

**CHAPTER 5**

**DETERMINANTS OF INWARD**

**FOREIGN DIRECT**

**INVESTMENT**

## **SECTION 5.1**

### **THEORIES OF FDI – A CHRONOLOGICAL OVERVIEW**

Considering the large number of motives an individual firm can have to undertake FDI, it is not surprising that there exists no general theory that can comprehensively explain the existence of MNCs and FDI. As a result of this, the FDI literature is diverse and spans over several different disciplines including international economics, economic geography, international business as well as management. There exist several studies providing overviews of FDI theories, for example, Agarwal (1980), Cantwell (1991), Meyer (1998) and Markusen (2002). Whereas this thesis primarily focuses on a developing economy, most of the theories described in this section can be applied to all types of economies.

#### **Early theories of FDI**

Most theories of FDI have emerged during the post-war period, when the forces of globalisation began to grow. The growing importance of MNCs and FDI during the fifties and sixties gave an impetus to researchers to find theories able to explain the behaviour of MNCs and the existence of international production. The early theories could only explain a limited share of the total FDI flows. These theories were also inadequate because they failed to bring out the fact that FDI is not only a capital flow but also constitutes a package including other components such as management and technology transfer.

Consequently, some of the approaches to develop a theory of FDI failed to incorporate the fundamental difference between portfolio and direct investment. An

example is the "Capital Markets Approach" (Aliber, 1970). These approaches used the already existing theories for flows of portfolio investment to explain flows of FDI. FDI was treated as portfolio investment and accordingly it was considered that FDI should flow to locations where the financial return on investment was the highest.

During the sixties, researchers started to focus more explicitly on MNCs and their activities. Vernon (1966) applied the idea of the product-life-cycle to international trade in order to explain the existence of international production as well as trade. According to Vernon, as a product moves through the product-life-cycle, the characteristics of the product change. These changes imply that the optimal location for production of the product also changes over time. The product-life-cycle begins when innovations are transformed into actual products. Increasing competition eventually forces production to move from higher to lower income economies in order to reduce production costs. As the product and its production process become more standardized, the product moves into the mature stage of its life-cycle. Consequently production in high and average income economies declines as a result of ever fiercer competition. The demand for the product is then met through exports from low income, developing economies to the rest of the world.

Vernon's theory was a contribution since it could explain some of the outflows of FDI from the US during the fifties and sixties. It was also the first theory that treated trade and direct investment as two dynamic alternatives to serve demand in a foreign market. Unfortunately, the theory fails to explain the large flows of FDI between developed economies. The focus on innovations also makes the theory difficult to apply to outflows of FDI from industries which are not innovative.

## **Firm-specific advantages and the “OLI” paradigm**

Stephen Hymer came up with his theory of firm specific advantages approximately at the same time as Vernon's theory. Hymer's dissertation (1960) laid the foundation necessary for “eclectic paradigm” that has had a large impact on FDI theories. The theory of firm-specific advantages was the first theory treating international production explicitly, and the first focusing on the MNC itself.

According to Hymer, firms operating in a foreign location are at a disadvantage compared to the domestic firms. The domestic firms are assumed to have lower costs of operation since they are more familiar with local conditions such as legislation, business culture, language and so on. It therefore becomes imperative for a foreign firm to have an offsetting, firm-specific advantage allowing it to compete with domestic firms. Firm-specific advantages include superior technology, brand name, managerial skills and scale economies. However, this approach could not explain the actual decisions about FDI. This void was filled by John Dunning, who further developed the idea of firm-specific advantages, resulting “OLI” paradigm of FDI, also known as the “eclectic theory” of FDI.

The “OLI” paradigm (Dunning, 1977) provides a strong framework for a discussion of the motives for FDI. It also allows for a discussion of the choice of an MNC between licensing, exports and FDI in order to serve a foreign market. This choice accordingly, is determined by Ownership advantages, Locational advantages and Internalisation advantages, thus the acronym “OLI”.

Ownership advantages are based on the concept of firm-specific advantages. To overcome the disadvantage of operating in a foreign country, a firm must possess an Ownership advantage. The Ownership advantage comes in the form of an asset

reducing the firm's production cost and allows it to compete with domestic firms in the foreign economy despite the information disadvantage.

Ownership advantages come in the form of assets such as patents, management or technology and should have the characteristics of 'excludability' and 'transferability'. The foreign firm should be able to exclude competing firms from using the asset. Also to create proper conditions for FDI, the Ownership advantages should be transferable to a foreign country and possible to use simultaneously in more than one Location.

Locational advantages determine how attractive a location is for production. A strong Locational advantage reduces a firm's production costs in that location. Locational advantages can never be transferred to another location but can be used by more than one firm simultaneously. For example, a supply of cheap labour can provide a Locational advantage for several labour-intensive firms. If the home country provides the strongest Locational advantage to the firm, then instead of FDI, production is located in the home country, and the output is exported in order to meet demand in the foreign economy.

The existence or non-existence of an Internalisation advantage is important to determine how the MNC chooses to use its Ownership advantage and also choose between own production and licensing of production to an external firm. Existence of an Internalisation advantage implies that the firm's most efficient alternative of using an Ownership advantage is through exports or FDI. If an internalization advantage is missing, it is more profitable for the firm to exploit its Ownership advantage through selling the right of its use to another firm through licensing. While possession of an Ownership advantage is a prerequisite for a firm to be able to serve demand in a

foreign market, it is the existence of Locational and Internalisation advantages that determines how the foreign market is served.

