a stable trend so far. 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.

Finally, we empirically examined private foreign capital inflows and macroeconomic variables such as exchange rate, money supply, and foreign exchange reserve and interest
rates, inflation rate, export and import in India. Followings are the major empirical findings given below:

Firstly, we have examined the dynamic relationship between private foreign capital inflows with macroeconomic variables including growth. As far as the literature is concerned, it suggests the existence of dynamic relationship among all macroeconomic variables with private foreign capital inflows. However, our empirical findings strongly show that there is dynamic short and long equilibrium relationship between few macroeconomic variables like exchange rate (EXR), foreign exchange reserve (FOREX), index of industrial production (IIP) and money supply (M3) with private foreign capital inflows (FINV) during the study period since 1995:04 to 2006:07.

Secondly, we have examined the effects of volatility of international oil price and international interest rate on private foreign capital inflows. The huge number of literature suggests that the volatility of international oil price and international interest rate affect the private foreign capital inflows. However, the empirical analysis shows that there is no effect of volatility of international oil price and international interest rate on private foreign capital inflows. These results have opened up some interesting issues for policy makers, financial economist and researcher.

Thirdly, we have examined the impact of private foreign capital inflows on economic growth using pair wise cointegration test and pair wise Granger causality test. Both the test suggests short and long run equilibrium relationship between the variables like economic growth and foreign direct investment and economic growth and foreign portfolio investment and vice versa. We find private foreign capital inflows have positive and direct impact in economic growth. In other way, the sound economic growth of the country attracts more private foreign capital inflows.

Lastly, we have examined the volatility of capital flows on exchange rate. As the earlier literature and theory suggests, there is effects of capital flows volatility on exchange rate. However, empirical findings support the literature on in one way as capital flows
volatility has the effects on exchange rate only but not in nominal effective exchange rate and real effective exchange rate with export based.

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. These are the following conclusions emerge from this study.

**Some Policy Implications**

The analysis and above mentioned results have in our judgement, important implication for policy and regulation. The experience with liberalization of controls on inward capital flows in India shows close similarities with other liberalizing economies. A striking difference between in India and these economies is that magnitude of capital flows has not been very large in India, so as to cause intensive macro and micro management problems. As such the challenges faced by India, both in terms of upon important economic variables such as macro economic management, have been far less.

Portfolio capital flows are invariably short term and speculative and are often not related to economic fundamentals but rather to whims and fads prevalent in international financial markets. There are three-policy implications, which emerge from this analysis. First India should move to influence both the size and composition of capital flows. Second India should focus on strengthening they’re banking system rather than promoting financial markets. Banks can provide the surest vehicle for promoting long-term growth and industrialization. Third, since financial markets in India are here to stay, Government should try to shield the real economy from their vagaries.

Capital inflows into India are associated with real appreciation, an area where conflicting policy choices are bound to rise. A more realistic response could be the continued use of capital controls, particularly in the short inflows. There is no doubt, particularly in the
aftermath of the currency crisis that capital controls have reemerged as a self protection device to safeguard against heavy capital flow pressures. Finally, in managing capital flows, so far sterilization has been regularly used to limit the flows.

There are several possible policy responses if some of the effects of the sudden surges in the capital flows are to be neutralized. Most often, central bank intervene foreign currency markets and buy foreign currency in order to prevent a nominal exchange rate appreciation in India. The subsequent policy responses can be of two types sterilized and non-sterilized. While non-sterilized responses will allow the monetary impact to filter through the system. The build up of foreign exchange reserves creates a cushion, which is available when there is a reversal of capital flows. Sterilization has certain other consequences. A tight monetary policy might help domestic interest rates high, making the capital inflows even more attractive. Thus, it has been found in the case of some countries, which have witnessed sudden surges of capital inflows that sterilization effects have witnessed that sterilization effects have tapered of alter the first two years. The removal of trade restriction and liberalizing capital outflows are possible approached to counter balance the effects of capital flows.

The existing policies of the government are being continuously changed in favor of foreign capital in India. What it is present now is merely some of the major changes. But, thousands of other minor changes are taking place each week in some sector of the economy or the other, creating a vast network of incentives for FDIs that help it grow in both depth and extent. The pace of its growth in India, at both the Central and State levels, shows quite clearly that policy is now fully dictated by the imperialists.

The policy responses of the RBI supplement by encouraging capital outflows to reduce pressure on the rupee in the foreign exchange market and also to check declines in earnings of the exporters. If the RBI failed to intervene in the foreign exchange market, and the exchange rate regime is a pure float. From the 1995 onwards the RBI has typically absorbed about 50 % of net capital inflows into international reserve. The RBI has limited choice in sterilizing the monetary impact of capital inflows and private sector
credit contraction and the Cash Reserve Requirement (CRR) of the commercial bank. The RBI sells Government securities from its asset portfolio to soak up the excess liquidity.

**Scope for Further Research**

This study focuses on the effect of private foreign capital inflows on macroeconomic variables and economic growth in India. Many studies have been carried out on this topic, but few for developing countries including India. There is not much consensus between the studies, whether for developed or developing countries. Most of the studies contain highly ambiguous and contradictory/inconsistent theoretical and empirical results. India has also not escaped from the debate or from the ambiguity of the answers. This leaves room for one more study.

Further research is also necessary in order to examine the effect of private foreign capital inflows on macroeconomic variables as well as possible regime changes that characterize the nature of the transition process in the Indian economy.

**References**


“Not all direct foreign investment around the world represents net capital flows. Often such investments are financed in local markets.”

Martin Feldstien

“There is no broad agreement about the value of direct foreign investment, which brings not capital but also technology and training.”

Joseph Stiglitz