

Does Improved Governance Lead to a Higher Share of FDI in Foreign Equity Investments?

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Abstract

We investigate the relationship between a country's share of FDI in its foreign equity investments (FDI plus foreign portfolio investment (FPI)) and its governance quality relative to that of the investor's country. Poorly governed countries are often advised to improve their governance structures to attract FDI. Contrary to this prescription, we find that as the governance quality of poor-governance host countries improves, FDI share of foreign equity investments declines, because of a relatively higher increase in FPI than FDI. Only after a sustained and meaningful improvement in governance quality, do low-quality host countries reap the benefits of attracting greater FDI from investors in high-quality countries.

Keywords Governance quality; FDI; FPI

JEL Classification: F21, F23, O43

1. Introduction

External debt financing (especially short-term debt) to a country is driven by speculative considerations regarding interest rates and exchange rates and is considered less desirable (Hausmann and Fernandez-Arias, 2000). In contrast, equity financing facilitates risk-sharing between domestic producers and foreign investors (Rogoff, 1999), thereby helping to stabilize domestic consumption and improve domestic producers' ability to pursue projects with higher risk and return. Equity investment

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can take the form of FDI or foreign portfolio investment (FPI). While both forms of equity contribute to economic growth and are thus preferable to debt, they react differently to external shocks and financial crises. FDI is generally preferred because it is more stable and better facilitates technological transfer (Borensztein *et al.*, 1998).

Given the importance of foreign equity investment, understanding the factors that explain the composition of a country's external equity financing is worth investigating. One such factor, governance quality, has received substantial attention in the recent literature. The governance quality of a country largely defines its investment environment, and thus its potential for economic growth (Globerman and Shapiro, 2002). Studies have produced seemingly contradictory results, with some identifying FDI as the preferred mode of investment when the host country suffers from poor governance and others finding that good governance attracts FDI. We contribute to the literature by presenting a unifying theory that explains the contradictory results of previous studies in a broader context.

Unlike most previous studies that utilize country *totals*, we examine foreign investment positions between pairs of *individual* countries (i.e. bilateral investment positions). This is important because policy initiatives aimed at influencing a country's external capital structure will impact investments from individual countries. While existing studies have largely examined only the level of the host country's governance quality, we consider the host country's governance quality *relative* to that of the source country. Foreign investors naturally compare the governance environment of a host country to the environment they have experienced at home, which has the appeal of familiarity. Our approach is supported by Andres *et al.*'s (2013) finding that location choices of FDI investors from different countries (specifically, developed vs. developing countries) are based on different pull factors. By examining *bilateral* investment positions and *relative* governance quality, we are able to investigate how a policy change can separately impact investments from individual countries. The potential for offsetting effects at the individual country level challenges the notion of universal policy prescriptions.

For countries that already have an adequate level of governance quality, we find that improvement in governance quality increases FDI activity. Such a relationship, however, is not evident for countries with poor governance quality. For such countries, we find that improvement in governance quality is actually likely to *decrease* the proportion of FDI in total foreign equity investment. This is because improvement in governance quality decreases information asymmetry, making it more difficult for controlling shareholders to enjoy the benefits of private control. This discourages additional investment from existing FDI investors, whose familiarity with weak institutions in their home countries (a competitive advantage) allows them to maximize such control benefits. At the same time, marginal improvement in the governance quality of the host country is insufficient to attract new investors from countries with high governance quality, who continue to perceive the host country's relatively weak institutions as a disadvantage. Only after a sustained and

meaningful improvement in governance quality can a low-quality host country reap the benefit of attracting greater FDI from investors in high-quality countries.

2. Background and Hypotheses Development

Although FDI and FPI are officially defined as the acquisition of more or less than a specific fraction (10%) of a foreign firm's shares, FDI is more than just the purchase of a substantial share in a foreign firm—it is an actual exercise of control and management (Razin *et al.*, 1998). Likewise, the critical feature of FPI is the lack of control over management (Goldstein and Razin, 2006). Despite their differences, both FDI and FPI are affected by institutions, which are the bedrock of market-based economies. Although governance deficiencies are deterrents to investment in general, governance factors that make a country attractive to one type of investor may not be as relevant for other types of investors. For example, the legal protection of owners' rights is certainly important to the portfolio investor but may be less so to the direct investor, who is able to exercise more control. Similarly, the size and activity of a country's equity market is critical to decision making in portfolio investments due to liquidity demands, but much less relevant to direct investment. Although political stability may be of concern to a portfolio investor, it influences direct investors to a much greater extent (Guler and Guillen, 2010). Albuquerque (2003) suggests that because much FDI is intangible in nature (e.g. technology, brand names) it is generally less subject to expropriation than other forms of foreign investment, and the optimal contract between foreign investors and financially constrained countries (in which expropriation is more likely) will usually be FDI.

Empirical studies on the subject have provided mixed results. Globerman and Shapiro (2002), Buchanan *et al.* (2012), and Maiti and Mukherjee (2013) find a positive relationship between governance quality and inward FDI. A similar positive effect on FDI flows, specifically for political institutions, is observed by Jensen (2003) and Busse and Hefeker (2005). Faria and Mauro (2009) similarly observe that better institutions tilt countries' capital structures toward equity (both FDI and FPI), with the effect being stronger for FDI than FPI. Wei (2000a,b, 2001) also concludes that weaker institutions shift capital inflows toward bank loans and away from FDI.

In contrast, Blonigen and Piger (2014) observe no relationship between FDI and governance factors, and Kho *et al.* (2009) find that there is no significant relationship between the composition of US foreign equity investment and several governance variables once insider ownership is accounted for. Hausmann and Fernandez-Arias (2000) also find no relationship, or possibly a negative relationship, between governance quality and the share of FDI in total capital inflows. Similarly, Albuquerque (2003) observes that the share of FDI is unrelated to governance quality. Li and Filer (2007) identify a significant negative relationship between GEI (a governance quality index) and the share of FDI in total capital inflows. However, they also find a positive

relationship between GEI and absolute FDI inflows. Daude and Fratzscher (2008) find that portfolio investment, particularly portfolio equity, is much more sensitive than FDI or bank loans to a broad set of governance indicators.

We identify two primary explanations for the failure of prior studies to yield conclusive results. First, much of the literature focuses on the governance quality of the *host* country with scant regard to the quality of the *source* country. Given that investors use the prevailing governance environment in their home countries as a benchmark when making foreign investment decisions, it is imperative that governance differences between the host and source country be considered. A few studies do consider the source country's governance quality. One example is Kim *et al.* (2011), who find that investors from low control-ownership disparity countries disfavor high-disparity Korean stocks. Similarly, Abdioglu *et al.* (2013) identify governance quality in the investor's home country as a factor influencing the decision to invest. Such findings suggest that the nature of governance in home countries influences portfolio choices abroad. A second explanation is that, while existing studies entertain the possibility of different impacts of various governance factors on external capital components, they fail to consider a differential *marginal* impact of governance quality based on the current state of governance in the host country. Existing studies have been estimating models with a *linear* relationship between governance quality and external capital structure, but a linear relationship may not exist.

