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Abstract

We examine whether institutional investors affect corporate governance by analyzing portfolio holdings of institutions in companies from 23 countries during the period 2003-2008. We find that firm-level governance is positively associated with international institutional investment. Changes in institutional ownership over time positively affect subsequent changes in firm-level governance, but the opposite is not true. Foreign institutions and institutions from countries with strong shareholder protection play a crucial role in promoting governance improvements outside of the U.S. Institutional investors affect not only which corporate governance mechanisms are in place, but also outcomes. Firms with higher institutional ownership are more likely to terminate poorly performing CEOs and exhibit improvements in valuation over time. Our results suggest that international portfolio investment by institutional investors promote good corporate governance practices around the world.

JEL classification: G32, G34, G38
Keywords: Institutional Investors, Corporate Governance, Shareholder Activism

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1. Introduction

There has been a dramatic reduction in barriers to international investment. Financial globalization and liberalization have contributed to a reduction in the firms' cost of capital (Bekaert and Harvey (2000)). Also, financial globalization has led many firms, particularly those that need access to global capital markets, to adopt better corporate governance practices. However, there is also evidence on the limits of financial globalization, since corporate insiders and controlling shareholders are likely to pursue their own interests at the expense of outside investors (Stulz (2005)).

In this paper, we study the role of international institutional investment as a channel for promoting better governance and convergence in governance practices across countries. Institutional holdings have been increasing globally, but we know little about their influence on corporations worldwide. Institutional investors might influence firms internationally to adopt better governance practices, either directly, by influencing the management and using voting rights ("voice"), or indirectly, by their decisions to buy or threaten to sell their shares ("voting with their feet").

Gillan and Starks (2003) highlight the special role that institutional investors, in particular foreign institutional investors, play in prompting change in corporate governance practices worldwide. Foreign institutions are often credited with taking a more active stance, while domestic institutions that have business relations with local corporations may feel compelled to be loyal to management. For example, Business Week (2006) reported that Fidelity Investments was more aggressive on governance issues in Europe, but relatively acquiescent in the U.S. where it manages several corporate pension accounts (Davis and Kim (2007)). Recent evidence from Sweden suggests that corporate ownership by domestic pension funds affiliated with

controlling shareholders do not enhance firm valuation but increase the control premium (Giannetti and Laeven (2009)). Ferreira and Matos (2008) find that foreign institutional ownership is positively associated with firm value and performance outside of the U.S., but there is no direct evidence that foreign investors are able to change corporate governance mechanisms and outcomes.

There have been high-profile cases where foreign shareholders were crucial in governance outcomes. An example is that of a U.K.-based hedge fund, The Children Investment Fund (TCIF). In 2005 the TCIF forced the management of Deutsche Börse to abandon a takeover bid for the London Stock Exchange, which led to the resignation of both chief executives and the chair of the supervisory board (Economist (2008)). TCIF also had a leading role in the 2007 takeover of ABN AMRO, a Dutch bank. The takeover was initiated by an open letter to ABN AMRO that proposed five resolutions aimed at forcing the bank to spin off its different lines of business, which would then lead to bids by foreign banks (Economist (2007)). Furthermore, activist funds with even small stakes affect governance. When Atticus, an activist hedge fund with just 1% of Barclays Bank's shares, stated publicly that Barclays should abandon its bid for ABN AMRO, there was a significant stock price reaction (Financial Times (2007)). A study by Becht, Franks, and Grant (2008) provides related evidence on (foreign) hedge-fund investor activism in continental Europe.

We examine the relation between stock-level institutional holdings and corporate governance in 23 countries during the period 2003-2008. Although we focus on non-U.S. companies, we also repeat our analysis for U.S. companies. Our sample comprises about 2,000 non-U.S. firms (5,000 U.S. firms). Following the literature (e.g., Gompers, Ishii, and Metrick (2003) and Aggarwal, Erel, Stulz, and Williamson (2009)), we create an index using 41

governance attributes, which we obtain from RiskMetrics (formerly Institutional Shareholder Services).[1] This index provides a firm-level governance measure that is comparable across countries. The 41 firm-level governance attributes in the index are those most studied in the related literature, and incorporates measures of board structure, anti-takeover provisions, auditor selection, and compensation and ownership structure.

We find a positive relation between firm-level governance and institutional ownership. Moreover, we find that changes in institutional ownership over time drive subsequent changes in firm-level governance, but that the opposite does not hold true. Thus, the direction of the effect seems to be from institutional ownership to subsequent changes in governance, and not from governance to institutional ownership. We also find that foreign investors play a predominant role in helping to improve firm-level governance of non-U.S. corporations. U.S. institutions, and more generally those institutions based in countries with strong protection for minority shareholder rights, are the main drivers of improvements in governance outside of the U.S., while institutions from countries with weak shareholder rights are not. Furthermore, our analysis shows that independent institutions (mutual fund managers, investment advisors) that are unlikely to have business ties with the invested firm are also the main drivers of governance improvements, rather than non-independent institutions (bank trusts, insurance companies).

The extent of shareholder protection in the country where the firm is located also matters. Firms located in countries with weaker investor protection are likely to benefit more from international institutional investment. We find that domestic institutions play a crucial role in improving the governance of firms located in countries with strong shareholder protection but in countries with weak shareholder protection, the main role in improving governance is played by

[1] In their study, Alexander, Chen, Seppi, and Spatt (2008) find that RiskMetrics is the leading proxy advisory firm in the world, and that its recommendations wield considerable influence in determining corporate voting outcomes.

foreign institutions, particularly those that come from countries with strong shareholder protection. Additionally, we find that domestic institutions play a predominant role in U.S. firms. Our analysis shows that the legal environment of both the institution and the firm shape the effectiveness of monitoring by institutional shareholders. Our findings indicate that international portfolio investment contributes to the convergence of good corporate governance across countries.

We also examine the impact of institutional investors on some specific governance provisions that have received more attention in the literature and among policy makers. We focus on board structure, the choice of firm auditors, and the existence of multiple share classes. We find that foreign, but not domestic, institutional ownership makes it more likely that the board has a majority of independent directors and an appropriate number of directors, and makes it less likely that the firm adopts a staggered board provision. This evidence is important, because governance indexes have been criticized for not capturing what really matters in corporate governance. Bebchuk, Cohen, and Ferrell (2009) and Daines, Gow, and Larcker (2010) suggest adopting alternative metrics and identifying the most important governance attributes. Bebchuk and Hamdani (2009) highlight the importance of accounting for ownership structure, which we do in this study by examining institutional ownership and controlling for insider ownership. In short, we can disagree with the governance attributes included and the index calculation. However, if our index were to convey no information, we would expect to find that the index is not related to institutional ownership.

We next ask if institutional ownership has real effects on corporate decision making, rather than just on adopted governance mechanisms. We specifically examine whether the presence of institutional investors improves the ability to identify and terminate poorly performing CEOs.

Institutional investors can force CEO turnover through activism, for example, by voicing their dissatisfaction over bad firm performance, and by influencing the decision by the board of directors to oust the CEO (Gillan and Starks (2003)). Or institutions can have an indirect influence by trading their shares if the CEO is not terminated when firm performance is poor (Parrino, Sias, and Starks (2003)). We find that CEO turnover is more sensitive to low abnormal stock returns when institutional ownership is high.