**Box 5.1: “OLI” advantages and MNC channels for serving a foreign market**

Channel for Serving Foreign Market	Ownership Advantage	Internalisation Advantage	Locational Advantage in Foreign Country
FDI	Yes	Yes	Yes
Exports	Yes	Yes	No
Licensing	Yes	No	No

*Source: Dunning (1981)*

FDI only occurs when the MNC possesses both an Ownership and an Internalisation advantage and the foreign country has a Locational advantage. For the case where the MNC lacks an Internalisation advantage, production is licensed to local firms in the foreign market. If the MNC’s home country has the strongest Locational advantage, the MNC uses exports to serve the foreign market. The “OLI” paradigm can, therefore, also be used as a framework for a discussion about the relationship between FDI and trade.

Dunning (1981, 1986) use the framework of the “OLI” paradigm as a base for the “Investment Development Path” (IDP) theory. The idea of the “IDP” theory is that there exists a U-shaped relationship between the level of an economy’s development and the net outward flows of FDI. In the first low income stage, FDI inflows are small and outflows are zero or close to zero. Domestic firms have not yet acquired Ownership advantages and therefore have no prospects for investing abroad whereas Locational advantages are too weak to attract inward FDI inflows. Economies where significant improvement of the Locational advantages take place (for example, an improvement of the educational level), enter the second stage. Inflows of FDI increase substantially while outward FDI remains very small, resulting

in an increasingly negative net outward FDI position. During the third stage, net outward flows are still negative but increasing. There are two possible causes for this. The first possibility is that outward investment is constant and inward investment is falling. Alternatively, the outflows of FDI are rising faster than the inflows due to eroded Ownership advantages of the foreign investors or as a result of domestic firms developing Ownership advantages, generating outflows of FDI. During the fourth stage, the outward flows of FDI surpasses the inflows of FDI, implying domestic firms have developed strong Ownership advantages. Empirical applications of the "IDP" theory include Barry et al. (2003), who analyse inward and outward FDI flows for Ireland. They find that the growing inflows and subsequent outflows of FDI are consistent with the "IDP" theory.

### **FDI and the new trade theory**

The new trade theory developed in response to the failure of classical trade theories of incorporating concepts observed in actual flows of international trade such as intra-industry trade. The new trade theories contributed by constructing general equilibrium trade models which could include increasing returns to scale, imperfect competition and product differentiation (Helpman and Krugman, 1985).

A weakness of the early contributions to the new trade theory was that they failed to incorporate MNCs and FDI. The dominant assumption in these theories was about the single plant national firms, which limited the usefulness of these models explaining FDI. However, during the eighties and nineties, James Markusen (1995) and other researchers modified the new trade models to allow for inclusion of MNCs and FDI. An important contribution of new trade theory models incorporating MNCs is that they can be used to analyse a firm's decision between FDI and exports. The decision between foreign production and exports revolves around the "proximity-

concentration trade-off", where MNCs compare trade costs to the costs of producing at several locations. The advantage of producing in a single location to achieve scale economies is compared to the reduction in trade cost achieved when production takes place at several locations close to the local market. The "proximity-concentration trade-off" has resulted in the idea of two primary forms of FDI, horizontal and vertical. The distinction between these forms has been fundamental for modeling MNCs and FDI (Markusen 2002).

Horizontal FDI means that an MNC replicates the same activities in several different geographical locations, whereas vertical FDI implies that an MNC locates production stages according to factor costs.

Vertical and horizontal FDI have different motives. Horizontal FDI occurs when the motive of the MNC is primarily "market-seeking" and the firm wants to satisfy foreign market demand by local production. In this case there exists a foreign market with a demand that the MNC wants to serve by producing close to the market. A reason for this might be that it is necessary to adapt the product to the preferences of local customers. Higher trade costs in the form of tariffs tend to increase the incentive for horizontal FDI.

An MNC performing vertical FDI has primarily an "efficiency-seeking" motive, that is, the MNC exploits differences in factor costs between geographical locations. The MNC decomposes the production process geographically into separate stages according to factor intensity. For example, the labour-intensive stage of production should be located where labour costs are low. Similarly, a capital-intensive stage should be located where the cost of capital is low. Vertical FDI can be seen as a special version of the spatial product cycle model described in Andersson and Johansson (1984).



The focus on a horizontal / vertical distinction of FDI and MNCs has strongly dominated trade theory models incorporating FDI. Two of the earliest models of vertical and horizontal MNCs are given in Helpman (1984) and Markusen (1984), respectively. Helpman's model is a general equilibrium model based on differences in factor endowments, where vertical MNCs locate production according to factor intensities, whereas Markusen presents a horizontal model of MNCs, where FDI is driven by firm-level scale economies.

The nineties saw an increasing number of trade models incorporating international production and MNCs. Modeling efforts were still based on the distinction between horizontal and vertical FDI since these were believed to be the main forms of FDI. Markusen (2002) provides an overview of how new trade theory models have incorporated MNCs and foreign direct investment, with a focus on general equilibrium models. Brainard (1993) presents a two-sector, two-country general equilibrium model, where firms choose between exports and foreign investment. The choice is determined by the trade-off between proximity to the market and scale economies at the plant level providing advantages to concentrating production in one country. According to him, national firms can coexist with MNCs in equilibrium. Brainard's (1997) study is an econometric study of MNCs using bilateral data for 27 economies with affiliate activity with the U.S. She finds that higher transport costs and foreign trade barriers result in an increase in FDI, providing support for a horizontal model of FDI. Markusen and Venables (1998) develop a two-country general equilibrium model where both national and multi-national firms arise endogenously. Simulation results imply MNCs become more important when countries are similar in size and relative endowments. The simulations also indicate that MNCs tend to arise when firm-level scale economies and tariff or transport costs

are large relative to plant-level scale economies, confirming the results found by Brainard (1993).

