



# Economic reform and foreign direct investment in Latin America: a critical assessment

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**Abstract:** After almost 25 years of experimenting with the neo-liberal economic reforms collectively known as 'Washington Consensus' policies, Latin Americans are starting to re-assess the merits of these policies at the voting booth. Whereas one of the key policies of the 'Washington Consensus' package was the liberalization of investment regimes, many of the newly elected governments are beginning to scrutinize the role of foreign direct investment (FDI) in their countries. Indeed, some nations have gone as far as to nationalize foreign firms. Without endorsing or condoning the actions taken by these governments, in this paper we argue that it is quite rational and very justified for governments in the region to re-evaluate the role of FDI for their development paths. Our exhaustive review of the literature on FDI in Latin America during the reform period shows that very few nations in the region actually received significant amounts of FDI as a result of reform, and that when FDI did materialize, it often fell far short of generating the necessary linkages required to make FDI work for economic development.

**Keywords:** Economic development, foreign investment, Latin America, trade and investment liberalization

## I Introduction

Since the early 1980s, nations in Latin America have been implementing a cluster of deep reforms to their economies. Known in the United States as the 'Washington Consensus' and in Latin America as 'neo-liberalism' the reforms include a package of economic policies intended to promote economic development,

by opening national economies to global market forces. Over the last 25, governments throughout Latin America have reduced tariffs and other protectionist measures, eliminated barriers to foreign investment, restored 'fiscal discipline' by reducing government spending, and promoted the export sector of the economy (Williamson, 1990).

Now, after 25 years of free-market reforms, many citizens in the hemisphere – and some governments – are questioning the wisdom of deep integration. Indeed so, as between October 2005 and December 2006 16 Latin American nations held either presidential or congressional elections. Nearly all of these contests have been referred to as referendum on the reforms. In many of the region's most significant economies – Argentina, Bolivia, Brazil, Chile, Uruguay and Venezuela – candidates critical of the 'Washington Consensus' prevailed. In other nations, the outcome of the vote was so close that right-leaning governments at the very least had no mandate to deepen the existing reforms.

This sea change in Latin American democracy has been portrayed in the Western press as an irrational resurgence by protectionists. However, a closer look at the record of the 'Washington Consensus' shows that the concerns of citizens and governments can be justified. Indeed, the region has not experienced the promised economic growth. Economic growth has occurred at an annual rate of less than 2 percent between 1980 and 2005, compared to a rate of 5.5 percent between 1960 and 1980. Growth was faster during the 1990s than in the 1980s, but it still did not compare to the period previous to the reforms. Chile is the one exception where growth rates almost doubled over the past 20 years compared to the 1960 to 1980 period. A closer look at their policy during this period shows that Chile deviated significantly from 'Washington Consensus' policies to achieve that growth.

The promise, among others, of following these policies is that FDI by multinational corporations will flow to countries and be a source of dynamic growth. Beyond boosting income and employment, the hope was that manufacturing FDI would bring knowledge spillovers, which would build the skill and technological capacities of local firms, catalyzing broad-based economic growth. Moreover, the environmental spillovers would mitigate

the domestic ecological impacts of industrial transformation.

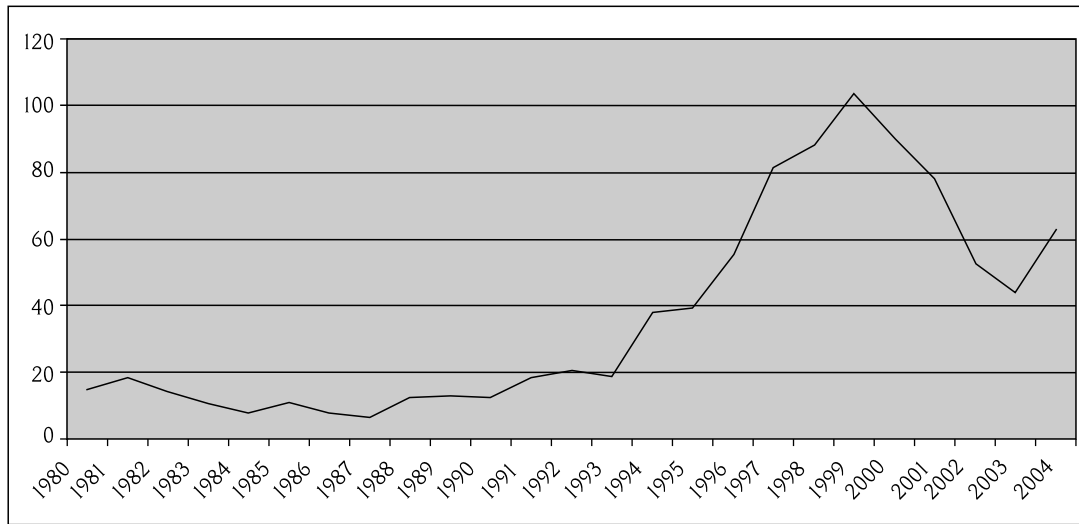
On almost every front, FDI has fallen short of delivering on its promise in Latin America. In this paper we conduct an exhaustive analysis of the literature in English and Spanish. We find that that very few nations in the region actually received significant amounts of FDI as a result of reform, and that when FDI did materialize it often fell far short of generating the necessary linkages required to make FDI work for economic development.