We also test whether changes in institutional ownership lead to changes in company valuations as measured by Tobin's Q. We find that changes in institutional ownership are positively associated with future changes in firm value. However, we fail to find evidence of a relation in the opposite direction. These findings on corporate outcomes also contribute to relieving concerns with the use of a governance index.

We perform a variety of robustness checks on our primary findings. In particular we address omitted-variable and endogeneity concerns. We use firm fixed effects to address the concern that institutional ownership might be related to some unobserved firm characteristics that explain governance. We use instrumental variables methods to address the concern that institutions might be attracted to firms that have higher governance (Giannetti and Simonov (2006)). For example, investors domiciled in countries with strong legal environments could systematically avoid weakly governed firms in countries with weak legal environments (Kim, Sung, and Wei (2008), Leuz, Lins, and Warnock (2009)). Our results are consistent with a causal relation from institutional ownership to corporate governance.

Our paper connects two strands of the literature. The first focuses on the value relevance of firm-level corporate governance. Becht, Bolton, and Roell (2003) and Dennis and McConnell (2003) provide reviews of these studies. For the U.S., authors show that firm value is related to

indexes of firm-level governance (e.g., Gompers, Ishii, and Metrick (2003), Bebchuk and Cohen (2005), Bebchuk, Cohen, and Ferrell (2009)). Outside of the U.S., there is also evidence of a positive relation between governance and firm value, and that minority shareholders benefit from better governance (e.g., Doidge, Karolyi, and Stulz (2004), Durnev and Kim (2005), Dahya, Dimitrov, and McConnell (2008), Aggarwal, Erel, Stulz, and Williamson (2009)).

The second strand of the literature focuses on the governance role played by institutional investors. Gillan and Starks (2007) survey the evolution of institutional shareholder activism in the U.S. from the value effect of shareholder proposals to the influence on corporate events.[2] Chung and Zhang (2009) find that the fraction of a firm's shares held by institutions increases with the quality of governance. Bushee, Carter, and Gerakos (2008) find evidence that ownership by governance-sensitive institutions in the U.S. is associated with future improvements in shareholder rights. In a survey of institutional investors, McCahery, Sautner, and Starks (2008) find that corporate governance is of importance to institutional investors, and that many institutions are willing to engage in shareholder activism. Recent papers study activism by individual funds, such as pension funds or hedge funds (Brav, Jiang, Partnoy, and Thomas (2008) and Klein and Zur (2008)).

Outside of the U.S., there is little evidence on the governance role played by institutional investors. There are several studies that examine the revealed preference of institutional investors (but not their governance role).[3] Our paper complements evidence that cross-border M&As frequently target companies in countries with low shareholder protection suggesting that cross-

[2] Studies find that institutional investors affect CEO turnover (Parrino, Sias and Starks (2003)), antitakeover amendments (Brickley, Lease, and Smith (1988)), executive compensation (Hartzell and Starks (2003)), and M&As (Gaspar, Massa, and Matos (2005) and Chen, Harford and Li (2007)).

[3] Kang and Stulz (1997), Dahlquist and Robertsson (2001) and Giannetti and Simonov (2006) study a single destination market; Aggarwal, Klapper and Wysocki (2005) and Leuz, Lins, and Warnock (2009) study U.S. investors holdings abroad; and Chan, Covrig, and Ng (2005), Li, Moshirian, Pham, and Zein (2006) study country-level institutional holdings.

border acquisitions improve investor protection within target firms (Rossi and Volpin (2004), Bris and Cabolis (2008)), and that international investors facilitate cross-border M&As (Ferreira, Massa, and Matos (2010)).

The paper proceeds as follows. In Section 2, we describe the firm-level corporate governance attributes, the institutional holdings data, and other firm-specific variables. In Section 3, we examine the relation between institutional investment and firm-level corporate governance. In Section 4, we investigate whether institutional ownership affects corporate governance outcomes. In Section 5, we conduct robustness checks. Section 6 concludes.

2. Data

In this section, we describe the sample of firms and variables used in this study. We obtain firm-level institutional ownership and corporate governance for 23 countries for the period 2003-2008. In our main tests we focus on non-U.S. firms. Table 1 shows that the total number of non-U.S. firms with both governance and institutional ownership data varies from a minimum of 1,556 in 2004 to a maximum of 2,218 in 2006. In 2008, the non-U.S. firms in our sample account for 71% of the world market capitalization, excluding the U.S. In the U.S., the number of firms with both governance and institutional ownership data varies from a minimum of 4,624 in 2008 to a maximum of 5,202 in 2005, thus accounting for approximately 96% of the U.S. market capitalization in 2008.

2.1. Firm-Level Governance

The data source for firm-level corporate governance attributes is RiskMetrics and our sample of

governance attributes covers the five-year period from 2004 to 2008.[4] RiskMetrics covers U.S. firms if they are included in any of the following indexes: the Standard and Poor's 500, the Standard and Poor's Small Cap 600, and the Russell 3000. RiskMetrics also covers non-U.S. firms that are included in the major stock indexes, such as the MSCI EAFE, which covers 1,000 stocks in 21 developed countries outside North America; the FTSE All Share Index, which consists of the FTSE 100, FTSE 250, and FTSE SmallCap indexes; the FTSE All World Developed index, which includes the largest firms in developed markets; and the S&P/TSX index of the Toronto Stock Exchange. RiskMetrics compiles governance attributes for each firm by examining the firm's regulatory filings, annual reports, and the companies' websites. For each attribute, RiskMetrics has set a minimally acceptable level of governance for evaluating whether a firm meets the minimum level. Aggarwal, Erel, Stulz, and Williamson (2009) describe the data in more detail.

We examine 41 firm-level governance attributes (see Appendix A) that are common to both U.S. and non-U.S. firms. These attributes cover four broad sub-categories: (1) *Board* (24 attributes), (2) *Audit* (three attributes), (3) *Anti-takeover provisions* (six attributes), and (4) *Compensation and Ownership* (eight attributes). *Board* attributes capture the aspects of the board of directors such as board independence, composition of committees, size, transparency, and how the board conducts its work. *Audit* includes questions on the independence of the audit committee and the role of auditors. *Anti-takeover Provisions* are drawn from the firm's charter and by-laws and refer to dual-class structure, role of shareholders, poison pills, and blank check preferred. *Compensation and Ownership* deals with executive and director compensation on issues related to options, stock ownership and loans, and how compensation is set and monitored.

[4] The information for non-U.S. companies is available starting in 2003 but our sample period starts in 2004 because data coverage is better. Also, beginning in 2004, there are fewer missing observations.

We use the 41 individual attributes to create a composite governance index, GOV_{41}, for each company. GOV_{41} assigns a value of one to each of the 41 governance attributes if the company meets minimally acceptable guidelines on that attribute, and zero otherwise. It is common in the literature to use additive indexes (e.g., Gompers, Ishii, and Metrick (2003), Bebchuk, Cohen, and Ferrell (2009)). We express our index as a percentage. If a firm satisfies all 41 governance attributes, then its GOV_{41} index will be equal to 100%.[5] Figure 1 and Table 2 show that on average, the countries with the highest GOV_{41} in 2008 are Canada (72.8%), the U.K. (59.3%), and Switzerland (56.6%). A GOV_{41} index of 72.8% for Canada implies that, on average, Canadian firms meet the minimum acceptable criteria for 72.8% of the 41 governance attributes studied (i.e., about 30 of the 41 attributes). The countries with the lowest GOV_{41} are Greece (35.9%), Portugal (36.2%), and Belgium (37.8%). The governance level in the U.S. is high at 62.2%. However, we note that the U.S. sample is more extensive than the international sample because it includes both large and small firms. The last column of Table 2 shows the average of the yearly change in GOV_{41} for each country. For every country except New Zealand, the average governance index has increased. Thus, over our sample period we see that corporate governance has improved around the world. We observe the largest positive changes for Sweden (5.1%), The Netherlands (4.5%), and Switzerland (4.0%). In the U.S., some firm-level governance attributes are mandated after the Sarbanes-Oxley Act of 2003, and so we also observe an improvement in GOV_{41}.

