

Does FDI Promote Political Stability? Evidence from Developing Economies

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Abstract

Following the strong emphasis on institutional quality in comparative development, its determinants have received growing attention in recent research. This paper contributes to this research by examining the role of FDI in shaping institutions regarding political stability in the developing world. It hypothesises that FDI contributes to socio-political stability through its socio-economic externalities and political agency potentials of foreign investors. The empirical results using primary bilateral greenfield FDI flows panel data for a large sample of developing countries evidence that FDI favours institutional development in terms of political stability. Remarkably, the results are robust to a range of specifications and alternative identification strategies as well as a series of sensitivity tests. Overall, this study outlines another channel through which FDI can contribute to development: the promotion of political stability.

Keywords: Greenfield, FDI, institutions, political stability, development

JEL Codes: F21, C23, E02, C26

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1) Introduction

Social and political stability is key to economic development. However, the world is still prone to political violence of different forms and manifestations. A quarter of the world's countries witnessed a dramatic surge in civil unrest in 2019 and that figure is predicted to rise to 40 % in 2020, Verisk Maplecroft has reported, while predicting the 2020s as the decade of rage, unrest and shifting geopolitical sands. Politically motivated violence has been common in many places in the world over the recent years. The Center for Systemic Peace's 2017 global report indicates an increase in the global magnitude of societal warfare¹ since 2011, after a declining trend from 1991. Similarly, Pettersson et al. (2019) documents that years from 2013 through 2018 have all recorded higher levels of non-state violence than any other year since 1989. Whether in the form of inter-rebel or state vs. rebels conflicts in Syria, communal conflicts in Ethiopia, political protests in Lebanon, cartel-related violence in Mexico, or terrorism attacks in Nigeria, turmoil remains pervasive in the developing world.

A growing body of research has investigated the causes of political instability and conflicts (Collier et al., 2008; Collier and Hoeffler, 2004, 1998; Elbadawi and Sambanis, 2002; Fearon and Laitin, 2003). Overall, determinants of political violence and instability are grouped into two main factors: political grievances and economic conditions. Political grievances refer to unfair, oppressing, or discriminating treatments facing groups of people and susceptible to lead them to revolt. In the view of economic conditions, poverty and bad economic prospects have been found to spark protests and conflicts. As pointed out by Acemoglu and Robinson (2012), roots of discontent in countries shaken by the Arab Spring lie in poverty. Likewise, terrorism ideology is thought to thrive in environments of despair and misery due to lacking economic opportunities. In this regard, factors with the potential to improve economic opportunities are expected to contribute to ensuring political stability by eliminating reasons for grievance and alleviating greed among people.

FDI is considered to be an important driver of growth for developing economies through various channels like technology transfer and productivity spillovers. It also generates significant social development opportunities through jobs creation and poverty reduction. In this respect, two

¹ Societal warfare includes civil, ethnic, and communal conflicts

types of FDI deserve a particular attention, greenfield investments, and the extension of existing capacity. In what follows, I refer to these two types as greenfield FDI, in line with the definition of the data source pertaining to this paper. By creating new capital assets and additional production capacity, greenfield FDI directly generates new economic activity and jobs². From the population side, greenfield FDI can thus support social and political stability substantially, by improving economic conditions. From the government side, strengthening competitiveness to attract FDI has become a policy of great interest in many countries. In some cases, Investment Promotion Agencies (IPAs) are dedicated to this objective. As a result, there has been a global rush in many countries to promote a more favourable environment for foreign investors. In 2016 for example, 108 countries, including 106 developing countries adopted a total of 111 investment laws that promote investment (UNCTAD, 2017). Socio-political stability is key to the success of FDI-driven institutional reforms as a turbulent environment renders investment risky and uncertain to foreign investors. In consequence, by triggering institutional reforms, greenfield FDI can increase governments willingness to set up a still and peaceful environment and reduce political risk for foreign investors.

Fig. 2 (section 3.3.3) shows a close association between greenfield FDI inflows as a percent of GDP and the socio-political institutional environment as measured by the *political stability and absence of violence index* from the Worldwide Governance Indicators (WGI) database over the period 2003-2017 for the full set of the paper's sample developing countries. The overall continuous deterioration in political stability was accompanied by a corresponding decrease of FDI over the period. In line with the preceding arguments, it appears relevant to question whether this positive relationship between greenfield FDI and political stability can receive a causal interpretation.

This paper examines the impact of FDI on socio-political stability in developing countries. Literature on the institutional impact of FDI is relatively new and weakly explored. Some studies like Demir (2016) approached institutions from a global perspective using aggregate measures of institutions. Others focused on specific aspects of institutions including corruption, political and market institutions (e.g., Ali et al., 2011; Dang, 2013; Kwok and Tadesse, 2006; Larraín B. and

² Greenfield FDI consist of the creation of firms from scratch. Extension of existing capacity refers to an increase in the capital of already established foreign enterprises. The third type of FDI is mergers and acquisitions (M&A). Unlike the first two types, which I refer to as greenfield FDI, M&A does not imply an immediate increase in the capital stock and its impact on economic activity is less straightforward.

Tavares, 2004; Long et al., 2015). The political stability aspect has not been explored per se. Following literature on the effects of globalization on conflicts, where the focus has been on trade, few studies such as Bussmann (2010) and Mihalache-O'Keef (2018) have investigated the particular role of FDI along with various measures of conflict (onset, occurrence, intensity...). This paper rather examines how FDI can shape the institutional environment of host countries in terms of its capacity to promote socio-political stability conditions and absence of violence (hereafter political stability). This includes not only low risk of armed conflicts, but also government instability, terrorist threat, protests and riots, violent demonstrations, and social unrest. Indeed, these factors also pose serious threats to development by preventing the economy from working effectively as they are associated with greater uncertainty, disruption of economic activity, loss of human life, infrastructure damage, and destruction of human capital, to name a few. In addition, these factors are also subject to the political agency of MNCs and FDI socio-economic influences on greed and grievance. Accounting for them gives a more complete sense of the institutional change potential of FDI with regard to political stability.

The present study adds to the literature on the institutional impact of FDI in a number of aspects. First, it extends existing work by exploring the political stability aspect of institutions in the developing world. It thereby emphasizes the stability-related political institutional environment required to promote socio-economic development. Second, while all studies in this literature use global FDI, I depart from them by looking at greenfield FDI to better test my hypotheses. Not all types of FDI are equal in their capacity to generate economic opportunities and therefore to temper greed and grievance. I am interested in greenfield FDI as it has the most direct impact on economic growth and jobs creation. On the methodological side, addressing the endogeneity issue of FDI with respect to political stability is crucial for achieving the goal of this paper. Taking advantage of the bilateral structure of the greenfield FDI data used in this study, I develop a gravity-based instrumental variable approach a la Frankel and Romer (1999), never used before in this literature. I supplement this approach with the system Generalized Method of Moments (SYS-GMM) for comparison purpose and also to account for the potential inertia nature of political stability through a dynamic model. The results clearly evidence that FDI favours political stability and appear quite robust to various specifications and estimations methods, as well as a series of sensitivity tests.

The rest of the paper is organized as follows: the next section revisits the link between FDI and institutions with a focus on political stability. Section 3 introduces the empirical methodology and

describes the data. In section 4, I present and discuss the empirical results followed by robustness tests in section 5. The final section concludes.

2) Literature review

The link between institutions and FDI 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 given to economic factors such as infrastructure, market size, exchange rates and labour 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. Factors like democracy, rule of law, property rights, low levels of corruption, and political stability have been identified as positively associated with FDI.

As foreign direct investors have been intensifying their investments and becoming major actors in developing countries, a research interest has emerged in new aspects of FDI impact including the institutional dimension. As a matter of fact, looking at only one aspect of the linkage, namely the effect of institutions on FDI, as most studies did, has major limitations in analyzing interactions between FDI and institutions: (i) this implies that multinational corporations (MNCs) always adapt to the local institutional environment, thereby ignoring their potential for political agency according to the profit-maximizing environment they need, in particular in developing countries where they are known to have high bargaining power; (ii): FDI-induced institutional reforms in countries competing to attract FDI are overlooked; (iii): the possibility that FDI socio-economic effects can trigger institutional change is disclaimed.

In response to these limitations, some studies, albeit comparatively few, have explored the reverse causality by investigating how FDI impacts institutions in 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's 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 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 study of FDI impact on institutional quality across Vietnam's provinces. Malesky (2009) also resorted to investor's lobbying efforts to demonstrate how FDI has contributed to shaping economic reforms in Eastern Europe. These empirical evidence 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 MNCs attempts to bring about institutional changes clearly appears to be the increase in 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 impacts 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. His results echo Larraín B. and Tavares' (2004) assessment of the effect of openness on corruption who found that FDI is significantly associated with lower corruption levels. However, Webster and Piesse (2018) have recently found no difference in the behaviour of foreign-owned and domestic firms with respect to corrupt practices based on firm-level data in emerging countries.

