

# FDI from the South, institutional distance and natural resources.<sup>1</sup>

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## Abstract

This study explores location choices for foreign direct investment stemming from emerging economies (often referred to as the South), with a particular emphasis on institutions and natural resources. Relying on a novel dataset of bilateral FDI flows over the past decade, and working within gravity model framework, we demonstrate that FDI from the South has a more regional aspect than investment stemming from the North. Large institutional distance between source and destination countries discourages FDI inflows from emerging economies, but the growing attractiveness of the primary sector outweighs this deterring effect. We also attest to the complementary relationship between capital flows from the North and South in developing recipient countries, which we attribute to different FDI patterns of these investors.

JEL Classification: F21, F23, E02

Keywords: Foreign direct investment, South-South, developing countries, institutions, crowding-in, natural resources.

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## 1. Introduction

The share of developing and transition countries in the global foreign direct investment (FDI) outflows has doubled in the last 20 years, reaching 16% of the total FDI outward stock. Most of this increase has happened since 2004 (UNCTAD, 2010). This process has not only been driven by an active role of China, whose share amounts to 8.5 percent of the total FDI stemming from the South.<sup>4</sup> Other important investors are Brazil, Hong Kong, India, Malaysia, Mexico, Russia, South Africa, South Korea, Singapore and the UAE, who together account for almost 80 percent of the total FDI outflows from the South. Most of the investment flows from developing countries go to other developing and transition economies, giving rise to the term “South-South FDI” and amounting to one-third of the total FDI inflows in emerging economies (Aykut and Ratha, 2004). The appearance of these new global investors has been described as a “huge infusion” or a “bonanza” in the popular media, reflecting large amounts that are being invested. It has naturally raised a number of important questions regarding their strategies and motivations, as well as implications for investors from the North.

Given the novelty of the subject and scarcity of the data, the academic literature about FDI stemming from the South is very limited, and most existing papers are either descriptive or have a regional focus (Aykut and Ratha, 2004; UNCTAD, 2006; Bera and Gupta, 2009). To our knowledge, ours is the first study that attempts to rigorously explain the determinants of FDI flows from emerging economies and their implications for other investors. Our contribution is two-fold. First, relying on the gravity model framework, we test whether emerging economies invest differently than developed countries. Second, we also explore whether investment from the South and the North exhibit a substitution or complementary relationship. We are able to tackle these issues thanks to our novel dataset that combines information on bilateral FDI for 60 developing and 22 developed economies between 1996 and 2007, and covering 85 percent of the world FDI flows.

Besides traditional determinants of FDI, a particular attention is paid to the institutional distance between source and destination countries. Poor institutional quality of potential host countries is often cited as the leading explanation for the scarcity of capital

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<sup>4</sup> We follow Aykut and Ratha (2004) and UNCTAD in defining “North” and “South” countries. In this paper, “North” includes only 22 high-income OECD countries, while “South” includes the rest: developing, transition economies, and six high-income non-OECD countries (Aruba, Brunei, Hong Kong, Kuwait, Singapore, UAE). Terms “the South”, “developing and transition economies” and “emerging economies” are used interchangeably throughout the paper.

flows from rich to poor countries predicted by the standard neoclassical theory – the “Lucas Paradox” (Lucas, 1990; Alfaro et al, 2008). If we follow this line of reasoning, how can one explain the recent increase in the South-South FDI? One plausible explanation can be found in recent studies suggesting that investors are deterred by an institutional distance and prefer to invest in countries with a similar institutional environment (Bénassy-Quéré et al. 2007; Habib and Zurawicki, 2002). Although these studies are performed on a sample of developed economies, their results imply that investors from the South may have a comparative advantage to invest in other developing countries (Claessens and Van Horen, 2009), because they may be eager and more able to operate in institutionally weak environments thanks to their previous domestic experience with poor institutions (Cuervo-Cazurra and Genc, 2008; Darby, 2009), as well as greater familiarity of business practices in similar markets (the World Bank, 2006). We test this implication and, while we confirm previous findings of the negative effect of institutional distance on FDI for a sample of investors from the North, our initial results do not provide support to this hypothesis for the sample of emerging economies. On the contrary, we find that multinationals from the South appear to be attracted by a large institutional distance, which is a puzzling result, as it reveals a tendency of these companies to invest in countries with either much better or much worse institutions.

We argue that there are two explanations for the above paradox. When emerging multinationals invest in countries with institutions that are better than at home, it is plausible to assume that they would prefer countries with best institutions. Despite unfamiliarity, such an institutional environment is the most transparent for potential entrants due to the low corruption, sound property rights, and political stability, which explains the attraction of the large institutional distance. In the alternative case, when investors from the South invest in countries with worse institutions than at home, we show that the documented appeal of bad institutions is driven by host countries endowed with natural resources. The growing attractiveness of the primary sector appears to outweigh the deterring effects of bad institutions, at least for the time being. If one controls for availability of natural resources, emerging multinationals from the South are on average discouraged by a large institutional distance, similar to investors from developed economies.

The strategic importance of the primary sector has increased since 2003 owing to an increased demand for natural resources and soaring commodity prices, motivating emerging economies to intensify efforts to acquire oil assets and invest in mining (UNCTAD, 2007).<sup>5</sup>

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<sup>5</sup> Despite the fact that companies from developing and transition economies now control most of the global production of oil and gas, their degree of internationalization is still relatively modest. Among five largest

To mitigate the domestic shortage of natural resources, the Chinese government has promoted outward FDI for resource exploration projects via preferential bank loans of the Export-Import Bank of China. As a result, between 2003 and 2005, the mining industry has accounted for 32 percent of the total outward Chinese FDI, albeit its share has decreased afterwards. The government of India has also mandated its state-owned oil companies to secure stakes in oversea oil deposits. While Russia does not need to secure resources for its own demand, it has still engaged in the competition for resources in the post-soviet republics with the aim of selling them in international markets.<sup>6</sup> Other important emerging investors in the primary sector are Brazilian, Kuwaiti and Malaysian enterprises.

Importantly, companies from the South that invest in the primary sector are almost always state-owned and, hence, they could be influenced by considerations other than economic. These investors appear to be less deterred by poor institutions in host countries than large private multinationals from developed countries (UNCTAD, 2007). As an extreme but instructive example, one may consider Chinese, Indian and Malaysian investment in Sudan that suffers from some of the worst institutions in the world and is facing United States economic sanctions due to the conflict in the Darfur region. China and Malaysia are also present in Iran, while Russia is the only major foreign investor in Belarus.

The emergence of large investors from the South may be viewed as taking away potential investment opportunities that could have been undertaken by investors from the North i.e. crowding them out.<sup>7</sup> However, we also show that behavior of developing countries' investors is different as they exhibit a more regional aspect and are more likely to invest in countries with common language and historical past. If investors from the South are attracted by other types of activities or sectors than investors from developed economies, these flows can be rather complementary. This would be good news for investors from the developed economies, but also for developing receiving countries, who would see different investment opportunities grasped by different investors, rather than emerging multinationals competing head-to-head with their counterparts from the North to earn market share. We test and confirm this hypothesis for the case of developing receiving countries.

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emerging country multinationals, only CNPC/PetroChina has any production abroad (17 percent of its total production). In comparison, the top privately owned oil multinationals from developed countries, ExxonMobil and BP, have at least 80 percent of their production in foreign countries.

<sup>6</sup> Turkmenistan and Uzbekistan, for instance, are large producers and exporters of natural gas, but they find it difficult to export due to restrictions on their access to the Russian Federation transit pipelines.

<sup>7</sup> Hillary Clinton, the US secretary of state, has noted that some developing countries are making "disturbing" gains in the Latin American region. She said that the US was competing for attention and relationships with at least the Russians, the Chinese and the Iranians.

The rest of this paper is organized as follows. Section 2 reviews the theoretical predictions and empirical evidence; Section 3 presents our empirical methodology; Section 4 explains data collection and summary statistics. Sections 5 describe our empirical findings and Section 6 concludes.

