

# 1 Introduction

The developing world has not remained on the sidelines of the globally growing FDI inflows worldwide. Over the period from 1990 to 2009 in particular, FDI flows to the region grew at an average rate of 14.62% i.e. more than twice that of the developed region, which was 7.02%<sup>1</sup> (based on our calculations from the UNCTAD statistics.) Literature has traditionally been interested in direct economic effects of FDI on host country economies with an emphasis on technology transfer and productivity spillovers. As foreign direct investors are intensifying their investments and becoming major actors in developing countries, a research interest has emerged in new aspects of FDI impact on developing economies. The objective of this paper is to contribute to this research by examining the institutional aspect.

Institutions can be delineated in many ways. Following [Acemoglu and Robinson \(2013\)](#), we refer to institutions, both economic and political, as the rules influencing how the economy works, and the incentives that motivate people. Political institutions lay the foundations of economic institutions which in turn foster or impede economic activities depending on whether they are good i.e. inclusive or bad i.e. extractive. As argued by the same authors, inclusive economic institutions provide secure property rights and a relatively equal access to economic resources to a broad section of society: secure property rights are the central piece of inclusive economic institutions. It is widely recognized that institutions crucially matter in attracting foreign investments. Institutional quality is viewed as one the most relevant determinants of FDI with the underlying idea that investors will choose destinations with better institutions as bad institutions increase the cost of doing business and risks. However, looking at this direction of causality only (from institutions to FDI inflows) has important limitations in analyzing the FDI/institutions relationship.

FDI have induced important changes in the institutional framework of many countries as a means of promoting a more favorable environment for foreign investors and attracting further FDI. In 2016 for example, 58 countries adopted 84 pro-investment policy changes. In the same year, 108 countries including 90 developing countries and 16 economies in transition adopted a total of 111 investment laws that promote investment ([UNCTAD, 2017](#)). In addition, high business opportunities like the need for a scarce resource or access to a large market can lead multinationals to assume a certain degree of risk and invest in destinations with low levels of institutional quality. An evidence is provided by China, ranked the world's third largest FDI recipient by the 2017 World Investment Report despite its institutional development gap. After they have chosen a destination, foreign investors are not always passive actors in the institutional field of that destination. This is supported by the fact that FDI implies establishing a lasting interest by the direct investor in the host country through the direct investment enterprise<sup>2</sup>. At

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<sup>1</sup>FDI inflows plummeted over the periods 2000-2003 and 2007-2009

<sup>2</sup>As defined by the Balance of Payments and International Investment Position Manual: Fifth Edition ([IMF, 2009](#)) of the International Monetary Fund, FDI arises when a unit resident in one economy makes an investment that gives control or a significant degree of influence over the management of a company that is resident in another economy. This concept is operationalized where a direct investor owns equity that entitles it to 10 percent or

least since the Watergate scandal that reported many American corporations as paying bribes to foreign officials and financing domestic political parties, the domestic policy shaping potential of foreign investors has become less questionable. Likewise, studies argue that multinational corporations (MNC) engage in lobbying and pressure activities on investment countries policy makers (Dang, 2013; Malesky, 2009). The influence of foreign investors as agents of institutional change is more relevant in developing host countries, given their relatively low bargaining power and poor institutional framework. For a more complete understanding of the FDI/Institutions relationship in the developing world it appears therefore crucial to consider the reverse link i.e. how FDI shape the institutional environment of developing host countries.

Sharing the view of Voigt (2013) that measures of institutions should refer to specific dimensions because aggregate measures are too broad and fuzzy to contain meaningful information, I am particularly interested in the impact of FDI on property rights<sup>3</sup>. Private property rights, the central piece of economic institutions, have become a significant foundation of transnational investments as they are crucial for investment contracts. Even countries with no liberal political institutions like China have adopted private property rights and freedom of contract as the authoritative basis for the agglomeration of MNCs as legal persons (Robé et al., 2016). Accordingly, property rights are more likely to be affected by FDI than could be other institutional factors. Increasing FDI flows could therefore generate a greater scope for developing countries to achieve more inclusive economic institutions notwithstanding their global poor levels of institutional quality. Moreover, I contend that the economic component of institutions is of particular interest as it represents the definite way through which economic performance is directly affected by institutions. As argued previously, political institutions lay the foundations of economic institutions which in turn foster or impede economic activities depending on whether they are good i.e. inclusive or bad i.e. extractive.

To be able to replicate their business practices in the investment countries, MNCs need to meet the institutional environment supporting these practices. In other words, transferring capital goes along with transferring institutions. To this regard it is essential to distinguish between investors from developed economies (the North) whose economic institutions are known to be more inclusive and investors from developing economies (the South) whose institutions are known to be less inclusive. A fact of central interest about the shape of FDI in the developing world over the recent years has been the growing importance of FDI flows from developing countries to other developing countries as a variant of the South-South cooperation. In 2010, South-South FDI outflows accounted for 63% of total FDI outflows from the developing region (UNCTAD, 2011). The difference in institutional environment between developed and developing countries may result in different institutional impacts according to the investor's country of origin. In their economic relationship with other developing countries, Southern countries' more of the voting power (if it is incorporated, or the equivalent for an unincorporated company) in the direct investment enterprise.

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<sup>3</sup>Economic institutions and private property rights will be used interchangeably throughout this study to refer to the same reality.

investors are accused of not following or even undermining western countries efforts in promoting better institutions in the developing world (Demir, 2016). While legal provisions<sup>4</sup> in developed countries constrain their firms to observe a number of good practices when intervening abroad, such provisions lack in developing investing countries.

The effects of FDI on economic institutions may also vary according to the main sectors driving foreign investments: the manufacturing and services sectors known to be competitive, and the natural resources sector known to be less competitive, largely due to large fixed costs to which it is associated. While we may expect FDI in the manufacturing sector to promote private property rights by pushing the local environment towards market-oriented institutions, it plausible that FDI in the resource sector contribute to develop extractive economic institutions in linkage with corruption and criminality. Resource-related Multinationals accountability are often questioned in conflicts broken out in developing countries as can testify some reports. An example is the S/2002/1146 UN report on the exploitation of the DRC's natural resources that notes the existence of foreign firms whose resource-exploitation activities were associated with the financing of conflicts in that country.

Up to date, little attention has been paid to institutional effects of FDI flows on host countries in literature. There have been few attempts providing empirical evidence on the potential multinationals have to affect host countries institutions. Furthermore, and to the best of my knowledge only (Demir, 2016) explicitly considers the allegations raised against developing countries investments by testing if there is any difference between the two origins of investment (North vs. South) regarding their consequences on institutional environment. My approach differs from that of (Demir, 2016) in different ways. First, while (Demir, 2016) is interested in multiple dimensions of institutions through a composite index, I focus only on economic institutions through private property rights . Second, I consider that using lagged FDI flows is not sufficient to address endogeneity issue between FDI and institutions. Then, I dig deeper through a gravity-based instrumental variable approach never used before in this literature. The rationale is to predict FDI flows out of exogenous dyadic variables, where distances between home and host countries are interacted with the revenue of the home countries. I supplement this approach with the system Generalized Method of Moments (GMM). Third, I test whether the impact differs according to the main driving sector of FDI (resource vs. non-resource sector). To this end, I distinguish between resource-relying and non resource-relying FDI countries through an econometric method derived from Hsiao (2014). To preview the results, I find that total FDI (from developed and developing countries) have a positive impact on economic institutions. FDI flows from developed economies tend to favor inclusive economic institutions in developing countries while no clear evidence on an effect of flows from developing economies is found. This positive institutional impact of FDI is mitigated in countries where the natural resources sector plays a prominent role in attracting FDI. Overall, the findings are robust to a series a robustness checks including the use of an alternative measure of economic institutions, the test of a delayed

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<sup>4</sup>These include the US Foreign Corrupt Practices Acts of 1977; the OECD Anti-Bribery Convention of 1997; the US Kleptocracy Asset Recovery Initiative launched in 2010; and the U.K Bribery Act passed in 2010.

effect of FDI, the exclusion of outliers from the sample, and the test of any specific income group or regional effect.

The rest of the paper is organized as follows: the next section revisits the link between FDI and institutions. Section 3 presents the empirical methodology. Section 4 describes the data used in the study and provides some stylized facts as well as summary statistics. Section 5 discusses the empirical results followed by robustness checks. The final section concludes.

## 2 Related literature

Relationship between FDI and institutions has been the subject of a wide range of studies. As FDI was becoming an important source of capital formation in the world, scholars have been interested in factors strengthening countries' attractiveness. Attention was initially paid to economic factors such as infrastructure, market size, exchange rates and labor costs (Bailey, 2018). Subsequently, Institutions have progressively been considered an equally important source of comparative advantage in FDI attractiveness since the work of North (1990) explaining how influential institutions and institutional change are on economic performance. This new consideration of FDI determinants has led to a series of papers exploring the effects of institutional variables on FDI inflows. In this vein, factors like democracy, government stability, rule of law and low levels of corruption have been identified as positively associated with FDI.

