

**BRAZIL: DETERMINANTS OF FOREIGN
DIRECT INVESTMENT AND ITS IMPACT ON
GROWTH (1980-2000)**

Dissertation submitted to the Jawaharlal Nehru University
in partial fulfillment of the requirements
for the award of the Degree of

MASTER OF PHILOSOPHY

EDWIN PRABU.A



**LATIN AMERICAN DIVISION
CENTRE FOR CANADIAN, US AND LATIN AMERICAN STUDIES
SCHOOL OF INTERNATIONAL STUDIES
JAWAHARLAL NEHRU UNIVERSITY
NEW DELHI-110067**

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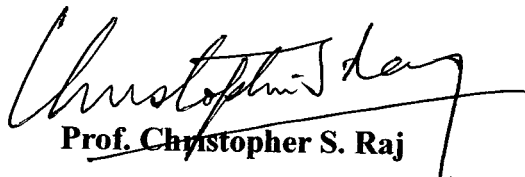
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CERTIFICATE

Certified that dissertation entitled “ **BRAZIL: DETERMINANTS OF FOREIGN DIRECT INVESTMENT AND ITS IMPACT ON GROWTH (1980-2000)**), submitted by me in partial fulfillment of the requirements for the award of the Degree of **MASTER OF PHILOSOPHY** has not been previously submitted for any other degree of this or any other university and is my own work.


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We recommend that this dissertation may be placed before the examiners for evaluation.


Prof. Christopher S. Raj
Chairperson


Prof. R.L. Chawla
Supervisor

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CHAPTER – I

INTRODUCTION

Foreign direct investment (FDI) is not a new phenomenon, but has been occurring throughout the twentieth century¹. It has been the most important vehicle of capital, technology and expertise for countries in the process of development. In the early years of the twentieth century, mostly under colonial rule, foreign investors built railroads, electric power systems and invested in plantations and mines to produce for export markets². The importance of FDI has waned after the Second World War in the wake of rising wave of nationalism. Presently, in the globalization era, the technological progress is viewed as the main determinant of the growth of the economy. Since developing countries lack innovation and development of new technology, their dependence upon diffusion of new technology from industrialized countries is quite pronounced.

FDI has been viewed as the main vehicle by which the developing country can access new technology through spillover effects. So it has been acquired importance as a critical component of growth strategy. It is argued that FDI supplements the domestic savings and provides much needed finance for the modernization of industries. Further, FDI is preferred over other sources of external finance because it is less volatile and less prone to crisis than other private inflows, since foreign investors have a long-term perspective. It is also a better source because debt financing generates fixed debt

¹ United Nations Conference on Trade and Development, *Capital Accumulation, Growth and Structural Change, Trade and Development Report* (Geneva: United Nations, 2003).

² Ibid

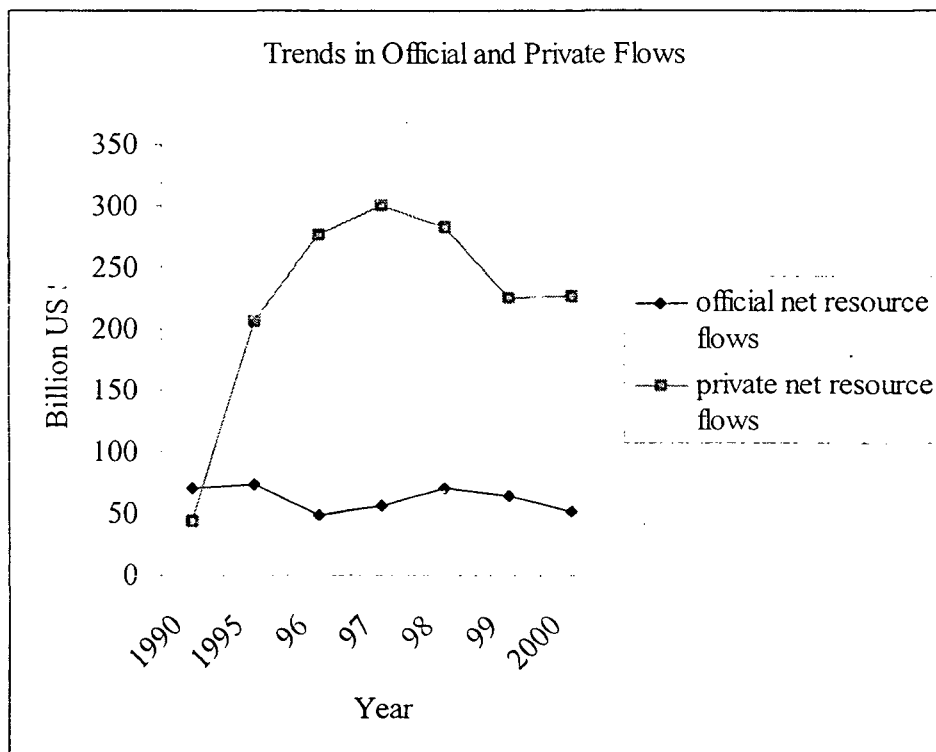
service obligations, while dividend is paid only after profits are earned in the country. It transfers knowledge to the host country through backward and forward linkages and it increases competition thereby increasing the productivity and efficiency of the economy.

FDI is defined by the International Monetary Fund “as investment that is made to acquire a lasting management interest (usually 10 percent of voting stock) in an enterprise operating in a country other than that of the investor (defined according to residency), the investors purpose being an effective voice in the management of the enterprise. It is the sum of equity capital, reinvestment of earnings, other long term capital and short term capital as shown in Balance of Payments”³. Thus FDI involves an ownership interest and effective decision making in the management of an enterprise. The growing importance of FDI is seen by its phenomenal spurt in the world economy. The global FDI inflow was only \$202.8 billion in 1990, rose more than three times to reach a volume of \$735.14 billion in 2001.

The other reason for growing importance of FDI is that the official development assistance from the developed to the developing countries has been drastically reduced in the 1990s. The graph below shows the trends in the net official flows and private net flows to all the developing countries.

³ International Monetary Fund, International Financial Statistics Yearbook (Washington D.C: 2001).

Graph 1.1



Source: World Bank, Global Development Finance: Country Tables, various issues.

The official net resource inflow includes all the official grants including technology co-operative grants and private resource flows includes all FDI and portfolio investment and other private flows. In 1980, the official net resource flows was US \$41.2 billions, which increased to US \$69.4 billions in the year 1990. But after 1990, the official net resource flows shrank drastically as shown in the graph, whereas the private net resource flows have spurred at an increasing rate. Thus, the developing

countries especially the very poor countries came to depend upon FDI inflow for their development and growth of the economy.

Brazil is the largest economy in the Latin America and alone consists of about half of the South American population and territory. It has a very favourable policy regime and provides various incentives to attract foreign direct investment. After China, Brazil is the largest recipient of FDI inflow in the developing world. In 1990, the annual FDI inflow to Brazil was US \$989 million, which rose to US \$32.8 billion in 2000.

The existing literature on determinants of FDI have focuses mainly whether the traditional variables like large domestic market, high per capita GDP, openness or the non traditional variables like human capital, low cost of production, efficiency of financial market influence the inflow of the FDI?. The recent studies on determinants of FDI have found evidence of non-traditional variables especially average years of schooling, efficiency of financial market highly influencing the inflow of FDI into the country. In this study, we attempt to study both traditional as well as non-traditional variables that influence the inflow of FDI in Brazil. This is with the objective to provide policy perspective to increase its attractiveness.

The literature on foreign direct investments impact on growth has focused mainly whether the FDI in the country is beneficial to the host country or not. Though the theoretical models have shown clearly that the FDI inflows have positive effect on host country, the analytical studies have shown mixed trends. While some studies have

shown positive impact of FDI, whereas other studies have shown no impact or negative impact of FDI on growth. The existing literature concludes that the positive impact of FDI on host country is not automatic, but depends on the institutional, political and economic aspects of the country. Thus the impact of FDI on growth is country specific and varies from country to country. In this study we also attempt to assess the impact of FDI on the economic growth on Brazilian economy through econometric models.

The Second Chapter presents an overview of the macroeconomic structure of the Brazilian economy during the period 1980-2000. It also gives an account of the foreign direct investment regime present in Brazil and analyses the trends in FDI inflow to Brazil by origin and destination of foreign investment.

The Third Chapter reviews the existing literature on determinants of FDI and its impact on growth. It analyses the various variables that may be affecting the objective of the study and provides a basis for the basic framework model used in this study.

The Fourth Chapter deals with the methodology, model and analysis of the study for determinants of FDI as well as FDI's impact on Brazilian economy. It also provides the data source used in the study. It analyses the results of the study and a modest attempt is made to provide explanation to the results.

Finally the Fifth Chapter presents the main conclusions of the study and provides various measures to be undertaken to increase the efficiency seeking inflow of FDI in Brazilian economy.

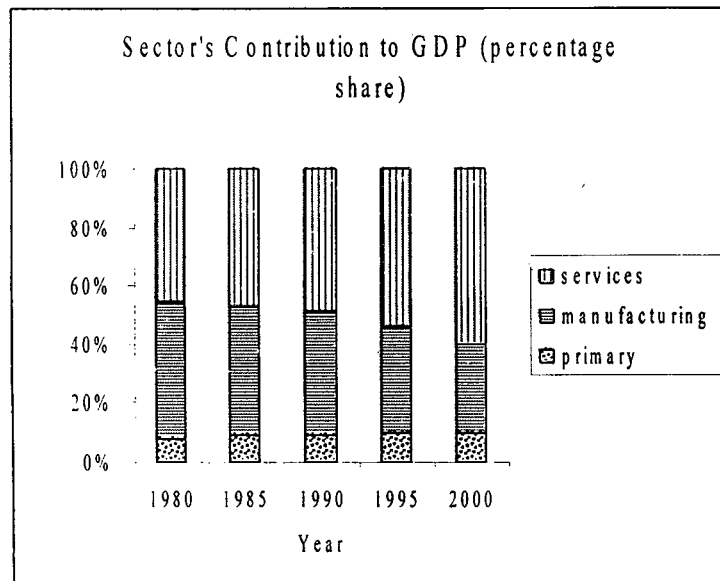
CHAPTER- II

MACROECONOMIC STRUCTURE OF THE BRAZILIAN ECONOMY

Economic Growth and Structure of the Economy

Brazil is one of the largest economies in the world. It is richly endowed with large natural resources and sizeable human capital. In the period 1980-2000, the contribution of various sectors to GDP has gone considerable change. The share of primary sector has marginally increased from 8.1% in 1980 to 10% of GDP in the year 2000. The share of manufacturing in GDP has been undergoing rapid decline over these years, while the share of services in GDP has been increasing rapidly. This is evident from the following graph.

Graph 2.1



Source: Various issues of Statistical Yearbook of Latin America and Caribbean, ECLAC

The share of manufacturing in GDP declined from 46% in 1980 to 41% in 1990 and was further reduced to 30% in the year 2000. Whereas the share of services sector increased from 46% in 1980 to 49.2% in 1990 and further rose to 60% in 2000. The increase in share of agriculture to GDP after the liberalization process is mainly due to its well-developed and advanced technology use in agriculture sector. This has resulted in Brazil becoming one of the world's largest producers and exporters of agricultural commodities in the world.

The Brazilian economy grew considerably from the mid 1960s to the beginning of the 1970s by more than 10%. However, the Brazilian economy has grown unevenly over the period of our study viz.1980-2000. This, in large part, can be attributed to adoption of inefficient macroeconomic policy model such as import substitution industrialization, as well as external shocks, and domestic fiscal problems and debt crisis. The period 1980-2000 can be divided into two major periods i.e., 1981-1991 and 1992-2000 in order to facilitate the study of macroeconomic structure of Brazil. The period 1981-1991 is generally referred as the 'long lost decade of stagnation' and the period 1991-2000, referred as the 'decade of reforms' in the Brazilian economy.