## 2. What Makes FDI from the South Different?

### 2.1 Institutional determinants

Traditional literature on FDI has paid a particular attention to the importance of institutions in attracting FDI, suggesting several reasons why their quality may matter. In line with the growth literature, good economic institutions, such as property rights and rule of law, increase incentives to invest and improve allocation of resources (Acemoglu et al., 2005; Kaufmann and Kraay, 2002; Rodrik et al., 2004). This leads to higher growth prospective and hence makes a country more attractive for foreign investors. Second, poor institutional environment, such as corruption, brings additional costs to FDI (Shleifer and Vishny, 1993; Wei, 2000). Third, FDI have very high sunk costs, which makes investors reluctant to enter foreign markets, unless they can write binding long-term contracts to decrease all types of uncertainty, and, hence, government stability, and institutions enabling contract enforcement are especially important (Naudé and Krugell, 2007; Busse and Hefeker, 2007). If contracts and property rights are well-enforced, each agent will be able to recoup its investment to a greater degree (Levchenko, 2007). The empirical literature supports these theoretical predictions and numerous studies demonstrate that strong institutions of host countries attract FDI (Wheeler and Mody, 1992; Daude and Stein, 2007); although most of these studies have been done with the focus on developed source countries.

The above literature does not provide an explanation for the emerging phenomenon of the South-South FDI. To understand the role of institutions in the capital flows between developing economies, one should rather look at studies of Habib and Zurawicki (2002) and Bénassy-Quéré et al. (2007), who propose to consider not only institutions in host countries, but also an institutional distance between the origin and the destination countries. They adopt the notion of “psychic distance”, which asserts that companies choose to enter markets perceived to be psychologically closer, because these countries present lower level of uncertainty, and psychic closeness facilitates learning from host countries. In line with this hypothesis, they find that institutional distance deters foreign investors. While these studies analyze a sample of mostly developed economies, their results imply that emerging investors

from the South that are familiar with weak institutions have a comparative advantage in investing in other developing economies that suffer from corruption and political instability.

There is an emerging literature that starts taking this stance. For example, Cuervo-Cazurra (2006) show that investors from countries with high corruption and the lack of enforcement of anticorruption laws select similar countries when they internationalize in order to explore their familiarity with corrupt environments and also because they face lower costs of operating as opposed to other investors.<sup>8</sup> Darby et al (2009) develop and empirically test the hypothesis that multinationals with previous experience of imperfect institutions at home are little, if not at all, discouraged by institutional deficiencies abroad, as contrasted to multinationals with no such experience, and that good governance in host countries may even deter those investors who had previous negative experience at home. Taken together, these studies imply that incentives to invest differ across investors, and that countries with bad institutions do not necessarily have to improve their quality in order to attract investors. They may still see considerable investment inflows, albeit from a different type of investors.

In this paper, we would like to advance this logic and test in a systematic way whether institutional distance plays a similar role for investors from the South as it does for the investors from the North. To the best of our knowledge, the only paper that studies the role of institutional distance on the sample that includes developing countries is Claessens and Van Horen (2008), but their study is restricted only to the banking FDI.

## 2.2 Complementarity vs substitution

Given the rise of investors from emerging economies, what are the implications for multinationals in developed economies? This depends on a number of factors. First of all, one has to know whether these investors compete in the same industries and sectors. Bera and Gupta (2009) show that investors in India from both the North and the South tend to concentrate in sectors that are equally characterized by larger markets, lower import intensity, and higher export orientation. Would this imply that South investors enter into competition with investors from the North for new investment opportunities? Besides their ability to deal with bad institutions, developing countries might have other advantages over developed countries when investing in the South, such as familiarity with low cost production processes

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<sup>8</sup> It should be mentioned that all investors, even those from developed countries, may engage in corrupt practices in order to smooth their business operations. Hines (1995) examines the impact of the Foreign Corrupt Practices Act of 1977 forbidding foreign bribery by American firms on subsequent US outward FDI growth to corrupt nations. Hines finds a lower FDI growth to corrupt states than to non-corrupt countries subsequent to the law's passage.

and the use of technologies that are more appropriate for developing countries.<sup>9</sup> Moreover, there is anecdotic evidence that South-South FDI prepares emerging country corporations for venturing into developed economies, by giving them the experience of competing with North companies in the South environment which they know. For example, before targeting Jaguar and Land Rover brands, Tata made important acquisitions in the South Korea and Singapore.

Second, one has to account for firm-specific advantages possessed by corporations from the developing and developed countries. The latter are more likely to possess advantages based on ownership of key assets, such as technologies, brands and intellectual property, while developing country corporations rely more on advantages related to production process capabilities, networks and organizational structure (UNCTAD, 2006). This could lead to substitution relationship if firms rely on their different strengths to compete within the same industries. Alternatively, it can lead to a complementary relationship between multinationals from the South and the North as a number of investors from the South rely on a business model of serving multinationals from the North (which already exists in technology equipment, IT services, household appliance).

To the best of our knowledge, no study has explored a potential substitution or complementarity between South-South FDI and the ability of developed economies to invest in the South.<sup>10</sup> Methodologically, such a study would be related to the literature on the impact of FDI on domestic investment (Borensztein et al. 1998; Agosin and Machado, 2005). It would also be linked to a more recent literature that looks at the effect of emerging large FDI recipients, such as China, on the amount of FDI received by other developing countries (Eichengreen and Tong, 2007; Fung et al., 2008; Garcia-Herrero and Santabarbara, 2007; Mercereau, 2005). These papers find that FDI flows to China do not crowd-out FDI flows to other emerging economies in Asia, Latin America and Central and Eastern Europe.

### 3. The Data

To address these issues, we construct a novel comprehensive database of bilateral annual data on FDI inflows that, in addition to developed countries, the North, encompasses a significant number of countries from the South.

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<sup>9</sup> For example, in Vietnam TVs made by Chines TLC are the most popular brand as their powerful color receivers provide clear picture even in remote areas.

<sup>10</sup> The question of substitution vs complimentarity is not analyzed for the South-North flows because these flows, accounting for just 3 percent of total flows, still do not represent an economically significant amount.

The data for developed countries come from the OECD statistics; while for all others we use the balance of payment data from national sources, ASEAN, and UNCTAD (for details, see Appendix 1 – Data Sources). In total, the dataset covers 82 host countries, of which 60 are countries located in the South; as well as 163 source countries, of which 139 are from the South. The coverage is almost complete for receiving Latin American, Asian, Central and Eastern European and North African countries<sup>11</sup>, and, if contrasted to the IMF aggregate data on FDI inflows, it accounts for 85 percent of the total world FDI inflows. Even though earlier data are available for the majority of countries, the sample is restricted to the 1996-2007 period, in line with the availability of other indicators. This leaves us with 22646 annual country-pairs in the bilateral dataset, and with 38 source countries per destination and per year on average.

Over the studied period, there has been a considerable increase in the total volume of FDI inflows (Figure 1). Notably, the amount of investment from the South has been increasing, too, almost doubling between the middle and the end of the considered period.

Distinguishing by sub-categories of both investing and receiving countries, the FDI flows from North to North represent half of the total FDI volume of our sample, even though there are only 14.8% of North-North country-pairs in the sample (Table 1). In contrast, South-South investments represent 14.5% of the total FDI volume, while South-South relationship is observed in 40% of the sample. In its turn, North-South FDI represent 18.5% of the total FDI flows, while South countries invest relatively little into the North (3.4% of the total volume). The percentages of flows between North and South countries do not sum up to 100% of the total inflows, as there are also considerable inflows from small islands and countries classified as offshore financial centers, which are excluded from our analysis.

For the second part of the paper, we also construct a panel dataset of receiving South countries, in which all incoming flows are aggregated into the North and South flows. This database contains 399 panel type country-year observations. South flows represent a significant portion of total inflows into a number of developing and transition economies (Figure 2), notably in Asia, but also in poorer countries of each sub-region, such as El Salvador in Latin America, Ethiopia in Africa, or former Republics of Yugoslavia and Central Asian former Republics of the Soviet Union. These countries are recipients of important amounts of regional FDI from richer, and bigger, neighbors.