Though highly influential in investors' destination choices, institutional quality is however not the prerequisite as one still observes FDI flows to institutionally poor countries. Moreover, countries with high institutional shortcomings in comparison to many other countries in the world are among the leading FDI recipients. Focusing only on the direction of causality going from institutions to FDI, as most studies did, has major limitations in analyzing interactions between FDI and institutions: (i): this implies that multinational corporations always adapt to the local institutional environment, thereby ignoring their possibility to take actions towards the profit-maximizing environment they need; (ii): FDI-induced institutional reforms in countries competing to attract FDI are overlooked; (iii): the possibility that foreign institutional norms supporting business practices of MNCs may influence host country institutions (institutional spillovers) is disclaimed.

In response to these limitations, some studies -albeit comparatively few- have explored the reverse causality by investigating how FDI impact institutions of destination countries. A body of this research argues that MNCs engage in lobbying and pressure activities on investment countries policy makers. Using firm-level data in China regions, Long et al. (2015) found that FDI has improved institutional quality -measured with the quality of rule of law experienced by Chinese domestic firms- in the host regions. They pointed out lobbying and negotiation by foreign investors to influence local governments as one potential channel through which this operates. Previous similar results with the same mechanisms were found by Dang (2013) in his empirical study of FDI impact on institutional quality across Vietnam's provinces. Malesky (2009) also resorted to investor's lobbying efforts to demonstrate how FDI have contribute to

shape economic reforms in Eastern Europe. These empirical evidences follow prior political strategy analyses contending that investors can individually or collectively interact with government officials to reduce the risks they face (Hahn, 1999; Hillman and Hitt, 1999). If the main motive behind MNC attempts to bring about institutional changes clearly appears to be the increase of profit margins, the outcome is however uncertain. As suggested by Hewko (2002), two mechanisms serve to predict if they can succeed or not in influencing prevailing institutions: (1) the ability to provide the local policy-makers with information on laws and regulations in other countries; (2) and the ability to coerce them by threatening to leave for more hospitable investment environments.

Economic exchanges have the potential to generate institutional spillovers between economic partner countries (Bahar et al., 2014; Bergstrand and Egger, 2013; Cheong et al., 2015). The existence of these spillovers is another channel through which FDI impact institutions. Naming it the demonstration effect, (Kwok and Tadesse, 2006) proposed this channel to demonstrate a significant negative effect of FDI on corruption in a large sample of host countries over a period of 30 years. The idea is that the presence of MNC in a country challenges the usual bad way business is done by demonstrating how business rooted in an environment built on trust and ethical conduct can be more efficient in the long run. The presence of MNC therefore provides a concrete and real example to follow. Following the institutional spillovers transmission channel, it appears relevant to account for the investor's country of origin in assessing the effect of FDI on institutions. Because developed countries are endowed with better institutions than developing countries, one may expect institutions to get improved by FDI flows from developed economies but undermined by flows from developing economies. Moreover, while regulatory pressure in developed investing countries (e.g., the US Foreign Corrupt Practices Acts, the OECD Anti-Bribery Convention, the US Kleptocracy Asset Recovery Initiative, and the U.K Bribery Act) constrains their firms to observe a number of good practices when intervening abroad, such provisions lack in developing investing countries. To consider allegations raised against Southern investors, Demir (2016) explicitly tested if there is any difference between the two origins of investment (North vs. South) regarding their consequences on institutional environment. In any case he does not find any significant effect of FDI flows on institutional gap between home and host countries, except the case of aggregate South-South flows where a significantly negative effect is detected on host countries institutions.

Although the studies mentioned above predict a positive impact of FDI on institutions, there are still reasons for concern. Multinationals may attempt to secure a competitive advantage over the domestic market or local resources through detrimental practices like promoting extractive economic institutions to exclude other parties from local properties or bribing officials to bypass local laws. The aforementioned legal provisions in developed countries which contain the actions of their firms abroad indicate that foreign investors are not always well-intentioned vis-à-vis host institutional environment. For example, the Foreign Corrupt Practices Act (FCPA) was adopted to prevent American firms from further corruption practices in foreign countries following the Watergate scandal. Even with the existence of such legislations, investors may be just as clever

at finding a way to circumvent the law through covert substitutes for prohibited actions (Wei, 2000). In addition, Demir (2016) noted that increasing FDI flows may also worsen institutional quality by broadening the pool of money available for bribery. Accordingly, the direction of institutional change caused by FDI appears not to be straightforward. In fact, empirical findings may differ according to approaches used and the dimensions of institutions investigated.

In this paper, I am interested in the quality of private property rights, considered the central piece of inclusive economic institutions<sup>5</sup> by Acemoglu and Robinson (2013). The same definition of good economic institutions as “providing secure property rights for a broad section of society” is shared by Acemoglu et al. (2005a). In his famous work, *The Mystery of Capital*, De Soto (2000) identifies exclusion of a broad section of population from the formal system of property rights as a characteristic of developing economies, calling for more inclusive economic institutions for people prosperity. His recommendations echo Knack and Keefer (1995) and Hall and Jones (1999) who identified property rights as crucial for growth and investment.

Through the transmission channels discussed above, it is reasonable to expect that FDI inflows promote inclusive economic institutions. As a market-based institutional factor, a clear and well-enforced system of property rights appears to be the type of environment foreign investors will tend to shape in host countries to get their costs reduced. Several studies revealed that overall, MNC prefer to operate in a liberal environment (Globerman and Shapiro, 2003; Sethi et al., 2002, 2003). A market-supporting institutional environment influences positively profitability by decreasing costs in many ways. It allows foreign investors to exploit ownership advantages in investment countries (Grosse and Trevino, 1996; Li and Resnick, 2003), constrains opportunistic behavior (Fan et al., 2009), enables cost-saving benefits of internalizing production (Meyer and Nguyen, 2005). Market institutions are crucial to support and develop private entities. As private organizations in host countries<sup>6</sup>, a growing presence of foreign investors through increasing FDI inflows will tend to push prevailing institutions towards market-oriented factors in which property rights play a central role.

Literature attributes part of differences in institutions across countries to time-invariant factors like: culture (Michalopoulos and Papaioannou, 2013; Easterly and Levine, 1997), geography (Levine, 2005), and history (Acemoglu et al., 2001, 2005a; Nunn and Wantchekon, 2011; Genaioli and Rainer, 2007). Time-varying variables account for institutional changes over time and represent leverages to use for building inclusive economic institutions. Besides FDI in which this paper is interested, literature has identified, among others, the following time-varying determinants of institutions: income levels (Docquier et al., 2016), openness (Ades and Di Tella, 1999; Rigobon and Rodrik, 2004), education (Acemoglu et al., 2005b; Murin and Wacziarg, 2014), and natural resources (Ades and Di Tella, 1999; Leite and Weidmann, 1999).

In the analysis of FDI impact on economic institutions the influence of natural resources deserves a particular attention in accordance with the resource curse literature. Foreign investors

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<sup>5</sup>The terms “economic institutions” and “property rights” will then be used interchangeably to refer to the same reality.

<sup>6</sup>State-owned enterprises are considered private organizations in foreign countries.



can influence investment countries property rights systems differently depending on their resource availability. In resource-rich countries, foreign investors are engaged in a contest, often competing to gain access to the resource (Newman et al., 2016). The incentive of foreign investors to ensure resource access combined with that of the government to engage in rent seeking activities can lead to extractive economic institutions in which the vast majority of the population has little or no secure and well-enforced property rights over the resource sector and many other related sectors. It then appears plausible that governments in resource-rich countries interact with multinationals -which possess technology to exploit resources- to appropriate more rents and serve their own interests at the expense of the society. This may result in lesser, if not detrimental, impact of FDI on property rights in countries where the main driving force of FDI is the natural resources sector as opposed to countries where foreign investments are weakly linked to the resource sector.

This paper contributes to the literature on institutional impact of FDI and is most closely related to Demir (2016). He explored whether bilateral FDI flows affect institutional development gaps between investing and investment countries and tests if the effect varies with the direction of flows (South-South, South-North, North-South, and North-North). In any case he does not find any significant effect of FDI flows on institutional gap between home and host countries, except the case of aggregate South-South flows where a significantly negative effect is detected on host countries institutions. My approach differs from that of Demir (2016) in different ways. First, while Demir (2016) is interested in multiple dimensions of institutions through a composite index, I focus only on economic institutions through the quality of the private property rights system. Second, I consider that using lagged FDI flows is not sufficient to address endogeneity issue between FDI and institutions. Then, I dig deeper through a gravity-based instrumental variable approach never used before in this literature. The rationale is to predict FDI flows out of exogenous dyadic variables, where distances between home and host countries are interacted with the revenue of the home countries. I supplement this approach with the system Generalized Method of Moments (GMM). Third, I test whether the impact differs according to the main driving sectors of FDI (resource vs. non-resource sector). To this end, I distinguish between resource-relying and non resource-relying FDI countries through an econometric method derived from Hsiao (2014). Due to the data at my disposal I cannot disentangle the mechanisms through which total FDI affect the institutional landscape in the developing world. I can only examine the overall impact which certainly operates through the various channels discussed throughout this section.