Research on the effect of FDI on political instability has been limited to one dimension of instability: internal or interstate conflicts. This research follows the broader literature on globalization and conflicts with prominence given to trade. According to the liberal view, economic integration reduces the likelihood of international conflict as countries would avoid militarized disputes to secure their mutually benefiting economic exchanges. Economically integrated countries will then tend to give preference to peaceful solutions to disputes given the extensive exchange of goods, services and capital between their private economic agents (Russett and Oneal, 2001). With the exception of studies such as Magee and Massoud (2011), Sorens and Ruger (2014), and Olzak (2011) who find either the opposite effect or no significant effect, the liberal proposition has found massive empirical support of various kinds. Many of these studies

have either focus on the trade component of globalization or resorted to a composite measure of globalization, (e.g., Barbieri and Reuveny, 2005; Blanton and Apodaca, 2007; Reed, 2003; Russett and Oneal, 2001). Only a few have examined the effect of FDI, either along with various indicators of globalization (Gartzke et al., 2001; Gartzke and Li, 2003) or as focus point (Busmann, 2010) and tend to find a tempering effect of FDI on interstate conflicts. For instance, Busmann (2010) found that inflows and stocks of FDI reduce the risk of an outbreak of a fatal dispute between countries based on data for the years 1890-2000 and using simultaneous equation models to address the endogenous character of the relationship.

The effect of globalization on civil conflicts has rather been analyzed in the light of its socio-economic externalities and the political agency potential of foreign investors. In the socio-economic externalities perspective, globalization affects civil strife through its socio-economic influences on greed and grievance, the two main determinants of internal conflict (Collier et al., 2008; Collier and Hoeffler, 2004; Miguel et al., 2004). Depending on its effects on economic opportunities, inequalities and welfare, globalization can either exacerbate or temper greed and grievance and subsequently feed or counter civil conflicts. From the liberal position, globalization is argued to favour economic growth, improve the efficiency of redistribution, and generate welfare for the entire population. Accordingly, it is expected to be a boon to domestic peace by eliminating reasons for grievance and alleviating greed among people (Mihalache-O'Keef, 2018). On the other hand, globalization critics, in particular the structuralist position, are sceptical as they point out globalization-driven opportunities to be associated with discriminative redistributive process, paving the way to discontent (e.g., Koubi and Böhmelt, 2014; Olzak, 2011). The empirical investigation of these two contradictory claims through the lens of FDI is very sparse. While Barbieri and Reuveny (2005), and Blanton and Apodaca (2007) found results consistent with the liberal position, Sorens and Ruger (2014) concluded that FDI has no effect on civil conflict. More recently, Mihalache-O'Keef (2018) argued that which position (liberal or structuralist) FDI's effect on intrastate conflict matches, depends on the sector of investment. Accounting for the sectoral distribution of FDI, he found that primary sector FDI exacerbates the risk of civil conflict while service sector FDI alleviates it.

The Political Agency perspective relates to the lobbying and pressure activities discussed earlier. FDI implies establishing a lasting interest by the direct investor in the host country through the control or a significant degree of influence over the management of the direct investment

enterprise³ (IMF, 2009). This characteristics of FDI makes it particularly sensitive to the political environment of investment destinations. Cognizant of foreign investors' need for a stable environment, governments are pushed towards providing such an environment in order to attract and maintain foreign capital. The Watergate scandal that reported many American corporations as paying bribes to foreign officials has also revealed foreign investors to be strategic players with direct actions in the political sphere of host countries. This political agency potential was evidenced in studies including Dang (2013), Long et al. (2015) and Malesky (2009), following 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). However, the stabilization role of FDI is sometimes questioned as allegations have been raised against MNCs that they have contributed to undermining local institutions in order to ensure control over local resources. An example of this is the financial and logistical support provided by the mining company AngloGold Ashanti in 2003-2004 to a rebel group operating in the gold-rich district of Ituri in DRC (Berman et al., 2017).

In the aftermath of dimensions of institutions such as corruption (Kwok and Tadesse, 2006; Larraín B. and Tavares, 2004; Webster and Piesse, 2018), rule of law (Long et al., 2015), market conditions (Malesky, 2009; Ali et al., 2011), this paper complements research on the institutional impact of FDI by examining the political stability dimension of institutions. It approaches political stability from an institutional perspective as an indicator of governance which goes beyond warfare and considers more dimensions including government (in)stability, terrorist threat, protests and riots, violent demonstrations, and social unrest. Indeed, these factors also pose serious threats to development by preventing the economy from working effectively as they are associated with greater uncertainty, disruption of economic activity, loss of human life, infrastructure damage, and destruction of human capital, to name a few. This approach thus relaxes the restrictive view of political stability with regard to the stability-related political institutional environment required to promote socio-economic development. In addition, these factors are also subject to the political agency of MNCs and FDI socio-economic influences on greed and grievance. Accounting for them

³ As defined by the Balance of Payments and International Investment Position Manual: Sixth 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 more of the voting power (if it is incorporated, or the equivalent for an unincorporated company) in the direct investment enterprise.

gives a more complete sense of the institutional change potential of FDI with respect to political stability.

In the body of work on FDI and its institutional effects, there is a quasi-systematic resort to global FDI, comprising greenfield FDI, and Mergers and acquisitions. The framework of analysis in this paper aims to emphasize the socio-economic influences of FDI on greed and grievance as the dominant mechanism relating FDI to political (in)stability of the recent decades. Indeed, there has been little or no interstate warfare since 1991, the end of the cold war (Marshall and Elzinga-Marshall, 2017). Most of political instability of the recent decades have arisen in the forms of internal crises. However, not all types of FDI are equal in their capacity to generate economic opportunities and therefore influence greed and grievance. Consequently, I focus on greenfield FDI as it has the most direct impact on economic conditions through jobs creation and poverty reduction.

3) Empirical methodology

In this section, I present the econometric approach guiding the empirical analysis of the effect of FDI on political stability. Section 3.1 introduces the model, followed by the identification strategy in section 3.2. And section 3.3 describes the data.

3.1) The model

To investigate the effect of FDI on developing countries' institutions in terms of socio-political stability, I use the following linear specification relating political stability to its determinants:

$$Polstab_{it} = \alpha + \beta_1 FDI_{it} + \sum_{k=2} \beta_k X_{it} + \varepsilon_{it} \quad (1)$$

where i and t refer to countries and time period respectively, $Polstab_{it}$ is a measure of political stability, FDI_{it} is greenfield FDI inflows as a percent of GDP, α a constant, ε_{it} represents the error term capturing omitted factors and noise, and X_{it} a vector of control variables reflecting the main time-varying determinants of political stability. These include:

The (log) real per capita GDP ($LogGDPPC$) controls for economic wealth. Lower per capita GDP has been found to be positively associated with civil conflict as worse income opportunities make people more likely to take up arms (Collier and Hoeffler, 1998, 2002, 2004; Miguel et al.,

2004). In addition, sufficiently centralized and powerful states with the real authority to sanction what anyone does are essential to good political institutions (Acemoglu and Robinson, 2012). And poor countries may face binding financial constraints in building such states.

The real per capita GDP growth rate (*Growth*) controls for the effects of income variations. Declining growth perceived as a negative income shock is disruptive to political stability as it makes easier recruitment of fighters from a growing pool of jobless people. It also may increase income inequality and generate tensions across social classes or with the state (Miguel et al., 2004).

Commodity exports as a percent of GDP in log (*LogCommod*): this variable relates to the resource curse literature pointing out how detrimental natural resources can be to institutions and development. Moreover, it is considered a common source of rebellion financing, matching the greed motive of conflicts (Collier and Hoeffler, 2004).

Unemployment (*Unemp*) captures in part economic opportunities. Jobless people constitute a potential pool for recruitment in armed groups and growing unemployment rates have traditionally been at the core of social protests.

Democracy (*Polity2*) is considered an inclusive political institution (Acemoglu and Robinson, 2012) and has the potential to prevent political exclusion and repression towards certain groups of the society, therefore limiting grievance-driven political instability.

Demographic pressures are captured by religious tensions (*Religion*) and ethnic tensions (*Ethnicity*). These tensions are likely to result from the size of the population as larger population countries are more likely to have higher religious and ethnic fragmentations, which may cause religious and ethnic tensions (Alesina and La Ferrara, 2005). Accordingly, I also include the (log) total population (*LogPop*) as an additional control.

Education, proxied with the (log) secondary school enrolment (*LogEduc*), may affect the risk of social unrest and conflict through changing attitudes. Collier and Hoeffler (2004) noted that conflict episodes started from lower school enrollment.

3.2) Identification strategy

Eq (1) will be first estimated using OLS regressions. As it is not straightforward to interpret OLS estimates of β_1 as a causal effect, addressing the endogeneity issue of FDI with respect to political stability is crucial for achieving the goal of this paper. Institutional quality is found to be a strong predictor of FDI location in the literature on FDI determinants. Countries with a better political

environment in terms of political stability will appear more attractive to investors and will tend to be the top destinations of FDI. This means that the coefficient of FDI – β_1 – can be driven by reverse causality. Another source of identification issue is omitted factors that could jointly affect the socio-political environment and FDI inflows and are not captured by the control variables. The challenge is then to formulate a strategy suitable for identifying the causal effect of FDI on political stability. That said, I rely on two alternative identification strategies: the Instrumental Variable Method (IV) and the System Generalized Method of Moments (SYS-GMM) in a dynamic framework. The SYS-GMM will also serve for comparison, following, among others, Murin and Wacziarg (2014) and Docquier et al. (2016).

