



Institutional determinants of emerging market returns and flows

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ABSTRACT

Investors commonly rely on macroeconomic variables to drive capital allocation decisions. But other institutional factors may alter investor returns as well, particularly in emerging market countries. Given these concerns, this paper examines the effects of institutional factors—specifically democracy, transparency and corruption—on emerging market equity returns and flows. We find that institutional quality impacts stock market returns and flows in emerging markets where corruption, transparency, and democracy levels are below average. We also find that government-owned or controlled industries are positively impacted by a deterioration in the corruption and democracy indexes, while highly concentrated sectors, like the financial industry, are negatively impacted by improving transparency.

1. Introduction

Investors often rely on macroeconomic factors (e.g., inflation, GDP growth) to drive allocation decisions (Ahlquist, 2006). But a burgeoning body of research suggests that investors should couple macroeconomic factors with market-specific institutional factors such as corruption when deciding where to allocate their capital across international markets. Institutional quality varies significantly across emerging market (EM) countries and within EM countries over time presenting an opportunity to explore the impact of institutional quality on EM stock market performance. As such, this paper examines if, and when, institutional quality impacts investor equity (i.e., stocks) returns and flows in emerging markets. Additionally, we assess if institutional quality has differential effects on investor equity returns in specific EM industries.

The three institutional factors we focus on are: democracy, transparency, and corruption. The quality of these factors can affect market performance because they impact the reliability of the data in which investors rely upon to allocate capital. In addition, institutional quality can influence the cost of doing business, and affect the stability of markets.¹ But how do each of these three institutional factors affect stock market performance in emerging markets.

First consider corruption. Corruption may increase the cost of doing business and, therefore, lower profitability and market returns. However, corruption could actually increase investor returns in specific sectors if it enables unique access to markets or government contracts.

Also, transparency can impact investor confidence and therefore, positively affect equity flows as well as returns. Increasing levels of transparency thus lower risk to investors and improve liquidity. Similarly democratic processes and norms (e.g., regular elections) can positively impact investor rights and protections and, therefore, spur investment. However, the amount of portfolio investment in non-democratic economies over the past few decades (e.g., China and Vietnam) suggest a willingness of investors to disregard a

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¹ See Doh et al. (2003), Lei and Wisniewski (2018), and Gelos and Wei (2005).

country's level of democracy when allocating capital.

Certainly, scholars² have studied the impact of democracy, corruption, and transparency on equity investment, but no study to our knowledge, considers all three together. Including each of the institutional factors in a study of EM equity performance is important given the different and potentially competing effects these institutions may have on equity investment behavior.

We hypothesize that EM equity returns and flows will be negatively impacted by worsening corruption as well as a deterioration in transparency and democracy. In addition, we hypothesize that the impact of the three institutional factors of interest will vary by industry, depending on the level of competition in the industry. More specifically, improvements in institutional quality (as measured by corruption, democracy, and transparency) will have a negative impact on equity flows and returns in industries (e.g. oil and gas, utility, financial services, and consumer services) that are highly concentrated and insulated, at least in part, from competition, whether through government ownership, management, or heavy regulation.

Combining our above predictions, we generate a simple framework for understanding equity returns and flows in emerging markets generally and in specific industries within emerging markets. That is improved institutional quality will help increase equity returns and flows in EMs under at least one of the following conditions:

- a. EM institutional quality must rank poorly initially.
- b. Industries must not be under direct government control.
- c. The industry is not heavily concentrated.

We find that change in institutional quality does indeed impact EM returns, and flows in the sectors where the corruption, transparency, and democracy levels are below average. Our industry findings also suggest that the primary government owned/managed sectors are positively impacted by a deterioration in the corruption and democracy indexes, while highly concentrated sectors, such as the financial industry, are negatively impacted by improving transparency.

2. Literature review

2.1. EM market returns/Flows and corruption indicators

Corruption may impact equity returns and flows because of the direct and indirect costs that corruption exacts. [Doh et al. \(2003\)](#) argue that corruption causes firms to incur direct costs (bribes or “grease”) and indirect costs (losses in firm productivity, macroeconomic instability, etc.). Direct costs are relatively straightforward to measure, but rarely observed. Bribers are a clandestine bunch. The paucity of direct cost measurements of corruption force researchers to analyze indirect costs, which is typically done on a particular country or region. For example, [Athanasouli et al. \(2012\)](#) find that bribery and corruption lead to smaller firm size and smaller firm growth in Greece. In Latin America, [Gaviria \(2002\)](#) argues that corruption reduces a firm's sales and growth, implying corruption enervates a firm's competitiveness. In Africa, [McArthur and Teal \(2002\)](#) and [Faruq et al. \(2013\)](#) observe that companies that bribe public officials are less productive than companies that refrain from bribery; also firms in corrupt African countries are less productive than firms residing in less corrupt African countries.

The impact of corruption on equity returns may depend on the current institutional quality of the country. [Bardhan \(1997\)](#) refers to “greasing the wheel” whereby the benefits of bribery outweigh the costs for investors. [Houston \(2007\)](#) adds that corruption can spur FDI and therefore economic growth in countries, with weak legal and regulatory regimes. Similarly, [Swaleheen and Stansel \(2007\)](#) find corruption increasing economic growth, but in countries with high levels of economic freedom.

[Diamonte et al. \(1996\)](#) test how corruption impacts market returns. They consider corruption in their larger model of political risk and find lower average market returns in less politically-stable EM countries. They also find political risks (i.e., corruption) to impact stock market returns more in emerging markets than in developed markets. [NG \(2006\)](#) adds, in his study of corruption on international financial markets that, corruption is associated with higher firm borrowing cost, lower stock valuation, and worse corporate governance. In a similar study, [Lee and Ng \(2009\)](#) find a negative relationship between corruption levels and firm value. They argue that corruption erodes future cash flows and atrophies shareholder value over time. In these studies, the higher direct and indirect cost of corruption reduces markets returns.

2.2. EM market returns and democracy

Democracy may impact equity returns and flows, according to [Lei and Wisniewski \(2018\)](#), because of the strength of investor protections in more democratic regimes. In addition, [Lei and Wisniewski \(2018\)](#) argue that retirement plans are more likely to be cultivated in democratic countries, and pension funds increase demand for equity investing. In an earlier study, [Biglaiser et al. \(2008\)](#) tested the impact of bond ratings and democratic institutional quality on the decision where to invest and on the amount of portfolio investment. [Biglaiser et al. \(2008\)](#) find that democracy matters greatly for “lower-end” developing nations but not as much for developed economies. They explain that bond ratings and democracy indicators have significant signaling effects, which impact equity flows in poorer countries. [Lehkonen and Heimonen \(2015\)](#) also observe this effect, but add that there is a parabolic relationship

² See [Schultz and Weingast \(1996, 1998, 2003\)](#), [Saiegh \(2005\)](#), and [Lehkonen and Heimonen \(2015\)](#) for democracy; [Diamonte et al. \(1996\)](#), [Donadelli et al. \(2014\)](#), and [Lee and Ng \(2009\)](#) for corruption; and [Lang et al. \(2012\)](#) and [Gelos and Wei \(2005\)](#) for transparency.

between democracy and political risk, meaning political risk is low in both pure authoritarian regimes and pure democracies. When political risk is higher, they observe higher equity returns. Their results suggest transitioning democracies (i.e., from authoritarian to democratic) experience the highest equity returns. Similar to Biglaiser et al. (2008) and Lehkonen and Heimonen (2015), we predict changes in institutional quality will predominantly impact emerging market flows and returns, where democracy levels are below average. As a corollary, we predict that changes in institutional quality will have a negligible impact on emerging markets with above average institutional scores.

2.3. EM market returns/flows and transparency indicators

In contrast to corruption, transparency has mainly been found to influence equity flows. (Gelos and Wei, 2005; Lang et al., 2012). For example, Gelos and Wei (2005) find that government and corporate transparency³ positively affect investment flows. Additionally, they find that foreign investors are more likely to pull their funds out of less transparent countries during crises than more transparent countries. Lang et al.'s (2012) results mimic Gelos and Wei's (2005) in that foreign investment into a country increases with transparency. Lang et al. (2012) argue that greater transparency, as measured by higher auditor quality, better accounting standards and other measures, improves liquidity and lowers transaction costs, leading to an increase in investment flows.