### 3 Empirical methodology

The study aims at exploring the effects of FDI on economic institutions in developing countries. This section presents the empirical approach adopted. Section 2.1 deals with the econometric model and section 2.2 presents the identification strategy.

### 3.1 Model specification

To investigate the effect of FDI flows on economic institutions, we use the following dynamic specification drawing on previous studies ([Acemoglu et al., 2005a](#); [Demir, 2016](#); [Docquier et al., 2016](#); [Spilimbergo, 2009](#)).

$$Inst_{it} = \alpha + \beta Inst_{it-1} + \gamma FDI_{it-1} + \sum_k \delta_k X_{it-1} + \epsilon_{it} \quad (1)$$

Where  $Inst_{it}$  is a measure of economic institutions for country  $i$  in period  $t$ . The lagged value of this variable enters the set of regressors to capture persistence in institutions.  $\alpha$  is a constant.  $FDI_{it-1}$ , the lagged value of FDI inflows is our main variable of interest.  $X_{it-1}$  is a vector of lagged control variables reflecting the main time-varying determinants of economic institutions. These are:

*Political institutions:* This variable as a key determinant of economic institutions is well illustrated in [Acemoglu et al. \(2005a\)](#). In summary, the argument is that economic institutions are the result of choices made by the different groups of society for their economic consequences associated with the groups' interests. Ultimately, prevailing economic institutions are determined by groups with more political power which comprises de jure and de facto political power. The former originates from the political institutions whereas the latter depends on the society's economic resources (capital and human as well, which we take into account through some of the variables described below). While some political institutions like democracy or constitutional monarchy lead to inclusive economic institutions, others like dictatorship or autocracy are more favorable to extractive economic institutions.

*Real Gross Domestic Product per capita:* Most studies on institutions use it as explanatory variable ([Docquier et al., 2016](#)). Wealthier economies are expected to have better institutions as building and promoting a sound institutional environment requires resources.

*Openness:* Integration into the global economy can affect institutions through good practices diffusion. More especially, greater openness to the world market may reinforce market-based institutions necessary to trade. Moreover, various studies, among which [Rodrik et al. \(2004\)](#), have shown that good institutions are correlated with openness.

*Natural resources:* Researches on natural resources curse have called attention on how detrimental availability of natural resources can be to institutions and development. The possibility of extracting rents from these resources may lead governments to engage in rent-seeking activities with little incentive to promote better institutions.

*Personal remittances:* financial transfers received by local populations from their relatives abroad represent additional resources that can encourage them to more actively get involved in the economic activities and demand more inclusive economic institutions. Relying on these foreign transfers, remittances recipients become more independent from government support and can raise voice to demand greater accountability. [Williams \(2017\)](#) found that remittances are positively associated with democratic institutions. But this can also work in the opposite direction through an increase in the share of funds diverted by the government for its own



purposes generating a deterioration of institutional quality (Abdih et al., 2012).

*Education:* Educated citizens can benefit from the critical and analytical skills needed for a good understanding of the nation’s major issues and how to influence them to their benefit. Literature presents mixed results of the effect of education on institutions. Some studies find a positive effect (e.g., Acemoglu et al. (2005b) ) while others like Murtin and Wacziarg (2014) evidence the contrary.

*Official development assistance:* countries relying on aid may have little incentive to promote pro-growth policies like making economic institutions inclusive. Government can even adopt rent-seeking behavior and appropriate this windfall of resources at the expense of society. An empirical evidence is provided by Djankov et al. (2008) showing that foreign aid result in worsening institutions.

## 3.2 Identification strategy

Most studies on FDI include institutions among its main determinants. That makes reverse causality an obvious identification issue to address when determining the effect of FDI on institutions. In general, countries with good economic institutions attract foreign investors as they decrease the cost of doing business. To reduce risks to investment including the possibility for profits repatriation, likelihood of expropriation and degree of contract viability, foreign investors will tend to invest in countries that secure property rights. A marginal “effect<sup>7</sup>” of FDI with respect to economic institutions may therefore be due to reverse causality as property rights are likely to positively affect FDI. Another source of identification issue is omitted factors that could jointly affect the level of economic institutions and the volume of FDI flows even when controlling for all relevant determinants of economic institutions. Once the model serving as framework to explain differences in institutions across countries over time is specified, the next challenge is to formulate an identification strategy able to solve the endogeneity problem. That said, I rely on two alternative identification strategies: the Instrumental Variable Method (IV) and the System Generalized Method of Moments (GMM) to better account for the inertia of institutions. The GMM will also serve for comparison, following, among others, Murtin and Wacziarg (2014) and Docquier et al. (2016).

### 3.2.1 Gravity-based instrumental variable: the two-stage least squares method (IV-2SLS)

Finding good instruments in a panel setting is a daunting task, especially that these instruments must vary over time. We have identified few instrumental variables proposed by studies on the effect of FDI on institutions in such a framework. Pinto and Zhu (2016) in their analysis of the effect of FDI on corruption use the summation of bilateral geographic distance between the host countries and the twenty wealthiest economies, weighted by their average real GDP per capita. They explain the logic of the instrument with these words: “on the one hand, investors

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<sup>7</sup>Normally the term effect implies endogeneity has already been adressed.

are more likely to invest in those destinations that are close to their home country; and on the other hand, wealthier countries (those with higher GDP per capita) are more likely to be better endowed with capital and hence more likely to invest abroad". In fact they drew on [Larraín et al. \(2004\)](#) who had developed the same instrument, adding cultural proximity in the calculation. A different approach is developed by [Malesky \(2009\)](#). He instruments for FDI stocks with predicted exchange rates to explore the influence of FDI on economic reform. But exchange rate fluctuations are in several instances dependent on the same politics that shape institutional environment, i.e. economic institutions in this study. Exchange rate is therefore very likely to violate the exclusion restriction. Then, he applied statistic methods to specific data to separate politics out of exchange rate fluctuations to get a better instrument. Even if I consider his method acceptable it cannot serve for this study given the extent of the sample countries and the type of data needed. I rather draw on the first strategy in a gravity-based approach.

The method builds on [Frankel and Romer \(1999\)](#) and [Feyrer \(2009\)](#), drawing on the first strategy ([Pinto and Zhu, 2016](#); [Larraín et al., 2004](#)). It consists in obtaining an exogenous source of variation in FDI. The idea is to capture the share of FDI strictly driven by factors other than institutions. This institution-independent share of FDI, which is a normal relation, represents the volume of FDI each country should have received if institutions of all countries had been set equal. This strictly exogenous share of FDI will serve as instrument for actual FDI. To do so, I construct the following gravity model of exogenous determinants of bilateral FDI flows:

$$FDI_{ijt} = \alpha_0 + \alpha_j + \beta_1 Lang_{ij} + \beta_2 \frac{1}{Dist_{ij}} GDP_{jt} + \beta_3 Log(Pop_{it}) + \epsilon_{ijt} \quad (2)$$

I then obtain the instrument by computing predicted FDI for each country. More precisely the instrument is obtained by aggregating for each host country and year predicted bilateral FDI flows over home countries, i.e.  $\sum_j \widehat{FDI}_{ijt}$ . The exogeneous bilateral determinants used are the following:

- *Language difference* ( $Lang_{ij}$ ) between host country  $i$  and home country  $j$ . While sharing a common language is proved to be a significant determinant of FDI (e.g., ([Bergstrand and Egger, 2007](#); [Di Giovanni, 2005](#); [Head and Ries, 2008](#); [Stein and Daude, 2007](#); [Wei, 2000](#))), there is no reason to believe this could directly affect property rights, as it could not with democracy ([Docquier et al., 2016](#)).
- *An interaction variable between the inverse of geographical distance* ( $Dist_{ij}$ ) *between the two countries and the home country's GDP at time  $t$*  ( $GDP_{jt}$ ). The variable is derived from the first approach of instrumentation we described above. The logic is the same: A country's FDI outflows amount is proportional to its revenue and inversely related to its distance from the country of investment.
- *The logarithm of the recipient country total population* ( $P_{it}$ ) to account for conquering new markets motive and proxy for the demand for the multinational's products. Demographic factors pointed out by literature as influencing institutions concern ethnic structure

(Michalopoulos and Papaioannou, 2013) or ethnic fragmentation (Easterly and Levine, 1997), not the size. Just as Docquier et al. (2016) in the case of democracy, we think population size has no direct impact on property rights.

- $\alpha_j$  is a source-country fixed effect. Following Docquier et al. (2016), we do not add recipient-country fixed effect because it could capture the influence of host countries' institutions on foreign investors' investment decisions.

