CHAPTER 1

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CHAPTER 1

INTRODUCTION

Developing economies pursue ambitious programs of industrialization and economic growth. This necessitates huge imports of technology, capital goods, raw materials etc., resulting in substantial foreign exchange expenditure. Foreign trade orientation of developing economies is characterized by import of capital goods and technology and export of primary products. Capital goods and technology are high value added products with inelastic demand and since their markets are characterized by monopolistic and oligopolistic features, they command high prices in the international market. On the other hand, exports of developing economies are mainly primary products such as food grains, cash crops, minerals etc. These products have elastic demand and since their markets are characterized by a high degree of competition, they command only low prices in international markets. This is a common feature of the foreign trade orientation of developing economies, except the oil exporting countries. Consequently, most developing economies spend more foreign exchange than they earn. This leads to the problem of chronic trade and current account deficits.

Therefore, an important macro economic issue, which developing economies have to manage, is that of financing their current account deficits. Current account deficits can be financed through various means such as running down of foreign exchange balances, Official Development Assistance (ODA),
commercial borrowing, multi-lateral borrowing, Foreign Direct Investment (FDI) and Foreign Portfolio Investment (FPI). Running down of foreign exchange balances requires huge quantity of foreign exchange reserves, which is not the case with developing economies. Official development assistance is no longer available in large quantities. Commercial borrowings lead to accumulation of foreign debt with its undesirable consequences. On the other hand, FDI and FPI are non-debt creating capital flows.

Even though FDI and FPI are preferred routes of current account financing these days, this was not the case in the years immediately the Second World War. The post-war era, characterized by decolonization, created a political environment which was anti-imperialistic and anti-capitalistic. Socialism, public sector and comprehensive planning were in vogue during the period. FDI and MNCs were looked upon with suspicion and resentment. The ‘East India Company complex’ was deep rooted in most developing countries which were former colonies of the imperial powers. India was no exception. Therefore, FDI was not encouraged. Indeed, very restrictive provisions in Acts like the FERA actually discouraged FDI. FPI was almost non-existent then. Thus, non-debt creating capital flows were not used for financing current account deficits.

In the absence of non-debt capital flows, developing countries in the early years of their independence relied on commercial borrowing and official development assistance to finance their current account deficits. This was the
preferred route of current account management in the first three decades following India’s independence. Commercial borrowing, though debt creating, was a reliable source of current account financing. Apart from commercial borrowing, India relied on, and substantially benefited from, ODA during the 1950s and 60s. Things started to change slightly in the 1980s and underwent a paradigm shift in the 1990s.

Collapse of communism in the former Soviet Union and Eastern Europe and the transition to market economies in countries like China and Vietnam were political events which had tremendous economic significance. The international economic environment became more market friendly. Along with the setback to Socialist economies, the phenomenal success of the market economies of South–East Asia and their emergence as ‘Asian Tigers’ created an environment favourable to private enterprise, private capital and FDI. The decline in ODA and the acceptance of the new idea that ‘trade is better than aid’ facilitated and accelerated this process.

Another factor which altered the nature of capital flows to developing countries was the excess liquidity in the developed world. Factors such as high savings rate in Japan, good demand for U.S. treasury bills by the developing countries, huge reserves of ‘petro-dollars’ in oil exporting countries etc., led to excess liquidity. But, the low interest rate and low stock market returns in the developed world forced this excess liquidity to seek more profitable investment avenues. Developing and emerging economies with high growth rates and high
levels of corporate profitability provided the right kind of investment avenues to funds from the developed world. To facilitate this change, developing countries started opening their capital markets to foreign investment. Foreign portfolio investment had arrived.

Right from the 1980s, liberalization started sweeping across the developing world. Changes in the economic policies of the two giants on the developing world – India and China – attracted worldwide attention. China embraced liberalization with the ascension to power of the pragmatic leader Deng Xiao Ping on the death of Mao Zedong in 1979. India started liberalizing her economy with sweeping economic reforms following the Balance of Payments Crisis of 1991.

The 1991 balance of payments crisis and the consequent Structural Adjustment Program led to a paradigm shift in India’s economic policy. The inward looking, import substituting economic policy based on comprehensive centralized planning and dominant public sector was replaced with an outward oriented policy emphasising market-led growth. Major reforms were introduced in all sectors and spheres of the economy. Comprehensive capital market reforms (discussed in detail in chapter 3) completely altered the very anatomy of the Indian capital market, transforming it into one of the most advanced and efficient capital markets in the world.