Including this introduction, this paper has five parts. Part II provides a brief overview of the FDI policies and FDI flows during the period under question. Part III presents the literature that shows how neo-liberal reforms have not had a significant effect on attracting FDI in the region. Part IV presents the literature that demonstrates how FDI that did come to the region fell short of providing the linkages necessary for broad-based growth. Part V summarizes our argument and makes suggestions for future policy-oriented research on these pressing questions.

## **II FDI trends**

There is no question that the region experienced an unprecedented amount of FDI since the reform period began. For some countries it has been truly impressive. Figure 1 exhibits annual FDI flows to Latin America and the Caribbean (LAC) from 1980 to 2004.

By the peak of 2000, FDI to the region had increased to six times the 1980 levels in real terms. The 1990s was a period of unprecedented increases in the level of FDI in the world economy as a whole, reaching \$1.6 trillion in the year 2000. However, the lion's share of that investment – 70 percent of all FDI – stayed in developed countries. Of the FDI that did accrue to the developing world during the 1990s, almost 80 percent of it flowed to just 10 countries. Five of those countries (Brazil, Mexico, Argentina, Bermuda and Chile) are in LAC. Even among the 10 countries that benefited most heavily from FDI, the



**Figure 1** FDI flows to LAC, 1980 to 2004

Source: World Bank, 2006

distribution was skewed; China, Brazil and Mexico received 58 percent of all FDI that flowed to the developing world in the 1990s (UNCTAD 2002).

Although the LAC region received a great deal of FDI, these flows were highly concentrated in just a handful of countries. Table 1 lists the top 15 nations that received the highest amount of annual FDI flows during the period 1990 to 2004. Brazil, Mexico, Argentina, Chile and Venezuela top the list. Indeed, these nations received 82 percent of all FDI in the region. Investment in the top 15 countries accounts for almost 98 percent of all FDI.

What factors led to the upsurge in FDI into the region (and the lack of flows in some countries)? When FDI did come, to what extent did it generate the necessary linkages to the domestic economy to promote development? To these questions we now turn.

### III What determines FDI flows to Latin America?

The 'foreign investment boom' in Latin America occurred concurrently with several crucial

developments in the region, including unilateral economic reforms, regional integration and the adoption of bilateral investment treaties. Hence, one key concern in the literature has been to look for causal relationships between these different developments and the strength of FDI flows. In other words, much of the literature has attempted to answer the following question: What determined the flow of FDI to Latin America in during the reform period?

The vast majority of studies on the determinants of FDI in LAC are econometric in nature. In other words, using FDI flows (or FDI/per capita) as a dependent variable, analysts statistically examine the extent to which other factors independently affect the level of such flows. There is unanimity among these studies that large and growing economies with low levels of inflation and debt (i.e., macroeconomic stability) are the key determinants of FDI in the region. There is also a consensus that weak environmental standards (in and of themselves) do not significantly attract FDI in the region. The jury is still out on the question of whether new treaties for trade and investment have independently

**Table 1** Top 15 recipients of FDI in LAC

Country	1990–2004 averages	
	Total FDI flows (2005 dollars)	Share of GDP
Brazil	15,801,198,776	2.29
Mexico	13,644,353,592	2.44
Argentina	7,155,416,230	2.43
Chile	4,380,660,984	5.35
Venezuela	2,759,307,856	2.69
Colombia	2,368,121,693	2.35
Peru	1,837,658,146	2.87
Ecuador	831,163,725	3.42
Trinidad and Tobago	663,880,757	8.02
Dominican Republic	622,671,184	3.32
Panama	615,140,794	5.03
Bolivia	504,402,775	5.47
Costa Rica	492,888,261	3.15
Jamaica	380,645,612	4.56
El Salvador	229,961,533	1.57
Top 15 total	52,287,471,918	
LAC total	53,440,220,855	
Top 15 share	97.8%	

Source: World Bank, 2006.

led to attracting FDI. The following is an exhaustive guide of the literature on these subjects.

#### *1 Methodological Approaches and Control Variables of Key Determinants*

In most cases, these studies have taken the form of cross-sectional analyses of total FDI flows for different groups of Latin American countries in the 1990s (and in some cases, longer periods). While each study has different model specifications, which attempt to explain the relationship between FDI and one additional determinant, the models generally share several core control variables. These studies find FDI to be positively and significantly correlated with the market size of the receiving economy and negatively but significantly correlated with the level of inflation and/or the level of external debt in the receiving country. Both variables are generally used to proxy macroeconomic stability (Nunnenkamp, 2000; Arbelaez, Daniels *et al.*, 2002; Chudnovsky,

Lopez *et al.*, 2002; Bengoa Calvo and Sanchez-Robles, 2003; Bittencourt and Domingo, 2004; Tuman and Emmert, 2004; Gallagher and Birch, 2005). These variables are found to be particularly important in the case of 'market seeking' FDI; that is, FDI aimed at exploiting the domestic market (Chudnovsky and Lopez, 2000). Agosin and Machado note, 'In spite of the talk about the internationalization of production and the increasing global market orientation of MNEs, looking at the broad picture, the size of domestic markets still seems to matter most to foreign investors' (Agosin and Machado, 2006). In addition, the existence of resources (either natural or human) has also been generally found to be an important determinant of investment, particularly in cases where FDI is 'resource-seeking' or 'export-oriented' (Chudnovsky and Lopez, 2000).