Long lost decade: 1981-1991

The Brazilian economic growth miracle was achieved in the period 1968 to 1974. In this period, the GDP growth rate increased by more than 10% per annum. During 1973-74, due to oil price shock, the oil prices rose four-fold, thereby skyrocketing the oil revenue of the OPEC countries and these countries invested their surpluses in the international banking system. While the international banking community was flooded

with Petrodollars, they were also in search of credit worthy borrowers. With stable economic growth achieved by Brazil, it could attract huge capital inflow from these lenders. Subsequent analysis, however, has shown that the increased external borrowings were not invested in the more productive resources, but spent in the populist measures and massive military expenditure⁴. Thus the external borrowings did not result in the increased export capacity of Brazil, which would have repaid the debt through earnings in foreign exchange. Due to import substitution policies of Brazil, the import of capital goods increased leading to accumulation of large current account deficits in its balance of payments. Thus with increase in external commercial borrowings and persistent current account deficits, the external debt crisis erupted in early 1980s. The external debt to GDP ratio was 28% in 1980, which increased to 47% in 1985, and had forced the authorities to devalue the currency by 25% in 1983 alone. The policy makers did try to reduce the current account deficit by restricting the import mainly through administrative procedures like delaying the issuance of import licenses and providing large subsidies to exporters⁵.

According to a study by Pinheiro et al, the firms received incentives worth 74 cents for every dollar exported of manufactured goods for the year 1981-82⁶. The tight monetary policy adopted by the US federal bank authorities, had increased its interest rate higher than that of Brazil, resulting into large outflow of capital from the latter to

⁴ United Nations Conference on Trade and Development, *Capital Accumulation, Growth and Structural Change, Trade and Development Report* (Geneva: United Nations, 2003).

⁵ Pinheiro et al, "Brazilian Economic Growth, 1900 – 2000: Lessons and Policy Implications. Were "wrong" policies, the cause of Brazil's Slowdown in Growth in the 1990s?", *Global Development Network (GDN)*, Washington, 2001.

⁶ *Ibid*

the former. This massive outflow resulted in collapse of the economy into recession and debt crisis.

The domestic economy was also weakened due to prevailing high inflation rate in Brazil. In the period 1980-93, the average inflation rate was 768% against the average annual inflation rate of 40% during 1964-80⁷. The Pinheiro study calculated that for the whole period, prices have increased by astonishing 7.7 billion times. On account of this twin problem of high external debt and high inflation rate the Brazilian economy achieved a very low growth rate. In the period 1981-93, GDP grew on an average 1.6% per annum, against a demographic expansion of 1.9% per annum, resulting in an average decline of 0.2% in per capita income⁸.

The Brazilian authorities tried to curb inflation through various domestic stabilization plans. During the period 1985-1991, there were five such plans to curb inflation. Starting from Cruzado plan in 1986, Bresser plan in 1987, Summer plan 1987 and two plans in 1990 and 1991 under Collor administration, all these plans failed to achieve their objective of curbing inflation and were also short lived. The government's inability to control inflation led to a phase of all around uncertainty in the economy and also a setback to government credibility of policy-making.

Decade of Reforms: 1992-2000

Having witnessed the East Asian miracle by early 1990s underpinned by their export-oriented strategy, the developing countries also reintroduced the outward oriented development strategy in their countries. Brazil under 'Washington Consensus'

⁷ Ibid

⁸ Ibid

doctrine started liberalizing and integrating its economy with the world economy in the 1990s. The tight monetary policy followed in the 1990s raised the interest rates significantly, which led to large inflow of portfolio investment into Brazil. These investments were used for strengthening its currency and also used for meeting the current account deficits⁹.

Although Brazil started liberalizing its economy from mid-1980s onwards but significant economic reforms were implemented from 1994 only. The important objectives of 1994 reforms was to remove distortions caused by government intervention and enhance the role of markets in the economic activity and to regain access to international capital markets in order to refinance outstanding debt and provide additional resources to finance growth¹⁰.

The Brazilian 'Real Plan' was implemented in 1994 with the objective of stabilizing the economy, controlling inflation and opening up the economy to competition to impart efficiency to its production system. The Real Plan was highly successful in reducing the inflation rate. The inflation rate i.e. consumer price index was a record 2489% in 1993, but was gradually reduced to single digit figure, having reduced to only 2.6% in 1998¹¹.

Brazil having implemented the first generational reforms like trade reform, industrial and agricultural reforms also started implementing second generational reforms such as social security reform, administrative reform of the public sector and tax policy reform. Despite these reforms, Brazilian economy in the 1990s has not

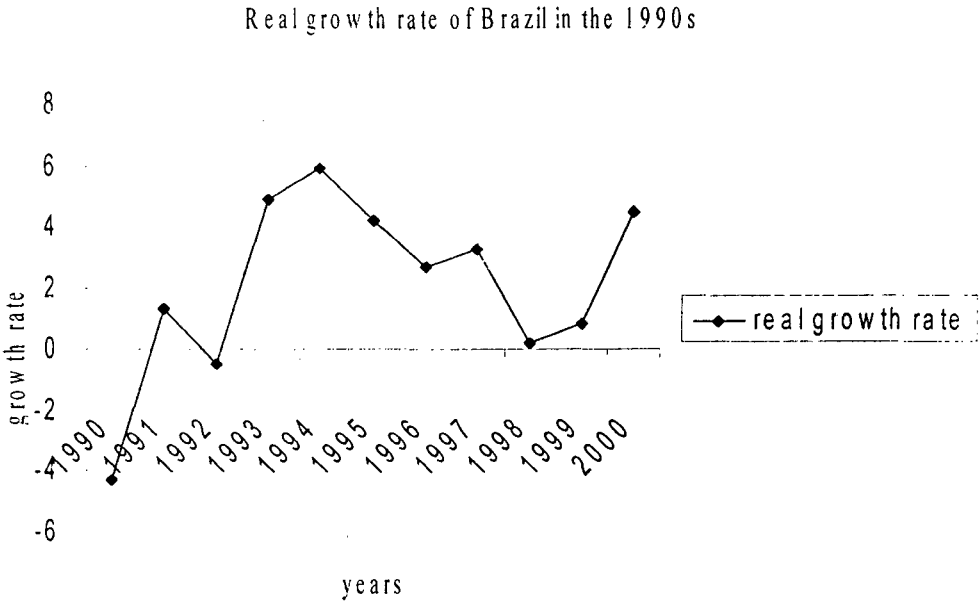
⁹ Renato Baumann, "Brazil in the 1990s: An Economy in Transition" in Baumann ed. *Brazil in the 1990s: An Economy in Transition*, (Hampshire: Palgrave Publications, 2002), p.10.

¹⁰ UNCTAD, n.4

¹¹ Renato Baumann, n.9, p.6

shown smooth and balanced growth. This was mainly due to external shocks in the world economy and restrictive monetary policy followed by Brazil to tackle fiscal problems. Though the average annual growth rate remained higher than that of the period 1980-1991, still it was very low compared to other developing countries growth rate. The following graph shows Brazil's real growth rate achieved during the period 1990 to 2000. The growth rate is so uneven that we could not find any consistence in its growth path. To see the effect of trade reform on the growth rate, for example empirical evidence show that trade liberalization has aggravated the external vulnerability of the Brazilian economy.

Graph 2.2



Source: United Nations Statistical Database.

Under the trade reform, for instance, the average tariffs were reduced from 54.9% in 1987 to 13.5% in 1993. All major non-tariff barriers (NTB) were eliminated; the various incentives given to exports were scaled down but all import restrictions were eliminated. As the available data show, the exports grew by just 2.3% per annum in the period 1994-98, whereas the imports grew by 20.4% per annum during the same period¹². This resulted in the drastic increase in the current account deficit, which ofcourse had been contained with great difficulty after the mid-1980 crisis. Due to an increase in current account deficit, the external debt as a percentage of GDP, which was around 47% in 1985, shrank to 28% in 1990, but increased again to 39.7% of GDP by 2000. Brazil is the largest external debtor country in the developing world and has been classified its debt as severe by the World Bank.

FDI Regime in Brazil

In the 1990s, Brazil has given considerable importance to the role of FDI in contributing to the development and growth of its domestic economy. In this respect, the Brazilian government lifted many restrictions and provided a favourable policy stance to encourage foreign investors. The 1962 Foreign Capital Law and subsequent amendments have continued to govern FDI inflow in the country. The Brazilian Congress approved constitutional amendments in 1995, which eliminated the distinction between foreign and national capital i.e., it provided national treatment to foreign investors.

¹² Pinheiro, n.5, p.24

Brazil opened its economy to foreign capital i.e. both portfolio investment and foreign direct investment (FDI) in a number of sectors such as distribution of gas, mineral exploitation and extraction including hydrocarbons, river and lake transport, telecommunication services, reinsurance operations which were previously closed to foreign investors. Only very few sectors like airport and airport services, fisheries sector, health care etc are restricted to foreign capital.

FDI was also allowed in the privatization process in order to improve the public finances and to improve the quality, coverage and efficient administration of public utilities. The government also simplified the operating procedures in order to remove the bureaucratic obstacles to foreign investment. Presently the foreign investors have to notify only to the Central Bank Foreign Capital Registration and Supervision Office (FIRCE) through the electronic declaratory register (RDE) within 30 days of bringing capital into the country. The registration is also required for remittance of profits and dividends or to repatriate invested capital. In order to further facilitate the FDI inflow, Brazil has signed Bilateral Investment Agreements (BIA) with 14 countries¹³. It has also become a member of Multilateral Investment Guarantee Agency (MIGA) in 1992; and in 1997, Brazil became an observer in the international committee on foreign investment and multinational enterprises of the OECD.

Brazil has also been taking active part in regional integration process and with Argentina, Paraguay and Uruguay has created MERCOSUR by the Treaty of Asuncion

¹³ World Trade Organization, Trade Policy Review of Brazil (New York, United Nations, 2000).

in 1991. Moreover, the state governments provide various incentives to attract FDI into their respective region. Marked by severe fiscal constraints in the 1990s, the state governments started offering various incentives including tax holidays to firms willing to set up business in territories in order to boost their tax revenues and help create jobs. The large trade deficit faced by Brazil has led the authorities to provide special incentives to investment in automobile industry with the expectation that its exports will bridge the trade deficit gap¹⁴.

Trends in Brazilian FDI inflow

Historically, Brazil has favoured foreign capital into its domestic productive sectors in order to push its GDP growth rate. Ever since the 1950s till 1980s, Brazil has had the highest participation of the foreign capital in its productive system among the developing countries. In the period 1976 – 80, Brazil accounted for 6.3% of the world's total FDI inflows¹⁵. But in the 1980s, Brazil faced unprecedented debt crisis and foreign capital inflows stumbled and the country had to maintain trade surpluses to meet its debt service obligations. Hence, Brazil's the share of FDI inflow to total world FDI flow declined to 1.2% during 1986 -90.

¹⁴ ECLAC, Foreign investment in Latin America and the Caribbean 2004, (Santiago, United Nations).