This instrumental-variable strategy was introduced by Frankel and Romer (1999). Since then, it has been extended in many studies, especially in the trade and migration literature, among which Alesina et al. (2016), Docquier et al. (2016), and Ortega and Peri (2014). This is the first time the strategy is employed in the literature on the consequences of FDI. It constitutes an improvement to the first approach of instruments described above as it relies on more detailed data – at the bilateral level – on the one hand and attempts to cover FDI motives as much as possible on the other hand.

### 3.2.2 System-GMM strategy (SYS-GMM)

With the first strategy of identification based on the IV-2SLS, we do not account for potential endogeneity of the controls and the so-called Nickell bias (Nickell, 1981) which arises from including the lagged dependent variable as a regressor in fixed effects regression. This is not a shortcoming per se in estimating Eq (1) since our focus is on the variable of interest FDI and the impact it could have on economic institutions. Nonetheless, as the SYS-GMM estimator proposed by Blundell and Bond (1998) enables us to deal with all these issues, we take advantage of it and use it as alternative identification strategy and a means of comparing results. The SYS-GMM technique combines the equation in first differences with the equation in levels in a system. Under the assumption that lagged FDI are not reacting to current changes, it instruments for the equation in levels with first differences of variables and for the equation in first differences with lagged levels of variables.

## 4 Data, stylized facts and summary statistics

### 4.1 Data

The sample is made up of 110 developing host countries and 112 home countries (developing and developed countries)<sup>8</sup> for which we collect three-year averaged data spanning the period between 1990 and 2009. The selected countries as well as the time period respond to the data availability. The full sample of countries is provided in Appendix, Table A2.

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<sup>8</sup>Developed countries are Australia, Austria, Belgium, Canada, Switzerland, Cyprus, Germany, Denmark, Spain, Finland, France, Greece, Hong Kong, Ireland, Iceland, Israel, Italy, Japan, Luxemburg, Netherlands, Norway, New Zealand, Portugal, Sweden, United Kingdom, and USA. The rest of the sample concerns developing countries (based on the UNCTAD classification).

## Data for the gravity model (Eq. 2)

Bilateral FDI Data are the same as those of (Demir, 2016). They are obtained from three sources: OECD, UNCTAD and national statistics institutes databases. For consistency we use one source for each country pair for the full period. The values are initially expressed in current US dollars, then deflated by the US GDP deflator (base year 2000) from the IMF's International Financial Statistics (IFS). Data on language difference and geographical distance are taken from the CEPII database. The former is a dummy variable equalling to 1 if a language is spoken by at least 9% of the population in both investing and recipient countries. The latter measures the simple distance between capitals in kilometer. For the source country GDP and the host country population we use the Penn World Table database version 9.0 (PWT 9.0).

## Data for the baseline model (Eq. 1)

- *Economic institutions*, proxied with private property rights and measured with the investment profile index of the International Country Risk Guide (ICRG) dataset. These data as measure of economic institutions were previously used by (Acemoglu et al., 2001, 2002; Knack and Keefer, 1995; Hall and Jones, 1999)<sup>9</sup>. The investment profile index assesses factors affecting the risk to investment, namely contract viability/expropriation, profits repatriation, payment delays. It ranges between 0 and 12, with 12 reflecting the better designed and most secured property rights for the purposes of this study.
- *Aggregate FDI inflows*: for a given year and from the bilateral FDI flows presented above, I sum the amounts of FDI received by a country from all its partner investing countries to obtain the aggregate FDI inflows for that country and year. In order to explore the effects with respect to the origin country categories (North vs. South), I implement three levels of aggregation (from all, developed and developing countries).
- *Other data* : Political institutions are measured with the Polity2 variable of the POLITY IV dataset. This variable is widely used in literature to assess de jure political institutions. The index ranges between -10 and +10, with +10 reflecting political institutions generating the most inclusive economic institutions. Data on real GDP per capita are obtained from the Penn World Table and expressed in log. Natural resources, personal remittances, education and official development assistance data are from the World Development Indicators of the World Bank. Natural resources are measured with total natural resources rents as a share of GDP. They consist of the sum of oil, natural gas, coal, mineral, and forest rents. We transform the values in logarithm. Personal remittances, received are the sum of transfers and compensation of employees, as a share of GDP (values are logged). For education and official development assistance we use respectively the secondary gross enrolment ratio (in log) and the net ODA received (percentage of GNI).

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<sup>9</sup>These authors used the Protection Against Risk of Expropriation indicator which is a subcomponent of the Investment Profile.

## 4.2 Stylized facts on FDI inflows and economic institutions, and summary statistics

Along the seven 3-year periods considered there was a steady increase of FDI flows to developing economies, both from the North and the South<sup>10</sup> (fig. 1). The economic shocks observed at certain points of time throughout the period did not stop the global momentum of growing FDI inflows in developing countries. North countries, albeit remaining the largest source of FDI in developing countries, are challenged by Investors from the South. The data show that between the first and the last period, FDI flows from developing countries increased significantly and the share in total flows nearly doubled (from 11.75% to 23.22%). This growing role of developing countries as new sources of investment within the developing world is driven by outflows from Asia with countries like China, India, Republic of Korea and Malaysia.

East Asia & Pacific has remained the first destination of FDI flows. The region established a real hegemony in attracting FDI before being overtaken by Europe & Central Asia in the last period. East Asia & Pacific seems to offer better investment advantages relative to the rest of the developing world in terms of labor costs, size of local markets, skilled manpower, and institutions. Over the period, the region's own weight in its FDI sources has been growing shifting the relative share of its FDI origins. This growing importance of intraregional investment is to a large extent due to the region's economic integration. In the new shape of investment in the region, China played a particular role as it was attractive to market-seeking FDI and became an important source of capital and technology for neighboring, low-income countries (UNCTAD, 2010). Sub-Saharan Africa, albeit improving, kept lagging behind: the region received an average of USD 2241509, that is 23 times less than East Asia Pacific, the largest recipient (table 1). Sub-Saharan Africa's new sources of investments are developing countries with China taking the lead, then other developing Asian economies like India and Malaysia. These investments are commonly directed towards the resource sector. However, banking and telecommunication industries are also important sectors of foreign investment in the region.

Table 1: FDI inflows and Investment Profile scores, by region

Region	FDI inflows			Invetment Profile		
	Mean	Std. Dev.	Freq.	Mean	Std. Dev.	Freq.
East Africa and Pacific	53567577	1.082e+08	84	7.4	2.3	84
Europe and Central Asia	26435304	60072682	140	8.1	2.5	107
Latin America and Caribbean	19344580	45153081	168	7.2	2.2	168
Middle East and North Africa	6274037.1	19907562	126	7.7	2.3	126
South Asia	10663556	26571520	28	6.3	1.5	28
Sub-Saharan Africa	2241509.1	11406183	217	6.5	2.1	217
Total	17072115	52478890	763	7.2	2.3	730

<sup>10</sup>Some single years over the period of study was marked by declines of FDI flows, for example in 2009 when investments fell by 24% (UNCTAD, 2010).

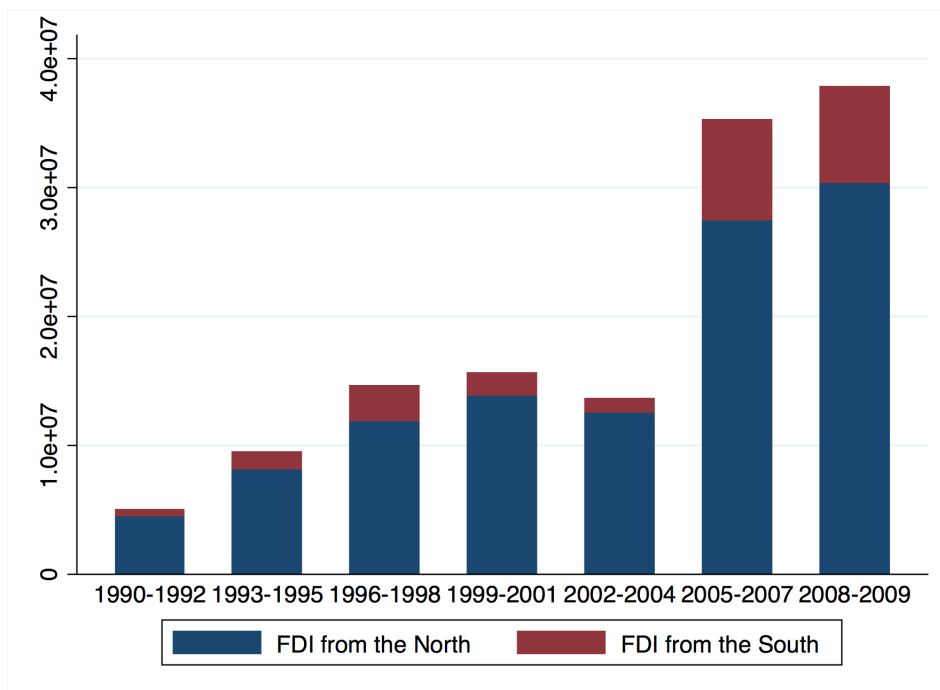


Figure 1: FDI flows to developing countries, globally and by group of home countries (North vs. South), 1990-2009

Table 2: Investment Profile scores by income groups

Income Group	Investment Profile		
	Mean	Std. Dev.	Freq.
High income	9.3	2.15	129
Upper middle income	7.4	2.1	252
Lower middle income	6.7	1.7	209
Low income	5.9	2.2	147

Investors, both from the North and the South, seem to prioritize upper middle and high-income destinations. The least beneficiaries are low-income countries. Given that they are capital-scarce and thereby susceptible to yield the highest investment rate of return, one might expect them to be part of the first beneficiaries of FDI. In fact, the so-called convergence theory suggests that the return to investment will be higher in low-income countries and make them very attractive to foreign investments from capital markets in an open world economy. But the data show that the dynamics of investments is beyond rates of return and may be influenced by other characteristics ranging from weak institutions, poor geography to inappropriate policies as predicted by the conditional convergence approach.

