External investor protection and internal corporate governance: Substitutes or complements for motivating foreign portfolio investment?

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Abstract

Institutional theory emphasizes external investor protection (EIP), while corporate governance theory focuses on internal corporate governance (ICG) to explain corporate operation and behavior. However, both mainstream theories explain much less the relationship between EIP and ICG. Examining firm foreign ownership from 30 countries, we show that while EIP and ICG separately foster firm foreign ownership, they are substitutes. Our findings imply that foreign investors have similar view with firms on EIP and ICG and that nations can counterbalance the impact from poor firm-level governance by promoting external investor protection to attract foreign ownership.

Keywords: Firm foreign ownership; Internal corporate governance; External investor protection

1. Introduction and motivation

For many countries, foreign investment is one of the key drivers for economic growth and national development, with global investment very desirable,1 while global investors are sensitive to investment environments, readily withdrawing capital if concerns emerge about profitability.2 To keep healthy and steady foreign capital influx, policy makers care about factors influencing foreign investment. Particularly, recent years saw rapid rise in global equity investment; how shareholder protection affects foreign ownership becomes important.

Studies on shareholder protection is rather broad and long developed. Early research on the importance of shareholder protection is based on corporate governance theory and focuses on firm-level internal mechanism. The mechanism of the internal corporate governance (ICG) is built on the Principal-Agent theory developed by Fama (1980) and Jensen (1993), in which there is potential conflicts of interest between shareholders (i.e., the Principal) and managers (i.e., the Agent). Much of the literature argues that, since shareholders and managers have information asymmetry and it is managers who normally have more complete corporate information than shareholders, managers, although they act on behalf of shareholders, may carry out self-interest conducts at the cost of shareholder's benefit. Hence, some mechanisms of ICG, e.g., board of directors, independent board members, are put in place to ensure that management team operates in line with shareholders' interest. For the sake of rapid rise in global investment, studies on effect of ICG on foreign investment were intense and several studies have found that foreign investors are attracted to transparent and well-governed firms (see, e.g., Aggarwal et al. 2005; Leuz et al. 2010; Das, 2014; Miletkov et al., 2014; among others). This strand of studies focuses on the effectiveness of the ICG mechanism in solving the conflicts among corporate stakeholders.

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[1] Several studies have documented the link between economic growth and foreign direct investment (see, e.g., Borensztein et al., 1998; Moran et al., 2005); however, recently, evidence shows that such link is conditional on, e.g., financial system development (Alfaro et al., 2004), regional factors (Bende-Nabende et al., 2001). Because our study does not focus on economic-FDI relationship, we just name a few above for those who look for further readings.

[2] A recent vivid example is Brazil. Brazil, being a member of the BRICs, is one of the global investment hotspots, but recently suffers from huge foreign equity outflow due to the environmental issue that affects the future profitability. See reports from the Financial Times: "Foreign investors rush out of Brazilian equities" (https://www.ft.com/content/770487c6-20cf-11ea-b8a1-584213ee7b2b).

However, the increasing complexity of the corporate operation and external environment, such as suppliers, overseas subsidies, and network partners; studies on external corporate governance, such legal system, becomes important. International business strategy views foreign direct investment as a primary means for firms to approach overseas markets. However, since the costs of capital resource and time for firms to set up a new business entity abroad are immense, foreign firms/investors may search for business entities already established by M&A or acquire part of the ownership. While ICG is firm-specific and less informative to outsiders, external corporate governance information, which is country-specific, is more transparent; hence, external investor protection rights also matter to foreign investors.

Institutional theory considers external investor protection (EIP), with a focus on country-level mechanism, such as legal systems. Ever since the seminal work of La Porta et al. (1998, 2000), studies document that countries with better legal protection of minority shareholders in general attract more foreign investment into domestic equity markets. Other studies, e.g., Dyck (2000), Boubakri et al. (2005), Giofre (2013), and Bhatta et al (2022), find similar positive association between EIP and foreign investment, although there are some mixed results found in Cremers and Nair (2005) and Cremers and Ferrell (2014). Further research finds that the positive association between EIP and foreign investment also depends on, e.g., political stability (Papaioannou, 2009), financial openness (Reinhardt et al., 2013; Okada, 2013; Quinn, 1997), and creditor's legal rights (Giofre, 2013).

From the perspective of global investors, both firm-specific corporate governance and country-specific legal system influence investment decision making. However, research mostly focuses on either effect of the mechanism onto foreign investment; the joint effect of the internal and external governance mechanisms has been overlooked for a long time. Academic researchers have recently begun to consider the interaction of the two mechanisms.

Gillan et al. (2011) and Guo et al. (2015) both implicitly and explicitly show a substitute effect between internal and external corporate governance. Bonetti et al. (2016) examine how firm- and country-level governance interplay in shaping financial reporting quality and find that firm- and country-level governance mechanisms have substitutional effect on firm's improvement in financial reporting quality. Overall, this strand of literature (e.g., Fu et al., 2022. Li and Fu, 2022; Shen et al., 2022) focuses mainly on firm's internal measure change to react the external legal change, and in

general firm managers view ICG and EIP as substitutes (e.g., Fu et al., 2022; Fu and Jian, 2021; Liu et al., 2022; Olaniyi et al., 2022;). We extend it further by studying the joint impact of ICG/EIP on foreign shareholders. Foreign shareholders are of increasing importance to firms. Therefore, their reactions to ICG and EIP mechanisms are crucial. If foreign shareholders' viewpoints are similar to respective managers, then corporate governance would likely be frictionless. However, if managers and shareholders have differing viewpoints, there would be potential conflict of interests (Adusei, 2022; Hong et al., 2022). But how foreign shareholders see ICG and EIP mechanisms jointly is currently less understood, we are motivated to fill the gap.

We explore the tradeoff between ICG and EIP and how this affects foreign investment.[3] We conjecture that EIP and ICG have a substitutional effect on foreign investment decision-making, with both mechanisms working separately toward protecting minority shareholders. Specifically, we compare the effects of ICG and EIP on foreign investment, as well as investigate how these two mechanisms interact with each other. Moreover, we investigate the joint effect of ICG and EIP by examining the interactions between EIP and ICG. The substitution view predicts a negative interaction between EIP and ICG.

Our sample includes firm-year observations for 30 countries over 2004–2020. Following Dahlquist and Robertsson (2001) and Aggarwal et al. (2011), we measure foreign ownership as foreigner institutional holdings relative to total shares outstanding. We use firm board size and the percentage of independent board members to measure ICG. These corporate governance variables are popular measures for investor protection at the firm-level and capture differing aspects of corporate governance (Wintoki et al., 2012; Paniagua et al., 2018). Further, a larger board of directors restricts CEO ability to control boards, while more independent board members reduce potential conflicts of interests between corporate insiders and outsiders (John and Senbet, 1998).

As measures of EIP, we use indices from the World Bank: the country-level Strength of Investor Protection Index and the average of the six Worldwide Governance Indicators. These variables cover

[3] There are two mutually exclusive forms of interaction between EIP and ICG: complements or substitutes. The dichotomy of substitutes versus complements has been adopted in a number of contexts (Bulow et al., 1985; Bowles and Polania-Reyes, 2012; Misangyi and Acharya, 2014; Goodell, 2017).

the effectiveness and soundness of overall legal system with respect to investor protection.

We analyze the joint impact on foreign investment by panel regression. In the regression setting, we include ICG and EIP, as well as the interactive term of these two variables to assess the hypothetical relationships. We find that ICG and EIP each separately increase firm foreign ownership, consistent with earlier findings for ICG (e.g., Aggarwal et al. 2005; Leuz et al. 2010; Das, 2014; Miletkov et al., 2014) and for EIP (e.g., Dyck, 2000; Boubakri et al., 2005; Giofre, 2013; Bhatta et al, 2022) on foreign investment. More importantly, we show that these two schemes of investor protection mechanisms, combined together, substitute for each other instead of reinforcing each other in foreign investment determination. We find the interaction between ICG and EIP is statistically negative, consistent with a substitution effect between ICG and EIP for firm foreign ownership.

Given results supporting the substitution view, we further apply standardized panel regression to gauge whether ICG or EIP has a stronger impact on firms' foreign ownership. Regression with all the variables being standardized enables us to compare magnitudes of effects to assess comparative importance of variables. To carefully address the potential omitted variable bias and endogeneity issues, we conduct several robustness checks, finding that the results are not altered. Results are robust after controlling for unobserved country, industry, and time effects. Results are also qualitatively the same after removing U.S. firms from the sample and adjusting for potential small sample bias.