¹⁵ Renato Baumann , n.9, p. 32

Table 2.1

Brazil's Share in World FDI Inflows

Years	Share
1970-75	5.1%
1976-80	6.3%
1981-85	4.4%
1986-90	1.2%
1991-95	1.3%
1996	2.7%

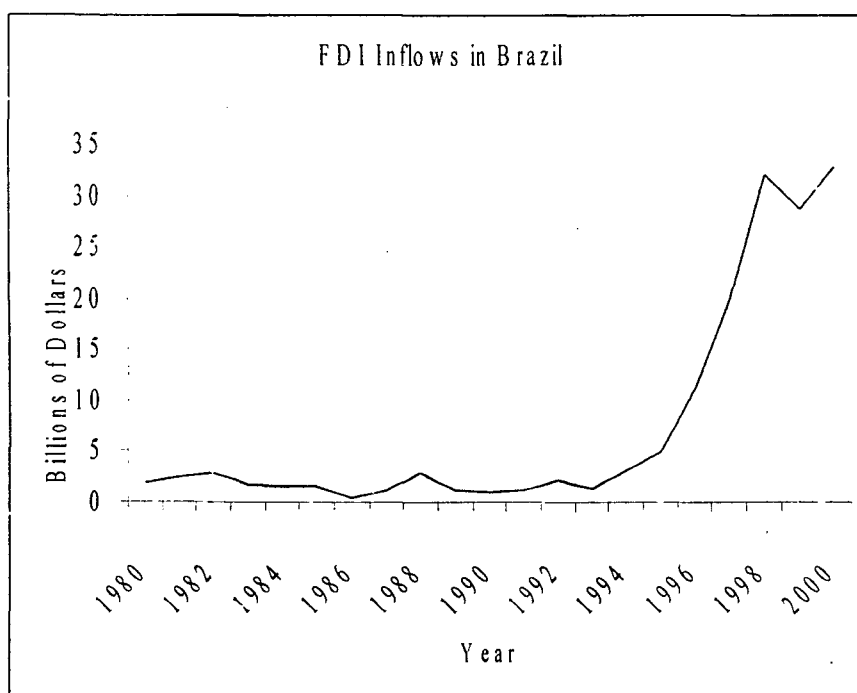
Source: Baumann, Renato., "Brazil in the 1990s: An Economy in Transition" in Baumann, ed., *Brazil in the 1990s: An Economy in Transition*, (Hampshire: Palgrave Publications, 2002).

After the liberalization of the economy, the FDI started flowing to Brazil, which improved the share of FDI to total world FDI to 1.3% in 1991-95 and 2.7% in 1996. But in the period 1990-1995, the inflow of FDI was very minimal, whereas the portfolio investment went up significantly. Brazil's liberalization policy coincided with the global acceleration of FDI inflows, so FDI inflows to Brazil were influenced by policy measures or influenced by the global phenomena seems to be difficult to distinguish. From the following graph, we could conclude that only after the privatization process in 1995, there was large inflow to Brazil, though the global acceleration of FDI inflow was evident from the early 1990s.

During the year 1991-1993, the portfolio investment flows increased from less than US\$ 800 millions till 1992 but witnessed staggering rise to reach US\$ 7 billions in

1993¹⁶. With the recovery of Brazilian economy, the large privatization of public sector and favourable policy measures provided by 1995 Constitutional amendments influenced the large inflow of foreign direct investment in Brazil. In the period 1995-2000, the FDI inflow has increased dramatically more than the portfolio investment. During this period, the major stimulation of FDI inflow is mainly due to privatization process started in the 1995. Apart from privatization process, the other factors such as large internal market, better access to other foreign markets like MERCOSUR and improved stability of the economy also influenced the large flow of FDI into the country. The following graph shows the annual increase of FDI inflow in the Brazilian economy.

Graph 2.3



Source: IMF, International Financial Statistics Yearbook 2001

¹⁶ Renato Baumann, n.9, p. 9-10.

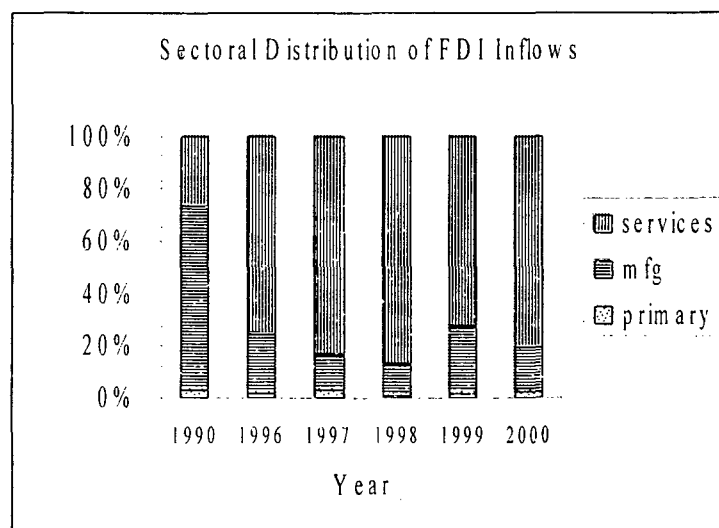
From the graph, we can see that from the 1980 to 1994 period, the FDI inflow was nearly stagnant accounting for less than US\$ 3 billions per annum. During the period 1994 to 1996, the FDI inflow increased to some extent but in the period 1996 to 2000 it increased dramatically and touched an average of nearly US\$ 32 billions per annum.

Sector-wise Distribution of FDI

FDI inflow played an important role in increasing the growth potential of various sectors in the Brazilian economy. Further it helped in financing large current account deficit. FDI inflows to various sectors have also shown changes after 1995. Before 1995, the largest share of FDI inflows went mainly to the manufacturing sector owing to Brazil's large potential market. In the year 1990, the primary sector accounted for 3.14%, the manufacturing accounted for 68.58% and the services sector accounted for only 26.29% of the total FDI flows into the country.

However during 1996 – 2000, the manufacturing share of FDI inflow declined and the share of services sector increased dramatically. The services sector in the period 1996 – 2000 absorbed an average of 80% of FDI inflows, while manufacturing received just 18% of total FDI flows into Brazil. The following bar diagram shows the sector-wise distribution of FDI inflow into Brazil.

Graph 2.4



Source: WTO, *Trade Policy Review of Brazil*, Various issues.

Within the services sector, business services accounted for the large share of FDI inflow with 20.3%, followed by telecom 18%, electricity, gas and water 15% and financial intermediaries 13.6% during the period 1996-2000¹⁷. In the manufacturing sector, the FDI inflow went to all sub sectors, accounting for small percentage share by each. By far the largest inflow was witnessed in motor vehicles, constituting, 3.9% of total FDI inflow into manufacturing.

The increasing share of services in the total FDI inflows is mainly attributed to the privatization of large public utilities like telecommunications, water services and opening up of various service sectors to foreign investment. The increase in the FDI inflow to motor vehicles in the manufacturing sector can be attributed to Brazil-

¹⁷ WTO, n.13

Argentina agreement on shared automotive regime under the MERCOSUR market agreement¹⁸.

Origin of FDI

A large share of FDI inflow in Brazil is accounted by the European Union members whose share has increased from 40.3% in 1995 to 47.7% in 1999. The contribution of USA and Canada has remained the same over the period but the relative contribution of Asia and other countries have declined sharply. Table 2.2 represents the FDI stocks by source of the continent.

Table 2.2

Share of FDI Stocks to Brazil by Continents

Source	1995	1999
Europe	40.3%	47.7%
US& Canada	29.8%	28.1%
Other Americas	14%	15.9%
Other countries	9.7%	4.9%
Asia	6.3%	3.4%

Source: WTO, Trade Policy Review of Brazil 2000.

Country wise origin of FDI inflow into Brazil has undergone considerable change after 1995. In 1991, USA was the major investor in Brazil, with its share of 28.9% of total FDI flows. The industrial countries of Europe also heavily invested in Brazil

¹⁸ ECLAC, n.14

especially Germany, United Kingdom and the Asian countries, particularly Japan also invested heavily in Brazil in the pre-1990 period. But the traditional investors in the post 1995 lost their importance as the major investors in Brazil except USA and France. The following table provides the origin of FDI flows and stocks into Brazil for the period 1991 to 2000.

Table 2.3

FDI Flows and Stocks by Major Investing Countries In Brazil (% Share)

Countries	FDI stock			FDI flow
	1991	1995	2000	1996-2000
USA	28.9	26	23.8	24.4
Germany	14.3	14	5	1.8
Spain	0.4	0.6	11.9	17.2
France	5	4.9	6.7	8.4
Netherlands	2.48	3.7	10.7	9.2
Portugal	-	0.3	4.4	6.4
United Kingdom	7.16	4.5	1.4	1.8
Switzerland	8.18	6.8	2.2	1.1
Japan	9.8	6.4	2.4	1.6

Source: WTO, Trade Policy Review of Brazil, Various issues.

In 2000, still USA remained the largest investor in Brazil accounting for more than 23%, but its share of total FDI has been reduced moderately from its peak of 29% in 1991. During 1996-2000 the European countries especially Spain, Netherlands, Portugal emerged prominent investors in Brazil. Particularly, Spain has increased its FDI share from 0.6% in 1995 to 11.9% in 2000. FDI from Latin America and Caribbean countries accounted for only around 15% of the total FDI share even though these countries have had more preferences on account of various regional agreements. Main investors in Brazil have been Argentina, Chile and Mexico respectively. Unlike multinational corporations, these regional investors could not integrate the regionalization as a part of their corporate strategies.

The destination of FDI inflow to the Brazilian economy has shown wide regional disparities. The foreign investment predominantly went to southern and central western regions of the country, but very low volume of FDI inflow was accounted by north and northeast regions. This shows that even the huge incentives provided by state governments have not influenced the investment decisions to invest in less developed regions.

Further the foreign firms have not invested in all the sectors but have concentrated mainly in six major sectors. These are telecommunications, automobile industries, electricity, food and beverages, petroleum and natural gas and retail commerce. Many of these firms are market-seeking firms in manufacturing or services, or resource seeking industries. However in the late 1990s, the sluggishness of domestic market along with the increased competition from imports forced foreign manufactures to look

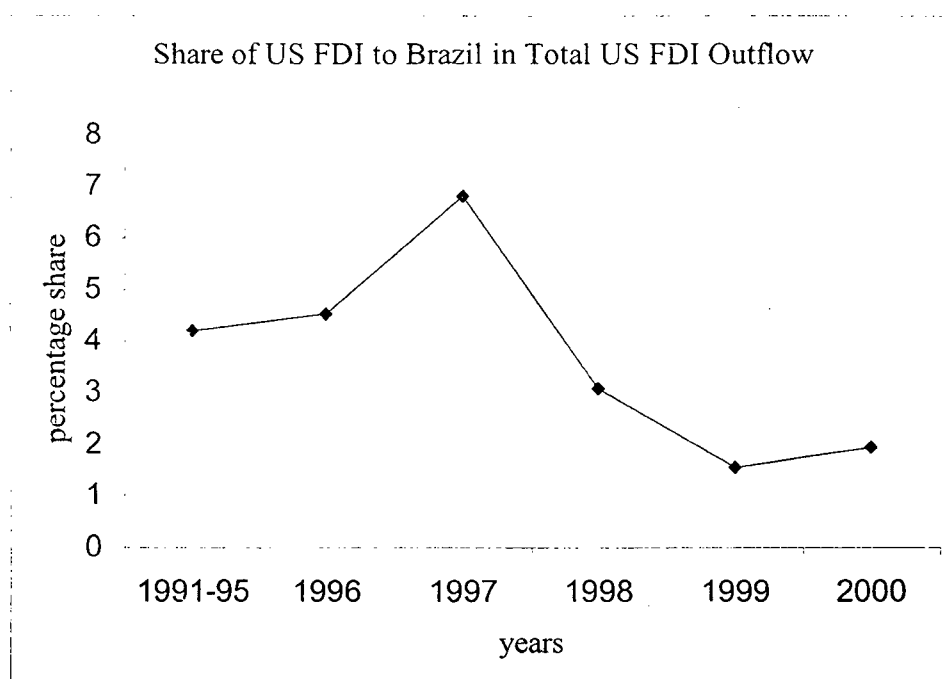


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for export markets and to modernize the industries¹⁹. The expansion of market through agreement on MERCOSUR has also influenced this trend especially in the automobile, electrical and electronic goods.

