

*MERIT-Infonomics Research Memorandum series*

*Foreign direct investment and economic development:  
Opportunities and limitations from a developing country  
perspective*

*Rajneesh Narula & Brian Portelli*

*2004-009*



*MERIT – Maastricht Economic Research  
Institute on Innovation and Technology*

PO Box 616  
6200 MD Maastricht  
The Netherlands  
T: +31 43 3883875  
F: +31 43 3884905

<http://www.merit.unimaas.nl>  
e-mail: [secr-merit@merit.unimaas.nl](mailto:secr-merit@merit.unimaas.nl)



*International Institute of Infonomics*

c/o Maastricht University  
PO Box 616  
6200 MD Maastricht  
The Netherlands  
T: +31 43 388 3875  
F: +31 45 388 4905

<http://www.infonomics.nl>  
e-mail: [secr@infonomics.nl](mailto:secr@infonomics.nl)

# **Foreign direct investment and economic development: Opportunities and limitations from a developing country perspective**

April 2004

Rajneesh Narula  
and  
Brian Portelli

## **Abstract**

FDI has attracted increasing interest from developing countries because of the perceived benefits in terms of the injection of capital, technology and knowledge. This article analyses the main analytical underpinnings concerning the inter-relationships between FDI and host country economic development. We undertake a brief review of empirical studies on the issue of FDI-led growth process. We highlight a very basic point emerging from the literature, that FDI is not a *sine qua non* for development. FDI-led growth is not a process that occurs automatically in the host country, and this reflects the complex nature of the interrelationships between multinational enterprises (MNEs) and host country economic agents. A vast majority of the existing empirical studies indicate that FDI does not always make a positive contribution to either economic growth and factor productivity. This is often because host countries are not able to capture the bulk of benefits associated with FDI without a certain threshold level of absorptive capabilities.

**Keywords:** Foreign direct investment, Multinational enterprises, Economic development

**JEL classification:** F23 O10

## **1. Introduction**

Over the past two decades, the growth of multinational enterprise (MNE) activity has increasingly been regarded as one of the defining characteristics of the world economy and an engine of economic growth. MNE-related externalities have been attracting increased interest from developing countries because of the perceived benefits in terms of the injection of capital, technology and knowledge, as well as the potential generation of economic growth in host countries. Key MNE externalities include the knowledge spillovers and linkages from multinationals (MNEs) to domestic firms in host countries. The nature of these MNE externalities may either arise from pure market transactions (e.g., through MNE vertical linkages) or else through knowledge spillovers which take non-market or non-monetary form.

This general warming of attitudes towards FDI has taken place in the context of the promotion of outward-looking economic strategies as envisaged by the 'Washington Consensus' institutions, namely the International Monetary Fund and the World Bank. Hence, developing countries have been undertaking policy shifts from inward-looking, import substitution industrialization models towards more outward-looking, export-oriented economic policies (Narula 1996, Ozawa 1992). The increased role of MNEs in certain sectors is in part a result of aggressive liberalization of FDI regimes and

privatization programmes. Indeed, the greatest change has been the reduction in state ownership and the subsequent privatization of assets.

The less developed a country is, the greater the need for such MNE externalities, as a means to alleviate resource and skill constraints normally associated with underdevelopment. Developing countries actively seek FDI to strengthen industrial competitiveness and enhance their growth prospects<sup>1</sup>. As a result, developing country attitudes towards FDI have changed, with dramatic improvements in the FDI policy regimes<sup>2</sup>. Governments in developing countries have not only reduced barriers to FDI but have also been offering special incentives to attract foreign firms and foster relationships between MNEs and local firms<sup>3</sup>.

The debate on the merits and de-merits of FDI started in the 1960s (Reuber et al 1973, Lall and Streeten 1977) and is still far from over. This topic has assumed greater importance in the context of the anti-globalisation movement which opposes further liberalisation of international trade and investment. FDI and its developmental effects is therefore a topic which attracts considerable attention and interest from academia and policy makers.

The objective of this article is therefore to look at the key analytical issues related to the topic of FDI and economic development from the point of view of host developing countries, specifically focusing on the impact of FDI on economic growth and the mechanisms through which this is achieved. After this introduction, Section 2 provides a brief overview of background of the topic, in terms of the trends in FDI flows and stocks in developing countries and main regional trends and performances. Section 3 presents an overview of the empirical evidence on FDI-led growth principally the mechanisms towards this end. We finish this article with some concluding remarks.

## **2. Background and trends of FDI in developing countries**

The growing importance of FDI represents one of the defining features of globalisation and the reshaping the international business environment and there are a number of studies that have examined the changing structure of international production and documented the meteoric growth in FDI activities (see Narula 2003a for a review). This section highlights some of the salient trends and country/ regional characteristics in terms of inward FDI.

Over the past two decades, world FDI inflows have more than tripled, increasing from around US\$ 55 billion in the late 1980s and reach US\$651 billion in 2002. As Table 1 illustrates, in 2002 more than 70 per cent of total world FDI inflows have been directed to developed countries, with the remainder being shared by developing regions. It is noteworthy that an increasingly large proportion

---

<sup>1</sup> The relevance of FDI vis-à-vis economic development stems from a number of potential benefits to be realised in the host economy. For example, FDI is less volatile than other private capital flows and provides a stable source of finance to meet capital requirements in developing contexts (Reisen and Soto 2001).

<sup>2</sup> This is particularly so in the case of those developing countries which until some time ago practised the outright barring of FDI activity (Caves 1982).

<sup>3</sup> In 1998, 103 countries offered tax concessions to foreign companies that set up production or administrative facilities within their border (Hanson 2001).

of aggregate FDI flows takes the form of cross-border mergers and acquisitions (M&As) which includes the acquisitions of public enterprises through various national privatisation programmes. In 1999, M&As accounted for around 80 per cent of total FDI inflows, corresponding to substantial high shares across developing regions (UNCTAD 2000). The take-over of former parastatal companies represented an increasingly important FDI driver in developing economies as these countries continue to liberalise their economies (Liberatori and Pigato 2000).