2.4. EM industry returns and institutional quality

Institutional quality may also impact industry-specific returns within emerging markets. Donadelli and Persha (2014) authored one of the few studies that analyze corruption's impact on portfolio investment by industry. They find that country-level governance indicators are not strongly correlated with either national or industry-level returns, with the exception of the consumer goods industry. In a similar industry-based study, Donadelli et al. (2014) examined the impact of corruption on industry returns. In doing so, they separate industries into those that are corruption-sensitive and those that are not. A corruption-sensitive industry refers to a sector where corruption abuse is more likely to benefit the manager or the firm. They find that corruption increases agency costs, which lowers average equity returns in corruption-sensitive industries, which were the consumer service, financial, oil & gas, and technology industries. Our study follows Donadelli et al. (2014) but diverges in that we analyze the impact of corruption along with transparency and democracy on industry-level equity returns.

3. Data and methodology

3.1. Data description

To test our predictions, we leverage three prominent indices assembled by the Frazier Institute,⁴ Transparency International,⁵ and the Economist Intelligence Unit⁶ (EIU) to measure corruption, transparency, and democracy. We apply these indices to 26 emerging markets from 2000 to 2017.

The countries covered include 10 high income, 11 upper middle income, and five lower middle-income countries, per the World Bank classification.⁷ These countries are commonly classified as emerging markets in that they are moving toward developed market status.⁸ Emerging market countries typically have rapid but volatile growth, low per capita income relative to developed countries, and developing regulatory frameworks. See the Appendix (Table A.4) for a list of countries in the data set as well as their classification by year into above and below average corruption, transparency, and democracy.

Emerging market returns were gathered from the Refinitiv (formerly Thomson Reuters) DataStream database covering total annual equity returns and industry equity returns for the 26 countries from 2000 through 2017. Net equity flows were gathered from the World Bank data set covering portfolio equity net inflows.⁹ Also, following other work (Donadelli et al., 2014; Lehkonen and Heimonen, 2015; among others) we include macro data (real economic growth, the real interest rate, and the current account balance) and financial data (foreign ownership levels and the highest marginal tax rate). This data was obtained from the World Bank indicators.

Table 1 provides summary statistics for the each of the variables. From the table we see the average annual return for the 26 EM countries over the 18 years was 14.7%, with a large standard deviation of 31.8%. Similarly, the standard deviation for equity flows was quite large relative to the mean of 2.85 billion per year for each country.

³ The authors refer to government transparency as "the timeliness and frequency of macroeconomic data availability and transparency in the conduct of macroeconomic policies" and corporate transparency as the clarity and "availability of financial and other business information."

⁴ See Extra Payments, Bribes, and Payment's category in the Economic Freedom Report.

⁵ The Transparency International Corruption Perceptions Index (CPI) is published annually by Transparency International. The CPI ranks countries by their perceived levels of public sector openness as determined by expert assessments and opinions. The index covers the year 2000 through 2017, excluding 2001.

⁶ See www.eiu.com. The index is a weighted average of the EIU rankings of four subcategories: vested interests, accountability of public officials, human rights, and freedom of association

⁷ See <https://datahelpdesk.worldbank.org/knowledgebase/articles/906519>.

⁸ See <https://www.ft.com/content/8a393522-39bf-11e5-bbd1-b37bc06f590c> for a definition.

⁹ We also analyzed the impact of the three institutional indexes on annual equity premiums. These results are shown in the Appendix.

Turning to the institutional indices shown in, we see the values are clustered fairly close to the mean as the coefficient of variation ranges from approximately 31 to 38% for the three testable indices, corruption, democracy, and transparency. Also, we see the average current account value is positive but varies significantly, while the average top marginal tax rate is roughly 31% with a standard deviation of 11. Finally, we see the average level of foreign ownership is fairly low at 6.7%.

3.2. Methodology

To assess the impact of institutional indicators on the annual equity returns (total and by industry) and flows, we developed the following reduced form regression equations. For each regression¹⁰ i serves as the country, t as the year, and n as the industry. In Eqs. (1) and (2), we are estimating the logged stock market returns and net flows in country i in year t .

$$\ln(\text{Returns})_{it} = \beta_0 + \beta_1 \text{EMreturns}_t + \beta_2 \ln \text{Institutional}_{it} + \beta_3 \text{Macro}_{it} + \beta_4 \text{Financial}_{it} + \varepsilon_{i,fe} \quad (1)$$

$$\ln(\text{Flows})_{it} = \beta_0 + \beta_1 \text{EMreturns}_t + \beta_2 \ln \text{Institutional}_{it} + \beta_3 \text{Macro}_{it} + \beta_4 \text{Financial}_{it} + \varepsilon_{i,fe} \quad (2)$$

We ran a Hausman test¹¹ on each regression to determine if a fixed effects (fe) or random effects (re) model was more suitable. See Table A.3 in the Appendix for Hausman test results. For the first two models fixed effect regressions with robust standard errors were used for most estimations, while in the third model a random effects model was generally used.

The primary control variable is emerging market returns (EMreturns_t), which refers to the MSCI emerging market index returns.¹² $\ln(\text{Institutional})$ is a vector of the three institutional variables of interest, The Transparency Corruption Perceptions Index (CPI), the Bribery index, and the Democracy Index, all logged.¹³ It also includes the Frazier Institute Regulation index, as a control variable. Macro_{it} refers a vector of three macro control variables, real GDP growth logged, the real interest rate, and the country's current account balance. We expect equity returns and flows to be positively impacted by increasing real GDP growth, declining real interest rate, and an improved current account balance. Financial_{it} refers to a vector of two control variables, which are foreign ownership of banks and the top marginal tax rate. We anticipate increasing foreign ownership to have a positive impact on equity returns and flows because higher foreign ownership signals lower risk. In contrast, we presume increasing the top marginal tax rate would have a negative impact on equity returns and flows.

For Eqs. (1) and (2), we run regressions covering the total sample and samples restricted by high (above the median) and low (below the median) measurements for the three institutional indices of interest, corruption, transparency, and democracy. Similar to Pancrazi and Proserpi (2020) and Bekaert et al. (2007), we run the restricted regressions to estimate the impact that changing institutional quality has on the equity returns and flows given the current institutional quality of the EM country.

We also ran a third regression analysis to assess the impact of institutional quality on industry returns (n) for each EM country.

$$\ln(\text{Ind.return})_{in} = \beta_0 + \beta_1 \text{EMreturns}_t + \beta_2 \ln \text{Institutional}_{it} + \beta_3 \text{Macro}_{it} + \beta_4 \text{Financial}_{it} + \varepsilon_{i,re} \quad (3)$$

The (n) industries covered are basic materials, consumer goods, consumer services, financial services, healthcare, industrial, oil and gas, technology, and utilities sectors. The hypothesis is that the impact of the institutional variables on industry returns will vary based on the level of government ownership and management between the industries as well as the level of industry concentration. Figs. 1 through 3 below show mean industry realized returns segmented by high and low institutional index (corruption, democracy, and transparency).

Fig. 1 shows industry returns by high and low corruption index. In the figure, no clear pattern emerges between industry returns and the corruption index, as returns in roughly half of the sectors (basic goods, financial, oil and gas, and health care) are higher in the above median (low corruption) countries. The opposite is true in the consumer goods, consumer services, industrial, utilities, and technology sectors. The average returns by industry in Fig. 1 appear to conflict with the results of Donadelli et al. (2014), who found lower returns in corruption-sensitive industries. However, only the healthcare sector in our study, passed the t -test suggesting that only in the healthcare sectors are differences in average realized returns between high and low corruption countries significantly different.

