CHAPTER III

METHODOLOGY

The usefulness and importance of Foreign Direct Investment cannot be exaggerated. In the context of liberalization the role of FDI in India assumes special significance. The government has been repeatedly examining its policy options based on the experience with the FDI inflows since 1991. Chapter I provides a bird's eye view of the importance of FDI in Indian context and lays down the framework for analysing the inflows of FDI in India. To facilitate clear understanding of the role of FDI inflows, the summary of findings and conclusions of the previous studies are presented in Chapter II. This chapter focuses on the methodological aspects relating to the analysis of FDI inflows in India.

Justifications for the Study and Problem Focus

Foreign Direct Investment has come to stay in India, thanks to liberalization policy. But has the country benefited in the expected way from the policy of liberalization is a question to be answered only after assessing different facets of FDI.

Since the beginning of the 1980's, there has been an enormous rise in the FDI flows to the developing world. East Asia and Latin America are the major destinations. These economies have undertaken an aggressive policy with regard to economic liberalization, whereas other economies of Eastern Europe, Central Asia, Middle East and North
Africa, Sub-Saharan Africa and South Asia have adopted half hearted economic liberalization regime.

The prevailing trend suggests that South Asia in general and India in particular has failed to attract sufficient FDI flows. India has been lagging far behind in the global race with regard to attracting FDI flows. These trends and situations demand introspection.

Further, there is a need to examine whether the policy options formulated and adopted are in tune with the efforts to improve the flow of FDI. Added to this, it is necessary to identify the factors which warrant constant monitoring to make them function favourably to ensure the FDI flow is maintained over a period of time, if not improved. It is also essential to examine whether the FDI flows move in to the direction, which is desirable from the country's point of view. India has also created agencies to accelerate FDI. How far these agencies have succeeded in their task has to be examined, to decide about their continuance or to revamp them. Another important aspect is to analyse the problems relating to FDI, so that necessary initiatives can be taken to solve them to ensure more smooth inflow of FDI. All these call for an analytical approach to India's experience with FDI inflows since the days of liberalization.
Objectives of the Study

The overall objective of the study is to analyse the Foreign Direct Investment in India. The specific objectives are to:

- examine the pattern of FDI inflow
- determine the direction of inflow
- identify the determinants of FDI
- evaluate the government policy and its impact on the inflow of FDI
- assess the role of agencies established to improve the FDI flows into India, and
- analyse the problems relating to the inflow of FDI

Period of Study

Considering the nature of the study, the data relating to pre-liberalization and post-liberalization period has to be analyzed. Hence, the period of the study selected is 1980-81 to 2000-01.

Sources of Data

As the study is of evaluatory type, it uses only Secondary data. The sources of the data include: Publications of Reserve Bank of India bulletin, Centre for Monitoring Indian
Tools of Analysis

Both statistical and econometric analyses were carried out with the data to accomplish the objectives set for the study.

1. By analysing the total inflow of FDI, it would be possible to identify pattern of the inflow over the period. The actual data relating to total inflow of FDI was plotted in a graph over the study period and the nature of scatter was studied. Based on this, a simple linear Quadratic function of the following type was fitted to estimate the FDI flows:

\[ Y = a + bt + ct^2 \]

(where 'a' is the intercept, 'b' and 'c' are the coefficients, 't' is the time)

The actual and estimated FDI inflows were represented in a graph.

2. To analyse the FDI inflows, the actual inflow of FDI was expressed in terms of approved quantum of FDI. This was analysed using the simple linear Quadratic functional form of the type specified above. The actual FDI inflows as a percentage of approved FDI and the estimated values of the same were represented in a graph.
3. The inflow of FDI was also analysed sourcewise, i.e., the countries wherefrom they emerged. The actual inflow was converted into percentage of the total inflow of FDI for each year. Inter-year and inter-country analysis of the percentage inflow of FDI were discussed to bring to light the changing scenario over the study period. To support the understanding of the inflows of FDI sourcewise, the FDI inflows countrywise were represented in a graph.

4. The FDI inflow had gone in different directions in India. To identify the destination of the FDI inflows and to discern the pattern in their directional flow, industrywise inflow of FDI for the study period was analysed. Inter-year and inter-industry FDI inflows were analysed. This was necessitated both to identify the direction of movement in FDI inflows and also to suggest suitable policies for changing the direction, if necessary. A graphical representation of the FDI inflows destinationwise was made to clarify.