Relative Attractiveness of Brazil to Foreign Direct Investment from US and European Countries

Graph 2.5



Source: OECD, *International Direct Investment Statistics Yearbook: 1991-2002*, 2003.

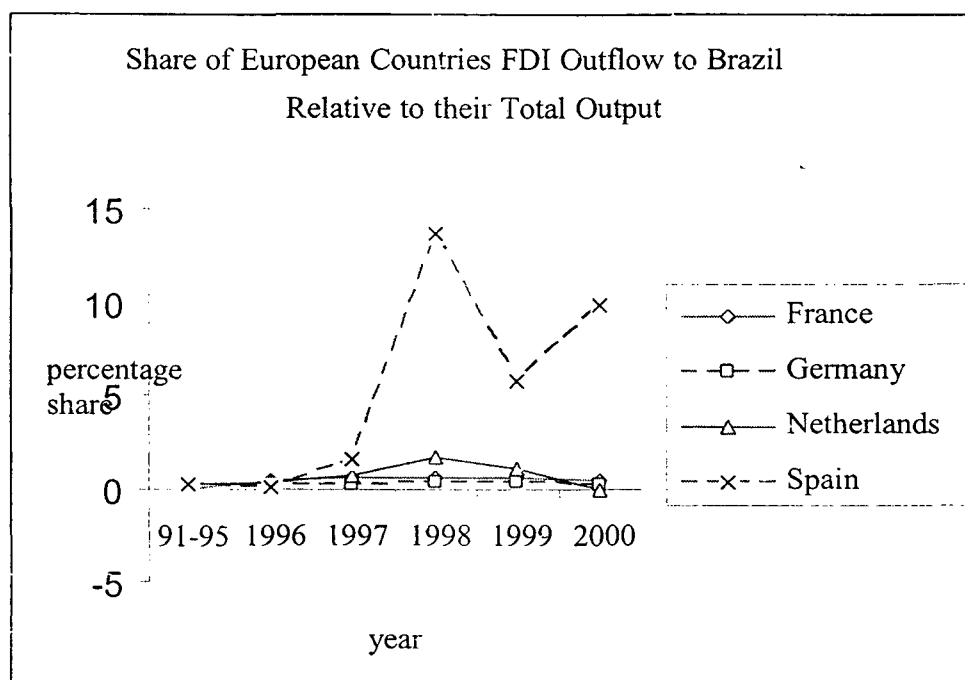
Though FDI from US is highest in Brazil, with 25% of FDI flow for the period 1996-2000, we wanted to examine Brazil's relative attractiveness to US foreign investors. For this, we plotted the graph for the share of US outward FDI flow to Brazil

¹⁹ ECLAC, n.14, p.12

to its total FDI outflow to all countries. Graph 2.5 shows this trend. From the graph, we could see that the share of FDI outflow from US increased from 1995 and peaked at 1997. In 1997, 9% of total US FDI outflow was accounted by Brazil. But after that the share has decreased steadily till 1999 to reach a low level of 1% share of US FDI outflow. However, in 2000, the share marginally increased to 2% of US FDI outflow. No doubt, US multinationals possess the high technology, good quality and superior management, which is likely to impact more favourably the growth of the Brazilian economy. Brazil is losing its attractiveness, as is shown by the graph, may not be getting efficient seeking investment or quality FDI from developed countries.

We also analysed Brazil's share of FDI outflow from the major European countries to their total outflows. The following graph 2.6 depicts this trend.

Graph 2.6



Source: OECD, *International Direct Investment Statistics Yearbook: 1991-2002*, 2003.

We plotted the share of FDI outflow to Brazil to that of total FDI outflow for the countries of Spain, Germany, France and Netherlands. Except Spain, all other countries share of FDI outflow to Brazil to their total FDI outflow was less than 1%. Germany and France share for the period 1991-2000 was nearly constant. Netherlands share increased from less than 0.5% in 1995 to reach 2%, but subsequently decreased to less than 1% in the year 2000. Only Spain has shown an increasing share of its FDI outflow coming to Brazil, from less than 0.5% share in 1990-1995, rising to more than 10% of its share of total FDI outflow.

This analysis is consistent with the origin of FDI to Brazil. Though Brazil is the second largest among developing countries in attracting the foreign direct investment. Its relative attractiveness of FDI from the large industrial countries is declining, as these provide the much-needed high technology and managerial expertise to Brazil.

In sum, the liberalization process has helped Brazil to diversify its resources of FDI inflow apart from traditional investors to new countries such as Spain, Netherlands, and Portugal. Of late, these countries have become important sources of FDI to Brazil. But the declining share of FDI outflow from developed countries to Brazil in their total outflows shows that Brazil's relative attractiveness is declining. Nonetheless, the Brazilian government should promote more FDI from the developed countries, increasing its attractiveness by providing highly skilled labour through education, low operational cost through removing all bureaucratic delays and good infrastructural facilities.

CHAPTER – III

Exploratory Survey of Literature on Foreign Direct Investment

Host Country Determinants of FDI

During the 1990s, foreign direct investment as a major vehicle of growth in the host country has gained momentum. So the policymakers in the developing countries were very much interested in various measures to facilitate the increase in the flow of FDI into their countries. A number of studies on determinants of FDI have thrown light on the various explanatory variables that might influence the foreign investors to invest in a particular country. Also the policymakers can influence these variables in such a way that they facilitate the inflow of FDI.

According to Dunning, foreign direct investment (FDI) is undertaken by the investors when the following three factors exist in the country²⁰. The ownership specific advantages like proprietary technology of a firm, which can compensate for the cost of establishing production facilities in the foreign country; the country should have location advantages such as lower cost of resources, large markets and well-developed infrastructure and, internalization of the firm through FDI, thereby exploiting both ownership specific and location advantages rather than through arm's length transactions.

In short, the owner specific and internalization conditions are firm specific determinants whereas location specific can be influenced directly by the government

²⁰ United Nations Conference on Trade And Development, *Trends and Determinants of Foreign Direct Investment, World Investment Report* (Geneva: United Nations, 1998).

in order to attract FDI. Thus the major determinants of FDI can be categorized into policy framework, economic determinants and business facilitation²¹.

- **Policy Framework for FDI**

The investment is influenced by the socio-economic and political stability of the country. The policy framework such as entry restriction in the sectors, ownership controls and unfavorable treatment relative to domestic firms also affect the decisions of the foreign investors. Macroeconomic policies like trade policy, privatization policy, tax policy regarding entry and operations also affect the decisions of the investors. FDI inflows also might be influenced by the various bilateral, regional and multilateral agreements related to the treatment and protection of FDI.

- **Economic Determinants**

Economic determinants can be classified into three ways, depending upon investors' perceptions. These are market-seeking FDI, resource seeking FDI and efficiency seeking FDI. In market seeking FDI, the investment decisions are mainly based on the large market size, per-capita income, and access to regional & global markets. In resource seeking FDI, the investors are influenced by the availability of raw materials, low cost labour and the good infrastructure facilities. The efficiency seeking FDI is influenced by the productivity of labour, other input costs such as transport cost as well as membership of the country in the regional groupings, so as to establish regional corporate networks.

²¹ Ibid

- **Business Facilitation**

Mostly, the investment decisions are influenced by the investment promotion measures of the host government, incentives available to the investors, administrative efficiency and social environment. A particular government can influence the decisions of the foreign investors to invest in its country by changing the incentives and other promotional measures offered by it. The investment incentives have become more important determinant of FDI in the globalization process in the recent years.

Investment Incentives

FDI as a source of financing economic development has led to serious competition among the competing host countries. Majority of the countries have liberalized their laws, rules and regulations and have generally given similar national treatment to the foreign investors. For instance, tax incentives have become an important policy to attract FDI for speedier development. Further, the countries offer various kinds of incentives such as tax holiday, accelerated depreciation, investment allowance, grants, and subsidized loans. Also, the developing countries give financial incentives such as grants, loan guarantees to attract FDI. Generally, it has been viewed that the developed countries give more financial incentives and the developing countries give more fiscal incentives, since the latter cannot afford to provide financial incentives.

The role of tax incentives in attracting FDI has shown mixed results. Available studies show that FDI is primarily influenced by the fundamental characteristics of the economy such as growth rate, market size, access to raw materials and availability of skilled labour in the host country; and incentives play a secondary role. Once the

foreign investors have chosen certain countries on the basis of their key determinants, incentives can only play a decisive role. Higher the level of incentives offered by a country, the more the probability that it will be selected for foreign investment. This is truer in the case of countries of the same region, which have similar economic fundamentals. It has been further found that incentives also play a major factor in attracting FDI where the investments are footloose and export-oriented.

Brazil also provides various incentives to attract FDI in its economy. It provides tax holidays, lower tax rates, investment allowance, duty exemption and deduction for qualified expenses for various FDI projects. The economic rationale behind incentives is to correct the failure of markets to reflect the wider benefits arising from externalities in production. The social benefits, which accrue due to foreign investment, are development of skilled labour, diffusion of technical knowledge and learning effects. The objectives for offering incentives include, inter alia, development of the underdeveloped regions by giving foreign investors special incentives to invest in a particular region; employing tax incentives to promote specific sectors, which are considered crucial for development. Many countries also give incentives generally for export-oriented activities, which comprise vocational training and transfer of technology to the local industries.

Review of Empirical Studies on Determinants of FDI

Traditionally, the empirical studies have used the market related variables like Gross Domestic Product (GDP), GDP per capita, GDP growth rate, population, administrative bottlenecks, entry restrictions and risk factors to show the determinants

of the FDI. However, with the rapid increase in globalization, the factors influencing FDI have changed. The lowering of trade barriers and uniform standards across the country under the WTO regime has reduced the importance of the market size of the economy. Presently, MNCs look for integrated international production systems, which would utilize regional or global economies of scale i.e., efficiency seeking FDI.

Further in the new era, the variables like complementary factors of production (these denote the availability of local inputs for internationally competitive production in host countries), educational skills, cost factors (these relate to the level of taxes, labour market regulations and the leverage of trade unions), restrictions on foreign trade, openness, post entry restrictions, and technology related regulations of non-traditional factors are considered as more important determinant of FDI²². However, the studies have shown that the importance of traditional factors have declined but still relevant in affecting the flow of FDI.

The study by Nunnenkamp on the determinants of FDI for the 28 developing countries has shown that the traditional market related determinants are still dominant in affecting the FDI inflow²³. The study provides little support for the non-traditional variables like, cost factor, complementary factors of production, and restrictions on foreign trade affecting the flow of FDI. However, the importance of human capital captured by the years of schooling has a positive and significant impact on the FDI

²² Nunnenkamp P., "Determinants of Foreign Direct Investment in Developing Countries: Has Globalization Changed the Rules of the Game?", *Kiel Working paper No.1122*, Kiel Institute of World Economics, 2002.

²³ Ibid

inflow. The variables like cost factors and restrictions on foreign trade have a negative influence on FDI inflow.

Jensen argues that democracy has a positive effect on FDI than other autocratic form of governments along with other determinants²⁴. MNCs investing abroad have high political risks in the sense that once invested, disinvesting the physical assets is costly. In case of government's change of policy after the investment is made, it might lead to reduction in profits for MNCs. Though it is argued in the literature that authoritarian regimes attract more FDI, as they are able to suppress the wage levels, the author provides counter argument that its positive effects of reducing political risks compensate this negative point in case of democracy. In a democracy, veto players like chamber of legislature, Supreme Court, separation of legislative and executive branches of the government or the federal actors make policy reversal difficult, thus reducing the political risks faced by the MNCs. Also democratic leaders may also suffer electoral costs in case of policy reversals.