The framework of these general equilibrium models of FDI can also be used for studies not primarily aimed at analysing the form FDI takes. An example is Markusen and Zhang (1999), who investigated host country characteristics that attract FDI and the reasons for developing economies receiving only small inflows of FDI despite being labour abundant. They construct a general equilibrium model based on a high income country and a country abundant in unskilled labour. Simulation indicates that small economies receive less FDI per capita than larger ones and their lack of skilled labour can be an explanation for the small inflows of FDI.

### **Knowledge-Capital and complex FDI forms**

The classification of FDI into a horizontal and a vertical form has recently been extended by the introduction of the concept of knowledge-capital which has added more realism to the strict distinction between horizontal and vertical FDI. According to Markusen (1995), MNC firm-specific advantages are primarily based on knowledge-capital, consisting of intangible assets such as patents, human capital (skilled engineers, for example), trademarks or brand name. He points to the significance of knowledge-capital for MNCs and claims that this fact primarily provides MNCs with an opportunity for international production. Markusen argues that MNCs tend to have large R&D expenditures and technically advanced products suggesting knowledge-capital is important. Knowledge-based assets share characteristics giving rise to FDI. It is easy and inexpensive to transfer knowledge based assets to new geographical locations and knowledge has a joint character. It can create a flow of services at several production facilities without affecting its productivity.

Markusen argues that the importance of knowledge for MNCs has implications for the choice between licensing and foreign production. The character of knowledge implies that it can be copied at low cost by a potential licensee that instead starts its own business. Therefore, licensing increases the risk of the MNC losing its firm-specific advantage through technology spillovers, which explains why an MNC prefers to Internalise and choose FDI.

According to this reasoning, the growing importance of knowledge for MNC activities can be an important explanation for the surge in global FDI during the last decades. MNC dependence on knowledge capital provides a strong incentive for Internalising Ownership-advantages resulting in larger volumes of FDI.

To emphasize the importance of knowledge, researchers have constructed models, attempting to formalise the idea of a knowledge-capital based MNC (Markusen 1997). The two-country, two-goods, two-sectors, models presented in these studies allow combinations of vertical and horizontal MNCs as well as national firms to arise endogenously. Carr et al. (2001) constructed a model that can be used for empirical testing of the theory of a knowledge-based MNC. This model incorporates both horizontal and vertical motives for FDI, and econometric testing supports the idea that MNCs are characterised by knowledge-based assets.

Markusen and Maskus (2002) used a general equilibrium framework to determine the importance of horizontal, vertical and knowledge-capital models of MNCs. Computer simulations are performed to test the three alternative models of FDI. Simulation along with estimation of the models based on data for U.S. FDI provides strong support for the horizontal model and rejects the vertical model. The results suggest FDI is most likely to take place between countries similar both in relative

endowments and size. They also provide strong support for knowledge-capital FDI but can not distinguish it from the horizontal model of FDI.

It has always been interesting to find out how the distinction between vertical and horizontal MNCs fit the form of MNCs actually observed. While studies such as Markusen and Maskus (2002) suggest horizontal MNCs and FDI tend to dominate, empirical studies using detailed firm-level data indicate the existence of more complex forms of FDI. Feinberg and Keane (2005) argue that actual MNC forms seldom can be classified as purely vertical or horizontal. Using firm-level data for U.S. MNCs with affiliates in Canada, they find that only 31 percent of the firms in the dataset could be classified as purely vertical or horizontal. Similarly, Hanson et al. (2001), using detailed data on U.S. MNCs, conclude that the actual choice of strategies done by MNCs is too varied to fit into the distinction between horizontal and vertical FDI.

These empirical observations indicating the existence of more complex forms of FDI led to models where MNCs are not strictly defined as being vertical, horizontal or based on knowledge capital. Yeaple (2003) presents a three-country model where MNCs follow so-called "complex integration strategies". In this model, MNCs perform FDI in order both to minimise transport costs and take advantage of differences in factor costs simultaneously. Consequently, MNCs are integrated both vertically and horizontally. The model shows how complex integration strategies result in a complicated structure of FDI determined by complementarities between host countries.

Another example of a complex MNC integration strategy was provided by Ekholm et al. (2004) where export-platform FDI is modeled as an additional form of FDI. They define export-platform FDI as MNC production in a host economy when the output is

sold in third markets and not in the parent or host country market. The objective of the MNC is to create an export-platform in the host economy. Ekholm et al. argue that export-platform FDI cannot be classified as either horizontal or vertical FDI since it shares characteristics of both forms of FDI. They construct a three-country model with two high-cost countries and one low-cost country. Export-platform FDI occurs when a firm in a large high-cost country constructs a plant in the low cost country in order to supply the other high-cost country. Numerical simulations of the model are performed in order to find conditions resulting in export platform FDI. The likelihood for this form of FDI is determined by the interaction of shipping costs and cost advantages between the three countries.

There are many empirical observations about export platform FDI. Ireland is an example of a host country that has received substantial inflows of export platform FDI. Barry and Bradley (1997) argue that foreign firms perform FDI in Ireland to produce for export rather than to satisfy local demand. FDI inflows to Ireland have been dominated by U.S. MNCs strongly focused on exporting their output to the rest of the EU.

## **SECTION 5.2**

### **THEORETICAL FRAMEWORK**

It is widely agreed that FDI takes place when three sets of determining factors exist simultaneously: the presence of Ownership specific competitive advantages in a transnational corporation (MNC), the presence of Locational advantages in a host country, and the presence of superior commercial benefits in an intra-firm as against an arm's-length relationship between investor and recipient.