We contribute to understanding how firms' foreign ownership is affected by corporate governance. First, as existing studies are largely limited to either firm-level ICG or country-level EIP, we extend the relevant strands of literature and provide insights on how the ICG and EIP interplay in firm's foreign ownership. As a second novelty, we document the ICG-EIP effect on a global scale. Prior studies on the ICG-EIP interaction mostly focus on the U.S. market (e.g., Abdioglu et al., 2013, Gong et al., 2013; Guo et al., 2015), while the scope of our paper covers global firms. With boarder and up-to-date coverage we provide a comprehensive insight on the effects of shareholder protection on global foreign ownership, confirming that the ICG-EIP substitutional effect is prevalent.

Our paper is related to Abdioglu et al. (2013) but with key differences. Abdioglu et al. (2013) study only U.S. market while we examine global markets. Further, we examine the target country investment protection and hence test the complimentary versus substitutional effects. On the other hand

Abdioglu et al. (2013) focus on investor country's investment protection while examining familiarity versus flight-to-safety arguments.

Despite offering theoretical value, our findings have policy implications for firm managers and governments. First, echoing prior conclusions (e.g., Gillan et al., 2011; Guo et al., 2015) that firm managers treat internal and external corporate governance as substitutes, our findings extend this view to foreign owners. Results indicate that firms are likely to have less friction when making or executing firm's strategies on shareholder rights. Additionally, of practical value, we find that EIP explains more variations in foreign investment than ICG. Therefore, governments in developing countries can prioritize external corporate governance mechanisms to save individual firms from spending extensively on internal corporate governance.

The rest of the paper is structured as follows: Section 2 outlines research hypotheses and testable regressions/ Section 3 describes data. Section 4 presents baseline and robustness results. Section 5 concludes.

2. Research design and hypotheses

2.1 Conceptual framework

We use the conceptual framework on optimal allocation on foreign investments outlined by Giofre (2013) to motivate our hypotheses and testable regressions. Under Giofre's framework, foreign investors face different costs on investing foreign assets. Foreign investors are riskier than home investors (Gehrig, 1993), but, among them, have heteroscedastic reception of market information. Hence, foreign investors are more prone to information-based judgment towards individually chosen optimal portfolio allocation of foreign objects, given respective perceptions of variance-covariance matrices of risk and return.

In this section, we briefly explain the Giofre (2013) foreign asset allocation and in the latter sections we outline our hypotheses and testable regressions. Based on Merton (1969), the investor with relative risk aversion utility function will reach the following optimal portfolio allocation:

$$\omega^* = \frac{1}{\lambda}\Sigma^{-1}(\bar{\mu} - ri) \qquad (1)$$

where ω^* is a vector of weights in the overall portfolio, λ is the parameter of relative risk aversion, $\bar{\mu}$ is a vector of expected stock returns, r is the risk-free rate, i is a vector of ones and Σ is the variance-covariance matrix of stock returns. As mentioned, foreign investors have investor-specific variance-covariance matrices, as within the international investment environment, investor decisions are made subject to available information. Hence, individual investors, denoted as l, have their own respective optimal allocations, ω^l, instead of universal optimal allocations, ω^*.

C^l is a $N \times N$ positive definite diagonal marix as foreign investment barrier, where the j-th diagonal element C^{lj} is the cost of holding country j's stock by investor l. To capture the cross-border barriers into the international investment, the investor-specific variance-covariance matrix becomes $\Sigma^l = \Omega C^l$, where Ω is the variance-covariance matrix without cross-border barriers. Therefore, the ω^l can be expressed as

$$\omega^l = \frac{1}{\lambda}(\Sigma^{\mathrm{l}})^{-1}(\bar{\mu} - ri) = (\mathrm{C}^{\mathrm{l}})^{-1}\Omega^{-1}\frac{1}{\lambda}(\bar{\mu} - ri). \qquad (2)$$

Next considering the equilibrium condition, where the stock demand and supply are met:

$$MS = \Phi\Omega^{-1}(\frac{1}{\lambda}(\bar{\mu} - ri), \qquad (3)$$

where $\boldsymbol{MS}$ is a vector of shares in the world market capitalization represent**ing** the total supply of stock**.** **T**he right-hand side is the weighted sum of stock indexes' demand**.** $\boldsymbol{\Phi}$ is a diagonal $\boldsymbol{N \times N}$ positive definite matrix where the j-th diagonal element, $\boldsymbol{\phi^j} = \sum_{\boldsymbol{l=1}}^{\boldsymbol{L}} \boldsymbol{MS^l}\frac{\mathbf{1}}{\boldsymbol{C^{lj}}}$, is the average investment advantage in holding asset j across investors. $\boldsymbol{D^l} = \boldsymbol{\Phi C^l}$, where $\boldsymbol{D^l}$ is a diagonal $\boldsymbol{N \times N}$ positive definite matrix, where the j-th diagonal element $D^{lj} = \phi^j C^{lj}$ represents the cost of investor l investing in asset j.

Under the equilibrium condition outlined above, the individual investor's optimal allocation is expressed by

$$\omega^l = (\mathrm{D})^{-1}\Phi\Omega^{-1}\frac{1}{\lambda}(\bar{\mu} - ri) = (\mathrm{D})^{-1}\mathrm{MS}. \qquad (4)$$

where the j-th element (or optimal weight for asset j) can be expressed as $\boldsymbol{\omega^{lj}} = \frac{\mathbf{1}}{\boldsymbol{D^{lj}}}\boldsymbol{MS^j}$.

2.2 Hypothesis development

Based on the Giofre (2013) conceptual framework, foreign investment is determined by $\frac{1}{D}$, the relative investment 'advantage' across assets and the market supply. 4 Here, we treat D as unobservable and related to shareholder protection mechanism, while MS is exogenous. From a global investment perspective, foreign investors are looking for profitable investment while also facing potential losses from insider expropriation. Specifically, foreign investors, as minority investors compared with domestic shareholders, face disadvantages when there is an interest conflict between insiders and minority group of shareholders.

Domestic insiders, while benefitting from the capital provided by foreign investors may also be motivated to expropriate wealth from foreign minority investors. Therefore, firm-level foreign investment is affected by how well firms address agency concerns. We hypothesize a positive impact of EIP and ICG on foreign ownership in firms.

H1: Both EIP and ICG are positively related to firms' foreign ownership.

ICG and EIP are substitutes, with the substitutional or complemental relationship between ICG and EIP dependsing on the costs and benefits of the various governance mechanisms. Following Gillan et al. (2011), if the costs and benefits of various governance mechanisms are homogeneous, then firms are likely to treat them as complements. On the other hand, if the costs and benefits of various governance mechanisms are heterogeneous, then firms are likely to treat them as substitutes. Here we apply the Gillan et al. (2011) argument in a foreign investment situation. Foreign investors will view ICG and EIP as complements if they think of ICG and EIP mechanisms as having little overlap in terms of costs and benefits. In this case, foreign investors prefer both mechanisms since ICG and EIP reinforce each other, and a complement relationship being a positive joint effect between these two mechanisms. In the same vein, foreign investors will view ICG and EIP as substitutes if ICG and EIP mechanisms overlap and the substitution relationship is a negative joint effect between the two mechanisms.

4 Note that, following the interpretation in Giofre (2013), $\boldsymbol{D}$ represents the investment cost while the inverse of $\boldsymbol{D}$ represents the investment advantage.

Figures 1 provides a visual summary of the ICG-EIP interaction effect on foreign ownership. In the figures, the Y-axis represents foreign ownership and the X-axis ICG. then foreign ownership is sorted by EIG into two groups (one group/line for high EIG and the other for low EIG). Following the above discussion, the two lines should be upward sloping, indicating that corporate governance improves foreign investment. Furthermore, a substitutional effect would be shown by the distance between the two lines are narrowing as ICG increases, implying a decreased marginal effect from ICG conditional on EIP.

[Figure 1 is about here.]

We formulate our second hypothesis on the interaction between ICG and EIP. Following earlier discussion:

H2: While EIP and ICG are separately positively related to firms' foreign ownership, their interaction is negatively significant

2.3 Testable regressions

The model for *H1* is

$$FOINS_{it} = \alpha + \beta_1 PROTECT_{it} + \beta_2 GOVERNANCE_{it} + \gamma CONTROL_{it} + \varepsilon_{it} \quad (5)$$

where FOINS is the measure of firm-level foreign ownership, PROTECT is the measure for country-level EIP, GOVERNANCE presents firm-level ICG mechanisms, and CONTROL is a vector of control variables.

We measure firm-level foreign ownership as the fraction of foreign institutional equity shares to the total equity shares outstanding (Luong et al., 2017; Kacperczyk et al., 2021). We use firm board size (BOSIZE) and the percentage of independent board members (BOIND) as proxies for ICG. These two corporate governance variables are common measures for corporate governance at the firm level (Dalton et al., 1999; Xie et al., 2003; Andres and Vallelado, 2008; Linck et al., 2008; Liao et al., 2015). We measure board size as the natural logarithm of total number of directors and board independence as the percentage of independent directors on a respective board.