5. Determinants of FDI inflows were also identified using a multiple regression analysis. One of the important objectives of this study is to identify the determinants of FDI inflows. This would help to examine the policies relating to each one of these determinants so as to make the overall environment favourable for increased inflows of FDI into India. In this context, the following determinants were selected: Gross Domestic Product (GDP), Coal Production (CLPRDN), Number of telephone lines (TELE), Exports (EXP), Imports (IMP), Number of commercial vehicles registered (a proxy for infrastructural development) (COMMVHL), population (proxy for potential...
market size] [POP], foreign exchange reserve [EXRSR] and industrial disputes [IDIS]

The determinants included for the study were selected based on the justifications explained below

Gross Domestic Product [GDP]  GDP captures the productive capacity of an economy. It reflects both the size of the domestic market and the purchasing power of the citizens. A positive relationship between this variable and FDI would be consistent with Kindleberger, who argues that foreign investment requires a sufficiently large host country market to accommodate the increase in local supply. Bajo – Rubio and Sosvilla – Rivero [1994] find a positive long run relationship between GDP and FDI.

Coal production  This variable was selected to represent the mineral industry, which is one of the basic industries in India.

Number of telephone lines  This determinant was taken as a proxy for standard of living of the people and so included for the study.

Exports:  As the level of nation’s export increases, it has the effect of altering local labour market and driving domestic wages towards world levels. This, in turn, makes FDI less profitable as the advantage of lower wages evaporates. Based on these observations, one might hypothesize a negative relationship between exports and FDI.
There is, however, an alternative possibility, that some countries may have higher exports because of some unique access to foreign markets. If a low wage country has access to a trading group, one might expect that country to draw significant level of FDI as countries outside the trading group attempt to sell within the countries of the group, thus having positive relationship.

Imports Founded on Mundell’s 1957 work, FDI should, ultimately, flow into those countries that are importing goods from abroad. The concept of import substitution has long been a theory used to explain international capital flows. Helmberger and Schmitz [1970] as well as Dunning and Normal [1983] contended that FDI credits vertically integrated production units and therefore, increases the amount of trade. Hymer [1970, 1972], Kindleberger [1970], Vernon [1966] and Caves [1971] argued that, given the oligopolistic structure of markets and international integration, imports and the level of FDI are complementary. There is a positive relationship between imports and FDI inflows.

Infrastructure Vernon [1966] has suggested that, for production to move abroad, the host nation must provide adequate infrastructure. However, a less developed nation is likely to mean lower wages and, hence, greater profit potential. Hence, there is a positive relationship between FDI and the level of development of the country’s infrastructure. The number of commercial vehicles registered was selected as a proxy for infrastructural development. This is because, the increase in number of vehicles on
road implies that new roads are laid and existing roads are improved. As a result, all other associated developments like power, communication, etc., also take place.

Population. Population is a measure of the potential market size of the host country. A smaller population will reduce projected profit from foreign investment, as potentially low wages should be more rapidly driven to world levels. The model to be specified might enter this variable as a direct measure of population, in which case, we would expect a positive relationship between population and FDI. Culem [1988] reports a positive impact of population on foreign investment within developed countries.

Foreign exchange reserve. This was taken as one more determinant, as with liberalization the country should experience improvement in its exchange reserve as a number of new multinational corporations have entered India. To examine whether this has any impact on the FDI inflow, this determinant was also included.

Industrial Disputes. One of the fears of liberalization expressed by the trade unions was displacement of labourers. While on the one hand the multinational corporations enter India to take advantage of cheap labour, the industrial atmosphere is very much surcharged with apprehensions on the part of the domestic manufacturers. This had resulted in a number of industrial disputes. Whether the industrial disputes influenced the inflow of FDI or not, was a question to be answered and so industrial disputes was chosen as one more determinant.
With the above selected variables, the multiple regression equation fitted is given below.

\[
\text{FDI} = a + b_1 \text{GDP} + b_2 \text{CLPRDN} + b_3 \text{TELE} + b_4 \text{EXP} + b_5 \text{IMP} \\
+ b_6 \text{COMMVHL} + b_7 \text{POP} + b_8 \text{EXRSR} + b_9 \text{IDIS}
\]

In the above equation, 'a' is the intercept and \( b_1, b_2, \ldots, b_9 \) are the coefficients of the respective variable.

6. This is followed by an analysis of the impact of FDI on select macro aggregates of the Indian economy. The macro aggregates selected include employment, Gross domestic savings, Net national product, personal disposable income and enrolment in schools. Each of these aggregates were taken as a dependent variable and regressed by keeping FDI inflows as the independent variable. Simple linear regression of \( Y = a + b \cdot X \) was used.

7. To provide the necessary background to understand the issues involved in FDI inflows in India, the policies of the Government of India are discussed since liberalization.

8. The objectives and functions of Institutions that have been established in the past to design, monitor and regulate the inflows of FDI are discussed next.
9. Problems experienced and involved in the FDI inflows are discussed to bring to light the dimensions of changes required in planning and policies of FDI

Limitations of the Study

1. As the study is completely based on secondary data for a specific period, conclusions arrived at are to be placed in proper perspective while applying them in a different policy environment

2. The multivariate analysis is subjected to the usual limitations associated with such techniques