- The Ownership-specific advantages (e.g. proprietary technology) of a firm, if exploited optimally, can compensate for the additional costs of establishing production facilities in a foreign environment and can overcome the firm's disadvantages vis-à-vis local firms.
- The Ownership-specific advantages of the firm should be combined with the Locational advantages of host countries (e.g. large markets or lower costs of resources or superior infrastructure).
- Finally, the firm finds greater benefits in exploiting both Ownership-specific and Locational advantages by internalisation, i.e. through FDI rather than arm's-length transactions. This may be the case for several reasons. For one, markets for assets or production inputs (technology, knowledge or management) may be imperfect, and may involve significant transaction costs or time-lags. Also it may be in a firm's interest to retain exclusive rights to assets (e.g. knowledge) which confer upon it a significant competitive advantage (e.g. monopoly rents).

While the first and third conditions are firm specific determinants of FDI, the second is Locational-specific and has a crucial influence on a host country's inflows of FDI. If only the first condition is met, firms will rely on exports, licensing or the sale of patents to service a foreign market. If the third condition is added to the first, FDI becomes the preferred mode of servicing foreign markets, but only in the presence of Locational-specific advantages. Within the trinity of conditions for FDI to occur, Locational determinants are the only ones that host governments can influence directly. (UNCTAD, 2006)

To explain differences in FDI inflows, and to formulate policies to capture inbound investment, it is necessary to understand how Locational factors influence the FDI decisions of a firm.

The objective of this chapter is therefore to review the Locational-specific (host-country) determinants of FDI flows.

### **Box 5.2: Locational determinants of foreign direct investment**

<b>Policy framework for FDI</b>	<b>Economic determinants</b>	<b>Business facilitation factors</b>
<b>Core FDI Policy Regime</b> <ul style="list-style-type: none"> <li>• Rules Regarding Entry and Operations</li> <li>• Standards of Treatments of Foreign Enterprise</li> <li>• Policies on Functioning</li> </ul>	<b>Market Seeking FDI</b> <ul style="list-style-type: none"> <li>• Market Size and Per Capita income</li> <li>• Market Growth</li> <li>• Access to Regional and Global Markets</li> <li>• Country Specific Consumer Preferences</li> <li>• Structure of Markets</li> </ul>	<b>Investment Promotion Measures</b> <ul style="list-style-type: none"> <li>• Investment Incentives</li> <li>• Hassle Costs (corruption, administrative inefficiency)</li> <li>• Social Amenities</li> <li>• After Investment Services</li> </ul>
<b>Trade Policy Regimes</b>	<b>Resource Seeking FDI</b> <ul style="list-style-type: none"> <li>• Structure of Markets</li> <li>• Raw Material</li> <li>• Low Cost Unskilled Labour</li> <li>• Skilled Labour</li> <li>• Technology innovatory and other created assets</li> <li>• Physical Infrastructure</li> </ul>	
<b>Intellectual Property Protection Regime</b>	<b>Efficiency – Seeking FDI</b> <ul style="list-style-type: none"> <li>• Cost of Resource and Assets</li> <li>• Other Input Costs</li> </ul>	
<b>Economic Stability of the Country</b> <ul style="list-style-type: none"> <li>• Monetary Policy</li> <li>• Fiscal Policy</li> </ul>		
<b>Political and Social Stability</b>		
<b>International Agreements on FDI</b> <ul style="list-style-type: none"> <li>• Bilateral Treaties</li> <li>• Regional Integration Frameworks</li> <li>• Multi Investment Frameworks</li> </ul>		

Source: Dunning John H, "The Theory of Transnational corporations", Transnational Corporations, department of Economic and Social Development, 1998.

Several caveats are required before reviewing the FDI determinants:

1. Direct investment abroad is a complex venture. As distinct from trade, licensing or portfolio investment, FDI involves a long-term commitment to a business endeavour in a foreign country. It often involves the engagement of



considerable assets and resources that need to be coordinated and managed across countries and to satisfy the principal requirements of successful investment, such as sustainable profitability and acceptable risk/profitability ratios. Typically, there are many host country factors involved in deciding where an FDI project should be located and it is often difficult to pinpoint the most decisive factor. Although the analysis that follows treats each of the three sets of determinants separately, the interrelationships among them have to be considered.

2. The relative importance of different location specific determinants depends on at least four aspects of investment:
  - a. The motive for investment (e.g. "resource-seeking" or "market seeking" FDI)
  - b. The type of investment (e.g. new or sequential FDI), the sector of investment (e.g. services or manufacturing)
  - c. The size of investors (small and medium-sized MNCs or large MNCs).
  - d. The relative importance of different determinants also changes as the economic environment evolves over time. It is, therefore, entirely possible that a set of host country determinants that explains FDI in a particular country at a given time changes as the structures of its domestic economy and of the international economy evolve. At the same time, there are also location specific determinants that remain constant. In the analysis that follows, only the most important host country determinants will be examined.
3. As a general principle, host countries that offer what MNCs are seeking, and/or host countries whose policies are most conducive to MNC activities,

stand a good chance of attracting FDI. But firms also see Locational determinants in their interaction with Ownership-specific and Internalisation advantages in the broader context of their corporate strategies. These strategies aim, for example, at spreading or reducing risks, pursuing oligopolistic competition, and matching competitors' actions or looking for distinct sources of competitive advantage. In the context of different strategies, the same motive and the corresponding host country determinants can acquire different meanings. For example, the "market-seeking" motive can translate, in the case of one MNC, into the need to enter new markets to increase the benefits arising from multi-plant operations; in the case of another MNC, it can translate into the desire to acquire market power; and for still another MNC, it can aim at diversifying markets as part of a risk reducing strategy. This points to the need for host countries not only to understand the motives of potential investors but also to understand their strategies.