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<sup>11</sup> Bilateral data for other African countries does not seem to be available. A notable exception is South Africa; however, this country reports FDI outflows rather than inflows.

All other data come from standard sources: macroeconomic data are from the World Bank Development Indicators; geographic data are from the CEPII distance and geodesic databases; data on average years of schooling are from Cohen and Soto (2007). The definitions and descriptive statistics of all variables are provided in Appendix 2.

The data on institutions are from the World Bank Governance Matters database, described in Kaufmann et al (2010). We work with six available measures of institutional quality – voice and accountability; political stability and lack of violence; government effectiveness; regulatory quality; rule of law; and control for corruption. By relying on simple averages of these indicators, we construct annual absolute difference between mean institutions in the source and destination country.

The countries of our database exhibit a significant variation in institutional quality. As shown in Table 1 institutional disparities are, naturally, the largest between North and South countries. At the same time, institutional differences are much wider among South-South investors as opposed to North-North investors, highlighting the diversity of countries that are partners to South-South relationships, as well as a potential different behavior of investors from the South. The latter hypothesis is reinforced in the last column of Table 1. Whereas inflows from North to either North or South countries are negatively correlated with institutional differences between source and host countries, which is a common finding in the literature (Habib and Zurawicki, 2002; Bénassy-Quéré et al., 2007), South-South flows exhibit a positive correlation with institutional differences.

## 4. Methodology and Results

### a) *Institutions and other Determinants of Bilateral FDI: is South-South Different?*

To estimate the differences in the investment behavior of investors from the South and North, we rely on the gravity equation, which has become very common in the application to bilateral FDI (Bénassy-Quéré et. al, 2007; Daude and Stein, 2007).

Our baseline equation is the following:

$$\ln(FDI_{sdt}) = \alpha_0 + \alpha_1 \ln D_{sd} + \alpha_2 Contig_{sd} + \alpha_3 ComLang_{sd} + \alpha_4 SmCnt_{sd} + \alpha_5 Colony_{sd} + \alpha_6 InstDiff_{sdt} + \alpha_7 InstDiff_{sdt} * North_s + u_{sdt}, \quad (1)$$

where  $FDI_{sdt}$  is bilateral uni-directional foreign direct investment from a source country  $s$  to a destination country  $d$  at a time  $t$ ,  $D$  – distance in kilometers between source and destination countries,  $Contig$  – a dummy variable equal to 1 if two countries have a common border,  $ComLang$  – a dummy equal to 1 if two countries share a common language,  $SmCnt$  – a

dummy variable if two countries belonged to the same country in the past, *Colony* – a dummy variable equal to 1 if two countries share a colonial past, *InstDiff* – an absolute difference in institutions between source and destination countries and *North* – a dummy variable equal to 1 if source country is a developed one.

The estimation results for this gravity equation are presented in Table 2. Following Baldwin and Taglioni (2006), we include time-variant source and destination country dummy variables in all our specifications in order to remove the cross-section and time-series correlation that result from the omitted variable bias. For example, this allows us to control for the omission of term that Anderson and Van Wincoop (2003) refer to as multilateral trade resistance. In these estimations, all standard gravity variables are correctly signed and significant at 1 percent level: geographic distance has a negative impact on FDI bilateral flows, while common border, language and colonial history exert a positive influence.

Our main variable of interest – institutional distance – is interacted with a dummy variable that takes a value of 1 if source country is located in the North. This allows us to see a differential impact for developing and developed source countries. The coefficient on the institutional distance should be interpreted as the impact of institutional distance on the FDI outflows from the South, while the sum of this coefficient with the interaction coefficient should be interpreted as the impact on the FDI outflows from the North. As we see, the sum is negative (and statistically significant at 1 percent), reflecting the fact that investors from developed economies prefer to invest in countries with a similar institutional environment. This finding is in line with the results of Habib and Zurawicki (2002) and Bénassy-Quéré et al. (2007) that study FDI flows of OECD countries and have very few emerging economies as sources of FDI. When it comes to developing and transition economies as source countries, we observe that institutional distance does not deter their FDI outflows and even has a positive effect. This is a surprising finding as it reveals that investors from the South invest in countries with either much better or much worse institutions than at home.

We provide a number of robustness tests. First, acknowledging potential endogeneity of institutions, we replace *InstDiff* with the difference in initial institutions for the year 1996 (*InstDiff1996*), the earliest date available in the Kaufman database, and present the estimation results in column (2). Second, as noted by Aykut and Ratha (2004), Chinese inward FDI flows are often overstated due to round tripping, as Chinese firms move money offshore and then bring it back to China disguised as FDI. To correct for this bias, we estimate our model excluding China as both source and destination country (column 3). Third, we disaggregate an absolute institutional distance into positive (when institutions in the source country are better

than in the destination country) and negative institutional distance (column 4). The idea behind this disaggregation is that negative institutional distance (when host institutions are better than at home) could be attractive because it means that countries search targets located in the best institutional environment. Our previous result, that institutional distance plays a positive role for FDI from the South, is robust to all these specifications. Paradoxically, this is driven by a positive institutional distance, i.e. investors from the South invest in countries with the worst institutions.

We additionally explore an alternative definition of institutional difference between partner countries, relying on the notion of institutional comparative advantage proposed by Claessens and Van Horen (2008). The latter stipulates that institutional differences should take into account institutional quality of competitors in other source countries and the institutional quality of the host country relative to other “competing” host countries. Formally, we compute the following measure of relative institutional distance:

$$RelInstDiff_{ijt} = (|Inst_{st} - Inst_{dt}| / (\sum_{s=1}^N |Inst_{st} - Inst_{dt}| / N)), \quad (2)$$

where  $Inst$  - is a measure of institutional quality in source country  $s$  or in destination country  $d$  at time  $t$ , and  $N$  - number of competitive source countries. Estimation results using this measure are in column (5) of Table 2, and they confirm our previous findings.

As a next step, we allow flexibility for all explanatory variables by interacting them with a dummy variable *North* (Table 3). Such specification does not influence our previous findings that institutional distance has a negative effect on FDI from the North and positive effect on FDI from the South. In addition, this approach allows us to observe whether standard FDI determinants have a differential effect on the South and North source countries. Indeed, the results in column (1) indicate that geographic and linguistic distances as well as close ties due to belonging to the same country in the past have a larger effect on FDI stemming from the South than from the North. Interestingly, past colonial ties have a larger impact on FDI flows for developed economies than developing ones.

Finally, since we are interested in the South-South FDI flows, we restrict our sample to South host countries to be able to compare South-South vs. North-South determinants (Table 3, column 2). Our previous results about the importance of geographic and cultural distance, as well as a pulling effect of the institutional distance for investors from the South remain robust. We additionally note a positive role of neighboring a North investor for a South recipient, but a negative effect of having a former colonial tie between North and South. Altogether, these findings corroborate previous cursory observations of the regional aspect of the South FDI (Aykut and Ratha, 2004; UNCTAD, 2006; BCG Report, 2006), but

out study is the first attempt to test this hypothesis formally within the gravity model framework.

While the positive effect of institutional distance on investors from the South seems to be a puzzling result, this result is not unique in the literature. Indeed, Darby et al. (2009) argue that not only large corruption does not deter, but could even attract investors from countries that have an experience of dealing with corruption at home. Similarly, Buckley et al. (2007) show that Chinese firms invest in countries with higher political risk, even after controlling for the rate of return. They advance a number of explanations that are linked to the nature and strategy of Chinese firms. Such behavior could be led by state-owned firms that do not maximize profits or could be due to close political ties between China and other developing host countries, where the bargaining position of Chinese firms may have been strengthened, because these host countries receive only a modest amount of FDI from developed economies. Chinese investors might be able to mitigate the risk associated with operating in risky environment or be prepared to invest in countries that are usually avoided by other investors due to ethical reasons. They also blame inexperience of Chinese investors that take decisions without the due diligence and risk assessment. According to the BCG Report (2006), the largest Russian investors are also state-owned, and a similar logic may be applied to them. The above explanations could indeed be the driving force behind some FDI in countries with very bad institutions, but they are unlikely to explain why an average investor from the South would want to invest in countries with much worse institutions than at home. We propose an alternative explanation for this paradox in the next sub-section.

