AN EMPIRICAL CRITICISM OF THE "FDI DEVELOPMENT" CONVENTION*

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ABSTRACT: Pro-Foreign Domestic Investment (FDI) policies have become a pillar of the development convention. While the literature has provided numerous studies on the effects of FDI on growth and investment in host country, very little is known about how domestic investment itself affects FDI inflows. The paper is an attempt to fill this gap. Evidences from a large cross-country sample (68 countries), over a long period (1984-2004), show that lagged domestic investment has a strong influence on FDI inflows in the host economy, implying that domestic investment is a strong catalyst for FDI in developing countries and that multinational companies do follow economic development.

KEYWORDS: Foreign direct investment; developing countries; domestic investment; industrial policy.

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UMA CRÍTICA EMPÍRICA DA CONVENÇÃO DO "DESEN-VOLVIMENTO DO INVESTIMENTO DIRETO EXTERNO (IDE)"

RESUMO: As políticas pró-IDE tornaram-se um pilar da convenção do desenvolvimento. Embora na literatura especializada inúmeros estudos abordem os efeitos do IDE sobre o crescimento e o investimento no país recebedor do IDE, pouco se sabe sobre como o investimento doméstico afeta os fluxos do IDE. Este trabalho tem o objetivo de preencher essa lacuna. Dados de uma ampla amostra de 68 países no período de 1984 a 2004 mostram que o investimento doméstico defasado exerce uma forte influência sobre os fluxos de IDE no país de destino, sugerindo que o investimento doméstico é um forte catalisador do IDE nos países em desenvolvimento e que as empresas multinacionais seguem o desenvolvimento econômico. Isso sugere que os instrumentos de política industrial, notadamente políticas de promoção do investimento direcionadas para firmas nacionais, também serão suficientes para atrair investidores estrangeiros.

PALAVRAS-CHAVE: Investimento direto externo; países em desenvolvimento; investimento doméstico; política industrial.

1. FDI'S STATUS IN THE DEVELOPMENT CONVENTION

While Aid and concessional loans used to account for the bulk of resource flows to developing countries (DC) a couple of decades ago, FDI has become the main source of external resource. Table 1 below shows that the resource flows to DC have increased since the early 1990s and that the most dramatic net increases have been in private capital flows, particularly FDI. The share of FDI in total net flows grew from 29% in 1991 to 80 % in 2008; meanwhile the share of official flows declined from 50 % to 3%. In nominal and real terms, official flows are now significantly lower than during the previous decades.

Table 1 - How important is FDI as a source of foreign capital in developing countries? (in billion USD)

Bio USD	1970	1991	2000	2008
(A) Official net flows(grants + concessional loans)	5.4	62.2	35.3	20
(B) Private net flows (portolio invt + FDI)	5.8	62	225.8	707
(A) + (B) = Net resource flows	11.2	124.2	261.1	727
FDI / net resource flows (in ratio)	**0.20**	**0.29**	**0.64**	**0.80**

Sources: Authors' elaboration based on Kokko (2002), Global Development Finance (2009, 2002), World Bank.

With few alternatives sources of foreign financing, it is not surprising that the attitudes towards inward FDI have changed over the last couple of decades. In contrast to former scepticism about whether FDI inflows should be encouraged at all, and to the frequent implementation of unfriendly policies towards Multinational Corporations (MNC), policy makers, as well as many scholars, now take the beneficial effects of FDI for granted. "MNC used to be seen as the emblem of dependency; they have now become the saviours of development" (Rodrik, 1999).

Pro-FDI policies rapidly became a pillar of the Washington consensus growth narrative, a pillar of the "neoliberal development convention" (Erber, 2008). "Development convention are 'stories' told about changes, (...) of how the future will be much better than the present if we follow the prescribed rules" (Erber, 2009). In that story, international capital mobility would allow global savings to be better allocated, to channel resources to investment projects in DC and to raise income and growth. According to the IMF Head, Stanley Fisher, "it was an inevitable step on the path of development which cannot be avoided" for DC governments[1].

This policy convention has spread into the academic field and into institutions such as laws and regulations.

Its spreading has been supported by a body of literature, which insists on the positive role of FDI in the growth and development processes (Borensztein *et al.*, 1998; De

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[1] In "Capital Account Liberalization and the role of the IMF", *IMF Seminar on Asia* Hong Kong, Sept 19, 1997. Quoted in Rodrik (2011). See also in Rodrik (2011, chapter 4).

Melo, 1999; Markusen *et al.*, 1999; OECD, 2002; Rodrik, 2000, 1999). Thus, in addition to fill the traditional investment and foreign exchange gaps, FDI can stimulate domestic investment, increase local market competition, enlarge international market access for local products, and generate externalities and knowledge "spillovers" (Blomstrom and Kokko, 2000). While development strategies used to focus on State's investments and interventions, FDI is now considered as the main source of catching-up and technological development. "The policy objective regarding investment is to improve the returns to investment in poor countries, both domestic and foreign, with a particular goal to increase the FDI flows directed to poor countries", considers an updated OECD paper on FDI in DC (Mayer, 2006). FDI attraction has become a development agendas priority.

Almost all countries liberalized their FDI policies. Those FDI policy changes have become more widespread since 1989, and the Eastern European economies "transition" process. According to UNCTAD (2001), more than 95% of the 1185 FDI regulation changes implemented during the 1990s have significantly eased restrictions on FDI inflows and MNC operations. In fact, despite (or thanks to) the absence of a multilateral framework for FDI, "unilateral, bilateral and regional efforts towards the liberalisation of national FDI frameworks have led to a remarkable level of *de facto* convergence of government policy approaches towards FDI among countries from all regions" (UNCTAD, 1994, p. 286).