3-2-1) The gravity-based instrumental variable approach

Finding good instruments in a panel setting is a daunting task, especially that these instruments must vary over time. Pinto and Zhu (2016) in their analysis of the effect of FDI on corruption constructed an instrument for FDI using the sum 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 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”. They actually drew on Larraín B. and Tavares (2004) who had developed the same instrument, adding cultural proximity to the construction of the variable. Taking note of these attempts to provide a reliable instrument for FDI and taking advantage of the bilateral structure of the greenfield FDI data used in this study, I adopt the Frankel and Romer’s (1999) approach to construct a gravity-based instrumental variable for FDI.

The instrument is obtained in two steps. First, I construct gravity-based predicted bilateral FDI flows by regressing actual bilateral FDI on exogenous variables which are unlikely to directly affect political stability (see Eq. (2) below). Second, the fitted bilateral FDI are aggregated by time period and host country to obtain the exogenous component of host countries’ total FDI in every time period. The instrument for aggregate actual FDI as a percent of GDP in Eq. (1) is the aggregate predicted FDI inflows expressed as a percent of destination countries’ GDP. Following Frankel and Romer (1999), the gravity-based instrumental variable method has been extended in numbers of studies, especially in the trade and migration literature, among which Alesina et al. (2016), and

Ortega and Peri (2014). To my knowledge, this is the first time this approach has been used to study the effects of FDI. The “pseudo” gravity equation from which the predicted FDI are computed is given by:

$$\text{Log}(FDI_{ijt}) = \alpha_0 + \alpha_j + \alpha_t + \beta_1 \text{Lang}_{ij} + \beta_2 \text{Log}(GDP_{jt}) + \beta_3 \alpha_t \text{Log}(Dist_{ij}) + \varepsilon_{ijt} \quad (2)$$

where $\text{Log}(FDI_{ijt})$ is the natural logarithm of greenfield FDI received by host country i from investing country j at time t ; Lang_{ij} measures language links between both countries: a common language shared by two countries is expected to ease their transborder investments; $\text{Log}(GDP_{jt})$ represents the natural logarithm of GDP⁴ of the investing country as richer countries are more likely to invest abroad; $\text{Log}(Dist_{ij})$ is the natural logarithm of the geographical distance between both countries which I interact with time period dummies (α_t): beyond the logic behind Pinto and Zhu (2016) and Larraín B. and Tavares's (2004) instrument that outflows from a country are negatively related to its distance from partner countries, the interaction of distance with time dummies accounts for common shocks in communication and technologies which have alleviated physical distance barriers to transborder investment over time. While all these independent variables have been commonly used in studies on FDI determinants based on a gravity model, including Bergstrand and Egger (2013), di Giovanni (2005), Head and Ries (2008), and Stein and Daude (2007), there is no reason to believe that they could affect (at least directly) political stability. α_0 is a constant, α_t a time fixed effect, and α_j an origin country fixed effect. Following Docquier et al. (2016), I do not include recipient country fixed effect because it could capture the influence of host countries' institutions on foreign investors' investment decisions.

3-2-2) *The System Generalized Method of Moments (SYS-GMM)*

For comparison purpose and also to account for the potential persistence in most institutional factors, I supplement the gravity-based instrumental variable approach with the SYS-GMM proposed by Blundell and Bond (1998) using a dynamic specification (i.e., adding the lagged dependent to the set of regressors in Eq (1)). The SYS-GMM estimator has the property to address the so-called Nickell bias (Nickell, 1981) which arises from including the lagged dependent

⁴ FDI and GDP values are expressed in nominal terms. They are effectively deflated by the multilateral resistance terms. Deflating them by some factor such as the CPI or the GDP deflator to express them in real terms could produce misleading results.

variable as a regressor in a fixed effects regression, and also to account for potential endogeneity of the controls. The SYS-GMM technique combines the equation in first differences with the equation in levels in a system. Under the assumption that lagged variables 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. The first set of estimations rely only on internal instruments. Then, I introduce the gravity-based instrument as external instrument for FDI.

3.3) Data and Sample

The investigation of FDI impact on political stability is based on a sample of 116 developing economies. The gravity model is estimated on these 116 countries (host countries) and 158 home countries (developing and developed countries)⁵. The data span the period between 2003 – the first year for which greenfield FDI data are provided – and 2017, allowing to focus on the underpinning factors of trends in political stability of recent years. Given the relatively little variation over time of the institutional quality variable, I use three-year averages of the data, resulting in five time periods. The selected countries as well as the time period respond to the data availability. The full sample of countries is provided in appendix, tables 9 and 10.

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

The bilateral FDI data are obtained from the fDi markets database of the Financial Times. The database provides information on greenfield FDI worldwide, including source market, destination market, and capital investment. The values are expressed in current US dollars. The sample dataset comprises 4,204 country pairs from 116 developing destination countries and 158 source countries. Data on language and geographical distance are taken from the CEPII database. The former is a dummy variable equaling 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 the most

⁵ 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 the USA. The rest of the sample concerns developing countries (based on the UNCTAD classification).

populated cities of the country pairs, in kilometre. The source country's GDP data are from the World Development Indicators (WDI) of the World Bank, in current USD.

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

Political stability is measured with the political stability and absence of violence index of the Worldwide Governance Indicators (WGI). This is one of the six dimensions of governance reported by the WGI capturing the institutional environment in terms of perceptions of the likelihood of political instability and/or politically motivated violence. The dimensions of (in)stability captured by the index include, among others, armed conflicts, government stability, terrorism, international tensions, protests and riots, violent demonstrations and social unrest⁶. The index is generated in such a way that it approximately ranges from -2.5 to 2.5, with higher values corresponding to better institutions. For the econometric estimations, I rescale the index so that it lies between 0 and 1, with 1 reflecting the highest political stability for the purpose of this study. The WGI have become widely used by academics (recent papers include Alquist et al., 2019; Batista and Vicente, 2011; Deng et al., 2018) and policymakers (for example, the Millennium Challenge Corporation relies on four of the WGI measures for determining country eligibility⁷), and its index of political stability appears to closely match the goal of this study. As a robustness check, I alternatively construct another index of political stability from three indicators of the International Country Risk Guide (ICRG)⁸, namely government stability, internal conflict and external conflict, each with a minimum score of 0 and a maximum score of 12. Following the ICRG methodology, the index is computed as the sum of the three indicators. As previously, I transform the scores so that they range between 0 and 1 for the econometric estimations.

FDI inflows as a percent of GDP: for a given year and from the bilateral FDI flows presented above, I compute total FDI received by a country from all source countries to obtain the aggregate FDI inflows for that country and year. The aggregate FDI is then expressed as a percent of the host country's current GDP using WDI data. In order to explore possible heterogeneity regarding the

⁶ For the methodology and list of the individual variables as well as data sources used to construct the index, see <https://info.worldbank.org/governance/wgi/Home/Documents>

⁷ See <https://www.mcc.gov/resources/doc/report-selection-criteria-methodology-fy19> for details

⁸ For details on the variables, see <https://www.prsgroup.com/wp-content/uploads/2012/11/icrgmethodology.pdf>

type of source country, I also distinguish between flows from developed countries and flows from developing countries.

Real per capita GDP, Real per capita GDP growth, Commodity exports as a percent of GDP, Unemployment (rate), Population size, and Education (measured with the gross enrolment rate in secondary education) data are all obtained from the WDI. Democracy is measured with the Polity2 variable of the POLITY IV dataset. Widely used in literature, it ranges between -10 and +10, with +10 equating to very democratic institutions. Religious tensions and ethnic tensions are taken from the ICRG. Ranging from 0 to 6, higher ratings are given to countries where tensions are minimal. For ease of interpretation, I rename them religious cohesion, and ethnic cohesion, respectively.

3.3.3) Some descriptive statistics

During the period analyzed, the developing countries sample registered total greenfield FDI inflows fluctuating around \$ 500 billion apart from the 2008 level which jumped to over \$ 895 billion. The surge observed in 2008 demonstrates the importance of the developing region as host for FDI during the 2007-2008 global financial crisis (UNCTAD, 2010). Developed economies have remained the largest source of FDI to developing countries, but with a declining share as South-South FDI has been growing over time (Fig.1). For example, while the share of greenfield FDI from developing economies in total FDI was 24 % over the first three years, it almost doubled over the last three years (44.2 %), virtually equally important as flows from developed economies. This growing role of developing countries as new sources of investment within the developing world is driven by outflows from Asia with China⁹, Republic of Korea, Singapore, India, and Malaysia accounting for over 50% of greenfield FDI outflows over the period¹⁰.

Greenfield FDI inflows within the developing region are unevenly distributed. The top 10 largest recipients account for more than half the total inflows during the period, with China taking the lead. Most of them are emerging or high-income economies¹¹. In particular, all BRIC countries are among the top 5 FDI destinations. In contrast, the bottom countries are generally low-income countries, most of them from Sub-Saharan Africa.