From Figs. 2 and 3 we see the total returns are the highest in the low democracy and transparency countries. We observe this result in each of the sectors except for health care, where the returns were the highest in the high transparency sector. The average annual total returns along with the average annual returns in the basic, financial, consumer service and industrial industries passed the t -test, suggesting significant differences in the means between the low and high transparency and democracy groups.¹⁴

¹⁰ We ran a Breusch-Pagan test for the correlation of the error terms between models 1 and 2 to determine if a seemingly unrelated regression would be a better fit. However, the correlation of the residuals in the models between logged total returns and equity flows were found to be low resulting in a low chi-squared, suggesting we cannot reject the hypothesis that the errors terms between Eqs. (1) and (2) are uncorrelated. We ran the test for the full sample and each of the restricted samples. As such, we ran separate fixed and random effects models.

¹¹ We ran a Hausman test on both regressions and found the fixed effects model to be the appropriate model versus a random effects model.

¹² The MSCI Emerging Markets Index includes large and mid-cap companies in 26 emerging market countries. As of 2019, the index covered approximately 85% of the market capitalization in each country. See <https://www.msci.com/documents/10199/c0db0a48-01f2-4ba9-ad01-226fd5678111>.

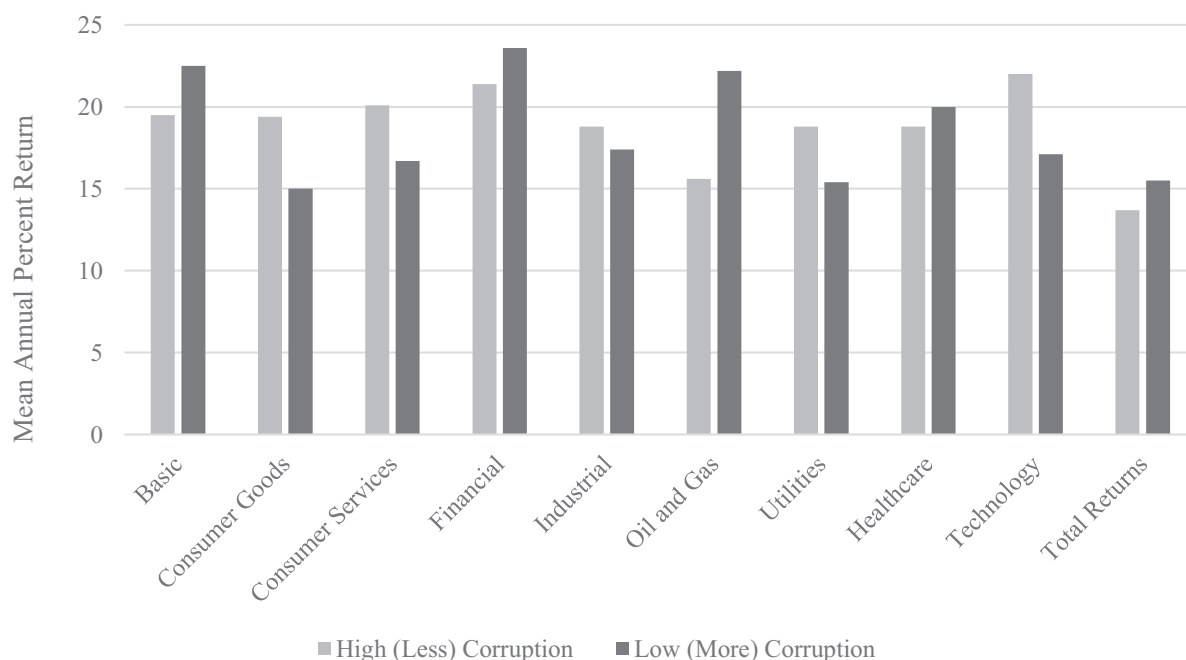
¹³ See in the appendix for the institutional variable wording and definitions.

¹⁴ The healthcare and oil and gas sectors did not pass the t -test in either segmentation, while the technology passed only in the transparency breakout and the utility industry passed only in the democracy breakout.

Table 1
Summary statistics.

Variable	Observations	Mean	Standard Deviation	Min	Max
Total Return	494	14.7%	31.8%	-49.9%	222.0%
Equity Flows	453	2.85 billion	8.82 billion	-42.5 billion	5.2 billion
Corruption	472	5.5	1.7	2.1	9.6
Democracy	459	0.54	0.17	0.13	0.94
Transparency	493	4.5	1.7	1.7	9.4
Regulation	493	6.8	1.0	4.1	9.5
Current Account	439	1.03 billion	6.8 billion	-14.4 billion	33.2 billion
Highest marginal tax rate	476	31.1%	11.3%	0%	55.0%
Foreign owners	471	6.7%	1.2%	3.5%	9.9%

Total return refers to percent return over the prior year. The Corruption, Transparency, and Regulation indexes are measured on a scale from 1 to 10. The Democracy index is measured on a scale from 0 to 1.

**Fig. 1.** Mean industry returns: high versus low corruption index.

Summary data for equity flows is presented in Table 2. Here we see the average equity flows are far higher in countries rated to be less corrupt. This result may be because the larger and higher per capita income countries generally scored better on corruption versus the lower income countries. We also see equity flows are higher in countries with greater transparency and higher scores for democracy.

Table 3 shows the mean level for each of the macro and financial variables used in the regression analysis. We see from Table 3 that real GDP growth rates are larger in the low versus high transparency and democracy countries. The higher country growth rates in the low institutional segments may in part explain the higher returns found in Fig. 1. We will explore this finding more in the regression results. We see the high transparency group has the smallest maximum marginal tax rate; otherwise, we find little difference in the top marginal tax rates between the groups. We see large differences in the annual current account balances between the high and low corruption and transparency segments. This difference may be due to the size of the countries in the respective segments. In contrast, the real interest rate appears to be similar between groups except for the high corruption countries, where we observe higher than average real interest rates. Finally, we see foreign ownership percentages are higher in each of the high institutional segments—compared to the low institutional segments—suggesting foreign investors may think these countries have lower risk or that these countries have fewer restrictions on foreign ownership. We will explore how each of these explanatory variables, along with the institutional indices, impact the response variables in the next section (Table 7, 8 and A.3).

4. Results

Table 4 shows the results from the regression analysis of emerging market returns segmented by high and low democracy,

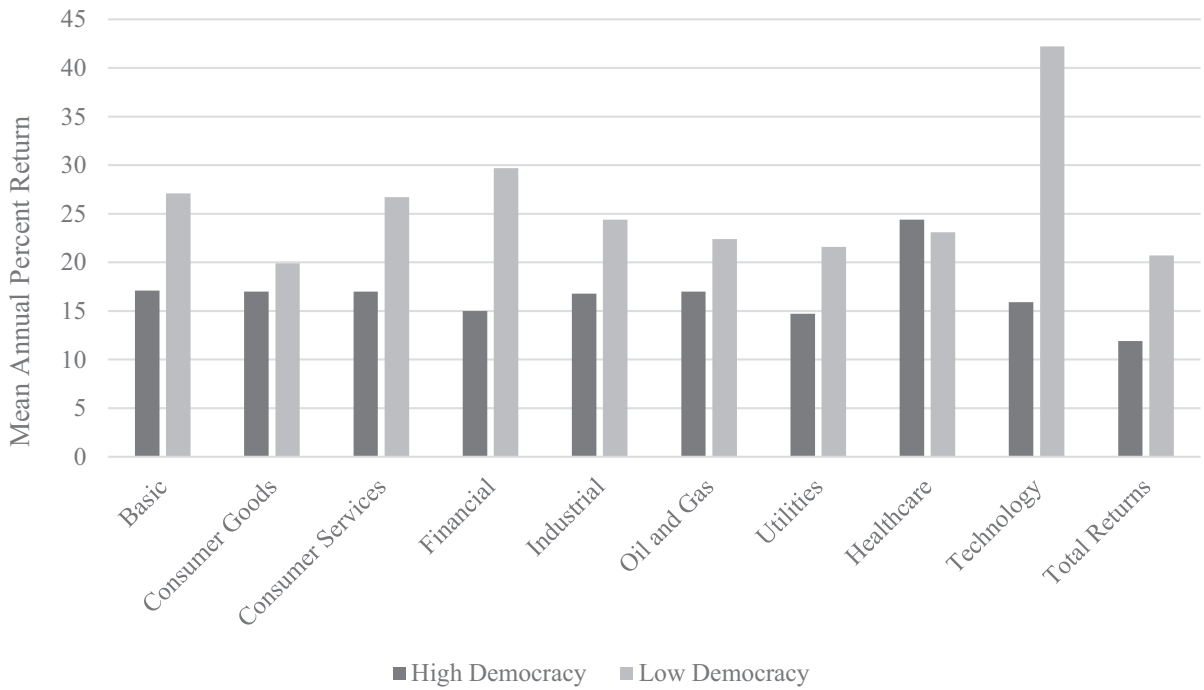


Fig. 2. Mean industry returns: high versus low democracy index.