Other studies have approached the question with an alternative methodology, using gravity models to examine the determinants of bilateral investment flows. These studies find

that bilateral investment flows increase with the GDP of both the receiver and the investor country but decrease with the distance between them (Daude and Stein, 2001; Aguilar and Vallejo, 2002; CIUP, CEDE *et al.*, 2003). In a slightly different kind of study, but one that still pays important attention to the source country's characteristics, Domingo, Artal *et al.* look at FDI flows from Organisation for Economic Co-operation and Development or OECD countries to Argentina (1986–1997). They have found that the size of the market, the skill level of labour, the existence of technological advantages, the deregulation of markets and the cost of capital are the significant determinants of the strength of FDI flows (Domingo, Artal *et al.*, 1998).

## 2 Additional Determinants

The vast majority of studies on the determinants of FDI use the variables outlined earlier. However, other analysts have conducted studies asking whether other factors, such as particular treaties or reforms, environmental regulations, and so forth have independently affected FDI flows. While the 'fundamentals' outlined earlier show up time and again as key determinants, the evidence on these other factors is more mixed. To summarize, there is no guarantee that unilateral reforms, new treaties, and weakening environmental standards will independently attract foreign investment if the fundamentals outlined above are not in place.

*Institutional factors:* Several studies examine the impact of what could be broadly defined as institutional factors, although the specific factors included under that heading vary quite a bit from study to study. Using panel data for 18 Latin American countries for the 1970–1999 period, Bengoa Calvo and Sanchez-Robles found the level of economic freedom (used in their study as a proxy for 'institutional background') to be positively and significantly correlated to FDI (Bengoa Calvo and Sanchez-Robles, 2003). The importance of the institutional factors as

determinants of FDI has also been pointed out by authors who use gravity models (Daude and Stein, 2001; Aguilar and Vallejo, 2002; Acea and Blyde, 2003; CIUP, CEDE *et al.*, 2003). Mixon and Treviño examine seven Latin American countries and compare the effects of macroeconomic variables (real exchange rate, inflation, GDP per capita) to the effects of 'institutional variables' (control over capital account transactions, political risk and privatization strategies) on FDI inflows from multinational enterprises. The authors argue that institutional variables prevail in importance as determinants of FDI (Mixon and Treviño, 2004).

Privatization was singled out as an important determinant of FDI inflows by Arbelaez, Daniels *et al.*, who conducted an econometric analysis of seven Latin American countries between 1988–1999, and by Chudnovsky, Lopez *et al.* for the case of Mercosur (Arbelaez, Daniels *et al.*, 2002; Chudnovsky, Lopez *et al.*, 2002). More recently, Biglaiser and DeRouen Jr. have deepened this line of analysis by attempting to locate the economic reforms most conducive to generating FDI. Using panel data for 15 Latin American countries from 1980 to 1996, and controlling for macroeconomic and good governance factors, these authors test the relative importance of tax, trade, domestic financial reform, privatization, and international capital liberalization. Their study shows that, with the exception of domestic financial and trade reform, governments that implement economic reforms are not more likely to attract FDI. Biglaiser and DeRouen Jr. also find the risk of expropriation to be critical, a point that had been suggested previously by Aguilar and Vallejo (Aguilar and Vallejo, 2002). Finally, in a very careful econometric analysis of FDI flows to Chile between 1960 and 2001, Ramirez found that in addition to traditional control variables (such as market size, real exchange rate, and the debt-service ratio), several institutional variables were significant determinants of the level of FDI flows. Interestingly, among these Ramirez finds

that 'the imposition of temporary controls on short-term capital have enhanced the effect of traditional variables such as real GDP or real exports in attracting FDI flows to the nation' (Ramirez, 2005).

*Bilateral investment treaties:* In part because of the region's history and risk of expropriation (as mentioned earlier), it has been argued that the adoption of bilateral or regional investment treaties – which protect investors from, among other things, expropriation – should therefore be expected to attract FDI. In recent years, a literature has developed that attempts to test for the existence of a causal link between the adoption of investment treaties and an increase in the inflows of FDI. While most studies look at the issue at the developing country level, a recent study has focused on the case of Latin America. After conducting a cross-sectional data analysis for 133 countries between 1993 and 1995, United Nations Conference on Trade and Development or UNCTAD finds that the impact of Bilateral Investment Treaties (BITs) on FDI is small and secondary to the effects of other determinants, especially market size. UNCTAD's finding is shared by Hallward-Dreimeier, who looks at data from 20 OECD countries flowing to 31 developing countries from 1980 to 2000 (though unfortunately, it is unclear how many Latin American countries are included in the sample). Work by Tobin and Rose-Ackerman, who examine FDI for 63 countries (20 of which are from Latin America) from 1975 to 2000, also supports this conclusion (UNCTAD, 1998; Hallward-Dreimeier, 2003; Tobin and Rose-Ackerman, 2004).