Singh and Jun in their study on determinants of FDI have found that the socio political instability in the country has a negative impact on foreign investment²⁵. Further, they also found that the exports of the country have also strong influences on the FDI inflows in the country. Noorbaksh et al (2001)²⁶ in their study has also found that the human capital is the significant determinant of foreign direct investment (FDI) in the developing countries.

²⁴ Nathan M. Jensen, "Democratic Governance and Multinational Corporations: Political Regimes and Inflows of Foreign Direct Investment", *International Organization*, vol.57, Summer 2003.

²⁵ Harinder Singh and Kwang W. Jun, "Some New Evidence on Determinants of Foreign Direct Investment in Developing Countries", *World Bank Policy Research Working Paper 1531*, World Bank, 1995.

²⁶ Noorbaksh et al, "Human Capital and FDI Flows into Developing Countries: New Empirical Evidence", *World development*, vol.29, 2001.

Economic Commission for Latin America and Caribbean (ECLAC) in their study on foreign investment in Latin America and Caribbean have analysed the foreign investment behaviour of multinational companies²⁷. They have classified mainly three types of motives of the investors to invest in the region i.e., natural resource seeking investment, local market seeking investment, efficiency seeking investment and technology asset seeking investment.

Table 3.1

Latin America and Caribbean: The Strategies of Transnational Corporations

Sector	Natural resource seeking	Local market seeking (national or regional)	Efficiency seeking (to capture export market)
Goods	<i>Petroleum:</i> Andean Community, Argentina, Trinidad & Tobago <i>Mining:</i> Chile, Argentina and Andean Community	<i>Automotive:</i> MERCOSUR <i>Chemical:</i> Brazil <i>Food and Beverages:</i> Brazil, Argentina, Mexico <i>Tobacco:</i> Brazil, Argentina, Mexico	<i>Automotive:</i> Mexico <i>Apparel:</i> Mexico Caribbean basin <i>Electronics:</i> Mexico, Caribbean basin
Services	<i>Tourism:</i> Mexico, Caribbean basin	<i>Finance:</i> Mexico, Chile, Argentina, Venezuela, Colombia, Peru, Brazil <i>Telecommunications:</i> Brazil, Chile, Argentina, Venezuela, Peru <i>Retail Trade:</i> Brazil, Argentina, Mexico <i>Electrical energy:</i> Brazil, Chile, Argentina, Colombia, Central America <i>Gas distribution:</i> Chile, Argentina, Colombia, Bolivia	<i>Business service:</i> Costa Rica.

Source: ECLAC: *Foreign investment in Latin America and Caribbean*, 2003.

²⁷ This section draws heavily from the study of ECLAC, *Foreign investment in Latin America and Caribbean*, (Santiago, United Nations, 2003).

In Mexico and the Caribbean basin, the most of FDI comes for efficiency seeking essentially to exploit low cost and large-scale production sites near major markets for the labour-intensive aspects of their production processes. The Multi National Companies (MNCs) set up export platforms in this sub-region as part of their regional or international systems of integrated production especially in the sectors such as the automotive and electronics industries, or low technology activities, such as apparel.

Mexico offers preferential access to the North American market through the North American Free Trade Agreement (NAFTA), while many Caribbean countries have special access to the United States market by way of the United States-Caribbean Basin Trade Partnership Act (CBTPA). As a result, Mexico and the Caribbean basin have witnessed a dramatic improvement in their international competitiveness as it relates to their participation as sources of the motor vehicles, electronics and apparel imported by the United States.

In South America, FDI inflow is primarily influenced by MNCs, which seeks to exploit natural resources in the region or to capture the huge domestic market in the host country. The local market seeking MNCs is most evident among European companies mainly in service sectors such as telecommunications, energy infrastructure and finance, especially in the MERCOSUR countries and Chile. The deregulation and liberalization of these sectors, coupled with broad privatization programmes in the MERCOSUR and Chile have been the key factors driving FDI flows in this region. Though the investment in services and infrastructure does not facilitate efficiency directly but may indirectly facilitate export activity by reducing

the cost of transportation and communication. The natural resource seeking FDI has been mainly centered in the Andean Community, Chile and Argentina, which possess high-quality natural resources especially petroleum, natural gas, copper and gold, along with facilitating regulatory frameworks.

Foreign Direct Investment (FDI) and its Impact on Growth:

The growth rate of the economy can be raised either by increase in the inputs i.e., capital or by increase in productivity or by both. The other important sources of growth are natural resources, human capital and the short run fluctuations in the inputs such as monsoons, immigration of skilful labour in the country.

The neoclassical growth theories mainly Solow model focuses on the capital accumulation and its link to savings decisions to explain the growth of the economy. In this model, the long run growth rate is determined by the rate of technical progress and growth rate of population, which are assumed to be exogenous in the growth model. So in this framework, the role of foreign direct investment is only to increase the capital available in the economy, thereby affecting the output growth in the short run. However the foreign direct investment will not affect the long run growth rate due to its assumption of diminishing returns to scale (DRS) of capital and the economy will converge to its steady state equilibrium. Thus this model neglects the FDI impact on the economy due to improvement in technology facilitated by the technological spillovers in the host economy. Another shortcoming of the neoclassical

model in terms of FDI is that the government policies promoting and facilitating FDI will have impact only in the short run rather than in the long run²⁸.

The Endogenous growth theories developed in the latter half of eighties mainly by Romer, Lucas, have successfully rectified the shortcoming of the neoclassical model. The model successfully explains endogenously the impact of technological progress on the long run growth rate²⁹. The model also incorporates the role played by the policy actions of the government in affecting the long run growth rate. The endogenous model incorporates human capital, Research and Development (R&D) and imperfect competition into the growth framework³⁰.

Thus, the foreign direct investment can be incorporated into the endogenous growth model as one of the variables explaining the long run growth rate. In this model, the FDI impacts on long run growth rate both directly and indirectly, i.e., directly increasing the capital stock and indirectly by enhancing the technology efficiency through technological spillovers. FDI may also affect the growth by increasing the employment; incentives for schooling or other investments in human capital such as expected higher future earnings associated with the training³¹.

Foreign direct investment is assumed to be one of the major channels in which the developing and least developing countries can access the advanced technologies. The most important benefit of FDI to the host countries is the transfer of technology from the foreign firms to the local enterprises. The technological transfer takes place

²⁸Luiz R Demello, "Foreign Direct Investment in Developing countries and Growth: A Selective Survey", *Journal of Development Studies*, vol. 34, no.1, 1997.

²⁹ Robert J.Barro, *Determinants of Economic Growth: A Cross Country Empirical Study*, (Massachusetts: Massachusetts Institute of Technology Press, 1997).

³⁰ Ibid

³¹ Bende-Nabende, *FDI, Regionalism, Government Policy and Endogenous Growth*, (London: Ashgate Publications, 1999).

through production facilities between foreign firms and domestic firms mainly through imitation, competition, linkages and training³². The linkages between the foreign firms and domestic firms can be classified into three types. They are backward linkages, forward linkages and horizontal linkages. Backward linkage exists when the foreign firms buy goods and services from the local units and forward linkage exist when the foreign firms sell goods and services to the local firms. A horizontal linkage explains the linkages between the foreign firms and local firms, which are competing in the local market. The technology transfer also takes place more when the foreign firms produce as a joint venture with domestic companies.

The developing countries generally have low level of technology, unskilled labour relative to the foreign firms. Therefore, backward linkage between foreign firms and the domestic firms is the major mode of transfer of technology and skills to a developing country. The greater knowledge base and skill base of foreign firms, if transferred, will lead to the efficiency and competitiveness of the local industries. Backward linkages create benefits both to the foreign firms and local companies. The foreign firms can buy cheap raw materials or can buy their inputs from local industries; thereby they can increase their specialization and upgrade their technology.

The domestic suppliers benefit from the foreign firms by the diffusion of technology and know-how from the foreign firms, when foreign firm buys large proportion of inputs from other local firms. This linkage leads to exchange of information, technical knowledge and skills, which lead to productivity growth and

³² Robert Lensink, and Morrissey, Oliver., "Foreign Direct Investment: Flows, Volatility and Growth in Developing Countries", SOM Research Report 01E16, Gronigen, 2001.

market diversification for the supplier firms. It also increases the employment and output of the supplier industries. Thus, the stronger the backward linkage between the local firms and the foreign firms, the larger is the benefit achieved by the host developing countries. The production efficiency achieved by local suppliers in turn lead to various indirect effects and spillovers for the rest of the host country. The spillovers of FDI are achieved through mobility of trained labour and competition effects. The spillover effects of FDI are greater when the foreign firms set up their Research and Development (R&D) centers in the host developing countries. The domestic firms can also learn the technology through imitation of the foreign goods either by learning through the redesigning the end product or by the movement of trained personnel from the foreign firms to the domestic firms.

The empirical estimation of the impact of foreign direct investment on the host economy is mainly in two ways. One is focusing on the firm level specific studies, ie, they analyze the particular industry productivity has increased due to foreign direct investment. The other way of estimating is to study the impact of foreign direct investment on the growth of the economy. Both types of empirical estimation have showed that the evidence of technology spillover is of mixed results. Some studies have found that the effect of FDI is positive, whereas others have found no evidence of impact due to FDI. Many studies have found that the positive effect of FDI depends on the circumstances in the host countries.

Borenstein et al, have analysed the impact of FDI on economic growth for 69 developing countries over the two periods i.e., 1970–79 and 1980–89³³. They

³³ Borensztein, E., De Gregario J., and J.W.Lee, "How does Foreign Direct Investment Affect Economic Growth", *Journal of International Economics*, vol.45, no.1, 1998.

estimated the impact using the Seemingly Unrelated Regression model with the panel data. Apart from FDI and other standard variables like investment rate and GDP, human capital was also included in the model. For this secondary school attainment was taken as a proxy for the human capital. Further they used only the FDI data, which flowed from the industrial countries i.e., from OECD countries, rather than all the FDI inflows into these countries. They argued that these FDI flows have higher technology, which is essential for the developing countries.

They found that there is complementarity between the FDI and human capital and the coefficient of the interaction term is positive and significant. However, this result was obtained only for the countries that have secondary school attainment above 0.52. Thus, they concluded that the foreign direct investment contributes positively to the growth rate, only when the host country has enough human capital to absorb the advanced technologies from the foreign firms.

Lensink and Morrissey studied the impact of FDI on growth in 115 countries for the time period 1975 to 1997³⁴. They found that there is a positive effect on growth by FDI, but the volatility of FDI has a negative impact. This result has been found by estimating the standard model using cross section, panel data and instrumental variable techniques.

Balasubramanyam et al estimated the “Bhagwati hypothesis” that is the export promoting countries should attract greater volume of FDI and its efficiency should be higher than the import substituting countries³⁵. The model was estimated against the annual average data relating to a cross section of 46 countries over the period of 1970

³⁴ Robert Lensink and Oliver Morrissey, n.32

³⁵ Balasubramaniyam et al, “Foreign Direct Investment and Growth in EP and IS Countries”, *The Economic Journal*, Royal Economic Society, vol.106, January 1996.

-1985. The result show that the output elasticity of foreign capital in export promoting countries is 1.83%, which is significant at 1%, whereas in import substituting countries elasticity is 1.77%, which is not significant at 1%. Further, the FDI output elasticity exceeds the output elasticity of domestic investment. Therefore they infer that the FDI is more important in determining the growth process than the domestic investment in export promoting countries. Thus the study finds evidence for the Bhagawati hypothesis.

Blomstrom, Lipsey and Zejan argue that developing countries may learn less from MNCs, as local firms' technology levels are low compared to that of MNCs³⁶. They found that secondary education; changes in labour force participation rates and initial distance behind the United States were the major variables that explain the growth rate of the developing countries. Hence they couldn't imitate or supply components to the MNCs. Chen et al (1995) have analyzed the effect of FDI on growth for China. Apart from FDI, he has used savings as an additional variable explaining growth. Also, he found that the FDI did not have any negative effect on domestic savings.