⁹ Here China includes Taiwan

¹⁰ Other countries such as the United Arab Emirates, Russia, and South Africa are also major investors

¹¹ Based on the World Bank income group classification

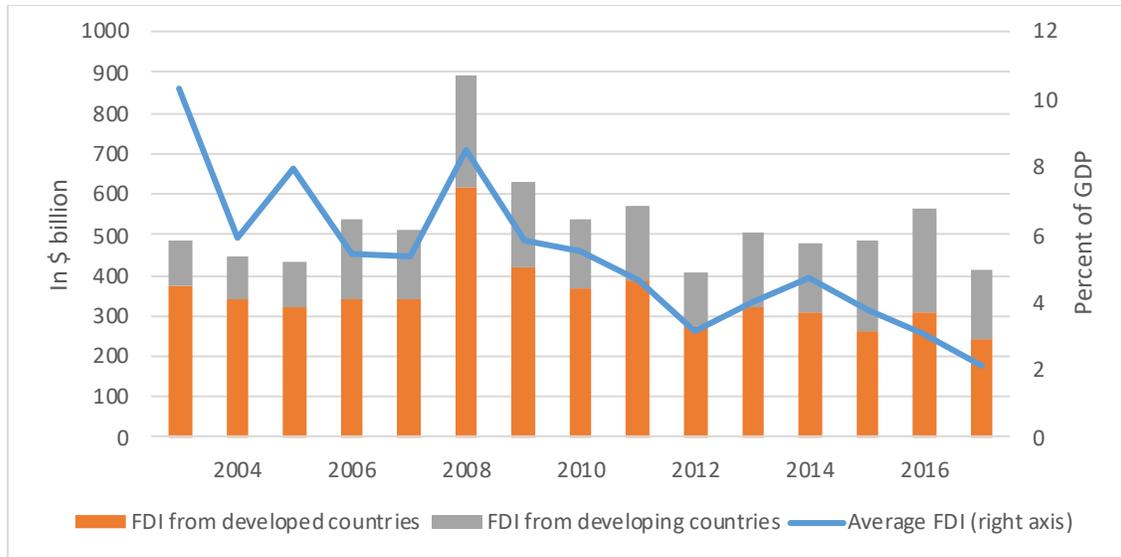


Figure 1: *Greenfield FDI inflows dynamics.*

However, the picture is quite different with inflows as a percent of GDP. Greenfield FDI represented a big share of GDP for small economies with countries such as Mozambique, Liberia and Mongolia where average FDI over the period was more than 20% of GDP, outperforming China with average FDI less than 3% of GDP. While Sub-Saharan Africa was the smallest recipient of FDI in absolute terms, the region turned to be the second-largest host for FDI as a percent of GDP (almost 6%). Like the evolution of current inflows, the share of greenfield FDI in GDP was instable along the period, but with an overall downwards trend, especially from 2008 (Fig. 1).

Turning to the developing countries' institutions, the data indicate that political stability went deteriorating along years with 2014 registering the lowest score of -0.4 on a worldwide approximate scale from -2.5 to 2.5 (Fig. 2). In spite of some improvements in years such as 2006 and 2015, the developing countries sample have never witnessed a political environment more stable than that of the beginning of the period. While the highest level of institutional quality in terms of political stability was in Europe & Central Asia, the most unstable environment was observed in South Asia, with a score of -1.7, far below the sample average of -0.37. The data point out a greater scope for substantial improvement in developing countries institutions in terms of political stability. As a first step towards exploring the possible contribution of FDI in achieving this, Fig. 3 shows that greenfield FDI is positively correlated with political stability. Finally, table 1 provides summary statistics on the variables used in the regression analysis.

Table 1. *Summary Statistics*

Variable	Obs	Mean	Std. Dev.	Min	Max
Polstab	588	0.605	0.206	0	1
FDI (total)	577	5.321	7.368	0	59.189
FDI (from the North)	577	3.071	5.035	0	45.329
FDI (from the South)	577	2.250	4.422	0	54.349
LogGDPPC	571	8.094	1.360	5.364	11.879
Growth	584	2.748	3.748	-20.148	27.736
LogCommod	487	1.135	2.056	-10.673	4.232
Unemp	570	7.734	5.707	0.147	32.989
Polity2	558	3.025	6.092	-10	10
Religion	485	4.348	1.327	1	6
Ethnicity	485	3.864	1.236	1	6
LogPop	595	16.105	1.803	10.415	21.044
LogEduc	472	4.154	0.548	1.786	4.825

4) Estimations results

The results are organized in two main sections. I first estimate the gravity model of Eq (2) that will serve for deriving the instrumental variable for FDI inflows. Second, I investigate the link between FDI and political stability using OLS method and the two identification methods, namely the IV-2SLS and the SYS-GMM.

4.1) PPML estimates of the gravity equation

Given the large number of zeros in the bilateral migration data, OLS estimates of the gravity equation parameters are very likely to be inconsistent. The Poisson regression by pseudo maximum likelihood appears to be the most appropriate method to estimate the above gravity model. More precisely, I rely on the Stata PPML command based on the method of Silva and Teneyro (2011) to identify and drop regressors that may cause the nonexistence of the (pseudo) maximum likelihood estimates. The results are given in table 2 with robust standard errors (clustered by

Table 2. *PPML estimates of the pseudo-gravity equation*

Bilateral Greenfield FDI flows	
Language	0.360** (0.183)
LogGDP_origin	0.803*** (0.135)
LogDist x Period1	-0.334*** (0.118)
LogDist x Period2	-0.529*** (0.0794)
LogDist x Period3	-0.361*** (0.0933)
LogDist x Period4	-0.343*** (0.0883)
LogDist x Period5	-0.413*** (0.0856)
Constant	-1.455 (3.197)
Observations	20,839
Destination FE	Yes
Time FE	Yes

Notes: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. The sample includes 116 destination countries and 158 developing and developed source countries. Robust standard errors clustered by country pairs are in parentheses.

country pairs). Overall, the regressors are strong predictors of bilateral FDI flows as all coefficients are highly significant. In addition, the coefficients have the expected signs: language links favour greenfield projects, countries tend to receive more investments from richer economies, and countries invest less in more remote destinations, everything else being equal. These results are consistent with findings of previous studies including Bergstrand and Egger (2013), di Giovanni (2005), Head and Ries (2008), and Stein and Daude (2007). Table 11 (in appendix) reports the first-stage regression results of the IV-2SLS estimation of political stability using the baseline specifications. The results show that the predicted FDI obtained from the PPML estimation of the gravity model is a strong predictor of actual FDI as the coefficients are all positive and highly significant. In addition, Fig. 4 (in appendix) displays a strong positive correlation between the FDI variable and its instrument with a correlation coefficient of 0.34.

4.2) Investigating the effect of FDI on political stability

The panel structure of the data allows to explore the effect of greenfield FDI on political stability using its time-varying determinants only as time-invariant factors are captured by country fixed effects (FE). The model is first estimated with OLS regressions. 2SLS and SYS-GMM are then employed to address possible endogeneity of FDI in specific manners discussed earlier.

4.2.1) OLS estimates

Table 3 reports OLS estimates of the political stability model. I start by relating political stability to economic variables only, in columns (1) and (2), as they proved to be more important determinants of socio-political instability than measures of political grievance (Collier and Hoeffler, 1998, 2002, 2004; Fearon and Latin, 2003; Miguel et al., 2004). The results indicate that FDI is positively and significantly related to political stability. On average, a 100 point increase in FDI inflows as a percent of GDP is associated with an improvement of institutions of about 0.2. Higher income as well as a positive shock to income favour stability as Per capita GDP and its growth rate have the expected signs and are highly significant, except growth in column (2). The negative coefficient of commodity exports is consistent with the “resource curse” hypothesis and the greed motive of instability. However, it is not statistically significant. Unemployment is significant with the expected sign: higher rates of unemployment breed political instability.

From column (3) through column (12), I gradually add the non-economic determinants of political stability. FDI remains positively associated with institutional quality. The coefficient becomes insignificant only in columns (9), (10) and (11) after adding the population and education variables as final additional controls. Overall, the link of the economic variables with political stability is robust to the inclusion of the non-economic variables. They tend to keep their sign and statistical significance as in columns (1) and (2). Turning to the non-economic variables, democracy has a positive association with political stability, although not significant. Religious cohesion and ethnic cohesion have the expected signs with statistical significance at conventional levels. Population has a negative coefficient, and significant in specifications without time FE, suggesting that larger populations increase the risk of political instability. Education is negatively and significantly related to institutions: educated people might be more demanding of the government and resort to protests to get things changed.