[5] There are only a few missing observations for some attributes in the data for the time period in our sample. We use the Boardex database to fill in the missing observations for board independence, board size, and chairman-CEO duality. For the observations that are still missing, we use the same value as the previous year. BoardEx is a leading database on board composition and compensation of publicly listed firms, and includes detailed biographic information on individual executives and board members of approximately 10,000 firms in nearly 50 countries (see Fernandes, Ferreira, Murphy, and Matos (2008) for details).

2.2. Institutional Ownership

We use institutional ownership for the period 2003 to 2007 because we study the effect of institutional ownership (one-year lagged) on the future level of corporate governance from 2004 to 2008. Institutional holdings data are from the FactSet/LionShares database. The institutions covered in the database are professional money managers such as mutual funds, pension funds, bank trusts, and insurance companies. FactSet/LionShares collects ownership data directly from public sources such as national regulatory agencies, stock exchanges, industry directories, and company proxies, as described in Ferreira and Matos (2008). In calculating institutional ownership, we include ordinary shares, preferred shares, American Depositary Receipts (ADRs), Global Depositary Receipts (GDRs), and dual listings.

We define *IO_TOTAL* as the sum of the holdings of all institutions in a firm's stock divided by the stock's total market capitalization at the end of each calendar year. Following Gompers and Metrick (2001), we set institutional ownership variables to zero if a stock is not held by any institution in FactSet/LionShares.[6] We separate total institutional ownership in several ways. We first consider the nationality of the institution. Domestic Institutional Ownership (*IO_DOM*) is the sum of the holdings of all institutions domiciled in the same country in which the stock is listed divided by the firm's market capitalization. Foreign institutional ownership (*IO_FOR*) is the sum of the holdings of all institutions domiciled in a country different from the one in which the stock is listed divided by the firm's market capitalization. And we partition ownership according to the legal origin of the institution's home country as defined in La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998): Common Institutional Ownership (*IO_COMMON*) or Civil Institutional Ownership (*IO_CIVIL*).

Figure 2 and Table 3 show that the countries other than the U.S. that have the highest

[6] When we repeat the empirical analysis using only firms with positive holdings, our main results are not affected.

average total institutional ownership in 2007 are Canada (59.1%), the U.K. (37.9%), and Sweden (36.7%). We find the lowest average institutional ownership in New Zealand (9.0%), Portugal (10.3%), and Hong Kong (12.7%). In 2007, the average total institutional ownership of non-US firms in our sample is 27% in 2007.[7] On average, U.S. firms have the highest total institutional ownership, 57.8% as of 2007. The average institutional ownership increases in all 23 countries during 2003-2007. The average yearly change in total institutional ownership is 2.4 percentage points.

Table 3 shows that domestic institutions account for more than half of institutional ownership in several countries, including the U.S. (87%), the U.K. (70%), Canada (60%), Sweden (60%), and Denmark (53%). But in most countries, the holdings of foreign institutions exceed those of domestic institutions. We find the highest foreign ownership in small countries such as, New Zealand (92%) and Ireland (89%). In ten of the 22 non-U.S. countries, institutions based in common-law countries, account for more than half of total institutional ownership. This ownership pattern is true both for firms located in common-law countries such as the U.K. or Canada, but also for firms located in civil-law countries, such as The Netherlands and Switzerland, which attract investment from institutions whose management companies are based in common-law countries.

2.3. Firm Characteristics

We obtain firm characteristics from Datastream/Worldscope. We use several firm-specific control variables in our regressions: log of total assets in U.S. dollars (*SIZE*), two-year annual sales growth in U.S. dollars (*SGROWTH*), debt to assets (*LEV*), cash holdings to assets (*CASH*),

[7] Institutional ownership is slightly higher for our sample of firms compared to other studies (e.g., Ferreira and Matos (2008)) because our sample covers larger firms for which governance data is available.

capital expenditure to assets (*CAPEX*), equity market to book ratio (*MB*), return on assets (*ROA*), R&D expenditures to assets (*R&D*), property, plant, and equipment to assets (*PPE*), foreign sales to total sales (*FXSALE*), number of analysts following a firm (*ANALYST*), percentage of shares closely held (*CLOSE*), and whether a firm is cross-listed on a U.S. exchange (*ADR*). We winsorize variables defined as ratios, namely *SGROWTH*, *LEV*, *CAPEX*, *MB*, *ROA*, *R&D, PPE*, and *FXSALE,* at the upper and lower 1% levels. In Appendix B we provide a detailed description of the variables we use in our study.

3. Institutional Ownership and Governance

To examine whether institutional investors promote better governance, we use panel regressions with firm-level governance as the dependent variable. We further investigate the relation by looking into the sample of firms from civil-law versus common-law countries. We next check whether it is the changes in institutional ownership that drive changes in governance or the opposite holds true, using regressions on changes. In a final subsection, we use individual governance attributes, rather than an index.

3.1. Panel Regression Tests

In these tests we use the firm-level governance index, GOV_{41}, as the dependent variable. The explanatory variable of interest is institutional ownership. All independent variables are lagged by one year so that we can examine the relation between the explanatory variables and future governance. Therefore, if GOV_{41} is for period t, each of the independent variables is measured at period t-1. Consistent with the literature, we include several firm-level control variables that are

related to governance.[8] For example, we include *SIZE* because other studies show that due to economies of scale, larger firms have better governance. Industry and country characteristics also affect the investment in firm-level governance (e.g., Doidge, Karolyi, and Stulz (2007)). We first estimate a pooled OLS regression using our firm-year panel. To account for industry and country sources of heterogeneity, we include industry and country dummies in each regression. We also include year dummies to account for the positive time trend in governance over the sample period.[9] We correct standard errors for clustering of observations at the country level (i.e., we assume observations are independent across countries, but not within countries).[10]

Panel A of Table 4 reports the results of the pooled ordinary least squares (OLS) regression of the governance index. The sample contains only non-U.S. companies. The regression estimates in column (1) of Panel A of Table 4 show a positive and significant association between total institutional ownership and governance. The table also shows that firms with higher leverage (*LEV*), growth firms (*MB*), firms with better performance (*ROA)*, firms followed by more analysts, and firms with ADRs have better governance. The percentage of closely held shares (*CLOSE*) is negatively related to governance.

Next, we analyze whether the positive relation between governance and institutional ownership is driven by the nationality of the institutional investor. Column (2) uses institutional ownership by foreign investors (*IO_FOR*); column (3) uses institutional ownership by domestic investors (*IO_DOM*); and column (4) uses both foreign and domestic institutional ownership in

[8] In unreported results, we obtain consistent findings if we run the governance regressions without including any control variables.

[9] In unreported results, we find that our results are not affected if we also add the interactions of the country and year dummies to capture country-specific time trends.