Hermes and Lensink argue that the financial system of the host country is an important precondition for the FDI to have positive impact on growth³⁷. The well-developed financial system affects the economic growth through influencing the allocation of resources in an efficient way and also reduces the risk involving upgrading of existing or upgrading new technologies. They have taken the private

³⁶ Magnus Blomstrom., Robert E.Lipsey, and Mario Zezan, "What Explains Growth in Developing Countries?", Discussion Paper No.1924, National Bureau of Economic Research (NBER), 1994.

³⁷ Neil Hermes and Robert Lensink, "Foreign Direct Investment, Financial Development and Economic Growth", *The Journal of Development Studies*, vol.40, no.1, October 2003.

sector bank loans to GDP ratio as the proxy for the measurement of financial development. Their analysis of the 67 Less Developing Countries (LDCs) for 1970 – 1995 period, found that the interactive term of FDI and the financial development is positive and significantly related to growth.

The study by Marta Bengoa Calvo and Blanca Sanchez-Robles have analysed the determinants of foreign direct investment for the period 1970 – 1999 for the 18 Latin American countries³⁸. They found that the index of economic freedom seems to have a positive and very significant effect on capital flows. The analysis found support for the market size hypothesis that is; the MNCs tend to move to countries with huge markets than countries with small markets. They found negative correlation between FDI and external debt to GDP ratio and for inflation rate. They also found that the human capital is positive but not significantly correlated.

De Mello analysed the impact of foreign direct investment on capital accumulation, output and total factor productivity for the sample of OECD and non-OECD countries during 1970 – 90³⁹. The time series and panel data analysis found that the long run growth impact of FDI depends on the degree of complementarity and substitution between FDI and domestic investment.

In Brazil, for example, foreign component suppliers to the automotive industries started their companies near the foreign automotive industries. The local industries only supplied the second-tier inputs to the automotive industry. The presence of foreign component suppliers near the automotive industries restricts the transfer of

³⁸ Marta Bengoa Calvo and Blanca Sanchez-Robles, “FDI, Economic Freedom and Growth: New Evidence from Latin America”, *European Journal of Political Economy*, vol.19, 2003.

³⁹ L.R.De Mello Jr., “Foreign Direct Investment Led Growth: Evidence from Time Series and Panel Data”, *Oxford Economic Papers*, vol.51, 1999.

technology from the foreign firms to the local firms⁴⁰. Further, the takeover of the local firm by the foreign firm may also have detrimental effect on the innovative capacity in the enterprises concerned. According to Cassiolato and Lastres, the multinational companies which took over the several large domestic auto parts producers such as Metal Leve, Freios Varga and Cofab, have downgraded the R&D activities of the local firms and shifted the frontier research to the R&D centres in their home countries⁴¹. Thus the technology transfer and spillover effects of FDI are not automatic one, but these depend on the fundamentals of the economy and the government policy in facilitating the linkages between the domestic firms and supplier firms. While summarizing the above literature, one conclusion can be drawn that the effect of FDI depends on various countries-specific factors.

⁴⁰ United Nations Conference on Trade And Development, *Promoting Linkages, World Investment Report* (Geneva: United Nations, 2001).

⁴¹ Ibid

CHAPTER-IV

DETERMINANTS OF FDI AND ITS IMPACT ON GROWTH IN BRAZIL: AN EMPIRICAL INVESTIGATION

Analytical Framework

a. Methodology

The objective of the study, as stated earlier, has been to find out the variables that influence the inflow of FDI into Brazil i.e., determinants of FDI. It will be useful in formulating specific policy measures that would attract more FDI inflows. The second objective of the study is to analyse how the FDI inflow impact on the growth of the Brazilian economy. The paper analyses the above objectives in the context of the Brazilian economy during 1980-2000.

Following the literature survey in Chapter III, it has been shown that the FDI inflows can be influenced by traditional determinants like huge domestic market, past growth rates, openness as well as non-traditional variables like average years of schooling and political stability. Thus we have the basic model of the determinants of FDI inflow:

$$\text{FDI}_t = \alpha + \beta_1 \text{Growth rate of real GDP}_{t-1} + \beta_2 \text{Real GDP per capita}_t + \beta_3 \text{Openness}_t + \beta_4 \text{Political Stability dummy}_t + \beta_5 \text{Average Years of Schooling}_t + \xi.$$

FDI measures the total FDI inflow into Brazil, since we are analysing the determinants of FDI inflow; we have taken the total FDI inflow and not the net FDI inflow. The domestic market is captured by the real GDP per capita, which shows the purchasing power of the country. If larger the market size, the larger will be the profit

for the multinational companies, we expect FDI inflow to be positively related to the per capita real GDP. The past year growth rate of the real GDP also said to be positively influencing the FDI inflow, as it shows the expansion of the domestic market. The openness of the economy to world economy is also positively correlated to the FDI inflow, because by integrating to World economy, the market size is expanding through exports and it also provides the multinationals the opportunity of vertical integration of their international production of commodities.

The multinational companies would also be attracted to the country, which has high skilled labours. Since, multinational companies use high technologies in their production function, the availability of skilled labours facilitate their production activities without operating costs like training etc. The economic theory also predicts that the country which has stability and freedom, tend to attract more FDI than the country which does not. This is because under political stability, their investments will have less risk at all than the country with political instability. In this paper, the political stability is captured by whether the country is ruled by Dictatorship or Democratically elected government. We expect negative correlation between FDI inflow and dictatorship government and positive correlation between FDI inflow and democratic elected government.

The growth of the economy is facilitated by the investment rate, past year growth rate, openness of the economy, political stability and human capital. The basic model of the impact of FDI on growth is given below:

$$\text{Growth Rate}_t = \alpha + \beta_1 \log \text{FDI}_t + \beta_2 \text{Gross Fixed Capital Formation}_t + \beta_3 \text{Openness}_t + \beta_4 \text{Average years of Schooling}_t + \beta_5 \text{Political Stability Dummy}_t + \xi_t$$

The investment rate is given by the gross fixed capital formation (GFCF), which is the ratio of investment to GDP. As we know the investment in the economy facilitates the growth of the economy, we expect a positive correlation between them. The openness will have positive effect on the growth of the economy as it increases the exports of the economy and also provides much needed imported capital goods to the developing country.

According to endogenous growth models, the human capital also contributes to the growth of the economy. Higher the rate of human capital formation, more the innovation will take place and the country will use higher technology, which in turn will facilitate the growth of the economy. Thus, we expect a positive sign for the human capital variable. Further, the economic freedom facilitates economic growth through efficiency achieved by market-oriented mechanism. Therefore in the dictatorship regime, the economic decisions are taken by the state, and the individual is restricted to some extent in his economic activities, we expect that the dictatorship dummy should hinder the economic growth of the economy. We, therefore, expect a negative sign for the dictatorship dummy variable.

b. Sources of Data

The foreign direct investment inflow has been taken from the International Monetary Fund publication 2001, "International Financial Statistics", which reports the balance of payment statistics on FDI.

The per capita income and the real growth rate of the Brazilian economy at constant 1990 prices in US \$ millions, have been taken from the United Nation Statistical Data Base, available at <http://unstats.un.org>.

The dictatorship dummy is used whenever the country has come under dictatorship rule. The paper uses the classification of dictatorship for Latin American countries given by the Scott Mainwaring. Though he classifies dictatorship into democratic, semi-democratic and authoritarian, in this paper we have taken semi-democratic and democratic as democratic governments and authoritarian regime as dictatorship regime⁴².

The human capital is captured by the average years of secondary schooling attended. The data for education is taken from the Barro and Lee education series⁴³.

The openness of the economy is measured by the ratio of the sum of exports plus imports to total GDP. The data for openness is taken from the Penn world tables, mark 6.1, published by Center for International Comparisons, Philadelphia⁴⁴.

The data for gross fixed capital formation (GFCF) is taken from the various issues of "Statistical Yearbook for Latin America and the Caribbean", published by the Economic Commission for Latin America and Caribbean (ECLAC).

⁴² Scott Mainwaring et al, "Classifying Political Regimes in Latin America", *Studies in Comparative International Development*, Vol. 36, No. 1, Spring 2001, p.49.

⁴³ Robert Barro and J.W.Lee, "International Measures of Schooling Years and Schooling Quality", obtained from <http://www.worldbank.org/research/growth/ddbarle2.htm>.

⁴⁴ Penn World Tables Mark 6.1 can be downloaded from <http://pwt.econ.upenn.edu/>.

c. Time Series Regression Estimates for Brazil

Determinants of FDI inflow in Brazil

The above model given in the methodology was regressed for the period 1980-2000. The Durbin-Watson d Test showed that the residuals of the estimated model are positively correlated⁴⁵. The White heteroscedasticity test also showed that the estimated model have hetero-scedasticity problem⁴⁶. The structure of the autocorrelation was detected by using the Cochrane-Orcutt procedure and the model was estimated by the Generalised Least Square method⁴⁷. The results of the estimates are given in table 4.1.

⁴⁵ Autocorrelation is defined as “correlation between members of series of observation ordered in time (as in time series data) or space (as in cross sectional data)”. But the classical regression assumes that autocorrelation does not exist in the disturbances u_i . So we have to remove the autocorrelation problem before estimating the regression model.

The Durbin-Watson d test provides the procedures for detecting the serial correlation in the estimated model.

⁴⁶ The heteroscedasticity problem arises when the variance of each disturbance term u_i , conditional on the chosen values of the explanatory variables is not constant as assumed by the classical linear model, but it increases as the independent variable increases. So in the presence of the heteroscedasticity problem the estimated coefficient will not be a best linear unbiased estimator (BLUE) and the estimation is not efficient.

⁴⁷ The Cochrane-Orcutt procedure provides the framework for detecting the structure of autocorrelation and helps to estimate the model by Generalised least squares model.

The Generalised Least Square estimation method takes into account the variability of disturbance term and gives more weightage to less variability and less weightage to more variability. Therefore the estimators calculated under this model are BLUE and are efficient.

Table 4.1

Regression Estimates for Determinants of FDI in Brazil

Dependant variable:	Log of FDI		
	Coefficient	t value	Prob (t)
Constant	-2.4637	-1.45	0.169
Real GDP PC	0.0041	5.69	0.000
Real GDP growth rate	-0.0888	-3.36	0.005
Openness	0.1713	2.83	0.013
Average years of Schooling	2.1964	6.24	0.000
Dictatorship dummy	1.8173	3.03	.009
R square	0.9205		

The above results show that the traditional variables like real GDP per capita, real GDP growth rate, openness as well as non-traditional variables like average years of schooling & political stability dummy significantly influence the FDI inflow in Brazil. All the variables are highly significant at 5% level of confidence and the goodness of the model i.e., R Square was very high. The market size hypothesis is positively correlated as expected and has been highly significant at 5% level of confidence. As real GDP per capita increases by one US dollar, FDI increases by 0.41 per cent. Brazil has the largest domestic market in the South America, so the foreign investors heavily invest in it. The expansion of market by signing the MERCOSUR agreement by

Argentina, Brazil, Paraguay and Uruguay in 1991 also increased the FDI inflow significantly particularly in motor vehicle industry⁴⁸.

The coefficient of real GDP growth rate is not positive as expected, but is negative and significant. The result indicates that as growth rate increases by one percent, FDI inflow is reduced by 8.88 per cent. This result couldn't be explained but may be due to the recession and debt crisis in the 1980s and Real crisis in 1997. So the growth rate achieved by Brazil was very erratic and did not show any trend. The analysis supports that the integration of the economy with the world economy facilitates the inflow of FDI into the country. As openness increases by one percent, FDI increases by 17.13 per cent.