Inward FDI stock in developing countries has increased from US\$ 307.5 billion in 1980, reaching US\$ 2,340 billion in 2002. This corresponds to around 33 per cent of total world inward FDI stock. The magnitude of inward FDI stock going to developed economies, accounting to 65 per cent of world total in 2000 compared to 56 per cent in 1980. For the developing economies, the same share decreased from 44 per cent in 1980 to around 35 per cent in 2002. Table 1 illustrates these trends. It is noteworthy that within the developing country groupings, there are marked differences among the developing regions. It is noteworthy to highlight the relative 'weight' of China in terms of inward FDI attraction in recent years. For example, in 2002, China's share in total inward FDI stock stood at 6 per cent, compared to 0.1 per cent in 1980.

TABLE 1

The important role of FDI in host economies is highlighted in specific indicators, such as the share of inward FDI flows as a percentage of gross fixed capital formation (GFCF), as well as the share of inward FDI stock as a percentage of gross domestic product (GDP). The share of inward FDI inflows as a percentage of GFCF measures the relative weight of FDI in total aggregate investment taking place in the host economy. Total investment includes both public and private sector investment in the host country. On the other hand, the share of inward FDI stock as a percentage of GDP provides a tentative measure of the importance inward FDI stock in relation to total economic activity taking place in the host country (as measured by GDP). Table 1 illustrates the increased importance of FDI flows and stock as evidenced from increasing shares in both indicators between 1980 and 2002.

Within the various regional groupings, it is equally evident that not all developing regions have been equally successful in attracting FDI to their economies. For example, whereas in 1980, Sub Saharan Africa and South America had almost the same level of inward FDI stock, with a share of world total at 4.0 and 4.2 per cent respectively, their respective shares in 2002 were very different. Sub Saharan Africa's share stood at 1.7 per cent of total inward FDI stock compared to 6.2 per cent for South American region. Although decreasing its shares over the 1980-2002 period, South East Asia maintained the highest share for developing countries. Alternatively, looking at the average growth rates over the period 1980-2002, it is more evident that inward FDI stock towards developed economies has grown at an average rate of 48 per cent. The highest growth rate is that for South

America with 61 per cent and the lowest growth rate is that for Sub Saharan Africa at 14.8 per cent. Table 2 illustrates these trends

TABLE 2

A reason behind cross regional disparities of FDI in developing countries may be due to the concentration of FDI in few selected countries. Indeed, it is estimated that the five largest host countries in developing world received 62 per cent of total FDI inflows (UNCTAD 2002a) These handful of countries primarily include the Asian newly industrialised countries, particularly China. As illustrated in Table 2, in each of the developing regions, just five countries accounted for over 70 per cent of all inward FDI flows.

TABLE 3

It is also evident that the onset of globalisation has transformed the modes of MNE production and trade in both developed and developing countries. This is reflected in changes in the extent of information and technology in economic activities, trade intensity and FDI liberalisation policies and the new rules of international trade and investment (Narula 2003a). In the context of these developments, over the past two decades the sectoral trends (primary, manufacturing and services) in FDI have also registered substantial changes. An important development has been the sharp decline in FDI stock going into primary sector economic activities, the share of which has registered a decrease by more than half between the period 1988-1997 (Table 3). On the other hand, the services sector has registered a growing share over the same period. It is also noteworthy that the greater importance of the services sector has been underpinned by the mergers and acquisitions (M&As) boom between 1987 and 2000. It is estimated that the share of the services sector M&As in 1999 was more than twice the sum of the primary and manufacturing sector (UNCTAD 2000). In terms of the level of FDI stock, the manufacturing sector remains the most important economic sector in the developing country group. It is also important to highlight the extensive regional disparities in sectoral composition. The African region appears to go against the overall developing country trends with the share of primary goods remaining substantially high and constant and the share of services sector diminishing. This outcome partly reflects the fact that a large number of MNEs operating in Africa are still attracted by the abundance of natural resources rather than the market or other host country location-specific advantages (Narula 1996). This form of FDI has different implications for growth and development in host economies than FDI in manufacturing and services. Hiemenz et al. (1991) find that natural resource oriented FDI in contrast to manufacturing FDI tends to be undertaken independently of macro-economic conditions and other host country factors. The Latin American and the Caribbean regions have registered a large drop in the share of the manufacturing sector with a corresponding

increase in the share of the services sector (Narula 2003b). The Asian region has exhibited a large and relatively stable share of manufacturing sector activities.

TABLE 4

These data provide an indication of the trends and importance of FDI in the developing country context, especially with regards to shares in global FDI stocks and flows and the relative 'weight' of FDI with respect to investment and economic activity in the host country. In addition to highlighting the trends in inward FDI flows and stocks, it is important to examine actual studies and empirical evidence on the potential for leveraging the role of FDI for economic growth. It is also relevant to examine and highlight the mechanisms through which FDI-led growth is achieved. Are there any determinant factors that facilitate this process? These questions and corresponding caveats are tackled in the next section.

### **3. FDI, economic growth and MNE externalities**

From the point of view of host developing countries, the central question concerning the role of FDI in development is to what extent FDI and MNE activity contribute to the generation of host country economic growth through the realisation of MNE externalities. This question is linked to the realisation of the necessary preconditions for MNE externalities and FDI-led growth to emerge. In this section, we stress the point that the impact of FDI on host country economic growth revolves around the nature and extent of these externalities, whether occurring in the same industry of the MNE or else in upstream industries (i.e. supplier firms)<sup>4</sup>. Irrespective of their nature and form, these externalities have an impact on FDI-led host country economic growth prospects. Externalities are the mechanism through which productivity gains by locally based firms occur, leading to the generation of economic growth in the host economy. Through these externalities, FDI inflows can potentially break the vicious circle of underdevelopment (as evident in low savings, low investment and low growth poverty traps) by easing capital, technology, knowledge constraints in the host economy. For example, MNEs are likely to bring in the host country capital, technology and knowledge and potentially lead to increased exports boosting international competitiveness (Blomstrom 1990). MNE externalities, technology spillovers and vertical linkages are tackled first as the mechanisms through which the generation of economic growth in the host country occurs. In passing, certain determinant factors for technology spillovers and growth are highlighted.