Next, we turn our attention to the EIP measures. Prior studies explore several measures for investor protection. Broadly speaking, these measures can be captured at the country-level, as related to, for instance, domestic legal systems and aggregate information transparency (Boubakri et al., 2005). This study applies two EIP measures, namely the Strength of Investor Protection Index (SIP) and Worldwide Governance Indicators (WGI). The Strength of Investor Protection Index, developed by Djankov et al. (2008), captures the extent to which minority shareholders are protected against expropriation by corporate insiders, particularly against directors' misappropriation of a firm's assets for their own private benefit. The value of this index ranges from 0 to 10 with higher values signaling better investor protection standards. We also use the Worldwide Governance Indicator constructed by Kaufmann et al. (2010) and maintained by World Bank as an alternative measure of country-level investor protection (see also Estrin et al., 2016). WGI is rated from 0 to 100 with 100 being the least risky and zero the riskiest. We use the average of the six indicators.

To ensure that our regression explains as much of the variation in foreign ownership as possible, we conduct a comprehensive search for factors identified by the extant literature as relevant in the study of foreign ownership. We include various firm-specific characteristics, as well as performance and risk measures. To this end, we include two firm characteristics variables (firm size and book-to-market ratio), three performance measures (dividend yield, ROE, and stock excess return), and three firm risk variables (current ratio, accounting leverage, and stock volatility). Finally, we also control for country and year fixed effects.

To investigate the interaction between ICG and EIP with regards to foreign ownership, we further incorporate the interactive term of ICG with EIP.

$$FOINS_{it} = \alpha + \beta_1\, PROTECT_{it} + \beta_2\, GOVERNANCE_{it} + \beta_3\, (PROTECT_{it} \times GOVERNANCE_{it}) + \gamma\, CONTROL_{it} + \varepsilon_{it}, \quad (6)$$

where GOVERNANCE and PROTECT are the ICG and EIP variables, respectively. CONTROL is a set of firm-specific control variables, as in Equation (5). Country and time fixed effects are again controlled for in the equation.

In Equation (6), we include both ICG and EIP measures respectively, as well as their interaction term. The interactive term enables inspection of which model, substitution or complement, functions in

foreign capital markets. We expect a negative coefficient of β_3 for the interaction term between ICG and EIP, indicating a substitutional effect.

3. Data

We obtain global data for this study from several sources. Accounting data are from Thomson Reuters, while foreign ownership data are from Worldscope of Thomson Reuters. Corporate governance measures are collected from BoardEX. Firm-level market information (stock excess return and stock historical volatility) are obtained from COMPUSTAT. Country-level governance measures, including the Strength of Investor Protection Index (SIP) and the World Governance Indicators (WGI), are collected from the World Bank.

The SIP is an average of three indices, the extent of disclosure index, the extent of director liability index, and the ease of shareholder suit index. The SIP ranges from 0 (no investor protection) to 10 (best investor protection). The data are from a survey of corporate lawyers and are based on securities regulations, company laws and court rules of evidence. Similarly, the WGI are an aggregate governance score consisting of six dimensions of governance for each country: Voice and Accountability, Political Stability and Absence of Violence/Terrorism, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption. The score ranges from 0 (poorest governance) to 100 (best governance). WGI data is collected yearly from surveys.

To merge firm-specific variables, we use firm identifiers e.g., ISIN and CUSIP where available. We also merge by country for country-level variables. All data are annual observations or year-end observations and converted from the local currency into U.S. dollars. We delete firm-year observations with board size equal to 0 or board independence large than 1. We trim the outliers at 1% and 99% levels for accounting, market, and ownership variables.

We restrict the selection of firms by excluding financial and utility firms, as these firms typically have larger market capitalizations and unusual capital structures. We also exclude China as a unique socialist country. Hungary is removed for having limited observations. We also remove firms in Luxembourg, as these are usually attracted to corporate tax benefits, with most of these off-shore entities owned by foreign investors.

Our final sample includes 8,809 firm-year observations for 30 countries for 2004–2020. Table 1 provides definitions of variables used in the paper. Panel A of Table 2 reports summary statistics. As shown in Table 2, average foreign ownership is about 27%. Turning to board-related variables, board size (BOSIZE) and independent board members (BOIND), the average number of board directors is 7.6, with a standard deviation of 1.37, while the average percentage of independent board members is 0.772 with a standard deviation of 0.130. The average for SIP (and WGI) is 7.234 (and 84.232) with the standard deviation being 1.365 (and 11.256).

Panel B of Table 2 reports Pearson correlation coefficients. Modest correlation coefficients, as well as variance inflation factors (VIFs) being less than 10, confirm the absence of a multicollinearity problem among the regressors in our regression models.5 From the correlation coefficient matrix, we find positive correlation coefficients for ICG (24.6% for FOINS-BOSIZE pair; 26.9% for FOINS-BOIND pair) and EIP (11.2% for FOINS-SIP pair; 11.7% for FOINS-WGI pair), indicating that internal and extremal corporate governance, respectively, are positively correlated to foreign ownership. The correlation coefficients between ICG and EIP range from -4.1% to 11.0%, implying that the correlations between internal and external corporate governance variables are mixed.

[Tables 1 and 2 are about here.]

Table 3 reports the sample average by country for key variables. Examining Table 3, we see that the number of observations varies widely across countries. U.S. firms form the majority of our sample, approximately 59%. Further, Anglo Saxon countries, UK, Australia, and Canada, contribute large amounts of observations, compared with non-English speaking countries. Since there are wide differences in observations by country, we control for country fixed effects in our regression models. In terms of foreign ownership, U.S. firms have one of the lowest foreign ownerships (9%, see Foreign Ownership column). Such low foreign ownership in the U.S. firms implies that U.S. investors are a main investment source for other countries. Greece (79.4%) and Poland (67%) are the countries with

[5] Since the EIP-related variables, i.e., SIP and WGI, are country-specific. So, when we calculate the correlation coefficients for the SIP and WGI, they are calculated at country level, i.e., we first take the average of the firm-specific variables by each country, then calculate the correlation coefficients against SIP or WGI.

the highest average foreign ownership, although the number of observations for these countries are low.

Regarding investor protection variables, we observe that better investor protection is associated with higher foreign ownership. For instance, Australia and New Zealand, which have particularly high WGI (92.153 and 97.414 on a scale of 100, respectively), also have higher FOINS. The country with the highest proportion in independent directors on average is Greece (84.5%), followed by Poland (84.4%), while Japan has the lowest proportion, with only 39.6% of the board members being independent directors. Similarly, higher BOIND is associated with higher foreign ownership. Again, board size (BOSIZE) is presented in log values. The country has the largest board size on average is Spain with 9.36 (=e2.236) members on board while Kuwait has the smallest board on average, with 6.97 (=e1.941) members on board.

[Table 3 is about here]

4. Results

4.1 Preliminary analyses

In this section, we provide some preliminary analysis on foreign ownership. Note that we use absolute foreign ownership. Table 4 presents mean values of foreign ownership for various groups of firms. To further investigate how foreign investment varies based on EIP and ICG, we classify firms into two groups based on the sample median of SIP (Panel A). We compute the mean value for foreign ownership for firms in high and low SIP countries separately. Results, presented in the first column of Panel A, show that firms in countries with high SIP have more foreign ownership than their counterparties in countries with low SIP.

Average foreign ownership is 36.4% for firms in better-protected countries, as indicated by SIP, and only 23.2% for firms in poorly protected countries. Moreover, t-test results (Column (1)) indicate that the difference of foreign ownership between high and low SIP countries are significant at 1% level (t=18.52). This is consistent with our expectation that firms better externally protected attract more foreign investment.

Columns (2)–(4) of Panel A of Table 4 report results of examining the relationship between foreign ownership and ICG across countries with differing levels of SIP. For countries with high (low)

SIP, we separately compute the mean value of foreign ownership for firms above (below) the sample median board independence (board size). Results are consistent with our expectation that well-governed firms attract more foreign investment as foreign ownership is higher for firms with higher board independence (larger board).

Independent board members have long been considered to reduce potential conflicts of interest between corporate insiders and outsiders by providing additional monitoring (John and Senbet, 1998). Independent directors, being less aligned with management, are more inclined to encourage firms to disclose a wider range of information (Hillman and Dalziel, 2003). Moreover, larger board are more likely to have independent directors with corporate or financial experience. This facilitates manager supervision and brings more human capital to advise managers (Zahra and Pearce, 1989; Xie et al., 2003; Andres and Vallelado, 2008).6 Sah and Stiglitz (1986) suggest that group decision making naturally gives rise to diversified opinions. Consequently, larger groups have a greater likelihood to reject risky projects since a project must be considered as good by several group members before it can be accepted by a large board (Cheng, 2008).