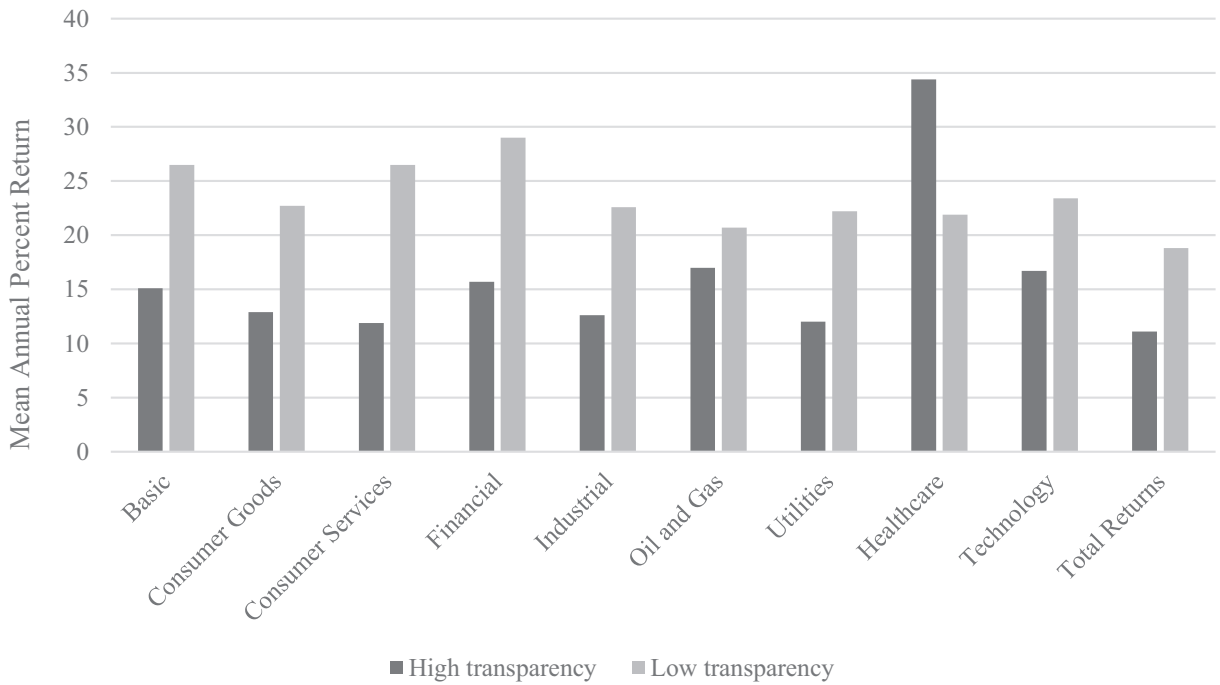


Fig. 3. Mean industry returns: high versus low transparency.

Table 2
Average annual equity flows by high and low institutional index.

Variable	Average (Std)	High Corruption (Std)	Low Corruption (Std)	High Transparency (Std)	Low Transparency (Std)	High Democracy (Std)	Low Democracy (Std)
Net Equity Flows (In Millions Of \$)	\$2850 (8800)	\$3970 (5800)	\$8820 (13,000)	\$3030 (9100)	\$2620 (8900)	\$3420 (9490)	\$2710 (9090)

The averages are split between high (≥ 5.3) and low (< 5.3) corruption scores, high (> 3.9) and low (< 3.9) transparency scores, and high (> 0.55) and low (< 0.55) democracy scores.

Table 3
Segmentation of macro and financial variables by institutional index.

Macro/Financial variables	Average	High Corrupt	Low Corrupt	High Transp.	Low Transp.	High Demo.	Low Demo.
Real GDP Growth Rates	3.2%	3.2%	3.4%	2.8%	3.7%	2.8%	4.0%
Max. Marginal Tax Rates	30.5%	30.0%	29.9%	27.5%	31.9%	30.6%	29.9%
Current Account Balance (in billions of USD)	1.0	-0.6	2.9	2.0	0.1	0.5	1.6
Real Interest Rate	5.7%	5.5%	5.7%	5.6%	5.6%	5.5%	5.7%
Percent Foreign Ownership	6.8%	6.2%	7.2%	7.5%	6.2%	7.0%	6.4%

The averages are split between the high (≥ 5.3) and low (< 5.3) corruption scores, high (> 3.9) and low (< 3.9) transparency scores, and high (> 0.55) and low (< 0.55) democracy scores.

Table 4
Emerging market equity returns by high and low institutional indices.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Total	High (Less)	Low (More)	High	Low	High	Low
	Returns	Corruption	Corruption	Demo.	Demo.	Transp.	Transp.
Emerging Market Return Index	0.557*** (0.0464)	0.552*** (0.0670)	0.546*** (0.0715)	0.594*** (0.0531)	0.487*** (0.0762)	0.543*** (0.0600)	0.557*** (0.0678)
Corruption (log)	7.027 (9.370)	-1.767 (26.48)	1.578 (15.07)	-3.141 (12.67)	3.331 (15.60)	3.699 (15.75)	-6.727 (12.90)
Democracy (log)	-18.68** (9.068)	-15.61 (13.26)	-22.73 (17.08)	-21.83 (28.67)	-4.326 (13.12)	-14.89 (12.84)	-25.31* (13.71)
Regulation (log)	-13.44 (15.31)	-0.615 (23.39)	-26.46 (27.91)	-19.91 (13.95)	-88.74* (45.80)	-11.27 (14.47)	-9.109 (32.19)
Transparency (log)	15.46 (14.41)	-34.62** (14.37)	65.60*** (24.34)	-3.055 (18.66)	86.71*** (31.89)	-10.86 (21.12)	75.55*** (23.32)
Percent Foreign Ownership (log)	17.40 (14.69)	40.28 (25.17)	5.704 (20.65)	2.817 (21.29)	18.21 (21.11)	7.441 (25.20)	21.38 (19.39)
Growth (log)	3.644* (1.936)	4.364 (2.971)	2.767 (2.816)	2.825 (2.252)	5.863* (3.234)	4.436* (2.638)	4.466 (2.724)
Tax Rate (log)	28.16*** (10.40)	28.43 (19.47)	33.81* (19.10)	14.37 (10.38)	111.0*** (27.79)	7.288 (10.31)	68.27*** (26.03)
Current Account.	1.408*** (0.466)	0.291 (0.621)	3.444*** (1.073)	0.148 (0.543)	3.117*** (1.019)	0.0344 (0.505)	4.035*** (0.960)
Real Interest	0.343 (0.366)	0.729 (0.553)	-0.152 (0.613)	0.173 (0.476)	0.843 (0.665)	0.0579 (0.499)	0.621 (0.544)
Constant	-146.1*** (48.08)	-172.5* (100.2)	-164.9** (78.59)	-11.81 (55.44)	-358.3*** (114.1)	-9.468 (57.51)	-349.1*** (93.77)
Observations	286	142	144	156	130	135	151
R-squared no fe, no controls	0.07	0.01	0.04	0.05	0.07	0.05	0.08
R-squared no fe, controls	0.43	0.40	0.45	0.54	0.40	0.51	0.46
Overall R-squared	0.48	0.47	0.47	0.55	0.52	0.52	0.549
Number of ids	20	19	16	17	16	15	13

Robust standard errors in parentheses: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

The averages are split between the high (≥ 5.3) and low (< 5.3) corruption scores, high (> 3.9) and low (< 3.9) transparency scores, and high (> 0.55) and low (< 0.55) democracy scores.