[10] We correct standard errors for country-level clustering because corporate governance is likely to be correlated within a country since some individual attributes are mandated by country-level regulation. Moreover, standard errors adjusted for country-level clustering also take into account that observations may not be independent across time within a firm. In unreported results, we find that standard errors clustered at the firm level are lower than standard errors clustered at the country level. We thus adopt the more conservative estimates of standard errors.

the same regression. The relation between foreign institutional ownership and governance is positive and significant, as is the relation between domestic institutional ownership and governance. However, when we use both foreign and domestic institutional ownership in the same regression, we find that foreign institutional ownership is positive and significant but domestic institutional ownership is no longer significant. A Wald test of the equality of the *IO_FOR* and *IO_DOM* coefficients (reported at the bottom of the table) rejects the null hypothesis.

Our results show a strong positive relation between foreign institutional ownership and governance. Outside of the U.S., foreign institutions seem to be particularly important in improving governance. This result complements other studies' findings of an asymmetric valuation effect of domestic compared to foreign-based institutions (e.g., Ferreira and Matos (2008)). The effect of foreign institutional ownership is economically significant. A ten percentage point increase in foreign institutional ownership is associated with a subsequent increase in the governance index of 0.35%, which represents nearly 20% of the average yearly governance change in our sample period.[11]

We next investigate whether the legal regime of the country of origin of the institutional money manager affects the relationship between governance and institutional ownership. La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998) argue that investor protection and therefore corporate governance is stronger in common-law countries as opposed to civil-law countries.

To illustrate how the origin country of the institutional money manager can matter, consider a company based in a civil-law country, say Germany. This firm is owned by two institutional investors, one from France and the other from the U.K. France scores lower than the U.K.

[11] Following the institutional ownership literature, we evaluate economic significance adopting a ten percentage point increase in foreign institutional ownership. This estimate is more conservative than using a one standard deviation increase because standard deviation of foreign institutional ownership in our sample is 15%.

according to most indicators that measure investor protection and the quality of institutions, so the French institutional investor might be less willing to change the governance of the German firm than would be the U.K.-based investor.

We classify institutional investors based on whether they are domiciled in common- (*IO_COMMON*) or civil- (*IO_CIVIL*) law countries. Columns (5)-(6) use ownership by institutions domiciled in common-law and civil-law countries. The coefficients for ownership by institutions from both common- and civil-law countries are positive and significant. However, when we use both *IO_COMMON* and *IO_CIVIL* in the same regression, column (7) shows that only the coefficient on *IO_COMMON* is positive and significant. Moreover, a Wald test of the equality of the *IO_COMMON* and *IO_CIVIL* coefficients (reported at the bottom of the table) rejects the null hypothesis. We conclude that there is a positive association between firm-level governance and "governance at home" of institutional investors holding a firm's stock. This finding indicates that institutions "export" good governance across countries. Foreign institutions, in particular those that come from countries with strong shareholder protection, seem to facilitate the convergence of corporate governance regimes around the world.

A legitimate concern with our results so far is an omitted-variables problem. To address this concern, we include firm fixed effects in our regressions to control for unobserved sources of firm heterogeneity. By using firm fixed-effects regressions, we analyze only the within-firm changes in governance and institutional ownership. Therefore, it solves a "joint determination" problem in which an unobserved firm-level time-invariant variable simultaneously determines both governance and institutional ownership.

Panel B of Table 4 reports our main results using a firm fixed-effects model (with year

dummies and standard errors adjusted for firm-level clustering).[12] There is a significant positive relation between firm-level corporate governance and total, foreign, and domestic institutional ownership (columns (1)-(3)). Moreover, when we use both *IO_FOR* and *IO_DOM* in the same regression, column (4) shows that only the coefficient on *IO_FOR* is positive and significant (now only at the 10% level), confirming our prior finding that foreign institutions are central to governance improvements outside of the U.S. When we use both *IO_COMMON* and *IO_CIVIL* in the same regression, column (7) shows that only the coefficient on *IO_COMMON* is positive and significant. Because this specification focuses on the effects of within-firm changes in governance, firm-specific omitted variables cannot explain the observed relation between governance and institutional ownership. One potential issue here is whether there is enough variation in institutional ownership and governance over our study's (short) sample period to estimate this relation with precision. The short answer is yes. Although the t-statistics are usually lower, suggesting a lower precision in the estimates, they are still quite high by traditional standards in most specifications.

3.2. The Role of the Country's Legal Regime and Shareholder Rights

Shareholder rights in the country where the firm is located can also influence the role that institutional investors play. We expect to find that the role of institutions, especially foreign ones, in prompting governance changes is more important in countries with weak shareholder protection. Therefore, to distinguish between firms located in countries with strong or weak shareholder protection, we estimate our panel regressions with governance as the dependent variable for subsamples based on shareholder protection. We use three proxies for shareholder

[12] We impose the requirement that a firm has a complete time series in our sample period to be included in the fixed-effects estimation. We obtain qualitatively similar results without imposing this requirement.

protection: the legal regime of the country from La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998), and the anti-self dealing index as well as the anti-directors rights index from Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2008). Panel A of Table 5 shows that there are 4,133 firm-year observations for civil-law countries and 3,443 firm-year observations for common-law countries, excluding the U.S.

Panel A of Table 5 reports the results of the pooled OLS regression of the governance index separately for firms located in civil-law and common-law countries. We find that the coefficient on total institutional ownership is positive for governance in firms based in both civil- and common-law countries (column (1) and column (5), respectively). The most interesting finding is that domestic institutional ownership is the main driver of governance improvements in common-law countries (column (8)), but in civil-law countries the main driver is foreign institutional ownership (column (4)). In fact, the foreign institutional ownership coefficient is positive and significant in civil-law countries, while the domestic institutional ownership coefficient is negative (a Wald test rejects the null that the foreign and domestic institutional coefficients are equal in each subsample).

There are other differences between firms based in civil-law and common-law countries. For example, in civil-law countries, smaller firms have better governance, but in common-law countries, the opposite is true. In common-law countries, there is a statistically significant negative relation between closely held shares and governance, but for civil-law countries this relation is insignificant.

Panel B of Table 5 presents estimates of firm fixed-effects regressions separately for firms located in civil-law and common-law countries. The firm fixed effects estimates are consistent with the pooled OLS regression estimates in that the coefficient of foreign institutional

ownership is positive and significant in civil-law countries (see columns (2) and (4)), but insignificant in common-law countries (see columns (6) and (8)). However, we find that the coefficient of domestic institutional ownership is no longer significant in common-law countries.

We repeat the analysis above using two other proxies for shareholder rights. We now split the sample based on the medians of the anti-director rights index or the anti-self dealing index. We do not tabulate these results, since the results are similar to those based on the civil- and common-law classification. When we use both domestic and foreign ownership in the same regression, for countries with weak shareholder protection, the coefficient of domestic institutional ownership is negative and significant, while the coefficient for foreign institutional ownership is positive and significant. For countries with strong shareholder protection, the coefficient of domestic institutional ownership is positive and significant, while the coefficient for foreign institutional ownership is insignificant

Our findings provide evidence that domestic institutions are associated with better corporate governance only if there is a strong legal environment in place. In countries with a weaker legal environment, domestic institutional money managers are more likely to have business ties to local corporations, to share the benefits of control, and to be more sympathetic to incumbent management (Gillan and Starks (2003), Stulz (2005), and Ferreira, Massa, and Matos (2010)). In contrast, foreign institutions seem to be able to exert pressure over local management. The positive relation between governance and foreign institutional ownership in civil-law countries suggests that international investors promote the convergence of good corporate governance around the world.

