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Abstract

This paper develops a theory on the complementarity in institutional qualities between the home and host countries in bilateral FDI. Firms 'born' in countries with poorer institutions tend to invest more in informal institutions to mitigate political risk. The marginal advantage of higher informal institution endowment is bigger when the political risk at the FDI destination is higher. Thus, all else being equal, the ranking of the MNE's home institutions predicts the ranking of the institutional qualities of their FDI destinations. I find robust empirical evidence for this theoretical prediction using bilateral FDI for 219 economies during year 2001-2010.

Key Words: Foreign Direct Investment; Informal Institution; Political Risk; Gravity Equation; Tobit

JEL Classification: C21; C23; C24; F21; F23

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1 Introduction

In the FDI literature, multinational enterprises (MNEs) are often theorized to be exclusively based in the North. The implicit rationale is that firms from the North have a universal advantage in FDI given their leading capacity in R&D and technology or management know-how. See, for example, Helpman (2006) for a survey of the literature. In practice, however, FDI originating from the South is growing rapidly in recent decades: from 6% of the world FDI outflows in 1986-1990 to 17% in 2006-2010 (Dixit, 2012). The share of FDI inflows received by the developing country from the peer South has increased even more disproportionately, from 6% in 1994 to over 36% in 2000 (Aykut and Ratha, 2004). This trend is likely to continue, given the rising economic weight of developing countries in the world; in 2013, FDI from developing countries (together with transition economies) accounted for 39% of global FDI outflows (UNCTAD, 2014). While empirically important, relatively little theoretical work has been done to formalize the rationales of South-based MNEs and their comparative advantage. This paper aims to create a theoretical framework for one such perspective—based on political risk and informal institution—and provide its empirical evidence.

The theory is built on the observation that political risk is an important consideration in firms' production choice, especially in developing countries. For example, in annual surveys of worldwide MNEs conducted by the World Bank MIGA agency, political risk is consistently ranked as one of the most important constraints for cross-border investments in developing countries (see MIGA, 2011, and its other annual reports) among other considerations such as macroeconomic instability. In addition to multilateral surveys, ad hoc incidents continue to happen that remind us of the hazards of doing business in certain parts of the world. For example, Churchill Mining, a London-listed firm, announced in May 2008 that it had found 150m tonnes of coal in Indonesian Borneo, soon before its mining license was revoked by a local district chief (The Economist, 2011). In January 2013, as another example, the Japanese engineering firm JGC was caught in a terrorist attack at gas plants in Algeria (Straits Times, 2013), with 10 Japanese killed among many other hostages.

Political risk is defined in this paper as the likelihood that political events occur and prevent a firm from realizing its profit. The event could be an adverse regulatory change where the state confiscates, overtly or covertly, the firm's profits by way of transfer and convertibility restrictions,

breach of contract, non-honoring of sovereign obligations, or expropriation. Alternatively, it could be violent political events such as war, terrorism, or civil disturbance that cause business interruption or physical damages (MIGA, 2011). Political risk tends to be higher in countries of poorer institutional qualities. For example, the more stable the political system, the more accountable the public officials, the better the regulatory quality, or the stronger the rule of law, the less likely a political-risk event will occur.

In response to political risk, firms can choose to develop firm-specific *informal institutions* to mitigate the political risk should it strike the firm. Informal institutions are difficult to identify and measure in practice, in part reflecting its various conceptualizations in the literature (Helmke and Levitsky, 2004; North, 1990; Casson et al., 2010). They may be categorized (in parallel with formal institutions) as political, economic, or legal. For example, informal political institutions may take the form of personal networks (Wang, 2000), political connectedness (Fisman, 2001; Faccio, 2006), political capital (Nee and Opper, 2010), or even direct political participation (Li et al., 2006) that help the firms communicate, represent, or protect its business interests in the political arena, or alternatively push through bureaucratic red tapes. Informal economic institutions might be illustrated by unofficial exchange networks (Ledeneva, 1998) or relational contracting (Mcmillan and Woodruff, 1999). Last but not least, informal legal institutions may include private patrols, private protection agencies or informal courts (Frye and Zhuravskaia, 2000) that substitute for inadequate police protection or ineffective courts. Informal political and legal institutions are of particular interest here because of their direct bearing on countering political risk.

Higher political risk (as a result of weaker formal institutions) increases the marginal benefit of investing in informal institutions. Thus, firms 'born' in the South with poorer institutional qualities will tend to invest more in informal institutions and thus are more relationship-based.[1] The skills, human capital, or networking knowledge developed at home to engage (in not necessarily structured or organized ways) with government officials, political figures, local communities, or other business entities enable them to reduce the objective political risk more effectively than firms from the North when investing in the same FDI destination, all else being equal. This marginal advantage is bigger when the objective political risk is higher. Thus, a MNE from a country with a poorer

[1]Some evidence or examples that informal institutions are more prevalent in environments of weaker formal institutions are provided by Faccio (2006), Fisman (2001), Frye and Zhuravskaia (2000), Li et al. (2006), and Mcmillan and Woodruff (1999).

institutional quality than another MNE will tend more likely to invest in a destination with a poorer institutional quality than the other MNE's choice of destination. In other words, there will be a complementarity in institutional qualities between the home and host countries in bilateral FDI.

The theoretical framework also predicts a rich pattern of bilateral FDI flows across countries of different institutional qualities. Depending on the model parameters such as the cost of developing informal institutions and the wage elasticity (with respect to institutional quality), both North-South and South-North FDI flows are possible, as firms trade off lower wages for better institutional quality. Second, it also predicts an ordered bi-directional FDI flows for countries of intermediate institutions, where a country receives FDI inflows from the North (in terms of institutional quality, e.g., China from the US) and sends FDI outflows to the South (e.g., China to Algeria) until a threshold on political risk is reached, above which FDI reverses its direction (and flows from the extreme South to the not-so-extreme South, and in turn to the moderate South).

I assemble a dataset of bilateral FDI stocks (and flows) for 219 economies between 2001-2010 based on the UNCTAD's Bilateral FDI Statistics, and institutional qualities using the Worldwide Governance Indicators. The comprehensive coverage of the set of countries is important, as this allows us to look into the behavior of FDI flows from (to) the whole spectrum of countries in terms of institutional quality, including the South-South and South-North FDI—a less investigated segment in the literature. I put to test the theory's main prediction of a positive assortative matching pattern between the home and host institutions, by regressing FDI on *the level and the interaction of institutional quality indicators* of the home and host countries, in addition to a long list of gravity variables (that control for information barriers or transaction costs), and the home and host country-specific characteristics such as GDPs, GDPs per capita, and general production cost levels. A positive coefficient on the institution interaction term would imply a complementarity effect between the home and host institutional qualities, and support the paper's theoretical prediction. I also include the difference in GDPs per capita between the home and host countries as a control for the Linder effect on FDI as proposed by Fajgelbaum et al. (2014).

Overall, I find very robust support for the theory's prediction. The complementarity effect in institutions is positive and significant, and the finding is robust to the FDI series used (inward or outward stocks and inward or outward flows), the measurement of institution (in terms of voice and

accountability, government effectiveness, regulatory quality, rule of law, or control of corruption), the estimation specification (with or without two-way time-varying country fixed effects), and the inclusion of zero FDI observations. The coefficient estimates on the level and the interaction of institutional qualities indicate that not all FDIs are attracted toward countries of better institutions. Better institutions attract proportionally more FDIs from countries of better institutions. A non-negligible proportion of countries with institutional qualities at the lower spectrum (below the 33% percentile as an indicative figure) in fact choose to make FDI in destinations of relatively poor institutional qualities. On the other hand, a better institution at home can be a disadvantage for firms when investing in destinations of relatively poor (below the 26% percentile) institutional qualities. The complementarity effects (and cutoffs) vary across institution indicators and robustness checks, but in general the effects are stronger for institutions related to regulation and political accountability, and weaker for political stability and absence of violence. This provides a circumstantial evidence on the plausible story that firms born in countries of weak regulatory quality may find it easier to build informal institutions such as political network to deal with red tapes than firms born in politically unstable and violence-prone countries to build informal institutions such as private security forces to deal with civil riots or wars. To the extent that such informal institutions are costly to build, we will observe weak or no complementarity effect in the corresponding institution indicators (as in the case of political stability and absence of violence).

This paper is motivated by Dixit (2012), which suggests that similarly poor governance endowments may be a source of comparative advantage for South-based MNEs when investing in developing countries. There is a large empirical literature that studies the impact of institutional quality or political risk in the host country on inward FDI, and most of the studies conclude with the importance of good institutions to attract inward FDI. However, only a few isolated empirical studies have looked at the relational difference in institutions between the home and host countries and its impact on the pattern of bilateral FDI. For example, Darby et al. (2010) found that South MNEs are less (or not at all) deterred by bad institutional quality in the host country than North MNE, based on bilateral FDI count data (on the number of MNEs from a country of origin present in a destination country). Relatedly, Cuervo-Cazurra and Genc (2008) measured the proportion of developing-country MNEs among the largest foreign firms in each of 50 LDCs and found that developing-country MNEs are more prevalent in LDCs with poorer regulatory quality and lower

control of corruption (although this negative relationship does not apply to all aspects of institutional quality, e.g., rule of law). Meanwhile, studying the FDI flows into 15 Asian countries (during 1990-2005) from 111 economies in the world, Hwang (2010) found that FDI flows from fellow Asian countries are less sensitive than non-Asian source countries to the political risk level of the host country. Bénassy-Quéré et al. (2007) provided probably one of the most direct evidence bearing on the topic. Using a gravity model for bilateral FDI from OECD countries to the other countries, they found that good institutions in the host country almost always increase the amount of FDI received; however, more interestingly, good institutions in the home country have no or even negative impact on outward FDI, and institutional distance has often a negative impact on bilateral FDI. Last but not least, Habib and Zurawicki (2002) focused on corruption and observed that both the corruption level in the host country and the distance in the corruption level between the home and host countries reduce bilateral FDI flows. The findings of the above studies are to a greater or lesser extent consistent with the current paper's prediction of a complementarity in institutional qualities in bilateral FDI (although the authors may not have seen or interpreted their results in the same light). The theory developed in this paper represents one attempt to integrate this small but growing literature. The empirical analysis of the paper complements the previous studies by extending the country coverage (with the inclusion of almost all economies in the world) and the empirical specification: with the use of an interaction term in line with the theory (rather than difference often used in the literature), and the consideration of both zero and positive FDI, and two-way multilateral effects.

The paper is organized as follows. In Section 2, I develop the theoretical model and predictions. In Section 3, I present the estimation framework and findings. Section 4 discusses potential extensions and concludes.