A major reform in the capital market was the opening of Indian capital market to Foreign Institutional Investment (hereafter FII) by Foreign Institutional
Investors (hereafter FIIs) in September 1992. The rupee was made convertible on the capital account for FIIs and foreign funds started flowing into the economy, first as trickles and later as floods. FII increased from $1634 in 1993-94 to $ 10248 in 2004-05. Foreign portfolio flows had a profound impact on the capital market in particular and the economy, in general. It boosted the country’s foreign exchange reserves and helped tide over the Balance of Payments problem; reduced interest rate (by increasing money supply), thereby, giving a fillip to aggregate demand; increased stock prices, thereby, benefiting millions of investors; encouraged private corporate investment by reducing the cost of capital; and raised the investment rate via higher level of current account deficit financing. Simultaneously, it also ushered in new macro economic challenges like managing exchange rate stability, price stability and interest rates – the so-called impossible trinity. It also threw up the new challenge of managing the ‘hot money’ capital flows.

The present study is a critical enquiry into the nature, causes and impact of FII in the Indian capital market.

1.1. Need and significance of the study

Portfolio investment by FIIs is a major economic phenomenon and a distinct financial trend of modern times. With the opening up of Indian capital market to FIIs India became a major destination for foreign portfolio flows. This marked a major shift in India’s current account deficit financing. Till the early
1990s India’s current account deficit was largely financed by debt flows and official development assistance. With the initiation of economic reforms in the 1990s, this debt creating capital flow was replaced by non-debt capital flows such as FPI and FDI. Foreign portfolio flows by FIIs played a crucial role in India’s macroeconomic stabilization in the 1990s.

FII impacts the economy through:

i. changes in foreign exchange reserves leading to change in exchange rate

ii. changes in money supply resulting in interest rate changes

iii. changes in stock price movements and thereby the cost of capital

iv. policy interventions like sterilization to maintain price stability

v. ability to sustain a higher current account deficit and thereby a higher GDP growth…etc.

Impact of Foreign Portfolio Investment by FIIs is profound and far reaching; particularly, the impact of FII on stock prices is a highly controversial issue. Scholars have extensively studied various problems relating to the capital market and FDI in India. But FII, being a recent phenomenon (a post 1992 phenomenon), has not attracted many serious studies. Particularly, the impact of FII on stock prices, i.e., whether FII is a cause or consequence of a booming stock market is a controversial issue. Since encouraging FII is regarded desirable, it is important to examine the determinants of FII. A major criticism against FII is that it can lead to capital outflows resulting in financial, currency and macroeconomic
cresses. Since FII is hot money which can be potentially volatile, it is important to enquire into the role of FIIs as destabilizing agents. It is also very important to understand the impact of FII on major macro economic aggregates like exchange rate, price level, interest rate, investment etc. These are large areas remaining seriously unexplored. The present study is an attempt to bridge this research gap.

1.2. Statement of the problem

The opening up of the Indian capital market to portfolio investment by FIIs from 1992 led to massive capital inflows into the country. While the amount of inflows was modest in the 1990s, it began to rise after 2000; and after 2003 the increase was manifold. While the amount of inflows was $18.49 billion during 1992-2000, it leapfrogged to $38.94 billion during 2000-2006. These massive capital inflows caused (or, was the consequence of) an unprecedented stock market boom, pushing the BSE SENSEX from 2932 in mid May 2003 to 14714 in February 2007. Foreign exchange reserves rose manifold from less than $1 billion in 1992 to $197 billion in May 2007. It also brought with it new challenges of macro economic management, particularly, the problem of ‘the impossible trinity’, i.e., managing stability in exchange rate, price level and interest rates.

Foreign portfolio investment by FIIs has become a controversial and debatable issue. Since FII has coincided with a stock market boom, it is debated whether FII is a cause or consequence in this relationship. Similarly, while it is evident that FII has led to a surge in foreign exchange reserves, improved
corporate governance, contributed to market efficiency and facilitated knowledge flows, it has also created the problem of ‘hot money’ volatility with its potential to cause external shocks to the economy. Similarly the low interest regime that prevailed in India during 2000-2007 contributed substantially to the high growth rate which India achieved in recent years. It can be argued that the low interest regime has been partly brought about by the increased money supply caused by FII inflows. The present study is an attempt to examine and explore these issues and problems.