3.3. Does Institutional Ownership Drive Changes in Governance?

An important concern is whether institutional ownership changes drive governance changes or the reverse holds true. Leuz, Lins, and Warnock (2009) find that U.S. investors avoid firms with governance problems when investing internationally. To address this issue, we study the relation between changes in institutional ownership and changes in governance. If institutional investors have a significant influence on governance as our results imply, then as institutional ownership increases over time, we would expect to see corresponding increases in governance. This approach also eliminates the impact of time-invariant unobservable firm characteristics on governance.

Panel A of Table 6 reports the results for regressions of changes in the governance index as the dependent variable and (lagged) changes in institutional ownership as the main explanatory variable. The dependent variable ΔGOV_{41} is the change in the governance index from period t-1 to t. The main explanatory variables are the change in institutional ownership (ΔIO) from period t-2 to t-1. We express all other independent variables in terms of changes; they are lagged one period relative to the governance index.[13] We also include the lagged level of the governance index (GOV_{41}) as a regressor to account for situations in which changes are limited (e.g., firms with high governance index cannot improve their governance significantly) and to capture any changes in response to existing levels (e.g., institutions buying firms with existing good governance, but no corresponding changes in governance).

Columns (1) and (3) show that the coefficients on the change in total and domestic ownership (ΔIO_TOTAL and ΔIO_DOM) are positive but significant only at the 10% level. In contrast, the coefficient on the change in foreign institutional ownership (ΔIO_FOR in column (3)) is positive and significant at the 5% level. Institutional holdings from common-law-based

[13] In unreported results, we obtain similar findings if we use the control variables in levels, rather than in changes.

money managers (Δ*IO_COMMON* in column (5)) also carry a positive and significant coefficient, while the coefficient on the change in civil-law ownership (Δ*IO_CIVIL*) is insignificant. Moreover, when we use both Δ*IO_FOR* and Δ*IO_DOM* (column (4)) or Δ*IO_COMMON* and Δ*IO_CIVIL* (column (7)) in the same regressions, we find that that only the coefficients on Δ*IO_FOR* and Δ*IO_COMMON* are positive and significant. These findings are indicative of the special role played by foreign institutions and institutions that originate in countries with good governance, such as common-law countries. We note that these countries not only have strong country-level governance, but also strong firm-level governance (see Table 2).

As an alternative to yearly changes, we split our sample period into two parts and regress changes in governance over 2006-2008 on changes in institutional ownership over the earlier period, 2003-2005. We would expect to see changes in institutional ownership in the earlier part of the sample associated with changes in governance in the most recent part of the sample. These (long-run) changes specifically address the concern that institutions potentially invest in anticipation of future governance improvements. For example, a firm announces a governance change in year t that will be formally adopted only in year t+1. Results in Panel B of Table 6 show that changes in foreign and common institutional ownership drive subsequent changes in firm-level governance.

Finally, to further substantiate our finding that changes in foreign institutional ownership affect future governance, we run the change regressions with the yearly change in the governance index and the yearly change in institutional ownership divided by the corresponding average change for other firms in the same country. This test allows us to address any remaining concerns that institutions invest in anticipation of future governance improvements at the country

level. The results in Panel C of Table 6 confirm that foreign institutions have a positive effect on governance.

We also conduct the changes regression analysis in the reverse direction, using the change in governance as the explanatory variable and the change in institutional ownership as the dependent variable. We wish to determine whether institutional investors drive improvements in governance, or whether improvements in governance attract institutional investment. We estimate five different models, each of which uses a different dependent variable representing the changes in institutional investment from t-1 to t: ΔIO_TOTAL, ΔIO_FOR, ΔIO_DOM, ΔIO_COMMON, and ΔIO_CIVIL. The independent variables in each specification are the change in governance during t-2 to t-1 (ΔGOV_{41}), and the firm-level control variables (coefficients not shown) used in Table 6. Table 7 reports the results of the reverse (yearly) changes regressions. We find that the coefficient on the change in governance is statistically insignificant or even negative in some cases.[14] In unreported regressions, we also find insignificant results when we run the reverse changes regression using the changes in Panel B (change in 2006-2008 versus 2003-2005) and the changes regression in Panel C (governance index and institutional ownership scaled by the corresponding country-level average change).

Overall, the evidence is consistent with institutional ownership, especially by foreign institutions, affecting governance, but not with governance affecting institutional ownership. Following an increase in ownership by foreign institutions, firm-level governance improves.

[14] The number of observations is lower in Table 7, where the dependent variable is the institutional ownership change, compared to Table 6, where the dependent variable is governance change, because we do not have institutional ownership data for 2008 and governance data for 2003. However, the results are consistent when we run the regressions in Table 6 with the smaller sample used in Table 7.

3.4. Individual Governance Attributes

The governance index (GOV_{41}) captures overall firm-level governance and is comparable across countries. However, we are also interested in examining the impact of institutional investors on particular governance mechanisms. Governance indexes have been criticized, and some studies have tried to identify the most important individual attributes (e.g., Bebchuk, Cohen, and Ferrell (2009), Daines, Gow, and Larcker (2010)). Following Aggarwal, Erel, Stulz, and Williamson (2009), we examine the seven individual governance attributes that have been most studied in the literature and among policy makers. We focus on some of the most important board characteristics such as board independence, board size, CEO/chairman separation, and the absence of a staggered board; the independence of firm auditors, and ratification of auditors; and the existence of multiple share classes.

We estimate probit regressions for the seven individual corporate governance attributes on institutional ownership. The dependent variables are dummy variables that take the value of one if the board has more than 50% of independent outside directors (*BOARD_INDEP*, item 3 in GOV_{41}); if the board size is greater than five but less than 16 (*BOARD_SIZE*, item 4); if the chairman and CEO positions are separated or there is a lead director (*CHAIRMAN_CEO*, item 7); if the board is elected annually (*NO_STAGGERED_BOARD*, item 12); if the audit committee comprises only independent outsiders (*AUDIT_COMMIT_INDEP*, item 26); if the auditors are ratified annually (*AUDITORS_RATIFIED*, item 27); and if there is a single class of common shares (*SINGLE_CLASS*, item 28). The main independent variables are ownership by foreign institutions (*IO_FOR*) and domestic institutions (*IO_DOM*). Our regressions also include the lagged firm-specific control variables (coefficients not shown) used in Table 4.

Each row in Table 8 corresponds to a different probit regression for each governance

attribute. We present the marginal effects evaluated at the mean for both domestic and foreign institutional ownership. We find that foreign institutional ownership is positively and significantly associated with a more shareholder-friendly board structure. Foreign institutional ownership increases the likelihood that the board has a majority of independent directors, that its size is appropriate, and that it does not adopt a staggered board provision. However, for domestic ownership, our results for all three of these characteristics are different. The marginal effects of domestic institutional ownership are negative (and significant at the 10% level).

We do not find evidence on the relation between institutional investors and firms' choices of auditors and multiple class structures. Overall, foreign institutional investors are associated with more shareholder-friendly board structures.