2 Model

Consider a monopolistic competition model, in which each firm produces an unique variety and supplies the product to markets all over the world. Abstract away from any kind of trade frictions in the theory such that the same price prevails in all markets. Under the assumption of identical CES preferences, the world demand function faced by each firm is the aggregation of demand in

all markets. Let X denote the demand of the world market:

$$X = AP^{-\varepsilon}, \tag{1}$$

where A indicates the size of the world market, P the world price, and $\varepsilon > 1$ the price elasticity of demand.

Suppose that labor is the only input used in production. Production incurs no fixed cost but a constant marginal cost denoted by $MC \equiv \frac{w}{\phi}$, where ϕ is the firm productivity level and w the wage rate. In words, the marginal cost of production is decreasing in a firm's productivity level and increasing in the wage rate in the production location.

2.1 Choice of Informal Institution

Consider a firm born in a country and developing its informal institution in response to the political risk facing its production. In the event that production takes place, given the monopolistically competitive market structure, the firm sets a constant markup over its marginal cost of production, $P = \frac{\varepsilon}{\varepsilon-1} MC$. Substituting the price into the profit function denoted by Π, we have

$$\begin{aligned} \Pi &= (P - MC)X \\ &= Bw^{1-\varepsilon}, \end{aligned} \tag{2}$$

where $B \equiv \left(\frac{A}{\varepsilon}\right)\left[\left(\frac{\varepsilon}{\varepsilon-1}\right)\left(\frac{1}{\phi}\right)\right]^{1-\varepsilon}$.

The firm faces a likelihood where a political event occurs that prevents it from realizing its profit. For example, the event could be an adverse regulatory change where the state confiscates, overtly or covertly, the firm's property or resources by breach of contract, non-honoring of sovereign obligations, or expropriation. Alternatively, it could be political violence such as insurrection, rebellion, civil disturbance, riots, terrorism, or war that disrupts the business operation. The incidence is termed a political-risk event. The probability r of a political-risk event is hypothesized to depend negatively on the institutional quality of a country measured in terms of: e.g., the accountability of public officials, political stability, government effectiveness, regulatory quality, rule of law, or control of corruption. Countries are indexed by r, representing its underlying

(inverse) institutional quality.

Firms choose how much to invest in firm-specific informal institutions, which can be deployed to mitigate political risk when it strikes a firm. Let $I \in [0,1]$ denote the informal institution developed by a firm. When a political-risk event hits the firm, with probability I, the firm can overcome the shock, while with probability $(1-I)$, the bad shock remains unresolved. Thus, the expected operating profit $E\Pi(I)$ of a firm with informal institution I is $E\Pi(I) = (1 - r + rI)\Pi$, which increases in I. Informal institution is costly to develop and maintain. Its cost function is assumed to take the functional form $C(I) = \frac{1}{\delta} I^{\delta}$, where $\delta > 1$. Thus, a firm maximizes its expected profit:

$$\max_{0 \leq I \leq 1} E\Pi(I) - C(I), \tag{3}$$

choosing I that satisfies the first-order condition: $r\Pi = I^{\delta-1}$, which implies that the optimal informal institution chosen by a firm will be:

$$I(r) = (r\Pi)^{\kappa} > 0, \tag{4}$$

where $\kappa = \frac{1}{\delta - 1} > 0$.

Assumption 1 *(i)* $w(r) = w_0 r^{-\eta}$ *where* $w_0, \eta > 0$*, and (ii)* $(Bw_0^{1-\varepsilon}) < 1$.

Assumption 1(i) captures the stylized fact that wage is in general increasing with the institutional quality of a country, that is, $\partial w(r)/\partial r < 0$. The particular functional form used implies that the elasticity of wage with respect to institutional quality $\varepsilon_w(r)$ is constant $(= \eta)$. This constant wage elasticity assumption is made for expositional simplicity. The main results of the paper will still hold under more general functional form assumptions for $w(r)$. Assumption 1(ii) implies that $I(r) < 1$ for all $r \in [0,1]$; that is, in equilibrium, informal institution invested by a firm will never completely eliminate the objective political risk. This implication is a reasonable approximation of the reality, and Assumption 1(ii) can be considered essentially a normalization parametrization.

Lemma 1 *Firms operating in countries with lower institutional quality (alternatively, with higher political risk) will invest more in informal institution (and thus are more relationship-based):* $\partial I(r)/\partial r > 0$.

Proof. Let $\alpha \equiv \eta(\varepsilon - 1) > 0$. Note that given Assumption 1(i), $I(r) = \left(Bw_0^{1-\varepsilon}\right)^{\kappa} r^{\kappa(1+\alpha)}$. Taking partial derivative of $I(r)$ with respect to r, we have

$$\frac{\partial I(r)}{\partial r} = \kappa(1+\alpha)\left(\frac{I(r)}{r}\right) > 0. \tag{5}$$

The above equation implies that $I(r) < I(1)$ for all $r \in [0, 1)$. Since $I(1) = \left(Bw_0^{1-\varepsilon}\right)^{\kappa}$ and $\kappa > 0$, we have $I(1) < 1$ by Assumption 1(ii). This completes the proof. ■

In this setup, informal institution increases in r for two reasons. First, for given operating profit Π, a higher political risk increases the marginal benefit of investing in informal institution. Second, the operating profit Π at risk is larger in a country with a lower wage rate (but also with a higher political risk). Thus, $r\Pi$ and hence I in (4) increases in r on both accounts.

2.2 Optimal FDI Destination

Now consider the firm's decision on the FDI destination as FDI becomes an option (as a result of, say, policy liberalization). As with formal institutions, informal institutions take time to build and to be internalized in the attitudes, behaviors, and culture of a society/firm. Thus, it is assumed that even with the possibility of FDI, firms are accustomed to (or bound by) the level of informal institution $I(r_h)$ they have developed at home given its institutional setting r_h. And they take with them the skills, experience, or knowledge required to engage (in not necessarily structured/organized ways) with government officials, political figures, local communities, or other business entities. For modeling simplicity, I assume that such informal institutional endowment is fully transnational (i.e., equally effective in combatting political risk in foreign countries), but the paper's qualitative results would continue to hold as long as there is some degree of transnationalization of informal institutions.

Each firm faces the following expected profit maximization problem and chooses its optimal destination r_d for FDI:

$$\max_{r_d \in [0,1]} E\Pi^F = (1 - r_d + r_d I(r_h))\Pi(r_d), \tag{6}$$

where $\Pi(r_d) \equiv \Pi(w(r_d)) = (Bw_0^{1-\varepsilon})r_d^{\alpha}$. In essence, firms face the tradeoff between lower production

cost w and lower political risk r_d. The first order condition requires that:

$$\frac{\partial E\Pi^F(r_d)}{\partial r_d} = \frac{\Pi(r_d)}{r_d}\left[\alpha - (1+\alpha)(1-I(r_h))r_d\right] = 0, \tag{7}$$

which implies that the optimal FDI destination country is of index:

$$r_d = \min\{H(I(r_h)),\ 1\}, \tag{8}$$

where $H(I(r_h)) \equiv \frac{\alpha}{(1+\alpha)(1-I(r_h))}$.[2] I make some further assumptions on the parameters to reduce the taxonomy of cases. The key prediction of the paper on the complementarity between the home and host institutions is robust to these assumptions.

Assumption 2 $(1+\xi)I(1) < 1 < \xi$, *where* $\xi \equiv \kappa(1+\alpha) > 0$.

Note that the first inequality in Assumption 2 implies Assumption 1(ii), and is thus a stronger condition. Proposition 1 summarizes the main results of the paper.

Proposition 1 (Complementarity in Institutional Qualities) *(i)* $I(r_h)$ *is strictly increasing and convex in* r_h. *(ii)* $H(I)$ *is strictly increasing and convex in* I. *(iii) Let* $\underline{r} \equiv H(I(0))$, $\bar{r} \equiv H(I(1))$, *and* $\{\hat{r}\} = \{r | r = H(I(r)),$ *where* $0 \leq r \leq 1\}$. *If* $\bar{r} > 1$, $\{\hat{r}\}$ *is empty. Otherwise,* $\{\hat{r}\}$ *is a singleton, and* $0 < \underline{r} < \hat{r} \leq \bar{r} \leq 1$, *where the equality holds when* $\hat{r} = \bar{r} = 1$.

Proof. Proposition 1(i): Recall that $I(r_h) = (r_h\Pi(r_h))^\kappa = \left(Bw_0^{1-\varepsilon}\right)^\kappa r_h^\xi = I(1)r_h^\xi$. It follows that

$$\frac{\partial I(r_h)}{\partial r_h} = \xi I(1) r_h^{\xi-1} > 0,$$
$$\frac{\partial^2 I(r_h)}{\partial r_h^2} = \xi(\xi-1) I(1) r_h^{\xi-2} > 0,$$

where the second inequality follows given Assumption 2. Thus, $I(r_h)$ is an increasing convex function of r_h.

[2] $E\Pi^F(r_d)$ has a single peak at $r_d = H(I(r_h))$, is strictly concave for $r_d > H(I(r_h))$ and strictly quasiconcave for $r_d < H(I(r_h))$. In particular, $\partial^2(E\Pi^F(r_d))/\partial r_d^2 \lesseqgtr 0$ if and only if $r_d \gtreqless \frac{\alpha-1}{(1+\alpha)(1-I(r_h))}$.

Proposition 1(*ii*): Given the definition of $H(I) = \frac{\alpha}{(1+\alpha)(1-I)}$, it is straightforward to verify that

$$\frac{\partial H(I)}{\partial I} = \frac{H(I)}{(1-I)} > 0,$$
$$\frac{\partial^2 H(I)}{\partial I^2} = \frac{2H(I)}{(1-I)^2} > 0.$$

The result thus follows.

Proposition 1(*iii*): By definition, $\underline{r} = \frac{\alpha}{1+\alpha}$, $\bar{r} = \frac{\alpha}{(1+\alpha)(1-I(1))}$, and $\hat{r}$ satisfies

$$\hat{r}\left(1 - I(1)\hat{r}^{\xi}\right) = \frac{\alpha}{1+\alpha}.$$

Let $LHS(r) \equiv r\left(1 - I(1)r^{\xi}\right)$, and $RHS(r) \equiv \frac{\alpha}{1+\alpha}$. It is straightforward to verify that $LHS(r)$ is strictly increasing in r for $r \in [0,1]$ as

$$\frac{\partial LHS(r)}{\partial r} = 1 - (1+\xi)I(1)r^{\xi} > 0,$$

since $r \leq 1$ and $(1+\xi)I(1) < 1$ given Assumption 2. Because $LHS(0) = 0$, and $LHS(r)$ is strictly increasing in r for $r \in [0,1]$, there exists a unique solution for $\hat{r}$ if and only if $LHS(1) \geq RHS(1)$. This condition is equivalent to $\bar{r} \leq 1$. When $\bar{r} = 1$, it follows that $LHS(1) = RHS(1)$ and $\hat{r} = 1$. This completes the proof. ■

Figures 1 and 2 illustrate the mapping in institutions between the home and host countries. For example, a firm born in country A will develop an informal institution of level $I(r_A)$ and choose to undertake FDI in country A' with an institutional setting $H(I(r_A)) = r_{A'}$. The curves $I(r_h)$ and $H(I)$ slope upward and are convex in their respective arguments. In Figure 1 (scenario *a*), $\bar{r} \equiv H(I(1)) > 1$ and the schedule $H(I)$ does not intersect with the schedule $I(r_h)$; on the other hand, in Figure 2 (scenario *b*), $\bar{r} \equiv H(I(1)) < 1$ and $H(I)$ intersects with $I(r_h)$ once from above at $\hat{r}$. Regardless of the scenarios, Proposition 1 implies that a MNE from a country with a lower institutional quality than another MNE will invest in a destination with a lower institutional quality than the other MNE's choice of destination. For example, compare the mapping between country B and B' versus country A and A', and those between country C and C' versus country D and D'. In other words, there exists a complementarity in institutional qualities between the home and

host countries.