Additionally, we observe that, though foreign ownership is strictly higher for firms with higher board independence/larger boards in both sub-groups of countries, t-test results of foreign ownership between well-governed and poorly governed firms in high- and low-SIP countries are 10.61 (10.45) and 23.72 (19.57) separately. This indicates that the difference of foreign ownership between well-governed and poorly governed firms is more significant in low-SIP countries and consistent with the substitution model, according to which ICG is more effective in firms located in countries with weaker EIP.

Panel B in Table 4 reports results of the same tests as Panel A but with replacing SIP with WGI as a measure of country-level investor protection. Results reported in Panel B are similar to Panel A and in line with our expectation that foreign ownership is higher in better-protected countries and well-governed countries. Moreover, the comparison of foreign ownership differences in firms with higher

6 Although the evidence on the role of board size is inconclusive, Dalton et al. (1999) document a positive and significant relation between board size and financial performance. Xie et al. (2003) find that large board can help to limit earning management. Given these results, we are not very surprised to observe higher foreign ownership in firms with large boards.

board independence/a larger board between high- and low-WGI countries supports the substitution perspective.

[Table 4 is about here]

Figure 2 presents the plots of foreign ownership against board characteristics separately for high and low country-level SIP. By doing so, we aim to highlight the effect of the interaction of ICG and EIP on foreign ownership. In the upper figure, observations are classified into 50 groups based on the value of board independence (X-axis). The Y-axis measures the mean value of foreign ownership of observations in each group based on board independence. Gray scatters denote combinations of the mean value of foreign ownership and board independence in countries with a low level of SIP; whereas black scatters denote combinations of the mean value of foreign ownership and board independence in countries with a high level of SIP.

The two straight lines show the linear prediction plots of the scatters in countries with low and high levels of SIP separately. We observe that the fitted line presenting the scatters in high SIP countries is higher than the line for low SIP countries, consistent with firm foreign ownership being generally greater in well-protected countries. Moreover, both of the fitted lines trend upwards, showing a positive relationship between board independence and foreign ownership. More interestingly, the fitted line presenting low-SIP countries is steeper than the line presenting high-SIP countries. This trend steepness implies a substitutional effect between ICG and EIP.[7]

In Figure 2, observations are classified into 50 groups based on board size (X-axis), with all other else the same as with the upper figure. Similarly, we find both of the fitted lines are upward sloping, illustrating a positive relationship between board size and foreign ownership, consistent with good ICG attracting more foreign investment. Moreover, the fitted line presenting low-SIP countries is steeper than the line presenting high-SIP countries, consistent with the substitution model.

[7] A substitution perspective implies that the effect of ICG on attracting foreign ownership, other things being equal, should be greater in countries with weaker investor protection. In countries with strong shareholder protection, in contrast, the impact of ICG on attracting foreign investors is reduced. Hence, it implies that the distance between the two lines is narrowed when the ICG is increased (i.e., moving to the right along with X-axis).

[Figure 2 is about here]

Preliminary results are consistent with the substitution model regarding ICG and EIP. However, our findings may be driven by firm-related characteristics. Therefore, we next conduct analyses that incorporates a variety of control variables.

4.2 Regression analysis

Table 5 reports multivariate regression results. Column (1) reports the regression results for the effect of ICG, controlling for firm characteristics. Results are consistent with ICG improving the willingness of foreign investment. The two variables BOSIZE and BOIND are both positively statistically significant at the 1% level. As for economic significance, a one standard deviation of increase (0.13) in BOIND will increase the foreign ownership FOINS by 3.7% (=0.285 * 0.13), while a one standard deviation increase in BOSIZE (STD = 0.32) will increase the foreign ownership FOINS by 1.89% (=0.059 * 0.32), holding other variables equal.

[Table 5 is about here]

We further add the EIP variables SIG and WGI to our model, with results reported in Columns (2) and (4) of Table 5. Together with the ICG variables, SIG and WGI are also positively statistically significant 1%. Results are consistent with ICG and EIP both positively affecting firms' foreign ownership. Regarding economic significance, Column (2) indicates that a one standard deviation increase in SIP (1.365; recall that SIP is at the scale of 0-10) will increase the foreign ownership by 2.32% (=0.017 * 1.365), while Column (4) indicates that one standard deviation increase in WGI (11.265; recall that WGI is at the scale of 0-100) will increase the foreign ownership by 5.63% (=0.005 * 11.265), holding other variables equal. Note that the coefficients for ICG in Columns (1), (2), and (4) are similar; implying that the impact of EIP is in general larger than ICG.

We further incorporate the interaction of ICG and EIP to investigate how those two factors interact to affect foreign ownership. Regression results are reported in Column (3) for SIP and Column (5) for WGI. Results show that there is a significantly negative impact of the interaction term between ICG and EIP on foreign ownership.

As for the economic impact of this joint effect, Column (3) suggests that concomitant one standard deviation increases in BOIND (STD = 0.13) and SIP (STD = 1.365) will cause a reduction of 0.89% (= -0.050 * 0.13 * 1.365) on foreign ownership. In the same vein, one standard deviation concomitant increases in BOSIZE (STD = 0.32) and SIP (STD = 1. 365) will cause a reduction of 0.44% (= -0.010 * 0.32 * 1. 365) on foreign ownership. Similarly, Column (5) suggests that a concomitant one standard deviation increase in BOIND (STD = 0.13) and WGI (STD = 11.265) will cause a reduction of 0.29% (= -0.002 * 0.13 * 11.265) on foreign ownership, while a one concomitant standard deviation increase in BOSIZE (STD = 0.32) and WGI (STD = 11.265) will cause a reduction of 0.36% (= -0.001 * 0.32 * 11.265) in foreign ownership. Results are consistent with ICG's impact on attracting foreign ownership being greater in countries with weaker investor, in accordance with our substitution model.

As the coefficients for EIP-related variables (SIP and WGI) are smaller than ICG-related variables (BOIND and BOSIZE), our results so far suggest that both ICG and EIP are important determinants of foreign investment. We are motivated to further investigate which of these mechanisms can explain most of the foreign investment. However, since the panel regression coefficient results reported in Table 6 are in different measurement units, direct comparison of these coefficients is difficult.

As standardized regression coefficients present coefficients in terms of a single, common set of statistically reasonable units, better comparison can be achieved (Siegel, 2016). We therefore we undertake standardized regressions, employing an OLS regression with all the variables subtracted by their sample mean and divided by their sample standard deviation. Standardized regression coefficients allow us to rank the importance of the explanatory variables in the regression by the absolute values of the coefficients.

Table 6 reports results for the standardized regressions, following the same specifications as those reported in Table 5. When we compare coefficients of the two ICG variables, independent board members and the number of board members, independent board members is more economically significant than board size. Both variables capture different aspects of corporate governance, with independent board members directly monitoring boards, while larger boards suggesting more board

diversity and more objective decision making. Our results show that independent board members serve as a more important role in determining foreign ownership.

[Table 6 is about here]

In addition, when we compare the coefficients between ICG and EIP, we find that WGI is more economically significant than both of ICG measures. Column (4) of Table 6 reports the regression results for BOSIZE, BOIND, and WGI. We observe that the coefficient of WGI (0.200) is larger than the coefficients of BOIND (0.115) and BOSIZE (0.060). All are statistically significant at 1%. While the power of each governance mechanism is potentially subject to various effects, such as sample size, period, trimming, etc., our findings here regarding the effectiveness of the mechanism are based on the standardized regression coefficients.

4.3 Robustness checks

We conduct several robustness checks of the substitution effect between the ICG and EIP. First, we test if our results are driven by unobserved industry effects. Firms in different industries have different business cycles, intensities of competition, predictability of demand, and scale economics and technological change. Therefore, industry effects may drive foreign ownership (Kronborg and Thomsen, 2009). We repeat the results reported in Table 5 with FOINS being demeaned by industry. In this analysis, we control for unobserved industry effects. These results, reported in Table 7, evidence that our baseline results are robust to controlling for industry effects. Firms with better ICG and located in well-protection countries are associated with more foreign ownership, with the effect of ICG mitigating poor EIP.

[Table 7 is about here]

Second, we repeat the main regression specification with non-U.S. firms. In our sample, the majority of the observations are U.S. To confirm that our results are not driven by U.S. observations, we run regressions a sample excluding U.S. firms. As shown in Table 8, all investor protection variables are statistically significant at 1% or 5%. Again, all four interactive terms are also negatively significant, indicating the identified substitution effect does not depend on U.S. firms.

[Table 8 is about here]

Next, we address potential endogeneity issues in the regression. We consequently perform GLS random-effects regression to control for unobserved heterogeneity in individual firms. Results, reported in Table 9, are qualitatively similar to results reported in previous tables.