*b) Institutions and resources.*

The finding that investors from the South pick countries with the worst institutions does not have a logical explanation. Hence, we think that there must be another FDI determinant that is negatively correlated with institutional distance and that is a very important driver of FDI from the South. A negative correlation with institutional distance means that this determinant must be either positively correlated with home institutions or negatively correlated with host institutions.

As it was discussed in the Introduction, growth of FDI from the South has recently been driven by investment in natural resources. Interestingly, most developing countries that are endowed with natural resources have a very poor quality of institutions and, hence, it is necessary to look at the sources of this negative correlation. Most of the explanations, found in the literature, relate to the rents that are generated due to natural resources exploitation and

that are easily appropriated. A “rentier effect” occurs, because revenues from the export of fuels and minerals allow governments to mollify dissent (buy off critics through lavish infrastructure projects or outright graft) and avoid accountability pressures (because taxes are low), increase incentives for corruption, as well as discourage the introduction of better institutions, because they would erode the political advantage and future rents of the incumbents (Acemoglu et al., 2004; Acemoglu and Robinson, 2006; Ades and Di Tella, 1999). Numerous studies also show that natural resources income is one of the leading determinants of the probability of wars and of the conflict duration (Collier and Hoeffler, 2004; Ross, 2004; Collier et al., 2004) with harmful effects on the quality of the legal system and, thus, on property rights (van der Ploeg, 2010).

The above rent-seeking models are confirmed by a number of empirical studies. Bhattacharyya and Hodler (2009) rely on a dataset covering 99 countries during 1980-2004 and find that natural resources induce corruption in countries that have endured a non-democratic regime for a long time. Isham et al. (2003) stress that certain types of natural resources, such as oil and diamonds, have a particularly weakening effect on institutional capacity. In a quasi-experimental study, Brollo et al. (2010) argue that windfall government revenues worsen the functioning of institutions by reducing the degree of political accountability and deteriorating the quality of elected officials as well. Vicente (2010) document an increase in corruption of 10 percent after the announcements of the oil discovery in São Tomé.

The negative relationship between natural resources endowment and institutions implies that its omission could bias the results if natural resources are indeed an important determinant of FDI. Therefore, we include an additional explanatory variable that accounts for the availability of subsoil resources in host countries and interact this variable with positive and negative institutional distance.<sup>12</sup> The data for natural resources is taken from the World Bank database on Natural Resources Wealth and is calculated as the present value of future rents from subsoil natural resources (oil, gas, coal, bauxite, copper, gold, iron, etc.) per capita. Our findings, presented separately for investors from the South and from the North (Table 4, columns 1-2) and also for receiving countries in the South (Table 4, columns 3-4), offer support to our hypothesis that availability of natural resources is an important determinant of FDI from the South and hence cannot be excluded from the estimation. Our results lead us to the following conclusions.

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<sup>12</sup> Since we include time-varying source and destination country dummies, the variable for natural resources is dropped in the estimation. But it is preserved in the interaction terms with institutional distance.

First, when investors from the South invest in countries with better institutions (negative institutional distance between source and destination country), we observe that a large institutional distance has a positive effect as these investors are attracted by countries with the best institutions. Such outcome is rather predictable, because despite unfamiliarity, such an institutional environment is the most transparent for potential entrants due to the rule of law (the quality of contract enforcement and property rights), low level of corruption, sound and unobtrusive regulation that promotes private initiative, high accountability, good quality of public services, and political stability. This also reflects “assets seeking FDI” as investors from the South purchase multinationals with famous brands and the latest technologies, which are more likely to develop in institutionally friendly environments. Interestingly, this motive also applies to investors from the North when they invest in other developed economies with better institutions than at home.

Second, when investors from the South invest in countries with worse institutions (positive institutional distance between source and destination country), they prefer to choose countries that are similar in terms of institutional quality. Thus, they mostly behave like investors from the North. The only exception is South-South flows, where the effect of institutional distance is found to be statistically insignificant.<sup>13</sup> The latter finding suggests that investors from the South are less deterred by an institutional distance than investors from the North and are willing and/or able to work in very heterogeneous institutional environments. This could be related to the fact that large emerging investors, such as China, India, Russia and Brazil, demonstrate large internal variations in the institutional quality. Banerjee and Iyer (2005) show that property rights differ substantially between Indian states, while Du et al. (2008) estimate that contract enforcement and corruption vary within China by a factor of four and two, respectively. Similarly, Naritomi et al. (2007) explains that large differences between de jure and de facto institutions in Brazil are related to the colonial past. Hence, multinationals in the South enjoy the benefits of relatively good institutions in some regions of their home countries, but they are also familiar with bad governance and corruption due to their business activities in other parts of the same country, providing them with the experience of working with both the bad and good institutions.

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<sup>13</sup> Given that most of FDI from developing countries is directed towards other developing countries, one can question in which cases institutional distance plays a deterring role for these investors as it is found in column 1 of Table 4. In fact, this result is driven by developing countries with good institutions, such as Hong Kong, Singapore, Chili, as well as Central and Eastern Europe that invest in developed countries with relatively worse institutions.

Finally, we find that institutional distance loses its deterring effect for investors from the South when they invest in countries endowed with a large wealth of natural resources. Thus, the previous finding of positive effect of institutional distance on FDI from the South was due to a missing variable bias. Importantly, the interaction between institutional distance and resources is not significant for investors from the North, which are consistently deterred by a large positive institutional distance. However, even in this case, its inclusion is important because only in such a specification we find that investors from the North invest either in countries with similar but slightly worse institutions (the deterring effect of the positive institutional distance) or in countries with much better institutions (the pulling effect of the large negative institutional distance).<sup>14</sup>

*c) Complements or substitutes?*

The analysis in the previous section allows us to conclude that emerging country investors behave differently than investors from developed economies. Geographic and linguistic distance appears to be a larger obstacle for the former ones, while important differences also exist vis-à-vis institutional distance and resource attractiveness. Given such differences, we would like to see whether investment flows from North and South behave as complements or substitutes. This question is of particular importance for developing host countries, where source countries both from the South and North are present.

To explore this issue, one can estimate the determinants of FDI at the aggregated level of destination countries, focusing only on South recipients, and cumulating, on a yearly basis, two broad types of foreign inflows: from the North and from the South. Following the Borensztein et al. (1998) methodology of studying the crowding-out effect of FDI on domestic investment, the estimated model would take the following form:

$$FDI\_GDP_{dt} = \beta_0 + \beta_1 SouthFDI\_GDP_{dt} + \beta_2 Controls_{dt} + \mu_t + \varepsilon_{dt} \quad (3)$$

where  $FDI\_GDP_{dt}$  is a ratio of total FDI to GDP in destination country  $d$  at time  $t$ ,  $SouthFDI\_GDP_{dt}$  is the amount of foreign direct investment from South investors over GDP in country  $d$  at time  $t$ , and  $Controls_{dt}$  is a set of other determinants of FDI, such as the level of initial income, the level of initial human capital, government consumption, and host institutions (see also Mercereau, 2005). If aggregate FDI flows from the South simply

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<sup>14</sup> Without inclusion of natural resource wealth, positive institutional distance has no significant impact while negative institutional distance has a negative impact on investors from the North (Table 2, column 4).

augment total FDI, the coefficient on this variable should equal to one. However, if FDI flows from South investors augment total FDI more than one-to-one, in other words, if there is a complementary relationship between South and North FDI, the coefficient on this variable should be greater than one. By the same token, a coefficient below one would imply the substitution between two types of flows.