Other studies, however, have found a positive association between the adoption of BITs and FDI flows. Neumayer and Spess look at 119 developing countries (29 of which are in Latin America) between 1970 and 2001. They use as an independent variable, the number of BITs a developing country has signed with OECD countries, weighted by the world share

of outward FDI flow that the OECD country accounts for. They find that developing countries that sign more BITs with developed countries receive more FDI inflows (Neumayer and Spess, 2005). This conclusion is shared by Egger and Pfaffermayr, who look at the issue from the supply side. The authors examined a sample of 19 high income-source countries and more than 50 host countries, eight of which are from Latin America, and found that BITs exert a positive and significant effect on real stocks of outward FDI, with a lower bound of 15 percent (Egger and Pfaffermayr, 2004). Finally, Salacuse and Sullivan look at 33 developing countries, eight of which are from Latin America, and find that the presence of a BIT with the United States has a large, positive and significant association with a country's overall FDI inflows. However, they find that this is not the case for BITs with other OECD countries (which have a weak positive, but not statistically significant effect), nor for BITs with other developing countries (which have weak negative, but not statistically significant effect) (Salacuse and Sullivan, 2005). As pointed out, however, none of these studies focuses exclusively on Latin America.

The only study to have undertaken a region-specific study of this kind is that of Gallagher and Birch, who find very limited evidence that BITs, in general, attract additional FDI. Moreover, they present strong evidence that an investment agreement with the United States will not lead to additional FDI (Gallagher and Birch, 2005). This finding is consistent with the conclusions of Tobin and Rose-Ackerman, but contradictory to that of Salacuse and Sullivan, although both studies have conducted non-region specific analyses (Tobin and Rose-Ackerman, 2004; Salacuse and Sullivan, 2005).

*Regional Integration:* There are also a significant number of studies that have focused on the impact that processes of regional integration might have had on FDI flows to Latin America.

In a study conducted through panel data analysis and looking at bilateral FDI flows (not exclusively for Latin America, but with the aim of assessing the possible FDI impact of the FTAA), Daude, Levy Yeyati *et al.* argue that sharing membership in a regional integration agreement with a source country increases the likelihood of receiving FDI by 27 percent. However, these gains are very unlikely to be distributed evenly between members (Daude, Levy Yeyati *et al.*, 2003). Aguilar and Vallejo, on the other hand, disagree with this finding, arguing that the FDI effects of a preferential trade agreement are ambiguous and depend on which effect (investment creation, investment diversion) prevails. They further argue that the results obtained by Daude, Levy Yeyati *et al.* may be a consequence of the fact that these authors fail, in their regressions, to control for institutional and infrastructure quality. This critique is shared by Chudnovsky and Lopez, and Bittencourt and Domingo (Chudnovsky and Lopez, 2001; Aguilar and Vallejo, 2002; Chudnovsky, Lopez *et al.*, 2002; Bittencourt and Domingo, 2004).

Looking specifically at the case of Mercosur, CIUP, CEDE *et al.* argue that for Brazil and Argentina, the most important determinants of FDI in the early 1990s were the size and dynamism of their domestic markets. In these countries, FDI was primarily driven by 'market seeking' motivations. However, they point out that in the cases of these two countries, being part of a customs union (Mercosur) provided an additional incentive for FDI. Moreover, this determinant is found to be more important for the smaller countries in the customs union, Paraguay and Uruguay (CIUP *et al.*, 2003). Nunnenkamp confirms this finding for investors in member countries of both Mercosur and CAN, but not of NAFTA (North American Free Trade Association) (Nunnenkamp, 2000).

In a recent study, however, Cuevas, Messmacher *et al.* (2005) argue,

FDI in Mexico under NAFTA was estimated two-thirds higher than it would have been

without NAFTA, despite the winding down of Mexico's privatization program and the banking and currency crises. The effect is so large because trade liberalization's effects on FDI depends on the relative sizes of the trading partners – there is a large asymmetry between Mexico and its NAFTA partners.

While agreeing with this finding, Waldkirch points out that while NAFTA did raise the level of investment from the partner countries, the United States and Canada, it did not have an independent positive effect on FDI inflows from the rest of the world (Waldkirch, 2003). Finally, in a very thorough analysis of the determinants of FDI flows to Mexico between 1970 and 2000, Dussel Peters, Loria Diaz *et al.* found FDI flows to be positively correlated with GDP levels and with the liberalization of trade policy, and negatively correlated with country risk levels and labour costs. They did not find significant correlation with interest rate levels or with the level of domestic investment – that is, they did not find any evidence of FDI crowding out domestic investment (Dussel *et al.*, 2003; Loria Diaz *et al.*, 2003).

On the other hand, Chudnovsky, Lopez *et al.* take issue with the broader argument underlying analyses that examine the relationship between preferential liberalization and FDI. They make the case that regional integration *per se* is unlikely to enhance the local attractiveness of Latin American economies. On the contrary, they find that regional integration is generally highly correlated with changes in the domestic policy environment that are, on their own, conducive to more FDI (Chudnovsky, Lopez *et al.*, 2002). This argument is supported by Tuman and Emmert who, looking at data for US FDI for 15 countries in Latin America from 1979 to 1996, find that membership in free trade areas has had no independent effect on inflows of FDI (Tuman and Emmert, 2004). A specific case, in which being part of a preferential agreement did not increase net FDI flows, is provided by González-Vigil, who looks at FDI

in manufacturing for the Andean region between 1992 and 1996. The author pays special attention to the case of Peru and argues that Peruvian trade policy made production costs more expensive in the 1990s. The author also argues that the policy failed to provide industrial activity with the levels of effective protection existing in competing markets, making Peru a less attractive location for international corporations interested in the Andean sub-regional market, particularly regarding FDI in manufactures with relatively high technological content (Gonzalez-Vigil, 2001).