#### **3.1 MNE externalities**

---

<sup>4</sup> In the case of vertical externalities, i.e. those externalities emerging from the links between an MNE in one sector with upstream sectors, can take monetary form (as emerging from pure market transactions) as well as non-monetary, in the form of knowledge and technology spillovers.

MNEs are among the most important actors in the generation and control of new technology and they utilise the tangible and intangible resources in different host countries to the most productive use<sup>5</sup>. The fact that technologies used by foreign affiliates are not always available at arm's length for host economies, adds to the importance attached to FDI as the most tenable form of technology acquisition for industrial upgrading. FDI activity may involve the explicit transfer of technology and in addition, the transfer of complementary resources such as management expertise and processes to best utilise this technology. For example, Djankov and Hoekman (1999) show that firms receiving FDI or involved in joint ventures tend to acquire new technologies more frequently than those without FDI and provide training programmes. The rest of this section evaluates the extant empirical evidence.

### *Technology spillovers*

It is important to highlight that technology spillovers are hard to quantify. This is because the various learning and transfer processes that underlay are hard to measure. Secondly, in the case of FDI spillovers it is difficult to determine the means by which technology transfer through FDI affects the productivity growth of host country based firms. Most empirical studies have dealt with these problems by taking the view that the technology gap which may exist between local firms and MNE affiliates is reflected in the observed differences in the level of total factor productivity (TFP), i.e. how labour and capital are utilised in host country firms. The effect of MNE technology spillovers can then be captured by changes in the level of TFP observed at the firm level, after controlling the impact of other variables that may influence the firm's productivity performance. A considerable number of studies have focused on the MNE impact on intra-industry TFP, stressing the possibility that MNEs exert a positive impact on the productivity levels of local firms. However, these studies examine the productivity externalities without trying to understand the mechanism through which these are realized. Such studies have therefore focused on the indirect evidence of externalities by exploring whether increases in the presence of MNEs in a country or sector are associated with increases in local firms' productivity in that country or sector or in upstream sectors. One robust finding in this regard is that MNEs tend to have higher productivity than domestic firms in the same sector (for example Haddad and Harrison 1993; Kokko et al 2001)<sup>6</sup>. Utilising this methodology, a number of studies indicate efficiency gains as a result of technological spillovers from MNE affiliates to local firms in the same industry, as for example, Blomstrom and Persson (1983) for Mexico and Blomstrom and Sjoholm (1999) for Indonesia. Using the same methodology, other studies indicate negative effects of FDI on local firms as Haddad and Harrison (1993) in the case of Morocco. This methodology has its pitfalls since MNEs might be attracted by sectors that are more productive in the first place and thus

---

<sup>5</sup> New technology generation is highly concentrated in a number of advanced industrial countries, taking place in large MNEs. For a discussion on the role of MNEs in the globalisation of innovation, see for example, Narula (2003a).

<sup>6</sup> When they adjust for firm size, Haddad and Harrison do not find differences in productivity between foreign and local firms.

the validity of TFP growth as a measure of MNE spillover effects stands for some re-assessment (Aitken and Harrison 1999)<sup>7</sup>. As Aitken and Harrison note, cross-sectional studies are subject to a critical identification problem. At the micro level, foreign firms may be located in high productivity industries as opposed to causing productivity externalities. At the macro level, high growth countries may attract more FDI as opposed to FDI causing this high growth. If this is the case, the coefficients on cross-section estimates are likely to overstate the positive impact of foreign investment. As a result, one might find evidence of positive externalities from foreign investment where no externalities do occur<sup>8</sup>.

Given this issue, empirical studies of FDI spillovers through panel data are used to deal with this endogeneity problem. For developing countries, these studies find no indication of the existence of positive horizontal externalities. In fact, many studies find evidence of negative horizontal externalities. In a recent review of the micro evidence on externalities from foreign owned to domestically owned firms which pays particular attention to panel studies, Gorg and Greenaway (2002) conclude that the effects are mostly negative. An explanation for this result might be that MNEs minimize technology leakages to competitors while simultaneously tend to improve the productivity of suppliers by transferring knowledge to them (see for example, Portelli and Narula 2004, Scott-Kennel 2001). More recent studies have examined the notion of positive externalities from FDI towards local firms in upstream industries, Blalock and Gertler (2003) find evidence of positive vertical externalities<sup>9</sup>. This argument points to the notion that if FDI were to generate spillovers, they are more likely to be vertical rather than horizontal in nature. However, most empirical studies of FDI spillovers have regressed local firm productivity on FDI activity within the same sector. Although such studies find no horizontal spillovers, the empirical work at the intra-industry level might therefore not be suitable to capture wider spillover effects on the host economy such as those created between MNEs and their suppliers. It is evident from the empirical literature that it is difficult to find robust evidence of positive externalities from multinationals to local firms in the same sector (horizontal externalities). Indeed, many studies for developing countries have paid particular attention to causality problems and have actually found evidence of negative horizontal externalities arising from multinational activity while confirming the existence of positive externalities from multinationals to local firms in upstream industries (vertical externalities).

---

<sup>7</sup> This point is stressed by Hanson (2001) in his critique of the method.

<sup>8</sup> For a more detailed analysis of this method see for example, Alfaro and Rodriguez Clare (2003).

<sup>9</sup> This new evidence, however, needs to be taken with caution. Methodological issues remain regarding estimation techniques and measurement of variables, in particular productivity measures.