[Table 9 is about here]

Additionally, we address concerns of endogeneity (particularly reverse causality) by examining the relation between foreign ownership and investor protection using dynamic generalized method of moments (GMM) panel estimation, as reported in Table 10. Dynamic GMM estimation is suitable for samples where the time span is relatively small compared to the cross-section of observations. Considering our dataset includes 17 years of annual observations (time series) for 30 countries (cross-section), we consider dynamic GMM method as appropriate.

[Table 10 is about here]

Specifically, we include lagged foreign ownership in our model as an independent variable considering ownership in t-1 as an important determinant of ownership in year t. Our model becomes dynamic due to the inclusion of foreign ownership in year t-1. We also lag all the control variables as internally generated instrumental variables to estimate our dynamic GMM regression (see Arellano and Bover (1995) for further details of the method). The coefficients of ICG and EIP are both statistically and positively significant with their interaction significantly negative. Thus, dynamic GMM estimation supports our findings.

In the Appendix, we provide additional checks on the robustness of the results in. In Table A.1, we test whether our results are altered under alternative measures of corporate governance. In our baseline tests, we use independent directors and board size as measures of ICG. One might question whether these two variables capture firm-level corporate governance sufficiently. To address this potential insufficient representation of ICG, we use corporate ESG (Environmental, Social, and

Governance) scores as alternative measures.[8] Here, we choose Refinitiv (formerly ASSET4) by Thomson Reuters. As the ESG score, consists of three main pillar scores, environmental-, social-, and corporate governance, we only use the pillar score from corporate governance aspect. The corporate governance pillar score (GOV hereafter) in Refinitiv is constructed by various aspects of corporate governance indicators, including management performance, shareholder rights, and firm's corporate social responsibility strategy and is therefore a comprehensive ICG measure.[9] The GOV score is firm-specific and ranges from 0 to 100.

The relevant results are reported in Table A.1. We drop BOSIZE and BOIND in the regression when including GOV because BOSIZE and BOIND are already included in GOV. Results are consistent with our baseline results. The coefficients for GOV are significantly positive with the interaction of GOV and EIP being significantly negative in all cases. Additionally, we repeat our baseline regressions with firm-clustered standard errors. Reported in Table A.2, baseline findings are confirmed using clustered (at firm level) standard errors.

5. Conclusions

Foreign investment literature explores how investor protections influence the willingness of foreign investment. On the other hand, corporate governance theory focuses on the role of firm-level governance in determining foreign ownership. Institutional theory considers external investor protection (EIP), as implemented by country-level institutions, improving foreign investment into domestic equity markets. Alternatively, corporate governance theory considers that internal corporate governance (ICG) mechanisms ease fears of manager expropriation; thereby increasing the willingness of foreign investment. However, whether country-level institutions or firm-level corporate governance mechanisms act as substitutes or complements has received little attention.

Following Giofre (2013) and Gillan (2011), we conceptualize the impact of country- and firm-level corporate governance mechanism on foreign investment We hypothesize a substitutional effect

[8] Here, we only briefly explain the ESG score as this is beyond the paper's scope. For further reading, we recommend Berg et al. (2022), in which the authors provide more details regarding scope and measure among different score providers.

[9] Further details about Refinitiv ESG score can be found in: https://www.refinitiv.com/en/sustainable-finance/esg-scores#methodology.

between ICG and EIP with regard to foreign investment, as a result of heteroscedastic costs and benefits of various governance mechanisms implied by prior studies (Gillan et al. 2011; Guo et al, 2015; Bonetti et al, 2016).

Examining firm foreign ownership from 27 countries, we evidence, expectedly, that country-level EIP and firm-level ICG separately foster firm foreign ownership. We further document a significantly negative interaction between EIP and ICG, supporting our argument that country- and firm-level corporate governance mechanisms substitute for each other with respect to engendering foreign ownership. Our findings are robust to various tests addressing potential omitted variable bias from unobserved fixed effects, clustering of standard errors, and controlling for endogeneity concerns. Results are also robust for samples excluding US firms, and alternative measures in foreign investment and governance measures.

We provide insights for governmental bodies and corporate managers to prioritize the most effective approach to attracting foreign investment with limited resources. Specifically, the finding that EIP explains more on the variation in foreign investment than ICG suggests governments in developing countries should prioritize external corporate governance mechanisms as more efficient than motivating individual-firm internal corporate governance.

We contribute to understanding foreign investment determination in relation to the overall effect of internal- and external corporate governance on a global scale. An important managerial implication of our results is related to potential reduction in conflict of interest between foreign owner and firm's management. While prior studies (Gillan, et al., 2011; Guo et al., 2015) find that firm management teams treat internal and external corporate governance as substitutes, we evidence that this substitution of internal and external corporate governance extends to foreign owners, providing new insights into the traditional principal-agent relationship between firm managers and foreign owners regarding corporate governance.

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Table 1. Variable definitions

Variable	Abbreviation	Definition
Foreign Ownership	FOINS	The percentage of the shares held by foreign institutional investors to the total shares outstanding.
Size	SIZE	The logarithm of market capitalization of a firm.
Dividend Yield	DY	Dividend paid per share divided by share price at the year-end.
Book to Market	BTM	Book value of equity divided by the market value of equity.
Current Ratio	CR	The ratio of current assets to current liabilities.
Leverage	LEV	Total liabilities divided by total equity.
Return on equity	ROE	Net income divided by book value of equity.
Excess Return	EXCRET	Firm's annual return, which is calculated by cumulating monthly returns on a firm minus value-weighted market return in our sample.
Stock Volatility	SIGMA	Standard deviation of residuals obtained by regressing each stock's monthly returns in previous year on the value-weighted market return for the same year.
Board Size	BOSIZE	The number of directors on the corporate board, expressed in natural logarithm.
Board Independence	BOIND	The percentage of independent directors on a board.
Strength of Investor protection	SIP	Country level index ranges from 0 to 10 with higher values indicating better investor protection standard.
World Governance Indicators	WGI	Country level institutional quality indicator rated from 0 to 100 with higher value signaling better investor protection in a country.

Table 2. Descriptive statistics of variables

Panel A of this table presents summary statics, including number of observations (N), mean, median, standard derivation, minimum (Min) and maximum (max) of the main variables used in our analysis. Panel B presents a correlation matrix of the variables. The sample includes 8,809 firm-year observations from 30 countries from 2004 to 2020.

Panel A. Summary statistics of firm and country level variables

Variable	N	Mean	Median	Standard Deviation	Min	Max
FOINS	8,809	0.274	0.117	0.313	0.000	1.000
SIZE	8,809	17.902	19.130	4.018	7.182	23.947
DY	8,809	0.012	0.000	0.033	0.000	0.572
BTM	8,809	0.647	0.589	0.401	0.001	3.304
CR	8,809	3.317	2.103	3.914	0.031	42.090
LEV	8,809	1.167	0.752	2.007	-11.237	17.399
ROE	8,809	-0.034	0.075	0.720	-16.637	10.373
EXCRET	8,809	-0.007	-0.038	0.525	-3.210	5.218
SIGMA	8,809	0.119	0.094	0.089	0.005	1.062
BOSIZE	8,809	2.032	2.079	0.315	1.099	3.332
BOIND	8,809	0.772	0.800	0.130	0.000	0.957
SIP	8,809	7.234	8.000	1.365	2.500	10.000
WGI	8,809	84.232	86.214	11.265	25.617	98.792

Panel B. Correlation matrix

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(13)	(14)
(1) FOINS	1.000												
(2) SIZE	0.274***	1.000											
(3) DY	0.034	0.045***	1.000										
(4) BTM	0.021	-0.108***	0.203***	1.000									
(5) CR	-0.099***	-0.126***	-0.094***	-0.115***	1.000								
(6) LEV	0.080***	0.050***	0.081***	0.069***	-0.205***	1.000							
(7) ROE	0.063***	0.194***	0.079***	-0.006	-0.065***	-0.200***	1.000						
(8) EXCRET	-0.003	0.011	-0.050***	-0.223***	0.078***	-0.024	0.096***	1.000					
(9) SIGMA	-0.122***	-0.259***	-0.121***	0.011	0.158***	-0.041**	-0.187***	0361***	1.000				
(10) BOSIZE	0.246***	0.423***	0.117***	0.001	-0.209***	0.153***	0.134***	-0.018	-0.261***	1.000			
(11) BOIND	0.269***	0.284***	-0.003	-0.047***	-0.073***	0.091***	0.055***	0.000	-0.078***	0.363***	1.000		
(13) SIP	0.112***	-0.054***	-0.076***	0.021	0.044***	-0.053***	-0.045***	0.005	0.124***	-0.078***	-0.012	1.000	
(14) WGI[10]	0.117***	-0.071***	-0.004	0.055***	0.034	-0.016	-0.003	-0.007	0.002	-0.055***	-0.032	0.110***	1.000

[10] SIP and WGI are correlated with Foreign Ownership at country-year level.

Table 3: Foreign ownership and market index by country

This table presents the list of countries and mean value of main variables used in our analysis by each country.