Drawing up the picture of FDI is an important step towards the goal of this study as not all FDI are the same with respect to economic institutions. For example, direct investors from developing countries and those from developed countries may have different degrees of influence in investment countries depending on their powers and preferences. In addition, the institutional





Figure 2: Evolution of Investment Profile score and FDI inflows over the 7 periods considered from 1990 to 2009

ground of some host regions or economies may be more or less favorable to new institutional change and make them more or less responsive to multinationals' actions. In general, level of property right protection has steadily risen over the period of study, tracking FDI inflows (Fig. 2). Table 2 illustrates that the level of property rights increases with the level of income. The highest protection of property rights is observed in high income countries with a mean of approximately 9. Nine countries out of the bottom twenty are in Sub-Saharan Africa with the lowest score (3.03) in Liberia. In general, these countries are ruled by totalitarian governments and were or are embroiled in conflicts: a fertile ground for poor economic institutions. With a mean of 6.5 (table 1), Sub-Saharan Africa is below the overall mean that is 7.2. It has traditionally been an (economically) weakly inclusive region. At the opposite are East Asia & Pacific and Europe & Central Asia with scores close to 8. The top five countries are from these two regions. Finally, summary statistics on variables used in Eq. (1) are presented in table 3.

## 5 Empirical results

### 5.1 General results

I start by presenting OLS estimates of (Eq. 2): the gravity model of exogenous determinants of bilateral FDI flows, which will serve for the instrumental variable. There are good reasons to believe that consistent results will be obtained from the OLS method. First, there is a small number of zeros in our bilateral FDI data (9.53% of total observations). Second, the regressors used are exogenous to FDI inflows: language and distance are predetermined, GDP in the host country and the population size in the home country are determined by other

Table 3: Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Investment Profile	737	7.2	2.3	0.5	12
FDI.Total	770	1.71e+07	5.22e+07	-9535220	5.35e+08
FDI.North	770	1.55e+07	4.60e+07	-9539047	4.94e+08
FDI.South	128	2534926	4391215	-4823093	2.64e+07
Polity2	740	2.2	6.363931	-10	10
Log(Gdppc)	749	8.537367	1.146124	5.17915	11.75536
Log(Remittances)	613	.06310	21.8242	-10.4519	3.496549
Trade	737	78.2332	45.6692	.2217	417.1153
ODA	611	5.9927	9.7607	-.1445	115.9546
Log(Education)	573	3.995461	.6515559	1.672447	4.701808
Log(Rents)	677	1.7016	1.8398	-7.633299	4.403216

factors not or weakly related to FDI flows from the home country. Table 4 reports the results with robust standard errors (clustered by country pairs). Overall, the regressors are strong predictors of bilateral FDI flows as all coefficients are significant at conventional levels. In addition, the coefficients have the expected signs: language links favor direct investment as does the local market size proxied with the host country population size. The inverse of distance between partner countries together with the investing country GDP has also a positive effect on bilateral FDI flows confirming the joint underlying idea that investors are more likely to invest in destinations close to their home country and wealthier countries are more likely to invest abroad.

Eq. 1 describing the relationship between FDI flows and economic institutions is alternatively estimated with OLS, 2SLS and SYS-GMM with internal instruments. OLS are employed to check correlation between FDI and economic institutions<sup>11</sup>. 2SLS and SYS-GMM are used to address the endogeneity issue of FDI in specific manners discussed in sub-section 2.2. The results based on FDI flows from all directions (North and South as well) are reported in Table 5. Columns (1), (2) and (3) present respectively OLS, 2SLS and SYS-GMM estimates. The Kleibergen-Paap Wald F statistic for weak identification when applying 2SLS appears to be large (20.241). In addition, the first-stage regression reported in Table A1 shows that this instrument is an excellent predictor of actual FDI flows. The AR(1), AR(2) and Hansen statistics suggest that the SYS-GMM is correctly specified. The three methods used for estimating the model confirm an inertia phenomenon as the coefficient of lagged property rights is positive and significant in each case. FDI coefficients in all estimations have a positive sign but significant only in the 2SLS estimation. Unlike the OLS estimation, the 2SLS is significant and larger, likely due to omitted factors bias not addressed with OLS. The 2SLS-based results suggest that a reinforcement of the presence

<sup>11</sup>Given inconsistent estimates generated by OLS regressions, I present only 2SLS and SYS-GMM regressions in the following results

Table 4: Gravity-based determinants of FDI

	Bilateral FDI flows
Language	2.844e+06* (1.644e+06)
Population	732,832*** (230,519)
$\frac{1}{Dist} \times GDP$	0.00127*** (0.000449)
Constant	-1.292e+07*** (4.058e+06)
Observations	9,016
R-squared	0.110
Origin and Year FE	YES

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

of multinationals through a 100 000 000\$-real additional investment contributes to improve property rights protection by 1.28 points in the short run. OLS and 2SLS results show that de jure political power is correlated with property rights. The positive and significant coefficients of Polity2 in both estimations reveal that inclusive political institutions are positively associated with inclusive economic institutions. These first results emphasize the existence of resource curse in institutional change. The coefficient of natural resource rents is significantly negative in the three estimations. It is worth noticing that SYS-GMM accounts for the endogeneity of all regressors so that it allows to certify that natural resources do have a negative impact on property rights.

Now I replicate the same analysis after splitting total flows into two groups of origin countries (North vs. South). By doing so I can assess whether the effect of FDI on institutions differs according to the type of origin country. Table 6 reports the results. For each group of origin country, I use IV-2SLS, with the same instrument as previously, and SYS-GMM estimations respectively. Columns (1) and (2) concern total flows from developed countries and the next two columns are about flows from developing countries. The results reveal that when considered separately, FDI flows from the North and from the South are neutral vis-à-vis institutional change in developing countries. In all cases, I fail to detect any significant effect of FDI on developing countries' economic institutions. Overall, the relationship observed between the controls and property rights with total flows is robust to the splitting of flows (From the North vs. From the South).

Table 5: Total FDI and Economic Institutions

	(1)	(2)	(3)
	OLS	IV	GMM
Dependent	Institutions		
Institutions <sub>t-1</sub>	0.463*** (0.0518)	0.441*** (0.0636)	0.681*** (0.0394)
FDI_Total <sub>t-1</sub>	4.39e-10 (2.63e-09)	1.28e-08* (6.67e-09)	4.75e-10 (9.29e-10)
Polity2 <sub>t-1</sub>	0.0971** (0.0396)	0.0998*** (0.0385)	0.0168 (0.0181)
Log(Gdppc) <sub>t-1</sub>	0.322 (0.378)	0.0640 (0.308)	-0.309 (0.399)
Log(Remit) <sub>t-1</sub>	0.0476 (0.0856)	0.0550 (0.0745)	-0.00857 (0.0469)
Trade <sub>t-1</sub>	0.00921 (0.00692)	0.00760 (0.00637)	0.00345 (0.00251)
ODA <sub>t-1</sub>	-0.0239 (0.0220)	-0.0333 (0.0214)	-0.0135 (0.0149)
Log(Education) <sub>t-1</sub>	-0.146 (0.492)	-0.258 (0.448)	0.127 (0.320)
Log(Rents) <sub>t-1</sub>	-0.548*** (0.161)	-0.514*** (0.173)	-0.283*** (0.0977)
Constant	2.127 (2.921)		4.918** (2.148)
AR(1)			0.000
AR(2)			0.258
K-P		20.241	
Hansen			0.217
Observations	313	306	313
R-squared	0.464		
Country FE	Yes	Yes	Yes