Marginal improvement in the governance quality of poor-governance host countries might have a significantly different impact on FDI and FPI than such improvement in good-governance host countries. FDI investors from countries with better governance than the host country are limited in their ability to consume the private benefits enjoyed by domestic insiders. Given this disadvantage, foreign investors favor FDI over FPI to obtain access to information and to monitor controlling shareholders and limit their insider benefits. As the host governance quality improves, the benefits of monitoring decrease and FDI becomes less attractive relative to FPI (Kho *et al.*, 2009). Therefore, improvement in governance quality for a poor-governance country is likely to lead to a decrease in FDI share, that is, its relative attractiveness compared to FPI. If an increase in FPI (a component of the denominator) pursuant to improvement in governance quality is not accompanied by a proportionate increase in FDI (the numerator), then FDI share decreases.

Countries with the lowest governance quality may even experience lower FDI if they pursue improvement in governance factors. This is because institutional deficiencies imply absent or poorly functioning markets, which allow information asymmetries to persist. Improvement in governance quality decreases such asymmetries and makes it difficult for controlling shareholders to enjoy the benefits of private control. This discourages additional investment from existing FDI investors, who enjoy such control benefits and are comfortable with weak institutions due to experience navigating similar conditions either in the subject host country or in their home countries. At the same time, marginal improvement in the governance

quality of the host country is generally not material enough to attract new investors from good-governance countries, who continue to perceive the host country's relatively weak institutions as a disadvantage.

Prior studies also suggest that, during the early stages, improvement in governance quality may not result in higher FDI in poor-governance countries. Cuervo-Cazurra (2006) shows that reduced corruption does not necessarily increase the level of FDI; rather, it changes the composition of FDI investors. Using firm-level data, Cuervo-Cazurra and Genc (2008) show that multinational enterprises (MNEs) from developing source countries are more prevalent, compared to MNEs from developed countries, in the least-developed host countries with poor regulatory quality and lower control of corruption. We contend that, for poor-governance countries, improved governance quality scares or drives away some investors while possibly attracting others. The overall effect is not positive enough to significantly increase FDI.

With regard to the denominator of the FDI/FE ratio, a relatively small improvement in governance quality can increase total foreign equity investment (FE) in the host country through the portfolio investment channel. Portfolio investors are yield-seeking investors that seek risk-reduction through diversification. A country that is relatively segregated from the rest of the world, with low FDI due to poor governance quality, has a low world beta and provides greater diversification benefits (Aurelio, 2006; Forster *et al.*, 2014). Prior studies (e.g. Daude and Fratzscher, 2008) show that FPI is more sensitive to improvements in governance quality than FDI. We thus contend that marginal improvement in the governance quality of poor-governance countries is likely to positively impact FPI more than FDI, resulting in a lower FDI/FE ratio.¹

At higher levels of governance quality, we expect a positive relationship between governance quality and FDI share. Good-governance countries already attract more FPI than poor-governance countries because higher transparency levels alter the control versus liquidity tradeoff, making FPI the more efficient mode of investment. Further improvement in governance does not provide any marginal incentive that would attract additional FPI. Consequently, greater FDI in response to better governance quality is not necessarily accompanied by a proportionate increase in FPI, resulting in a higher FDI/FE ratio. Hence, we hypothesize as follows:

Hypothesis 1. There is a non-linear U-shaped relationship between governance quality and the share of FDI in total foreign equity investment.

Hypothesis 2. The relationship is negative for countries with poor governance.

Hypothesis 3. The relationship is positive for countries with good governance.

¹We acknowledge that FDI investors and FPI investors in a country are not one and the same; thus, such investors are not necessarily choosing between FDI and FPI. None of our arguments assume such behavior. Rather, our arguments are based on the relative attractiveness of the host country to different types of investors.

3. Data and Results

3.1. Dependent Variable

The dependent variable is FDI as a share of total foreign equity investment (FDI plus FPI). Data for bilateral investment positions are from the Coordinated Direct Investment Survey (CDIS) and Coordinated Portfolio Investment Survey (CPIS) compiled by the International Monetary Fund (IMF). The CDIS, which is available beginning in year 2009, collects comprehensive data on FDI positions by economy of direct investor (for inward FDI) and by economy of investment (for outward FDI). The CPIS collects information on the stock of cross-border holdings of equity securities broken down by the issuer's economy of residence. We analyze capital *stocks* rather than capital *flows*, as do Faria and Mauro (2009) who compare this approach to firm-level studies of domestic capital structure that test liability stocks. Although most prior studies use flow data, studies examining both stocks and flows have found similar results (Hausmann and Fernandez-Arias, 2000). Stock data are more suitable for our study because changes in the governance quality of a country are gradual in nature and take a longer time to discernibly impact foreign investment.

3.2. Regression Model

We test our hypotheses with a regression model of the following form:

$$FDI\ Share = b_0 + b_1(Gov.) + b_2(Relative\ Gov.) + b_3(Relative\ Gov.)^2 + b_kX_k + e$$

Based on our hypotheses, we expect to observe significant relationships for *Relative Gov.* and its squared term.

3.3. Explanatory Variables

The two primary factors we examine are *Governance*, the governance quality of the *host* country, and *Relative Governance*, the governance quality of the source country *relative* to that of the host country (host minus source). Following Faria and Mauro (2009), governance is measured as the simple average of six governance indicators drawn from the Worldwide Governance Indicators (WGI) project, a research dataset that is sponsored and distributed by the World Bank. The six indicators measure six broad dimensions of governance, including:

- 1 *Voice and Accountability (Voice)* captures the extent to which a country's citizens are able to participate in selecting their government, as well as the freedoms of expression and association and a free media.
- 2 *Political Stability and Absence of Violence (Political)* captures the likelihood of a country's government being destabilized or overthrown by unconstitutional or violent means, including politically motivated violence and terrorism.

- 3 *Government Effectiveness (Govt)* captures the quality of public services, the quality of the civil service and its independence from political pressure, the quality of policy development and implementation, and the credibility of the government's commitment to such policies.
- 4 *Regulatory Quality (Reg)* captures the ability of the government to develop and implement sound policies and regulations that promote private sector development.
- 5 *Rule of Law (Law)* captures confidence of agents in the rules of society, especially the quality of contract enforcement, property rights, the police, and the courts.
- 6 *Control of Corruption (Corrupt)* captures use of public power for private gain.

These governance indicators are subjective in nature, compiled from 30 individual data sources that combine the perceptions of many enterprise, citizen, and expert survey respondents. The WGI project reports the indicators for 215 industrial and developing countries. Each index ranges from -2 (weak governance) to $+2$ (strong governance) for most countries, with a mean of 0 and a standard deviation of 1.²

The relative governance factor is measured as the simple average of the six governance indicators for the host country minus that for the source country. Our use of an average follows Faria and Mauro (2009), who proffer that extracting a common component makes no difference. Despite the subjective nature of this composite measure, it is suitable for our study because managers make foreign investment decisions based on their *perceptions* of governance in a foreign country. Moreover, the use of a difference measure (relative governance = host governance – source governance) helps us avoid any bias that might be present in the index.