Country	N	FOINS	BOIND	BOSIZE	SIP	WGI
Australia	1,070	0.402	0.792	1.971	5.543	92.153
Austria	21	0.639	0.796	2.182	5.286	93.659
Belgium	52	0.530	0.822	2.203	6.904	85.614
Canada	948	0.323	0.788	1.993	8.316	93.522
Denmark	31	0.533	0.828	2.121	6.194	95.900
France	184	0.302	0.798	2.205	5.516	82.631
Germany	225	0.347	0.733	2.297	5.107	89.556
Greece	25	0.794	0.845	2.210	3.640	66.405
India	40	0.221	0.736	2.256	7.500	47.456
Indonesia	62	0.637	0.779	2.125	6.000	36.133
Ireland	116	0.593	0.806	2.176	8.707	90.930
Israel	348	0.390	0.782	1.992	7.859	68.831
Italy	144	0.484	0.789	2.152	5.840	67.966
Japan	171	0.002	0.396	2.289	6.500	88.157
Kuwait	23	0.588	0.680	1.941	5.130	55.087
Malaysia	48	0.452	0.770	2.027	8.792	60.282
Netherlands	131	0.382	0.771	2.155	4.145	93.536
New Zealand	42	0.547	0.829	2.155	9.524	97.414
Norway	51	0.503	0.839	2.150	6.392	96.476
Philippines	56	0.327	0.827	2.159	4.000	39.201
Poland	75	0.670	0.844	2.192	6.000	71.719
Russia	38	0.660	0.793	2.093	5.237	27.344
Singapore	78	0.396	0.747	1.994	9.321	88.557
South Africa	112	0.278	0.802	2.119	7.821	59.756
Spain	28	0.168	0.796	2.326	6.500	75.356
Sweden	77	0.582	0.815	1.981	5.649	96.397
Switzerland	114	0.446	0.787	1.979	3.110	96.894
Thailand	96	0.510	0.803	2.118	7.104	44.580
UK	1,124	0.362	0.751	2.032	8.184	87.317
US	3,279	0.091	0.778	1.989	7.772	83.618

Table 4. Foreign ownership by country level and firm level protection

This table classifies firms based on both country level of investor protection and on firm level corporate governance characterized by sample median value of board independence and board size. In panel A, firms are identified as in a good investor protection country if they are incorporated in a country where SIP is higher than the world median. In panel B, firms are identified as in a good investor protection country if they are incorporated in a country where WGI is higher than the world median.

Panel A. Mean value of foreign ownership across subgroups classified by SIP and board structure				
	All	BOIND > Median	BOIND < Median	Difference
SIP > median	0.364	0.418	0.293	10.61***
SIP < median	0.232	0.307	0.136	23.72***
		BOSIZE > Median	BOSIZE < Median	Difference
SIP > median	t=18.52***	0.447	0.317	10.45***
SIP < median		0.330	0.168	19.57***
Panel B. Mean value of foreign ownership across subgroups classified by WGI and board structure				
	All	BOIND > Median	BOIND < Median	Difference
WGI > median	.370	0.397	0.252	10.53***
WGI < median	.184	0.317	0.041	25.35***
		BOSIZE > Median	BOSIZE < Median	Difference
WGI > median	t=28.76***	0.467	0.307	14.75***
WGI < median		0.263	0.138	15.75***

Table 5: Panel regression results

The table presents the regression results using the sample over 2004 to 2020 with country and year fixed effect controlled. Dependent variable is FOINS. The standard error is clustered and reported in parentheses below each coefficient (clustering done at the firm level). The stars ***, ** and * mean that the statistical significance is at 1%, 5% and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)
SIZE	0.010***	0.011***	0.012***	0.010***	0.012***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
DY	-0.321***	-0.321***	-0.328***	-0.319***	-0.322***
	(0.099)	(0.100)	(0.099)	(0.100)	(0.100)
BTM	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CR	-0.001**	-0.001**	-0.002**	-0.001**	-0.002**
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
LEV	0.003**	0.003**	0.003**	0.003**	0.003**
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
ROE	-0.000	-0.000	-0.001	-0.000	-0.001
	(0.003)	(0.003)	(0.004)	(0.003)	(0.003)
EXCRET	0.001	0.001	0.001	0.001	0.000
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
SIGMA	-0.080*	-0.082*	-0.077*	-0.077*	-0.070
	(0.044)	(0.044)	(0.045)	(0.044)	(0.045)
BOIND	0.285***	0.273***	0.615***	0.290***	0.460***
	(0.038)	(0.038)	(0.078)	(0.038)	(0.067)
BOSIZE	0.059***	0.060***	0.116***	0.058***	0.144***
	(0.015)	(0.015)	(0.032)	(0.015)	(0.029)
SIP		0.017***	0.033***		
		(0.006)	(0.007)		
SIP × BOIND			-0.050***		
			(0.011)		
SIP × BOSIZE			-0.010**		
			(0.005)		
WGI				0.005***	0.007***
				(0.001)	(0.001)
WGI × BOIND					-0.002***
					(0.001)
WGI × BOSIZE					-0.001***
					(0.000)
Constant	-0.232***	-0.359***	-0.457***	-0.676***	-0.840***
	(0.052)	(0.072)	(0.077)	(0.115)	(0.135)
Year and Country	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.439	0.440	0.445	0.440	0.442
N	8,809	8,809	8,809	8,809	8,809

Table 6: Standardized panel regression results

The table presents the regression results using the standardized sample over 2004 to 2020 with country and year fixed effect controlled. Dependent variable is FOINS. The standard error is clustered and reported in parentheses below each coefficient (clustering done at the country and year level). The stars ***, ** and * mean that the statistical significance is at 1%, 5% and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)
SIZE	0.130***	0.138***	0.155***	0.138***	0.163***
	(0.039)	(0.039)	(0.039)	(0.039)	(0.040)
DY	-0.034***	-0.034***	-0.035***	-0.034***	-0.034***
	(0.010)	(0.011)	(0.010)	(0.011)	(0.011)
BTM	-0.009	-0.009	-0.009	-0.009	-0.009
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
CR	-0.018**	-0.018**	-0.019**	-0.019**	-0.020**
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
LEV	0.021**	0.021**	0.021**	0.021**	0.022**
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
ROE	-0.000	-0.000	-0.001	-0.000	-0.001
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
EXCRET	0.002	0.002	0.002	0.001	0.000
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
SIGMA	-0.023*	-0.023*	-0.022*	-0.022*	-0.020
	(0.013)	(0.013)	(0.013)	(0.013)	(0.013)
BOIND	0.118***	0.113***	0.256***	0.115***	0.191***
	(0.016)	(0.016)	(0.032)	(0.016)	(0.028)
BOSIZE	0.059***	0.060***	0.117***	0.060***	0.144***
	(0.015)	(0.015)	(0.032)	(0.015)	(0.029)
SIP		0.073***	0.143***	0.081***	0.086***
		(0.028)	(0.029)	(0.027)	(0.027)
SIP × BOIND			-0.212***		
			(0.044)		
SIP × BOSIZE			-0.098**		
			(0.047)		
WGI				0.200***	0.276***
				(0.043)	(0.053)
WGI × BOIND					-0.109***
					(0.036)
WGI × BOSIZE					-0.122***
					(0.046)
Constant	0.000	0.000	0.000	0.000	0.000
	(0.009)	(0.008)	(0.008)	(0.008)	(0.009)
Year and Country	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.439	0.440	0.445	0.441	0.443
N	8,809	8,809	8,809	8,809	8,809

Table 7. Results for industry-adjusted data

The table presents the regression results using the sample over 2004 to 2020 with country and year fixed effect controlled.