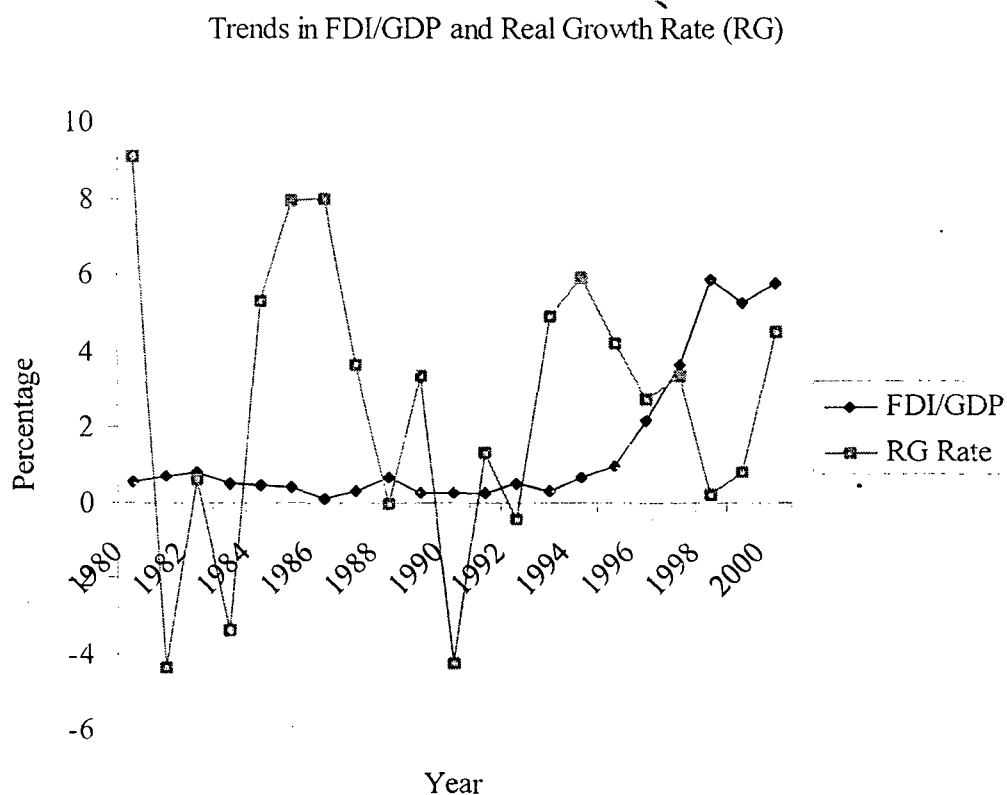
The Regression also supports the Borenstein et al analysis that higher the educational level, higher will be the FDI inflow. As the average years of schooling increases by 1 year, FDI increases by 219.64 percent. The dictatorship dummy showed a surprise result of positively influencing the FDI inflow rather than expected negative sign. This result could be interpreted that the foreign investors had more confidence in the military regime in Brazil because unlike political leaders, they did not have any populist measures and actually tried to liberalise their economy under their rule.

⁴⁸ ECLAC, Foreign investment in Latin America and the Caribbean. (Santiago, United Nations, 2004).

Impact of FDI on Growth of the Brazilian Economy

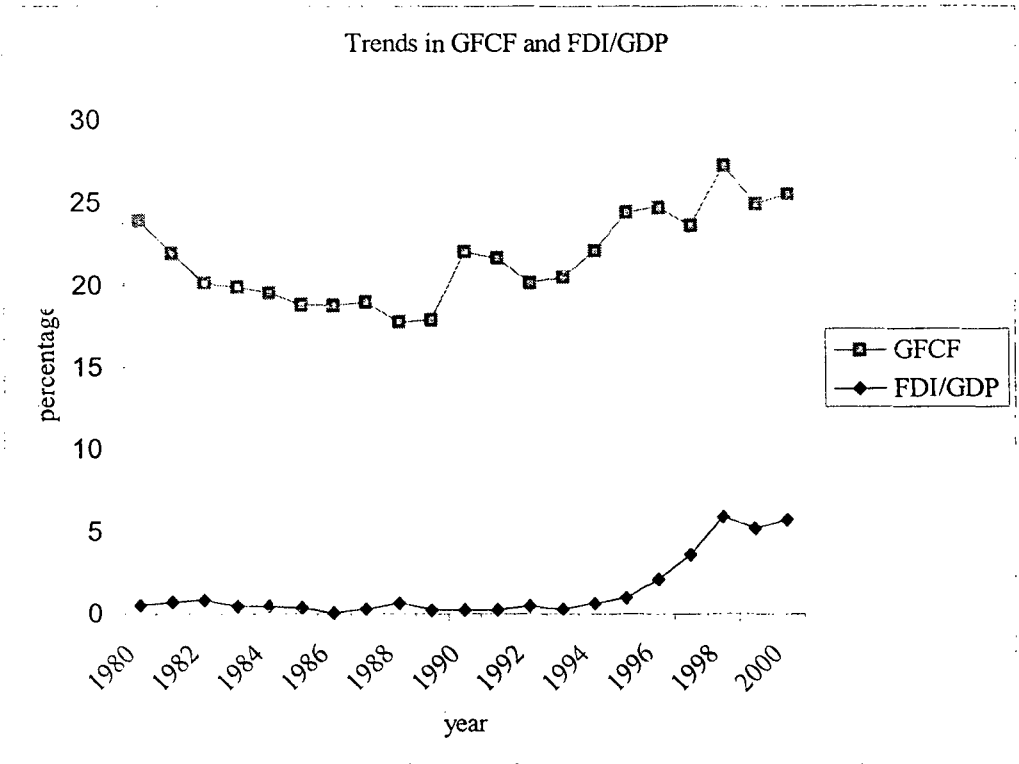
Before running the regression estimates, as a preliminary analysis, we analysed the trends of growth rate and the ratio of FDI and GDP. The trends didn't show any correlation at all between the two variables. Whereas the FDI/GDP ratio has been near constant throughout the 1980 to 1994 period, but after that it has risen at an increasing rate. The Growth rate has been showing uneven rate as we discussed in the second chapter of this paper. The graph depicting the trends of FDI/GDP and real growth rate is given below.

Graph 4.1



We also analysed whether the FDI has increased the gross domestic investment of the Brazilian economy. The gross fixed capital formation to GDP ratio (GFCF) was taken for the gross domestic investment. If the gross fixed capital formation in the economy is increased after the inflow of FDI, then the investment rate will be increased leading to growth of the economy. That is, if both the variables show an increasing trend, then we assume that the FDI has supplemented over and above the domestic savings. If it shows negative trend, then the FDI has crowded out or replaced the domestic savings, in that case it may not increase the growth of the economy. The variables FDI/GDP and gross fixed capital formation was plotted in the graph and is given below.

Graph 4.2



In the period 1980 to 1990, the domestic investment has been declining whereas the FDI/GDP remained constant. In the period 1994-1997, the increase in inflow of FDI mainly due to privatisation of the public sector industries, has actually increased the gross domestic investment, so it might have contributed to growth. But in the period 1997 to 2000, despite the increase in FDI at an increasing rate, the domestic investment has fallen. So, FDI might have replaced the existing domestic investment. This could be to some extent true, because more of the FDI have come in Brazil to acquire the existing industries rather than for new Greenfield investment. If the FDI inflow were predominantly on new Greenfield investment, it would have provided employment, increased output and would have affected the growth rate significantly. More or less this has been the experience of many other Latin American countries.

d. Time Series Regression Estimates

The basic model given in the methodology was regressed and the results indicated that the residuals of the model are negatively correlated. The model was regressed after removing the autocorrelation problem by using the generalized difference equation method. The results of the estimation are given below.

Table 4.2

Regression Estimates for FDI Impact on Growth

Dependant variable	Growth rate		
Variables	Coefficient	t value	Prob > t
Constant	5.8926	0.26	0.802
Log of FDI	-1.5185	-1.43	0.174
Dictatorship Dummy	-4.1139	-0.7	0.494
GFCF-GDP ratio	0.3059	0.59	0.566
Openness	0.5444	0.80	0.437
Average Schooling	3.7517	0.82	0.428
R square	0.2035		

The regression estimates showed that only two variables i.e., FDI and past year growth rate were significant and others were not significant at all. The economic theory predicts that the FDI impacts on growth through increase in investment as well as improving the value added of the economy by using high technology and spill over effects. In our regression, though the FDI is significant, the signs of the coefficients were not positive as expected. The estimates showed that FDI negatively contributes to the growth. As FDI increases one percent, growth rate is reduced by -0.0289 percent. The trend analysis of FDI/GDP growth rate which showed the negative correlation has

been confirmed by the time series analysis. The result is very surprising, and we could partially explain the reasons for the negative impact.

The case study by Cassiolato and Lastres, referred in the chapter III, shows the decline in R&D expenditure by multinational companies and shifting the R&D centres to their home country. The other reasons could be that the FDI investment in manufacturing has decreased and services sector share increased. The services sector has very little impact on the export growth of the economy, leading to higher current account deficit due to liberalised imports, which makes the economy vulnerable to the external crisis. A case study by Instituto De Estudios Para Desenvolvimento Industrial (IEDI), 2002, on foreign companies in Brazil for the period 1989 to 1997, found that their exports had a marked shift from net exports of high technology goods and was accompanied by a sharp rise in high technology imports not linked to exports leading to balance of payment crisis. Further, they found that the foreign companies' expansions of industries were not financed by the equity, rather financed by the external loans, thereby increasing the total external debt⁴⁹. These studies show only the indirect effect of FDI investment on economic growth.

The ratio of gross fixed capital formation to GDP influences the growth rate, but significant only at 11 percent level. The openness of the economy positively influences the growth of the economy, but it is not significant. All the other variables like average years of schooling, dictatorship dummy were also not significant.

For a normal standard curve, the number of observation should be 30 in order to reach a meaningful interpretation of results. Since the model is only for the period

⁴⁹ Cited in United Nations Conference on Trade And Development, *Capital Accumulation, Growth and Structural Change, Trade and Development Report* (Geneva: United Nations, 2003).

1980-2000, the number of observations being only 21, we cannot explain with certainty the relationship of the FDI and its impact on growth. So, in order to draw valid conclusions, we also estimated the above model for the 10 Latin American countries.

Panel Data Estimation for Latin American Countries

The countries taken into analysis are Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Peru, Paraguay, and Venezuela for the same time period 1980-2000. Uruguay was not included in the analysis due to unavailability of data. The panel data estimation for the 10 countries has 210 number of observations. So, the result of this estimation can be interpreted and can draw valid conclusions about the determinants of FDI and its impact on growth of the economies.

The panel data estimation can be done by two methods namely fixed effect and random effect. The fixed effect model takes the constant term to be a group specific constant term in the regression model, whereas random effects model specifies that constant term is a group specific disturbance i.e., it assumes that the individual effects are uncorrelated with the other regressors in the model⁵⁰. The Hausman specification test provides that if the critical value from the chi-squared table is greater than the test value, then the model has to be estimated with the random effect model and if the test value is greater than the chi-square table value, then the model has to be estimated using the fixed effect model.

⁵⁰ Gujarati, Damodar., *Basic Econometrics*, Fourth edition, McGrah Hill publication, 2003 pp. 576-578

Determinants of FDI

The determinants of FDI estimation showed that the errors were found to be autocorrelated. Further, the estimation showed the presence of cross-sectional heteroscedasticity in the data. The heteroscedasticity problem and autocorrelation was removed by using the feasible generalised least square (FGLS) estimation with different AR1 coefficient for different countries and the model was estimated. The estimated Hausman specification test showed that the test value is higher than the critical value from the chi square estimation, so the model was estimated using the fixed effect model. The result of the estimation is given below.