Two separate regressions were also run. One included only the three institutional variables of interests, so it was run without fixed effects or control variables. A second regression included the three institutional variables of interest and the control variables, but did not include fixed effects. The R-squared was reported for each separate regression.

transparency, and corruption.¹⁵ Only 286 of the potential 494 observations were covered due to data availability. We see from the first row that the emerging market returns are significant as expected in all of the regressions. We also find in the total sample, column (1), that the coefficient for the democracy index logged is negative and significant suggesting that countries that scored higher in the democracy index had lower total returns. The coefficient for the democracy index was not significant in any of the other restricted regressions, except for the low transparency group. Though this finding is only significant at the 0.10 level, it is surprising and contradicts the parabolic relationship between political risk and market returns that [Lehkonen and Heimonen \(2015\)](#) observe. The difference may be that we include other institutional indexes. Alternatively, the disparity could be attributed to the differences in the indexes used.¹⁶

When the sample is segmented into above and below median institution scores, we find that the coefficient for the transparency index logged is positive and significant in the low (i.e., below average) sample for corruption, transparency, and democracy. The coefficients were not significant in the above median samples for these institutional categories, except for the high (lower) corruption sample. This finding indicates that improved transparency has a positive effect on emerging market returns in the countries who are viewed to be relatively corrupt, un-democratic, and lacking in transparency. We did not observe this finding in countries that have above the median institutional quality. In fact, none of the variables outside of emerging market returns had a significant impact on equity returns in the countries with above average institutional indexes (except for the low corruption sample). This result suggests that country equity returns are primarily influenced by overall emerging market returns when a country's institutional quality (principally transparency level) is increasing. In fact, we see that the r-squared is primarily influenced by the control variables. For example, in the total sample, the r-squared is 0.07 without fixed effects and controls, 0.43 with controls and no fixed effects, and 0.48 with both controls and fixed effects. Interestingly, we also see that the r-squared when regressing total returns against the three indices of interest is highest in the low-quality institutional segments (high corruption, low democracy, and low transparency), suggesting that changes in these indices explains total returns more in EM countries where institutional quality is below the median.

From column (1) we also see that coefficients for the current account and tax rate were positive and significant. The rationale behind this result likely relates to the improving strength of the economy as the current account might improve as the country becomes more competitive, causing equity returns to increase. Similarly, increasing tax rates may occur in a strengthening economy, enabling policy makers to improve the country's fiscal position, which could positively impact market returns. Also, the coefficient for economic growth is positive and weakly significant, providing limited evidence that emerging market returns were positively impacted by a growing economy as measured by real GDP growth.

Turning to [Table 5](#), equity flows, we find that the coefficient for the corruption index has a negative, significant impact on equity flows in the total sample, suggesting that as corruption scores improve, net equity flows into EM countries decrease. This result is quite surprising, and we do not observe this finding in any of the sub-segments, except for the high transparency segment where the coefficient of the corruption index is negative and weakly significant. This finding suggests that equity investors are attracted to countries where the level of corruption or bribery is increasing. This result may be due, as point out, to increasing FDI into China, a country with low (worse) scores on corruption indices.

We also find the coefficients for the other three institutional variables to be insignificant when regressed against equity flows. In fact, only the coefficient for economic growth was significant in its impact on equity flows in the total sample. In addition, we find the coefficient for the democracy index to be positive and significant in the low democracy and low transparency segments, suggesting that improving democracy in countries with relatively weak democracy and transparency measurements will have a positive impact on equity flows. We also see the coefficient for growth to be positive and significant in the overall sample as well as in the low transparency and higher corruption countries, while the coefficient for the percent foreign ownership is positive and significant in the low democracy countries. These findings again suggest that countries with relatively weak institutions relating to corruption, democracy, and transparency will attract equity flows with improving macro conditions and greater levels of foreign ownership. We did not observe this result for the countries with higher than median institutional scores in columns 2, 4, and 6. In contrast, equity flows in these countries are influenced to a greater degree by emerging market returns and perhaps other unobserved factors, since the R-squared is smaller in the high versus low institutional sectors. Also, we see, similar to [Table 4](#), that the r-squared is primarily influenced by the control variables. Also, similar to [Table 4](#), we find the r-squared the highest in the low-quality institutional segments (high corruption, low democracy, and low transparency), suggesting that changes in these indices explains equity flows more in EM countries where institutional quality is below the median.

In [Table 6](#), we analyze the impact of institutional quality on EM equity returns by industry. Our hypothesis is that institutional quality will have a significant impact on industry returns in those sectors that either owned or operated by the government or are heavily concentrated. What we find is that in addition to the impact of the overall emerging market index, which is significant in all regressions, the returns in the consumer services sector are negatively impacted by improvements in the corruption level. This result suggests that returns on consumer services, whose sub-segments include retail and wholesale services, leisure and hospitality services, health and social services, and education, are higher when there is an increasing level of corruption. Our finding conflicts with results from [Donadelli et al. \(2014\)](#); we believe the difference, at least in part, is because we include democracy and transparency indexes in our estimation. Also, we see that the r-squared with only the institutional variables (r-squared no re or controls) is the highest in the

¹⁵ A correlation matrix, shown in the Appendix, indicated moderate correlation (0.68) between the log of the corruption and transparency index and minimal correlation between other indexes.

¹⁶ We used the EIU democracy index, while [Lehkonen and Heimonen \(2015\)](#) use the Polity index of Polity IV and the democratic accountability index from the Political Risk Service, published in ICRG.

Table 5
Emerging market equity flows by high and low institutional indices.

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
	Total Equity	High (Less)	Low (More)	High	Low	High	Low
	Flows	Corruption	Corruption	Democracy	Democracy	Transparency	Transparency
Emerging Market	94.43***	96.74***	108.9***	125.4***	74.34***	96.48***	107.8***
Returns Index	(17.64)	(31.57)	(20.69)	(28.51)	(19.15)	(33.26)	(19.90)
Corruption (log)	-9660***	-551.1	1323	-10,037	-347.7	-6881*	-5609
	(3560)	(4360)	(4225)	(6791)	(3923)	(3681)	(3788)
Democracy (log)	269.4	4723	-4113	-17,416	8938***	2698	7615*
	(3495)	(4941)	(3691)	(15,006)	(3333)	(3391)	(4026)
Regulation (log)	5490	-3970	-9253	4787	21,974*	-1318	2987
	(5793)	(8074)	(6547)	(7585)	(11,515)	(7828)	(9450)
Transparency (log)	1320	-71.17	9573*	3616	-9878	5300	832.4
	(5483)	(7042)	(5158)	(10,094)	(8006)	(6184)	(6844)
Percent Foreign	5303	11,859	4631	-8844	10,594*	-13,102	5178
Ownership (log)	(5580)	(11,853)	(5974)	(11,538)	(5361)	(13,934)	(5693)
Growth (log)	1517**	564.0	2233***	1209	1163	789.9	1804**
	(736.4)	(1411)	(814.8)	(1210)	(823.6)	(1466)	(799.6)
Tax Rate (log)	2621	-7238	6540	4976	5980	2877	15,277**
	(3942)	(9199)	(5525)	(5569)	(6843)	(5693)	(7641)
Current Account	48.59	106.6	-385.5	240.6	-192.6	-416.7*	-72.91
	(176.5)	(293.7)	(310.4)	(290.3)	(245.4)	(183.9)	(281.9)
Real Interest	18.06	245.5	18.90	-164.8	248.6	128.7	-44.99
	(139.3)	(261.9)	(177.4)	(257.8)	(168.3)	(278.7)	(159.8)
Constant	-14,279	34.58	-18,700	-3069	-60,177**	12,250	-53,239*
	(18,280)	(47,332)	(22,739)	(30,410)	(28,733)	(31,875)	(27,526)
Observations	285	141	144	141	145	134	151
R-squared no fe, no controls	0.01	0.01	0.02	0.01	0.09	0.02	0.03
R-squared no fe, cont.	0.12	0.08	0.24	0.16	0.14	0.08	0.26
Overall R-squared	0.136	0.139	0.268	0.122	0.308	0.121	0.281
Number of ids	20	19	16	16	17	15	13

Robust standard errors in parentheses: ***p < 0.01, **p < 0.05, *p < 0.1 Two separate regressions were also run. One included only the three institutional variables of interests, so it was run without fixed effects or control variables. A second regression included the three institutional variables of interest and the control variables, but did not include fixed effects. The r-squared was reported for each separate regression.

basic goods and oil and gas sectors. The oil and gas sector is an industry that is highly concentrated and often government owned or managed in emerging markets.