Dependent variable is FOINS. All variables in this table are adjusted by industry. The standard error is clustered and reported in parentheses below each coefficient (clustering done at the country and year level). The stars ***, ** and * mean that the statistical significance is at 1%, 5% and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)
SIZE	0.007***	0.007***	0.009***	0.008***	0.009***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
DY	-0.321***	-0.320***	-0.328***	-0.326***	-0.326***
	(0.101)	(0.102)	(0.101)	(0.102)	(0.102)
BTM	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CR	-0.001*	-0.001*	-0.001*	-0.001*	-0.001*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
LEV	0.003*	0.003*	0.003*	0.003*	0.003*
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
ROE	-0.000	-0.000	-0.001	-0.000	-0.001
	(0.003)	(0.003)	(0.004)	(0.003)	(0.003)
EXCRET	0.004	0.004	0.003	0.001	0.001
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
SIGMA	-0.091**	-0.093**	-0.088**	-0.075*	-0.072
	(0.043)	(0.043)	(0.043)	(0.044)	(0.044)
BOIND	0.313***	0.307***	0.647***	0.314***	0.443***
	(0.038)	(0.039)	(0.078)	(0.038)	(0.066)
BOSIZE	0.061***	0.062***	0.126***	0.059***	0.141***
	(0.015)	(0.015)	(0.031)	(0.015)	(0.029)
SIP		0.009*	0.027***		
		(0.005)	(0.007)		
SIP × BOIND			-0.050***		
			(0.010)		
SIP × BOSIZE			-0.011**		
			(0.005)		
WGI				0.008***	0.011***
				(0.001)	(0.001)
WGI × BOIND					-0.002**
					(0.001)
WGI × BOSIZE					-0.001***
					(0.000)
Constant	0.000	0.000	0.000	0.000	0.000
	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)
Year and Country	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.438	0.438	0.443	0.442	0.443
N	8,809	8,809	8,809	8,809	8,809

Table 8. Results excluding U.S. firms

The table presents the regression results using the non-US sample over 2004 to 2020 with country and year fixed effect controlled. Dependent variable is FOINS. The standard error is clustered and reported in parentheses below each coefficient (clustering done at the country and year level). The stars ***, ** and * mean that the statistical significance is at 1%, 5% and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)
SIZE	0.015***	0.015***	0.016***	0.014***	0.017***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
DY	-0.367***	-0.367***	-0.372***	-0.365***	-0.370***
	(0.120)	(0.120)	(0.119)	(0.120)	(0.120)
BTM	-0.000**	-0.000**	-0.000**	-0.000**	-0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CR	-0.002*	-0.002*	-0.002*	-0.002*	-0.002*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
LEV	0.006**	0.006**	0.006**	0.006**	0.006**
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
ROE	0.003	0.003	0.002	0.003	0.002
	(0.006)	(0.006)	(0.006)	(0.006)	(0.005)
EXCRET	0.018**	0.018**	0.018**	0.017**	0.017**
	(0.008)	(0.008)	(0.008)	(0.008)	(0.008)
SIGMA	-0.220***	-0.220***	-0.213***	-0.214***	-0.208***
	(0.049)	(0.049)	(0.050)	(0.049)	(0.049)
BOIND	0.367***	0.365***	0.746***	0.375***	0.580***
	(0.051)	(0.051)	(0.104)	(0.050)	(0.090)
BOSIZE	0.048**	0.048**	0.102**	0.048**	0.164***
	(0.022)	(0.022)	(0.043)	(0.022)	(0.040)
SIP		0.002**	0.037***		
		(0.001)	(0.012)		
SIP × BOIND			-0.058***		
			(0.014)		
SIP × BOSIZE			-0.010*		
			(0.006)		
WGI				0.006***	0.009***
				(0.001)	(0.002)
WGI × BOIND					-0.003**
					(0.001)
WGI × BOSIZE					-0.002***
					(0.001)
Constant	-0.225***	-0.236**	-0.453***	-0.705***	-0.964***
	(0.085)	(0.115)	(0.129)	(0.138)	(0.156)
Year and Country	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.312	0.312	0.318	0.314	0.316
N	5,530	5,530	5,530	5,530	5,530

Table 9. GLS random effect regression

The table presents the GLS random-effects (RE) model regression estimator over 2004 to 2020 with country and year fixed effect controlled. Dependent variable is FOINS. The standard errors reported in parentheses are adjusted for heteroscedasticity. The stars ***, ** and * mean that the statistical significance is at 1%, 5% and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)
SIZE	0.010***	0.011***	0.016***	0.010***	0.015***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
DY	-0.015	-0.019	-0.017	-0.014	-0.010
	(0.076)	(0.075)	(0.076)	(0.076)	(0.077)
BTM	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CR	-0.001	-0.001	-0.001	-0.001	-0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
LEV	-0.001	-0.001	-0.001	-0.001	-0.001
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
ROE	-0.002	-0.002	-0.002	-0.002	-0.002
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
EXCRET	-0.000	-0.001	-0.003	-0.001	-0.002
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
SIGMA	-0.079***	-0.079***	-0.071**	-0.078**	-0.070**
	(0.031)	(0.031)	(0.031)	(0.031)	(0.031)
BOIND	0.346***	0.335***	0.469***	0.349***	0.447***
	(0.034)	(0.034)	(0.049)	(0.034)	(0.051)
BOSIZE	0.083***	0.085***	0.134***	0.083***	0.131***
	(0.015)	(0.014)	(0.020)	(0.015)	(0.021)
SIP		0.037***	0.041***		
		(0.006)	(0.006)		
SIP × BOIND			-0.033***		
			(0.008)		
SIP × BOSIZE			-0.014***		
			(0.003)		
WGI				0.003**	0.004***
				(0.002)	(0.002)
WGI × BOIND					-0.002***
					(0.001)
WGI × BOSIZE					-0.001***
					(0.000)
Constant	-0.300***	-0.526***	-0.488***	-0.633***	-0.555***
	(0.059)	(0.072)	(0.072)	(0.164)	(0.164)
Year and Country	Yes	Yes	Yes	Yes	Yes
Chi^2	2196.098	2263.000	2401.248	2244.946	2265.672
N	8,809	8,809	8,809	8,809	8,809

Table 10. Dynamic GMM estimations

This table represents the results from regressions estimated by using a dynamic panel GMM estimator as proposed by Arellano and Bover (1995) and Blundell and Bond (1998). Dependent variable is FOINS. All control variables are considered to be endogenous with the exception of the year and industry dummy variables. The null hypothesis of the Hansen test of overidentification is that all instruments are valid. The null hypothesis of the difference-in-Hansen test of exogeneity is that the instruments used for the equations in levels are exogenous. The stars ***, ** and * mean that the statistical significance is at 1%, 5% and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)
SIZE	-0.004	0.000	-0.001	-0.001	0.004
	(0.005)	(0.008)	(0.006)	(0.008)	(0.006)
DY	0.177	0.151	0.097	0.137	0.183
	(0.141)	(0.148)	(0.141)	(0.143)	(0.141)
BTM	-0.000	-0.000*	-0.000**	-0.000*	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CR	-0.000	-0.000	0.000	-0.000	-0.000
	(0.001)	(0.002)	(0.001)	(0.002)	(0.001)
LEV	-0.001	-0.000	-0.001	-0.001	0.000
	(0.002)	(0.003)	(0.002)	(0.004)	(0.002)
ROE	-0.001	-0.003	-0.003	-0.003	-0.002
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
EXCRET	0.028***	0.014	0.028***	0.015	0.027***
	(0.007)	(0.010)	(0.007)	(0.010)	(0.007)
SIGMA	-0.160**	-0.167*	-0.149**	-0.167*	-0.142**
	(0.063)	(0.090)	(0.061)	(0.093)	(0.064)
BOIND	0.485***	0.566***	0.596***	0.551***	0.647***
	(0.095)	(0.113)	(0.106)	(0.112)	(0.105)
BOSIZE	0.101**	0.058**	0.119***	0.060**	0.179***
	(0.040)	(0.030)	(0.042)	(0.031)	(0.043)
SIP		0.008	0.022		
		(0.023)	(0.014)		
SIP × BOIND			-0.045***		
			(0.016)		
SIP × BOSIZE			-0.021***		
			(0.007)		
WGI				0.012*	0.006***
				(0.007)	(0.002)
WGI × BOIND					-0.005***
					(0.001)
WGI × BOSIZE					-0.002**
					(0.001)
Constant					-0.002**
					(0.001)
Year and Country	Yes	Yes	Yes	Yes	Yes
Hansen test	0.465	0.506	0.445	0.695	0.564
N	8,809	8,809	8,809	8,809	8,809