*Intellectual property protection:* An additional factor that has always been perceived as a key determinant of FDI is the protection of intellectual property rights. Conducting a panel data analysis for eight countries in Latin America, Acea and Blyde find that the level of intellectual property protection (measured using the Ginarte and Park Index for patent protection) has a positive and significant impact on bilateral FDI for Latin America. This impact is despite controlling for institutional variables, human capital, infrastructure levels and macroeconomic conditions. This effect is found to be particularly noticeable after 1995, in light of the reforms that countries selected for the sample adopted as a result of the 1994 TRIPS agreement (Acea and Blyde, 2003).

*Enforcement of environmental and labour standards:* Looking at the impact that the enforcement of labour standards has on inward FDI from the US and Japan to 27 countries in Latin America, Daude, Mazza *et al.* find their results broadly consistent with cross-sectional studies with a global focus. They find no evidence of a 'race to the bottom' in Latin America. Moreover, they find that 'the observance of some core labor standards leads to higher levels of FDI. This is the case, for example, with free association and collective bargaining and for labor market discrimination' (Daude, Mazza *et al.*, 2003).

In terms of environmental standards, Gentry has pointed out that the enforcement of environmental regulation will not deter foreign investment, as 'non-environmental factors (access to resources, markets and labor) are the most important considerations for most foreign direct investors when deciding to invest' (Gentry, 1998).

*Policy incentives:* Finally, another important set of determinants discussed in the literature are policy incentives designed to attract FDI. Generally, there is a consensus that while policy incentives are not capable of attracting FDI *per se*, they do play a significant role when the more important determinants (such as market size, existence of natural resources, etc.) are relatively similar among different countries (Chudnovsky and Lopez, 2000; Nunnenkamp, 2000). In this sense, both Chudnovsky and Lopez, and Biglaiser and DeRouen Jr. point out that 'rules-based' policies to attract FDI are much more desirable than 'incentives-based' policies (Chudnovsky and Lopez, 2000; Biglaiser and DeRouen Jr., 2006).

#### **IV Did FDI generate linkages and spillovers?**

The promise of FDI is that it will generate forward and backward linkages to the host economy, in addition to 'spillovers' in terms of technological transfer and learning. This section of the paper reviews both econometric studies and on-the-ground case study evidence that examine the extent to which FDI generated linkages and 'spillovers' during the reform period. With the exception of some evidence that shows that FDI has brought environmentally sound technological transfer in some nations, by and large (and regardless of the research technique) there is a consensus that the promised 'spillovers' did not materialize in LAC during the neo-liberal period.

##### *Linkages and spillovers from FDI:*

###### *Theoretical foundations*

Historically, there have been two reasons why countries actively promote FDI. First, FDI



has the primary and direct effect of boosting investment, employment, foreign exchange and tax revenue. In addition, host governments expect FDI to cause indirect benefits by generating 'spillovers' to and linkages with the host economy. The anticipation of 'spillovers' and linkages stems from the assumption that foreign investors enjoy a degree of technological advantage and, therefore, higher levels of productivity. The word 'spillovers' is generally used to refer to knowledge and technological transfers, while the word 'linkages' refers to backward and forward connections with the host economy. Theory predicts that linkages and 'spillovers' will occur through imitation, competition and acquisition of human capital (horizontal knowledge and technological spillovers), and through upstream or downstream interactions between a foreign investor and its suppliers or customers (vertical linkages) (Hirschman, 1958; Findlay, 1978). However, Maurice Kugler has argued that a careful interpretation of economic theory would lead to the opposite prediction; a lack of inter-industry 'spillovers'. Kugler argues,

The optimal location and organizational strategies by a MNC are chosen to minimize the risk of losing profits due to the leakage of technical information to potential competitors. Therefore, the host-country firms within the MNC subsidiary's sector will tend to experience limited technological gains ensuing FDI, whereas producers in other sectors may benefit, especially if the MNC outsources to local upstream suppliers. (Kugler, 2000)

A rich body of literature exists that addresses the issue of FDI 'spillovers' and linkages both at the theoretical and global empirical levels (with detailed discussions on methodological issues and broad cross-sectional studies). For example, Markusen and Venables, 1999; Blomstrom, Globerman *et al.*, 2001; Hanson, 2001; Haskel, Pereira *et al.*, 2002; Smarzynska, 2002; Blomstrom, 2003; Alfaro, Chanda *et al.*, 2004; Alfaro and Rodriguez-Clare, 2004; Görg and Greenaway, 2004; Lipsey, 2004; Lipsey and Sjöholm, 2005.

A full discussion of this literature is, however, beyond the scope of this paper. In contrast, this paper will focus on recent, empirical and Latin America-specific inquires into the existence of 'spillovers' and linkages from FDI.