Thus, DC governments have turned to the question of how to attract FDI and have initiated various measures to achieve this goal. The design and the implementation of FDI promotion policies have been promoted, and often supported, by international organisations and foreign donors (from the IMF to the EC) to help DC to benefit from this potent force for economic growth[2]. Thus, every host government now provides numerous forms of incentives to encourage entry by MNC: fiscal privileges, regulation distortions or exemptions, subsidies, preferential loans and guarantees. Foreign investment promotion agencies and attractiveness policies have flourished everywhere to build up or strengthen host country location advantages (Blomstrom and Kokko, 2003; Oman, 2000).

DC has implemented policies aimed at creating stronger incentives for foreign investors who are potentially capable of providing FDI flows. Understanding the determinants of FDI inflows and unveiling the reasons why some developing countries are more successful than others in attracting FDI may thus provide policy makers with useful guidance for future policies. FDI flows can undoubtedly promote growth. However, the reverse causality, from growth to international investment attraction, may

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[2] See for instance the Initiative on Governance and Investment for Development in the Middle East and North Africa (MENA) initiated by the OECD (www.oecd.org/mena), or a similar project promoted by the EC (http://www.animaweb.org).

explain most of the correlation. MNC location decisions should be influenced by host countries economic performance: it would be logical for MNCs to choose to invest in more profitable economies. Thus, this paper primary focus is to investigate whether domestic investment is a significant determinant of FDI in developing countries. It differs from existing studies because, firstly, it uses a large cross-country (68 developing countries) sample over a long period (1984-2004) and, secondly, because it analyzes the influence of domestic performance on international integration, rather than the impact of international integration on domestic performance.

The next section offers a review of the literature on the determinants of FDI in developing countries. Section 3 provides an introduction to our analytical framework. Methodology and data used in the empirical study are presented in Section 4. Section 5 discusses the regression results, and Section 6 presents some concluding remarks.

2. HOW ECONOMISTS EXPLAIN FDI LOCATION

The increasing role played by FDI in developing countries has created considerable research interest among economists. Consequently, an extensive empirical literature exists on FDI determinants in developing countries and/or on MNCs location determinants. The literature examines a large number of variables that have been put forward to explain FDI. Some of these variables are encompassed in formal hypotheses, whereas others are only suggested because they make sense intuitively. In the absence of a consensus on a theoretical framework to guide the empirical work, the result is a sizeable and diverse literature in which investigators have considered a number of explanatory variables in an attempt to establish a statistically significant relationship among FDI inflows and other variables of interest. Those studies have identified a number of variables, such as market size, economic openness, rate of return, quality of infrastructure, human capital, political instability, as potential determinants of FDI (Lim, 2001). However, according to Chakrabati meticulous surveys (2003, 2001), while "a vast empirical literature not only exists but continue to grow around the issues of identifying the forces attracting FDI. It is not exactly clear whether one can have any confidence in the conclusions reached by FDI regressions".

Empirical studies on FDI determinants mainly come in two forms: investor surveys and econometric or case studies. For example, the large survey of 1000 firms by A.T. Kearney mentions large market size, political and macroeconomic stability, GDP growth, domestic regulations and the ability to repatriate profits as the most important factors affecting FDI location (Development Business, 1999). A World Bank survey on investment location preference in East Asia of 173 Japanese manufacturing firms also ranks the size of the market, plus the cost of labor and FDI policies as the main deter-

minants (Kawaguchi, 1994). A study on the consequence of EU enlargement on FDI flows towards other developing or emerging countries finds similar results: host market size and growth rate have the highest influence (Kawaguchi, 1994). It is noteworthy that fiscal and tax incentives were considered as having little or no impact on FDI location decisions. Buch *et al.* (2005) investigate the determinants of German FDI location over the world. They show that a 1% increase in the size of a given foreign market is associated with a 1% increase in the activity of the German firms in this location.

Econometric studies typically use aggregate measures of FDI to study either one particular country or a panel of countries. While a couple of variables such as market size or labor cost are usually included in empirical models, other determinants chosen vary significantly, according to data availability or research objective. On average, the most robust determinant of FDI inflows is the market size. Market size estimated by real GDP or GDP per capita is significant in most studies (Dupuch and Mazier, 2002; Mayer, 2006; Michalet, 1999; Levasseur, 2002; Lim, 2001) – a result that may reflect the predominance of market seeking FDI strategies ("horizontal" FDI). The stock of infrastructure in the host country also has a positive impact on FDI inflows (Dupuch and Mazier, 2002; Kinda, 2007; Kumar, 2000; Rieber, 2000). Agglomeration effects are often found to be highly significant (Lim, 2001). Sectoral studies show that MNCs location choices are strongly influenced by the presence of foreign investors. The impact of trade openness is expected to be uncertain, because of the prevailing horizontal nature of FDI strategies. Nevertheless, several studies show a positive link (Lecraw, 1991; OECD, 2002). Low labor cost should have a positive influence on FDI. However, the impact becomes mitigated or null when the different qualities of labor are included in the model. For example, Mody *et al.* (1998) do not find that low wages are a determinant of Japanese FDI, although a better quality of labor influences positively FDI. Similarly, higher tax levels are expected to negatively influence MNC location choices and FDI inflows. However, this negative causality is not robust. In fact, most of the cost variables, as wage and tax for instance, can be integrated in econometric regression as proxies of host country advantages in terms of labor productivity or infrastructure and public goods supply. Then, the empirical results are mixed. The country economic and social stability does influence very significantly FDI inflows, and MNC avoid countries and territories where political risks and economic instability are high (Asiedu, 2001; Lecraw, 1991; Pigato, 2001).

While a large number of studies have been conducted to identify the determinants of FDI attraction, a real consensus has yet to emerge. There is no robust set of explanatory variables that can be regarded as the core or the "true" determinants of FDI. Results in the literature are very sensitive to sample selection and methodology, indicating a lack of robustness (Moosa and Cardak, 2005). Chakrabarti (2001) concludes

that "the relation between FDI and many of the controversial variables (namely, tax, wages, openness, exchange rate, tariffs, growth and trade balance) are highly sensitive to small alterations in the conditioning information set". The two main exceptions are market size, a robust and positive determinant of FDI, and country instability, a robust but negative explaining factor. Agglomeration effects additionally have a positive influence. However, since they explain current FDI flows by the amount of cumulated FDI in the country, they leave open the determinants of the initial investments and this result can not lead to practical policy implications.