If Assumption 2 does not hold, the schedule $I(r_h)$ is not necessarily convex and there could be more than one cutoff $\hat{r}$ in scenario (a), but the main result on the institutional complementarity is robust. In fact, the result necessarily holds if $I(r_h)$ and $H(I)$ are both increasing functions, which is true given Lemma 1 and the definition of $H(I)$.

Focusing on the scenarios implied by Proposition 1, we can summarize the choice of FDI destinations by MNEs as follows.

Lemma 2 (North-South or South-North FDI) *(a) If $\hat{r}$ does not exist for a given productivity level ϕ, firms ϕ from all countries undertake FDI in a country with poorer institutional qualities (North-South FDI). (b) If $\hat{r}$ exists for a given productivity level ϕ, firms ϕ from countries with $r_h < \hat{r}$ undertake North-South FDI, while firms from countries with $r_h > \hat{r}$ undertake FDI in a country with better institutional qualities (South-North FDI).*

Proof. (a) By Proposition 1(*iii*), if $\hat{r}$ does not exist, it follows that $LHS(r) < \frac{\alpha}{1+\alpha}$ for $r \in [0,1]$, which implies that $r_d = \min\{H(I(r_h)), 1\} > r_h$ for all $r_h < 1$. (b) By the same proposition, if $\hat{r}$ exists, then $LHS(r) < \frac{\alpha}{1+\alpha}$ for $r < \hat{r}$ and $LHS(r) > \frac{\alpha}{1+\alpha}$ for $r > \hat{r}$, which implies that $r_d = H(I(r_h)) > r_h$ for $r_h < \hat{r}$ and $r_d = H(I(r_h)) < r_h$ for $r_h > \hat{r}$. ■

In essence, MNEs trade off lower wage for better institutional quality in choosing FDI destinations, given their endowment of informal institution. When the political risk constraint is mild, we see that firms are attracted toward the South (as in A to A' and B to B'). However, MNEs may indeed invest in the North relative to home (as in C to C' and D to D'), when the political risk constraint is binding, in which case, there is a tendency for FDI to flock to the 'middle countries' of intermediate institutional conditions.

Lemma 3 (Uni- or Bi-directional FDI Flows) *Countries with $r \in [\underline{r}, \bar{r}] \backslash \{\hat{r}\}$ are characterized by FDI flows in both directions by firms of a given productivity level. On the other hand, countries with $r < \underline{r}$ or $r > \bar{r}$ see only FDI outflows but no FDI inflows by firms of a given productivity level.*

Proof. This is evident since the countries that will receive FDI are those with $r \in [\underline{r}, \bar{r}]$, the range of $H(I)$, while all countries $r \in [0,1]$ could potentially undertake FDI. ■

I elaborate on the potential two-way FDI flows indicated by Lemma 3. In scenario (a), countries are partitioned into two disjoint subsets: $R^{\emptyset S} \equiv [0, \underline{r})$, and $R^{NS} \equiv [\underline{r}, 1]$, where the first superscript

indicates the institutional ranking of the source country of FDI inflows *relative* to country r, while the second superscript the institutional ranking of the destination country of FDI outflows *relative* to country r. A superscript S indicates that FDI inflows (outflows) originate from (go to) a country of lower institutional quality, while a superscript N a country of better institutional quality. A superscript $\emptyset$ is used when country r receives no FDI inflows (or does not invest abroad). See, for example, points $A \in R^{\emptyset S}$ and $B \in R^{NS}$ in Figure 1. Country A receives no FDI inflows but invests in a institutionally relatively backward country A', while country $B = A'$ receives FDI from a relatively advanced country A and invests in a relatively backward country B'. In scenario (b), countries are partitioned instead into four disjoint subsets: $R^{\emptyset S} \equiv [0, \underline{r})$, $R^{NS} \equiv [\underline{r}, \hat{r})$, $R^{SN} \equiv [\hat{r}, \bar{r})$, and $R^{\emptyset N} \equiv [\bar{r}, 1]$. Points $C \in R^{\emptyset N}$ and $D \in R^{SN}$ in Figure 2 illustrate the direction of the FDI flows: While country C receives no FDI inflows but invest in a relatively advanced country C', country $D = C'$ receives FDI from a relatively backward country C and invests in a relatively advanced country D'.

The analysis so far takes the firm productivity level as given and derives the optimal FDI destination given the firm's home institutional quality. As shown in the Math Appendix, an increase in firm productivity ϕ will lead to a rightward shift of the $I(r_h)$ schedule for all $r_h \in (0, 1]$ (and the rightward shift is bigger for higher r_h), while leaving $I(0)$ and the whole schedule $H(I)$ unchanged. Intuitively, a more productive firm will produce at a larger scale and hence has more at stake, which prompts it to invest more in informal institution to counter political shock.[3] The larger informal institution in turn allows a more productive firm to locate its FDI in a country of relatively poorer institutional quality, all else being equal, and the differentiation in I across firms is bigger in countries of higher political risk r_h. Thus, given a distribution $G(\phi; r_h)$ of firm productivity levels ϕ in a country r_h, it will imply a distribution $F(r_d; r_h)$ of institutional qualities r_d of FDI destinations from the source country r_h (and the distribution $F(\cdot; r_h)$ will be more diverse with a larger r_h). This provides another layer of assortative matching between the firm productivity level and the destination institutional quality. In the current paper given FDI data at the country level, I will only be able to test the matching pattern at the country level; the difference across countries in firm productivity distributions (and their means) is left to be captured in a crude way by county-specific variables (such as GDPs per capita or fixed effects).

[3]Faccio (2006), for example, shows that political connections are more widespread among larger firms.

3 Empirical Evidence

The central question I seek to address is whether bilateral FDI follows the assortative mapping pattern predicted by Proposition 1 and illustrated in Figures 1 and 2. In words, the theory predicts that a MNE may invest in a destination (d) of arbitrarily higher or lower institutional quality than its home country (h), so both South-North and North-South FDI are possible. However, relative to another MNE of similar characteristics but from a country of different institutional quality, the ranking of the MNE's home institutions predicts the ranking of their FDI destination institutions. That is, a MNE from a country with a lower institutional quality than another MNE, will tend more likely to invest in a destination with a lower institutional quality than the other MNE's choice of destination, all else being equal. This key prediction of complementarity in institutional quality is tested by including the level and the interaction of the institutional qualities of the home and destination countries as part of the determinants of bilateral FDI, as highlighted in (9).

$$\begin{aligned}\ln(FDI_{ijt}) &= \beta_0 + \beta_1 \ln(gdp_{i,t-1}) + \beta_2 \ln(gdp_{j,t-1}) + \beta_3 \ln(gdppc_{i,t-1}) + \beta_4 \ln(gdppc_{j,t-1}) \\ &\quad + \beta_5 |\ln(gdppc_{i,t-1}) - \ln(gdppc_{j,t-1})| + \beta_6 \ln(p_{i,t-1}) + \beta_7 \ln(p_{j,t-1}) \\ &\quad + \boldsymbol{\beta_8 G_{i,t-1} + \beta_9 G_{j,t-1} + \beta_{10}(G_{i,t-1} * G_{j,t-1})} + \gamma X_{ij,t-1} + \epsilon_{ijt}, \qquad (9)\end{aligned}$$

where FDI_{ijt} denotes FDI in country i from country j in year t. This specification implies that the marginal impact of the destination institution $G_{i,t-1}$ on FDI is

$$\partial \ln(FDI_{ijt})/\partial G_{i,t-1} = \beta_8 + \beta_{10} G_{j,t-1}, \qquad (10)$$

which is increasing in the home institutional quality and consistent with the theoretical prediction of Proposition 1 if $\beta_{10} > 0$. That is, as one country moves up the institutional quality ladder, it will attract more FDI only from countries of sufficiently good institutions such that $G_{j,t-1} > \hat{G}_j \equiv -\beta_8/\beta_{10}$ and the FDI increment is more from countries of higher institutional qualities. Seen from a different perspective, the marginal impact of the home institution $G_{j,t-1}$ on FDI,

$$\partial \ln(FDI_{ijt})/\partial G_{j,t-1} = \beta_9 + \beta_{10} G_{i,t-1}, \qquad (11)$$

is increasing in the destination institutional quality and consistent with Proposition 1 if $\beta_{10} > 0$. A country of better institutions may not gain an advantage in investing unless the destination is of sufficiently good institutions such that $G_{i,t-1} > \hat{G}_i \equiv -\beta_9/\beta_{10}$, and the advantage is stronger with better destination institutions. In sum, a positive sign of β_{10} suggests a relational matching pattern in FDI in terms of institutions, supporting the paper's main hypothesis. An insignificant β_{10}, on the other hand, implies a uniform impact of home or destination institutions on FDI, regardless of the FDI parnter country's institution, contradicting Proposition 1.

In developing the theoretical model, I have abstracted away from many potentially important determinants of FDI suggested in the literature. I control for them in (9). This includes the economic size of the home and host countries, measured by their gross domestic products (GDP), the income level of the two countries, measured by their GDPs per capita, and the business operating costs of the two countries, measured by their general price levels. Globerman and Shapiro (2002) provide some of the economic interpretations for how these variables may or may not affect FDI. I also include a long list of bilateral variables X, typically used in the gravity literature, to measure the extent of transaction or information barriers: such as distance, contiguity, common language, colonial relationship, regional trade agreement (RTA), and currency union (CU). To this list I add bilateral investment treaty (BIT), as in the context of FDI, the presence of BIT may affect the political risk perception of MNEs and the FDI pattern as a result.