In addition, we see a negative, significant coefficient for the democracy index in the oil and gas industry suggesting that increased accountability of public officials leads to lower returns in the oil and gas sector, which is typically government controlled or managed in emerging market countries. In contrast, the coefficient for the democracy index was positive and significant in the consumer goods industry indicating that higher returns will prevail in this industry as democratic institutions improve. Finally, we find a negative, significant coefficient for the transparency index logged in the financial services, consumer goods, and utility industries, suggesting higher returns in these industries are associated with declining transparency index ratings. The rationale is that in many emerging market countries, financial services, utilities, and other sectors are very concentrated, often with two or three private firms controlling the market. Increased transparency then can provide customers with more information regarding products, pricing, etc., which may lead to lower rates and profits. See [Tables 7 and 8](#) for a summary of all results relating to the impact of the three institutional factors on market returns, equity flows, and industry returns.

5. Conclusions

This paper examines the effect that varying levels of institutional quality regarding corruption, transparency, and democracy has on annual equity returns, flows, and industry returns in EM countries over an 18-year period. We find that an increasing level of transparency has a positive, significant impact on average annual market returns in each of the below median group of countries relative to corruption, transparency, and democracy. This result suggests that for emerging market countries where corruption, transparency, or democracy are poor, policies that improve transparency will have a positive impact on market returns.

In addition, changes in institutional indices impact several EM industry returns. Specifically, we see higher democracy scores result in lower returns in the utility, oil and gas, and technology industries, while higher scores for corruption result in lower returns for the consumer services and utility industries. The commonality between these industries is that they have a high level of government ownership or management, particularly in emerging market countries, or are highly concentrated industries. Finally, we see higher corruption scores result in lower net equity flows, a result that may be driven by FDI into China. Less surprising is the finding that net equity flows are positively impacted by an increase in the democracy index in countries with below median democracy and transparency scores.

In summary, varying corruption and transparency do seem to impact market returns and flows with the impact found primarily in

Table 6
Emerging market equity total returns by industry.

Variables Dep: Total Return	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Basic Goods	Consumer Goods	Consumer Services	Financial	Healthcare	Technology	Oil and Gas	Industrial	Utility
Emerging Market Returns	0.863*** (0.09)	0.503*** (0.06)	0.535*** (0.11)	0.766*** (0.11)	0.55*** (0.09)	0.41*** (0.14)	0.502*** (0.10)	0.689*** (0.09)	0.651*** (0.09)
Corruption (log)	17.61 (16.11)	-0.86 (11.85)	-39.52* (22.87)	19.22 (18.78)	-9.17 (17.98)	25.26 (30.65)	13.52 (22.40)	-7.63 (16.16)	-17.15 (15.62)
Democracy (log)	1.242 (9.40)	11.40*** (4.41)	-30.55 (22.47)	6.012 (11.10)	-0.978 (9.85)	-40.68 (25.15)	-50.3*** (18.72)	10.12 (9.37)	-5.988 (9.21)
Regulation (log)	-5.254 (20.79)	-11.86 (14.79)	11.49 (35.41)	13.24 (23.59)	26.36 (23.02)	-57.72* (30.92)	13.11 (34.52)	9.495 (19.83)	-22.45 (19.59)
Transparency (log)	-22.5* (14.40)	-18.08* (10.55)	1.068 (36.90)	-44.12** (17.40)	10.22 (15.45)	-5.015 (27.93)	24.2 (32.98)	-20.08* (14.67)	-31.39** (15.10)
Percent Foreign Ownership (log)	7.965 (18.97)	5.739 (15.91)	30.13 (37.90)	10.75 (23.60)	5.528 (21.09)	25.77 (41.25)	0.866 (32.28)	36.09 (22.26)	75.46*** (19.73)
Growth (log)	4.016 (3.34)	5.782** (2.36)	9.023*** (4.51)	4.697 (3.94)	3.387 (3.34)	-3.962 (5.61)	1.683 (4.16)	3.755 (3.33)	0.549 (3.92)
Tax Rate (log)	0.615 (9.40)	6.077 (9.33)	113.5*** (31.37)	-7.061 (11.61)	-4.56 (9.61)	2.218 (17.39)	40.95* (23.61)	12.29 (12.25)	0.423 (8.80)
Current Account	-0.149 (0.61)	0.595 (0.42)	2.699** (1.14)	0.846 (0.69)	-0.191 (0.57)	-0.763 (0.82)	2.364*** (0.89)	0.384 (0.57)	0.571 (0.58)
Real Interest	0.256 (0.33)	0.27 (0.23)	-0.00852 (0.88)	0.348 (0.40)	0.118 (0.51)	-0.167 (0.63)	-0.36 (0.71)	0.924*** (0.33)	-0.21 (0.33)
Constant	-0.978 (59.95)	28.11 (50.07)	-421.5*** (144.50)	19.77 (69.78)	-30.39 (65.45)	20.9 (111.80)	-248.9** (101.50)	-77.9 (67.84)	-20.96 (53.45)
Observations	254	259	262	265	204	138	225	273	249
R-squared no re, no controls	0.05	0.02	0.02	0.02	0.01	0.02	0.04	0.03	0.01
R-squared no re, cont.	0.31	0.25	0.16	0.22	0.18	0.11	0.20	0.22	0.24
R-squared	0.31	0.25	0.23	0.22	0.18	0.11	0.26	0.22	0.24
Number of ids	18	18	19	19	15	13	16	19	19

Robust standard errors in parentheses: ***p < 0.01, **p < 0.05, *p < 0.1.

Consumer Service, Financial, Oil and Gas, and Utility are heavily concentrated industries, while Basic Goods, Consumer Goods, Healthcare, Technology, and Industrial are less concentrated industries.

Two separate regressions were also run. One included only the three institutional variables of interests, so it was run without fixed effects or control variables. A second regression included the three institutional variables of interest and the control variables, but did not include fixed effects. The R-squared was reported for each separate regression.

Table 7
Summary of results – impact of indices on market returns and equity flows.

	Variable	Total sample	High (Less) Corrup.	Low (More) Corrup.	High Demo.	Low Demo.	High Transp.	Low Transp.
<i>Market Returns</i>	Corruption							
	Democracy	(-)		(+)				(-)
	Transparency		(-)			(+)		(+)
<i>Equity Flows</i>	Corruption	(-)					(-)	
	Democracy					(+)		(+)
	Transparency			(+)				

A “+” indicates a positive and significant relationship between changes in the institutional variable and the returns in each EM with high or low institutional quality. A “-” indicates a negative and significant relationship. The averages are split between the high (> = 5.3) and low (<5.3) corruption scores, high (>3.9) and low (<3.9) transparency scores, and high (>0.55) and low (< 0.55) democracy scores.

Table 8
Summary of results – impact of indices on emerging market industry returns.

	Variable	Basic Material	Consumer Goods	Consumer Services	Financial	Health care	Techno.	Oil and Gas	Indus.	Utility
<i>Industry Returns</i>	Corruption			(-)						
	Democracy			(+)				(-)		
	Transparency	(-)		(-)		(-)			(-)	(-)

A “+” indicates a positive and significant relationship between changes in the institutional variable and the returns in each EM industry. A “-” indicates a negative and significant relationship.