To sum up, the empirical evidences on FDI attraction drive us back to the basic structure of the investment behaviour since Keynes: the investment decision (the location choice or investment attraction) results from the combination of the volume of demand (proxies here are market size variables) with the risk of investment (proxies here: instability or country risk indicator).

3. ANALYTICAL FRAMEWORK

3.1. FIRMS INVESTMENT BEHAVIOURS

However global, FDI does not flow everywhere with the same intensity. Among developing countries, certain host economies are more attractive than others. While there is no consensus on the determinants of host country FDI attractiveness, differences in international attractiveness between countries are easy to observe.

The only unambiguous conclusion from empirical studies is that MNC location choice follows the basic investment selection process: the decision to invest is based on the combination of two determinants, demand size and risk assessment. Thus we can expect MNC to follow local firms' behaviour, because the latter are closer to the demand and they are usually the first to be informed of changes in the domestic market opportunities.

It is extremely difficult to point out to a single FDI locational determinant. Instead, MNC are attracted toward countries that offer adequate combinations of locational determinants such as conditions for stable operations and access to large markets (Dunning, 1998; Muchielli, 1998; Noorbash, 2001; Siebert, 1999). In such countries, the domestic investment level is high, because there are many business opportunities. This level reflects the degree of economic attractiveness of the country, i.e.: the location--specific combination of business opportunities and risks on which the private domestic investment level in the country is based. For the same reason, FDI attraction will result from the country level of economic attractiveness, because foreign firms target the same type of profitable environment, as do local entrepreneurs. If not, it would imply that MNC typically do invest where local firms cannot identify profitable investment

opportunities (i.e., low level of economic attractiveness), or that MNC usually do not invest where they are plenty of such opportunities (i.e., high level of economic attractiveness), as shown by the investment rate of domestic firms[3], or both.

Thus, we expect domestic investment to lead foreign direct investment. Private investment by developing countries firms signals profitable opportunities and stable conditions, and thus stimulates FDI. In other words, domestic investment acts as a catalyst for foreign investment.

3.2. WHY WOULD FDI FOLLOW DOMESTIC INVESTMENT? EMPIRICAL STUDIES

A large attention has been devoted in the literature to FDI impact on economic growth in host countries, and a number of studies have examined the impact of FDI on domestic investment. In the neoclassical growth model, FDI promotes economic growth by increasing the volume of investment and/or its efficiency (Li and Liu, 2005). Thus, FDI positive contribution mainly comes from growth stimulation (Borensztein *et al.*, 1998; De Mello, 1999; Findlay, 1978; Lim, 2001; Nunnenkamp and Spatz, 2003; Wang, 1990) and from FDI's role as a channel for technology transfer and spillovers, notably through linkages with local suppliers (Blomstrom and Kokko, 2000; Grether, 1997; Smarzynska, 2004; Xu and Wang, 2000). Several papers have also attempted to measure the crowding-in and crowding-out effects of FDI on domestic investment (Agosin and Machado, 2005; Agosin and Mayer, 2000; Bosworth and Collins, 1999; Kumar and Pradhan, 2002; Markusen and Venables, 1999), with conflicting results. In comparison, a very narrow attention has been dedicated to the impact of domestic investment on FDI.

To our knowledge, only three papers explicitly include domestic investment as a potential determinant of FDI. Harrison and Revenga (1995) include domestic investment as an explanatory variable in a research on trade policy liberalisation impact. They find that compared with the size of the local market and openness to trade, domestic investment has no impact on FDI. This result is probably due to the heterogeneity of the sample, notably in terms of openness to FDI, during a period (1970-1992) when developing countries FDI policies were quite diverse. To the authors: the 1999 paper by McMillan should be cited here and included in the list of references. This conclusion, and apparent paradox – when local firms choose to invest more, foreign companies choose to invest less – result directly from the method chosen to measure domestic investment: domestic investment = Gross fixed capital formation (GFCF) minus FDI. But FDI is a balance of payment data, not a National Account one. FDI does not translate

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[3] Such discordance may appear because of a very particular context, as in the case of off-shore investments for instance.

nor immediately neither systematically into real capital formation in the host country. For instance, the acquisition of a local company by a foreign investor is a transfer of assets. It will result in a capital inflow, noticed in the balance of payment, but it will not increase capital formation in the country. Moreover, FDI flows are much more unstable than GFCF. As a result, FDI variation will largely determine the change of the proxy used to measure domestic investment [-FDI + GFCF], and the relationship between those two variables will always be negative. In a very creative paper on Sub-Saharan Africa, Ndikumana and Verick (2008) investigate whether domestic investment promotes FDI and is in its turn affected by FDI. Their study cover 38 African countries from 1970 to 2005, and they separate private domestic investment and public domestic investment, thanks to a World Bank database on Africa. Their conclusion goes in the opposite direction. Their results indicate that the relationship between FDI and domestic investment run both way. But the positive impact of domestic investment on FDI, especially in the case of private investment, is stronger and more robust that the reverse relation. Public domestic investment also has a positive influence on FDI inflows.

3.3. WHY WOULD FDI FOLLOW DOMESTIC INVESTMENT? THEORETICAL ARGUMENTS

In theory, there appear to be several ways in which domestic investment might influence positively FDI. Two obvious channels are, firstly, agglomeration economies and polarisation effects and, secondly, information asymmetry. The theory of MNC's specific advantage offers an additional explanation.