3.4. Control Variables

Our selection of control variables is based primarily on previous empirical work on the determinants of FDI. Faria and Mauro (2009) identify several factors: size of the economy, economic development, credit markets development, openness, natural resources, and economic transition of a former communist regime. These are considered “pull” factors, since they represent characteristics of the host country that attract (i.e. pull) investment from other countries. Other control factors employed in previous studies (e.g. Hausmann and Fernandez-Arias, 2000; Garibaldi *et al.*, 2002; Gliberman and Shapiro, 2002, 2003; Kim *et al.*, 2011) include physical distance between the source and host country, host stock market development, host education level, host legal origin, and host Tax_burden. Following Portes and Rey (2005), we include bilateral trade flows in the model, with a lag of 1 year to avoid

²The WGI indices were designed to be normally distributed. We calculate the skewness and kurtosis of the governance index in our data sample. The observed skewness measure of -0.27 and Kurtosis measure of 1.0 lie well within the acceptable ranges for a normal distribution.

endogeneity issues. To account for infrastructure development, we also include variables for electricity consumption and internet usage. Finally, we control for language effects with a three-level categorical variable that identifies the primary languages of two countries as the same, similar (not the same, but able to communicate), or dissimilar (not able to communicate). Definitions and data sources for all control variables are provided in the Appendix.

Expected signs for our control variables are based on results of previous studies. Albuquerque (2003), Hausmann and Fernandez-Arias (2000), and Li and Filer (2007) are the most directly applicable references, as their dependent variables are ratios similar to ours. From other studies that examine only FDI or FPI, we inferred the relative impact on our ratio of interest (FDI/FE). With regard to expected signs, our controls can be segregated into two primary groups. Positive factors to attract FDI to a greater extent than FPI include trade, language similarity, private credit availability, openness, availability of natural resources, internet usage, electricity consumption, and education level. The second group is comprised of factors that are expected to positively impact both FDI and FPI, with the latter effect (FPI) dominating. This group includes size (GDP), economic development (GDP per capita), and stock market development.³ We expect a positive coefficient for *Transition_economies* because they offer untapped opportunities for private enterprise. Finally, physical distance is expected to negatively impact FDI with no significant impact on FPI.

3.5. Sample

Our sample includes all pairs of countries for which the necessary data are available for years 2009 (the first year that bilateral FDI investment positions are available) through 2011. Of the two investment data sets, CPIS and CDIS, the former contains the greater number of country-pair observations. We remove observations with no/confidential/negative CDIS or CPIS data, countries with no WGI data for the governance factor, and country pairs with zero foreign equity investment. Following prior studies (Hausmann and Fernandez-Arias, 2000; Faria and Mauro, 2009), we average all variables across the 3 years. Our sample includes 1607 observations for 49 different source countries and 65 host countries.⁴

³Although Chan *et al.* (2014) found that growth in GDP influences FDI, they did not examine FDI as a share of total foreign equity investment.

⁴Even though we have 3 years of data (2009, 2010, and 2011), we follow prior studies and average 3 years of data for two reasons. First, the nature of governance in countries does not change meaningfully from one year to the next. Moreover, the decision-making process for FDI generally takes years, and any effect would not be captured in such a short period of time. Second, for over 37% of country pairs, the data are not available for all 3 years. In most of these cases, the data are available for 1 year only. Inclusion of a variable measuring change in governance would cause non-random exclusion of country pairs, thereby possibly biasing the study.

3.6. Descriptive Statistics

A notable observation is that the FDI/FE ratio for a majority of the observations is above 0.5. This is expected because a large majority of the countries do not have sizable investments in their stock markets from foreign investors. We measure physical distance in deciles based on greater circle distance between country capitals for all possible country pairs.⁵ The mean and median physical distance decile for our sample are 3.33 and 3 respectively. This is a reflection of the fact that less-developed countries sometimes do not have meaningful investments in other far-off developing countries even though they continue to venture into developing countries close to home.

In Table 1, we report descriptive statistics across countries with different levels of governance quality (worst, below average, above average, and best). Countries with worst governance quality (e.g. Pakistan and Nigeria) have a smaller economy, lower standard of living, less trade activity, smaller stock market, and limited credit availability to the private sector. Such countries have lower inbound FDI on average. The mean values of electricity consumption, internet usage, and education are also lower in such countries. Examples of countries with the next level of governance quality (below average, but within 1 standard deviation of the mean) include Mexico, Russia, and Thailand. Countries with above-average governance quality include Israel, Brazil, South Africa, and Malaysia. Finally, the topmost group includes the United States, Singapore, Chile, and Switzerland.

While our data observations are fairly well distributed across the top three groups, we have very limited observations for countries with the bottom governance quality. Given that such countries invest little in other countries and attract investment from relatively fewer countries, it is not surprising that they constitute a small percentage of our sample. In Table 2, we present the distribution of total FDI dollars across four categories of host and source governance quality (same categories as Table 1). We find that an overwhelming majority of FDI activity (68%) is attributable to investors from source countries with the best governance quality. Investors from source countries with below-average governance contribute less than 1%. Similarly, the large majority of FDI dollars (92%) is invested in host countries with an index value above the mean. Within this group, the best countries (defined as those with an index value greater than 1) attract the lion's share (65%). The worst countries (with an index value less than -1) attract less than half a percent of total FDI dollars. Countries with the worst governance fail to attract meaningful FDI from better-quality countries, as well as such FDI from their peers.

3.7. Regression Results

We estimate an LP (linear probability) model and perform our analysis using GLS. Given the bounded nature (fraction between 0 and 1) of the dependent variable, we

⁵For large countries like Brazil, Canada, China, India, Russia, and the United States, we measure shortest distance between the borders instead of capital cities.

Table 1 Descriptive statistics across countries with different levels of governance quality

Table shows the mean value for the different variables across host countries with different levels of governance quality.

<i>Host governance</i>	Worst $-2 \leq X < -1$	Below average $-1 \leq X < 0$	Above average $0 \leq X < 1$	Best $1 \leq X < 2$
FDI to FE ratio	0.80	0.73	0.66	0.62
Governance	-1.18	-0.39	0.57	1.44
Relative Gov	-2.20	-1.33	-0.25	0.75
Trade (Mil \$)	952	3129	5702	5581
Physical distance	4277	4495	3286	3840
GDP (Bil \$)	264	838	1147	1780
GDP/capita (\$)	5287	7238	23 524	47 234
Stk. Mkt/GDP	0.16	0.53	0.70	0.93
Credit_dev	0.24	0.57	1.15	1.49
Openness	0.50	0.71	1.00	1.19
Nat_resources	0.01	0.07	0.06	0.09
Tax_burden	0.43	0.52	0.45	0.39
English_legal	0.57	0.20	0.22	0.38
Scand_legal	0.00	0.01	0.03	0.17
German_legal	0.00	0.08	0.41	0.15
Transition_econ	0.00	0.14	0.25	0.04
Lang_similarity	1.26	1.14	1.18	1.34
FDI(Mil \$)	1590	2912	8117	20 556
human_capital (%)	22.56	33.10	47.02	46.35
Kwh/cap('000)	1.34	2.47	5.48	9.12
Internet user per 100	25.05	32.25	60.19	77.70
N	47	431	583	546
<i>Examples</i>	Pakistan Nigeria	India Mexico Kazakhstan Russia Turkey Thailand	Israel Brazil South Africa Malaysia	USA Singapore Chile Switzerland Australia

also estimate a logit model. To account for censoring of the dependent variable (FDI share) at the lower bound of 0 and upper bound of 1, we also estimate Tobit models. We find that despite the bounded nature of the dependent variable our findings are not dependent on model choice. In the interest of ease of interpretation and presentation, we show the results of the GLS model here.⁶

⁶Results of the Logit and Tobit models are available upon request.