### *MNE vertical backward linkages and labour mobility*

Two ways in which FDI transfers technology to the host-country based firms is via MNE backward linkages, and labour mobility<sup>10</sup>. MNEs can benefit the host economy through the backward linkages they generate; i.e. relations with local suppliers of intermediate inputs in their production process. As a result, MNE affiliates may transfer technologies to local firms in their value chain; i.e. either to those firms who supply them with intermediate goods or to local buyers in the host country. Notwithstanding the extensive empirical literature on FDI and spillovers, there are hardly any empirical studies that analyse the explicit link between linkages and spillovers (Blomstrom et al. 2000). Whereas the formation of inter-firm linkages does not necessarily mean that technology spillovers to local firms occur, vertical backward linkages may represent an important medium for technology spillovers (Lim 2000). It is unlikely that MNEs are able to contain the full value of this explicit and implicit transfer of technology to vertically linked firms in the host economy. Therefore, a priori it can be hypothesised that inter-firm linkages represent a good basis for knowledge spillovers and introduction of new technologies to host-based firms (Blomstrom and Kokko 1998). This is also a point highlighted in the seminal literature on vertical backward linkages (Lall 1980, Watanabe 1983 and UNCTC 1981) which has shown that through these inter-industry relations MNEs may assist local suppliers in the development and upgrading of their technological capabilities<sup>11</sup>.

Certain determinant factors for MNE backward linkages have been identified in the literature. For example, the larger the host market and the more sophisticated the technological capabilities of local suppliers, the more pronounced the MNE linkages are expected to be. Local procurement by foreign affiliates tends to increase over time as a result of the experience from investment, upgrading in the host country receptor conditions and possibly lower costs of local sourcing (Driffield and Mohd Noor 1999, McAleese and McDonald 1978, Gorg and Ruane 1998, Scott-Kennel and Enderwick 2001). Rodriguez Clare (1996) shows that more linkages are created when the production process of MNEs involves the intensive utilisation of intermediate goods, when the costs of communication between parent and affiliate are high and when the home and host country are not too different in terms of variety of intermediate goods produced. McAleese and McDonald (1978) argue that backward linkages tend to increase primarily with the addition of production processing stages over time and in relation to the growth of the industrial base in the host country. This point is reiterated in various studies such as in Aitken and Harrison (1991). Blomstrom and Kokko (1997) suggest that some host country characteristics that may influence the extent of linkages are market size, local

---

<sup>10</sup> In addition to these two mechanisms, the literature identifies horizontal linkages and international technology spillovers as other potential forms of technology transfer modes. However, in the case of countries in early stages of development and with weak industrial bases, the importance of these may not be so pronounced. However, intra-firm transfer technology may occur from the parent firm to the foreign affiliate.

<sup>11</sup> MNE assistance to suppliers may involve the training in management and organization, assistance in the adoption of superior technology and extending markets and is tantamount to technology spillovers through vertical linkages.

content regulations and the size and technological capability of local firms. Government policies can play an important role in the creation of MNE vertical linkages.<sup>12</sup> The extent of MNE vertical linkages depends extensively on the procurement strategies of foreign affiliates (Chen 1996) as well as the manner with which local sourcing increases in intensity over time (Rasiah 1994)<sup>13</sup>. Given the absorptive capacity structures in developing countries, some authors find it unrealistic for developing countries to attract FDI with high linkage potential (Stewart 1976, Rodriguez-Clare 1996). Absorptive capacities are dealt with in greater depth in section 3.3.

Another way in which FDI transfers technology to the host-country based firms is via labour mobility. Workers employed by a MNE affiliate are most likely to receive and acquire knowledge of superior technology and management practices. Through the switching of employers or even the start up of new business enterprises byof MNE trained personnel, the knowledge embodied in human capital can spill over to other host country-based firms. A number of studies have been undertaken to provide insights into the spillovers emerging from labour turnover. For example, Katz (1987) finds that many managers of local firms in Latin America were previously trained in MNE affiliates at the start of their careers. Gershenberg (1987) shows that MNEs provided more management training than local private firms and that a small percentage of job changes involve a movement from multinationals to domestic firms. Spillovers from labour linkages are determined according to type of training given to the labour force as well as to labour mobility (Slaughter 2001, Fosfuri et al 2001). As we discuss later, absorptive capacity is a determinant factor to FDI impact at the host country level.

### **3.2 FDI and economic growth**

The realisation of MNE externalities potentially leads to the generation of economic growth at the macroeconomic level. At the macroeconomic level, cross-section empirical work by Borensztein et al (1998), Carkovic and Levine (2002) and Alfaro et al (2003) find little support that FDI has an exogenous positive effect on economic growth. However, their evidence suggests that local conditions, such as the level of education and the development of local financial markets play an important role in allowing the positive effects of FDI to materialize. In the widely cited paper in the literature, Borensztein et al. (1998), using a dataset of FDI flows from industrialized countries to sixty-nine developing countries, find that FDI is an important vehicle for transferring technology and higher growth only when the host country has a minimum threshold of human capital<sup>14</sup>. De Mello (1999) finds a positive and significant impact of FDI on output growth in OECD and Asian non-OECD countries. However, FDI tends to increase output growth through higher productivity in technological

---

<sup>12</sup> For further discussion, see UNCTAD (2001).

<sup>13</sup> When analysing MNE linkages, it is important to keep in mind that MNEs benefit host economies only if linkages generated are beyond those already generated or displaced.

<sup>14</sup> Likewise, Xu (2000) using data on U.S. MNEs finds that a country needs to reach a minimum human capital threshold in order to benefit from the technology transfer from MNEs, and that most developing countries do not meet this threshold.

leader countries and through capital accumulation in technological laggards. Elsewhere, Reisen and Soto (2001) find a positive correlation between FDI and portfolio equity flows on the one hand and GDP growth on the other. Other evidence in the literature confirms the positive impact of FDI on growth but highlight that developing countries need to have reached a certain threshold level of development in their location factors, *inter alia* in the level of human capital and the physical infrastructure prior to be able to internalise the associated benefits of FDI (Saggi 2000). De Mello (1997) points to differences in the growth impact of FDI across countries based on such capabilities. Since host country technological capabilities are likely to determine the scope for spillovers from foreign to domestic firms, the growth impact of FDI tends to be limited in technologically less advanced countries. The same authors go further to argue that FDI raises growth only in those countries where the labour force has reached a minimum threshold of educational attainment. Xu (2000) finds strong evidence of the positive effect of FDI on total factor productivity growth in host countries<sup>15</sup>, but reiterates that the absorption of MNE's technology may require a certain level of human capital accumulation on the recipient side. In the same vein, Zhang (2001) finds that the impact of FDI growth is country specific and tends to be positive where policies favouring free trade and education are adopted to encourage export oriented FDI.