Agglomeration effects and interfirm externalities create linkages between domestic and foreign investors. Several studies based on an economic geography or an endogenous growth framework show that the stock of public infrastructure is a positive determinant of FDI inflows (Kinda, 2007). In an endogenous growth model, public capital stock increases production factors productivity and reduces transaction costs (Barro, 1990; Rieber, 1999). Infrastructure increases the return on investment and stimulates private investment. For example, Loree and Guisinger (1995) show that countries with more developed infrastructures receive a higher share of US FDI. Kumar (2001) obtains the same positive relationship in a study based on a 66 countries sample, as well as Asiedu (2001) in her research on FDI determinants in African countries. Thus, the better the state of the host country infrastructure is, the more profitable the FDI is. Therefore, *ceteris paribus*, FDI follows increases in public domestic investment. In other words, public investment leads FDI.

Another major result of the literature on MNC's investment is their tendency to agglomerate in certain country in a higher proportion than what would be expected from the size of the market (Fontagné and Meyer, 2005). Agglomeration or clustering

effects are found to be highly significant. As a consequence, the existing stock of FDI has a very positive influence on new foreign investments, notably in developing countries (Alaya *et al.*, 2007; Hanson, 2001; Yehoue, 2005). Foreign investors may be influenced by the presence of other foreign firms for various reasons, including the gain from inter-firms externalities and the signal of profitability given by the success of the first firms (Lim, 2001).

The positive attributes of previous public investment and foreign investment should also be important in the case of private domestic investments. An increase on domestic private investments, as a stock or as a flow, contributes to reduce transaction costs, as well as increasing technology spreading or extending interfirm division of labor. Most of the externalities and agglomeration effects produced by public or foreign investment can be generated by the domestic private sector as well. As a consequence, the determinants that explain the positive influence of public investment or foreign investment stock on FDI inflows are also relevant in the case of private domestic investment. Private investment should also lead FDI.

Therefore, we will use GFCF as a proxy, to estimate the influence of domestic investment on FDI inflows. GFCF include public and private domestic investment[4]. These two types of investment increase the rate of return of new investment, and both can be expected to have a positive influence on FDI.

A second type of linkage between domestic investment and FDI can be found in the concept of the firm's specific advantage, on which is based the modern theory of the multinational company and international investment. Initially proposed by Hymer (1976) and later taken up and developed further, notably by Dunning (1988, 1977) in his "eclectic paradigm", the firm's specific advantages are linked to market imperfections and give the firm a competitive advantage over its rivals. The specific advantage is a determinant of large companies' investments abroad, because they give them the power to be competitive on foreign markets, despite the domestic firms' advantages in terms of market knowledge, local linkages (Ietto Gillis, 2005; Muchielli, 1998). The ownership of such competitive assets (brand, scale, technology) is necessary for the FDI project to succeed. This analytical framework implicitly assumes that FDI follow domestic investments, because domestic investors have more accurate information about the local business climate than do foreign investors. As Graham and Krugman (1991) put it: "domestic firms have better knowledge and access to domestic markets; if a foreign firm decides to enter the market, it must compensate for the advantages enjoyed by domestic firms" (in Borenszstein *et al.*, 1998). Thus, the coherent sequence

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[4] GFCF includes private investment. In a market economy, it can be used as a proxy for private investment, when such data is not available.

with the specific advantage concept is when domestic investment leads foreign direct investment. The contrary (FDI before domestic investment), as well as the absence of any linkage (FDI without domestic investment), would be incongruous and conflicting with this framework. In fact, if they are no domestic competition and previous investors on the host country market, foreign firms do not need any specific advantage to be competitive; the theory of the multinational company specific advantage falls down.

The modern theory of MNC is implicitly based on the hypothesis of a market-knowledge advantage of domestic firms. The foreign firm need to possess a "super power" to overcome the domestic competitors' advantages due to their proximity and their experience of the local market, which allow them to identify and to react to new business opportunities faster and sooner[5].

Thirdly, McMillan (1998) suggests a close and more explicit link. She supposed that private domestic investors have better information about the local business climate than do foreign investors. When information is incomplete, domestic investment acts as a signal about the situation of the economy to foreign firms. Thus we could expect to see domestic investment lead FDI. Ndikumana and Verick (2008) also use this "signal theory" to explain the influence of private domestic investments on FDI. Higher level of private investment is seen as an indication of high returns to capital; it generates a signalling effect to foreign firms that stimulates FDI.

Last but not least, most of the literature on the determinants of FDI concludes towards the significant and positive role of market size. Hence, to the extent that domestic investment determines growth and/or market size, these studies indirectly consider domestic investment as a determinant of FDI. Furthermore, the market size has a positive influence on FDI because this variable is a proxy for potential profits. In comparison, the level of domestic investment gives more accurate information on profit expectations in the host country.

4. METHODOLOGY AND DATA

Since the purpose of this paper is to emphasize the effects of domestic investment on FDI inflows in developing countries, the study focuses on that, ignoring several commonly analyzed economic variables. However, we include other independent variables often used in the literature to explain FDI inflows, with different interpretations for some of the variables. The choice of variables was constrained by data availability.

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[5] The "FDI before domestic investment" sequence is compatible with the Hymer-Dunning framework only if we supposed that MNC always posses a more accurate information about the local business climate than do domestic firms. The specific advantage is then reduced to a cognitive advantage. The modern theory of MNC is changed into a simple information asymmetry explanation, and it disappears once more.

As is usual in the literature, the dependant variable is the ratio of net FDI flows to GDP. Technically, FDI have three components: equity capital, reinvested earnings or intracompany loans. FDI inflow may result in the creation of new economic assets in the host country ("greenfield" investment) or in the transfer of domestically owned assets to a foreign investor. In the second case, M&A operation implies a transfer of assets from domestic to foreign investors and does not increase, at least initially, the country capital stock. M&A in DC may often be decided for different reasons than host country economic attractiveness: privatization policies, fall of assets price due to a debt or a liquidity crisis, credit crunch. In such cases, no linkages should be expected between FDI and domestic investment. For those reasons, we distinguish the total inflow of FDI (FDI/GDP), which includes M&A, and (fresh or "net") greenfield investments by foreign firms (FDI-M&A/GDP). In the first place, it seems more appropriate to use the second variable in our framework. However, M&A data are less homogeneous, notably because it is not possible to trace the origin of the funds used[6].