### 1 Regional studies

Recent empirical works that have looked for evidence of 'spillovers' and linkages from FDI to Latin America are almost unanimous in their finding, as recently articulated by Machinea and Vera,

There is an element shared in almost all the region, albeit with important differences between countries and it's the scarce generation of linkages that, starting from the location of FDI in the different sectors, spread out through the rest of the productive system, maximizing its potential in terms of the growth of domestic economic activity. (Machinea and Vera, 2006)

However, in a recent paper that uses firm-level data from Brazil – (1997–2000), Chile (1987–1999), Mexico (1993–2000) and Venezuela (1995–2000) – Alfaro and Rodriguez-Clare challenge this view. They argue that the literature tends to interpret the finding that the share of inputs bought domestically by multinational corporations is lower than the share bought by local firms. This stands as evidence that multinationals generate fewer linkages than domestic firms do. However, they argue that 'the share of inputs bought domestically is not a valid indicator of the linkages that multinational corporations can generate'. Instead, they use the ratio of the value of inputs bought domestically to the total workers hired by the firm to incorporate the fact that multinationals 'also use more inputs in relation to the workers they hire'. Therefore, they conclude that 'Our alternative indicator... shows that the opposite is true: multinationals are likely to have a positive linkage effect' (Alfaro and Rodriguez-Clare, 2004).

Before looking at regional studies that look at evidence of linkages and 'spillovers', it is worth looking at the broad issue of the effect of FDI on the level of domestic investment for the region

as a whole. In other words, has FDI crowded in (encourage) or crowded out (discourage) domestic investment in Latin America? This question is clearly related to the question of whether FDI and domestic investment are substitutable or complementary. Based on an econometric exercise of looking at data from 1970 to 1996, Agosin and Mayer argue that for Latin America, the norm has been crowding out. They call attention to the fact that the benefits from FDI are by no means automatic or assured (Agosin and Mayer, 2000). Moreover, the authors argue that the crowding out phenomenon may result from the fact that Latin American countries have generally been 'much less choosy about FDI than Asian countries, either in the sense of prior screening or attempting to attract desirable firms'. In addition, the crowding out effect of FDI has recently been confirmed by Gallagher, who looks specifically at the case of Mexico (Gallagher, 2005).

## 2 *Local studies*

Beyond these broad regional analyses, an important number of country-specific or sub-regional studies have addressed the issue of 'spillovers' and linkages from FDI. These studies are reviewed below, organized by region.

*Southern cone:* In a study conducted for three countries in Mercosur (Argentina, Brazil and Uruguay), Laplane, Padovani Goncalves *et al.*, confirm the generalized assumption that foreign firms are more productive than domestic ones. The study also finds evidence of vertical linkages in all three countries, but locates horizontal 'spillovers' only in local enterprises that already had developed systems and capacity for innovation. These characteristics are generally described in literature as 'absorptive capacity' (for a more detailed discussion on the role of 'absorptive capacity' see, for example, Chudnovsky, Lopez *et al.* (2004).

Moreover, specifically regarding the case of Brazil, Laplane, Padovani Goncalves *et al.*, find

that when FDI is aimed at serving the domestic market ('market-seeking'), the presence of foreign firms reduces the scale of local firms and therefore their productivity (Laplane, Padovani Goncalves *et al.*, 2000). In a 1999 study that looks at FDI and competitiveness in the mining and manufacturing sectors in Brazil, Bonelli argues that the relationship between FDI and competitiveness is murky. 'When looking at data within the manufacturing sector linking the growth of competitiveness (whether measured by unit labor costs or export performance) to FDI,' the author states, 'there does not appear to be a clear-cut relationship with either the growth of FDI or the share of foreign capital within different industries' (Bonelli, 1999). Finally, in a recent and comprehensive study, da Motta Veiga summarizes the Brazilian experience, arguing that 'Detailed evaluations made in the late 90s pointed out the limited integration of Brazilian branch offices to the production, trade and technology networks of transnational corporations and the limited positive externalities (both technological and productive) on domestic firms as two important indicators of the insufficient contribution of these companies to development' (da Motta Veiga, 2004).

Two important and recent studies have looked specifically at the case of Argentina. Using data from more than 700 manufacturing firms in Argentina between 1992 and 2001, Chudnovsky, Lopez and Rossi do not find evidence either of positive or of negative 'spillovers' for domestic firms from FDI presence. However, these authors do find that domestic firms with high absorption capabilities are more likely to receive both horizontal and vertical 'spillovers'. The authors also point out that 'higher levels of innovative activities by TNCs affiliates did not enhance the possibilities of domestic firms to reap positive "spillovers".' (Chudnovsky, Lopez *et al.*, 2004). This finding has been directly challenged by Bell and Marin, who focus on the role that the subsidiaries of multinational corporations play on the 'spillover' process (Bell and Marin, 2006). They call this

approach the 'Active Subsidiary' model. Using data for industrial firms in Argentina over the period 1992-1996, they found that 'it was not simply the existence of MNC subsidiaries, linked to the superior knowledge resources of the parent that generated spillovers. Instead, the subsidiaries' own knowledge creation and accumulation seems to have been a significant source of the spillover potential' (Chudnovsky, Lopez *et al.*, 2004; Bell and Marin, 2006).

Finally, in a study that looks specifically at 'spillovers' from multinational corporations in the manufacturing industry in Uruguay, Bittencourt and Domingo find that, taking fixed effects into consideration, the subsidiaries of multinational corporations did not improve their performance differently than the local firms (Bittencourt and Domingo, 2004). However, these authors do find vertical 'spillovers' for the 1990-1996 period and verify that domestic firms that employ people with higher skills have improved their productivity, taking advantage of the innovations introduced by multinational corporations in their sectors (that is, they find that firms with absorptive capacity experience horizontal 'spillovers'). Lastly, Bittencourt and Domingo argue that the increase in productivity of local firms may be a result of government policies for industrial promotion, which may have outweighed the effect of competition from MNCs and increased imports (Bittencourt and Domingo, 2004). In an earlier study based on 1988 data (that also looks at the case of Uruguay), Kokko, Tansini and Zejan examine the impact of a country's overall development strategy on 'spillovers' and linkages. They find that 'the role of foreign MNCs for the international diffusion of technology may be relatively more important in inward-oriented than in outward-oriented trade regimes' (Kokko, Tansini *et al.*, 2001).