Table 3: *OLS estimates of the political stability model*

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Political stability											
FDI	0.00243*** (0.000796)	0.00190** (0.000801)	0.00247*** (0.000800)	0.00191** (0.000806)	0.00234*** (0.000840)	0.00163* (0.000862)	0.00230*** (0.000864)	0.00158* (0.000877)	0.00129 (0.000917)	0.00143 (0.000901)	0.00155 (0.000971)	0.00165* (0.000978)
LogGDPPC	0.0798*** (0.0270)	0.177*** (0.0389)	0.0764*** (0.0271)	0.175*** (0.0395)	0.0680*** (0.0257)	0.176*** (0.0396)	0.0703*** (0.0256)	0.179*** (0.0379)	0.0891*** (0.0248)	0.167*** (0.0419)	0.111*** (0.0340)	0.170*** (0.0401)
Growth	0.00259*** (0.000946)	0.00116 (0.00119)	0.00255** (0.00103)	0.000864 (0.00127)	0.00220** (0.00108)	0.000449 (0.00133)	0.00210** (0.00103)	0.000344 (0.00129)	0.00184* (0.00108)	0.000574 (0.00123)	0.000576 (0.00118)	-0.000806 (0.00163)
LogCommod	-0.00355 (0.00453)	-0.00545 (0.00413)	-0.00262 (0.00479)	-0.00460 (0.00449)	-0.00495 (0.00553)	-0.00696 (0.00529)	-0.00588 (0.00556)	-0.00791 (0.00529)	-0.00777* (0.00455)	-0.00791 (0.00509)	-0.00414 (0.00326)	-0.00369 (0.00399)
Unemp	-0.00435** (0.00204)	-0.00550** (0.00214)	-0.00460** (0.00193)	-0.00590*** (0.00205)	-0.00463** (0.00191)	-0.00585*** (0.00207)	-0.00422** (0.00194)	-0.00546** (0.00209)	-0.00484** (0.00191)	-0.00559*** (0.00203)	-0.00423** (0.00208)	-0.00525** (0.00225)
Polity2			0.00156 (0.00489)	0.00333 (0.00489)	0.00121 (0.00466)	0.00303 (0.00477)	0.00145 (0.00444)	0.00329 (0.00455)	0.00270 (0.00452)	0.00334 (0.00457)	0.00169 (0.00483)	0.00211 (0.00485)
Religion					0.0488*** (0.0150)	0.0543*** (0.0141)	0.0398** (0.0166)	0.0451*** (0.0159)	0.0432** (0.0165)	0.0457*** (0.0160)	0.0363* (0.0194)	0.0399** (0.0188)
Ethnicity							0.0287 (0.0176)	0.0297* (0.0155)	0.0284* (0.0167)	0.0294* (0.0155)	0.0289* (0.0157)	0.0271* (0.0147)
LogPop									-0.125** (0.0534)	-0.0413 (0.0604)	-0.113* (0.0628)	-0.0655 (0.0623)
LogEduc											-0.112** (0.0502)	-0.0963* (0.0496)
Constant	-0.0188 (0.227)	-0.760** (0.311)	0.00459 (0.224)	-0.752** (0.317)	-0.138 (0.228)	-1.004*** (0.335)	-0.232 (0.240)	-1.108*** (0.336)	1.687* (0.868)	-0.325 (1.180)	1.794* (1.007)	0.477 (1.126)
Observations	472	472	465	465	415	415	415	415	415	415	346	346
R-squared	0.096	0.151	0.098	0.156	0.121	0.189	0.140	0.209	0.179	0.212	0.238	0.263
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Notes: *** p<0.01, ** p<0.05, * p<0.1. All standard errors (in parenthesis) are heteroskedasticity robust. Political stability is measured with the “political stability and absence of violence index” index of the WGI rescaled between 0 and 1. FDI represents greenfield FDI inflows as a percent of GDP. The first two columns include only economic determinants. The following columns add progressively the other determinants.

The previous regressions excluded two major factors of resentment, poverty and inequality, because of too many missing observations (using WDI data on the poverty headcount ratio at \$1.90 and the Gini index, respectively). In table 12 in appendix, I disregard this concern and extend the last two specifications by adding them. Including these two variables almost halves the observations. This extension does not affect the relationship between FDI and political stability as the coefficient remains positive, albeit insignificant. In the following estimations, I then use models from columns (7) and (8) of table 3 as preferred specification, including both economic and political grievance-related predictors of political stability. I can also build on them to add the population and education variables, but no further addition to include poverty and inequality measures for the reasons exposed above.

4.2.2) 2SLS estimations

In table 4, I re-estimate the preferred specification by 2SLS using the gravity-based instrument. The Kleibergen-Paap Wald F statistic (KP) for weak identification is always very large in the baseline model from columns (1) and (2), at least 22.73, far above the most demanding Stock-Yogo critical value of 16.38. The KP in columns (3) and (4) is above the critical value of 8.96 for 15% maximum IV size. Overall, the KP statistics thus suggest that the instrument is quite strong and performs well in the second stage.

Previous results from OLS estimations are confirmed by the IV-2SLS estimations regarding the effect of greenfield FDI on institutional quality in terms of political stability. In all columns except column (2), greenfield FDI as a percent of GDP exerts a significant and positive influence on political stability. The effect is about 0.8-point increase in the score of the institutional quality index for a 100 percentage-point increase in FDI inflows. This coefficient is much larger compared to that of table 3, suggesting that the OLS coefficients were downwards biased. With the exception of per capita GDP growth and population which become insignificant, the other predictors follow their patterns of earlier results: GDP per capita, religious cohesion and ethnic cohesion have a positive and significant association with the institutional index; the link is negative and significant for unemployment and education; commodity exports and democracy are insignificant with expected signs (negative for the former and positive for the latter). Globally, table 4 is suggestive of a causal and strong impact of greenfield FDI on political stability.

Table 4: 2SLS estimates of the political stability model

	(1)	(2)	(3)	(4)
	Political stability index			
FDI	0.00769*** (0.00276)	0.00464 (0.00298)	0.00832* (0.00472)	0.00799* (0.00475)
LogGDPPC	0.0987*** (0.0288)	0.173*** (0.0313)	0.135*** (0.0412)	0.177*** (0.0447)
Growth	0.000157 (0.00136)	-0.000248 (0.00125)	-0.00162 (0.00177)	-0.00208 (0.00174)
LogCommod	-0.00681 (0.00523)	-0.00755 (0.00507)	-0.00181 (0.00549)	-0.00117 (0.00601)
Unemp	-0.00543*** (0.00197)	-0.00626*** (0.00201)	-0.00500** (0.00215)	-0.00641*** (0.00228)
Polity2	0.00171 (0.00305)	0.00296 (0.00300)	0.000967 (0.00321)	0.00120 (0.00325)
Religion	0.0391*** (0.0127)	0.0446*** (0.0126)	0.0286* (0.0164)	0.0338** (0.0165)
Ethny	0.0270* (0.0162)	0.0288** (0.0138)	0.0311** (0.0146)	0.0292** (0.0134)
LogPop			0.00114 (0.144)	0.0227 (0.143)
LogEduc			-0.151** (0.0706)	-0.143** (0.0718)
Kleibergen–Paap stat	23.45	22.73	10.60	11.19
Observations	414	414	340	340
Country FE	Yes	Yes	Yes	Yes
Time FE	No	Yes	No	Yes

Notes: *** p<0.01, ** p<0.05, * p<0.1. Standard errors (in parenthesis) are heteroskedasticity robust. The excluded instrument is the fitted FDI as a percent of GDP. Political stability is measured with the “political stability and absence of violence” index of the WGI, rescaled between 0 and 1. FDI represents greenfield FDI inflows as a percent of GDP. The Kleibergen-Paap statistics to be compared with the Stock-Yogo critical values to test the instrument’s strength.

4-2-3) SYS-GMM estimations

Tables 5 reports SYS-GMM estimates for comparison purpose and also to account for the potential persistence in political stability through a dynamic specification by adding the lagged institutional index to set of regressors in Eq (1). The results are based on the preferred specification.

Table 5: *SYS-GMM estimates of the dynamic political stability model*

	(1)	(2)	(3)	(4)
	Internal instruments		Gravity instrument	
FDI	0.00288 (0.00188)	0.00517** (0.00243)	0.00340* (0.00198)	0.00584** (0.00257)
Growth	0.00370 (0.00232)	0.00458* (0.00270)	0.00317 (0.00237)	0.00424 (0.00277)
LogGDPPC	0.0102 (0.00794)	0.0113 (0.00880)	0.00537 (0.00817)	0.00790 (0.00936)
LogCommod	0.00816 (0.00746)	0.00784 (0.00744)	0.00665 (0.00720)	0.00717 (0.00717)
Unemp	-0.00186 (0.00266)	-0.00181 (0.00289)	-0.00112 (0.00256)	-0.00134 (0.00286)
Polity2	0.00602*** (0.00224)	0.00600** (0.00233)	0.00518** (0.00219)	0.00543** (0.00229)
Religion	-0.0135 (0.0132)	-0.0172 (0.0147)	-0.0103 (0.0126)	-0.0146 (0.0147)
Ethnicity	0.0161 (0.0100)	0.0218** (0.0110)	0.0140 (0.00908)	0.0202* (0.0105)
Polstab _{t-1}	0.891*** (0.0844)	0.904*** (0.0917)	0.918*** (0.0859)	0.923*** (0.0950)
Observations	331	331	331	331
AR(1)	0.0254	0.0283	0.0227	0.0268
AR(2)	0.156	0.178	0.217	0.238
Hansen	0.391	0.505	0.302	0.519
Country FE	Yes	Yes	Yes	Yes
Time FE	No	Yes	No	Yes

Notes: *** p<0.01, ** p<0.05, * p<0.1. Standard errors (in parenthesis) are heteroskedasticity robust. AR(1) and AR(2): p-values of Arellano-Bond test for serial correlations. Hansen: p-values for the null hypothesis of instrument validity. Columns (1) and (2) rely on internal instruments only. Columns (3) and (4) use the gravity-based instrument for FDI.