A recent study by Fajgelbaum et al. (2014) proposes a Linder hypothesis for FDI, i.e., MNEs will tend to invest in countries of similar income per capita, due to non-homothetic preferences and proximity-versus-concentration tradeoff in serving foreign markets. In (9), I include the same measure as in their study, the absolute value of the difference in log-per capita income between home and host country, to control for this potential effect.

$$\begin{aligned} \ln(FDI_{ijt}) &= \beta_0 + \beta_5 |\ln(gdppc_{i,t-1}) - \ln(gdppc_{j,t-1})| + \boldsymbol{\beta_{10}(G_{i,t-1} * G_{j,t-1})} \\ &\quad + \gamma X_{ij,t-1} + \lambda_{i,t} + \theta_{j,t} + \epsilon_{ijt}. \end{aligned} \tag{12}$$

Following Anderson and van Wincoop (2003), it has become a regular practice in the gravity literature of trade to control for the multilateral resistance to trade of the exporting and the importing country. Several trade models have since derived different theoretical foundations for

such multilateral effects; see for example, Eaton and Kortum (2002), Helpman et al. (2008) and Chaney (2008). The theoretical foundations for a gravity model of FDI are not as well established, although recently Head and Ries (2008) and de Sousa and Lochard (2011) have developed models for bilateral FDI that bear close resemblance to the gravity equations for trade, suggesting the presence of multilateral home and host country effects. In view of this, I consider a second empirical specification, (12), which includes destination country by year and home country by year fixed effects $(\lambda_{i,t}, \theta_{j,t})$. The two-way fixed effects are allowed to vary by year given the panel data structure. This alternative specification has its pros and cons. On one hand, it reduces the concern of estimation bias due to omitted variables that are home-country-year or destination-country-year specific. For example, the corporate tax rate of the home and the host country may affect FDI but are omitted from (9); the two-way fixed effects in (12) control for all such omitted variables. On the other hand, this alternative specification does not allow us to separately identify the effects of variables that vary by home/destination country and year, such as GDP, GDP per capita, and the level of institutional quality, which are of interest by themselves. In addition, the set of dummies for $\{it\}$ and $\{jt\}$ can become very large for a large panel dataset. This poses a problem for estimation methods that rely on numerical optimization, such as Tobit to account for zero FDI. Thus, I will rely on (9) as the benchmark for inferences and use (12) as a robustness check wherever feasible.

3.1 Data and Measurement

The FDI data are based on the UNCTAD's Bilateral FDI Statistics, which consists of 206 economies reporting their FDI inward stock, outward stock, inward flows, and outward flows (in current US dollars) for year 2001-2012 with respect to each of the partner countries. The set of partner countries ever recorded includes 193 economies, 13 of them not in the set of reporters.[4] This dataset is comprehensive in terms of country coverage, including poor and institutionally weak countries as FDI source or destination countries. This is an advantage, as it allows us to look into the less investigated spectrum of South-South or South-North FDI.

In the UNCTAD's Bilateral FDI Statistics, the FDI inward stock (flows) reported by the recipient country is not necessarily equal to the FDI outward stock (flows) reported by the origin country. Thus, without taking a stand on the direction or degree of measurement errors, I measure

[4] http://unctad.org/en/Pages/DIAE/FDI%20Statistics/FDI-Statistics-Bilateral.aspx

FDI_{ijt} based on each of these four series alternately as robustness checks. The raw data differentiate between missing data (data that are not available or are not separately reported, indicated by two dots (..)) and zero data (where the item is equal to zero or negligible; indicated by dash (-)). The pattern of zero or missing FDI data also suggests some degrees of measurement errors (e.g., the recipient country reports zero FDI while the origin country reports missing or positive FDI). Having no convincing way of correcting the data, I choose to use only the positive (and zero) FDI entries, and treat the missing FDI entries as literally missing and drop them from the analysis.[5]

I measure a country's institutional quality based on the Worldwide Governance Indicators (WGI), 2013 Update, in six dimensions: voice and accountability (VA), political stability and absence of violence (PV), government effectiveness (GE), regulatory quality (RQ), rule of law (RL), and control of corruption (CC).[6] Details on the interpretation of the indicators can be found in Kaufmann et al. (2010). Since these indicators are highly correlated with one another, I include them one at a time in the estimation of (9) and (12). For each governance indicator, a country receives both a point estimate, ranging from approximately -2.5 (weak) to 2.5 (strong), and a percentile ranking among all countries. I report the results based on the point estimate, although the results are qualitatively similar based on the percentile ranking.

The data on GDP and GDP per capita (in current US dollars) are retrieved from the World Development Indicators.[7] I then construct the general price level of a country relative to the United States by the ratio of its GDP (per capita) in current US dollars to its GDP (per capita) in current PPP dollars. This variable aims to capture the overall cost of production (including, e.g., rent, wages, intermediate materials and infrastructure) facing the firms operating in the country.

The transportation and information cost proxies X are compiled from several sources. The CEPII website provides the data on bilateral distance, and whether two countries are contiguous (*contig*), share a common language (*comlang*), have ever had a colonial link (*colony*), have had a common colonizer after 1945 (*comcol*), are currently in a colonial relationship (*curcol*) or were/are the same country (*smctry*).[8] The data on whether two countries are currently in a regional trade

[5] I also drop the negative FDI entries from the analysis, as they cannot be accounted for by the current theoretical or empirical framework.

[6] http://data.worldbank.org/data-catalog/worldwide-governance-indicators.

[7] http://data.worldbank.org/data-catalog/world-development-indicators (22-Jul-2014 update).

[8] http://www.cepii.fr/CEPII/en/bdd_modele/presentation.asp?id=6. See Mayer and Zignago (2011) for further details. I corrected some coding errors of *smctry* in the original data, wherever they were not symmetric for the same country pair ij and ji based on the information in http://www.worldstatesmen.org/, which is the same source used

agreement (*rta* for 1958-2014), and using a common currency (*comcur* for 1948-2009) are retrieved from de Sousa's website.[9] Last but not least, the data on bilateral investment treaties are obtained from UNCTAD. I construct a dummy variable that equals one if a BIT is currently in force between a country pair and zero otherwise, according to the date a BIT enters into force (and the date it is terminated if ever).[10]

All regressors (if time variant) are lagged one period relative to the FDI variable, to reduce the concern of reverse causality. I also experiment using longer lags of the right-hand-side variables in unreported exercises, but the results are similar.

In sum, the study covers bilateral FDI stocks (flows) for 219 economies during 2001-2010, with attrition in the sample size due to missing entries or gaps in the data. The effective sample varies depending on the estimation specification used and the FDI series under study.[11]

3.2 Results

I estimate specifications (9) and (12) first using only positive FDI observations based on the ordinary least squares (OLS) estimation method, and subsequently using both positive and zero FDI observations based on the Tobit estimation method à la Eaton and Kortum (2001).

3.2.1 Positive bilateral FDI

Table 1 presents the OLS estimation result of (9) for FDI inward stock (reported by the recipient country). As shown by the table, the coefficient on the institution interaction term ($G_d * G_h$) is positive and significant regardless of the indicators used to measure institutional quality, consistent with the implications of Proposition 1. Table 2 summarizes the results when the FDI outward stock, inflows, or outflows are used instead to measure the FDI activity. The sign of the coefficient

by the original data to create the variable. Details on the entries corrected are available upon request.

[9] http://jdesousa.univ.free.fr/data.htm. See also de Sousa (2012).

[10] The data were retrieved from the UNCTAD website in June 2013. The interface has since been migrated to http://investmentpolicyhub.unctad.org/IIA. I corrected the original data downloaded in cases where BIT entries on one side are missing or where the dates of entry into force are inconsistent between two BIT partner countries. The corrections are made based on the updated information provided in the above website. I set the cutoff date to be July 1st of a year in defining the year-varying *bit* dummy.

[11] The whole set of 219 economies consists of 206 reporting countries and 13 partner countries that did not appear as reporting countries. The FDI series used are truncated in year 2010, because the data on currency union is available only up to 2009. Gaps in the data, for example, occur in the governance indicators, which are not available for year 2001. Missing data arise mainly due to the dependent variable, although different country coverage across data sources leads to missing data on the independent variables as well. Specification (12) does not require observations on country-specific variables, which explains the bigger sample size in estimations with two-way fixed effects.

on $(G_d * G_h)$ is significantly positive and amazingly robust across all FDI series and institution indicators (except perhaps PV). The Linder hypothesis for FDI proposed by Fajgelbaum et al. (2014) is also supported overall by the data on FDI stock; the evidence for it is weaker in cases of FDI flows.

We can calculate the lower bound $\hat{G}_h$ implied by (10) for the home country that will be attracted by a better institution at the destination given the coefficient estimates of G_d and $(G_d * G_h)$ in Table 2. As an indication, the median of this cutoff across all institution indicators and FDI series in Table 2 is -0.43. This corresponds to approximately 0.43 standard deviation below the mean of the institutional quality distribution across countries.[12] Thus, not all FDIs are attracted toward countries of better institutions. Better institutions attract proportionally more FDIs from countries of better institutions. A non-negligible proportion of countries with institutional qualities at the lower spectrum ($\Phi(-0.43) \approx 0.33$ using standardized normal distribution as an approximation) in fact choose to make FDI in destinations of relatively poor institutional quality. On the other hand, the median of the corresponding cutoff $\hat{G}_d$ suggested by (11) is -0.64 based on the coefficient estimates of G_h and $(G_d * G_h)$ in Table 2. This highlights the fact that a better institution at home can be a disadvantage for firms when investing in destinations of relatively poor institutional qualities ($\Phi(-0.64) \approx 0.26$).

I take the strength of the complementarity between home and host country institutions as reflecting the possibility for firms to build firm-specific informal institutions to reduce political risk. The strongest complementarity is observed for RQ and weakest for PV in Table 2. This suggests that firms born in countries of weak regulatory quality may find it easier to build informal institutions such as political network to deal with red tapes than firms born in politically unstable and violence-prone countries to build informal institutions such as private security forces to deal with civil riots, terrorism, or wars. To the extent that such informal institutions are too costly, we will not observe the complementarity effect. This is illustrated by the case of PV given FDI outward stock (flows), where the sign for the coefficient on G_d is positive and for $(G_d * G_h)$ insignificant, indicating a universal preference for a politically more stable host country. Without the complementarity, the positive sign for the coefficient on G_h also implies that firms coming from a politically more stable country has a universal advantage in outward FDI, other things being equal.

[12] The WGI governance indicators have approximately a zero mean and unit standard deviation.

Refer back to Table 1. Most of the other coefficients are precisely estimated and consistent with ex ante theoretical predictions. A larger home or host market size, a lower production cost at the destination and a higher production cost at home, physical proximity, common language, colonial relationship, and currency union all help raise bilateral FDI stock.