Robust standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

## 5.2 How influential are natural resources?

An important observation from the previous results is that natural resource rents have a systematic significantly negative effect on institutions in almost all estimations. These results confirm the natural resource curse hypothesis that natural resource dependence is detrimental to institutional development. Given this conclusion and knowing that one of the main motives behind foreign investment is exploitation of natural resources, the influence of this variable deserves a particular attention in the analysis of the FDI/institutions relationship. Foreign investors can influence investment countries property rights systems differently depending on their resources availability. In resource-rich countries, foreign investors are engaged in a contest, often competing to gain access to the resource (Newman et al., 2016). The incentive of foreign investors to ensure resource access combined with that of the government to engage in rent seeking activities

Table 6: Accounting for investors' origins

	(1)	(2)	(3)	(4)
	IV	GMM	IV	GMM
	From the North		From the South	
Dependent:	Institutions			
Institutions <sub>t-1</sub>	0.439*** (0.0649)	0.682*** (0.0394)	0.134 (0.189)	0.735*** (0.152)
FDI_North <sub>t-1</sub>	1.37e-08 (9.39e-09)	7.64e-10 (1.27e-09)		
FDI_South <sub>t-1</sub>			3.09e-07 (2.32e-07)	-2.35e-08 (2.56e-08)
Polity2 <sub>t-1</sub>	0.0971** (0.0386)	0.0173 (0.0179)	0.314** (0.126)	-0.00751 (0.0361)
GDPPC <sub>t-1</sub>	0.0961 (0.317)	-0.270 (0.391)	-1.598 (2.228)	-0.0801 (0.297)
Remittances <sub>t-1</sub>	0.0536 (0.0744)	-0.00301 (0.0461)	0.643* (0.365)	-0.00360 (0.0916)
Trade <sub>t-1</sub>	0.00799 (0.00641)	0.00335 (0.00246)	0.0149 (0.0299)	0.000157 (0.00607)
ODA <sub>t-1</sub>	-0.0322 (0.0217)	-0.0125 (0.0148)	-0.00819 (0.0377)	0.0158 (0.0133)
Education <sub>t-1</sub>	-0.213 (0.445)	0.0958 (0.313)	-2.047 (2.360)	0.457 (0.488)
Rents <sub>t-1</sub>	-0.535*** (0.171)	-0.271*** (0.0968)	-1.266** (0.579)	-0.375*** (0.144)
Constant		4.682** (2.117)		1.539 (2.736)
Country FE	Yes	Yes	Yes	Yes
AR(1)		0.000		0.011
AR(2)		0.269		0.194
Cragg-Donald	14.981		2.140	
Hansen		0.196		1.000
Observations	306	313	54	56

Robust standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

can lead to extractive economic institutions in which the vast majority of the population has little or no secure and well-enforced property rights over the resource sector and many other related sectors. Resource-driven FDI are thus likely to favor poor economic institutions.

Owing to the lack of data on FDI by sector over years for my sample countries, I test this hypothesis by differentiating the institutional effect of FDI according to two groups of countries: resource-dependent FDI countries and non resource-dependent FDI countries. To do so, I assess how successful are natural resources in attracting FDI in the whole sample and for every single country. The coefficient obtained for every economy is then compared with the average coefficient (in the whole sample). Countries with a value greater than the average are more reliant on the resource sector in attracting FDI relative to countries with a value below the average. I name

the former group Rentier States. The econometric specification behind the splitting process of the sample is provided by Hsiao (2014) and can be written as a model of FDI determinants :

$$FDI_{it} = (\bar{\beta} + \alpha_i + \lambda_t)Resources + \sum_k (\bar{\beta}_k + \alpha_{ki} + \lambda_{kt})X_{kit} + \mu_{it} \quad (3)$$

Natural resources are proxied with total rents;  $X$  represents a vector of control variables affecting inward FDI.  $\bar{\beta}$  indicates the average coefficient, while  $\alpha_i$  designates the individual coefficient related to country  $i$ . The equation is estimated with a Fixed-Coefficient Model or Fixed-Effects ANOVA Model. The regression is run on 67 countries for which we have complete observations as the estimation command used<sup>12</sup> requires balanced panel data<sup>13</sup>. The list of these countries as well as their distribution between Rentier and non-Rentier States is provided in appendix, Table A3. I augment the specification in Eq (1) by adding to the set of explanatory variables a dummy "Rentier" taking "1" for Rentier-States and "0" otherwise, and an interaction term between the dummy and FDI. Then I obtain Eq (4):

$$Inst_{it} = \alpha + \beta Inst_{it-1} + \gamma_1 FDI_{it-1} + \gamma_2 (FDI \times Rentier)_{it-1} + \sum_k \delta_k X_{it-1} + \epsilon_{it} \quad (4)$$

If the hypothesis is verified, FDI will have a lesser impact on institutions in Rentier States (or even a negative impact) compared to non-Rentier States from the estimation of Eq (4). Columns (1) and (2) of Table 7 present the results using respectively the 2SLS and SYS-GMM. They reveal that the positive impact of total FDI flows on property rights is mitigated in countries where the mining and quarrying sector represent a major driver of FDI. In both estimations, the coefficient of the interaction term is negative and significant at conventional levels. The 2SLS-based results indicate the possibility that the institutional impact of FDI turn into negative in Rentier-States as the interaction term coefficient is greater in absolute value than that of FDI.

## 6 Robutness checks

In order to explore the sensitivity of our findings to additional considerations, I conduct a series of robustness checks. First, the results discussed above are based on the Investment Profile Index of the ICRG for the reasons exposed in the sub-section 4.1. As a robustness check on this measure of inclusive economic institutions, I replicate the previous regressions using the Protection of Property Rights variable of the Fraser Institute as an alternative measure. This variable is part of the components of the Economic Freedom Index. It represents an indicator of how effectively government protective function of persons rightfully acquired properties is performed. The Property Rights index ranges between 0 and 10 with higher score indicating more secure and protected property rights<sup>14</sup>. Due to data limitation I use yearly data (from

<sup>12</sup>I used the `xtfixedcoeftvcu` Stata command developed by Diallo (2016).

<sup>13</sup>I do not present the regression results because of their size; however, they are available upon request.

<sup>14</sup>For more details concerning the variable see <https://www.fraserinstitute.org/economic-freedom/approach>.



Table 7: Rentier vs. Non-Rentier States

	(1)	(2)
	IV	GMM
Dependent:	Institutions	
Institutions <sub>t-1</sub>	0.481*** (0.0685)	0.676*** (0.0396)
FDI <sub>t-1</sub>	1.69e-08* (8.90e-09)	6.23e-10 (9.46e-10)
Rentier		0.293 (0.398)
FDI×Rentier <sub>t-1</sub>	-2.52e-08** (1.09e-08)	-8.87e-09 (7.16e-09)
Polity2 <sub>t-1</sub>	0.0858** (0.0371)	0.00485 (0.0189)
Gdppc <sub>t-1</sub>	0.0142 (0.383)	0.0463 (0.366)
Remittances <sub>t-1</sub>	0.0379 (0.0723)	0.0128 (0.0540)
Trade <sub>t-1</sub>	0.00992 (0.00670)	0.00332 (0.00232)
ODA <sub>t-1</sub>	-0.0475** (0.0227)	-0.0165 (0.0125)
Education <sub>t-1</sub>	-0.234 (0.568)	-0.0147 (0.348)
Rents <sub>t-1</sub>	-0.492*** (0.182)	-0.276*** (0.0932)
Constant		2.404 (1.995)
Country FE	Yes	Yes
AR(1)		0.000
AR(2)		0.799
Cragg-Donald	14.194	
Hansen		0.991
Observations	243	247

Robust standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

2000 to 2009). The regressions are based on the same identification strategies as before (IV-2SLS and SYS-GMM). Table 8 reports results based on FDI from all origin countries in its first two columns, then FDI originating from the North in columns (3) and (4)<sup>15</sup>, and the last two columns test the difference in the FDI impact according to the type of country (Rentier vs. Non-Rentier).

Columns (1) and (2) show that total FDI have a significantly positive effect on economic institutions even when measured with the Protection of Property Rights Index. As previously,

<sup>15</sup>I do not present regressions based on FDI from the South because they lack statistical validity, given the associated statistics as well as the number of observations.

FDI flows from the North are positively associated with economic institutions, but more than that, the coefficients here are significant at conventional levels (columns (3) and (4)). The last two columns results point towards a weaker impact of FDI on institutions in Rentier-States relative to the others. In line with the above results, the marginal effect of being a Rentier State is negative in both regressions and significant in the SYS-GMM estimation. Overall, these additional results are quite similar to those based on the Investment Profile Index.