*Venezuela and Colombia:* In a somewhat older article, but widely referenced in the literature, Aitken and Harrison studied the productivity 'spillovers' of foreign investment in Venezuela, looking at 4,000 Venezuelan plants between

1976 and 1989 (Aitken and Harrison, 1999). While they found increases in foreign participation to be correlated with increases in the productivity of small plants (less than 50 employees) they also found, in contrast, that 'increases in foreign ownership negatively affect the productivity of wholly domestically owned firms in the same industry. These negative effects are large and robust to alternative model specifications'. Further, the authors argue that the positive effects identified in previous studies 'can be explained by the tendency for multinationals to locate in more productive sectors and to invest in more productive plants' (Aitken and Harrison, 1999). Kugler examines multi-sectoral data from Colombian manufacturing plants for the 1974-1998 period, and finds inter-industry 'spillovers', both generic know-how 'spillovers' and linkage externalities, to be sizable (Kugler, 2000).

*Mexico, Central America and the Caribbean:* Several authors have looked at the evidence of linkages in Central America, the Caribbean and Mexico. Contrasting original expectations with the results of apparel industry FDI on the Caribbean basin, Mortimore argues that the hopes about 'spillovers', particularly in terms of the modernization of existing assets in the industry (in cases when FDI was directed to the purchase of existing facilities), were not fulfilled (Mortimore, 2000).

Mattar, Moreno-Brid and Peres, Villalobos and Grossman, and Gallagher examine the case of Mexico. All demonstrate that 'spillover' effects are far from a generalized phenomenon in Mexican manufacturing (Mattar, Moreno-Brid *et al.*, 2003; Villalobos and Grossman, 2004; Gallagher, 2005). In a detailed econometric analysis that looks at foreign investment in Mexico between 1960 and 2001, Ramirez finds that once reverse flows or profits and capital are subtracted from the gross inflows of FDI into the country, the contribution of net FDI to the financing of private capital formation is significantly reduced (Ramirez, 2006).

Moreover, after taking into account the growing remittances of profits and dividends, Ramirez finds a marked change in the size and econometric significance of the impact that foreign capital per worker has on the rate of labour productivity growth. In other words, the size of productivity 'spillovers' are reduced when remittances are taken into account (Ramirez, 2006).

In a detailed study of the case of the Dominican Republic, Vergara argues that despite its significant impact on the level of exports, the investment that happened within the framework of export processing zones had no significant impact in terms of technology transfers or the generations of local linkages. His conclusion is shared by Sanchez-Ancochea, who add in an analysis of Costa Rica and the Dominican Republic that most of the value added by foreign investment was captured by multinational corporations as profit (Vergara, 2004; Sanchez-Ancochea, 2006).

On the other side of the debate, and contrary to what has been the 'conventional wisdom' in the matter, Buitelaar, Padilla *et al.* argue that FDI, in the *maquila* industry in Mexico, Central America and the Caribbean, has fostered (albeit to a limited extent) technology transfers and productive capacities in host countries (Buitelaar, R. *et al.*, 1999).

### 3 *Environmental 'spillovers'*

In addition to the productivity 'spillovers' and linkages that can potentially result from FDI, scholars have been interested in the environmental impact that FDI can have in host economies. Some speculate that FDI can act as a 'pollution halo', where foreign firms originating from developed countries with more stringent environmental standards and developed technologies transfer such practice to the developing countries they invest in. Through supplier linkages, some foreign firms have been known to require or at least demonstrate better environmental practice to the

national firms of host countries and thus increase the environmental performance of host country firms.

*Empirical studies:* There are, however, very few works that have looked exclusively at the environmental effects of FDI in Latin America. Referring to the results of a previous study by Chudnovsky, Lopez and Freylejer of 32 large firms, 17 of which were foreign owned, Chudnovsky and Bouzas found that foreign firms conduct environmental management activities in Argentina more frequently than domestic firms (Chudnovsky, López *et al.*, 2000; Chudnovsky and Bouzas, 2004). Similarly, da Motta Veiga cites the findings of the Instituto Observatório Social, an institution closely connected to the workers' union in Brazil, which seem to confirm that 'the changes brought to the organization of transnational companies in Brazil over the 90s contributed to the branch offices adopting and diffusing principles and guidelines for sustainable development elaborated at the head offices' (da Motta Veiga, 2004).

A relatively large number of studies have examined the case of Mexico. One study described the way in which affiliates of US chemical firms teamed up with the Mexican chemical industry to incorporate US 'responsible care' environmental policies into operations of the Mexican chemical industry (Garcia-Johnson, 2000). Another study on the chemical fibre industry found that although environmental regulations and inspections were the key driver for environmental compliance in that industry, foreign participation in the industry was correlated with environmental improvements as well (Dominguez Villalobos, 2000).