1.3. Objectives of the Study

The main objectives of the study are:

i. to examine the determinants of foreign portfolio investment by FIIs.

ii. to examine the nature of relationship between FII and stock price movements; particularly, the issue ‘whether higher stock prices are the consequence or cause of FPI’.

iii. to study the impact of FPI on:

a. Balance of payments
b. Interest rates
c. Cost of capital
d. Corporate governance, knowledge flows and market efficiency

iv. to study the issue of vulnerability of emerging economies to ‘hot money’ inflows, in the context of vulnerability experiences of other countries.
1.4. Hypothesis

The study is based on the following hypothesis:

i. Foreign portfolio investment by FIIs has caused a boom in the Indian stock market as reflected in the BSE SENSEX and NSE NIFTY.

ii. FII has had a favourable impact on India’s Balance of Payments, interest rates, cost of capital, corporate governance and market efficiency.

iii. Unregulated and unbridled capital flows will lead to volatility in markets and will expose the economy to external shocks.

1.5. Data source

The study is based entirely on secondary data. Data on FII in India since the entry of FIIs in 1992 upto 2006 were obtained from the publications of the RBI, the NSE and the SEBI. Data on the stock price movements came from the RBI, the BSE and the NSE. Other data on trends and patterns of resource mobilization in Indian capital market were obtained from ‘Securities Market: A Review’, an NSE publication. Data regarding Balance of Payments, interest rates, foreign exchange reserves etc., were collected from RBI’s ‘A Handbook of Statistics on Indian Economy’, and ‘Report on Currency and Finance’.

The study uses the following analytical tools:
1.6. Methodology and Tools of Analysis

An econometric framework was developed to examine the impact of FII on stock indices such as BSE SENSEX and NSE NIFTY. The method of Ordinary Least Squares (OLS) was used to estimate the equations for stock index functions.

To test the impact of FII on BSE SENSEX, a Multiple Regression Model was developed.

To check the structural breaks in equations, the Chow Break Point Test or Chow Test is used. Details of the statistical techniques used are as follows:

1.6.1. Regression

Regression analysis is the statistical technique for the investigation of relationship between variables. It helps to predict the values of the dependent variable with respect to given values of the independent variable or variables. A simple regression analysis can show the linear relation between an independent variable \( X \) and a dependent variable \( Y \). A Multiple linear regression includes two or more independent variables in the model. A simple regression model can be written as

\[
Y_i = \beta_1 + \beta_2 X_i + u_i,
\]

where \( \beta_1 \) is constant, \( \beta_2 \) is slope and \( u \) error term. This equation can be called population regression function. Since we do not observe the population regression
function directly, we estimate it from the sample regression function. The sample regression function can be written as

$$\hat{Y}_i = \hat{\beta}_1 + \hat{\beta}_2 X_i + \hat{u}_i.$$ 

This function is equal to

$$\hat{u}_i = Y_i - \hat{Y}_i$$

In order to estimate the values for $\hat{\beta}_1$ and $\hat{\beta}_2$ we use the method of ordinary least squares (OLS). This method helps to find the best estimates for $\hat{\beta}$'s by minimizing the error sum of squares:

$$\text{Minimize } \sum \hat{u}_i^2 = \sum (Y_i - \hat{Y}_i)^2 = \sum (Y_i - \hat{\beta}_1 - \hat{\beta}_2 X_i)^2 \text{ with respect to } \hat{\beta}_1 \text{ and } \hat{\beta}_2.$$ 

Partial differentiation yields

$$\frac{\partial (\sum \hat{u}_i^2)}{\partial \hat{\beta}_1} = -2 \sum (Y_i - \hat{\beta}_1 - \hat{\beta}_2 X_i)$$

$$\frac{\partial (\sum \hat{u}_i^2)}{\partial \hat{\beta}_2} = -2 \sum (Y_i - \hat{\beta}_1 - \hat{\beta}_2 X_i)X_i$$

Setting these two equations equal to zero and rearranging terms yield the normal equations

$$\sum Y_i = n\hat{\beta}_1 + \hat{\beta}_2 \sum X_i$$

$$\sum Y_i X_i = \hat{\beta}_1 \sum X_i + \hat{\beta}_2 \sum X_i^2$$

These equations can be solved simultaneously to obtain
\[
\hat{\beta}_2 = \frac{\sum x_i y_i}{\sum x_i^2}
\]
and
\[
\hat{\beta}_1 = \bar{Y} - \hat{\beta}_2 \bar{X},
\]
where \( x_i = X_i - \bar{X} \) and \( y_i = Y_i - \bar{Y} \) (these are deviations from the mean values of \( X \) and \( Y \)).