Richer countries (of higher GDP per capita) receives less FDI, contrary to what some FDI theories may suggest based on consumer purchasing powers. This result based on FDI inward stock, however, turns out to be sensitive to the FDI series studied: the sign is generally positive and significant for FDI inflows/outflows but insignificant for FDI outward stock. This discrepancy in findings may not be surprising as GDP per capita can reflect, for example, productivity levels but also factor prices, which work in opposite directions in influencing FDI. Thus, its net effect on FDI is an empirical question. Although I have used the general price level to control for production cost, it may not have fully captured the factor price variation across countries.

Regional trade agreements and bilateral investment treaties do not have robust positive effects on bilateral FDI. In fact, ironically, BIT is shown to have a negative (and statistically significant) effect on inward FDI stock; similar results are found using FDI outward stock or FDI flows. This result, however, is not robust to the inclusion of fixed effects or zero FDI observations, as will be shown later.

Table 3 reports the coefficient estimates for specification (12) with two-way (time-varying) fixed effects included in the regression, based on FDI inward stock. Overall, the results are similar to the benchmark in Table 1. The institution interaction term continues to be positive and significant (except in the case of PV), showing a complementarity effect between home and host country institutions. The Linder hypothesis for FDI is now clearly supported by the data. Most of the other variables have qualitatively similar effects on FDI as in the benchmark, although some lose their significance (such as currency union) while others become statistically significant (such as regional trade agreements). The BIT is now shown to have insignificant (rather than negative) effect on bilateral FDI.

Table 4 summarizes the results with FE controls for all FDI series. The findings are quite similar regardless of the FDI series used (in stock or flows, reported by the recipient or the country of origin). The institutional complementarity effect is statistically significant overall. The effect tends to be stronger for VA, GE and RQ, weaker for RL and CC, and absent for PV. This pattern suggests an

interesting interpretation of the areas where informal institutions are feasible and prevalent, and where they are not. The Linder hypothesis for FDI continues to hold. The results for the other variables (unreported) are also similar across FDI series, although with some variations in their statistical significance: one robust difference from the benchmark is that the coefficient on RTA now becomes statistically positive with the FE controls.

3.2.2 Zero augmented bilateral FDI

This section presents the result of Tobit estimation using both zero and positive FDI observations. This is implemented by the STATA *intreg* command, with the left censoring point set at the minimum positive value observed of the FDI series under study.[13] This is first done for specification (9) without the FE controls. As shown in Table 5 for FDI inward stock, the coefficient estimates for most variables increase in magnitude, as may be expected given that OLS estimates of truncated data tend to be downward biased toward zero. The coefficient on $(G_d * G_h)$ now roughly doubles and is unambiguously significant and positive regardless of the institution indicator. As shown in Table 6, the strong evidence for the complementarity effect in institutions is robust to the changes in the FDI series used. Overall, the complementarity effect is still the strongest in terms of VA, GE and RQ, and the weakest in terms of PV, with RL and CC somewhere in between. Given the coefficient estimates on G_d, G_h, and $(G_d * G_h)$, we can again calculate the lower bound $\hat{G}_h$ for an increase in G_d to attract FDI from countries above the threshold, and $\hat{G}_d$ for an increase in G_h to increase the home firm's FDI in destinations above the threshold. The median of these cutoffs across all FDI series and institution indicators are 0.19 for $\hat{G}_h$ and -0.49 for $\hat{G}_d$, indicating generally higher cutoffs (in standard deviations of the institutional quality distribution) than in the benchmark. This is consistent with the above finding of a stronger complementarity effect given the Tobit estimation.

The evidence in Table 6 for the Linder hypothesis is not as overwhelming across the board; it is generally stronger for the FDI stock, and weaker or absent for the FDI flows, similar to the benchmark. As shown in Table 5, the sign of BIT now turns around and becomes significantly positive with the inclusion of zero FDI observations. This indicates the importance of BIT at driving the extensive margin (rather than the intensive margin) of FDI relations. The same is

[13] That is $2000 US dollars for the FDI outward flows and $1 million US dollars for the other three FDI series.

observed when the other FDI series (unreported) are used. By the estimates in Table 5, signing a BIT would increase the latent bilateral inward FDI stock by around 30%, which is economically significant.

I conduct the last robustness check by allowing both two-way fixed effects and zero FDI observations. As discussed earlier, this poses some difficulties for estimation methods based on numerical optimization such as Tobit, as the number of dummy variables for FE increases rapidly with the number of countries and years (206 reporting countries and 193 partner countries, multiplied by 10 years, although the actual number is smaller with missing data). The estimation algorithm *intreg* in Stata cannot produce variance estimates in some cases. I verify the results with the *tobit* algorithm. The point estimates are arbitrarily close to those of *intreg*, but the variance estimates are still missing for some cases and not necessarily in the same cases as with *intreg*. This led me to conjecture that the missing variance is not necessarily a statistical, but a numerical, result. In view of this, I will take a conservative approach when interpreting the estimation results by focusing on the cases without missing (or incredibly large) variance estimates.

Table 7 presents the results for FDI inward stock. The RQ equation cannot be precisely estimated for all variables, while the variance estimate is missing for the Linder term in the VA equation and for the institution interaction term in the GE equation. Nonetheless, all the point estimates are quite similar across equations of different institution indicators, and are of expected signs. Proximity, contiguity, common language, colonial relationship, being/having been the same country, regional trade agreements, currency union, and bilateral investment treaties all help raise potential FDI activities. Compared to Table 3, all variables increase in their magnitude of impact with the inclusion of zero FDI observations and some by a large amount, suggesting the importance of these variables at affecting the extensive margin of FDI.

Table 8 summarizes the results on the Linder effect and the institutional complementarity effect for all FDI series. The Linder hypothesis for FDI holds in general, except in the case of FDI outward stock where the variance estimate is missing for several equations. We see an overall robust evidence for the institutional complementarity effect, except PV where the effect is weak or absent. The findings for the other regressors based on different FDI series (unreported) are also more or less the same as presented in Table 7.

4 Conclusion

In this paper, I propose a theory on a positive assortative matching pattern between the home and destination institutional qualities in bilateral FDI flows. This theory formalizes the perspective on the comparative advantage of South-based MNEs to deal with politically uncertain and relationship-based investment environment, relative to their peers from the North. This helps explain the greater presence of South-based MNEs in countries of relatively poorer institutions documented by several studies in the literature. I conduct an extensive econometric test of this hypothesis using bilateral FDI for 219 economies during year 2001-2010. The results indicate a statistically significant complementarity effect between the home and destination institutional qualities, robust to the FDI series studied (in stock or flows, reported by the recipient or the country of origin), the institution indicators used, the inclusion of two-way multilateral effects, and the consideration of zero FDI. The effect tends to be stronger with the inclusion of zero FDI and for the dimensions of institutions where the scope for firms to build informal institutions (to counter the associated political risk) is bigger, which is in line with the proposed theoretical mechanism and implications.

The paper's theoretical framework also suggests some additional interesting testable predictions. First, there will be a reverse assortative matching pattern between the productivity of a firm and the institutional quality of its choice of FDI destination, all else being equal. This implies a mapping from the firm productivity distribution of a home country to a distribution of FDI destinations in terms of institutional qualities. Second, given the same spread of firm productivity, the spread of institutional qualities of FDI destinations will be larger for a source country of higher political risk (or worse institutional quality). I leave the examination of these hypotheses to future work with firm-level FDI data.

The idea of informal institution has been modeled in this paper in a simplistic reduced form. In reality, it likely embodies many facets of firm-specific cultures and capacities growing out of a society's political structure and social conditions. The rich fabric and informal nature of these human, social, and political capitals (with some discussed in the introduction) are difficult to measure in mathematical terms but represent an interesting avenue to understand the incentives and constraints of firms born in developing countries, and their comparative advantages when venturing abroad. Further theoretical and empirical analysis of the mechanisms through which

firms' informal institutional endowment transcends national borders would also help us identify the factors determining the strength of its transnationalization.

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Math Appendix

Comparative Static Analysis of ϕ Use the definitions of $I(r)$, $H(I)$, $\underline{r}$, $\bar{r}$ and $\hat{r}$, respectively, we can show that

$$\begin{aligned}
\frac{\partial I(r)}{\partial \phi} &= \begin{cases} 0 & \text{if } r = 0 \\ \kappa(\varepsilon - 1)\frac{I(r)}{\phi} > 0 & \text{if } \ r \in (0,1] \end{cases}, \\
\frac{\partial H(I)}{\partial \phi} &= 0, \\
\frac{\partial \underline{r}}{\partial \phi} &= 0, \\
\frac{\partial \bar{r}}{\partial \phi} &= \kappa(\varepsilon - 1)\frac{\bar{r}}{\phi}\frac{I(1)}{(1 - I(1))} > 0, \\
\frac{\partial \hat{r}}{\partial \phi} &= \kappa(\varepsilon - 1)\frac{\hat{r}}{\phi}\frac{I(\hat{r})}{(1 - (1+\xi)I(\hat{r}))} > 0.
\end{aligned}$$

Thus, an increase in ϕ will lead to a rightward shift of the $I(r)$ schedule for all $r \in (0,1]$ (and the rightward shift is bigger for higher r), while leaving $I(0)$ and the whole schedule $H(I)$ unchanged. This implies that firms of higher productivity levels in each country invest more in I and choose to locate their FDI in countries of relatively poorer institutional qualities. In Figure 1, the partition of countries is not affected. In Figure 2, $R^{\emptyset S}$ remains unchanged (since $\partial \underline{r}/\partial \phi = 0$), R^{NS} expands (since $\partial \hat{r}/\partial \phi > 0$), and $R^{\emptyset N}$ shrinks (since $\partial \bar{r}/\partial \phi > 0$). The impact on R^{SN} is ambiguous.