Columns (1) and (2) rely on internal instruments only. Columns (3) and (4) use the gravity-based instrument for FDI. The AR(1) and AR(2) p-values of Arellano-Bond test for serial correlation and Hansen J test statistics suggest that the SYS-GMM is correctly specified in all estimations. The SYS-GMM estimates confirm the results obtained with the 2SLS method. FDI keeps having a positive impact on political stability with statistical significance at usual levels, except for column (1). The magnitudes varying about between 0.3 and 0.6 for a 100 point increase in FDI as

a percent of GDP are smaller than the 2SLS estimates but remain larger than OLS estimates, thereby confirming the downwards bias of OLS estimates.

Regarding the control variables, the positive and significant coefficient of the lagged dependent suggests an inertia in political stability in the developing world. Per capita GDP, its growth rate, unemployment, democracy and ethnic cohesion have the expected signs, although they lose significance in some specifications. Religious cohesion and commodity exports fail to significantly affect political stability.

5) Sensitivity checks

This section conducts a series of robustness tests to explore the sensitivity of the main results. First, the results discussed above are based on the measure of institutional quality as provided by WGI political stability and absence of violence index. As I noted earlier, this measure is a composite index of a range of indicators of socio-political stability from various sources. In table 6, I repeat the 2SLS and SYS-GMM estimations of the baseline specification using an alternative measure of political stability obtained from three indicators of the International Country Risk Guide (ICRG)¹³, namely government stability, internal conflict and external conflict, in the way discussed in section 3.3. The results support the previous findings. While 2SLS estimation in column (2) fails to detect a statistically significant effect of FDI on political stability, column (1) shows that FDI contributes to institutional development in terms of political stability. Results from the SYS-GMM estimations are more compelling. The effect is positive and highly significant in all specifications, whether based on internal instruments only or using the gravity instrument as external instrument for FDI. Moreover, the KP statistics indicates that the instrument is strong enough, the AR(1), AR(2), and Hansen statistics suggest that the SYS-GMM model is well specified.

Next, following Demir (2016), I explore whether there is any differential impact of FDI on institutions depending on the origin of investments: developed countries (North) vs. developing countries (South), given allegations raised against Southern investors of undermining developed country achievements in improving institutional quality in the developing world. In table 7, I

¹³ For details on the variables, see <https://www.prsgroup.com/wp-content/uploads/2012/11/icrgmethodology.pdf>

Table 6: 2SLS and SYS-GMM estimates using an alternative measure of political stability

	(1)	(2)	(3)	(4)	(5)	(6)
	IV-2SLS		SYS-GMM			
			Internal instrument		Gravity instrument	
FDI	0.00913** (0.00420)	-0.00655 (0.00421)	0.0118*** (0.00347)	0.00713** (0.00331)	0.0121*** (0.00352)	0.00767** (0.00336)
LogGDPPC	-0.137*** (0.0415)	0.138*** (0.0467)	0.0146 (0.0121)	0.00441 (0.0108)	0.0123 (0.0122)	0.00136 (0.0109)
Growth	0.00621*** (0.00226)	0.00529*** (0.00170)	-8.61e-05 (0.00291)	0.00188 (0.00260)	-0.000456 (0.00295)	0.00138 (0.00263)
LogCommod	0.0152** (0.00741)	0.00814 (0.00604)	0.0176* (0.0104)	0.0180** (0.00740)	0.0174 (0.0106)	0.0177** (0.00771)
Unemp	-0.00526* (0.00285)	-0.00330 (0.00264)	-0.00129 (0.00276)	-0.00100 (0.00224)	-0.000938 (0.00285)	-0.000570 (0.00236)
Polity2	-0.00662** (0.00310)	-0.000510 (0.00298)	0.00289 (0.00225)	0.00307* (0.00182)	0.00281 (0.00229)	0.00299 (0.00188)
Religion	0.0429* (0.0236)	0.0510*** (0.0181)	0.00938 (0.0123)	0.00718 (0.0101)	0.0117 (0.0118)	0.0104 (0.0102)
Ethnicity	0.0284* (0.0166)	0.0343** (0.0133)	0.00452 (0.0137)	0.0103 (0.0124)	0.00452 (0.0141)	0.0101 (0.0129)
Polstab _{t-1}			0.581*** (0.0794)	0.687*** (0.0773)	0.574*** (0.0818)	0.679*** (0.0791)
Observations	414	414	331	331	331	331
KP	23.45	22.73	.	.	.	.
AR(1)	.	.	0.000620	0.000175	0.000772	0.000266
AR(2)	.	.	0.296	0.734	0.278	0.674
Hansen	.	.	0.139	0.118	0.155	0.147
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	No	Yes	No	Yes	No	Yes

Notes: *** p<0.01, ** p<0.05, * p<0.1. Standard errors (in parenthesis) are heteroskedasticity robust. Polstab is measured using ICRG indicators (see section 3.3). KP statistics to be compared with the Stock-Yogo critical values to test the instrument's strength. AR(1) and AR(2): p-values of Arellano-Bond test for serial correlations. Hansen: p-values for the null hypothesis of instrument validity. SYS-GMM in columns (3) and (4) rely on internal instruments, columns (5) and (6) use the gravity-based instrument for FDI.

replicate 2SLS and SYS-GMM estimations after splitting the source countries into North and South to distinguish between greenfield FDI from the North and greenfield FDI from the South¹⁴. Columns (1) through (4) report the 2SLS estimates; columns (5) to (12) display the SYS-GMM estimates with internal instruments only (the first four columns) and gravity-based instrument for

¹⁴ The gravity-based instruments for each provenance are obtained from the estimation of the gravity model for each subsample (FDI flows from the North and FDI flows from the South). The results are available upon request.

Table 7: Effects of FDI on political stability: flows from the North vs. flows from the South

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	IV-2SLS				Internal instrument				SYS-GMM			
									Gravity instrument			
FDInorth	0.0125*** (0.00431)	0.00793 (0.00503)			0.000638 (0.00286)	0.00336 (0.00402)	0.00181 (0.00289)	0.00494 (0.00401)				
FDIsouth			0.00590 (0.00574)	0.00413 (0.00606)					0.00637* (0.00363)	0.00572 (0.00356)	0.00657* (0.00386)	0.00576 (0.00385)
LogGDPPC	0.122*** (0.0321)	0.175*** (0.0327)	0.0589** (0.0230)	0.178*** (0.0317)	0.00523 (0.00790)	0.00545 (0.00863)	-0.000931 (0.00791)	-8.75e-05 (0.00897)	0.0108 (0.00840)	0.00891 (0.00830)	0.00988 (0.00836)	0.00874 (0.00816)
Growth	0.000223 (0.00142)	6.41e-06 (0.00126)	0.00208* (0.00119)	0.000186 (0.00121)	0.00546** (0.00212)	0.00627** (0.00252)	0.00463** (0.00220)	0.00557** (0.00254)	0.00326 (0.00218)	0.00470* (0.00250)	0.00318 (0.00219)	0.00469* (0.00252)
LogCommod	-0.00651 (0.00525)	-0.00743 (0.00525)	-0.00601 (0.00540)	-0.00796 (0.00489)	0.00955 (0.00773)	0.00852 (0.00752)	0.00736 (0.00745)	0.00691 (0.00713)	0.00816 (0.00738)	0.00700 (0.00732)	0.00801 (0.00727)	0.00700 (0.00730)
Unemp	-0.00502** (0.00214)	-0.00586*** (0.00203)	-0.00441** (0.00183)	-0.00570*** (0.00205)	-0.00144 (0.00272)	-0.00120 (0.00293)	-0.000525 (0.00258)	-0.000453 (0.00284)	-0.00221 (0.00278)	-0.00190 (0.00287)	-0.00208 (0.00272)	-0.00188 (0.00280)
Polity2	0.00216 (0.00315)	0.00303 (0.00307)	0.00124 (0.00309)	0.00324 (0.00302)	0.00529** (0.00210)	0.00527** (0.00219)	0.00420** (0.00199)	0.00432** (0.00208)	0.00656*** (0.00250)	0.00604** (0.00260)	0.00647*** (0.00242)	0.00603** (0.00252)
Religion	0.0373*** (0.0133)	0.0424*** (0.0134)	0.0407*** (0.0127)	0.0462*** (0.0125)	-0.0138 (0.0129)	-0.0175 (0.0138)	-0.00780 (0.0123)	-0.0115 (0.0135)	-0.00442 (0.0121)	-0.00814 (0.0117)	-0.00428 (0.0120)	-0.00811 (0.0117)
Ethnicity	0.0337** (0.0160)	0.0329** (0.0143)	0.0256 (0.0159)	0.0275** (0.0136)	0.0190* (0.0101)	0.0232** (0.0104)	0.0154* (0.00913)	0.0199** (0.00972)	0.0172* (0.00889)	0.0242*** (0.00867)	0.0171** (0.00867)	0.0241*** (0.00861)
PolStab _{t-1}					0.925*** (0.0834)	0.932*** (0.0864)	0.948*** (0.0827)	0.950*** (0.0878)	0.848*** (0.0909)	0.880*** (0.0933)	0.854*** (0.0900)	0.881*** (0.0925)
Observations	414	414	414	414	331	331	331	331	331	331	331	331
KP	26.62	13.62	4.895	3.633	.	.	.	.	.	.	.	.
AR(1)	.	.	.	.	0.0147	0.0198	0.0145	0.0224	0.0272	0.0178	0.0214	0.0152
AR(2)	.	.	.	.	0.0762	0.0739	0.116	0.113	0.268	0.140	0.284	0.141
Hansen	.	.	.	.	0.402	0.538	0.305	0.522	0.346	0.307	0.314	0.309
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes

Notes: *** p<0.01, ** p<0.05, * p<0.1. Standard errors (in parenthesis) are heteroskedasticity robust. PolStab is measured with the “political stability and absence of violence” index of the WGI, rescaled between 0 and 1. FDInorth and FDIsouth represent greenfield FDI flows as a percent of GDP from the North and the South, respectively. KP statistics to be compared with the Stock-Yogo critical values to test the instrument’s strength. AR(1) and AR(2): p-values of Arellano-Bond test for serial correlations. Hansen: p-values for the null hypothesis of instrument validity.

FDI (the last four columns). The results do not suggest any particular differential effect according to the provenance of FDI flows, thereby resonating with previous findings by Demir (2016). Like the main results, the coefficient of FDI is positive no matter where FDI originates from and can be significant in either subsample.

Third, I investigate whether the positive effect of FDI could be driven by non-oil exporting countries as oil exports are argued to generate institutional gaps (see Ross, 2001; Tsui, 2011). Likewise, Mihalache-O'Keef (2018) found that FDI in the primary sector particularly exacerbates the risk of civil conflict as opposed to service sector FDI. To this end, I repeat the main previous regressions on the sample of oil-exporting countries¹⁵ only. It is worth noticing that oil-exporting countries exhibit an average institutional index of -0.64, far below the mean for non-oil-exporting sample (-0.31) and the full sample mean of -0.37¹⁶. The statistics tests from the estimations do not meet the requirements (KP very low, AR(1) and AR(2) not satisfied). Even if the results – available upon request – are not compelling, they show that FDI remains positively related to political stability.

Then, I investigate whether the results are conditional on income level by excluding upper-middle and high-income countries, based on the World Bank classification. While they witnessed the weakest institutional development, low income and low-middle income countries registered the largest greenfield FDI inflows as a percent of GDP during the period of study¹⁷. The 2SLS estimates given by table 8 show that the results are robust to the exclusion of upper-middle and high-income countries. The effect is positive in both models and statistically significant in model (1). The data for the subsample sample of low and low-middle income countries do not fit the SYS-GMM estimations as the statistics tests are indicative of model misspecifications. However, FDI coefficients remain positive, although not significant.

Last but not least, given that the instrument used throughout the paper is obtained from predicted values, I question the robustness of the FDI coefficients significance by testing their sensitivity to bootstrap wherever the instrumental variable was used in the baseline specification. The results, which are available upon request, give support to the robustness of the statistical significance of the FDI coefficients.

¹⁵ The distinction between oil-exporting and non-oil exporting countries is based on the IMF (2018) countries classification. Economies are categorized oil-exporting when fuel was their main source of export earnings and exceeded 50 percent of total exports on average between 2012 and 2016 (IMF, 2018)

¹⁶ The values are based on the initial index values (before rescaling)

¹⁷ Average FDI: 6.7 % for low income, 6.6% for low middle income, 4.1 % for upper middle income, and 4.2 % for high income. Average political stability index: -1.02 for low income, -0.64 for low middle income, -0.42 for upper middle income, and 0.71 for high income.

Table 8: *Effects of FDI on political stability on the subsample of low-income countries*

	(1)	(2)	(3)	(4)	(5)	(6)
	IV-2SLS		SYS-GMM			
			Internal instrument		Gravity instrument	
FDI	0.0109** (0.00447)	0.00239 (0.00386)	0.00254 (0.00190)	0.00385 (0.00361)	0.00306 (0.00263)	0.00397 (0.00314)
LogGDPPC	0.0630 (0.0461)	0.259*** (0.0627)	-0.00215 (0.0207)	0.000588 (0.0426)	-0.0104 (0.0224)	-0.0104 (0.0339)
Growth	0.00278 (0.00291)	0.00229 (0.00236)	0.00837** (0.00394)	0.00648 (0.00545)	0.00676 (0.00492)	0.00609 (0.00501)
LogCommod	-0.00987 (0.00796)	-0.0199*** (0.00701)	0.00437 (0.00927)	0.0116 (0.0156)	0.00433 (0.0109)	0.01000 (0.0128)
Unemp	-0.0154** (0.00661)	-0.0122** (0.00593)	-0.000508 (0.00337)	-0.00382 (0.00854)	0.00250 (0.00676)	-0.00192 (0.00722)
Polity2	0.00242 (0.00458)	0.00832* (0.00456)	0.00304 (0.00208)	0.00788 (0.00563)	0.00384 (0.00608)	0.00761* (0.00448)
Religion	0.0470* (0.0273)	0.0544** (0.0237)	-0.0118 (0.0121)	-0.0415 (0.0442)	-0.00502 (0.0253)	-0.0182 (0.0278)
Ethnicity	0.0164 (0.0334)	0.0217 (0.0255)	0.000336 (0.0126)	0.0434 (0.0590)	-0.0502 (0.0560)	0.0110 (0.0444)
Polstab _{t-1}			0.997*** (0.0732)	1.110*** (0.162)	1.106*** (0.142)	1.111*** (0.137)
Observations	167	167	135	135	135	135
KP	20.658	16.663	.	.	.	.
AR(1)	.	.	0.133	0.213	0.115	0.183
AR(2)	.	.	0.0800	0.0661	0.0780	0.0671
Hansen	.	.	0.998	0.157	0.355	0.110
Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Time FE	No	Yes	No	Yes	No	Yes

Notes: *** p<0.01, ** p<0.05, * p<0.1. Standard errors (in parenthesis) are heteroskedasticity robust. Polstab is the “political stability and absence of violence” index of the WGI, rescaled between 0 and 1. FDI represents greenfield FDI flows as a percent of GDP. KP statistics to be compared with the Stock-Yogo critical values to test the instrument’s strength. AR(1) and AR(2): p-values of Arellano-Bond test for serial correlations. Hansen: p-values for the null hypothesis of instrument validity.

6) Conclusion

The institutional environment of developing countries in terms of socio-political stability has been subject to major movements over the recent decades. Countries have been shaken by socio-political instability of different forms and manifestations and identifying factors susceptible to promote sustainable institutional quality regarding political stability is key to development. This

paper contributes to examining the question by empirically investigating the impact of FDI on political stability focusing on greenfield projects in a large sample of developing countries.

The results evidence that FDI favours political stability as measured with the political stability and absence of violence index of the WGI. Overall, the results appear quite robust to various specifications and estimations methods, as well as a series of sensitivity tests including the use of an alternative measure of political stability, the provenance of FDI flows (North vs. South), the use of different sub-samples according to dependence on oil resources, and income level.

Beyond the direct economic effects, these findings point another channel through which FDI can contribute to development: the promotion of political stability. The different mechanisms through which greenfield FDI promote a stable socio-political environment in the developing world are not disentangled empirically. Only the overall impact is examined. Borrowing from literature on determinants of political instability, this paper argues that the impact is composed of the various channels highlighted throughout the text and consisting mainly in socio-economic externalities of greenfield FDI, the political agency potential of foreign direct investors, and investment promotion policies by host countries' policy makers.