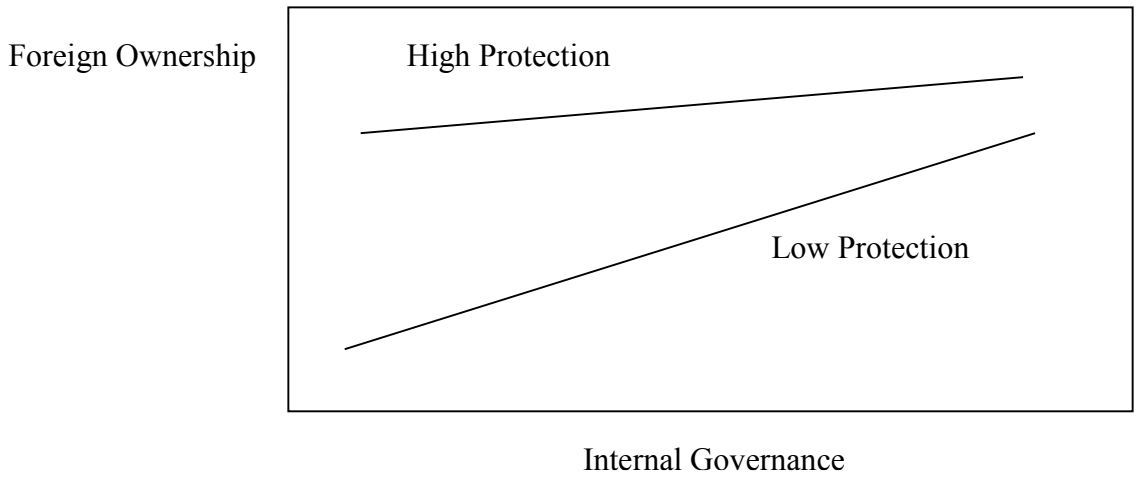
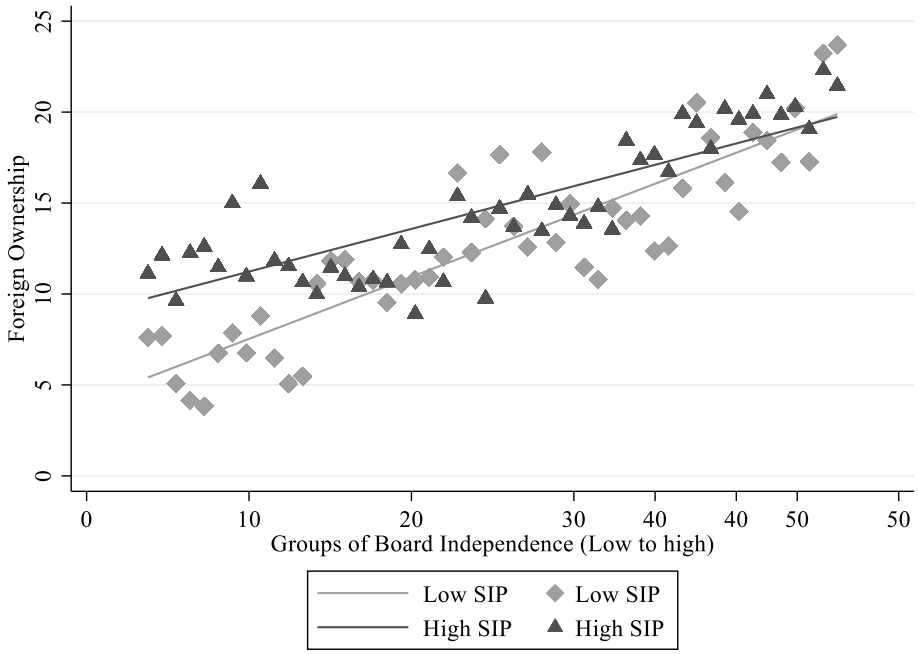


Figure 1. Substitute model of external investor protection and internal governance.

Notes: A substitution perspective implies that the effect of internal corporate governance on attracting foreign ownership, other things being equal, should be greater in countries with weaker investor protection.



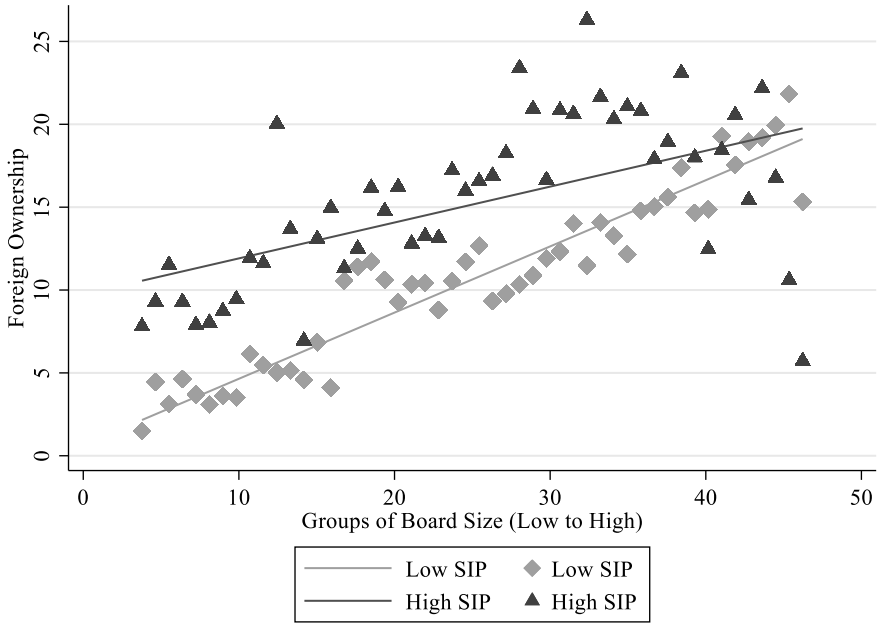


Figure 2. Foreign ownership and board characteristics in countries with different levels of investor protection.

Notes: Scatter plots are shown of foreign ownership against board independence (size) for countries with high and low investor protection.

Appendix

The appendix contains three tables for robustness checks.

1. Table A.1. reports the regression results using Refinitiv GOV score as alternative ICG measure.
2. Table A.2. reports regression results with clustered standard error.

Table A1. The table presents the regression results using the sample over 2004 to 2020 with country and year fixed effect controlled. Dependent variable is FOINS. GOV is corporate governance score from Refinitiv (formerly ASSET4). The standard error is clustered and reported in parentheses below each coefficient (clustering done at the country and year level). The stars ***, ** and * mean that the statistical significance is at 1%, 5% and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)
SIZE	0.021***	0.021***	0.024***	0.021***	0.022***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
DY	-0.212	-0.219	-0.267	-0.213	-0.228
	(0.173)	(0.175)	(0.164)	(0.173)	(0.171)
BTM	0.000	0.000	0.000	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CR	-0.004***	-0.004***	-0.005***	-0.004***	-0.005***
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
LEV	0.006**	0.005**	0.006**	0.006**	0.006***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
ROE	-0.002	-0.002	0.006	-0.002	0.007
	(0.011)	(0.011)	(0.011)	(0.011)	(0.011)
EXCRET	0.000	-0.000	-0.006	0.000	-0.003
	(0.012)	(0.013)	(0.011)	(0.012)	(0.011)
SIGMA	-0.113	-0.125	-0.113	-0.113	-0.100
	(0.093)	(0.093)	(0.089)	(0.093)	(0.087)
GOV	0.001***	0.001***	0.005***	0.001***	0.005***
	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)
SIP		0.026***	0.021***		
		(0.007)	(0.008)		
SIP × GOV			-0.001***		
			(0.000)		
WGI				0.004	0.005**
				(0.003)	(0.002)
WGI × GOV					-0.000***
					(0.000)
Constant	-0.079	-0.265***	-0.226**	-0.399*	-0.487**
	(0.087)	(0.093)	(0.090)	(0.235)	(0.221)
Year and Country	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.533	0.534	0.565	0.533	0.570
N	3,294	3,294	3,294	3,294	3,294

Table A2. The table presents the regression results using the sample over 2004 to 2020 with country and year fixed effect controlled. Dependent variable is FOINS. The standard error is clustered and reported in parentheses below each coefficient (clustering done at firm level). The stars ***, ** and * mean that the statistical significance is at 1%, 5% and 10% levels, respectively.

	(1)	(2)	(3)	(4)	(5)
SIZE	0.010***	0.011***	0.012***	0.010***	0.012***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
DY	-0.321**	-0.321**	-0.328***	-0.319**	-0.322**
	(0.125)	(0.126)	(0.126)	(0.125)	(0.126)
BTM	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CR	-0.001	-0.001*	-0.002*	-0.001*	-0.002*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
LEV	0.003	0.003	0.003	0.003	0.003*
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
ROE	-0.000	-0.000	-0.001	-0.000	-0.001
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
EXCRET	0.001	0.001	0.001	0.001	0.000
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
SIGMA	-0.080*	-0.082*	-0.077*	-0.077*	-0.070
	(0.044)	(0.044)	(0.044)	(0.044)	(0.044)
BOIND	0.285***	0.273***	0.615***	0.290***	0.460***
	(0.040)	(0.041)	(0.059)	(0.041)	(0.061)
BOSIZE	0.059***	0.060***	0.116***	0.058***	0.144***
	(0.019)	(0.019)	(0.027)	(0.019)	(0.029)
SIP		0.017**	0.033***		
		(0.008)	(0.007)		
SIP × BOIND			-0.050***		
			(0.010)		
SIP × BOSIZE			-0.010**		
			(0.005)		
WGI				0.005***	0.007***
				(0.002)	(0.002)
WGI × BOIND					-0.002***
					(0.001)
WGI × BOSIZE					-0.001***
					(0.000)
Constant	-0.089	-0.186**	-0.315***	-0.611***	-0.734***
	(0.061)	(0.083)	(0.075)	(0.200)	(0.204)
Year and Country	Yes	Yes	Yes	Yes	Yes
Adj. R^2	0.439	0.440	0.445	0.440	0.442
N	8,809	8,809	8,809	8,809	8,809