### **3.3 Determinant factors – absorptive capacity**

The empirical evidence seems to suggest that a number of determinant factors need to be in place at the host country level for MNE externalities to occur and FDI-led growth to be realised. There is consensus in the literature highlighting these determinant factors, grouped under the concept of *absorptive capacity*. The realisation of MNE technology spillovers as well as FDI-led growth are determined by the absorptive capacity of host country economic agents, be they firms, individuals or institutions. The concept of technological congruence or absorptive capacity<sup>16</sup> is a function of the capability of the country to benefit from technological spillovers from the more industrialized countries and the ability to accumulate and best utilize technology and knowledge. Absorptive capacity includes the ability to search and select the most appropriate technology to be assimilated from existing ones available, as well as the activities associated with creating new knowledge. Absorptive capacity also reflects the ability of economic agents to integrate the existing and exploitable resources – technological opportunities – into the production chain, and the foresight to anticipate potential and relevant technological trajectories (Crisuolo and Narula 2001). Laggard “economic units” (countries or firms) must possess *inter alia*, the ability to absorb, internalize and utilize the knowledge potentially made available to them. Absorptive capacity in economic units

---

<sup>15</sup> This result pertains to US survey data on manufacturing MNEs and the technology transfer effect is significant only for developed countries.

<sup>16</sup> Abramovitz (1990, 1995) distinguishes between two elements of social capability and technological congruence or absorptive capacity. Dahlman and Nelson (1995) define national absorptive capacity as the “ability to learn and implement the technologies and associated practices of already developed countries”.

corresponds to the appropriate supply of human capital and technological capability to be able to generate new technologies and consequently use productive resources efficiently. The development and upgrading of capabilities is expected to translate into productivity growth for firms as well as countries<sup>17</sup>. Absorptive capacity is significant for development because it allows domestic economic actors to internalize knowledge that exists elsewhere (either within the domestic economy or externally) that is made available directly or indirectly to them. There are several ways in which technology flows occur, either through arms-length means (such as through licensing) or through trade in intermediate goods, plant and equipment or even products or services (Narula 2003c). As in the focus of this article, technology flows may also be made available through the modality of FDI. Although not the only means available, spillovers from FDI are indeed regarded as one of the most practical and efficient means by which industrial development and upgrading can be promoted (Narula and Dunning 2000). While the *potential* for MNE-related spillovers is clear, as are the opportunities for industrial upgrading therefrom, it is increasingly acknowledged that the nature, level and extent of the benefits vary considerably with the levels of absorptive capacity.

It should also be stressed that while human capital represents a core aspect of absorptive capacity and that a host country should possess a minimum threshold stock of knowledge that will allow it to absorb MNE externalities, its presence is also not a sufficient condition for knowledge accumulation (Criscuolo and Narula 2001). Knowledge accumulation requires the simultaneous presence of institutions and economic actors that determine the stock of knowledge in a given location and the efficient use of markets and hierarchies – be they intra-firm, intra-industry or intra-country (Narula 2003c). This knowledge is not costless and must be accumulated over time. Hence, while physical and human capital are necessary conditions for catching-up, the lack of appropriate incentives for production and investment can compromise the success of the technological upgrading (Lall 1992)<sup>18</sup>.

The contrasting empirical evidence on the impact of FDI at the host country level reinforces the claim that MNE externalities and knowledge spillover effects are not automatic as one would tend to believe but are affected by several host-industry and host country factors. An important characteristic for the emergence of technology spillovers is the technology gap between MNE affiliates and local firms in the host country. Kokko (1994) and Kokko et al (1996) provide evidence for the hypothesis that spillovers are easier to identify empirically when the technological attributes of local firms match those of the MNE affiliates. Specifically, Kokko et al (1996) argue that a high technology gap combined with low competition prevents spillovers to the host economy. The absorptive capability of host country firms to absorb foreign technology appears to be an important

---

<sup>17</sup> Although one has to highlight that there are other intervening factors in play see e.g., Abramovitz 1986, 1995, Dahlman and Nelson 1995).

<sup>18</sup> For example, the availability of a large stock of suitably qualified workers does not in itself result in efficient absorption of knowledge, although the definition of human capital shares some commonality with the concept of absorptive capacity.

determinant of the size of the FDI spillovers. Kokko et al. (2001) highlight the importance of past experience in industrialisation as a precondition for international transfer of technology and the absence of this experience is concomitant to lack of absorptive capacity by the local sector (Radosevic 1999). For example, in the Sub-Saharan African region, host to the majority of LDCs, the conditions that stimulate technological assimilation (such as developed human capital, adequate physical infrastructure and a dynamic business climate) are absent, leading to constraints in mastering foreign, imported technology as well as to compete in international markets (Mytelka 1985, Lall and Pietrobelli 2002). The development of capacities and capabilities is key to both potentially attracting more FDI inflows as well as increasing the potential for MNE technological spillovers tenable to industrial upgrading of the host economy. Moreover, the improvement in location factors is an imperative path for host countries to undertake since the competition for FDI among developing countries is heavily intensifying (see for example, Mytelka (1996) and Mudambi (1998)). An increasingly significant factor in influencing MNE location decisions is the presence of sophisticated, created assets (in the form of developed human capital and domestic firms' technological capabilities) in host countries (Narula and Dunning 2000, Noorbakhsh et al. 2001). It is therefore crucial, especially in the context of intense competition for FDI, that developing countries formulate policies that improve local skills and build human resource capabilities, in order to be able to benefit most from FDI and MNE activity. For instance, Borensztein et. al. (1998) show that, at country level, a minimum threshold of absorptive capacity is necessary for FDI to contribute to higher productivity growth, while Narula and Marin (2003) show that only firms with high absorptive capacity are likely to benefit from FDI spillovers. In other words, possessing educated people is a precondition for a country's increased absorptive capacity, which contributes to enhanced productivity.