Consumer Service, Financial, Oil and Gas, and Utility are heavily concentrated industries, while Basic Goods, Consumer Goods, Healthcare, Technology, and Industrial are less concentrated industries.

EM countries that are ranked in the bottom half in institutional quality. We found democracy indicators to have minimal impact on market returns, but to have a positive impact on equity flows for EM countries with lower initial institutional quality. The policy implication is fairly clear. Investors should incorporate changing levels of transparency and corruption when investing in emerging market countries where transparency and corruption is a problem. However, there are certainly vested interests (e.g., industry interests) that will want the status quo to continue given the benefits they receive from the institutions in place.

This paper only covers the impact of institutional quality in emerging markets on equity investing. It is left to other research to study the effect of varying institutional quality on the debt markets.

CRedit authorship contribution statement

Ralph Sonenshine: Conceptualization, data curation, formal analysis, methodology, project administration, supervision, Writing - original draft, Writing - review and editing. **Bradley Erickson role:** Investigation, methodology, validation, visualization, wrting - original draft, Writing - review & editing.

Appendix

Table A.1
Emerging market risk premium segmented into high and low institutional indices.

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dep Variable: Risk Premium	Risk Premiums	High (Less) Corruption	Low (More) Corruption	High Demo	Low Demo	High Transp.	Low Transp.
Emerging Market Returns	-0.0001 (0.0006)	0.001 (0.001)	-0.0009 (0.0008)	-0.0002 (0.0009)	0.0007 (0.001)	0.0005 (0.0009)	-0.001 (0.001)
Corruption (log)	-0.245** (0.089)	-0.372*** (0.118)	-0.384 (0.305)	-0.190* (0.102)	0.0684 (0.186)	-0.121* (0.0638)	-0.315* (0.152)
Democracy (log)	-0.200* (0.098)	-0.220*** (0.055)	-0.269* (0.117)	-0.515 (0.820)	-0.254** (0.087)	-0.194 (0.129)	-0.396 (0.287)
Regulation (log)	0.083 (0.168)	-0.546 (0.338)	0.300 (0.267)	0.0509 (0.204)	-0.633 (0.456)	0.060 (0.189)	0.065 (0.415)
Transparency (log)	0.319** (0.147)	0.201 (0.228)	0.438** (0.216)	0.239 (0.197)	0.142 (0.434)	0.187 (0.192)	0.417 (0.418)
Percent Foreign Ownership (log)	0.182 (0.195)	0.900 (0.848)	0.239 (0.227)	0.230 (0.239)	0.185 (0.488)	0.0230 (0.312)	0.235 (0.305)
Growth (log)	-0.005 (0.017)	0.029 (0.049)	-0.002 (0.021)	-0.012 (0.024)	-0.042 (0.030)	0.017 (0.029)	-0.006 (0.026)
Tax Rate (log)	-0.181 (0.157)	-0.249*** (0.097)	-0.302 (0.186)	-0.216 (0.185)	-1.230 (1.348)	-0.212 (0.166)	0.0290 (0.618)
Current Account	-0.002 (0.007)	-0.015** (0.004)	-0.001 (0.012)	0.005 (0.010)	-0.035** (0.016)	-0.011 (0.009)	0.003 (0.019)
Real Interest	0.009** (0.004)	0.005 (0.012)	0.008 (0.005)	0.013** (0.005)	-0.009 (0.007)	-0.005 (0.009)	0.01 (0.007)
Constant	1.858*** (0.588)	-3.702 (7.782)	1.704** (0.682)	1.816** (0.814)	6.656 (4.831)	2.273*** (0.701)	1.034 (2.149)
Observations	114	34	80	75	39	57	57
R-squared	0.202	0.09	0.279	0.208	0.444	0.159	0.304
Number of ids	20	8	16	14	9	12	12

Robust standard errors in parentheses ***p < 0.01, **p < 0.05, *p < 0.1.

Market risk premiums, defined as the additional return that's required on an index or portfolio of investments above the given risk-free rate, were gathered from [Fernandez et al. \(2016\)](#) annual survey of finance/economics professors, equity analysts, and company managers. The averages are split between the high (> = 5.3) and low (<5.3) corruption scores, high (>3.9) and low (<3.9) transparency scores, and high (>0.55) and low (< 0.55) democracy scores.

Table A.2
Breakout of total returns, risk premiums, and equity flows by region.

Variables	Latin Am	Asia	Europe	Mid. East	Latin Am	Asia	Europe	Mid. East	Latin Am	Asia	Europe	Mid. East
	Total Returns	Total Returns	Total Returns	Total Returns	Equity Prem. (log)	Equity Prem. (log)	Equity Prem. (log)	Equity Prem. (log)	Equity Flows	Equity Flows	Equity Flows	Equity Flows
Emerging Market Returns	0.59*** (0.10)	0.63*** (0.06)	0.49* (0.16)	0.31** (0.18)	-0.001 (0.00)	0.00 (0.00)	0.00 (0.00)	0.00 (0.00)	70.73** (20.87)	133.2** (31.28)	32.57 (27.09)	20.42** (9.13)

(continued on next page)

Table A.2 (continued)

Variables	Latin Am	Asia	Europe	Mid. East	Latin Am	Asia	Europe	Mid. East	Latin Am	Asia	Europe	Mid. East
	Total Returns	Total Returns	Total Returns	Total Returns	Equity Prem. (log)	Equity Prem. (log)	Equity Prem. (log)	Equity Prem. (log)	Equity Flows	Equity Flows	Equity Flows	Equity Flows
Corruption (log)	3.06 (16.27)	21.12 (17.71)	31.14 (19.48)	13.36 (19.34)	-0.346* (0.14)	0.00 (0.08)	-0.249** (0.04)	1.12*** (0.17)	-4114 (3004)	-23,816 (13620)	6784 (5792)	3161 (2373)
Democracy (log)	-27.04 (20.86)	-14.93 (12.28)	-34.93 (18.46)	-5.64 (79.38)	-0.95 (0.94)	-0.201** (0.06)	-0.56 (1.25)	-2.32 (1.30)	-3255 (3466)	-734.10 (11383)	-369.70 (5631)	4015 (2843)
Regulation (log)	1.57 (22.03)	-31.31 (17.85)	-31.91 (26.38)		-0.04 (0.27)	-0.39 (0.29)	0.484* (0.16)		1006 (3736)	16,142 (22890)	6276 (7714)	
Transp. (log)	16.64 (13.60)	20.43 (20.80)	-29.56 (68.99)	-48.40 (26.10)	0.07 (0.25)	0.50 (0.40)	0.57 (0.61)	-0.32 (0.25)	-4814** (1724)	2884 (9971)	801 (4811)	1979 (3336)
% Foreign Ownership (log)	-9.25 (31.31)	22.37 (16.31)	112.00 (117.90)	48.77 (34.15)	0.817* (0.32)	-0.255* (0.13)	0.53 (0.95)	-0.409* (0.17)	2490 (5388)	9898 (10227)	-13,847 (8256)	614 (1686)
Growth (log)	5.52** (1.49)	2.58 (3.23)	-0.24 (7.81)		-0.02 (0.03)	-0.02 (0.02)	-0.07 (0.06)		1477* (733)	1201 (1731)	2199* (584)	
Tax Rate (log)	14.53 (10.83)	9.897 (33.15)	11.12 (38.43)		-0.784 (0.92)	0.391 (0.35)	-0.52*** (0.05)		-3241 (7887)	10,649 (16542)	-293 (4586)	
Current Acc.	1.408 (1.02)	0.768 (0.66)	3.786 (1.48)		-0.0007 (0.03)	-0.0113 (0.01)	-0.0053 (0.02)		-866 (510)	127.9 (234)	351 (217)	
Real Interest	1.03** (0.30)	-0.454 (0.74)	1.142 (1.26)		0.0147 (0.01)	0.0102 (0.01)	-0.0126 (0.01)		-161.2 (150)	293.9 (338)	396.5 (144)	
Constant	-81.05 (85.24)	-90.81 (162.70)	-194.4 (94.79)	-33.92 (141.60)	3.141 (1.59)	1.027 (1.44)	0.837 (1.24)	-1.072 (1.69)	16,471 (30679)	-49,228 (37515)	-1876 (5939)	-4899 (12390)
Observations	84	147	43	54	38	53	18	16	84	146	43	38
R-squared	0.529	0.529	0.549	0.116	0.408	0.353	0.82	0.643	0.241	0.186	0.3	0.236
Number of ids	6	10	3	4	6	10	3	4	6	10	3	3

Robust standard errors in parentheses, ***p < 0.01, **p < 0.05, *p < 0.1.