The basic specification for the model is therefore:

$$FDI_{it} = a_0 + a_1 \, stGFCF_{it} + a_2 FDIst_{it-1} + a_3 ICRG_{it} + a'X_{it} + \varepsilon_{it}$$

where i indexes countries, t indexes time, $stGFCF_{it}$ measures the cumulated flows of Gross Fixed Capital Formation in the recent past, $FDIst_{it-1}$ is the lagged FDI stock. ICRG it is a synthetic indicator of country risk, X_{it} is a vector of other variables that are often considered as influencing FDI. a_0 iis a common fixed effect term and εit is the error term.

$stGFCF_{it}$ is the sum of the actualised value of domestic investment flows during the previous five years. We use Gross Fixed Capital Formation, which includes both private and public sector investment, because data on private domestic investment in DC are too limited. We use a five year period because investment tends to be volatile. In a poor DC, a donor grant to finance new infrastructure or new equipment may increase considerably, but briefly, the investment rate. A one year large variation of the investment rate may be explained by factors exogenous to the investment climate, as a dramatic recession or an unusually large investment. Generally such causes do not last. Our indicator is a compromise between the actualised value of the country capital stock, which is unavailable, and the investment flow, which is too volatile.

It is calculated as:

$$stGFCF_{it} = [(GFCF/GDP)_{it-1} \, .0.8] + [(GFCF/GDP)_{it-2} \, .0.8^2] + [(GFCF/GDP)_{it-3} \, .0.8^3]$$
$$+ [(GFCF/GDP)_{it-4} \, .0.8^4] + [(GFCF/GDP)_{it-5} \, .0.8^5].$$

This variable is appropriate with MNC decision process and with an imperfect information environment : we expect the recent past to influence current FDI flows, because MNC investment strategies are planned and implemented not annually but on a

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[6] For more information on these data, see: <http://www.unctad.org/en/docs/wir2009meth_en.pdf>.

multiannual time period; information on favourable investment opportunities become more convincing when they have been confirmed for several years, but their impact does not last and information becomes rapidly outdated, which explains the choice of a high actualization rate (20%).

FDIst $_{it-1}$ is calculated as the ratio of the stock of FDI on GDP for the preceding year. We expect FDI inflows to have a large correlation with the stock of FDI, which captures both the attraction of new FDI to countries with existing investments (agglomeration effects increase the profitability of new investments) and reinvested profits of MNC returning as FDI inflows to the receiving country (Alaya, 2007; Lim, 2001; Hanson, 2001).

ICRG $_{it}$ is a synthetic indicator of country risk provided on an annual basis since 1984. It comprises 22 variables in three subcategories of risk: political, financial, and economic. This composite index ranges from 0 to 100, the latter corresponding to the lowest possible risk. We expect the ICRG index to be positively related to FDI inflows.

As highlighted above, the literature on FDI has focused on other key determinants. Our empirical specification therefore includes additional variables. LGDP$_{it}$ is the log of the country GDP. LGDPc$_{it}$ is the log of the country GDP per capita in constant 2000 \$. It captures the level of economic development of the country and its productivity, as well as the sophistication of the domestic demand, and it should have a positive influence on FDI. However, GDPc is often used as a proxy for real wages. In the literature, the relationship between GDP per capita and FDI is not unanimous. The availability of natural resources is often supposed to influence MNC investments. As an opposite proxy for this economic specialisation, we used MX$_{it}$ the ratio of manufactured exports on total exports. It increases with the country's level of industrialization and decreases when the country specialises on primary products. Its influence on FDI inflows will depend on the type of investment. When FDI follow "resource-seeking strategies", primary specialisation (i.e., low level of MX$_{it}$) will have a positive influence on investment inflows. GRO$_{it}$-1 is the GDP growth rate of the preceding year. It is expected to have a possible positive impact on FDI, mainly through a disincentive effect when growth is too weak. TAX$_{it}$ stands for fiscal revenue on GDP (in %), and is a proxy of the global tax rate applied to the private sector. INF$_{it}$ is the consumer prices annual change. In a preliminary step, we included trade openness (export+import/GDP) and the stock of education (from the Barro-Lee database), but these two variables had no significant effect (results not reported here).

The model is estimated with panel data. The data set covers 68 developing countries over the period 1984-2004. Countries from the former Warsaw Pact are not included because of their economic transition and the complete transformation of their FDI

policies during the period. The data on FDI are collected from the World Investment Report database provided by the United Nations, and most other data used in the model are taken from the World Bank "World Development Indicators" database. ICRG values since 1984 come from the Prsgroup.

In the results presented below, we control for various usual pitfalls. Hence, outliers have been withdrawn and we checked that our data do not present either multicorrelinearity (variance inflation factors have been calculated) or heteroscedascity (White test). However, as expected since we are using time series, the error terms cannot be assumed as independent. They are auto-correlated (Durbin-Watson test). Therefore, we estimate linear regression model with autoregressive errors (AUTOREG procedure from SAS software). The correlation matrix of all the variables used in the equations indicates no serious problem, except in one case, where the correlation coefficient of LGDP and LGDPc is 0.62.