Another voluntary effort in 1997 and 1998 involved a number of US firms, the World Bank and Mexican SME (small and medium-size enterprises) suppliers in the electronics and cement sectors. In an attempt to 'green the supply chain', foreign firms such as Lucent,

SCI Systems and IBM (in addition to a few large Mexican firms) contributed funds toward the training and certification of their SMEs in environmental management systems (EMS). The World Bank matched every dollar provided by the foreign 'mentoring' firm with another dollar. Although laudable as a structure for collaboration, the project's success was mixed. In some cases, the mentoring foreign firms themselves did not have an EMS, reducing their capacity to positively influence and work with their suppliers (Ahmed, Martin *et al.*, 1998).

Three studies conclude that foreign presence in the Mexican steel industry led to better environmental performance. Gentry and Fernandez (1998) found that Dutch steel firms and the Mexican government brokered an agreement whereby the Mexican government agreed to share some of the environmental liabilities of the sector (Gentry and Fernandez, 1998). Later, the foreign firms began investing in environmental improvements. A broader study of the Mexican steel sector found that foreign firms or firms that serve foreign markets, were more apt to comply with environmental regulations in the steel sector (Mercado, 2000).

The third study that examined the criterion, air pollution in Mexican steel found that the Mexican sector is 'cleaner' per unit of output than its US counterpart. This is partly due to the fact that the new investment (both foreign and domestic) came in the form of more environmentally benign mini-mill technology, rather than more traditional and dirtier blast furnaces. Based on this analysis, the author hypothesizes that when pollution is in large part a function of core technologies, new investment can bring overall reductions in pollution intensity. However, when pollution is a function of end-of-pipe technologies, new investment will not necessarily correspond with reductions in pollution intensity unless such technology is required and enforced by the government (Schatan, 1999; Gallagher, 2005).

Two World Bank studies concluded that the key determinants of compliance by domestic and foreign firms with environmental regulations in Mexico are: 1) government pressure, including inspections; 2) local community pressure; and 3) whether or not the firm has an EMS (Dasgupta, Hettige *et al.*, 1997). Interestingly, one of the studies found no correlation between compliance and firm origin (Dasgupta, Hettige *et al.*, 2000). Foreign firms, in other words, were no more likely to comply with regulation than domestic firms.

## V Conclusion

Newly elected governments in Latin America are fundamentally questioning the merits of current FDI policy in the region. This paper shows that such a re-evaluation is justified. This paper has critically assessed the rather extensive literature on the developmental impacts of FDI in LAC since the 1990s. Specifically, two bodies of literature were examined: first, the literature regarding the determinants of FDI in the Latin American region, and second, the extent to which FDI generated productivity and environmental 'spillovers' in the host country.

We find that only a handful of nations received the lion's share of FDI in the region. Indeed, just five countries – Brazil, Mexico, Argentina, Chile, and Venezuela – received more than 80 percent of all the FDI in the region. The most significant determinants of FDI flows to the region were market size, economic growth rates and export orientation. Interestingly, there is mixed evidence that trade or investment agreements have an independent effect on FDI flows in the region. Nor is there evidence that LAC's relatively weak environmental regulations serve as an independent determinant of FDI flows.

We also find almost unanimous evidence that FDI resulted in very limited productivity 'spillovers' for the region. Indeed, one macro-level study of the region goes so far as to argue that FDI 'crowded out' domestic investment

in the region during the 1990s. The relatively small body of literature on environmental 'spillovers' is more mixed, however. Studies have shown that foreign firms have transferred environmental technologies to Argentina and Mexico in numerous sectors. Analysis of the environmental impact of FDI in other countries is lacking.

What is lacking in the literature, and is clearly a direction for new research, is empirical-based research on what the appropriate policies are to make FDI work for development. If a policy environment that was very closed to FDI in the 1960s and 1970s failed to bring much FDI at all and a wide-open policy during the 1980s and 1990s had a similar affect, what then is the right balance between states and the private sector in terms of investment policy?

Answers to these research questions will find ready ears in the region. While some new Latin American governments are going so far as to nationalize foreign firms, others are going equally far in the opposite direction to privatize and sell off to foreigners those state-owned sectors such as education and utilities. Yet, many other governments are looking for a more balanced approach. What this paper makes clear is that new policies are needed.

There is some literature in this area, but much more needs to be done. Drawing from the experiences of Mexico, Costa Rica, South America and East Asia, Mortimore, Vergara and Katz argue that active public policy to encourage the formation of supply networks and the development of technological and human resource capacity is needed to produce linkages. These authors point to the case of Mexico as one in which these factors were missing, and linkages were weak (Mortimore, Vergara *et al.*, 2001). Similarly, and based on their analysis of Mercosur, Laplane, Padovani Goncalves *et al.* agree and advocate for stronger policy interventions to support physical and human infrastructure development and innovation activities by local firms, with the aim of benefiting from the 'spillovers' as much as possible (Laplane, 2000).

Such a literature is in its infancy. What is more, very little of it addresses the extent to which Latin American governments have 'the room to maneuver' to deploy effective policies. Latin American nations signed numerous trade and investment treaties during the neo-liberal period. Most of these treaties lock in earlier reforms and will thus make it more difficult than for nations – such as China and India – who have not signed many bi-lateral and regional deals with Western countries. What is clear is that Latin American voters are speaking very loudly on this subject; if change does not occur, their voices will multiply and may lead governments to take draconian measures that will benefit few.

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