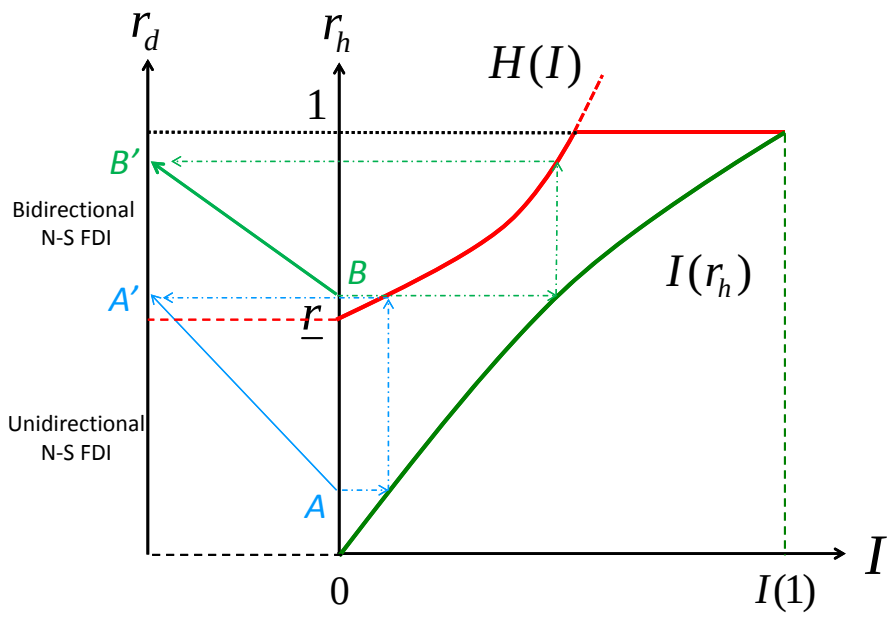

Figure 1: Mapping in Institutions between Home and Host Countries. Scenario (a)

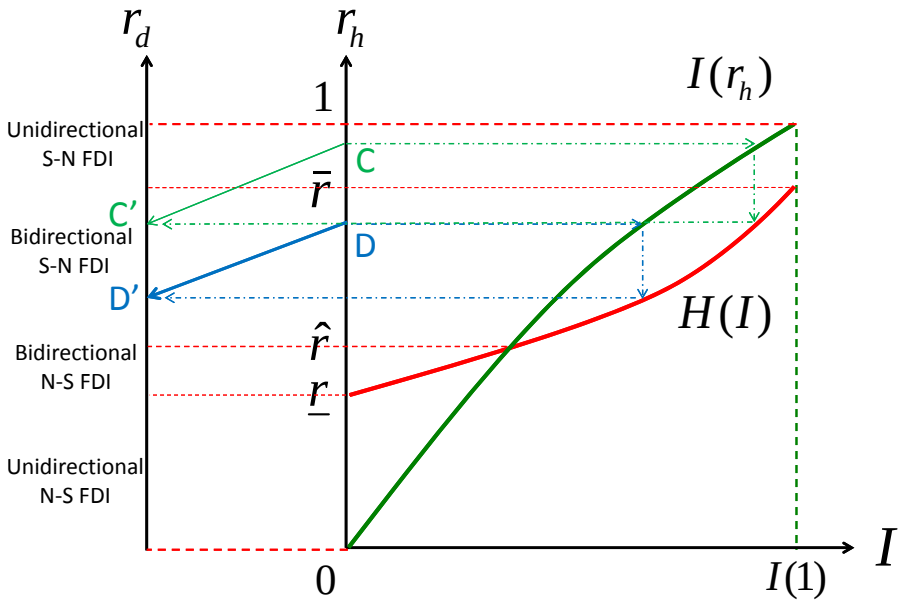

Figure 2: Mapping in Institutions between Home and Host Countries. Scenario (b)

Table 1: Positive bilateral FDI—inward stock reported by the recipient country

FDI inward stock	**VA**		**PV**		**GE**		**RQ**		**RL**		**CC**	
$\ln(gdp_d)$	0.586	***	0.617	***	0.565	***	0.581	***	0.584	***	0.584	***
	(0.020)		(0.022)		(0.020)		(0.020)		(0.020)		(0.020)	
$\ln(gdp_h)$	0.449	***	0.477	***	0.437	***	0.449	***	0.451	***	0.454	***
	(0.018)		(0.019)		(0.018)		(0.018)		(0.018)		(0.018)	
$\ln(gdppc_d)$	-0.029		-0.143	**	-0.146	***	-0.148	***	-0.138	**	-0.159	***
	(0.052)		(0.056)		(0.054)		(0.055)		(0.055)		(0.053)	
$\ln(gdppc_h)$	0.262	***	0.165	***	0.091		0.172	***	0.099	*	0.082	
	(0.054)		(0.058)		(0.057)		(0.057)		(0.058)		(0.056)	
$\lvert D.\ln(gdppc)\rvert$	-0.125	***	-0.179	***	-0.066	*	-0.035		-0.073	*	-0.098	***
	(0.034)		(0.033)		(0.038)		(0.039)		(0.039)		(0.037)	
$\ln(p_d)$	-0.088		-0.088		-0.271	**	-0.303	**	-0.301	**	-0.342	***
	(0.136)		(0.120)		(0.125)		(0.125)		(0.124)		(0.124)	
$\ln(p_h)$	0.840	***	1.080	***	0.932	***	1.020	***	0.879	***	0.856	***
	(0.154)		(0.132)		(0.136)		(0.136)		(0.133)		(0.132)	
G_d	-0.124	**	0.167	***	0.150	**	0.164	**	0.168	**	0.224	***
	(0.054)		(0.049)		(0.072)		(0.080)		(0.066)		(0.059)	
G_h	0.097	*	0.175	***	0.257	***	0.017		0.290	***	0.310	***
	(0.051)		(0.047)		(0.059)		(0.069)		(0.060)		(0.050)	
$\boldsymbol{G_d * G_h}$	**0.267**	***	**0.082**	*	**0.298**	***	**0.400**	***	**0.283**	***	**0.210**	***
	(0.035)		**(0.042)**		**(0.045)**		**(0.055)**		**(0.045)**		**(0.034)**	
$\ln(distance)$	-0.486	***	-0.491	***	-0.525	***	-0.517	***	-0.509	***	-0.522	***
	(0.042)		(0.042)		(0.041)		(0.041)		(0.041)		(0.041)	
contig.	0.535	***	0.513	***	0.552	***	0.567	***	0.560	***	0.531	***
	(0.130)		(0.130)		(0.128)		(0.129)		(0.129)		(0.128)	
comlang	1.164	***	1.204	***	1.100	***	1.145	***	1.106	***	1.049	***
	(0.090)		(0.089)		(0.088)		(0.088)		(0.089)		(0.088)	
colony	0.876	***	0.887	***	0.898	***	0.894	***	0.892	***	0.870	***
	(0.136)		(0.135)		(0.134)		(0.133)		(0.136)		(0.133)	
comcol	0.417	***	0.468	***	0.313	**	0.362	***	0.337	***	0.346	***
	(0.127)		(0.127)		(0.123)		(0.123)		(0.123)		(0.123)	
curcol	0.484		0.587	*	0.736	**	0.648	**	0.735	**	0.988	***
	(0.330)		(0.328)		(0.349)		(0.313)		(0.345)		(0.370)	
smctry	0.165		0.089		0.126		0.145		0.187		0.202	
	(0.229)		(0.228)		(0.225)		(0.227)		(0.227)		(0.225)	
rta	0.030		0.154	**	0.007		-0.017		0.037		0.064	
	(0.080)		(0.078)		(0.076)		(0.078)		(0.077)		(0.076)	
comcur	0.713	***	0.739	***	0.756	***	0.745	***	0.710	***	0.746	***
	(0.144)		(0.146)		(0.145)		(0.142)		(0.146)		(0.144)	
bit	-0.176	***	-0.229	***	-0.163	***	-0.212	***	-0.157	**	-0.110	*
	(0.064)		(0.064)		(0.062)		(0.062)		(0.063)		(0.062)	
# Observations	24974		24959		24970		24970		24974		24970	
R^2	0.528		0.525		0.539		0.535		0.537		0.541	

Note: Robust standard errors clustered by country-pairs are reported in the parenthesis. The entry ***, ** and * indicates statistical significance at the 1%, 5% and 10% level, respectively. All regressors (if time variant) are lagged one period relative to the FDI variable. $\lvert D.\ln(gdppc)\rvert$ is a shorthand for $\lvert \ln(gdppc_{i,t-1}) - \ln(gdppc_{j,t-1})\rvert$.

Table 2: Positive bilateral FDI—all stocks and flows

	VA		**PV**		**GE**		**RQ**		**RL**		**CC**	
FDI inward stock:												
$\lvert D.\ln(gdppc)\rvert$	-0.125	***	-0.179	***	-0.066	*	-0.035		-0.073	*	-0.098	***
	(0.034)		(0.033)		(0.038)		(0.039)		(0.039)		(0.037)	
G_d	-0.124	**	0.167	***	0.150	**	0.164	**	0.168	**	0.224	***
	(0.054)		(0.049)		(0.072)		(0.080)		(0.066)		(0.059)	
G_h	0.097	*	0.175	***	0.257	***	0.017		0.290	***	0.310	***
	(0.051)		(0.047)		(0.059)		(0.069)		(0.060)		(0.050)	
$\boldsymbol{G_d * G_h}$	**0.267**	***	**0.082**	*	**0.298**	***	**0.400**	***	**0.283**	***	**0.210**	***
	(0.035)		**(0.042)**		**(0.045)**		**(0.055)**		**(0.045)**		**(0.034)**	
# Observations	24974		24959		24970		24970		24974		24970	
R^2	0.528		0.525		0.539		0.535		0.537		0.541	
FDI outward stock:												
$\lvert D.\ln(gdppc)\rvert$	-0.087	**	-0.168	***	-0.053		-0.033		-0.081	*	-0.093	**
	(0.038)		(0.038)		(0.041)		(0.043)		(0.042)		(0.041)	
G_h	0.053		0.281	***	0.323	***	0.029		0.428	***	0.533	***
	(0.056)		(0.055)		(0.067)		(0.079)		(0.066)		(0.055)	
G_d	0.165	***	0.121	**	0.121		0.235	***	0.100		0.130	**
	(0.058)		(0.054)		(0.076)		(0.083)		(0.069)		(0.062)	
$\boldsymbol{G_d * G_h}$	**0.270**	***	**0.018**		**0.273**	***	**0.348**	***	**0.215**	***	**0.184**	***
	(0.037)		**(0.046)**		**(0.047)**		**(0.058)**		**(0.046)**		**(0.034)**	
# Observations	22793		22782		22793		22793		22793		22793	
R^2	0.522		0.516		0.528		0.525		0.525		0.535	
FDI inward flow:												
$\lvert D.\ln(gdppc)\rvert$	-0.050	*	-0.085	***	0.060	*	0.053		0.010		0.016	
	(0.028)		(0.028)		(0.034)		(0.034)		(0.035)		(0.032)	
G_d	-0.103	**	0.214	***	-0.162	**	-0.066		-0.092		0.024	
	(0.051)		(0.046)		(0.069)		(0.076)		(0.064)		(0.057)	
G_h	0.097	**	0.076	*	0.092	*	0.007		0.207	***	0.130	***
	(0.047)		(0.045)		(0.053)		(0.062)		(0.054)		(0.044)	
$\boldsymbol{G_d * G_h}$	**0.248**	***	**0.133**	***	**0.395**	***	**0.444**	***	**0.289**	***	**0.263**	***
	(0.033)		**(0.038)**		**(0.044)**		**(0.055)**		**(0.044)**		**(0.033)**	
# Observations	19414		19403		19407		19407		19414		19407	
R^2	0.422		0.421		0.432		0.430		0.427		0.431	
FDI outward flow:												
$\lvert D.\ln(gdppc)\rvert$	-0.019		-0.085	***	0.053		0.045		-0.003		0.011	
	(0.031)		(0.031)		(0.035)		(0.034)		(0.036)		(0.035)	
G_h	-0.034		0.119	**	0.174	***	-0.022		0.254	***	0.246	***
	(0.050)		(0.050)		(0.056)		(0.068)		(0.058)		(0.047)	
G_d	0.066		0.161	***	-0.107		0.041		0.010		0.019	
	(0.053)		(0.048)		(0.068)		(0.075)		(0.061)		(0.057)	
$\boldsymbol{G_d * G_h}$	**0.250**	***	**0.047**		**0.328**	***	**0.359**	***	**0.216**	***	**0.213**	***
	(0.032)		**(0.041)**		**(0.041)**		**(0.052)**		**(0.042)**		**(0.032)**	
# Observations	16305		16299		16304		16304		16305		16304	
R^2	0.442		0.436		0.449		0.445		0.444		0.449	

Note: See the note of Table 1. Coefficient estimates for the remaining regressors omitted in the report.