## **EXPLAINING THE LOCATIONAL FACTORS**

### **1. Market Size**

Market size is one of the most important considerations in making investment Locational decisions. The attractiveness of large markets is related to larger potential for local sales, because local sales are more profitable than export sales specially in larger countries where economies of scale can be eventually reaped. Also large countries offer more diverse resources which makes local sourcing more flexible. The higher the GDP, the better is the nation's economic health and better are the prospects that the direct investment will be profitable. Thus GDP has a positive influence on direct investment from abroad.

## **2. Economic stability of the country**

Monetary and fiscal policies which determine the parameters of economic stability such as the interest rates, tax rates, and the state of external and budgetary balances, influence the investment rates, described as follows:

### **a. Interest Rates**

Interest rates affect the cost of capital in a host country, directly affecting one of the determinants of the investment decision. The effects of interest rates on FDI are smaller than on domestic investment because MNCs normally have a greater choice of sources of financing.

### **b. The level of External Indebtedness**

The level of external indebtedness is expected to have a negative impact on FDI inflows. The level of indebtedness shows the burden of repayment and debt servicing on the economy thus making the country less attractive for foreign investors.

### **c. Debt Service Ratio**

This is represented by total debt service as a percentage of total income of the country. The higher this ratio, the higher will be the burden of the country to service the debt out of the income of the country. The FDI inflows are expected to increase with a small debt service ratio. Thus this variable is expected to have a negative correlation with the FDI inflows.

#### d. Foreign Exchange Reserves

The higher the level of foreign exchange reserves in terms of import cover reflects the strength of external payments position and helps to improve the confidence of the prospective investors. Therefore a positive relationship is expected between the foreign exchange reserves and the inflow of foreign direct investment.

#### e. Exchange Rate Regime

Exchange rate represents the investment climate in the country. High exchange rate will erode the profitability of foreign investment, increase the cost of production and introduce distortions in the host country's economy. As a consequence, a negative relationship can be hypothesized between the exchange rate and the flow of foreign capital.

#### f. Inflation Rate

A high rate of inflation is a sign of internal economic tension and of the inability or unwillingness of the government and the central bank to balance the budget and to restrict the money supply. As a rule, the higher the inflation rate, the less will be the FDI inflows. A negative relationship is expected.

#### g. Deficit in the Balance Of Payments

A large deficit in the BOP indicates that the country lives beyond its means. The danger increases that free capital movement will be restricted and that it

will be more difficult to transfer the profits from the direct investments into the investing country. Hence a negative relationship can be expected.

### **3. Availability of human capital**

The continued expansion of MNCs was in the past, a response to differential availability of factor endowments in various countries. Cheap and productive labour reduces the cost of production and yields high profitability. Low wage rates and higher labour productivity thus is expected to have a positive influence on FDI inflows.

### **4. Availability of natural resources**

Historically the most important host country determinant of FDI has been the availability of natural resources. The availability of natural resources (raw material) for manufacturing is one of the most important factors in investment decision making. If the resources are available locally the cost of production remains low, as the cost of transportation is saved. It is the sustained availability of the resources which matter in the investment decisions. In case of planned and long term industrial investments, the availability of raw material for a short period is not considered favorable.

### **5. Economic policies of the host country**

Economic policies include the industrial policies, trade policies, tax structures, the intellectual property protection regime, bilateral investment treaties, regional integration frameworks, multilateral investment frameworks etc of a country. Government policies are a possible determinant of FDI since the Government

considers FDI flows as a means to fight unemployment and enhance national growth rates.

## **6. Infrastructural facilities**

The establishment of industry requires a highly developed infrastructure. The development of roads, rails, electricity and communication system are important infrastructural facilities which are vital for the development of the industry. These factors are responsible for the attraction of FDI and the lack of them becomes a hindrance.

## **7. Agglomeration effects**

Agglomeration effects are also significant in attracting FDI. Agglomeration economies arise from the presence of other firms, other industries; as well as from the availability of skilled labour force. Agglomeration effects correspond to positive spillovers from investors already producing in this area. This gives rise to economies of scale and positive externalities, including knowledge spillovers, specialized labor and intermediate inputs. Thus high FDI today implies high FDI tomorrow. Such high persistence over time is reinforced by the nature of FDI, which involve high sunk costs and is often accompanied by physical investment that is irreversible during short run.

### **Box 5.3: Determinants of FDI–Summarised**

<b>Determinant</b>	<b>Possible Proxy Variable</b>	<b>Effect</b>
Market Size, Market Growth	GDP, GDP Growth Rate	+++
Level of development	GDP per Capita, GDP per Capita Growth Rate	++
Urbanisation	Percentage of Urban Population	+
Human Capital	Secondary School Enrolment Ratio	+/-
Agglomerations	FDI Lagged One Period	+
	Number of Firms in the Region	+
	GDP	+
Economic Integration	Member of Economic–Political Union	+
Governments, Trade Regime	(Exports + Imports) / GDP	+
	FDI as a fraction of GDP	+
	Infrastructure (Roads)	+
Labour Costs	Wages and Salaries	-
Exchange Rate Variability	Absolute / Relative Change in Real Exchange Rate	+/-
Political Instability	Foreign Debt as a Fraction of GDP	
Interaction Between the Foreign Investor and the Domestic Firms	R&D	+/-
	Marketing process	+/-