Table 2 Distribution of FDI dollars across source and host countries

Table shows the distribution of FDI dollars across host countries and source countries with different levels of governance quality.

		Host country				All
		Worst Gov < -1	Below avg. -1 ≤ Gov < 0	Above avg. 0 ≤ Gov < 1	Best 1 ≤ Gov	
Source country						
Worst	Gov < -1	0.0%	14.1%	19.9%	66.0%	0%
Below avg.	-1 ≤ Gov < 0	1.2%	3.4%	19.9%	75.6%	1%
Above avg.	0 ≤ Gov < 1	0.2%	9.6%	29.3%	60.8%	31%
Best	1 ≤ Gov	0.5%	6.3%	26.7%	66.6%	68%
All		0.4%	7.3%	27.4%	64.9%	100%

We estimate three different regression models with cluster-adjusted standard errors⁷ as follows:

$$FDI\ Share = b_0 + b_1(Gov.) + b_kX_k + e \tag{1}$$

$$FDI\ Share = b_0 + b_1(Gov.) + b_2(Relative\ Gov.) + b_kX_k + e \tag{2}$$

$$FDI\ Share = b_0 + b_1(Gov.) + b_2(Relative\ Gov.) + b_3(Relative\ Gov.)^2 + b_kX_k + e \tag{3}$$

The three specifications offer different pictures of the significance of the governance variables in predicting FDI/FE. In the first model, we find a significant positive coefficient on Governance. However, when Relative Governance is added (Model 2), Governance becomes insignificant, and Relative Governance has a highly significant positive coefficient. These results indicate that the governance quality of the host country contributes more to explaining FDI share when viewed relative to that of the source country. However, a majority of foreign investment, whether FDI or FPI, is made by investors from rich countries (which also happen to have better governance quality). At the same time, rich countries also attract the lion’s share of FDI and FPI. Therefore, many studies have reported a positive relationship between FDI and governance quality. Such findings are simply a reflection of the greater magnitude of investment activity from rich and better-quality nations.

We find a highly positive significant coefficient for the squared term, and Relative Governance continues to have a highly significant positive coefficient (Model 3). The adjusted R^2 is 0.20, which is comparable to the explanatory value of previous

⁷Clustered across host country. The results are robust to two-way clustering across host and source also.

studies that examine shares of foreign investment (e.g. Hausmann and Fernandez-Arias, 2000; Albuquerque, 2003; Li and Filer, 2007; Faria and Mauro, 2009). Our results suggest a convex relationship between relative governance and the FDI/FE ratio. It appears that the impact of improved governance quality in a host country may be positive for attracting FDI from some source countries and 0 or even negative for attracting FDI from others.

To better understand the underlying mechanism, we estimate the relationship between the natural log of FDI (measured in \$millions) and our variables of interest in Models 4 through 6 of Table 3. We present the regression equations for the models below:

$$\text{Ln}(\text{FDI}) = b_0 + b_1(\text{Gov.}) + b_k X_k + e \tag{4}$$

$$\text{Ln}(\text{FDI}) = b_0 + b_1(\text{Gov.}) + b_2(\text{Relative Gov.}) + b_k X_k + e \tag{5}$$

$$\text{Ln}(\text{FDI}) = b_0 + b_1(\text{Gov.}) + b_2(\text{Relative Gov.}) + b_3(\text{Relative Gov.})^2 + b_k X_k + e \tag{6}$$

Unlike in Model 2, where FDI share is the dependent variable, we find that the coefficient for Governance maintains its sign and gains magnitude and significance in Model 5 where Ln(FDI) is the dependent variable. However, the sign of Relative Governance is negative. This neutralizes much of the positive relationship between Governance and FDI, but not all.⁸ When we include the squared term of Relative Governance, both governance variables maintain their sign and magnitude, and we find a significant positive coefficient for the squared term. The non-linear impact is marginal though, suggesting the relationship between governance quality and FDI is highly monotonic. This suggests that relative governance has a much stronger non-linear impact on the FPI component (in the denominator of the FDI/FE ratio), consistent with prior findings that FPI is more sensitive to governance quality than FDI.

To further explore and illustrate the relationship between governance quality and FDI/FE, we segregate our sample into good-governance and poor-governance host countries. We use an index value of 0 (representing the mean) as the cutoff point.⁹ We first perform the same analysis as above using the subsample of countries with poor-governance quality (see Table 4). When using Governance as the only governance variable (Model 1), we find an insignificant coefficient for governance suggesting that governance does not impact FDI/FE for poor-governance countries. However, when we introduce Relative Governance in Model 2 we find a significantly positive coefficient, while the coefficient for Governance continues to

⁸Since relative governance is measured as the governance of the host minus source, an increase in host governance is accompanied by an equal increase in relative governance.

⁹Our results are robust to alternative cutoff points ranging from -0.5 to 0.5.