Another problem with assessing the effects of domestic investment on FDI inflows is endogeneity. For instance, omitted factors could have a positive impact simultaneously on domestic investment and FDI, because both variables are a signal of economic performance. Although, in principle, the endogeneity problem can be avoided by applying instrumental variable techniques, the fundamental problem is that there are no ideal instruments available. To deal with this issue, McMillan (1999) defines domestic investment as "net" domestic investment: $(GFCF - FDI)_{it}$. This methodology drives her to a paradox: a negative relationship between domestic investment and FDI. In other words, the main linkage is investment substitution: when the domestic firms increase their investment on a host market, MNC decide to reduce theirs. However this conclusion results from the ex-ante measure of domestic investment. The link between FDI_{it} and $(-FDI_{it})$ is negative, so is the relationship between FDI_{it} and $(-FDI_{it} + GFCF_{it})$! This attempt to calculate domestic investment "net" from FDI is inaccurate; it can only lead to the conclusion that domestic investment does not stimulate FDI. Furthermore, such measure is based on the hypothesis that the whole FDI inflow immediately leads to the same amount of capital formation in the host economy. This is wrong. International capital transfer and investment implementation are not always simultaneous. Moreover foreign capital inflows are sometimes employed to purchase domestic assets. In this case, FDI implies ownership change but no additional capital formation: GFCF does not increase. These problems explain why we follow Ndikumana and Verick (2008) and we use lagged value of investment to build our explanatory variables to minimise the bias arising from endogeneity. Our domestic investment proxy does not include FDI for the year t and we do not make any inaccurate subtraction or miscalculation that would *ex-ante* influence the result.

Table 2 – Descriptive statistics

	N	Minimum	Maximum	Mean	Std. Deviation
FDI_GDP	1319	-0.122	0.204	0.019	0.026
FDI-M&A_GDP	1141	-0.280	0.167	0.015	0.027
FDIst$_{-1}$	1265	-0.370	1.580	0.170	0.188
stGFCF_GDP	1231	0.180	1.240	0.536	0.161
ICRG	1064	25	91	60.410	11.422
MX	1036	0.180	99	40.065	28.312
GDP	1326	177	1 931 710	54 395	142 710.9
GDPc	1325	74.740	24 163.9	2 136.2	3 368.0
GRO$_{-1}$	1264	-16.830	19.450	3.483	4.201
TAX	484	2	57	15.920	6.325
INF	1285	-11.45	11 749.64	61.941	535.777

Source: Authors' elaboration.

5. EMPIRICAL RESULTS

In this section, we first present the results of OLS regressions for all the countries in the sample. Secondly, we split the sample according to three criteria, in order to create more homogeneous country groups, and we compare the results for those different subsamples.

5.1. RESULTS FOR ALL THE COUNTRIES IN THE SAMPLE

The results of the regression for all (developing) countries in the sample are reported in Table 3. Specifications (1) to (4) refer to the basic model. From specification (5), we progressively exclude non-significant variables. Specifications (7) and (8) refer only to the core variables.

Table 3 reveals several interesting results. First, these regressions show that domestic investment has a large positive effect on FDI inflows. The coefficient of stGFCF in these specifications is always highly significant; the basic model is robust to changes in specifications. As anticipated, the coefficient increases for FDI "net" of Mergers and Acquisitions (FDI-M&A). Secondly, as expected, FDI inflow is positively correlated with the stock of FDI, which confirms the attraction of new FDI to countries with existing MNC investments, and country stability, proxied by ICRG, has a very significant positive impact on FDI. The regression results confirm that political and economic risk is a severe impediment to FDI. A major reason is the irreversible nature of FDI due to the large share of sunk cost in FDI projects.

We include in the first specifications, (1) to (6), the growth, tax and inflation variables, and the signs of coefficients are consistent with predictions, although they are statistically insignificant. Contrary to expectations, the coefficient on the GDP is negative and not truly significant. This may reflect the heterogeneity of this sample and the fact that FDI may either be attracted by resource-rich countries, usually poor, or by market size in less poor developing countries.

**Table 3 - Impact of domestic investment on FDI inflow, 1984-2004
(all developing countries)**

	Dependent variable FDI (1)	Dependent variable FDI (2)	Dependent variable FDI-M&A (3)	Dependent variable FDI-M&A (4)	Dependent variable FDI (5)	Dependent variable FDI-M&A (6)	Dependent variable FDI (7)	Dependent variable FDI-M&A (8)
Constant	-0.0718 (-5.05)***	-0.0415 (-2.62)***	-0.0558 (-4.02)***	-0.0367 (-3.09)***	-0.0381 (-4.42)***	-0.0262 (-3.19)***	-0.0322 (-5.35)***	-0.0246 (-4.05)***
FDISt$_{-1}$	0.0526 (6.84)***	0.0541 (7.04)***	0.0455 (6.07)***	0.0488 (8.75)***	0.0513 (8.05)***	0.0493 (8.00)***	0.0481 (7.95)***	0.0477 (8.05)***
stGFCF	0.0320 (2.94)***	0.0336 (3.01)***	0.0334 (3.14)***	0.0381 (4.77)***	0.0168 (2.18)**	0.0219 (2.79)***	0.0172 (2.38)**	0.0189 (2.56)**
ICRG	0.000673 (3.50)***	0.000858 (4.76)***	0.000515 (2.71)***	0.000756 (5.22)***	0.000583 (5.33)***	0.000426 (3.62)***	0.000557 (5.86)***	0.000340 (3.40)***
MX	-0.000085 (-1.45)	-0.000041 (-0.65)	-0.000095 (-1.67)*	-0.000079 (-1.72)*	-0.000039 (-0.87)	-0.000026 (-0.60)		
LGDP		-0.001736 (-1.33)		-0.001931 (-2.11)**				
LGDPc	0.003479 (1.90)*		0.002344 (1.31)		0.000696 (0.57)	-0.000725 (-0.63)		
GRO$_{-1}$	0.000424 (1.75)*	0.000384 (1.59)	0.000221 (0.91)	0.000596 (2.19)**	0.000182 (1.25)	0.000116 (0.70)		
TAX	0.0000538 (0.23)	-0.000063 (-0.26)	-0.000058 (-1.57)	-0.000281 (-1.57)				
INF	-1.488E-6 (-0.65)	-8.619E-7 (-0.38)	-1.374E-6 (-0.60)	-7.689E-7 (-0.31)				
R²	0.348	0.335	0.283	0.280	0.180	0.164	0.154	0.138

Notes: (***) Significant at the 1% level. (**) Significant at the 5% level. (*) Significant at the 10% level. t values are in brackets.
Source: Authors' elaboration.