## **SECTION 5.3**

### **LITERATURE REVIEW**

An extensive set of determinants has been analyzed in the literature on the determinants of FDI. Numerous empirical studies (Agarwal, 1980; Gastanaga et. al., 1998; Chakrabarti, 2001; and Moosa, 2002) lead to a set of explanatory variables that are widely used and found to be significant determinants of FDI. Markusen and Maskus (1999), Love and Lage-Hidalgo (2000), Lipsey (2000) and Moosa (2002) highlight how the domestic market size and differences in factor costs can relate to the Location of FDI. This factor is important to foreign investors who operate in industries characterized by relatively large economies of scale. This is because they can exploit scales economies only after the market attains a certain threshold size. The most widely used measures of market size are GDP, GDP/Capita and growth in GDP. The signs of these coefficients are usually positive.

Discussing the labor cost, which is one of the major components of the cost function, it is found that high nominal wages, other things being equal, deter FDI. This must be particularly true for the firms, which engage in labor-intensive production activities. Therefore, conventionally, the expected sign for this variable is negative. There are studies that find no significant or a negative relationship of wage and FDI (Kravis and Lipsey, 1982; Wheeler and Mody, 1990; Lucas, 1993; Wang and Swain, 1995; and Barrell and Pain, 1996). Nonetheless, there are other researchers who have found out that higher wages do not always deter FDI in all industries and have shown a positive relationship between labor costs and FDI (Moore, 1993; and Love and Lave-Hidalgo, 2000). This is because higher wages indicate higher productivity and hi-tech



research oriented industries, in which the quality of labor matters, prefer high-quality labor to cheap labor with low productivity.

Recently, a few researchers have also studied the impact of specific policy variables on FDI in the host countries. These policy variables include openness of trade, tariff, taxes and exchange rate. Gastanga et al (1998) and Asiedu (2002) focus on policy reforms in developing countries as determinants of foreign direct investment inflows. They find corporate tax rates and degree of openness to foreign direct investment to be significant determinants of FDI. Similarly many recent models highlight the effect of tariffs on FDI in the context of horizontal and vertical specialization within MNCs (Ethier, 1994 and 1996; Brainard, 1997; Carr, Markusen, and Maskus, 2001).

Likewise the effect of exchange rate movements on FDI flows is a fairly well studied topic, although the direction and magnitude of influence is not very certain. Froot and Stein (1991) claimed that a depreciation of the host currency should increase FDI into the host country, and conversely an appreciation of the host currency should decrease FDI. Similarly, Love and Hidalgo (2000), also acknowledge that the lagged variable of exchange rate is positive which indicates that a depreciation of the peso encourages US direct investment in Mexico after some time. Contrary to Froot and Stein (1991), Campa (1993), while analyzing foreign firms in the US puts forth the hypothesis that an appreciation of the host currency will in fact increase FDI into the host country that suggests that an appreciation of the host currency increases expectations of future profitability in terms of the home currency.

Sayek Selin (1999), explained the relationship between FDI and inflation. This research's results from an impulse response analysis supported the theoretical model, shown a 3 percent increase in Canadian inflation reducing US FDI in Canada by 2 percent and increasing USA domestic investment by one percent. Similarly, a 7

percent increase in Turkish inflation reduces US FDI in Turkey by 1.9 percent, increasing US domestic investment by 0.3 percent.

## **SECTION 5.4**

### **HYPOTHESIS AND METHODOLOGY**

In the present chapter the Locational specific (host country) determinants of the foreign direct investment inflows are studied. A brief analysis of these variables that would set as a background for the empirical analysis of the determinants of FDI in India has already been given in the previous section. Based on the theory of John Dunning, several variables affecting FDI have been discussed in this present section. The present study is a version of an explanation of the inward flow of FDI into India from 1980-81 to 2005 based on some important quantifiable policy and economic variables. A process of gradual relaxation of controls and regulations with a view to attract large inflows of foreign investments was discernable from the year 1981. In a limited and phased manner market forces were allowed to govern the foreign investment flows during this period. Hence this period has been selected.

Considering the principal determinants of FDI inflows the equation is specified is as follows:

$$\text{IFDI} = a_0 + a_1 \text{GDP} + a_2 \text{WAGE} + a_3 \text{INFL} + a_4 \text{EXDBT} + a_5 \text{INFR} + a_6 \text{OPEN} + a_7 \text{REER} + a_8 \text{AGGL}$$

Where,

- i. IFDI : Foreign direct investment net inflows measured as BOP current US\$ billion
- ii. GDP : Gross Domestic Product at factor cost measured in current US\$ billion
- iii. WAGE : Total emoluments paid to the workers measured in Rs. Lakhs.
- iv. INFL : (Inflation) GDP deflator measured as annual percentages
- v. EXDBT : Total external debt measured in current US\$ billion

- vi. INFR : (Infrastructure) Proxied by energy use measured as Kg. of oil equivalent per capita.
- vii. OPEN : Sum of Exports + Imports divided by GDP  $[(Ex+Im) / GDP]$
- viii. REER : Indices of Real Effective Exchange Rate of the Indian Rupee–36 country bilateral weights with base 1985=100
- ix. AGGL : Agglomeration effect measured by a two year lag values of net FDI inflows

## **Hypothesis**

"Locational factors (pull factors) determine the flow of inward foreign direct investment to India".