Table 3 Model estimates—full sample

The dependent variable for Models 1, 2, and 3 is FDI to FE ratio. The dependent variable in Models 4, 5, and 6 is Ln(FDI in millions). Cluster-robust standard errors. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Dep. variable	FDI/FE																							
	Model 1						Model 2						Model 3						Natural log of FDI (\$millions)					
	Coeff	Sigma	Coeff	Sigma	Coeff	Sigma	Coeff	Sigma	Coeff	Sigma	Coeff	Sigma	Coeff	Sigma	Coeff	Sigma	Coeff	Sigma						
Intercept	1.786	0.382***	1.926	0.390***	1.823	0.384***	-12.04	3.925***	-15.29	3.659***	-16.23	3.517***	0.061	0.035*	-0.012	0.036	0.003	0.036	0.419	0.259	1.920	0.288***	2.048	0.274***
Relative_Gov			0.072	0.012***	0.065	0.012***																		
Rel_Gov_sqd					0.019	0.006***																		
Internet	0.002	0.001	0.002	0.001	0.002	0.001	-0.005	0.012	-0.001	0.011	-0.001	0.010	0.002	0.002	0.001	0.002	0.002	0.001	0.010	0.010	0.001	0.010	0.009	0.009
human_capital	-0.001	0.002	-0.001	0.002	-0.001	0.002	-0.002	0.011	-0.001	0.010	-0.001	0.009	0.007***	0.007**	-0.016	0.007**	0.067	0.093	0.065	0.087	0.065	0.087	0.057	0.086
Kwh/cap('000)	-0.016	0.007**	-0.016	0.007**	-0.016	0.007**	0.067	0.093	0.065	0.087	0.057	0.086	0.005***	0.005***	0.047	0.005***	1.031	0.036***	0.985	0.038***	0.985	0.037**	0.999	0.037***
Ln(trade)	0.043	0.005***	0.046	0.005***	0.047	0.005***	1.031	0.036***	0.985	0.038***	0.985	0.037**	0.004	0.006	-0.004	0.006	-0.098	0.041**	-0.085	0.037**	-0.085	0.037**	0.463	0.102***
Phys_dist_decile	-0.004	0.006	-0.004	0.006	-0.005	0.006	-0.098	0.041**	-0.085	0.037**	-0.085	0.037**	0.014	0.015	-0.014	0.015	0.471	0.118***	0.467	0.097***	0.467	0.097***	0.006	0.118
Lang_similarity	-0.014	0.015	-0.014	0.015	-0.014	0.016	0.471	0.118***	0.467	0.097***	0.463	0.102***	-0.052	0.013***	-0.056	0.014***	-0.071	0.131	0.015	0.124	0.015	0.124	0.006	0.118
Ln(GDP)	-0.075	0.043*	-0.075	0.044*	-0.068	0.040*	-0.071	0.131	0.015	0.124	0.006	0.118	-0.075	0.043*	-0.075	0.044*	-0.282	0.378	-0.252	0.357	-0.252	0.357	-0.194	0.319
Ln(GDP/cap)	-0.028	0.033	-0.027	0.034	-0.031	0.033	-0.076	0.331	-0.123	0.340	-0.159	0.309	-0.028	0.033	-0.027	0.034	-0.076	0.331	-0.123	0.340	-0.123	0.340	-0.159	0.309
Stk_mkt/GDP	-0.026	0.044	-0.030	0.045	-0.025	0.043	0.316	0.348	0.423	0.336	0.474	0.316	-0.026	0.044	-0.030	0.045	0.316	0.348	0.423	0.336	0.423	0.336	0.474	0.316
Credit_dev	0.011	0.030	0.012	0.032	0.015	0.031	0.551	0.291*	0.535	0.294*	0.564	0.272**	0.011	0.030	0.012	0.032	0.551	0.291*	0.535	0.294*	0.535	0.294*	0.564	0.272**
Openness	0.123	0.146	0.133	0.143	0.162	0.148	1.360	0.998	1.157	0.954	1.430	0.872	0.123	0.146	0.133	0.143	1.360	0.998	1.157	0.954	1.157	0.954	1.430	0.872
Nat_resources	0.203	0.117*	0.214	0.119*	0.220	0.119*	0.573	1.067	0.394	0.980	0.474	0.316	0.203	0.117*	0.214	0.119*	0.573	1.067	0.394	0.980	0.394	0.980	0.474	0.316
Tax_burden	-0.026	0.047	-0.020	0.047	-0.017	0.045	-0.274	0.447	-0.381	0.437	-0.349	0.418	-0.026	0.047	-0.020	0.047	-0.274	0.447	-0.381	0.437	-0.381	0.437	-0.349	0.418
English_legal	-0.049	0.067	-0.042	0.067	-0.043	0.065	-1.433	0.768*	-1.578	0.714**	-1.573	0.699**	-0.049	0.067	-0.042	0.067	-1.433	0.768*	-1.578	0.714**	-1.578	0.714**	-1.573	0.699**

Table 3 (Continued)

Dep. variable	FDI/FE											
	Natural log of FDI (\$millions)											
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	Coeff	Sigma	Coeff	Sigma	Coeff	Sigma	Coeff	Sigma	Coeff	Sigma	Coeff	Sigma
German_legal	-0.043	0.048	-0.037	0.048	-0.029	0.044	-0.568	0.389	-0.686	0.392*	-0.612	0.359*
Transition_econ	0.114	0.037***	0.119	0.036***	0.120	0.037***	0.460	0.337	0.415	0.334	0.434	0.327
N	1477		1477		1477		1528		1528		1528	
Adj. R ²	0.17		0.192		0.198		0.482		0.578		0.582	
F-value	17.92		19.41		19.20		80.01		110.9		107.41	

be insignificant. This suggests that governance quality is positively correlated with FDI/FE for poor-governance countries, but only when measured relative to the source country. When we introduce the squared term of Relative Governance in Model 3, the coefficient of Relative Governance increases by more than 2.3 times and maintains its sign and significance, and the squared term has a positively significant coefficient.¹⁰ In sum, these results indicate that the impact of governance quality on FDI/FE for poor-governance countries is highly non-linear and very dependent on the level of the source country's governance quality. Given that data on electricity consumption, internet usage and education are missing for a few countries in the sample, we re-estimate our primary regression (regression equation 4) excluding these variables from the set of control variables in Model 4. Our results remain the same. In the estimation for FDI (Model 5), we find the sum of the coefficients for Governance and Relative Governance to be close to 0, indicating the observed relationship between FDI/FE and governance quality is primarily due to FPI rather than FDI. The insignificant and small coefficient for the squared term of Relative Governance in Model 6 also suggests that the observed non-linearity in FDI/FE is likely not due to FDI changes.

When we estimate the relationship between governance and FDI/FE for the good-governance subsample we find remarkably different results (see Table 5). First, we find a significantly positive coefficient for Governance in Model 1. When we include Relative Governance in Model 2, we find that Governance maintains its positive sign but loses significance. When we include the squared term of Relative Governance in Model 3, Governance is marginally significant and remains positive, with a coefficient magnitude 1.7 times that of Relative Governance. These results suggest that, when host countries with already above-average governance further improve their governance quality, they attract a higher share of FDI, regardless of the governance quality of the source country. In Model 5 of Table 5, we find that, after accounting for the negative coefficient of Relative Governance, the overall impact of both governance measures (Governance and Relative Governance) is highly positive and statistically significant. This indicates that the observed positive relationship between governance and FDI/FE for good-governance host countries is primarily due to increased FDI rather than FPI.

¹⁰We remind the reader here that, even though the coefficients for Relative Governance and Relative Governance squared for the FDI/FE models in Tables 6–8 are all positive, their implications differ. These coefficients only confirm the existence of the convex relationship between Relative Governance and FDI/FE. The possible range of Relative Governance in a subsample of poor-governance countries is significantly different from a subsample of good-governance countries. As we show in Figure 1 below, the downward sloping part of the U-shaped relationship is dominant in the relevant range of X for the poor-governance subsample, while the upward sloping part of the curve is relevant for the good-governance subsample.

Table 4 Model estimates—poor-governance subsample

Data are limited to host countries with governance index ≤ 0 . The dependent variable for Models 1, 2, 3, and 4 is FDI/FE and Ln(FDI) for Models 5 and 6. Cluster-robust standard errors. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Dep. variable	Natural log of FDI (\$millions)																	
	Model 1			Model 2			Model 3			Model 4			Model 5			Model 6		
	Coeff	Sigma		Coeff	Sigma		Coeff	Sigma		Coeff	Sigma		Coeff	Sigma		Coeff	Sigma	
Intercept	1.592	0.427***		1.637	0.449***		1.688	0.459***		1.455	0.403***		-23.62	2.374***		-24.65	3.376***	
Gov	0.003	0.053		-0.079	0.060		-0.036	0.062		-0.061	0.055		1.437	0.322***		1.150	0.377***	
Relative_Gov				0.066	0.025**		0.155	0.033***		0.148	0.030***		-1.469	0.133***		-1.458	0.233***	
Rel_Gov_sqd							0.043	0.014***		0.040	0.012***					-0.007	0.083	
Internet	-0.002	0.001*		-0.002	0.001		-0.002	0.001								-0.018	0.011	
human_capital	0.000	0.001		0.000	0.001		-0.001	0.001								-0.006	0.011	
Kwh/cap('000)	0.014	0.009		0.000	0.010		0.002	0.010								-0.024	0.116	
Ln(trade)	0.040	0.012***		0.039	0.012***		0.039	0.012***		0.043	0.011***		1.075	0.072***		1.097	0.081***	
Phys_dist_decile	-0.026	0.010**		-0.025	0.009**		-0.024	0.009**		-0.023	0.008**		-0.048	0.073		-0.068	0.071	
Lang_similarity	-0.027	0.039		-0.039	0.037		-0.043	0.035		-0.047	0.030		0.441	0.224*		0.505	0.286*	
Ln(GDP)	-0.075	0.023***		-0.073	0.025***		-0.070	0.025***		-0.053	0.016***		0.174	0.101*		0.103	0.153	
Ln(GDP/cap)	0.052	0.041		0.048	0.043		0.035	0.044		-0.013	0.021		-0.019	0.161		0.347	0.331	
Shk_mkt/GDP	-0.144	0.058**		-0.141	0.062**		-0.136	0.063**		-0.188	0.041***		-0.604	0.399		-0.677	0.553	
Credit_dev	-0.202	0.054***		-0.217	0.061***		-0.237	0.072***		-0.249	0.058***		-0.914	0.585		-0.814	0.631	
Openness	0.147	0.078*		0.164	0.083*		0.194	0.086**		0.251	0.054***		0.967	0.569*		1.247	0.801	
Nat_resources	-0.030	0.130		-0.003	0.127		0.016	0.120		0.003	0.110		3.167	1.292***		3.670	1.232***	
Tax_burden	0.364	0.069***		0.384	0.073***		0.412	0.074***		0.386	0.060***		1.710	0.572***		2.080	0.565***	
English_legal	-0.019	0.065		-0.018	0.067		-0.027	0.067		-0.024	0.046		-0.035	0.328		-0.166	0.431	
Scand_legal	0.182	0.097*		0.250	0.111**		0.345	0.139**		0.308	0.106***		-0.502	1.135		0.289	1.480	