Table 3: Positive bilateral FDI—inward stock; with FE controls

FDI inward stock	**VA**		**PV**		**GE**		**RQ**		**RL**		**CC**	
$\lvert D.\ln(gdppc)\rvert$	-0.230	***	-0.314	***	-0.188	***	-0.236	***	-0.231	***	-0.198	***
	(0.030)		(0.031)		(0.037)		(0.036)		(0.038)		(0.036)	
$\boldsymbol{G_d * G_h}$	**0.174**	***	**-0.056**		**0.163**	***	**0.109**	**	**0.092**	**	**0.113**	***
	(0.032)		**(0.038)**		**(0.043)**		**(0.049)**		**(0.042)**		**(0.031)**	
$\ln(distance)$	-0.973	***	-0.980	***	-0.980	***	-0.981	***	-0.975	***	-0.977	***
	(0.045)		(0.045)		(0.045)		(0.045)		(0.045)		(0.045)	
contig.	0.277	**	0.285	**	0.286	**	0.290	**	0.289	**	0.289	**
	(0.130)		(0.129)		(0.129)		(0.130)		(0.129)		(0.129)	
comlang	0.589	***	0.589	***	0.581	***	0.593	***	0.582	***	0.587	***
	(0.097)		(0.097)		(0.097)		(0.097)		(0.097)		(0.097)	
colony	0.948	***	0.973	***	0.953	***	0.957	***	0.959	***	0.941	***
	(0.141)		(0.140)		(0.140)		(0.140)		(0.140)		(0.140)	
comcol	0.365	***	0.383	***	0.401	***	0.400	***	0.405	***	0.403	***
	(0.134)		(0.135)		(0.135)		(0.135)		(0.135)		(0.135)	
curcol	0.776		0.723		0.824		0.783		0.802		0.834	
	(0.916)		(0.917)		(0.936)		(0.923)		(0.925)		(0.946)	
smctry	0.497	**	0.438	**	0.457	**	0.444	**	0.457	**	0.460	**
	(0.220)		(0.219)		(0.220)		(0.220)		(0.219)		(0.219)	
rta	0.106		0.211	***	0.176	**	0.179	**	0.189	**	0.192	**
	(0.080)		(0.078)		(0.078)		(0.080)		(0.078)		(0.078)	
comcur	0.102		0.126		0.157		0.139		0.141		0.154	
	(0.135)		(0.135)		(0.136)		(0.135)		(0.135)		(0.135)	
bit	0.001		-0.006		0.002		-0.012		-0.002		0.005	
	(0.059)		(0.059)		(0.059)		(0.059)		(0.059)		(0.059)	
Controls:												
Home Country * Year FE	Y		Y		Y		Y		Y		Y	
Destination Country * Year FE	Y		Y		Y		Y		Y		Y	
# Observations	25692		25677		25688		25688		25692		25688	
R^2	0.716		0.714		0.715		0.714		0.715		0.715	

Note: See the note of Table 1.

Table 4: Positive bilateral FDI—all stocks and flows; with FE controls

	VA		**PV**		**GE**		**RQ**		**RL**		**CC**	
FDI inward stock:												
$\lvert D.\ln(gdppc)\rvert$	-0.230	***	-0.314	***	-0.188	***	-0.236	***	-0.231	***	-0.198	***
	(0.030)		(0.031)		(0.037)		(0.036)		(0.038)		(0.036)	
$\boldsymbol{G_d * G_h}$	**0.174**	***	**-0.056**		**0.163**	***	**0.109**	**	**0.092**	**	**0.113**	***
	(0.032)		**(0.038)**		**(0.043)**		**(0.049)**		**(0.042)**		**(0.031)**	
# Observations	25692		25677		25688		25688		25692		25688	
R^2	0.716		0.714		0.715		0.714		0.715		0.715	
FDI outward stock:												
$\lvert D.\ln(gdppc)\rvert$	-0.271	***	-0.397	***	-0.249	***	-0.276	***	-0.328	***	-0.257	***
	(0.034)		(0.036)		(0.042)		(0.040)		(0.042)		(0.042)	
$\boldsymbol{G_d * G_h}$	**0.184**	***	**-0.126**	***	**0.151**	***	**0.138**	***	**0.027**		**0.103**	***
	(0.034)		**(0.040)**		**(0.046)**		**(0.053)**		**(0.044)**		**(0.032)**	
# Observations	23323		23312		23323		23323		23323		23323	
R^2	0.721		0.720		0.720		0.720		0.719		0.720	
FDI inward flow:												
$\lvert D.\ln(gdppc)\rvert$	-0.213	***	-0.280	***	-0.146	***	-0.179	***	-0.228	***	-0.187	***
	(0.029)		(0.030)		(0.035)		(0.034)		(0.036)		(0.035)	
$\boldsymbol{G_d * G_h}$	**0.195**	***	**0.024**		**0.222**	***	**0.202**	***	**0.087**	**	**0.118**	***
	(0.029)		**(0.033)**		**(0.038)**		**(0.045)**		**(0.037)**		**(0.028)**	
# Observations	19905		19894		19898		19898		19905		19898	
R^2	0.643		0.640		0.642		0.642		0.641		0.641	
FDI outward flow:												
$\lvert D.\ln(gdppc)\rvert$	-0.223	***	-0.313	***	-0.197	***	-0.226	***	-0.271	***	-0.233	***
	(0.033)		(0.034)		(0.039)		(0.037)		(0.040)		(0.040)	
$\boldsymbol{G_d * G_h}$	**0.173**	***	**-0.048**		**0.158**	***	**0.135**	***	**0.036**		**0.071**	**
	(0.033)		**(0.037)**		**(0.041)**		**(0.049)**		**(0.039)**		**(0.030)**	
# Observations	16681		16675		16680		16680		16681		16680	
R^2	0.661		0.659		0.659		0.659		0.659		0.659	
Controls:												
Home Country * Year FE	Y		Y		Y		Y		Y		Y	
Destination Country * Year FE	Y		Y		Y		Y		Y		Y	

Note: See the note of Table 1. Coefficient estimates for the remaining regressors omitted in the report.

Table 5: Zero augmented bilateral FDI—inward stock

FDI inward stock	**VA**		**PV**		**GE**		**RQ**		**RL**		**CC**	
$\ln(gdp_d)$	0.650	***	0.713	***	0.614	***	0.635	***	0.641	***	0.640	***
	(0.026)		(0.028)		(0.026)		(0.026)		(0.026)		(0.026)	
$\ln(gdp_h)$	0.626	***	0.648	***	0.621	***	0.639	***	0.632	***	0.633	***
	(0.024)		(0.025)		(0.023)		(0.023)		(0.023)		(0.024)	
$\ln(gdppc_d)$	-0.023		-0.284	***	-0.185	**	-0.229	***	-0.128	*	-0.158	**
	(0.068)		(0.075)		(0.072)		(0.074)		(0.074)		(0.071)	
$\ln(gdppc_h)$	0.281	***	0.252	***	0.160	**	0.256	***	0.160	**	0.132	*
	(0.069)		(0.076)		(0.073)		(0.073)		(0.074)		(0.073)	
$\lvert D.\ln(gdppc)\rvert$	-0.121	***	-0.250	***	-0.046		-0.023		-0.047		-0.097	**
	(0.043)		(0.043)		(0.048)		(0.049)		(0.049)		(0.048)	
$\ln(p_d)$	-0.302	*	-0.055		-0.315	*	-0.410	**	-0.276	*	-0.309	*
	(0.178)		(0.161)		(0.164)		(0.164)		(0.164)		(0.167)	
$\ln(p_h)$	1.899	***	1.799	***	1.592	***	1.718	***	1.512	***	1.495	***
	(0.200)		(0.176)		(0.177)		(0.176)		(0.176)		(0.176)	
G_d	-0.102		0.356	***	0.128		0.273	**	0.032		0.130	*
	(0.073)		(0.070)		(0.093)		(0.106)		(0.088)		(0.078)	
G_h	-0.281	***	-0.019		0.056		-0.259	***	0.148	*	0.216	***
	(0.067)		(0.067)		(0.081)		(0.091)		(0.081)		(0.068)	
$\boldsymbol{G_d * G_h}$	**0.563**	***	**0.183**	***	**0.529**	***	**0.650**	***	**0.522**	***	**0.374**	***
	(0.048)		**(0.058)**		**(0.059)**		**(0.072)**		**(0.059)**		**(0.045)**	
$\ln(distance)$	-0.610	***	-0.598	***	-0.640	***	-0.644	***	-0.620	***	-0.632	***
	(0.055)		(0.056)		(0.054)		(0.054)		(0.055)		(0.054)	
contig.	1.015	***	1.082	***	1.098	***	1.116	***	1.105	***	1.078	***
	(0.184)		(0.182)		(0.179)		(0.180)		(0.180)		(0.179)	
comlang	1.433	***	1.463	***	1.362	***	1.428	***	1.365	***	1.318	***
	(0.128)		(0.127)		(0.125)		(0.125)		(0.126)		(0.126)	
colony	1.341	***	1.356	***	1.369	***	1.366	***	1.359	***	1.320	***
	(0.188)		(0.186)		(0.186)		(0.184)		(0.190)		(0.187)	
comcol	0.525	***	0.688	***	0.456	**	0.514	***	0.510	***	0.524	***
	(0.188)		(0.185)		(0.180)		(0.181)		(0.181)		(0.182)	
curcol	0.307		0.431		0.656	*	0.511		0.624	*	0.896	***
	(0.347)		(0.329)		(0.368)		(0.412)		(0.347)		(0.323)	
smctry	0.843	***	0.676	**	0.741	**	0.754	**	0.813	***	0.812	***
	(0.288)		(0.292)		(0.289)		(0.292)		(0.289)		(0.288)	
rta	0.037		0.280	***	0.063		0.018		0.114		0.165	
	(0.107)		(0.105)		(0.103)		(0.104)		(0.104)		(0.103)	
comcur	0.726	***	0.786	***	0.799	***	0.779	***	0.747	***	0.801	***
	(0.206)		(0.206)		(0.203)		(0.202)		(0.204)		(0.201)	
bit	0.339	***	0.247	***	0.352	***	0.273	***	0.362	***	0.407	***
	(0.085)		(0.085)		(0.083)		(0.083)		(0.084)		(0.084)	
# Observations	36587		36483		36567		36567		36587		36567	
# Zeroes	11613		11524		11597		11597		11613		11597	

Note: See the note of Table 1.