4. Does Institutional Ownership Affect Corporate Governance Outcomes?

In this section, we provide direct evidence that higher institutional ownership affects governance outcomes. We explore whether institutional ownership is correlated with good governance in terms of identifying and terminating poorly performing CEOs. This complements our evidence in the previous section on governance mechanisms. We then also analyze whether changes in institutional ownership drive subsequent changes in firm valuation.

4.1. CEO Turnover-Performance Sensitivity

We examine whether a higher presence of institutions as shareholders improves the ability of a firm's board of directors to identify and terminate poorly performing CEOs. DeFond and Hung (2004) show that in countries with strong investor protection, there is a stronger association between CEO turnover and bad firm performance than there is in countries with weak investor

protection. Institutions can be particularly influential in exporting good governance practices in this area through direct activism or through indirect discipline by selling shares.

We collect data from BoardEx to identity the top executive of each firm in each year. The BoardEx database contains detailed biographic information on top executives in many countries. We use the term "CEO" to describe this executive, regardless of whether the firm uses "chief executive officer" or some other designation (such as "managing director" or "executive chairman"). We start with our main sample of firms from Table 1, but because coverage in BoardEx is not as extensive for some countries, we drop Hong Kong, Japan, New Zealand, Singapore and Switzerland from the analysis. For each firm we identify the CEO at each year-end in the period 2004-2008. The obtained sample of non-U.S. firms contains 3,955 firm-years observations. At the end of 2008, the sample comprises 909 non-U.S. firms and represents more than 75% of the market capitalization of the non-U.S. firms in our main sample.

We classify a firm as having experienced a CEO turnover when the top executive at the end of the year is different from the CEO at the end of the previous year. There are a total of 723 turnover events. These events imply a turnover rate of 18% in the period 2004-2008, which is in line with Lel and Miller (2008), who find that the average CEO turnover worldwide is 16% in the 1992-2003 period. As in DeFond and Hung (2004) and Lel and Miller (2008), we cannot distinguish between voluntary and forced turnovers, but this distinction just leads to additional noise in the dependent variable, because voluntary turnovers are unlikely to be related to performance (Hermalin and Weisbach (2003)).

To test the effect of institutional ownership on CEO turnover-performance sensitivity, we use a probit model of CEO turnover on lagged abnormal stock returns (*ABNORMAL_RET*), lagged institutional ownership (*IO*), and an interaction term of abnormal stock returns and

institutional ownership (*ABNORMAL_RET* × *IO*). Following Weisbach (1988) and Lel and Miller (2008), we run a probit regression:

$$CEO\_TURN_{it} = \alpha + b_1 IO_{i,t-1} + b_2(ABNORMAL\_RET_{i,t-1} \times IO_{i,t-1}) + b_3 ABNORMAL\_RET_{i,t-1} + b_4 SIZE_{i,t-1} + \varepsilon_{it}, \quad (1)$$

where CEO_TURN_{it} is a dummy variable that equals one if the CEO left firm i during year t, and zero otherwise. We measure the previous year abnormal return (*ABNORMAL_RET*) as the firm's annual stock return in U.S. dollars minus the country's stock market return (as given by Datastream stock market indexes in U.S. dollars). *IO* is alternatively total (*IO_TOTAL*), foreign institutional ownership (*IO_FOR*), and domestic institutional ownership (*IO_DOM*) in the previous year. The regression also includes the lagged logarithm of total assets (*SIZE*), as well as year, country, and industry dummies.[15] Our coefficient of interest is the one on the interaction between stock returns and institutional ownership (b_2). Ai and Norton (2003) show that researchers cannot draw conclusions about the sign and the significance of the interaction term in nonlinear models (such as probit models) by examining the coefficient on the interaction term. To ensure that we draw valid inferences on the interaction variable effect, we estimate the marginal effect of the interaction variable and its significance using the delta method described by Ai and Norton (2003).

Table 9 presents the results of our analysis. The interaction terms show that CEO turnover is more sensitive to low abnormal stock returns in firms with higher institutional ownership. The estimated mean interaction effects (reported at the bottom of the table) are negative and

[15] There is a concern that the interaction between *IO* and *ABNORMAL_RET* may be capturing a difference in CEO turnover-performance sensitivity between large and small firms, since *IO* is positively correlated with *SIZE*. We obtain consistent results (untabulated) when we include the interaction between *SIZE* and *ABNORMAL_RET* as an additional control variable.

statistically significant. We interpret this result to mean that firms with higher institutional ownership have a greater propensity to shed poorly performing CEOs. This finding is consistent with institutional investor monitoring having an effect on this corporate governance outcome.

We have documented that higher institutional ownership is associated with a higher CEO turnover-performance sensitivity. To confirm that governance is a channel by which institutional ownership affects CEO turnover-performance sensitivity, we apply a two-step regression method. A first-step regression divides the governance index into a component linearly related to institutional ownership and a residual component not related to institutional ownership. We refer to these as the fitted and the residual components of governance, respectively. In a second-step regression, we re-estimate the probit model of CEO turnover by including as regressors the fitted governance measure (instead of institutional ownership), its interaction with the abnormal return, and the residual component. The estimates (not tabulated) show that the interaction of the fitted-value component of governance with the abnormal return is negative and significant. This finding suggests that indeed governance is a channel by which institutional ownership affects CEO turnover-performance sensitivity.

4.2. Firm Valuation

Changes in governance attributes or increased CEO turnover-performance sensitivity brought by foreign institutional investment are important if these are conducive to shareholder value creation. We test whether this is indeed the case.

Previous studies (e.g., Gompers, Ishii, and Metrick (2003), Doidge, Karolyi, and Stulz (2004)) examine the real effects of good governance and monitoring by measuring the impact of governance on firm valuation, as measured by Tobin's Q. Ferreira and Matos (2008) find that

foreign institutions have a significantly positive impact on Tobin's Q.

We replicate the results in Ferreira and Matos (2008) using our sample of non-U.S. firms for the period 2003-2008. We estimate pooled OLS regressions of Tobin's Q ratios on foreign and domestic institutional ownership, firm-level controls, and country, industry, and year dummies. Tobin's Q is calculated as the book value of total assets plus the market value of equity minus the book value of equity divided by total assets. Columns (1)-(4) of Table 10 report the results. We find that unlike ownership by domestic institutions, ownership by foreign institutions is positively associated with Tobin's Q ratios.

Columns (5)-(8) of Table 10 report firm fixed-effect regressions of Tobin's Q to control for unobserved sources of firm heterogeneity. By including firm fixed effects in our regressions, we analyze only the within-firm changes in Tobin's Q and institutional ownership. We find again that the foreign institutional ownership coefficient is positive and significant, while the domestic institutional ownership coefficient is insignificant. Thus, there is robust evidence that foreign institutions drive up firm valuation.

We also test whether changes in institutional ownership lead to increases in firm valuation. Thus, we regress changes in Tobin's Q from t-1 to t on changes in institutional ownership (ΔIO_TOTAL, ΔIO_FOR, ΔIO_DOM) from t-2 to t-1 and also on changes in control variables from t-2 to t-1. Columns (9)-(12) of Table 10 present the results for the changes regressions of Tobin's Q on institutional ownership. ΔIO_TOTAL has a positive and significant coefficient. ΔIO_FOR and ΔIO_DOM both carry a positive and significant coefficient in columns (10) and (11), respectively. However, in column (12) when we use both ΔIO_FOR and ΔIO_DOM in the same regression, we find that ΔIO_FOR is positive and significant and ΔIO_DOM is insignificant. Thus, increases in (foreign) institutional ownership drive increases in firm

valuation.