Table 4 (Continued)

Dep. variable	FDI/FE						Natural log of FDI (\$millions)					
	Model 1		Model 2		Model 3		Model 4		Model 5		Model 6	
	Coeff	Sigma	Coeff	Sigma	Coeff	Sigma	Coeff	Sigma	Coeff	Sigma	Coeff	Sigma
German_legal	0.186	0.078**	0.205	0.086**	0.220	0.096**	0.174	0.066**	0.053	0.681	0.570	0.823
Transition_econ	-0.113	0.051**	-0.073	0.050	-0.032	0.056	-0.038	0.034	0.335	0.398	0.576	0.596
N	399		399		399		450		478		421	
Adj. R ²	0.1645		0.177		0.188		0.1991		0.617		0.6073	
F-value	5.35		5.5		5.61		7.57		49.03		33.48	

Table 5 Model estimates—good-governance subsample

The dependent variable for Models 1, 2, 3, and 4 is FDI to FE ratio. The dependent variable in Models 5 and 6 is Ln(FDI). Data are limited to host countries with governance index ≥ 0 . Cluster-robust standard errors. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Dep. variable	FDI to FE ratio						Ln(FDI)					
	Coeff	Sigma	Coeff	Sigma	Coeff	Sigma	Coeff	Sigma	Coeff	Sigma	Coeff	Sigma
Intercept	1.894	0.541***	2.060	0.563***	1.902	0.562***	2.019	0.372***	-16.80	2.399***	-17.07	3.243***
Gov	0.144	0.046***	0.069	0.047	0.082	0.048*	0.084	0.045*	2.343	0.292***	2.342	0.282***
Relative_Gov			0.072	0.013***	0.048	0.014***	0.050	0.014***	-1.493	0.108***	-1.777	0.119***
Rel_Gov_sqd					0.022	0.008***	0.022	0.008***			0.250	0.056***
Internet	0.002	0.001*	0.002	0.001*	0.002	0.001*					0.005	0.009
human_capital	-0.001	0.002	-0.001	0.002	-0.001	0.002					0.005	0.017
Kwh/cap('000)	-0.014	0.007**	-0.013	0.006**	-0.014	0.006**					0.063	0.069
Ln(trade)	0.044	0.005***	0.047	0.005***	0.048	0.005***	0.052	0.006***	0.978	0.043***	0.987	0.039***
Phys_dist_decile	-0.008	0.006	-0.009	0.006	-0.009	0.006	-0.007	0.006	-0.108	0.033***	-0.116	0.033***
Lang_similarity	-0.014	0.015	-0.011	0.016	-0.013	0.016	-0.015	0.017	0.378	0.094***	0.383	0.098***
Ln(GDP)	-0.027	0.018	-0.032	0.019	-0.029	0.019	-0.039	0.018**	0.008	0.125	0.044	0.147
Ln(GDP/cap)	-0.162	0.041***	-0.165	0.042***	-0.156	0.041***	-0.148	0.033***	-0.043	0.275	-0.247	0.355
Stk_mkt/GDP	-0.029	0.035	-0.029	0.036	-0.036	0.036	-0.035	0.036	0.011	0.244	-0.107	0.253
Credit_dev	0.012	0.046	0.004	0.048	0.000	0.047	0.034	0.051	0.672	0.361*	0.794	0.463*
Openness	0.028	0.031	0.029	0.032	0.031	0.032	0.030	0.029	0.467	0.216**	0.492	0.215**
Nat_resources	0.171	0.174	0.174	0.175	0.186	0.176	0.109	0.164	1.272	0.882	1.633	0.980
Tax_burden	-0.053	0.185	-0.052	0.188	-0.081	0.183	-0.044	0.184	-1.138	1.479	-1.556	1.405
English_legal	-0.056	0.053	-0.050	0.053	-0.048	0.053	-0.058	0.053	-0.409	0.427	-0.583	0.449
Scand_legal	-0.065	0.069	-0.062	0.069	-0.062	0.068	-0.078	0.079	-1.436	0.480***	-1.891	0.639***
German_legal	-0.065	0.051	-0.058	0.050	-0.058	0.048	-0.045	0.042	-0.528	0.447	-0.734	0.436
Transition_econ	0.139	0.054**	0.137	0.055**	0.146	0.055**	0.150	0.037***	0.694	0.381*	0.814	0.426*
N	1078		1078		1078		1100		1129		1107	
Adj. R - sq	0.200		0.222		0.226		0.221		0.588		0.589	
F-value	16		17.21		16.73		19.35		101.48		80.37	

Among the control variables, we find largely insignificant impacts of internet usage, education, and electricity consumption on FDI. Though higher GDP is weakly associated with higher FDI in poor-governance countries, it has a measurable positive impact on FPI, hence a significant negative impact on FDI/FE.¹¹ A well-developed stock market encourages FPI in poor-governance countries. As expected, we find a significant positive coefficient for the lagged trade variable in all our models, suggesting that trade ties encourage FDI. Physical proximity (lower distance) to the host country, similarity in language, openness, and availability of private credit promote FDI in good-governance countries. However, these variables impact both FDI and FPI in the same direction, resulting in no significant change to FDI/FE. For poor-governance countries, natural resources are the strongest pull factor for FDI by far. We find that Tax_burden has a significantly positive coefficient for poor-governance host countries.