Given the importance of natural resources outlined in the previous section, we also augment this specification by the natural resources endowment. To see potential differences in North-South FDI relationship in resource-rich and resource-poor countries, we also interact South FDI flows with resources.

Estimation results based on this approach are summarized in Table 5, column (1). By itself, the coefficient on South FDI is significantly greater than one, while the interaction term is positive and also statistically significant. The effect of a marginal increase in South FDI, evaluated at the mean value of natural resources, on the overall share of FDI to GDP is of the order of 2.486. This suggests that in the absence of natural resources, aggregate South investment inflows increase aggregate total investment more than one for one, or that South FDI are complementary to North FDI. In the presence of natural resources, this complementary effect is actually amplified<sup>15</sup>.

In addition to this, to control for the endogeneity of our variable of interest due to simultaneity, and also to test the complementarity hypothesis in the long run, we estimate specification (3) using the Blundell and Bond (1998) system GMM estimator, which is a joint estimation of the equation in levels and in first differences. Adoption of this methodology is motivated by a similar application by Agosin and Machado (2005) to test long-run complementarity between foreign and domestic investment. In column (2) of Table 5, we embrace a specification that allows the current total amount of foreign investment to depend on the current and lagged value of South FDI, as well as on the lagged value of total investment. Given the time-invariance of resources, it is interacted only with the current level of South FDI. In column (3), we also inquire into a possible longer-term relationship, including two lags of the South and total investment variables. In both cases, we use year effects and previous GDP growth proxying returns on investment (Gastanaga, Nugent, and Pashamova, 1998) as instruments in GMM estimation. Both specifications fare well according to tests of first and second order serial correlation; and also Sargan test does not allow

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<sup>15</sup> In the current setting, we are not able to see whether this complementarity concerns only the resource FDI, or the resource and non-resource FDI. The distinction may be important, as suggested, for instance, by Poelhekke and Ploeg (2010).

rejecting the null hypothesis of the validity of the instruments. Based on these two specifications, the computed complementarity effect between South and North FDI ranges from 2.372 to 3.375.<sup>16</sup> Given our careful treatment of endogeneity, we can attribute this result to crowding-in of investors from the North by investors from the South. The amplifying effect of natural resources endowment on this complementary relationship, however, is not robust.

Finally, to mitigate the volatility of yearly data, we also confirm these results in column (4), re-estimating equation (3) on cross-section data averaged for the studied period. Despite small sample size, our results of complementarity between investment from the North and the South remain valid.

## 5. Conclusions

While South-South FDI flows constitute one-third of total foreign investment in developing and transition economies, there has been a lack of a systematic study of the determinants and implications of such flows, mainly due to data limitations. We attempt to fill this gap in this paper due to our unique dataset of FDI flows and ask two simple questions: (1) Do foreign investors from the South behave differently than investors from the North; and (2) Do investment from the South serve as complement or substitute to the investment from the North?

We demonstrate that FDI from the South has a more regional exposure than investment from developed countries, as geographic and cultural distance appears to be more important for the former investors. Whereas we confirm previous findings that large institutional distance deters investors from the North, the relationship between FDI and institutional distance is more complex for emerging economies. Our findings lead us to the following conclusions. First, when countries from the South invest in countries with better institutions, institutional distance can be viewed as a driving force. This is likely due to the “asset-seeking” nature of FDI, as emerging investors acquire new technologies, brands, and intellectual property. Second, when emerging economies invest in countries with worse institutions, they are on average deterred by a large institutional distance, except for the case of South-South FDI where it has no significant effect. Third, the effect of an institutional

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<sup>16</sup> Long term effect of South FDI is equal to the sum of short-term coefficients on South FDI divided by 1 minus the sum of coefficients of the lagged dependent variable:

$$\widehat{\beta}_{LT}(FDI_s) = \frac{\sum \widehat{\beta}_{ST}(FDI_s)}{1 - \sum \widehat{\beta}(FDI_T)}.$$

distance is outweighed by the appeal of natural resources, which is the driving force behind FDI from the emerging economies that strive to secure the possession of subsoil resources.

The emergence of new multinational corporations in the South does not displace other investors and, if anything, appears to be rather complementary to FDI from the North. Given our careful treatment of endogeneity, we can talk about a crowding-in of investment from the North by emerging country investors. We attribute this outcome to differences in investment behavior between developed and developing economies.