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Appendix

Table 9: *List of host developing countries and number of observations for bilateral greenfield FDI flows*

Afghanistan	80	Hungary	261	Poland	290
Albania	125	India	406	Qatar	250
Algeria	239	Indonesia	281	Romania	304
Andorra	55	Iran	249	Russia	373
Angola	179	Iraq	244	Rwanda	175
Antigua	25	Jamaica	70	Saudi Arabia	279
Argentina	269	Jordan	190	Senegal	160
Armenia	160	Kazakhstan	260	Seychelles	49
Aruba	25	Kenya	294	Sierra Leone	75
Brazil	313	Kuwait	180	Singapore	369
Bulgaria	255	Laos	100	Slovakia	249
Burkina Faso	60	Latvia	175	Slovenia	165
Burundi	70	Lebanon	185	Somalia	65
Cambodia	176	Lesotho	25	South Africa	330
Cameroon	155	Liberia	80	South Korea	255
Cape Verde	45	Libya	215	Sri Lanka	190
Central African Republic	35	Lithuania	200	Sudan	105
Chad	70	Madagascar	65	Suriname	30
Chile	238	Malawi	65	Syria	185
China	473	Malaysia	320	Tajikistan	110
Colombia	253	Mali	84	Tanzania	195
Comoros	15	Malta	184	Thailand	276
Costa Rica	214	Mauritania	90	Togo	70
Cote d'Ivoire	205	Mauritius	114	Trinidad & Tobago	86
Croatia	195	Mexico	279	Tunisia	210
Cuba	134	Moldova	141	Turkey	296
Czech Republic	274	Mongolia	135	UAE	412
Egypt	293	Morocco	244	Uganda	190
Estonia	174	Mozambique	235	Ukraine	246
Eswantini	50	Myanmar	195	Uruguay	159
Ethiopia	220	Namibia	134	Uzbekistan	190
Gabon	105	Niger	45	Venezuela	176
Gambia	50	Nigeria	295	Vietnam	304
Georgia	215	Oman	214	Yemen	125
Ghana	266	Pakistan	210	Zambia	180
Guatemala	143	Panama	244	Zimbabwe	125
Guinea	100	Papua New Guinea	100	Total	20.839
Guinea Bissau	45	Paraguay	119		
Haiti	54	Peru	234		
Honduras	129	Philippines	249		

Table 10: *List of origin countries and number of observations for bilateral greenfield FDI flows*

Afghanistan	15	Czech Republic	240	Kuwait	265	Russia	375
Albania	5	Democratic Republic of Congo	15	Kyrgyzstan	20	Rwanda	10
Algeria	40	Denmark	370	Laos	15	Samoa	10
Andorra	15	Djibouti	15	Latvia	130	Saudi Arabia	260
Angola	55	Dominican Republic	15	Lebanon	140	Senegal	30
Antigua	5	Ecuador	40	Libya	30	Seychelles	5
Argentina	135	Egypt	210	Lithuania	110	Sierra Leone	5
Armenia	15	El Salvador	30	Luxembourg	335	Singapore	305
Australia	385	Equatorial Guinea	10	Macau	30	Slovakia	85
Austria	295	Estonia	95	Malawi	5	Slovenia	100
Azerbaijan	65	Ethiopia	15	Malaysia	270	South Africa	370
Bahamas	45	Fiji	10	Mali	20	South Korea	400
Bahrain	170	Finland	310	Malta	110	Spain	435
Bangladesh	65	France	515	Mauritius	125	Sri Lanka	70
Barbados	15	Gabon	10	Mexico	170	Sudan	15
Belarus	140	Gambia	5	Moldova	5	Sweden	385
Belgium	315	Georgia	40	Mongolia	10	Switzerland	455
Belize	25	Germany	485	Morocco	150	Syria	10
Bermuda	152	Ghana	50	Mozambique	5	Tajikistan	15
Bhutan	5	Greece	200	Myanmar	25	Tanzania	75
Bolivia	10	Greenland	10	Namibia	15	Thailand	195
Bosnia-Herzegovina	35	Guatemala	40	Nepal	45	Togo	115
Botswana	50	Guyana	5	Netherlands	420	Trinidad & Tobago	5
Brazil	270	Haiti	5	New Zealand	150	Tunisia	110
Brunei	25	Honduras	15	Nicaragua	30	Turkey	305
Bulgaria	100	Hong Kong	340	Nigeria	170	Turkmenistan	5
Burkina Faso	35	Hungary	155	North Macedonia	40	UAE	400
Burundi	20	Iceland	105	Norway	305	Uganda	20
Cambodia	30	India	480	Oman	105	Ukraine	165

Cameroon	10	Indonesia	120	Pakistan	110	United Kingdom	530
Canada	470	Iran	150	Panama	85	United States	538
Cayman Islands	26	Iraq	30	Papua New Guinea	5	Uruguay	35
Chile	130	Ireland	310	Paraguay	10	Vanuatu	15
China	485	Israel	235	Peru	60	Venezuela	88
Colombia	65	Italy	400	Philippines	150	Vietnam	165
Costa Rica	45	Jamaica	40	Poland	195	Yemen	45
Cote d Ivoire	90	Japan	435	Portugal	225	Zambia	15
Croatia	100	Jordan	125	Qatar	245	Zimbabwe	40
Cuba	20	Kazakhstan	90	Republic of the Congo	20		
Cyprus	245	Kenya	145	Romania	140	Total	20.839

Table 11: *First-stage regression results for the 2SLS models*

	(1)	(2)	(3)	(4)
	Greenfield FDI as a percent of GDP			
Instrument	0.127*** (0.0290)	0.0936*** (0.0201)	0.0834*** (0.0260)	0.0767*** (0.0230)
LogGDPPC	-0.232 (2.037)	3.654 (2.697)	-1.035 (2.483)	0.613 (3.608)
Growth	0.329*** (0.0623)	0.216*** (0.0720)	0.289** (0.113)	0.185* (0.104)
Commodity	0.160 (0.318)	-0.0927 (0.376)	-0.296 (0.377)	-0.356 (0.433)
Unemp	0.309** (0.126)	0.333*** (0.117)	0.181 (0.120)	0.244* (0.131)
Polity2	0.0542 (0.121)	0.145 (0.120)	0.125 (0.147)	0.154 (0.141)
Religion	0.521 (0.820)	0.380 (0.731)	1.230 (1.149)	1.041 (1.080)
Ethnicity	0.467 (0.490)	0.401 (0.500)	-0.156 (0.732)	-0.163 (0.770)
LogPop			-14.76* (8.376)	-12.47 (9.989)
LogEduc			6.168 (5.093)	7.524 (5.207)
Observations	415	415	346	346
R-squared	0.189	0.234	0.248	0.273
Country FE	Yes	Yes	Yes	Yes
Time FE	No	Yes	No	Yes

Notes: *** p<0.01, ** p<0.05, * p<0.1. Standard errors (in parenthesis) are heteroskedasticity robust. The instrument is the fitted FDI from the gravity model. The sample is made up of 116 destination developing countries and 158 source developing and developed countries.

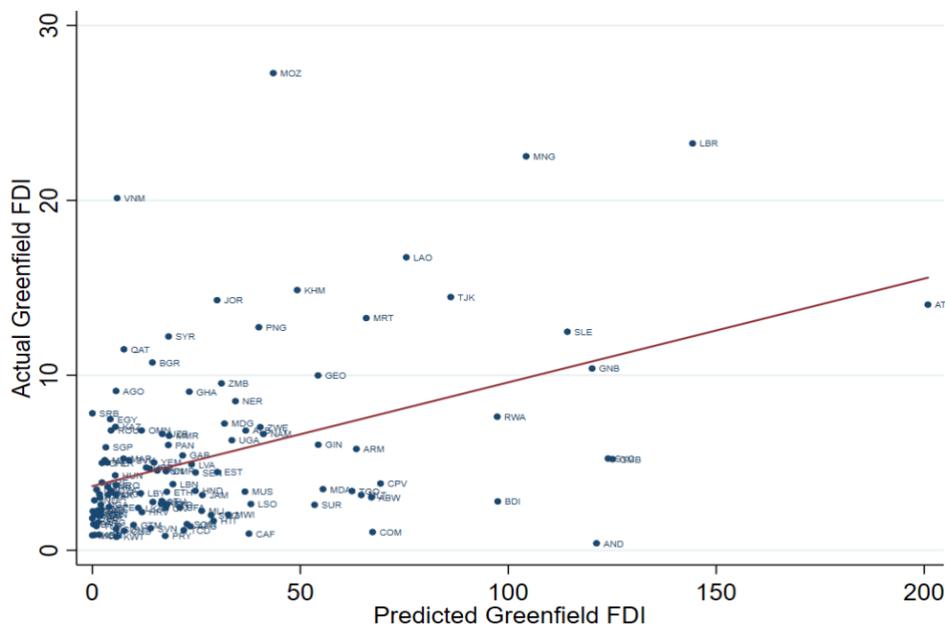


Figure 4: *Correlation between Greenfield FDI inflows as a percent of GDP and its fitted values*

Table 12: OLS estimations of the political stability model, including the poverty and inequality variables

	(1)	(2)
	Political stability	
FDI	0.00225 (0.00160)	0.00223 (0.00163)
LogGDPPC	0.0824 (0.0614)	0.155* (0.0777)
Growth	-0.00110 (0.00173)	-0.00185 (0.00186)
LogCommod	-0.0105** (0.00436)	-0.00498 (0.00738)
Unemp	-0.00643** (0.00250)	-0.00702*** (0.00248)
Polity2	-0.000471 (0.00504)	-6.19e-05 (0.00512)
Religion	0.0595** (0.0297)	0.0615* (0.0312)
Ethnicity	0.0358** (0.0149)	0.0326** (0.0147)
LogPop	-0.256** (0.113)	-0.187 (0.125)
LogEduc	-0.0830 (0.0590)	-0.0802 (0.0623)
Poverty	-0.00504* (0.00299)	-0.00415 (0.00322)
Gini index	0.00368 (0.00326)	0.00264 (0.00364)
Constant	4.167** (1.866)	2.440 (2.330)
Observations	233	233
R-squared	0.342	0.358
Country FE	Yes	Yes
Time FE	No	Yes

Notes: *** p<0.01, ** p<0.05, * p<0.1. Standard errors (in parenthesis) are heteroskedasticity robust. Political stability is measured with the political stability and absence of violence index of the WGI. FDI represents greenfield FDI inflows as a percent of GDP.