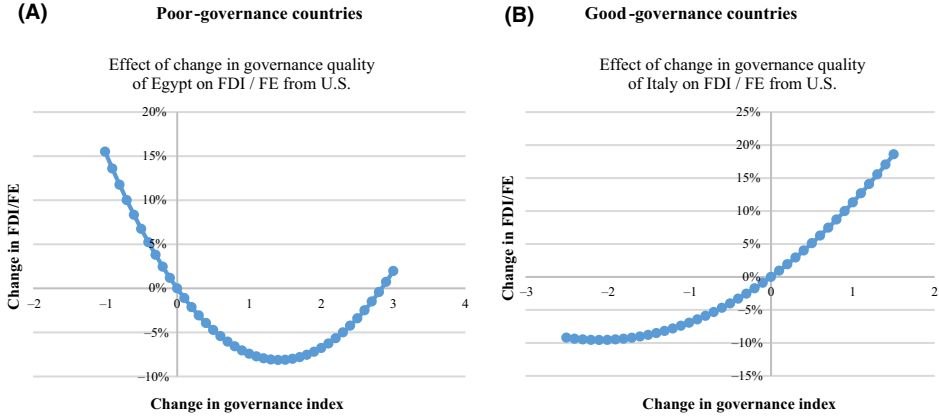
Based on the regression coefficients observed for the two subsamples (poor-governance and good-governance), we estimate the likely impact of improvement in governance quality for two representative countries: Egypt and Italy. With a governance index slightly above -1 , Egypt represents a poor-governance country. Italy's governance index is higher, at around 0.5 , representing a good-governance country. Since an overwhelming majority of FDI activity is attributable to countries with the best governance, we use the United States, with an index value of about 1.5 , as a representative source country. The sum of the coefficient estimates for Governance and Relative Governance in Model 5 of Table 4 suggests that an improvement of Egypt's governance index from -1 to 0 would likely cause FDI from the United States to *decrease* slightly (by slightly more than 3%). As illustrated in Figure 1A, the results of Model 4 in Table 4 suggest that such improvement would result in a decline in Egypt's share of FDI (FDI/FE) from the United States from 0.750 to 0.677 (a decline of 0.073 , calculated as $[-0.061*0 + 0.148*-1.5 + 0.04*(-1.5)^2 + b_x*X]$ $- [-0.061*-1 + 0.148*-2.5 + 0.04*(-2.5)^2 + b_x*X]$, where -1 and -2.5 are governance and relative governance, respectively, prior to improvement, and 0 and -1.5 thereafter).¹² This is because improved governance increases FPI. Given that FPI contributes to the denominator, the result is a magnified decline in the FDI/FE ratio. Thus, for poor-governance countries, the negative relationship between governance and FDI share from good-governance countries is driven by FPI. Contrary to what we observe for Egypt, an improvement in Italy's governance quality from the current level of 0.5 to 1.5 will likely *increase* FDI from

¹¹Our results stay the same when we also include the GDP of the source country in the model.

¹²Let FDI be 0.75 and FPI be 0.25 , which makes FDI/FE 0.75 . Even if FDI decreases by 4% with no change in FPI, the new FDI would be 0.72 and the ratio would be 0.742 . For the new ratio to be 0.677 , FPI must increase from 0.25 to 0.34 (an increase of 34%).

Figure 1 Effect of change in governance quality on FDI/FE.

Egypt is a poor-governance country while Italy is a fair governance country. (A) For poor-governance countries, a marginal improvement in governance quality is associated with lower FDI/FE until such countries markedly improve their governance to become good-governance countries. (B) An improvement in governance quality is associated with higher FDI/FE for good-governance countries



the United States two-fold.¹³ The impact of this improvement on the FDI/FE ratio will also be positive, with an increase of 0.11 (as illustrated in Figure 1B, based on estimates of Model 4 in Table 5). An increase in the FDI/FE ratio implies that the increase in FDI is not accompanied by a proportional increase in FPI. This shows that changes in FDI share for good-governance countries in response to governance quality changes are primarily driven by changes in FDI rather than FPI.

3.8. Robustness Tests

The six individual WGI indicators are highly correlated. This makes it difficult to disentangle the effect of one indicator from another. We nonetheless attempt to test the validity of our arguments by breaking apart the six-factor index. We contend that some investors are attracted to poor-governance countries because such conditions allow them to take advantage of information asymmetries. With regard to this competitive advantage, three of the six governance indicators are directly relevant: regulatory quality, rule of law, and control of corruption. The others, particularly freedom of expression (voice) and political stability/absence of violence likely do not contribute. An environment that is safe and peaceful is generally preferred even by such investors, all else equal. Similarly, presence or absence of democracy is of less concern to such investors. We therefore contend that a composite index of the

¹³Based on estimates of Model 5 in Table 5, where the dependent variable is the natural log of FDI.

Table 6 Individual WGI governance indicators—poor-governance subsample

In Models 1 and 3, *Gov* is average regulatory quality, rule of law, and control of corruption. For Model 2, governance factors are based on principal component analysis of six WGI factors. For Models 1 and 2, the *Gov(X)*, *Relative_gov(X)*, and *Rel_gov_sq(X)* variables are the simple average of *Political* and *Voice*. For Model 3, these variables are based on *Voice* alone. Cluster-robust standard errors. ***, **, and * represent significance at the 1%, 5%, and 10% levels, respectively.

Dep. variable	Model 1		Model 2		Model 3	
	X = Avg. of Political & Voice				X = Voice	
	Coeff	Sigma	Coeff	Sigma	Coeff	Sigma
FDI/FE						
Intercept	1.436	0.41***	1.278	0.41***	1.434	0.417***
Gov	-0.11	0.05**	-0.12	0.06*	-0.14	0.06**
Relative_Gov	0.184	0.05***	0.166	0.04***	0.229	0.05***
Rel_Gov_sqd	0.037	0.02**	0.032	0.01**	0.043	0.017**
Gov(X)	0.066	0.06	0.109	0.08	0.11	0.054**
Relative_Gov(X)	-0.05	0.06	-0.15	0.08*	-0.1	0.045**
Rel_Gov_sqd(X)	0.003	0.02	-0.02	0.02	0.001	0.012
Ln(trade)	0.045	0.01***	0.045	0.01***	0.047	0.011***
Phys_dist_decile	-0.02	0.01**	-0.02	0.01**	-0.02	0.011*
Lang_similarity	-0.04	0.03	-0.04	0.03	-0.04	0.026
Ln(GDP)	-0.05	0.02***	-0.06	0.02***	-0.06	0.016***
Ln(GDP/capita)	-0.01	0.02	-0.01	0.02	-0.01	0.022
Stk_mkt/GDP	-0.18	0.04***	-0.18	0.04***	-0.17	0.042***
Credit_dev	-0.23	0.06***	-0.24	0.06***	-0.2	0.062***
Openness	0.231	0.06***	0.235	0.06***	0.204	0.059***
Nat_resources	-0.01	0.11	-0.02	0.11	-0.02	0.116
Tax_burden	0.364	0.09***	0.365	0.09***	0.361	0.072***
English_legal	-0.02	0.05	-0.02	0.05	-0.02	0.043
Scand_legal	0.257	0.13**	0.266	0.12**	0.221	0.134
German_legal	0.161	0.07**	0.168	0.07**	0.146	0.065**
Transition_econ	-0.04	0.04	-0.04	0.04	-0.04	0.043
N	450		450		450	
Adj. R ²	0.2		0.24		0.205	
F-value	6.54		8.2		6.77	

three critical components (Reg, Law, and Corrupt)¹⁴ should demonstrate a stronger U-shaped relationship with FDI share than a composite index of political stability (Political) and freedom of expression (Voice).