Table 9 reports the following of the robustness analysis results through the IV-2SLS-based strategy. In column (1), I question further the delayed effect of FDI by using its second lag. The result remains the same: total FDI have a significantly positive effect on institutions. Column (2) tests if the primary results are driven by China. In fact, the simple correlation between Investment Profile and lagged FDI rises by more than 11 percentage points (from 14.74% to 26.25%) without China in the sample. The results do not change considerably after removing China from the sample. The impact of FDI on property rights remains positive and significant. Next, I explore whether the results are sensitive to income and regional differences. To this end, I follow the World Bank classification of countries and split the sample into high-income countries and low-income countries encompassing the low, lower-middle and upper-middle-income economies. The dummy is encoded 1 for high-income countries and 0 for low-income countries. I interact total FDI flows with the income dummy in column 3, then with regional dummies<sup>16</sup> in the following columns in this order: Sub-Saharan Africa (SSA), Middle East & North Africa (MENA), Latin America & the Caribbean (LAC), Europe & Central Asia (ECA), South Asia (SAS), and East Asia & Pacific. The results are quite similar to those reported before. FDI keeps having a significantly positive impact on inclusive economic institutions except in the case of Latin America & the Caribbean region dummy. In all types of heterogeneity considered, income groups and regions as well, only the marginal effects of being a country of Europe & Central Asia or East Asia & Pacific are significant. Both marginal effects are negative with magnitudes close to those of their related total FDI coefficients (i.e the average effect for all countries). Consequently, foreign direct investors might have little or neutral influence on economic institutions in these two regions. Overall, the results support the previous findings by suggesting that the positive impact of FDI flows on property rights is robust to income and regional differences.

## 7 Concluding Remarks

The ever-growing presence of direct investors in developing countries is not without consequences on their institutions. In their quest for maximizing profits, international firms need an environment with the lowest possible constraints. In developing countries where governments' bargaining power is particularly low vis-à-vis foreign investors, the prevailing economic institutions are likely to be, in part, a result of multinationals' influence to shape the profit-maximizing environment they need. Such an environment features partnership and contract facilities with local companies, assurance of not being expropriated, and a clear level playing field with a se-

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<sup>16</sup>I do not control additively for the dummies because of the use of fixed effects.

Table 8: Regressions using the Property Rights Index

	(1)	(2)	(3)	(4)	(5)	(6)
	IV	GMM	IV	GMM	IV	GMM
Dependent	Institutions					
Institutions <sub>t-1</sub>	0.314*** (0.0558)	0.804*** (0.0557)	0.310*** (0.0555)	0.793*** (0.0586)	0.320*** (0.0602)	0.854*** (0.0476)
FDI_Total <sub>t-1</sub>	2.82e-09** (1.43e-09)	1.56e-09*** (4.91e-10)			3.57e-09** (1.67e-09)	1.68e-09*** (4.72e-10)
FDI_North <sub>t-1</sub>			3.90e-09** (1.99e-09)	1.79e-09*** (6.12e-10)		
Rentier						0.238 (0.171)
FDI×Rentier <sub>t-1</sub>					-4.40e-09 (2.96e-09)	-3.93e-09* (2.11e-09)
Polity2 <sub>t-1</sub>	0.0224 (0.0155)	-0.00340 (0.00833)	0.0215 (0.0155)	-0.00544 (0.00796)	0.0150 (0.0147)	0.00322 (0.00793)
Gdppc <sub>t-1</sub>	-0.131 (0.225)	-0.0182 (0.215)	-0.171 (0.230)	-0.0195 (0.213)	-0.0471 (0.267)	-0.0410 (0.194)
Remittances <sub>t-1</sub>	0.0277 (0.0220)	-0.00462 (0.0104)	0.0302 (0.0222)	-0.00662 (0.0106)	0.0267 (0.0258)	-0.00693 (0.00909)
Trade <sub>t-1</sub>	0.000636 (0.00355)	0.00383** (0.00161)	0.000479 (0.00357)	0.00398** -0.00148 (0.00169)	0.00345** (0.00369)	 (0.00156)
ODA <sub>t-1</sub>	0.0260* (0.0155)	-0.00277 (0.0131)	0.0257* (0.0155)	-0.00254 (0.0129)	0.0260 (0.0182)	-0.0131 (0.0126)
Education <sub>t-1</sub>	0.0458 (0.316)	-0.0353 (0.272)	0.0583 (0.323)	-0.0344 (0.270)	0.0107 (0.340)	-0.00847 (0.232)
Rents <sub>t-1</sub>	0.240*** (0.0833)	-0.0442 (0.0753)	0.233*** (0.0843)	-0.0636 (0.0714)	0.277*** (0.0848)	-0.0307 (0.0675)
Constant		1.148 (0.975)		1.257 (0.994)		0.786 (1.100)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Times FE	Yes	Yes	Yes	Yes	Yes	Yes
AR(1)		0.008		0.008		0.009
AR(2)		0.634		0.630		0.638
K-P	16.150		14.306		10.304	
Hansen		0.977		0.972		1.000
Observations	360	362	360	362	305	306

Robust standard errors in parentheses

\*\*\* p&lt;0.01, \*\* p&lt;0.05, \* p&lt;0.1

cure private property system, in a word, inclusive economic institutions. However, analysts raise concerns about opposite incentives of MNC, consisting in setting up extractive economic institutions which ensure them control over local properties by excluding rivals and populations from economic opportunities. While the question of the institutional impact of foreign direct investments in developing countries is of a great importance for development, there have surprisingly been few attempts in literature providing empirical answers.

This paper contributes to empirically examine the question in a large sample of developing countries by focusing on economic institutions proxied with private property rights. I exploit bilateral FDI flows between home countries and developing host countries to develop a gravity-based identification strategy never used in this literature which I complement with the SYS-

Table 9: Regressions results: Second lag of FDI, dropping China, Income groups and Regions

Dependent:	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
					Institutions				
FDI_Total <sub>t-2</sub>	1.70e-08*								
	(9.27e-09)								
FDI_Total <sub>t-1</sub>		1.07e-08*	1.30e-08*	1.28e-08*	1.36e-08**	1.76e-08	1.87e-08**	1.30e-08*	1.82e-08*
		(6.40e-09)	(6.74e-09)	(6.79e-09)	(6.84e-09)	(1.10e-08)	(8.78e-09)	(6.91e-09)	(9.97e-09)
Institutions <sub>t-1</sub>	0.377***	0.447***	0.442***	0.442***	0.443***	0.454***	0.434***	0.442***	0.422***
	(0.0646)	(0.0620)	(0.0636)	(0.0646)	(0.0636)	(0.0630)	(0.0661)	(0.0636)	(0.0669)
Polity2 <sub>t-1</sub>	0.0586	0.0965**	0.100***	0.0998***	0.102***	0.110***	0.0984**	0.0995***	0.0891**
	(0.0373)	(0.0383)	(0.0385)	(0.0384)	(0.0385)	(0.0395)	(0.0386)	(0.0385)	(0.0393)
Gdppc <sub>t-1</sub>	0.315	0.273	0.0634	0.0652	0.0839	0.0266	-0.0581	0.0664	0.172
	(0.299)	(0.315)	(0.308)	(0.307)	(0.315)	(0.323)	(0.304)	(0.308)	(0.298)
Remittances <sub>t-1</sub>	-0.0750	0.0352	0.0551	0.0554	0.0404	0.0635	0.0364	0.0553	0.0599
	(0.0623)	(0.0744)	(0.0746)	(0.0751)	(0.0778)	(0.0757)	(0.0752)	(0.0746)	(0.0753)
Trade <sub>t-1</sub>	0.00402	0.00705	0.00761	0.00759	0.00773	0.00668	0.00739	0.00765	0.00874
	(0.00630)	(0.00630)	(0.00637)	(0.00638)	(0.00636)	(0.00647)	(0.00647)	(0.00637)	(0.00628)
ODA <sub>t-1</sub>	-0.0433*	-0.0270	-0.0333	-0.0333	-0.0346	-0.0315	-0.0363*	-0.0333	-0.0330
	(0.0231)	(0.0214)	(0.0214)	(0.0214)	(0.0212)	(0.0211)	(0.0217)	(0.0214)	(0.0215)
Education <sub>t-1</sub>	-1.250***	-0.0730	-0.263	-0.261	-0.252	-0.335	-0.208	-0.264	-0.157
	(0.408)	(0.451)	(0.448)	(0.453)	(0.446)	(0.453)	(0.458)	(0.449)	(0.455)
Rents <sub>t-1</sub>	-0.247	-0.517***	-0.512***	-0.512***	-0.500***	-0.522***	-0.508***	-0.511***	-0.549***
	(0.153)	(0.169)	(0.174)	(0.176)	(0.175)	(0.177)	(0.182)	(0.173)	(0.171)
HighInc×FDI <sub>t-1</sub>			-2.12e-08						
			(2.27e-08)						
SSA×FDI <sub>t-1</sub>				-1.26e-09					
				(1.38e-08)					
MENA×FDI <sub>t-1</sub>					-4.54e-08				
					(3.24e-08)				
LAC×FDI <sub>t-1</sub>						-1.54e-08			
						(1.28e-08)			
ECA×FDI <sub>t-1</sub>							-2.10e-08**		
							(8.69e-09)		
SAS×FDI <sub>t-1</sub>								-5.50e-09	
								(1.32e-08)	
EAP×FDI <sub>t-1</sub>									-1.69e-08*
									(9.88e-09)
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
K-P	8.279	20.353	19.924	19.248	20.033	8.661	12.517	18.370	15.099
Observations	258	312	306	306	306	306	306	306	306