#### **4. Conclusions**

This article has reviewed and discussed some of the main empirical issues concerning FDI and development, focusing on the emergence of MNE externalities and the potential of FDI-led growth. The last two decades have witnessed a surge in global FDI flows and developing countries are more eager than ever to attract such investment flows to their ailing economies. The surge in flows and policy fervour to FDI in general has led to a reinforcement of the role of MNEs in host countries, as well as a renewed interest of policymakers in host developing countries to maximize the benefits from FDI towards long-term economic development. The contribution of FDI to development is less controversial in theory than in practice since it is theoretically plausible that FDI provides a channel for capital injection, technology and knowledge transfer. This belief has been reinforced by the successful industrial upgrading experience of newly industrialised countries and has as a result fuelled the belief that FDI is a *sine qua non* for development. However, notwithstanding the evidence that FDI can have a potential contribution to both income growth and factor productivity in host countries, it is increasingly evident that it complements rather than substitute local factors tenable to economic

development. It has been argued that absorptive capabilities, *inter alia* the level of human capital, matter for a positive impact of FDI on host country economic growth and MNE spillovers. Host countries cannot capture the full benefits associated with FDI until a threshold level of capabilities is reached. The importance of this threshold absorptive capacity level highlights the non-automatic interactions between FDI and development in the host country. Realistically, countries at early stages of economic development do not have fully developed created assets and hence their location advantages are presumed to be insufficient to attract inward direct investment, with the exception of FDI arising from the possession of natural assets. Hence, whereas some ‘resource gaps’ in the host economy can be filled immediately by the attracting of FDI flows (investment, production, employment, tax revenue), other benefits inextricably linked to development such as knowledge and technology upgrading take time to emerge or possibly never take place<sup>19</sup>. The developmental impact of FDI rests on the dynamics of the transfer of technology, but more importantly on the extent of integration of MNE affiliates in the host country systems and how much upgrading of local capabilities takes place over time since it is vital that foreign agents of dynamic comparative advantage must complement rather than substitute local agents. The growth of MNEs and their dominance of certain sectors are often associated with their pre-eminent position in the creation and ownership of technological assets. That developing countries can benefit from spillovers accruing from MNE activity is not disputed fact. However, it remains an assumption that MNE activity is a *sine qua non* for economic development, and that greater FDI flows will automatically result in the dissemination of these technologies and organizational practices from developed to developing countries.

---

<sup>19</sup> See for example, the discussion of static versus dynamic benefits from FDI in Lall (2000).

## References

- Abramovitz, M. (1995). "The elements of social capability", in D.H. Perkins, and B.H. Koo (eds.), *Social capability and long-term growth*, Basingstoke, Macmillan Press.
- Abramovitz, M. (1990). "The catch-up factor in postwar economic growth", *Economic Inquiry*, 28: 1-18.
- Abramovitz, M. (1986). "Catching up, forging ahead, and falling behind", in *Journal of Economic History*, June, Vol. 46(2), pp. 385-406.
- Aitken, B. and Harrison, A. E. (1999). "Do Domestic Firms Benefit from Direct Foreign Investment? Evidence from Venezuela", *American Economic Review*, Vol. 89.
- Aitken, B. and Harrison, A. E. (1991). "Are There Spillovers From Foreign Direct Investment? Evidence from Panel Data for Venezuela", mimeo, MIT and the World Bank, November 1991.
- Alfaro, L and Rodriguez-Clare, A. (2003). "Multinationals and Linkages: An Empirical Investigation", November 2003, Inter-American Development Bank.
- Alfaro L., Areendam, C., Sebne, K. and Selin, S. (2001). "FDI and economic growth: The role of local financial markets" Working Paper 01-083. Cambridge MA: Harvard Business School.
- Blalock, G. and Gertler, P.J. (2003). "Technology Diffusion and Welfare Effects from Foreign Direct Investment through Supply Chains". Discussion paper, 7.20. Cornell University, Ithaca, N.Y.
- Blomstrom, M. (1990). *Transnational Corporations and Manufacturing Exports from Developing Countries*. New York. United Nations.
- Blomstrom, M., Kokko, A. and Zejan, M. (2000). *Foreign Direct Investment: Firm and Host Country Strategies*. London: Macmillan Press.
- Blomstrom, M. and Kokko, A. (1998). "Multinational Corporations and Spillovers", *Journal of Economic Surveys*, 12 (3), 247-277.
- Blomstrom, M and Kokko, A. (1997). "How Foreign Investment Affects Host Countries", Policy Research Working Paper, The World Bank.
- Blomstrom, M. and Persson, H. (1983). "Foreign Investment and Spillover Efficiency in an Underdeveloped Economy: Evidence from the Mexican Manufacturing Industry", *World Development*, Vol. 11.
- Blomstrom, M. and Sjöholm, F. (1999). "Technology Transfer and Spillovers. Does Local Participation with Multinationals Matter?" Department of Economics, Stockholm School of Economics. 1999.
- Borenstein, E., De Gregorio, J. and Lee, J.W. (1998). "How does foreign direct investment affect economic growth?", *Journal of International Economics*, 45, pp. 115-35.
- Carkovic, M. and Levine, R. (2002). "Does Foreign Direct Investment Accelerate Economic Growth?" Working Paper Series, National Bureau of Economic Research (NBER) June 2002.
- Caves, R.E. (1982). *Multinational Enterprise and Economic Analysis*, Cambridge: Cambridge University Press.