## **Empirical Analysis**

For the purpose of the study, aggregate annual time series data at country level at current prices is used. Aggregate time series data is used for its stationary characteristics. This implies that the mean and standard deviation do not systematically differ over a period of time. In addition aggregate data is normally very useful in establishing long term econometric relationships between the variables.

As it is known that usually economic time series move together, therefore, if all the variables are included simultaneously in the equation there may be possibility of multicollinearity. To examine the variables which may not be included simultaneously in the equation, a bivariate correlation matrix for all the expected explanatory variables and the dependent variable was obtained. Based on the correlation matrix several variables were selected as the possible explanatory variables. The correlation matrix also shows high degree of association between all the explanatory variables.

**Box 5.4: Correlation matrix of inward FDI flows and the determinants of inward**

**FDI flows**

	IFDI	GDP	EXDBT	INFR	INFL	OPEN	REER	AGGL	WAGE
IFDI	1	.933**	.750**	.889**	-.788**	.924**	-.524**	.885**	.932**
GDP	.933**	1	.817**	.911**	-.731**	.947**	-.572**	.921**	.927**
EXDBT	.750**	.817**	1	.954**	-.482**	.832**	-.921**	.712**	.905**
INFR	.889**	.911**	.954**	1	-.675**	.911**	-.828**	.847**	.981**
INFL	-.788**	-.731**	-.482**	-.675**	1	-.640**	.270	-.775**	-.676**
OPEN	.924**	.947**	.832**	.911**	-.640**	1	-.628**	.880**	.957**
REER	-.524**	-.572**	-.921**	-.828**	.270	-.628**	1	-.456**	-.734**
AGGL	.885**	.921**	.712**	.847**	-.775**	.880**	-.456**	1	.865**
WAGE	.932**	.927**	.905**	.981**	-.676**	.957**	-.734**	.865**	1

\*\* Correlation is significant at the 0.01 level (2-tailed).

\* Correlation is significant at the 0.05 level (2-tailed).

(Estimates based on appendix tables)

Simple correlation between IFDI and GDP is found very high at 0.933. Correlation between IFDI and WAGE is also very high at 0.932. OPEN is correlated with IFDI with  $r = 0.924$ . Agglomeration effects (AGGL) are correlated with IFDI at 0.885. INFR is correlated to FDI with  $r = 0.889$ . REER and INFL have a negative correlation with IFDI as expected with  $r = 0.524$  and  $r = 0.788$  respectively. EXDBT should have a negative correlation with IFDI. However, it is positive with  $r = 0.75$ .

Using Multiple Linear Regression (MLR), the explanatory variables are regressed. In order to estimate the regression model, a statistical package, Statistical Package for Social Sciences (SPSS), is used. SPSS is run and from the output, the values of the constant,  $\alpha$  (slope), coefficient of regression. In addition, the output shows the t-statistic and p-values for the coefficients which results in either rejecting or failure to reject the hypothesis at a specified level of significance. The p-value is the probability of getting a result that is at least as extreme as the critical value. The null hypothesis is rejected if the p-value is less than or equal to the critical value.

**REGRESSION RESULTS**

(Estimates based on appendix tables)

Regression Analysis Explaining the Variations in IFDI flows

**Dependent Variable** : IFDI flows

**Period** : 1980 To 2005

**N** : 26

**Regression Model – 1**

**Model Summary:**

R Square	Adjusted R Square	F-Value
0.936	0.927	102.291

**Coefficients:**

	Coefficient	Beta	t
(Constant)	- 1041.348	–	- 2.017
GDP	5.559	0.400	2.664**
WAGE	1037.631	0.958	4.645*
EXTDBT	- 31.809	- 0.439	- 3.333**
Notes: * Significant at 1% / ** Significant at 5%			

**Excluded Variables:**

	Beta In	t
ENRGY	0.506 <sup>c</sup>	1.174
INFL	- 0.114 <sup>c</sup>	- 1.227
OPEN	- 0.022 <sup>c</sup>	- 0.091
AGG	- 0.009 <sup>c</sup>	- 0.063
c. Predictors in the Model: (Constant), GDP, WAGE, EXT_DBT		

**Regression Model – 2**

**Model Summary:**

R Square	Adjusted R Square	F-Value
0.919	0.911	129.614

**Coefficients:**

	Coefficient	Beta	t
(Constant)	- 958.273	–	- 1.069
OPEN	28523.012	0.711	9.174*
INFL	- 259.380	- 0.333	- 4.293*
Notes: * Significant at 1% / ** Significant at 5%			

**Excluded Variables:**

	Beta In	t
ENRGY	0.107 <sup>b</sup>	0.700
AGG	0.011 <sup>b</sup>	0.073
b. Predictors in the Model: (Constant), OPEN, INFL		

## **SECTION 5.5**

### **FINDINGS AND CONCLUSIONS**

The above findings corroborate the theoretical predictions emanating from recent propositions in the theory of international trade and are able to explain about 92% of the variations in FDI in India. Size of the market indicated by GDP, labour productivity measured by WAGE, economic stability measured by level EXDBT and INFL and OPEN are found to be statistically significant and have proper signs. The coefficients of WAGE and OPEN are positive and highly significant in explaining the FDI inflows. The coefficients of INFL and EXDBT are negative and statistically significant. Other variables like AGGL, and INFR are statistically insignificant and do not explain the variations in FDI inflows.