After estimating \( \hat{\beta}_1 \) and \( \hat{\beta}_2 \), these values can be used for forecasting \( Y_i \) by plugging in the simple regression model.

### 1.6.2. Coefficient of Determination (R-square)

\( r^2 \) (two-variable case) or \( R^2 \) (multiple regression) tells us how well the sample regression line fits the data or it explains what proportion of the total variation in \( Y_i \) is explained by \( X_i \).

\[
r^2 = \frac{\sum (\hat{Y}_i - \bar{Y})^2}{\sum (Y_i - \bar{Y})^2} = \frac{ESS}{TSS}
\]
Or, alternatively, as
\[
r^2 = 1 - \frac{\sum \hat{\epsilon}_i^2}{\sum (Y_i - \bar{Y})^2} = 1 - \frac{RSS}{TSS}
\]

where ESS = explained sum of squares; RSS = residual sum of squares; and TSS = total sum of squares.

\( r^2 \) is called the Coefficient of Determination and it “measures the percentage of the total variation in \( Y \) explained by the regression model”. \( r^2 \) is a non-negative number that ranges from zero to one. Zero means no fit and an \( r \)-squared of one means a perfect fit.
1.6.3. t Test

The ratio of the coefficient estimate to its standard error is known as the t-statistic which provides us with a guide to assess the statistical significance of the relationship. This is known as a hypothesis test. With a hypothesis test we examine whether a particular finding is compatible with some stated hypothesis or not. We generally make two statements when we conduct a hypothesis test: the null hypothesis which reflects the concept of no difference or no effect, and is denoted as \( H_0 \); and the alternative hypothesis which is simply the opposite of the null statement and is denoted as \( H_1 \) (or \( H_A \)).

Very often, in the context of our regression model, we want to run the test \( H_0: \beta_2 = 0 \) against a suitably defined alternative. In general, we could specify the alternative hypothesis as a one-sided or two test, e.g., \( H_1: \beta_2 > 0 \) or \( H_1: \beta_2 < 0 \) represent one-sided tests whereas \( H_1: \beta_2 \neq 0 \) represents a two-sided test. The choice between one-sided or two-sided tests is usually made on a priori grounds (i.e. what we expect the relationship between X and Y will be prior to estimation). The general rule is:

- If a positive relationship is expected: test \( H_0: \beta_2 = 0 \) against \( H_1: \beta_2 > 0 \)
- If a negative relationship is expected: test \( H_0: \beta_2 = 0 \) against \( H_1: \beta_2 < 0 \)
- If there is no pre-conceived idea as to the direction of the relationship: test \( H_0: \beta_2 = 0 \) against \( H_1: \beta_2 \neq 0 \).
In each case acceptance of \( H_0 : \beta_2 = 0 \) implies that there is no relationship between the X and Y. Therefore, usually we want to reject \( H_0 \). In order to see whether there is a statistically significant relationship between X and Y, a rule of thumb for the 5\% significance level is to check whether the t-statistic is numerically greater than 2. If so, we can reject \( H_0 \) and conclude we have found evidence of a relationship between X and Y. In other words, \( \hat{\beta}_2 \) is significantly different from zero at the 5\% level.

**1.6.4. F-test**

Now as well as being able to interpret the individual significance of each of the explanatory variables in the equation, we might also wish to consider conducting a collective test, i.e. whether collectively all these variables are explaining a significant amount of the variation in the dependent variable. This is equivalent to testing the significance of the \( R^2 \). The test is computed as an F-statistic. For example, suppose in estimating 4 (page 147) we wish to determine the collective significance of the slope parameters, our null hypothesis is:

\[
H_0 : \beta_1 = \beta_2 = \ldots \ldots = \beta_k = 0
\]

against the alternative hypothesis that at least one of the coefficients is non-zero. The test statistic is:

\[
F = \frac{\frac{R^2}{k-1}}{\frac{1-R^2}{n-k}}
\]

5 (page 150)
where $k$ is the number of explanatory variables including the constant and $n$ is the number of observations in the sample. If the calculated $F$ statistic is greater (less) than the chosen critical $F$ value then we reject (fail to reject) the null hypothesis at the chosen level of significance.