5.2. THE CASE OF RESOURCE-POOR COUNTRIES

Securing the supply of raw materials and other natural resources has been acknowledged as an important objective of MNC, since the earliest works on international investment in the case of such resource-seeking or rent-seeking FDI, no correlation is to be expected with the domestic investment. FDI inflows are driven by specific factors in resource-rich countries. Furthermore, the literature on the Dutch-disease and on the resource "curse" shows that natural resources abundance rarely stimulates domestic investment. To exclude this kind of economic structure and such type of FDI incentives from our sample, we introduce here an export structure threshold: we classify countries where manufactured exports account for less than 25% of total exports (MX<25%) as resource-rich economies.

Table 4 reports the regressions on the resulting group of resource-poor developing countries. The quality of the results increases when the influence of natural resources is reduced. As expected, the positive coefficient of domestic investment increase when M&A are excluded and the influence is measured on the "net" FDI inflow.

A 1% increase in stGFCF as a percent of GDP is followed by a 0.045% increase in future net FDI (FDI-M&A) as a percent of GDP. By construction, stGFCF is 2.7 times higher than GFCF/GDP (if the investment rate is stable). Thus, the previous coefficient means that, on average, a 1% increase of the domestic investment rate in the previous five years will increase the current FDI ratio by 0.12 %. This variation is significant since the mean of the ratio FDI/GDP in our sample is 1.8 %, and the mean of the ratio (FDI-M&A)/GDP is 1.5%.

Table 4 - Impact of domestic investment on FDI inflow, 1984-2004 (MX > 25%)

	Dependent variable FDI (9)	Dependent variable FDI-M&A (10)
Constant	-0.0484 (-4.86)***	-0.0370 (-3.59)***
FDISt$_{-1}$	0.0511 (7.11)***	0.0443 (6.13)***
stGFCF	0.0305 (3.47)***	0.0448 (4.62)***
ICRG	0.000483 (3.73)***	0.000249 (1.86)*
MX	-0.000033 (-0.53)	-0.000088 (-1.37)
LGDPc	0.001665 (1.21)	0.000987 (0.68)
GRO$_{-1}$	0.000293 (1.54)	0.000233 (1.27)
R^2	0.278	0.231

Notes: (***) Significant at the 1% level. (**) Significant at the 5% level. (*) Significant at the 10% level. t values are in brackets.
Source: Authors' elaboration.

5.3. THE CASE OF NON-POOR DEVELOPING COUNTRIES

A second specific feature of developing economies can influence negatively FDI inflows. *Ceteris paribus*, a poverty-trap, or a high level of poverty in a country, will discourage MNC investments. While business and profit opportunities still arise in very poor countries, they are less easy to identify by foreign investors, because they may be isolated on heterogeneous niche-markets, which are difficult or too costly to penetrate. Institutional deficiencies often contribute to reduce further market access for foreigners. Thus we formulate the hypothesis that host country domestic investment may stimulate FDI inflow once the country has escaped from poverty, i.e., per capita reach $1500 (constant 2000).

Table 5 shows the regressions for this subsample of "non-poor" developing countries, where GDPc is higher than 1500$. stGFCF is still highly significant and its coefficient increases when compared to the whole sample. The influence of past domestic investment trend is strong. On average a 1% increase in GFCF/GDP in the previous five years increases current FDI/ GDP by 0.1%, and "net" FDI/GDP by 0.14%.

LGDPc becomes statistically significant and positive. This result further confirms the hypothesis that FDI inflow responds positively to host country income level, once it grows beyond a threshold level.

Table 5 - Impact of domestic investment on FDI inflow, 1984-2004 (GDPc > $1500)

	Dependent variable FDI (11)	Dependent variable FDI-M&A (12)
Constant	-0.1078 (-4.50)***	-0.1084 (-4.86)***
$FDISt_{-1}$	0.0441 (5.09)***	0.0359 (4.47)***
stGFCF	0.0385 (3.55)***	0.0528 (4.92)***
ICRG	0.000700 (4.06)***	0.000508 (2.93)***
MX	-0.000093 (-1.29)	-0.000090 (-1.33)
LGDPc	0.007120 (2.40)**	0.007064 (2.55)**
GRO_{-1}	0.0000824 (0.36)	0.0000201 (0.09)
R^2	0.241	0.252

Notes: (***) Significant at the 1% level. (**) Significant at the 5% level. (*) Significant at the 10% level. t values are in brackets.
Source: Authors' elaboration.

5.4. REGIONAL TRENDS

Next, in tables 6a and 6b we divide the developing world into four main regions: (Sub-Saharan) Africa; East Asia; Latin America; Middle East and North Africa (MENA). The R^2 increases, indicating the importance of regional effect, except in Latin America. Yet domestic investment remains significant only in East Asia. This weaker link in other developing regions suggests that other determinants interfere. The conclusion that "Africa is different" (Asiedu, 2001) tends to be confirmed by our results, which implies that, in Africa, MNC invest more in countries well known (FDIst is statistically significant), stable and poor!

Nevertheless, the linkage between domestic and foreign investment in East Asia is impressive. Specifications (14) and (20) show that a large share of the variation in FDI rate can be explained by a small number of factors and that stGFCF is statistically very significant in East Asia. The strongest effect of domestic investment on FDI is found in East Asia. An increase of 1% of the average GFCF/GDP rate raises the "net" FDI/GDP ratio by about 0.2%!