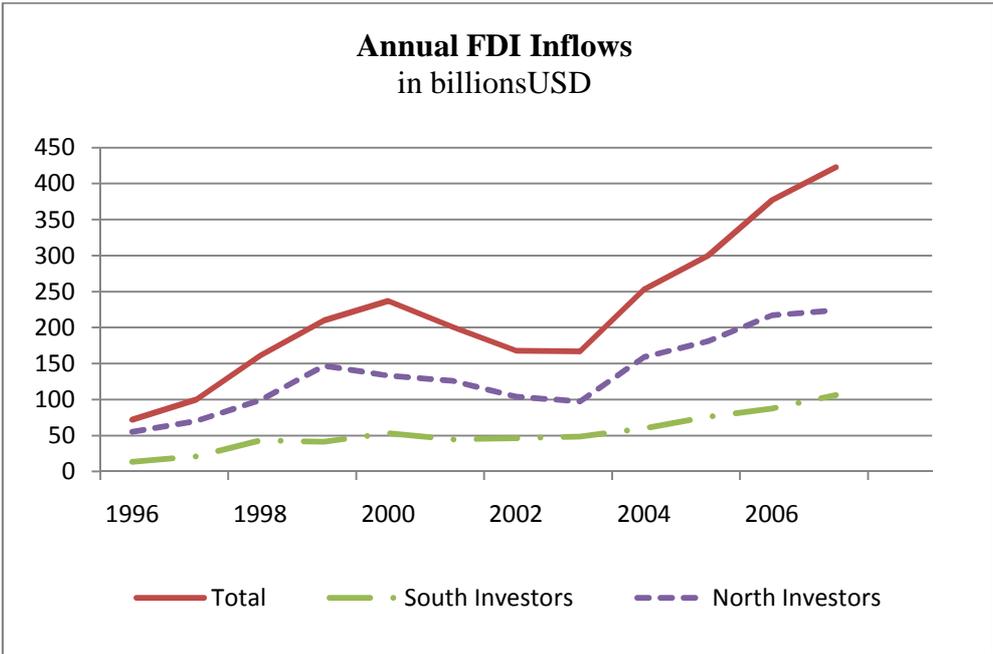
## References

- Acemoglu, D., S. Johnson and J. Robinson, 2005. Institutions as the Fundamental Cause of Long-Run Growth, in *Handbook of Economic Growth*, ed. By P. Aghion and S. Durlauf.
- Acemoglu, D., J.A. Robinson and T. Verdier (2004). Kleptocracy and divide-and-rule: a theory of personal rule, *Journal of the European Economic Association*, 2, 162-192.
- Acemoglu, D. and J.A. Robinson (2006). Economic backwardness in political perspective, *American Political Science Review*, 100-131.
- Ades, A. and R. Di Tella (1999). Rents, competition, and corruption, *American Economic Review*, 89, 982-993.
- Agosin, M. R. and R. Machado, 2005. Foreign Direct Investment in Developing countries: Does it Crowd in Domestic Investment? *Oxford Development Studies* 33(2), 149-162.
- Anderson, J., and D. Marcouiller, 2002. Insecurity and the Pattern of Trade: An Empirical Investigation," *Review of Economics and Statistics*, 84, 342–52.
- Alfaro, L., S. Kalemli-Ozcan and V. Volosovych, 2008. Why Doesn't Capital Flow from Rich to Poor Countries? An Empirical Investigation, *The Review of Economics and Statistics* 90 (2), 347-368.
- Aykut, A. D. and D. Ratha, 2004, South-South FDI Flows: How Big Are They?, *Transnational Corporations* 13(1), 149-176.
- Baldwin, R. and D. Taglioni, 2006. Gravity for Dummies and Dummies for Gravity Equations, NBER Working Papers 12516.
- Banerjee, A. and L. Iyer, 2005. History, Institutions, and Economic Performance: The Legacy of Colonial Land Tenure Systems in India, *The American Economic Review* 95 (4), 1190-1213.
- Bénassy-Quéré, A., M. Coupet and T. Mayer, 2007. Institutional Determinants of Foreign Direct Investment, *The World Economy* 30(5) 764-782.
- Bera, S., and S. Gupta, 2009. South-South FDI vs North-South FDI: A Comparative Analysis in the Context of India, ICRIER Working Paper No. 238
- Bhattacharyya, S. and R. Hodler (2010). Natural resources, democracy and corruption, *European Economic Review*, 54(4), 608-621.
- Blundell, R. and S. Bond, 1998. Initial conditions and moment restrictions in dynamic panel data models, *Journal of Econometrics* 87(1), 115-143.
- Borensztein, E., J. De Gregorio and J. Lee, 1998. How does Foreign Direct Investment Affect Economic Growth? *Journal of International Economics* 45, 115-135.
- Boston Consulting Group, 2006. The New Global Challengers. How 100 Top Companies from Rapidly Developing Economies are Changing the World. A Report. Boston.
- Brollo, Fernanda, Tommaso. Nannicini, Roberto Perotti, and Guido Tabellini, 2010. The Political Resource Curse, CEPR Discussion Paper 7672.
- Buckley, P.J., J. Clegg, A.R. Cross, X. Liu, H. Voss, and P. Zheng, 2007. The determinants of Chinese outward foreign direct investment, *Journal of International Business Studies*, 38 (4), 499-518.
- Busse, M. and C. Hefeker, 2007. Political Risk, Institutions and Foreign Direct Investment. *European Journal of Political Economy*, Elsevier, 23(2), 397-415.
- Claessens, S. and N. Van Horen, 2008. Location Decisions of Foreign Banks and Institutional Competitive Advantage, DNB Working Papers 172.
- Cohen, D. and M. Soto, 2007. Growth and human capital: good data, good results, *Journal of Economic Growth* 12(1), 51-76.

- Collier, P. and A. Hoeffler, 2004. Greed and grievance in civil wars, *Oxford Economic Papers*, 56, 663-695.
- Collier, P., A. Hoeffler and M. Soderbom, 2004. On the duration of civil war, *Journal of Peace Research*, 41, 253-273.
- Cuervo-Cazurra, A. 2006. Who Cares About Corruption? *Journal of International Business Studies*, 37, 807–822.
- Cuervo-Cazurra, A., and M. Genc, 2008. Transforming Disadvantages into Advantages: Developing-Country MNEs in the Least Developed Countries. *Journal of International Business Studies*, 39, 957–979.
- Darby, J., R. Desbordes, and I. Wooton, 2009. Does public governance always matter? How experience of poor institutional quality influences FDI to the South. CEPR DP 7533.
- Daude D. and E. Stein, 2007. The quality of institutions and foreign direct investment, *Economics and Politics* 19(3), 317-344.
- Du, J., L. Yi and Z. Tao, 2008. Economic institutions and FDI location choice: Evidence from US multinationals in China, *Journal of Comparative Economics* 36, 412–429.
- Eichengreen, B. and Tong, H., 2007. Is China's FDI coming at the expense of other countries?, *Journal of the Japanese and International Economies*, 21(2), 153-172.
- Fung, K.C., I. Korhonen, K. Li and F. Ng, 2008. China and Central and Eastern European Countries: Regional Networks, Global Supply Chain, or International Competitors? The World Bank Policy Research Working Paper Series 4689.
- Garcia-Herrero, A. and D. Santabarbara, 2007. Does China Have an Impact on Foreign Direct Investment to Latin America?, *China Economic Review* 18(3), 266-286.
- Gastanaga, V., J. Nugent and B. Pashamova, 1998. Host Country Reform and FDI inflows: How Much Difference do they Make? *World Development* 26(7), 1299-1314.
- Habib, M. and L. Zurawicki, 2002. Corruption and Foreign Direct Investment, *Journal of International Business Studies* 33(2), 291-307.
- Hines, J.R., 1995, Forbidden Payment: Foreign Bribery and American Business After 1977, NBER Working Paper no. 5266, September.
- Isham, J., L. Pritchett, M. Woolcock and G. Busby, 2003. The varieties of the resource experience: How natural resource export structures affect the political economy of economic growth, World Bank, Washington D.C.
- Kaufmann, D., A. Kraay, and M. Mastruzzi, 2010. The worldwide governance indicators : methodology and analytical issues, Policy Research Working Paper Series 5430, The World Bank.
- Kaufmann, D., A. Kraay, E. Lora and L. Pritchett, 2002. Growth without Governance, *Economía* 3(1), pp. 169-229.
- Levchenko, A., 2007. Institutional Quality and International Trade, *Review of Economic Studies*, 74(3), 791-819.
- Lucas, Robert E., 1990. Why Doesn't Capital Flow from Rich to Poor Countries? *American Economic Review* 80, 92–96.
- Mercereau, B., 2005. FDI Flows to Asia: Did the Dragon Crowd Out the Tigers? IMF Working Papers 05/189.
- Naritomi, J., R. Soares and J. Assunção, 2007. Rent Seeking and the Unveiling of 'De Facto' Institutions: Development and Colonial Heritage within Brazil, NBER Working Papers No. 13545.
- Naudé, W. A., and W.F. Krugell, 2007. Investigating Geography and Institutions as Determinants of Foreign Direct Investment in Africa Using Panel Data. *Applied Economics*, 39, 1223–1233.
- Poelhekke, S., and F. van der Ploeg, 2010. Do Natural Resources Attract FDI? Evidence from Non-Stationary Sector-Level Data. CEPR Discussion Paper Series No. 8079.

- Rodrik, D., A. Subramanian and F. Trebbi, 2004. Institutions Rule: The Primacy of Institutions Over Geography And Integration In Economic Development, *Journal of Economic Growth* 9 (2), 131-165.
- Ross, M.L., 2004. What do we know about natural resources and civil war?, *Journal of Peace Economics*, 41, 337-356.
- Shleifer, A. and R. W. Vishny, 1993. Corruption. *Quarterly Journal of Economics*, 108(3), 599-617.
- Van der Ploeg, R., 2010. Natural Resources: Curse or Blessing?, CESifo Working Paper Series No. 3125.
- Vicente, P.R. (2010). Does oil corrupt? Evidence from a natural experiment in West Africa, *Journal of Development Economics*, 92, 1, 28-38.
- Wheeler, D. and A. Mody, 1992. International investment location decisions. The case of U.S. firms, *Journal of International Economics* 33, 57-76.
- Wei, S.-J., 2000. How Taxing is Corruption on International Investors, *Review of Economics and Statistics* 82(1), 1-11.
- World Bank, 2006. Global Development Finance: The Development Potential of Surging Capital Flows. Chapter 4: Financial Integration Among Developing Countries. The World Bank: Washington, D.C.
- UNCTAD, 2006. FDI from Developing and Transition Economies: Implications for Development, World Investment Report
- UNCTAD, 2007. Transnational Corporations, Extractive Industries and Development, World Investment Report
- UNCTAD, 2010. Investing in a Low-Carbon Economy, World Investment Report