Table A.3

Hausman test results.

	Chi-Sq Statistic	p-Value	Type of regression model
Model 1 log Total ret.	38.60	0.000	Fixed Effects
High corrupt total ret.	10.79	0.2964	Random Effects
Low corrupt total ret.	19.38	0.0222	Fixed Effects
High dem total ret.	6.72	0.6658	Random Effects
Low demo total ret.	30.95	0.0003	Fixed Effects
High transp. Total ret.	8.67	0.4679	Random Effects
Low transp. Total ret.	44.90	0.000	Fixed Effects
Model 2 log Eq. Prem.	18.33	0.0497	Fixed effects
High bribe total ret.	2.90	0.987	Random Effects
Low bribe total ret.	19.584	0.0334	Fixed Effects
High dem total ret.	27.46	0.0020	Fixed Effects
Low demo total ret.	30.95	0.0003	Fixed Effects
High transp. Total ret.	67.43	0.0000	Fixed Effects
Low transp. Total ret.	27.42	0.022	Fixed Effects
Model 3 Eq. flow	40.22	0.0000	Fixed effects
High bribe total ret.	15.29	0.1220	Random Effects
Low bribe total ret.	42.50	0.0000	Fixed Effects
High dem total ret.	28.76	0.0014	Fixed Effects
Low demo total ret.	41.82	0.0000	Fixed Effects
High transp. Total ret.	14.94	0.1333	Random Effects
Low transp. Total ret.	50.02	0.0000	Fixed Effects
Model 4 Industries			
Basic total ret.	12.89	0.2298	Random Effects
Consumer gds total ret.	3.05	0.9802	Random Effects
Consumer ser total ret.	34.74	0.0001	Fixed Effects
Finance total ret.	11.68	0.3068	Random Effects
Healthcare total ret.	5.69	0.8405	Random Effects
Technology total ret.	6.23	0.7953	Random Effects
O&G total ret.	31.52	0.1333	Fixed Effects
Industrial total ret.	5.60	0.8479	Random Effects
Utility total ret.	11.91	0.2911	Random Effects

The averages are split between the high (≥ 5.3) and low (< 5.3) corruption scores, high (> 3.9) and low (< 3.9) transparency scores, and high (> 0.55) and low (< 0.55) democracy scores.

Table A.4
Institutional segmentation of emerging market countries by years.

Countries	High (Less) corruption	Low (More) corruption	High transparency	Low transparency	High democracy	Low democracy
<i>Argentina</i>	2003, 2004	2000, 2002, 2005–2017	–	All year	2004–2017	2000–2003
<i>Brazil</i>	2000–2005	2006–2017	2000, 2004, 2013–2017	2006–2012	2006–2017	2000–2005
<i>Chile</i>	All years	–	All years	–	All years	–
<i>China</i>	2000–2008, 2015–2017	2009–2014	2016, 2017	2000–2015	–	All years
<i>Colombia</i>	2000–2006	2007–2017	–	All year	2015–2017	2000–2014
<i>Czech Republic</i>	2002–2007	2000,2001,2008–2017	All years	–	All years	–
<i>Greece</i>	2000–2006	2007–2017	2000–2008, 2013–2017	2009–2012	All years	–
<i>Hong Kong</i>	All years	–	All years	–	All years	–
<i>Hungary</i>	2000–2007	2008–2017	All years	–	All years	–
<i>India</i>	2004,2005, 2016–2017	2000–2003, 2006–2014	2016, 2017	2000–2015	2006–2017	2000–2005
<i>Korea</i>	2000–2009	2010–2017	All years	–	All years	–
<i>Malaysia</i>	All years	–	All years	–	–	All year
<i>Mexico</i>	2000–2006	2007–2017	–	All year	2006–2014	2000–2005, 2015–2017
<i>Pakistan</i>	NA	NA	NA	NA	NA	NA
<i>Peru</i>	2000–2006	2007–2017	2000–2002	2003–2017	–	All year
<i>Philippines</i>	–	All year	–	All year	2014–2017	2000–2013
<i>Poland</i>	2000,2002,2014–2013	2001,2003–2017	2000–2002, 2007–2017	2003–2006	All years	–
<i>Qatar</i>	All years	–	All years	–	–	All years
<i>Singapore</i>	All years	–	All years	–	All years	–
<i>South Africa</i>	2014–2017	2000–2013	All years	–	All years	–
<i>Sri Lanka</i>	2002	2003–2017	All years	–	2015–2017	2000–2014
<i>Taiwan</i>	All years	–	All years	–	All years	–
<i>Thailand</i>	2000–2007	2008–2017	2000–2007	2008–2017	2000–2001	2002–2017
<i>Turkey</i>	2001,2004,2008–2013	2000,2002,2003, 2005–2007,2014–2017	2000–2006	2007–2017	–	All years
<i>UAE</i>	All years	–	All years	–	–	All years

The averages are split between the high (≥ 5.3) and low (< 5.3) corruption scores, high (> 3.9) and low (< 3.9) transparency scores, and high (> 0.55) and low (< 0.55) democracy scores.

Table A.5
Independent variable correlation matrix.

	Democracy	Regul.	Transp.	Corruption.	Foreign Ownership	Tax Rate	Growth	Real interest rate	Current account
Democracy	1.0000								
Regulation	0.1179	1.0000							
Transparency	0.5072	0.0881	1.0000						
Corruption	0.1610	0.0470	0.6815	1.0000					
Foreign Ownership	0.4070	0.0601	0.6094	0.6342	1.0000				
Tax Rate	–0.1647	0.0331	–0.3244	–0.0940	–0.2044	1.0000			
Growth	–0.1848	–0.0264	–0.0157	0.1642	0.1174	0.0751	1.0000		
Real Interest Rate	–0.0107	–0.1767	–0.0807	0.0407	0.0206	0.0446	–0.011	1.000	
Current Account	–0.0322	0.0798	0.5344	0.4954	0.2980	–0.3770	0.1524	–0.162	1.0000

Table A.6
Institutional variable definitions.

Variable	Source	Description
<i>Democracy</i>	Economic Intelligence Unit (EIU)	“Voice and accountability captures perceptions of the extent to which a country’s citizens are able to participate in selecting their government, as well as freedom of expression, association, and media.”
<i>Transparency</i>	The Transparency International Corruption Perceptions Index (CPI)	“Ranks 180 countries and territories by their perceived levels of public sector corruption, according to experts and business people.”
<i>Corruption</i>	Frazier Economic Freedom Report	“This sub-component is based on the Global Competitiveness Report questions: (1) “In your industry, how commonly would you estimate that firms make undocumented extra payments or bribes connected with the following: A – Import and export permits; B – Connection to public utilities (e.g., telephone or electricity); C – Annual tax payments; D – Awarding of public contracts (investment projects); E – Getting favorable judicial decisions. Common (= 1), Never occur (= 7)”. (2) “Do illegal payments aimed at influencing government policies, laws or regulations impact

(continued on next page)

Table A.6 (continued)

Variable	Source	Description
		companies in your country? 1 = Yes, significant negative impact, 7 = No, no impact at all". (3) "To what extent do government officials in your country show favoritism to well-connected firms and individuals when deciding upon policies and contracts? 1 = Always show favoritism, 7 = Never show favoritism". The wording of the questions has varied slightly over the years."

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