Table 6 - Impact of domestic investment on FDI inflow (FDI) by region, 1984-2004

Dependent variable FDI	(13) Africa	(14) East Asia	(15) Latin America	(16) MENA
Constant	0.009002 (0.58)	-0.0881 (-3.08)***	0.000860 (0.04)	-0.0376 (-1.98)**
$FDISt_{-1}$	0.0781 (8.54)***	0.0738 (5.40)***	0.0287 (2.35)**	0.0116 (1.28)
StGFCF	-0.0146 (-1.19)	0.0531 (2.57)**	0.0199 (1.27)	0.0136 (0.97)
ICRG	0.000774 (3.70)***	0.000456 (1.01)	0.000762 (4.34)***	0.000777 (5.33)***
MX	-9.979E-6 (-0.09)	-0.000156 (-0.78)	0.0000111 (0.13)	0.000139 (1.93)*
LGDPc	-0.007713 (-3.32)***	0.004832 (1.12)	-0.005170 (-1.56)	-0.001949 (-0.93)
GRO_{-1}	0.000283 (1.01)	0.000493 (0.97)	0.0000537 (0.22)	-0.000166 (-0.55)
R^2	0.354	0.521	0.09	0.337

Notes: (***) Significant at the 1% level. (**) Significant at the 5% level. (*) Significant at the 10% level. t values are in brackets.
Source: Authors' elaboration.

Table 6b - Impact of domestic investment on FDI inflow (FDI-M&A) by region, 1984-2004

Dependent variable FDI-M&A	(19) Africa	(20) East Asia	(21) Latin America	(22) MENA
Constant	0.0291 (1.62)	-0.1184 (-4.12)***	0.0135 (0.69)	-0.0283 (-1.36)
FDISt$_{-1}$	0.0649 (6.14)***	0.0553 (4.15)***	0.0268 (2.46)**	0.0135 (1.40)
stGFCF	-0.0196 (-1.38)	0.0710 (3.36)***	0.0151 (1.10)	0.0318 (1.93)*
ICRG	0.000777 (3.21)***	0.000562 (1.28)	0.000529 (2.89)***	0.000348 (2.21)**
MX	-9.321E-6 (-0.08)	-0.000422 (-1.96)*	0.0000433 (0.57)	0.0000825 (1.09)
LGDPc	-0.0108 (-4.02)***	0.008371 (1.95)*	-0.005725 (-2.04)**	-0.001504 (-0.67)
GRO$_{-1}$	0.000113 (0.36)	0.000420 (0.80)	0.000103 (0.34)	-0.000063 (-0.27)
R²	0.264	0.536	0.07	0.173

Notes: (***) Significant at the 1% level. (**) Significant at the 5% level. (*) Significant at the 10% level. t values are in brackets.
Source: Authors' elaboration.

6. CONCLUSION

This paper investigates the impact of domestic investment on FDI in developing countries using a large cross-country sample for the period 1984–2004. The literature has provided numerous studies on the effects of FDI on growth and investment in host country, but the relationship between FDI and domestic investment is bidirectional. Yet very little is known about how domestic investment itself affects FDI inflows. The understanding of the linkages between domestic investment and FDI is a key to understand the determinants of countries international attractiveness, which helps in turn to select the policy levers that may be activated to increase both FDI inflows and economic performance in the host country. This paper attempts to contribute to fill this gap.

The empirical results obtained in this paper show, first, a strong influence of previous domestic investments on foreign investors. Evidence from annual data for 68 developing countries suggests that lagged domestic investment has a quantitatively significant impact on FDI inflows in the host economy. This impact is strongest when countries move away from underdevelopment level. For instance, for DC with a GDP per capita above 1500$, a one percent increase in domestic investment, as a percent of GDP, rises FDI as a percent of GDP by as much as 0.1%. Furthermore, the correlation coefficient increases when total FDI is replaced by greenfield or "net" FDI as the dependant variable. In the former subsample, the same variation of the domestic investment rate rises (FDI-M&A)/GDP by 0.14%. In summary, we can conclude that domestic investment is a strong catalyst for FDI in DC; domestic investment appears to be a good predictor for future foreign investment inflow.

Second, the empirical results from this study are consistent with endogenous growth theories and with the new economic geography (NEG) framework, as they confirm the agglomeration of FDI flows in the developing world. However, our results are not completely in line with the NEG, because here the polarisation forces are centrifuge and not

centripetal. The direction of causality goes from the country economic attractiveness, appreciated by its rate of investment, to the FDI inflow, and it does not follow a "centre to the periphery" route. This finding reveals one of the bases of development strategy, before its dissolution in the Washington consensus. The mode of entry of a country in the world economy rests upon its internal dynamic, that can be appreciated by its rate of investment (Amsden, 2001; Bradford, 1993; Judet, 1986; Rodrik, 2009, 1999).

Third, the policy implications of this study are straightforward. Our results show that the promotion of domestic firms investment will lead to more FDI inflows. Developing countries will benefit from measures aimed at encouraging domestic investment, and a better investment performance will efficiently stimulate FDI. The evidence suggests notably that industrial policy, aimed at enhancing the profitability and the scope of domestic investments, will be effective to increase FDI inflows in the country as well[7].

Many countries are actively trying to attract foreign investors with various incentives and subsidies. The competition between governments to attract FDI tend to shift profits and welfare from the host countries to foreign multinationals, while empirical research shows that international investment incentives play only a marginal role in determining the international pattern of FDI (Blomstrom and Kokko, 2000; Oman, 2000). Thus, a more efficient policy choice would be to transfer the pro-FDI incentives budget to industrial policy, or any kind of domestic investment promotion measures, that will stimulate domestic firms' investment.

Finally, this study confirms that a FDI attraction policy cannot serve as a development strategy, because FDI flows are directed towards developing countries which have already a strong investment rate! Of course causality between those two variables runs in both directions. However, it is important to underline that, ceteris paribus, FDI flows where there is already a dynamic process of economic development. Thus, our results suggest that MNC follow economic development.

In other words, the first "developmental convention" (Erber, 2009), which focused on changing the productive structure by promoting manufacturing investment, has remained quite effective to achieve both structural change and FDI attraction.

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[7] According to Nunnenkamp (2002) motto: "what is good for domestic investment is also good for FDI!".

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