- Dahlman, C. and Nelson, C. (1995). "Social Absorption Capability, National Innovation Systems and Economic Development", in Perkins, D and Koo, B. (eds.), *Social Capability and Long-term Growth*, Basingstoke: Macmillan Press.
- De Mello, L.R. Jr. (1999). "Foreign Direct Investment-Led Growth: Evidence from Time Series and Panel Data", *Oxford Economic Papers*, Vol. 51. pp. 133-151.
- De Mello, L.R., Jr. (1997). "Foreign Direct Investment in Developing Countries and Growth: A Selective Survey", *Journal of Development Studies*, Vol. 34, pp 1-34.
- Djankov, S. and Hoekman, B. (1999). "Foreign Investment and Productivity Growth in Czech Enterprises", *World Bank Economic Review*, Vol. 14. pp. 49-64.
- Driffield, N. and Mohd Noor, A, H. (1999). "Foreign direct investment and local input linkages in Malaysia", *Transnational Corporations*, 8,3, pp 1-24.
- Fosfuri, A., Motta, M. and Roende, T. (2001). "Foreign direct investment and spillovers through workers' mobility", *Journal of International Economics* 53, 205-222.
- Gershenberg, I. (1987), "The Training and Spread of Managerial Know-How, A Comparative Analysis of Multinational and Other Firms in Kenya". *World Development*, Vol. 15. No. 7 pp. 931-939, 1987.
- Görg, H. and Greenaway, D. (2002). "Much ado about nothing? Do domestic firms really benefit from foreign investment?" CEPR Discussion Paper 3485.
- Gorg, H. and Ruane, F. (1998). "Linkages between Multinationals and Indigenous Firms: Evidence for the Electronics Sector in Ireland", *Trinity Economic Paper Series*, Technical Paper No. 98/13.
- Haddad, M. and Harrison, A. (1993). "Are there positive spillovers from direct foreign investment? Evidence from panel data for Morocco", *Journal of Economic Development*, 42 (51-74).
- Hanson, G. (2001). "Should Countries Promote Foreign Direct Investment", Research Paper No. 9, Research Papers for the Intergovernmental Group of Twenty-Four on International Monetary Affairs, UNCTAD, United Nations New York and Geneva.
- Hiemenz, U., Numme, P. and Spinanger, D. (1991). *The International Competitiveness of Developing Countries for Risk Capital* (Chapter 8), Kieler Studien, 242 (Tubingen. J.C.B. Mohr, 1991).
- Katz, J. (1987), *Technology Generation in Latin American Manufacturing Industries*, St. Martins Press, New York.
- Kokko, A. (1994). "Technology, market characteristics and spillovers", *Journal of Development Economics*, Vol 43 (1994), pp 279-293.
- Kokko, A., Zejan, M. and Tansini, R. (2001). "Trade Regimes and Spillover Effects of FDI: Evidence from Uruguay", *Weltwirtschaftliches Archiv*, Vol. 137, pp. 124-149.
- Kokko, A., Tansini, R and Zejan, M. (1996). "Local technology capability and productivity spillovers from FDI in the Uruguayan manufacturing sector". *Journal of Development Studies*, 32(4), 602-612.
- Lall, S and Pietrobelli, C. (2002), *Failing to Compete. Technology Development and Technology Systems in Africa*, Edward Elgar.



- Lall, S. (1992). "Technological capabilities and industrialization", in *World Development*, Vol. 2, No. 2, pp.165-86.
- Lall, S. (2000). "FDI and Development: Policy and Research Issues in the Emerging Context", Working Paper Number 43, *QEH Working Paper Series*, Queen Elizabeth House, University of Oxford.
- Lall, S. (1980). "Vertical Inter-firm Linkages in LDCs: An Empirical Study", *Oxford Bulletin of Economics and Statistics* (August 1980) pp. 209-222.
- Lall, S and Streeten, P. (1977). *Foreign Investment, Transnationals and Developing Countries.*, London Macmillan, 1977.
- Liberatori, M and Pigato M. (2000). *FDI through Privatization in Sub-Saharan Africa*, Mimeo, World Bank, Washington, D.C.
- Lim, E. G. (2000). "Determinants of, and the Relation Between, Foreign Direct Investment and Growth: A Summary of the Recent Literature". IMF Working Paper. Middle Eastern Department. November 2001. IMF. Washington DC.
- McAleese, D and McDonald, D. (1978). "Employment growth and the development of linkages in foreign-owned and domestic manufacturing enterprises", *Oxford Bulletin of Economics and Statistics* (1978).
- Mudambi, R. (1998). "The Role of Duration in MNE investment attraction strategies", *Journal of International Business Studies*, 29 (2): 239-262.
- Mytelka, L. (1996). *Locational Tournaments, Strategic Partnerships and the State*, mimeo, Carleton University, Ottawa.
- Mytelka, Lynn K. (1985). "Stimulating Effective Technology Transfer: The Case of Textiles in Africa", in Rosenberg, N and Frischtak, C. (eds.) *International Technology Transfer*, Praeger, New York. 1985.
- Narula, R. (2003a). *Globalisation and Technology*, Cambridge, Polity Press.
- Narula, R. (2003b). "Multinational firms, regional integration and globalizing markets: Implications for developing countries", in R. Devlin and A. Estevadeordal, (eds.), *Trade and regional integration in the development agenda*, Washington DC., Inter-American Development Bank.
- Narula, R. (2003c). "Understanding absorptive capacities in an *innovation systems* context: consequences for economic and employment growth". *MERIT Research Memorandum 2004-003*.
- Narula, R. (1996). *Multinational Investment and Economic Structure*, London, Routledge.
- Narula, R. and Marin, A. (2003). "FDI spillovers, absorptive capacities and human capital development: Evidence from Argentina", *MERIT Research Memorandum 2003-16*.
- Narula, R. and Criscuolo, P. (2002). "A novel approach to national technological accumulation and absorptive capacity: Aggregating Cohen and Levinthal" *MERIT Research Memorandum 2002-18*.
- Narula, R. and Dunning, J. (2000). "Industrial Development, Globalisation and Multinational Enterprises: New Realities for Developing Countries", *Oxford Development Studies*, Vol. 28, No. 2, 2000.