Robust standard errors in parentheses

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

GMM Method. I find that total FDI from all directions (North and South) have a positive impact on economic institutions (as measured with the Investment Profile Index of the ICRG, then with the Property Rights Index of the Fraser Institute in a robustness check). Testing if the investor's origin country matters, the results suggest that aggregate FDI flows from developed Economies tend to favor inclusive economic institutions in developing countries. Actually both measures of institutions have positive coefficients, but only the coefficient of the Property Rights Index is significant. However, I do not find any clear evidence concerning aggregate flows from other developing countries. While no significant effect is found from the Investment Profile measure, the estimations using the property Rights Index lack statistical meaning due to a high loss of observations and invalidating statistics. Given the sensitivity of foreign investment to natural resources and the well-documented negative effect on resources on institutions, I investigated the existence of a heterogeneous FDI effect between resource-relying and non-resource-relying countries in attracting FDI through an econometric technique building on Hsiao (2014). The

results reveal that the positive impact of total FDI flows on property rights is mitigated in countries where the mining and quarrying sector represent a major driver of FDI. Overall, the results are robust to various situations: the use of the Property Rights Index as alternative measure of economic institutions, the use of the second lag of FDI, the exclusion of China (the outlier) from the sample, the test of any specific income group or regional effect.

In spite of evidenced allegations of perverse influence against foreign investors on investment countries environment, these empirical findings show that the overall impact of total FDI on developing countries' economic institutions is positive. The idea that institutional environment is promoted by investors from the North but undermined by those from the South does not get strong empirical support from this study based on economic institutions. Due to the data at my disposal I cannot disentangle the mechanisms through which total FDI improve the institutional landscape in the developing world. I can only examine the overall impact which operates through the various direct and indirect channels explained along the paper. These findings advocate for the promotion of FDI from all source countries, rather than from one specific type of origin country to the detriment of the other type. Preferential investment agreement with a specific type of investment countries may have limited positive impact on economic institutions in developing countries. Governments and Development Organizations concerned with economic institutions should encourage more open and competitive investment policies for all types of origin countries (North and South as well).

The results also underline that the sector of investment matters. In particular, the positive impact of FDI is mitigated in countries where the resource sector plays a prominent role in attracting FDI. Known to be less market-oriented compared to other sectors like the manufacturing one, the natural resources sector allows development of rent-seeking investments requiring extractive economic institutions. It thus appears crucial that policy makers promote efficiency-seeking investments through a rebalancing of FDI driving sectors rather than largely relying on the resource sector.

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Table A1: First-stage regression of the Table 5 2SLS estimation

Dependent:	FDI.Total <sub>t-1</sub>
PredictedFDI <sub>t-1</sub>	1.045*** (0.110)
Institutions <sub>t-1</sub>	233,338 (1.041e+06)
Polity2 <sub>t-1</sub>	-467,063 (535,726)
GDPPC <sub>t-1</sub>	4.159e+06 (6.414e+06)
Remittances <sub>t-1</sub>	-592,865 (1.399e+06)
Trade <sub>t-1</sub>	-54,582 (121,937)
ODA <sub>t-1</sub>	432,837 (373,725)
Education <sub>t-1</sub>	-3.602e+06 (8.284e+06)
Rents <sub>t-1</sub>	-4.986e+06 (3.116e+06)
Constant	-1.376e+07 (5.366e+07)
Country FE	Yes
Observations	313
R-squared	0.354
Standard errors in parentheses	
*** p<0.01, ** p<0.05, * p<0.1	

Table A2: List of the sample countries

Country	Host	Home	Country	Host	Home	Country	Host	Home
Albania	✓	✓	Greece		✓	Norway		✓
Algeria	✓	✓	Guatemala	✓	✓	Pakistan	✓	✓
Angola	✓		Guinea	✓		Panama	✓	✓
Argentina	✓	✓	Guinea-Bissau	✓		Papua New Guinea	✓	
Armenia	✓	✓	Haiti	✓	✓	Paraguay	✓	✓
Australia		✓	Honduras	✓	✓	Peru	✓	✓
Austria		✓	Hong Kong		✓	Philippines	✓	✓
Azerbaijan	✓	✓	Hungary	✓	✓	Poland	✓	✓
Bahamas	✓	✓	Iceland		✓	Portugal		✓
Bahrain	✓	✓	India	✓	✓	Qatar	✓	✓
Bangladesh	✓	✓	Indonesia	✓	✓	Romania	✓	✓
Belarus	✓	✓	Iran	✓	✓	Russia	✓	✓
Belgium		✓	Iraq	✓	✓	Saudi Arabia	✓	✓
Bolivia	✓	✓	Ireland		✓	Senegal	✓	
Botswana	✓		Israel		✓	Sierra Leone	✓	
Brazil	✓	✓	Italy		✓	Singapore	✓	✓
Brunei	✓	✓	Jamaica	✓	✓	Slovakia	✓	✓
Bulgaria	✓	✓	Japan		✓	Slovenia	✓	✓
Burkina Faso	✓		Jordan	✓	✓	South Africa	✓	✓
Cameroon	✓	✓	Kazakhstan	✓	✓	South Korea	✓	✓
Canada		✓	Kenya	✓	✓	Spain		✓
Chile	✓	✓	Kuwait	✓	✓	Sri Lanka	✓	✓
China	✓	✓	Latvia	✓	✓	Sudan	✓	✓
Colombia	✓	✓	Lebanon	✓	✓	Sweden		✓
Congo, Rep	✓		Liberia	✓	✓	Switzerland		✓
Congo, Dem Rep	✓	✓	Libya	✓	✓	Suriname	✓	
Costa Rica	✓	✓	Lithuania	✓	✓	Syria	✓	✓
Côte d'Ivoire	✓		Luxembourg		✓	Taiwan	✓	✓
Croatia	✓	✓	Madagascar	✓		Tanzania	✓	
Cuba	✓	✓	Malawi	✓	✓	Thailand	✓	✓
Cyprus		✓	Malaysia	✓	✓	Togo	✓	✓
Czech Republic	✓	✓	Mali	✓	✓	Trinidad & Tobago	✓	
Denmark		✓	Malta	✓	✓	Tunisia	✓	✓
Dominican Republic	✓	✓	Mexico	✓	✓	Turkey	✓	✓
Ecuador	✓	✓	Moldova	✓	✓	United Arab Emirates	✓	✓
Egypt	✓	✓	Mongolia	✓	✓	Uganda	✓	
El Salvador	✓	✓	Morocco	✓	✓	Ukraine	✓	✓
Estonia	✓	✓	Mozambique	✓		United Kingdom		✓
Finland		✓	Myanmar	✓	✓	United States		✓
France		✓	Namibia	✓	✓	Uruguay	✓	✓
Germany		✓	Netherlands		✓	Venezuela	✓	✓
Ethiopia	✓		New Zealand		✓	Vietnam	✓	✓
Gabon	✓		Nicaragua	✓	✓	Yemen	✓	
Gambia	✓		Niger	✓		Zambia	✓	
Ghana	✓	✓	Nigeria	✓	✓	Zimbabwe	✓	

Table A3: Rentier and Non-Rentier States

<b>Rentier States</b>	<b>Obs.</b>	<b>Non Rentier States</b>	<b>Obs.</b>
Albania	7	Bahrain	7
Algeria	7	Brazil	7
Angola	7	Brunei	7
Argentina	7	Chile	7
Bangladesh	7	China	7
Bolivia	7	Ecuador	7
Botswana	7	Hungary	7
Bulgaria	7	Iran	7
Cameroon	7	Kuwait	7
Congo, Rep	7	Malaysia	7
Congo, Dem Rep	7	Mexico	7
Costa Rica	7	Qatar	7
Côte d'Ivoire	7	Saudi Arabia	7
Dominican Republic	7	Trinidad & Tobago	7
Egypt	7	Turkey	7
El Salvador	7	United Arab Emirates	7
Ethiopia	7		
Gabon	7		
Ghana	7		
Guatemala	7		
Haiti	7		
Honduras	7		
India	7		
Indonesia	7		
Jamaica	7		
Kenya	7		
Mongolia	7		
Morocco	7		
Mozambique	7		
Namibia	7		
Nicaragua	7		
Nigeria	7		
Pakistan	7		
Panama	7		
Paraguay	7		
Peru	7		
Philippines	7		
Poland	7		
Romania	7		
Senegal	7		
Singapore	7		
South Africa	7		
South Korea	7		
Tanzania	7		
Thailand	7		
Togo	7		
Tunisia	7		
Uruguay	7		
Venezuela	7		
Yemen	7		
Zambia	7		