Table 6: Zero augmented bilateral FDI—all stocks and flows

	VA		PV		GE		RQ		RL		CC	
FDI inward stock:												
$\lvert D.\ln(gdppc)\rvert$	-0.121	***	-0.250	***	-0.046		-0.023		-0.047		-0.097	**
	(0.043)		(0.043)		(0.048)		(0.049)		(0.049)		(0.048)	
G_d	-0.102		0.356	***	0.128		0.273	**	0.032		0.130	*
	(0.073)		(0.070)		(0.093)		(0.106)		(0.088)		(0.078)	
G_h	-0.281	***	-0.019		0.056		-0.259	***	0.148	*	0.216	***
	(0.067)		(0.067)		(0.081)		(0.091)		(0.081)		(0.068)	
$\boldsymbol{G_d * G_h}$	**0.563**	***	**0.183**	***	**0.529**	***	**0.650**	***	**0.522**	***	**0.374**	***
	(0.048)		**(0.058)**		**(0.059)**		**(0.072)**		**(0.059)**		**(0.045)**	
# Observations	36587		36483		36567		36567		36587		36567	
# Zeroes	11613		11524		11597		11597		11613		11597	
FDI outward stock:												
$\lvert D.\ln(gdppc)\rvert$	-0.137	***	-0.274	***	-0.103	**	-0.102	*	-0.124	**	-0.127	**
	(0.047)		(0.046)		(0.052)		(0.054)		(0.053)		(0.052)	
G_h	-0.263	***	0.294	***	0.609	***	-0.014		0.644	***	0.679	***
	(0.074)		(0.072)		(0.093)		(0.107)		(0.090)		(0.076)	
G_d	-0.049		-0.038		-0.166	*	0.154		-0.198	**	-0.161	**
	(0.076)		(0.075)		(0.099)		(0.113)		(0.093)		(0.081)	
$\boldsymbol{G_d * G_h}$	**0.519**	***	**0.119**	*	**0.442**	***	**0.501**	***	**0.394**	***	**0.355**	***
	(0.049)		**(0.061)**		**(0.063)**		**(0.077)**		**(0.062)**		**(0.047)**	
# Observations	35257		35166		35256		35256		35257		35256	
# Zeros	12464		12384		12463		12463		12464		12463	
FDI inward flow:												
$\lvert D.\ln(gdppc)\rvert$	0.005		-0.079	**	0.107	**	0.101	**	0.028		0.022	
	(0.037)		(0.037)		(0.043)		(0.043)		(0.044)		(0.042)	
G_d	-0.204	***	0.394	***	-0.286	***	-0.001		-0.199	**	-0.055	
	(0.069)		(0.062)		(0.086)		(0.097)		(0.081)		(0.072)	
G_h	0.031		0.108	*	0.242	***	0.020		0.391	***	0.310	***
	(0.062)		(0.060)		(0.073)		(0.084)		(0.073)		(0.060)	
$\boldsymbol{G_d * G_h}$	**0.472**	***	**0.204**	***	**0.531**	***	**0.610**	***	**0.366**	***	**0.324**	***
	(0.044)		**(0.052)**		**(0.055)**		**(0.067)**		**(0.055)**		**(0.042)**	
# Observations	36340		36236		36315		36315		36340		36315	
# Zeros	16926		16833		16908		16908		16926		16908	
FDI outward flow:												
$\lvert D.\ln(gdppc)\rvert$	-0.130		-0.390	***	-0.009		-0.109		-0.146		-0.113	
	(0.092)		(0.093)		(0.105)		(0.106)		(0.108)		(0.104)	
G_h	-0.622	***	0.443	***	0.605	***	-0.123		0.846	***	0.738	***
	(0.157)		(0.150)		(0.182)		(0.210)		(0.185)		(0.151)	
G_d	-0.312	**	-0.058		-0.959	***	-0.191		-0.631	***	-0.613	***
	(0.158)		(0.154)		(0.204)		(0.238)		(0.189)		(0.171)	
$\boldsymbol{G_d * G_h}$	**1.145**	***	**0.336**	**	**0.988**	***	**0.939**	***	**0.714**	***	**0.696**	***
	(0.103)		**(0.131)**		**(0.125)**		**(0.157)**		**(0.127)**		**(0.098)**	
# Observations	32925		32844		32912		32912		32925		32912	
# Zeros	16620		16545		16608		16608		16620		16608	

Note: See the note of Table 1. Coefficient estimates for the remaining regressors omitted in the report.

Table 7: Zero augmented bilateral FDI—inward stock; with FE controls

FDI inward stock	**VA**		**PV**		**GE**		**RQ**	**RL**		**CC**	
$\lvert D.\ln(gdppc)\rvert$	-0.244		-0.370	***	-0.172	***	-0.233	-0.216	***	-0.192	***
	(.)		(0.037)		(0.060)		(0.671)	(0.046)		(0.044)	
$\boldsymbol{G_d * G_h}$	**0.357**	***	**0.000**		**0.309**		**0.263**	**0.235**	***	**0.219**	***
	(0.040)		**(0.046)**		**(.)**		**(0.759)**	**(0.050)**		**(0.038)**	
$\ln(distance)$	-1.263	***	-1.276	***	-1.275	***	-1.282	-1.269	***	-1.271	***
	(0.054)		(0.054)		(0.289)		(3.689)	(0.054)		(0.054)	
contig.	0.391	**	0.414	**	0.417	**	0.425	0.420	**	0.420	**
	(0.166)		(0.165)		(0.189)		(1.233)	(0.165)		(0.164)	
comlang	0.821	***	0.819	***	0.811	***	0.830	0.801	***	0.815	***
	(0.118)		(0.119)		(0.218)		(2.391)	(0.120)		(0.119)	
colony	1.416	***	1.463	***	1.436	***	1.439	1.446	***	1.413	***
	(0.181)		(0.181)		(0.368)		(4.146)	(0.182)		(0.182)	
comcol	0.434	***	0.492	***	0.505	**	0.512	0.518	***	0.505	***
	(0.164)		(0.166)		(0.202)		(1.483)	(0.165)		(0.165)	
curcol	1.197	***	1.143	***	1.306	**	1.227	1.282	***	1.334	***
	(0.438)		(0.440)		(0.518)		(3.557)	(0.435)		(0.426)	
smctry	0.829	***	0.705	**	0.740	**	0.719	0.744	***	0.747	***
	(0.276)		(0.276)		(0.322)		(2.088)	(0.275)		(0.275)	
rta	0.175	*	0.381	***	0.322	***	0.309	0.336	***	0.353	***
	(0.095)		(0.092)		(0.116)		(0.894)	(0.092)		(0.092)	
comcur	0.490	**	0.562	***	0.615	**	0.583	0.592	***	0.612	***
	(0.199)		(0.198)		(0.243)		(1.689)	(0.200)		(0.200)	
bit	0.187	**	0.171	**	0.193	**	0.166	0.191	***	0.201	***
	(0.072)		(0.073)		(0.084)		(0.484)	(0.072)		(0.072)	
Controls:											
Home Country * Year FE	Y		Y		Y		Y	Y		Y	
Destination Country * Year FE	Y		Y		Y		Y	Y		Y	
# Observations	37688		37582		37668		37668	37688		37668	
# Zeroes	11996		11905		11980		11980	11996		11980	

Note: See the note of Table 1.

Table 8: Zero augmented bilateral FDI—all stocks and flows; with FE controls

	VA	PV	GE	RQ	RL	CC
FDI inward stock:						
$\lvert D.\ln(gdppc)\rvert$	-0.244	-0.370 ***	-0.172 ***	-0.233	-0.216 ***	-0.192 ***
	(.)	(0.037)	(0.060)	(0.671)	(0.046)	(0.044)
$\boldsymbol{G_d * G_h}$	**0.357** ***	**0.000**	**0.309**	**0.263**	**0.235** ***	**0.219** ***
	(0.040)	**(0.046)**	**(.)**	**(0.759)**	**(0.050)**	**(0.038)**
# Observations	37688	37582	37668	37668	37688	37668
# Zeroes	11996	11905	11980	11980	11996	11980
FDI outward stock:						
$\lvert D.\ln(gdppc)\rvert$	-0.289	-0.449	-0.273 ***	-0.335	-0.335	-0.247 ***
	(.)	(.)	(0.051)	(.)	(.)	(0.051)
$\boldsymbol{G_d * G_h}$	**0.325** ***	**-0.080**	**0.222** ***	**0.158** **	**0.121** **	**0.202** ***
	(0.043)	**(0.050)**	**(0.056)**	**(0.067)**	**(0.055)**	**(0.041)**
# Observations	36153	36060	36152	36152	36153	36152
# Zeroes	12830	12748	12829	12829	12830	12829
FDI inward flow:						
$\lvert D.\ln(gdppc)\rvert$	-0.156 ***	-0.259 ***	-0.083	-0.110 ***	-0.189 ***	-0.150 ***
	(0.033)	(0.033)	(39.70)	(0.040)	(0.041)	(0.040)
$\boldsymbol{G_d * G_h}$	**0.358** ***	**0.074** *	**0.325**	**0.334** ***	**0.150** ***	**0.168** ***
	(0.035)	**(0.039)**	**(155.7)**	**(0.050)**	**(0.042)**	**(0.033)**
# Observations	37399	37293	37374	37374	37399	37374
# Zeroes	17494	17399	17476	17476	17494	17476
FDI outward flow:						
$\lvert D.\ln(gdppc)\rvert$	-0.360 ***	-0.650 ***	-0.296 ***	-0.425 ***	-0.459 ***	-0.364 ***
	(0.086)	(0.088)	(0.108)	(0.105)	(0.109)	(0.108)
$\boldsymbol{G_d * G_h}$	**0.818** ***	**0.037**	**0.589** ***	**0.469** ***	**0.311** ***	**0.366** ***
	(0.088)	**(0.106)**	**(0.112)**	**(0.131)**	**(0.106)**	**(0.086)**
# Observations	33716	33633	33703	33703	33716	33703
# Zeroes	17035	16958	17023	17023	17035	17023
Controls:						
Home Country * Year FE	Y	Y	Y	Y	Y	Y
Destination Country * Year FE	Y	Y	Y	Y	Y	Y

Note: See the note of Table 1. Coefficient estimates for the remaining regressors omitted in the report.