Table 4.3

Fixed Effect Estimation for determinants of FDI

Dependent variable	Log of FDI			
	With Openness		Without Openness	
Variables	Co-efficients	Prob. > z	Co-efficients	Prob. > z
Average Schooling	0.5021	0.001	0.5137	0.000
Dictatorship Dummy	0.3328	0.071	0.4009	0.019
Growth rate of real GDP	-0.0120	0.058	-0.0108	0.067
Real GDP per capita	0.00054	0.000	0.0005	0.001
Openness	0.0028	0.310	-	-
Constant	0.0305	0.195	1.1019	0.203

From the table 4.3, we see that traditional determinants of FDI like real GDP per capita and growth rate of real GDP significantly influence FDI. However openness does not play a role in attracting FDI. Removing openness does not have much impact in the coefficients of other variables. We see that the real GDP per capita has the positive effect on foreign direct investment and it is highly significant. This once again proves the importance of large domestic market in attracting the FDI inflows. The growth rate of real GDP, contrary to the expectation, has a negative sign but it is highly significant at 10 percent.

The non-traditional variables such as average schooling years of total population and the dummy for dictatorship regime are significant, showing the importance of education and political stability in attracting FDI. The average schooling of the population positively influences the FDI inflows into the country and is significant. This reiterates the fact that in general, FDI has been attracted to countries with skilled labour as it is more capital intensive. Also FDI increases during years of authoritarian regime, contrary to the expectation. The existing literature shows that democracy has positive influence on FDI inflow⁵¹. When there is authoritarian regime in the Latin American countries, FDI inflows is actually increasing. This might be due to the fact that in general in the Latin American countries; the economies had been shifted to market regimes under the dictatorship regime.

⁵¹ Jensen, n.24

The coefficient of the independent variables for the time series estimation for Brazil and panel data estimation for 10 Latin American countries have shown the same signs for all the variables. The real GDP growth rate is negatively affecting the inflow of FDI for Brazil as well as the Latin American countries. Thus from the regression analysis we conclude that both the traditional variables and non-traditional dummies like skilled labour greatly influence the inflow of FDI into the economy.

The panel data estimation has shown that the non-traditional variables coefficients are higher than the traditional variables, indicating the trend that the variables like average years of schooling, political climate are given more importance by the foreign investors in these countries. Thus the increased competition, openness and integration of the economy to world have forced the foreign investors to look for efficient seeking investment rather than the domestic market size and protection available to them.

Influence of FDI on Growth:

As in the case of panel data estimation, the estimation's errors were found to be auto correlated as well as there was presence of cross-sectional heteroscedasticity in the data. Hence, we estimated with the feasible generalised least square (FGLS) model with different AR1 coefficient for different countries. In this analysis also, the estimated Hausman specification test showed that the test value is higher than the critical value from the chi square estimation, so the model was estimated using the fixed effect model. The estimated results are given below.

Table 4.4

Fixed Effect Estimation Results for Impact of FDI on Growth

Dependent variable	Growth rate		
Variables	Co-efficient	Z values	Prob.>z
Log of FDI	0.1682	2.03	0.042
Average years of Schooling	0.2727	1.28	0.199
GFCF	0.5045	10.44	0.000
Openness	-0.0045	-0.39	0.695
Dictatorship Dummy	-0.2760	-0.61	0.540
Constant	-10.5712	-6.61	0.000

The important result is that the foreign direct investment affects the growth rate positively for the 10 countries. Further, the coefficient is also significant at the 5% level of confidence. Gross Fixed Capital Formation/GDP ratio has considerable influence on growth rate, in line with the theory. The GFCF is also highly significant indicating the important role played by it in the growth of the economy.

The average years of schooling, which is, proxy for the human capital is positively affects the growth rate as expected. But the coefficient is not significant at the 5% level of significance. The coefficient of the openness variable has the negative signs, not as expected. But, it was not significant. The dictatorship dummy as in the case of all estimation of FDI impact on Growth, has negatively contributes with the growth of the economy. But, again this coefficient is not significant.

Thus our econometric analyses conclude that the foreign direct investment actually increases the growth of the economy for the 10 Latin American countries. This result is in conformity with the results found in various literatures on foreign direct investment.

CHAPTER-V

CONCLUSION

Brazil's policy stance is one of promoting foreign direct investment inflow to the country and considers it as an important vehicle for the development and growth of the economy. Brazil's FDI inflow particularly increased after the privatisation programme in the mid 1990s. The resultant FDI inflow was sustained by the higher growth rate and macroeconomic stability achieved by Real plan. During this period, the FDI inflow was predominantly in sectors such as public utilities and infrastructure. Further, during 1990s, there was predominant shift in the destination of FDI inflow from manufacturing to services sector. The origin of the FDI inflow has also changed and new countries like Spain, Portugal and Netherlands have become important source of FDI inflow into Brazil apart from USA, which is still a major investor in the economy.

The econometric analysis of determination of FDI inflow in Brazil has shown that the traditional variables such as market size, openness as well as quality of education, cost of production influence the decisions of the foreign investors. This result also has been supported by the panel estimation for the 10 Latin American countries. The time series analysis on foreign direct investment's impact on growth has shown negative influence. But the result could not be inferred because the number of observations was very small. Therefore, we ran the panel data estimation, which proved that the FDI in 10 Latin America countries contributed significantly to the growth of their economies.

Since FDI positively affects the growth, the real challenge for the Brazilian policy makers is to influence the FDI inflow in such a way that its destination is in the desired

sectors. The service sector does not directly contribute to the export growth of the economy but indirectly it may enhance the quality of the export services. So the proposed benefits of FDI to Brazil seem to be low than the theoretical model suggests. This is plausible to argue that it may be because of predominant FDI inflow in services sector.

One of the main problems of Brazil is its recurring current account deficit on account of high imports and low growth in exports. This results in the vulnerability of the economy to external shocks. So, in order to reduce the recurring current account deficit, the FDI inflow should have to be more in manufacturing than services sector. The service sector exports are very less compared to the manufacturing sector exports, so if FDI inflow is predominantly in manufacturing, thereby it will not only influence the growth of the economy but would also provide protection against external vulnerability. The consistent balance of payment account and the resultant stability in exchange rate management will also increase the confidence of the foreign investors in the economy, thereby raising the inflow of FDI into Brazil.

However in the period 1997 – 2000, increased openness of the Brazilian economy led to severe competition from imports. The foreign companies were forced to change their strategy from one of market seeking to efficiency seeking industries. The declining domestic market due to lower growth rate also boosted the efficiency seeking strategy of foreign investors⁵². This efficiency seeking trend among foreign companies could be consolidated because Brazil possess number of advantages such as large size

⁵² ECLAC, Foreign investment in Latin America and the Caribbean 2004, (Santiago, United Nations).

of the domestic market to reap economies of scale, presence of 80% of the fortune 500 companies in Brazil and large industrial base⁵³.

Therefore, the real task of the policymakers is to sustain the process of efficiency seeking motives of the foreign investors and to increase the FDI inflow in the economy by increasing the attractiveness of the country by enhancing the efficiency of significant variables of the determinants of FDI inflow.

Measures to be taken to increase the FDI inflow in efficiency seeking industries

The efficiency seeking industries are basically competitive industries, and have very low difference of price among the industries for their products. These industries look for destinations, which provide cheap raw materials, skilled and inexpensive labour and efficient supply of inputs, as well as infrastructure facilities, facilitating their production processes. Some of these measures are listed below.

i. Reducing the Transaction Cost of the Economy

The cost factors affect most the efficiency seeking industries than the market seeking industries, because they can align their local prices with local costs⁵⁴. The efficiency seeking industries always look for low cost otherwise they will lose their market share and will have different locations to choose from. Therefore, one of the important measure to be taken is to reduce the transaction cost of the economy, relative to other economies, thereby providing an edge to the industries operating in Brazil in the world market as well as increasing the inflow of efficiency seeking industries. The

⁵³ Ibid

⁵⁴ Ibid

reduction of cost factors involves all the factors affecting the productivity of firms and which are unrelated to the internal economies of scale.

a. Infrastructure Bottlenecks

The infrastructure constraint is one of the most important bottlenecks in attracting efficiency seeking FDI in Brazil. The inefficient transport system and ports infrastructure delay the supply of products in time, thereby reducing the value of goods as well as increasing the cost of the production process. The inefficient infrastructure is often considered as a bottleneck, which limits the Brazils competitiveness in various sectors. Brazil has good communications system but is plagued by the power shortage in the economy. This also raises the cost of the production. Increase in the costs of production reduces the competitiveness, and may prompt efficiency seeking investment to move elsewhere. The Brazilian government has taken several steps to improve the infrastructure sectors by encouraging investment through private and government participation.

b. Tax Burden

The tax burden directly affect the cost of production and its competitiveness, so lower the tax burden, the higher the probability that the efficient seeking firms will invest in the country. The World Development Report 2004, has found that large number of firms in Brazil, consider tax system as a major obstacle to business activity. The tax reforms have been not undertaken due to political

opposition. However, the Brazil government able to pass the tax reform in December 2003, which would increase the efficiency of the tax system and will reduce the tax burden on the industries.

c. Bureaucratic controls

The Doing Business report 2004, of the World Bank has found that the procedures required to start a business, and the associated time and cost because of delay in approval in Brazil was higher than the Latin American countries average. The Entrepreneurs in Brazil have to go through 17 steps to launch a business; the time taken for approval on average is over 152 days, at a cost equal to 11.7% of gross national income (GNI) per capita. The Latin American countries average is only 11 in case of number of procedures to start a procedure, time taken is only 70 days, but the cost was around 60.4% of gross national income (GNI) per capita, which is higher than the Brazil. So the government should reduce the number of days delay in approval by bringing registration under a single window system. Further, the legal reforms should be taken up for reducing the delay in court verdict and contract enforcement.

ii. High Quality Work Force

The presence of highly skilled labour attracts FDI inflow particularly the efficient seeking industries as we found out from the econometric analysis as well as from the literature survey. The secondary enrolment ratio for Brazil is quite high compared to other developing countries, but it is still lower than Chile and

Argentina. The quality of education measured by various methods like average number of students in class, intra-country distribution of trained teachers also indicates that Brazil lag behind other Latin American countries.

A study by Carlson has found that in 2001, the average number of students in lower secondary grades in public schools average for Brazil was around 34.5, which is higher in Latin America⁵⁵. The study also found that the intra-country distribution of trained teachers showing wide variations across the regions. The percentage of teachers with tertiary level training varies from 3% in Bahia and Para states to 42% in Sao Paulo, while the national average is 22%. The Brazilian educational system also suffers from mainstreaming its courses into useful application in the industrial sector. So, the government has to actively intervene in the education sector and should remove all problems and strengthen its quality of education.

iii. Efficient Financial System

The government should also promote the financial system in the country. Various studies have found that efficient financial system influences the FDI inflows into the country as well as promote the efficient allocation of resources, thereby, contributing to the growth of the economy. The primary and secondary market should be strengthened and the regulatory mechanism of the capital sector should be well developed.

⁵⁵ Cited in ECLAC, The Millennium Development Goals: A Latin American and Caribbean Perspective, June 2005, p.98.

iv. Macroeconomic Risk and Uncertainty

The efficiency seeking foreign direct investment is also influenced by the macroeconomic stability achieved by the country. The countries like China and India are attracting huge inflows mainly due to its stability of its economy. So Brazil should strengthen its monetary and fiscal policy to effectively deal with any external or business cycle problems and to bring the economy to the growth path.

Thus these are the various measures the Brazilian government should undertake to increase its attractiveness of FDI inflows and also derive expected benefits from the FDI through various spillover effects. The government should also promote the various linkages between the foreign firms and the domestic firms through various instruments like local content requirement, as well as facilitating clusters of input industries around large-scale industries.

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