Figure 1. The Dynamics of FDI Inflows



Source: Own estimations

Figure 2. The Share of FDI Inflows to GDP in Developing and Transition Economies

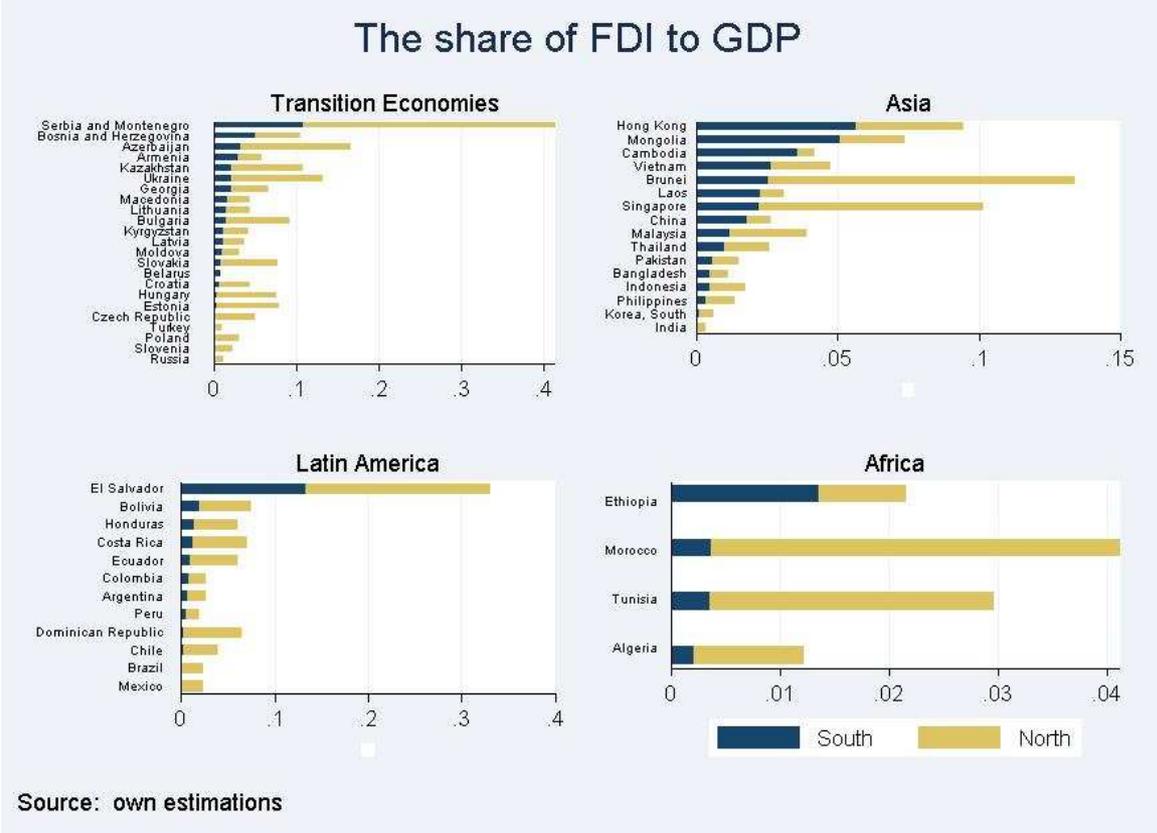


Table 1. Summary Statistics of Bilateral Inflows, 1996-2007

Type of FDI Relationship	Mean annual yearly flows; in mln USD	Aggregate flows for the period: percent of total	Observations: percent of total sample	Absolute institutional difference between partner countries	Correlation between inflows and absolute institutional difference
South-South	96800	14.5	40.9	0.727	0.092
North-North	339000	50.9	14.8	0.380	-0.227
North-South	122000	18.5	26.8	1.528	-0.118
South-North	22300	3.4	17.4	1.439	-0.155

*Source: own calculations*

Table 2. Impact of Institutional Distance on FDI Flows

*Dependent variable: lnFDI*

	With absolute institutional distance	With initial institutions	Excl. China	Positive and negative inst. distance	With relative institutional distance
	(1)	(2)	(3)	(4)	(5)
lnD	-0.872*** (0.0221)	-0.836*** (0.0259)	-0.838*** (0.0266)	-0.877*** (0.0222)	-0.872*** (0.0220)
Contig	0.395*** (0.0646)	0.440*** (0.0763)	0.502*** (0.0808)	0.391*** (0.0647)	0.394*** (0.0647)
ComLang	0.642*** (0.0537)	0.715*** (0.0626)	0.627*** (0.0664)	0.644*** (0.0537)	0.641*** (0.0537)
Colony	0.820*** (0.0676)	0.864*** (0.0820)	0.916*** (0.0851)	0.811*** (0.0677)	0.829*** (0.0676)
SmCnt	0.739*** (0.0973)	0.983*** (0.113)	0.788*** (0.123)	0.745*** (0.0975)	0.724*** (0.0972)
InstDiff	0.322*** (0.0344)				
InstDiff*North	-0.438*** (0.0580)				
InstDiff1996		0.478*** (0.0457)	0.414*** (0.0500)		
InstDiff1996*North		-0.634*** (0.0782)	-0.602*** (0.0812)		
PostInstDiff				0.477*** (0.122)	
PostInstDiff*North				-0.406*** (0.0598)	
NegInstDiff				0.133 (0.108)	
NegInstDiff*North				-0.752*** (0.139)	
RelInstDiff					0.299*** (0.0337)
RelInstDiff*North					-0.405*** (0.0583)
Constant	17.35*** (0.829)	18.62*** (0.938)	20.73*** (0.941)	23.48*** (0.661)	17.07*** (0.830)
Time variant country dummies	Yes	Yes	Yes	Yes	Yes
Observations	22646	15974	14205	22646	22646
R-squared	0.642	0.667	0.675	0.642	0.642

Column (1) presents estimation with an absolute institutional distance; (2) with initial institutional distance; (3) excluding China; (4) with relative institutional distance; (5) with positive and negative institutional distance. All models include time variant destination and source dummy variables.

\*, \*\*, \*\*\* - statistical significance at 10%, 5%, and 1% levels, respectively

Table 3. Impact of Institutional Distance on FDI Flows: Fully Interacted with *North* Dummy

*Dependent variable: lnFDI*

	Full Sample	Sub-sample of South Recipients
	(1)	(2)
lnD	-1.004*** (0.0312)	-1.185*** (0.0387)
lnD*North	0.275*** (0.0412)	0.303*** (0.0519)
Contig	0.435*** (0.0785)	0.274*** (0.0865)
Contig*North	-0.180 (0.140)	0.874*** (0.333)
ComLang	0.833*** (0.0619)	1.131*** (0.0800)
ComLang*North	-0.572*** (0.0972)	-0.678*** (0.140)
Colony	0.342*** (0.0825)	0.210 (0.173)
Colony*North	1.192*** (0.134)	1.882*** (0.235)
SmCnt	0.561*** (0.103)	0.523*** (0.110)
SmCnt*North	-0.336 (0.305)	-1.150*** (0.445)
InstDiff	0.324*** (0.0343)	0.129** (0.0573)
InstDiff*North	-0.474*** (0.0579)	-0.523*** (0.0861)
Constant	20.51*** (0.851)	28.94*** (1.934)
Observations	22646	14746
R-squared	0.645	0.648

All estimations contain the full set of time variant source and destination fixed effects. \*, \*\*, \*\*\* - statistical significance at 10%, 5%, and 1% levels, respectively

Table 4. Institutional distance and resources.

*Dependent variable: lnFDI*

	South investors	North investors	South-South	North-South
	1	2	3	4
lnD	-0.803*** (0.0361)	-0.976*** (0.0371)	-0.894*** (0.0449)	-1.307*** (0.0568)
Contig	0.638*** (0.0838)	0.0287 (0.123)	0.544*** (0.0930)	0.810** (0.318)
ComLang	1.004*** (0.0701)	0.162* (0.0923)	1.272*** (0.0905)	0.0700 (0.142)
Colony	0.372*** (0.0888)	1.518*** (0.110)	0.798*** (0.187)	2.068*** (0.167)
SmCnt	0.397*** (0.116)	0.450 (0.318)	0.388*** (0.122)	-0.719 (0.438)
PostInstDiff	-1.475*** (0.170)	-1.917*** (0.259)	0.0554 (0.436)	-3.530** (1.722)
PostInstDiff*Resources	0.0918*** (0.0214)	0.0246 (0.0288)	0.0979*** (0.0231)	0.0116 (0.0290)
NegInstDiff	1.292*** (0.152)	0.814** (0.399)	-0.625 (0.442)	0.575 (1.835)
NegInstDiff*Resources	0.0227 (0.0144)	0.0711 (0.0466)	0.0462** (0.0201)	0.209 (0.146)
Constant	17.98*** (0.633)	20.45*** (0.789)	16.65*** (0.943)	27.97*** (3.447)
Time variant country dummies	Yes	Yes	Yes	Yes
Observations	12557	8927	8851	5750
R-squared	0.598	0.651	0.643	0.646

All estimations contain the full set of time variant source and destination fixed effects.