We present the results of our analysis for the poor-governance subsample in Table 6. We find a negative coefficient for the Governance 3-factor index and positive coefficients for the Relative Governance 3-factor index and Relative Governance

¹⁴Based on referee request we also perform principal component analysis using all six factors and present our results in Model 2 of Table 6.

3-factor index squared. Our results suggest that if Nigeria, with a 3-factor Governance value of -1 , were to improve its 3-factor value to 0 , its FDI share from Switzerland (with a 3-factor value of 1.86) would actually decline by 10% . We also note that the 2-factor index variables of Political and Voice have insignificant coefficients. In Model 3, we test only Voice alongside the 3-factor index. Although the coefficients for the 3-factor index remain as before, we find a significant negative coefficient for the relative Voice variable. The indication is that, when investing in poor countries, FDI investors from countries with higher freedom of speech and democratic expression actually prefer investing in countries with lower freedom. In aggregate, the findings in Table 6 support our theory.

Although developing nations often prefer FDI to FPI, it is conceivable that such nations might actually encourage FPI to aid creation of a domestic stock market if they do not have one. Even though the stock market capitalization-to-GDP ratio is above 0 for all host countries in our sample, we note that a significant number of country pairs have an FDI/FE ratio of 1 . To ensure that our observed results are not a result of such observations, we exclude all observations with FDI/FE of 0 or 1 . Our results remain as before. We also test robustness of our results by excluding observations with a stock market capitalization-to-GDP ratio below the 5th percentile or above the 95th percentile and by limiting our sample to poor-governance countries.¹⁵ We find our findings to be robust to these tests.

It is also conceivable that foreign investors cause the host country to revisit some corporate governance issues and positively impact the corporate governance measure (Kwok and Tadesse, 2006).¹⁶ This possibility of an endogenous relationship might lead one to question the validity of our observations. However, we contend that, while foreign investors may impact corporate governance in the host country after FDI has been made, they do not decide to make FDI with this intent. Moreover, our attempt to capture the relationship between FDI/FE and the corporate governance environment documents a quadratic relationship. If the observed relationship was a reflection of the endogeneity problem, it would bias the result toward a positive relationship and not a U-shaped relationship. Our findings in the presence of a suspected endogenous relationship would mean that the actual U-shaped relationship is in fact stronger than that which we observe. Nonetheless, we also run our regression with FDI/FE data for 2010 using lagged governance variables to circumvent any possibility of an endogenous relationship. Our results do not change.

Given the high correlation between the governance quality of a country and its GDP per capita, it is conceivable that our observed results are really a manifestation of the interaction between foreign investment and country development rather than corporate governance. To investigate this possibility, we include relative GDP per capita (host minus source) and its squared term in our analysis along with the

¹⁵Results are unreported but are available upon request.

¹⁶Pierre (2015) showed in a model that government corruption may increase or decrease depending on the interaction of FDI and rule of law.

governance variables. We find insignificant coefficient estimates for relative GDP per capita and its squared term in all the models, while the coefficients for our variables of interest remain virtually the same.

4. Discussion and Conclusion

Our study contributes to the literature by presenting and empirically supporting a unifying theory that resolves the inconsistent findings of previous studies. We identify the methodological limitations of previous studies and explain why they fail to produce conclusive results. Our study addresses these limitations by using a more diverse data sample (including both rich and poor countries), examining foreign investment positions between pairs of individual countries (rather than country totals), considering the governance quality of both the source and the host country (relative governance), and testing for different relationships at different levels of governance quality (a non-linear relationship).

Our study enhances its usefulness to public policymakers in evaluating alternative strategies for attracting desired foreign investment. Our study finds that governance factors that make a host country attractive are not uniform across foreign investors or across types of foreign investment. Certain pull factors are more important for FDI than for FPI. We also show that foreign investors use different benchmarks by which they evaluate governance quality, which depends on the quality of institutions experienced in their home countries.

Our inclusion of a relative governance measure resolves the seemingly contradictory results of previous studies. We find that the relationship between governance quality and FDI share is U-shaped. Specifically, for countries that already have an adequate level of governance quality, we find that improvement increases FDI activity. For countries with poor-governance quality, improvement is actually likely to *decrease* the FDI/FE ratio. The impact on FPI (in the denominator) is more reliably positive, as an improvement in governance quality increases FPI from good-governance countries like the United States. Such investors increase their portfolio investments in frontier markets as the host country's governance quality improves over a threshold, making it feasible to invest in stocks. In contrast, for countries that already have adequate governance quality, marginal improvement invites significantly more new FDI than FPI, which increases the FDI/FE ratio.

Our findings are especially striking because improvement in governance quality is often prescribed to countries with below-average governance as a means to attract FDI from high-quality countries. Our results suggest that such efforts by poor-governance countries are more likely to increase FPI than FDI from such countries. Only after a sustained and meaningful improvement in governance quality can a low-quality host country reap the economic benefits of attracting greater FDI from investors in high-quality countries.

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Appendix A1 Definitions and sources of variables

Name	Description	Source
FDI to FE ratio	FDI is the average FDI stock measure of positions for 2009–2011 by economy of direct investor (for inward FDI) and by economy of investment (for outward FDI). FE includes FDI and FPI. FPI is stock of cross-border holdings of equity securities	CDIS, CPIS
Governance	Simple average of six institutional indicators	WGI
Relative Governance	Difference in the governance of host country and source country (host minus source)	WGI

Appendix A1 (Continued)

Name	Description	Source
Ln (Trade)	Natural log of lagged value of exports (\$) reported by source to host if available; otherwise, imports reported by host from source	ICTS
Physical Distance score	Score between 1 and 10 based on greater circle distance	CIAGC
Ln(GDP)	Natural log of total GDP in constant 2009 prices (\$)	WDI
Ln(GDP/cap)	Natural log of host country per-capita GDP in constant 2009 prices (\$)	WDI
Stk_mkt/GDP	Stock market capitalization as % of GDP	WDI
Credit_dev	Domestic credit to private sector as % of GDP	WDI
Openness	Sum of exports and imports as % of GDP	WDI
Nat_resources	Ores and metals exports as % of merchandise exports	WDI
Tax_burden	Amount of taxes and mandatory contributions payable by businesses, after accounting for allowable deductions and exemptions, as % of commercial profits	WDI
English_legal	Indicator variable for legal origin	DLLS08
Scand_legal		
German_legal		
Transition_econ	1 if host country belonged to former USSR, former Yugoslavia, or ex-communist countries	FM09
Lang_similarity	1 if primary language of host and source country are dissimilar in origin; 2 if similar; 3 if the same	Hand
collected		
Human_capital	Percentage of the labor force with secondary education	WDI
Kwh/cap ('000)	Electricity consumption. Top value winsorized to second highest.	WDI
internet	People who used internet in the last 12 months (measured per 100 people)	WDI

CDIS = Coordinated Direct Investment Survey compiled by IMF; CIAGC = Geographic coordinates from CIA World Factbook; CPIS = Coordinated Portfolio Investment Survey by IMF; DLLS08 = Djankov, La Porta, Lopez-de-Silanes and Shleifer (2008); FM09 = Faria and Mauro (2009); ICTS = OECD International Trade by Commodity Statistics, Harmonized System 1988, All Commodities; WDI = World Development Indicators by World Bank; WGIP = Worldwide Governance Indicators Project by World Bank.