The results both confirm and complement findings of other studies where it has been found that cost related factors, macro economic factors and country's profile of political risk index are the major determinants of inward FDI flows. (Markusen and Maskus, 1999; Love and Lage-Hidalgo, 2000; Lipsey, 2000; Moosa, 2002; Moore, 1993; Sayek Selin, 1999)

Over a period of time general and specific FDI policies have become less restrictive to inward FDI in India. With fewer policy barriers, other factors have become emerged as important determinants. Prominent among them are basic economic pull factors such as good quality and productive human resources on the supply side, and market size on the demand side. Macro-economic policies that shape the underlying fundamentals of cost-competitiveness, economic stability of the country



and degree of integration with the world economy have also become more important over time in attracting FDI.

Market size is an important factor affecting FDI; however, in India, this important traditional variable has decreased in importance. At the same time, cost differences between locations, spillovers from increased competition on the domestic turf, the ease of doing business and the availability of skills have become more important. This is validated in the results of this study.

Thus although FDI remains strongly driven by its traditional determinants, the relative importance of different Locational determinants for competitiveness enhancing FDI is shifting. Cheap and skilled labour is an important determinant attracting FDI to India. A high wage adjusted productivity of labour has attracted "efficiency seeking" FDI aiming to produce for the domestic economy as well as for exports to other countries. India remains a country with a large supply of skilled human capital attracting more FDI, particularly in sectors that are relatively intensive in the use of skilled labour. While low cost remains a Locational advantage, the increasingly sought after advantages are competitive combinations of wage, skills and productivity. This explains the growing volume of vertical "efficiency seeking" FDI in which foreign companies seek to produce intermediate and/or final products in the cheapest (real) cost locations primarily for exports to third markets. It is found that the FDI flows were already skewed towards manufacturing and services sector in 1990, but increasingly have shifted towards services in the past 15 years. India has been able to attract increasing amounts of FDI in high value-added services. Now, even the most strategic of functions such as R&D are expanding in some developing countries as multinational corporations seek to benefit from pools of talent at competitive costs, particularly in those countries that have actively helped to create this (incl. Singapore, Malaysia, China and India). (UNCTAD, 2005)

This has implications on the success of domestic policies to attract inward FDI. The nature and sequencing of general and specific policies in areas covering investment, trade, innovation and human resources are all important. Appropriate policies to benefit from FDI include building up local human resource and technological capabilities to capture productivity spillovers. Lall (2000) argues that FDI Locational decisions will increasingly depend on economic factors and not on temporary policy interventions.

One important hypothesis from various studies is that gains from FDI are far higher in an open regime. Trade openness generally positively influences the export oriented FDI inflow into the economy. As shown in our results trade openness in the Indian economy has emerged as an important factor attracting FDI inflows.

The results also suggest that long term investment benefits from stability as it reduces the risks for the long-term investor. This is backed up by investor surveys and to a large extent by the evidence. Politically unstable countries tend to receive relatively small amounts of FDI. Government finance is another important issue that affects capital flows. A high level of external debt in India has emerged as a deterrent for FDI inflows.

To conclude, the Locational strategies chosen by firms are likely to be highly contextual and would vary according to industry specific characteristics, the motives for FDI, and the functions being performed by MNC subsidiaries. The government should recognize that the Locational specific advantages sought by mobile investors are changing. Over all, India needs to maintain the growth momentum to improve market size, frame policies to make better use of their abundant labour forces and follow more open trade policies for attracting FDI. Field surveys of the rankings of

various countries by business executives compiled and published by the EIU in the 2000 and 2001 editions of the World Investment Prospects (E.I.U. 2002) show that business executives are increasingly ranking the political stability, quality of infrastructure and government policies towards private enterprise and competition, along with the macro economic environment, as the critical variables likely to affect the future geography of FDI in the early years of the 21st century. The government needs to give constant attention to the upgrading and reconfiguring of their own unique Locational bound advantages, both actual and potential. However, regional initiatives need to be designed carefully to ensure the benefits of new FDI are broadly spread across the regions and sectors.

It is possible that government regulations and policies may deter some forms of FDI, particularly where they affect Ownership. Thus the Government needs to assess the benefits of such interventions against the costs of creating impediments to FDI, which reduce the ability of the country to compete with other developing countries for foreign investments.

Many of the motivations influencing the investment decisions of multinational companies apply equally to domestic investors. Addressing the problems identified by foreign investors already committed to the region should not only in the long run make India more attractive to new FDI but should in the shorter term encourage increased domestic investment.

If the economy has to benefit from the FDI's spillover effects and economic growth, the country needs to attract FDI formulating a bundle of policies that caters for the interests of all the potential investors from different countries. This implies that the country needs stable macro economic indicators, better country risk profile followed by cost related and investment environment improving factors.

Thus India should continue its program of economic reforms, as a sustained healthy economic growth is the biggest attraction for foreign capital. However, any political reforms need to ensure that instability does not ensue. Further, the government should create specific Locational advantages in areas and sectors which have not been able to attract more FDI, such as skilled employees and improving the infrastructure. This will help reduce the disparities in development across regions and sectors.

## **LIMITATIONS AND SCOPE FOR FURTHER RESEARCH**

### **Limitations**

Like all research, the findings here need to be interpreted cautiously given the inherent data constraints of the macro economic time series data and the scope of this research. It is possible that the importance of the Locational factors will differ depending on sector, type and motivation of FDI and a more detailed study at the micro level would yield meaningful insights.

### **Scope of Further Research**

An interesting topic for future research would be to analyze how foreign direct investment in India is affected by factor endowments such knowledge capital, in order to better explain the driving forces of FDI and more closely determine whether FDI tends to be vertical rather than horizontal in nature. It would also be very pertinent to study the impact of FDI inflows on various domestic macro and micro economic variables. Another interesting research avenue would be to undertake a causal analysis to determine whether the relationship between FDI and growth is unidirectional or bidirectional.

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