We are concerned that the causal relation runs in the opposite direction if firms with better governance (and higher valuations) attract more foreign capital in the first place. We conduct the analysis in the reverse direction, with changes in institutional ownership as the dependent variable and changes in Tobin's Q as the explanatory variable. In unreported regressions, we find that the coefficient on changes in Tobin's Q is statistically insignificant. This result suggests that the direction of the effect is from institutional ownership to firm valuation.

Finally, we test whether the increases in firm valuation are due to improvements in corporate governance. We again apply a two-step regression method where the first-step regression divides the governance index into a component linearly related to institutional ownership and a residual component not related to institutional ownership. In a second-step regression, we re-estimate the Tobin's Q regressions by including as regressors the fitted governance measure (instead of institutional ownership) and the residual component. The estimates (not tabulated) show that the fitted value component of governance coefficient is positive and significant. This finding suggests that indeed governance is a channel by which institutional ownership affects firm valuation.

5. Robustness and Additional Tests

In this section, we perform a variety of robustness checks of our primary findings. We first address endogeneity concerns using instrumental variables methods. We then analyze alternative classifications of institutional investors.

5.1. Instrumental Variables Method

An important concern is that institutional ownership is endogenously determined. Indeed, a firm with better governance may be more likely to attract foreign institutional shareholders. Moreover, a firm with expected future governance improvements is also more likely to attract institutional investment, especially by foreigners. To address issues related to the endogeneity of the institutional ownership, we use lagged values as explanatory variables and change regressions in Section 3. To alleviate any remaining concerns, we utilize instrumental variables methods. Under standard identification assumptions, we apply two-stage least squares (2SLS) tests to isolate the effect of institutional ownership on governance. Hence, we need an instrument for institutional ownership, a variable that is correlated with institutional ownership, but uncorrelated with governance except indirectly through other independent variables.

Following Ferreira and Matos (2008), who find that domestic institutions prefer dividend-paying stocks, we use a dividend payment dummy (*DIV*) as an instrumental variable for total (*IO_TOTAL*) and domestic (*IO_DOM*) institutional ownership.[16] For foreign institutional ownership (*IO_FOR*), we use membership in the Morgan Stanley Capital International All Country World index (MSCI ACWI) as an instrument. We use a dummy variable (*MSCI*) that takes the value of one if a firm is a member of the MSCI ACWI in year t, and zero otherwise. MSCI is a commonly used benchmark index for foreign portfolio investors (but not for domestic institutions that generally use local stock market indexes).[17] Empirically, Ferreira and Matos (2008) and Leuz, Lins and Warnock (2009) find that MSCI membership increases the probability

[16] In our sample of non-U.S. firms, 75% of the firms pay dividends.
[17] In our sample of non-U.S. firms, the number of firms with GOV_{41} index that are included in the MSCI index is 52%.

that a firm attracts foreign capital.[18] MSCI membership does not seem to be correlated with governance in our sample as the correlation between GOV_{41} and *MSCI* is statistically insignificant. Firms that are MSCI members have an average GOV_{41} index of 46.0% while non-MSCI members have an average GOV_{41} index of 46.2%. Thus, the instrument does not seem to be correlated with our dependent variable. We will test this assumption later in the section using the Hansen's overidentification test.

Specifications IV(1) in Panel B of Table 11 present the results of the first-stage regressions that use total, domestic, and foreign institutional ownership as the dependent variables. All explanatory variables are lagged by one period. Regressions include the control variables (coefficients not shown) used in Table 4 and industry, country, and year dummies. The first-stage regression results support the view that foreign ownership is positively associated with MSCI membership, and that total and domestic institutions are attracted by dividend-paying stocks. F-tests reported at the bottom of Panel B indicate that the hypotheses that instruments can be excluded from the first stage regressions are strongly rejected. This suggests that the instruments are not weak.

Specification IV(1) in Panel A of Table 11 present the coefficients of the second-stage regression that uses the governance index (GOV_{41}) as the dependent variable. After we take into account the possibility that institutional ownership is endogenous, we find evidence of a positive relation between governance and foreign institutional ownership. However, we note that we do not find a similar relation between governance and total or domestic institutional ownership. This evidence supports the conclusion that there is a causal link from institutional ownership to governance, and that foreign institutions are the main force of governance improvements outside

[18] We do not instrument total institutional ownership with the MSCI dummy because this dummy variable is not significant in a first-stage regression of *IO_TOTAL*.

of the U.S. Thus, we conclude that endogeneity is unlikely to explain the relation between (foreign) institutional ownership and corporate governance.

To confirm the robustness of our findings on foreign institutional ownership, we consider several sets of instrumental variables. In specifications IV(2), we employ both *DIV* and *MSCI* as instruments for foreign institutional ownership. In this specification we have more instruments than endogenous variables therefore we can test for the exogeneity of the instruments using overidentification tests. The Hansen's overidentification tests (reported at the bottom of Panel A) confirm the quality of the instruments, showing that they are not related to corporate governance in any other way than through their impact on the instrumented variable (i.e., foreign institutional ownership). The second-stage results in the IV(2) specification in Panel A remain consistent with a positive relation between governance and foreign institutional ownership. This holds true when we use *IO_FOR* and *IO_DOM* in the same regressions (we can include both regressors as we are now using two instruments).

We also utilize share turnover (*TURN*) as an instrument for institutional ownership in specifications IV(3). Hartzell and Starks (2003) use share turnover as an instrument in their study of institutional ownership and executive compensation. As the liquidity of a stock increases, the transaction cost for an investor to rebalance its portfolio decreases. We thus expect that stocks with higher turnover attract more ownership by institutions, in particular foreign ones since they typically have higher portfolio turnover. In specifications IV(3), we use *DIV* and *TURN* as instruments for institutional ownership, while in specifications IV(4) we use all three instruments (*DIV*, *MSCI* and *TURN*). As expected, foreign institutional ownership is positively related to share turnover, as shown by the positive and significant coefficient on *TURN*. Additionally, F-tests (reported under specifications IV(3) and IV(4) in Panel B) of the joint significance of the

instruments in the first stage suggest that the instruments are not weak. The Hansen's overidentification tests (reported under specifications IV(3) and IV(4) in Panel A) further support the validity of these instruments. The second-stage results from specifications IV(3) and IV(4) in Panel A remain consistent with a positive relation between governance and foreign institutional ownership. Moreover, when we use *IO_FOR* and *IO_DOM* in the same regressions, we find that the *IO_FOR* coefficient is positive and significant but the *IO_DOM* coefficient is insignificant.

Finally, we use the net dividend tax (*TAX_DIV*) as an alternative instrument for foreign institutional ownership. Foreign investors are penalized in the presence of taxation on dividends because dividend taxes are withheld whereas capital gain taxes are not. Chan, Covrig, and Ng (2005) and Ferreira, Massa, and Matos (2010) show that foreign investors have lower holdings in countries with higher net dividend tax rates. Desai and Dharmapala (2009) show how dividend tax changes lead to a substantial portfolio reallocation by U.S. investors towards stocks in tax-favored countries. We thus expect that firms in countries with lower net dividend taxes attract more foreign ownership. The first stage regression results confirm that indeed foreign institutions prefer to invest in shares of firms located in countries with lower dividend taxes, as shown by the negative and significant coefficient on *TAX_DIV* in the first-stage regression (see specification IV(5) in Panel B). The second-stage results from the IV(5) specification in Panel A are consistent with a positive relation between governance and foreign institutional ownership.