1.7. Scope of the Study

The period of the study is 1992-2006. FIIs were allowed to invest in Indian markets from 1992 onwards. This is the rationale for the choice of the period.

FPI is for portfolio investment by FIIs in financial securities such as shares and debentures of companies and bonds issued by the government. Since there is a cap on FPI on government bonds ($2 billion), this category accounts for only a negligible proportion of FPI. Therefore, in the context of the present study, we consider FI investment in equities only.

The study is done at the national level.

1.8. Conceptual Framework

The important technical concepts used in the study are explained as follows:

1.8.1. Capital Market

Capital market is the market for long term funds, distinct from the money market, which is the market for short term funds. Capital market facilitates
resource mobilization by the corporate sector through direct issue of securities to
investors.

1.8.2. Primary Capital Market

Primary capital market is the market where new capital issues (IPOs – Initial Public Offerings) are made to the investing public.

1.8.3. Secondary Market

This is the market where issued securities are listed and traded: narrowly referred to as the stock exchange.

1.8.4. Foreign Portfolio Investment (FPI)

FPI is investment from abroad in financial securities issued in India. FPI consists of investment by FIIs in the equity and debt instruments of Indian companies. The terms FPI and FII are often used interchangeably.

1.8.5. Foreign Institutional Investors (FIIs)

FIIs are institutions such as overseas pension funds, mutual funds, investment trusts, asset management companies, institutional portfolio managers, university funds, endowment funds, charitable trusts, foundations etc. registered with the SEBI and given approval for investing in financial securities in India.
FIIs registered with the SEBI belong to two categories:

i. Regular FIIs: those required to invest at least 70% in equities

ii. 100% Debt Fund FIIs: those permitted to invest only in debt instruments.

1.8.6. Sub-accounts

Sub-accounts are the underlying funds on whose behalf the FIIs invest. The entities eligible to be registered as sub-accounts are: partnership firms, private companies, public companies, investment trusts and individuals.

1.8.7. Domestic Entity as FII

Domestic portfolio managers or domestic AMCs eligible to be registered as FIIs to manage the funds of sub-accounts are treated as domestic entities as FIIs.

1.8.8. Participatory Notes (P Ns)

P Ns are derivative instruments issued against an underlying security which permits the holder to share in the capital appreciation/income from the underlying security. P Ns are like contract notes and are issued by FIIs registered in the country to their overseas clients who may not be eligible to invest in the Indian stock market.
1.8.9. Hot Money

Hot money refers to all short term funds operating under conditions of capital account convertibility. Hot money, being sensitive to interest rate risk and exchange rate risk can flow in and flow out very quickly creating huge volatility in markets, thereby, exposing economies to external shocks.

1.8.10. Disintermediation

Disintermediation is the transfer of funds from savers to borrowers (corporates) without passing through the accounts of financial intermediaries like banks.

1.9. Limitations of the Study

The study relies exclusively on secondary data. The limitations and deficiencies of this data can also be the limitations of this study. Regarding the conclusions on the inter relationship between FII inflows and stock prices, it may be mentioned that stock prices are highly volatile and the influence of determinants of stock prices vary from period to period. Therefore, conclusions drawn about these interrelationships based on their behaviour during the study period may not have relevance for another period of time in future.

1.10. Plan of the Study

The study is planned and arranged in seven chapters.
The first chapter details introduction, need and significance of the study, statement of the problem, objectives of the study, hypothesis, data source and methodology, conceptual framework, limitations and plan of the study.

The second chapter is a review of literature.

The third chapter gives a detailed account of the history and evolution of Indian capital market with emphasis on capital market reforms, particularly the reforms relating to foreign institutional investment. It also examines the impact of reforms.

The fourth chapter gives a profile of FPI in India. It explores the determinants of FPI and its costs and benefits. It also examines the trends and patterns of FPI in India. The impact of FII on macro economic indicators such as Balance of Payments, interest rate, exchange rate, cost of capital and corporate governance is also examined in this chapter.

The fifth chapter examines the impact of FII on stock prices.

The sixth chapter examines the controversial issue of FIIs as sources of ‘hot money’, instability and vulnerability; and looks for evidences for instability in the Indian context.

The seventh chapter concludes with a summary of findings and implications for policy.