\*, \*\*, \*\*\* - statistical significance at 10%, 5%, and 1% levels, respectively.

Table 5. Complementarity or Substitution between Investment from the South and the North

<i>Dependent Variable: Total FDI over GDP</i>				
	A-la Borensztein et al (1998)	Blundell and Bond (1998) + Borensztein et al (1998)	Blundell and Bond (1998) + Borensztein et al (1998)	A-la Borensztein et al (1998) Cross-section
	(1)	(2)	(3)	(4)
FDISouth	1.731*** (0.193)	1.385*** (0.383)	1.278*** (0.403)	2.153*** (0.587)
Resources	9.39e-07 (9.38e-07)	2.15e-06 (2.76e-06)	-3.51e-06 (5.40e-06)	-1.90e-07 (2.06e-06)
FDISouth*Resources	0.00023*** (4.9e-05)	2.01e-05 (8.05e-05)	-8.71e-05 (0.000150)	0.001** (0.0001)
Initial Income (1996)	-0.003 (0.003)	-0.003 (0.004)	-0.008 (0.008)	-0.003 (0.007)
Initial Education (1996)	0.003*** (0.001)	-0.001 (0.004)	-0.003 (0.005)	0.002 (0.002)
Gov. Consumption	0.005 (0.006)	0.010 (0.019)	-0.004 (0.021)	0.009 (0.014)
Host Institutions	0.018*** (0.004)	-0.005 (0.014)	-0.006 (0.016)	0.017* (0.009)
FDISouth (-1)		-0.702** (0.334)	-0.559* (0.303)	
FDISouth (-2)			-0.453 (0.480)	
Total FDI (-1)		0.712*** (0.087)	0.787*** (0.184)	
Total FDI (-2)			0.002 (0.199)	
Constant	-0.067** (0.028)	0.011 (0.084)	0.105 (0.128)	0.005 (0.053)
N Obs	352	303	276	37
R-squared	0.524			0.704
Sargan (p-value)		0.384	0.225	
First-order serial correlation (p-value)		0.093	0.038	
Second-order serial correlation (p-value)		0.323	0.432	
<b>Computed Long-term effect:</b>	<b>2.486</b>	<b>2.372</b>	<b>3.375</b>	

Columns 1 and 4 are estimated by OLS and include the full set of year fixed effects; reported are robust standard errors. Columns 2 and 3 are estimated using the one-step generalized method of moments. Instruments in GMM estimation: time dummies and GDP growth. Statistical significance at \* 10%, \*\* 5%, and \*\*\* 1%, respectively.

## Appendix 1. Sources of FDI Data

<b>Countries</b>	<b>Sources</b>
Argentina, Armenia, Belarus, Bosnia and Herzegovina, Brazil, Bolivia, Colombia, Costa Rica, Croatia, Czech Rep, Dominican Rep, Ecuador, El Salvador, Estonia, Honduras, Hungary, Georgia, Kazakhstan, Latvia, Lithuania, Moldova, Macedonia, Pakistan, Peru, Slovenia, Ukraine	Balance of Payments/ National Central Banks
Chile	Chilean Foreign Investment Committee
Bulgaria, Russia, Serbia and Montenegro	The Vienna Institute for International Economic Studies
Algeria, Azerbaijan, Ethiopia, Kyrgyzstan, Mongolia	UNCTAD
India	Indian Ministry of Commerce and Industry
Brunei, Cambodia, Malaysia, the Philippines, Indonesia, Myanmar, Laos, Singapore, Thailand, Vietnam,	Balance of Payments /Statistics of Foreign Direct Investment in ASEAN
Bangladesh	Board of Investment; National Central Bank
Morocco	Office des Changes
Tunisia	Ministry of Development and International Cooperation
China	China Statistical Yearbooks
Hong Kong	Balance of Payment/ Census and Statistics Department
Taiwan	Investment Commission, MOEA
Sri Lanka	Board of Investment of Sri Lanka
Australia, Austria, Belgium, Canada, Denmark, Finland France, Germany, Greece, Iceland, Ireland, Italy, Japan Luxembourg, Mexico, The Netherlands, New Zealand Norway, Poland, Portugal, Slovak Republic, South Korea, Spain, Sweden, Switzerland, Turkey, United Kingdom, United States	OECD Statistics

## Appendix 2. Variable Description and Sample Statistics

Variable	Description	Obs	Mean	St. Dev.	Min	Max
<i>Dep.Var. in the Gravity Sample</i>						
Linflows	Natural logarithm of total annual bilateral FDI inflows, mln, current USD	22646	15.90	3.06	2.69	26.53
<i>Indep.Var. in the Gravity Sample</i>						
LnD	Natural logarithm of km of simple distance between most populated cities	22646	8.22	1.07	4.09	9.90
Contig	1 for contiguity	22646	0.09	0.28	0.00	1.00
ComLang	1 if a language is spoken by at least 9% of the population in both countries	22646	0.15	0.36	0.00	1.00
Colony	1 for pairs ever in colonial relationship	22646	0.06	0.23	0.00	1.00
SmCnt	1 if countries ever were the same country	22646	0.03	0.18	0.00	1.00
InstDiff	Simple absolute difference between means of institutional indicators (control of corruption, government effectiveness, political stability and lack of violence, regulatory quality, rule of law, voice and accountability) in source and in destination countries	22646	1.02	0.75	0.00	3.89
PosInstDiff	Absolute difference between institutional indicators, if institutions in source country are better (worse) than institutions in destination countries.	22646	0.58	0.77	0.00	3.59
NegInstDiff	Absolute difference between institutional indicators, if institutions in source country are worse than institutions in destination countries.	22646	0.43	0.69	0.00	3.89
RelInstDiff	The absolute difference between the means of institutions of the source and of destination country, divided by the average absolute difference between the institutional quality of each alternative source country and that of the destination country (Claessens and Van Horen, 2008)	22646	0.99	0.68	0.00	3.84
North	Dichotomous variable equal to 1 for developed (North) source countries, 0 for developing (South)	22646	0.41	0.49	0.00	1.00
Resources	Natural logarithm of the subsoil resources in USD dollars per capita in the destination country	21484	5.57	2.66	0.00	11.26
<i>Dep.Var. in the Aggregate Sample</i>						
TotalFDI/GDP	Sum of flows from North and South investors, aggregated by host country and year, and divided by current GDP	508	0.06	0.07	0.00	0.84
<i>Indep.Var. in the Aggregate Sample</i>						
FDI_South	Sum of flows from South investors, aggregated by host country and year, and divided by current GDP	508	0.01	0.03	0.00	0.28
Log of Initial Income	Natural logarithm of GDP in 1996	508	7.54	0.88	5.42	9.87
Initial Education	Years of Schooling in 1990	508	6.84	2.21	2.20	10.50
Log of Gov. Consumption	Natural logarithm of total government consumption over GDP	508	22.55	1.60	18.70	26.86
Dummy for Africa	Dichotomous variable equal 1 if the host country is in Africa; zero otherwise	508	0.02	0.12	0.00	1.00
Dummy for Asia	Dichotomous variable equal 1 if the host country is in Asia; zero otherwise	508	0.20	0.40	0.00	1.00
Dummy for Latin America	Dichotomous variable equal 1 if the host country is in Latin America; zero otherwise	508	0.37	0.48	0.00	1.00
Institutions, domestic	Means of institutional indicators in the host country	427	-0.06	0.64	-1.28	1.55
Resources	Subsoil resources in USD dollars per capita in the destination country					
Inflation	Inflation, consumer prices (annual, %)	493	38.96	357.25	-8.52	7481.66