- Noorbaksh, F., Paloni, A and Youssef, A (2001). "Human Capital and FDI Inflows to Developing Countries: New Empirical Evidence", *World Development*, Vol. 29, No. 9, pp. 153-1610, 2001.
- Ozawa, T. (1992). "Foreign Direct Investment and economic development". *Transnational Corporations*, 1. 27-54.
- Portelli, B and Narula, R (2003). "Foreign direct investment through acquisitions and implications for technological upgrading. Case evidence from Tanzania", Globalisation as a Transformative Process Working Paper Series 05/03, September 2003, TIK, University of Oslo, Norway.
- Radosevic, S. (1999). *International Technology Transfer and Catch-up in Economic Development*, Edward Elgar, Cheltenham, UK.
- Reisen, H and Soto, M. (2001). "Which Types of Capital Inflows Foster Developing-Country Growth", *International Finance*, Vol. 4. No. 1.
- Reuber, G.L., Crookell, H., Emerson, M. and Gallais-Hamonno, G. (1973), *Private Foreign Investment in Development*, Oxford: Clarendon Press.
- Rodriguez Clare, A. (1996). "Multinationals, Linkages and Economic Development" *The American Economic Review*, Volume, 86, Issue 4 September 1996, 852-873.
- Saggi, K. (2000). "Trade, Foreign Direct Investment and International Technology Transfer: A Survey", World Bank, Policy Research Working Paper No, 2349.
- Scott-Kennel, J and Enderwick, P. (2001), *Economic Upgrading and Foreign Direct Investment: Exploring the Black Box of the IDP*, Mimeo, University of Waikato, New Zealand.
- Slaughter, M. J. (2001). "Skill Upgrading in Developing Countries: Has Inward Foreign Direct Investment Played a Role?", FDI, Human Capital and Education in Developing Countries, Technical Meeting, 13-14 December, OECD, Paris.
- Stewart, J. C. (1976). "Linkages and Foreign Direct Investment", *Regional Studies*, May 1976, 10(2), pp. 245-58.
- UNCTAD, (2003) *World Investment Report 2003 - FDI Policies for Development. National and International Perspectives*, United Nations. New York and Geneva.
- UNCTAD, (2001). *World Investment Report 2001 - Promoting Linkages*, United Nations. New York and Geneva.
- UNCTAD, (2000), *World Investment Report 2000 - Cross-Border Mergers and Acquisitions and Development*, United Nations. New York and Geneva.
- UNCTC, (1981). *Transnational Corporations Linkages in Developing Countries: The Case of Backward Linkages via Subcontracting*, New York.
- Watanabe, S. (1983). *Technology Marketing and Industrialization: Linkages between Small and Large Enterprises*, New Delhi; Macmillan.
- Xu, B. (2000). "Multinational Enterprises, Technological Diffusion, and Host Country Productivity Growth", *Journal of Development Economics*, Vol. 62, pp. 477- 493.
- Zang, K. (2001). "Does Foreign Direct Investment Promote Economic Growth? Evidence from East Asia and Latin America", *Contemporary Economic Policy*, Vol. 19, No. 2. pp. 175-185.

**Table 1. Basic world FDI indicators**

Type of economy	in US \$ millions		as a % of GFCF		in US \$ millions		% share in world total		average % growth	as a % of GDP	
	1980	2002	1980	2002	1980	2002	1980	2002	2002 - 1980	1980	2002
World	54,957	651,188	2.3	12.2	699,415	7,122,506			39.9	6.7	22.3
Developed economies	46,530	460,334	2.7	12.3	391,946	4,594,850	56.0	64.5	46.6	4.9	18.7
Developing economies	8,392	162,145	1.2	10.5	307,469	2,339,788	44.0	32.9	28.7	12.6	36.0
Developing countries excl. China	8,335	109,445	1.3	..	301,219	1,891,896	43.1	26.6	23.0	13.5	35.8

Source: UNCTAD, FDI database

**Table 2. Basic FDI indicators for developing regional groups**

Host region	FDI inflows				FDI inward stock						
	in US \$ millions		as a % of GFCF		in US \$ millions		% share in world total		average % growth	as a % of GDP	
	1980	2002	1980	2002	1980	2002	1980	2002	2002 - 1980	1980	2002
Developing economies	8,392	162,145	1.2	10.5	307,469	2,339,788	44.0	32.9	28.7	12.6	36.0
Sub Saharan Africa	239	7,452	0.3	10.7	27,840	122,723	4.0	1.7	14.8	10.9	37.5
South America	3,631	25,836	3.2	14.6	29,345	441,110	4.2	6.2	61.0	5.9	48.8
South East Asia	3,558	88,613	0.1	7.2	216,139	1,304,973	30.9	18.3	21.9	27.9	38.0
Least developed countries	537	5,232	3.6	6.6	3,419	46,099	0.5	0.6	54.3	3.1	23.5

Source: UNCTAD, FDI database

**Table 3. FDI to developing regions in relation to total inward FDI stock**  
in percentage terms

	<b>1980</b>	<b>2002</b>
<b>Africa</b>	10.5	7.3
North Africa	1.4	2.1
Other Africa	9.1	5.2
South Africa	5.4	2.2
<i>concentration ratio in 2002 (5 largest recipients)</i>		
<i>South Africa, Nigeria, Egypt, Tunisia, Angola)</i>		70.1
<b>Latin America and the Caribbean</b>	16.4	32.6
South America	9.5	18.9
Other Latin America and the Caribbean	6.8	13.7
Brazil	5.7	10.1
<i>concentration ratio in 2002 (5 largest recipients)</i>		
<i>Brazil, Bermuda, Argentina, Mexico, Chile)</i>		77.6
<b>Asia and Pacific</b>	73.1	60.1
South East Asia	70.3	55.8
China	2.0	19.1
<i>concentration ratio in 2002 (5 largest recipients)</i>		
<i>China, Hong Kong, Singapore, Malaysia, Indonesia)</i>		79.4
<i>Source: UNCTAD, World Investment Report (various)</i>		

**Table 4. Share of Inward FDI stock by sector in Developing Countries**  
(percentage)

	Asia		LAC		Africa		Total	
	1988	1997	1988	1997	1988	1997	1988	1997
Primary	8.4	3.5	8.8	5.7	51.8	53.4	10.3	3.9
Manufacturing	62.1	62.9	67.4	28.8	20.8	26.6	62.3	60.7
Services	29.4	33.6	23.8	55.5	27.4	19.8	27.4	35.4
Total	100	100	100	100	100	100	100	100

*Source: UNCTAD, World Investment Report 1999*