Overall, the results from the instrumental-variables regressions of governance on institutional ownership using a variety of specifications and instruments yield very similar results. The effect of foreign institutional ownership on governance is positive and statistically significant in all five specifications, while the effect of domestic ownership is insignificant. The effect of foreign ownership is even stronger than the one estimated by OLS. Since all

specifications lead to similar coefficients on foreign institutional ownership, our findings are unlikely to be subject to potential concerns related to weak instruments.

5.2. Alternative Classifications of Institutional Investors

In our main tests, we group institutions based on their country of origin (foreign vs. domestic and common-law vs. civil-law based) motivated by the question of whether institutions export governance internationally. In this sub-section we explore alternative classifications to capture which institutions are more capable or willing to promote the adoption of good corporate governance practices.

First, we examine whether U.S.-based institutions (*IO_FOR_US*) play a special role in the governance of the foreign firms in which they invest, because the U.S. is a country that is considered to have a high level of investor protection. In Panel A of Table 12, columns (1)-(3) and (7)-(9) show that there is a positive relation between governance and both U.S. institutions (*IO_FOR_US*) and non-U.S. foreign institutions (*IO_FOR_NUS*), with exception of the firm fixed-effects model when we use both explanatory variables of interest in the same regression. Panel B presents change regressions, where ownership by foreign institutions from the U.S. has a positive and significant coefficient and ownership by non-U.S. foreign institutions has an insignificant coefficient.

Second, to study the relation between governance and type of institution we follow Chen, Harford, and Li (2007) and Ferreira and Matos (2008) and classify institutions according to the potential for business ties to a corporation as independent or grey institutions. Independent institutional ownership (*IO_IND*) is the percentage of shares held by mutual fund managers and investment advisers. These institutions are more likely to collect information, are subject to

fewer regulatory restrictions, and have fewer potential business relationships with the corporations in which they invest. We anticipate that this group will be more involved in monitoring corporate management. Brickley, Lease, and Smith (1988) refer to these institutions as "pressure-resistant," and Almazan, Hartzell, and Starks (2005) call them "active." Grey institutional ownership (*IO_GREY*) is the percentage of shares held by bank trusts, insurance companies, and other institutions (e.g., pension funds, endowments). The current or prospective business relationships of these types of institutions with corporations tend to make this group more "pressure-sensitive" with respect to corporate management. Alternatively, we can think of these groups of institutions as having higher monitoring costs. We anticipate that this group will be more loyal to corporate management and thus more likely to hold shares without reacting to management actions that do not align with the interests of shareholders. Brickley, Lease, and Smith (1988) refer to these institutions "pressure-sensitive" and Almazan, Hartzell, and Starks (2005) call them "passive."

In Panel A of Table 12, columns (4)-(6) and (10)-(12), present our results based on classifying institutions as independent (*IO_IND*) or grey (*IO_GREY*) institutions. When we include both *IO_IND* and *IO_GREY* in the same regression, the coefficient of *IO_IND* is positive and significant, while the coefficient of *IO_GREY* is insignificant (columns (6) and (12)).

The change regression analysis in Panel B of Table 12 shows that changes in U.S. institutional ownership (columns (1) and (3)) and changes in independent institutional ownership (columns (4) and (6)) drive changes in governance, unlike changes in non-U.S. foreign and grey institutional ownership. We conclude that foreign institutions, especially institutions located in countries with strong shareholder protection such as the U.S., and independent institutions, which are less likely to have potential conflicts of interest that impede their monitoring ability,

are the main drivers of governance improvements in non-U.S. firms.

In unreported results, we also conduct an analysis in the reverse direction, similar to that in Table 7. We use the change in governance as the explanatory variable and the change in institutional ownership (ΔIO_FOR_US, ΔIO_FOR_NUS, ΔIO_IND, and ΔIO_GREY) as the dependent variable. We find that the coefficient on the change in governance is not significant.

We also consider measures of concentration of institutional ownership (e.g., ownership by institutional blockholders, institutional ownership Herfindal index) in alternative to the level of institutional ownership. In unreported results, we find a positive and significant relationship between governance and institutional ownership concentration but the magnitude of effect is statistically and economically smaller. This finding suggests that institutions are able to improve governance through shareholder activism without having a small number of institutions holding large stakes in a firm.

5.3. Additional Robustness Checks

Table 13 reports our base results for the sample of U.S. firms. Panel A of Table 13 presents the results of the governance panel regressions. We note that the specifications are similar to those in Table 4 for non-U.S. firms, but now we estimate them for our sample of U.S. firms. The results for U.S. firms in columns (4) and (8) show the coefficient of domestic institutional ownership is positive and significant, while the foreign institutional ownership coefficient is not significant when both variables are included in the same regression. This finding accords with our earlier results for common-law countries in Table 5. Panel B of Table 13 reports the results of the regression of changes in governance for the sample of U.S. firms. We find that U.S.-based institutions are among the most active promoters of good governance practices not only

internationally, but also in their home market.

We also perform a variety of other robustness checks (not tabulated here). First, we re-run our tests excluding firms from regulated industries (Utilities, Transportation, Telecommunication, Insurance, Energy, and Banking). The results are similar and lead to the same conclusions. Second, we use economic development (GDP per capita), financial development (market capitalization to GDP), and country-level governance attributes (legal origin, rule of law, anti-director rights, and anti-self dealing index) as control variables in alternative to country fixed effects. We still find a positive relation between governance and institutional ownership. Finally, we include annual stock returns as a control variable. We find that the stock return coefficient is insignificant, and that our primary results do not change.

6. Conclusion

We find that international institutional investors export good corporate governance practices around the world. In particular, foreign institutional investors and institutions from countries with strong shareholder protection are the main promoters of good governance outside of the U.S. Our results are stronger for firms located in civil-law countries. Thus, international institutional investment is especially effective in improving governance when the investor protection in the institution's home country is stronger than the one in the portfolio firm's country.

Our results suggest that it is changes in institutional ownership over time that drive changes in firm-level governance, but the opposite is not true. We also provide evidence that institutional ownership has a direct effect on corporate governance outcomes, functioning as a disciplinary mechanism in terminating poorly performing CEOs. Furthermore, increases in institutional

ownership lead to increases in firm valuation, suggesting that institutional investment not only affects governance mechanisms, but also has real effects on firm value and board decisions.

To our knowledge, our paper is the first to establish a direct link between international portfolio investment and the adoption of better corporate governance practices that promote corporate accountability and empower shareholders worldwide. Our findings support the view that institutions are not simply attracted to firms with stronger governance, but they also play a direct role in improving governance. Foreign institutions take a lead role in improving governance and shareholder activism that local investors seem unable to take outside of the U.S. A particular aspect of foreign institutions that seems to be important is their independence with respect to local corporate managers. We conclude that monitoring and activism by institutions travel beyond country borders and lead to better firm performance. Our findings highlight that market forces (namely institutional investors) are able to promote good corporate governance practices around the world beyond the effect of government regulations.

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Figure 1
Governance Index by Country and Year

This figure shows the average of the firm-level governance index (GOV_{41}) by country and year in 2004-2008. GOV_{41} is the percentage of the 41 governance attributes that a firm meets, as described in Appendix A. An index of 100% means that a firm has adopted all 41 governance provisions.

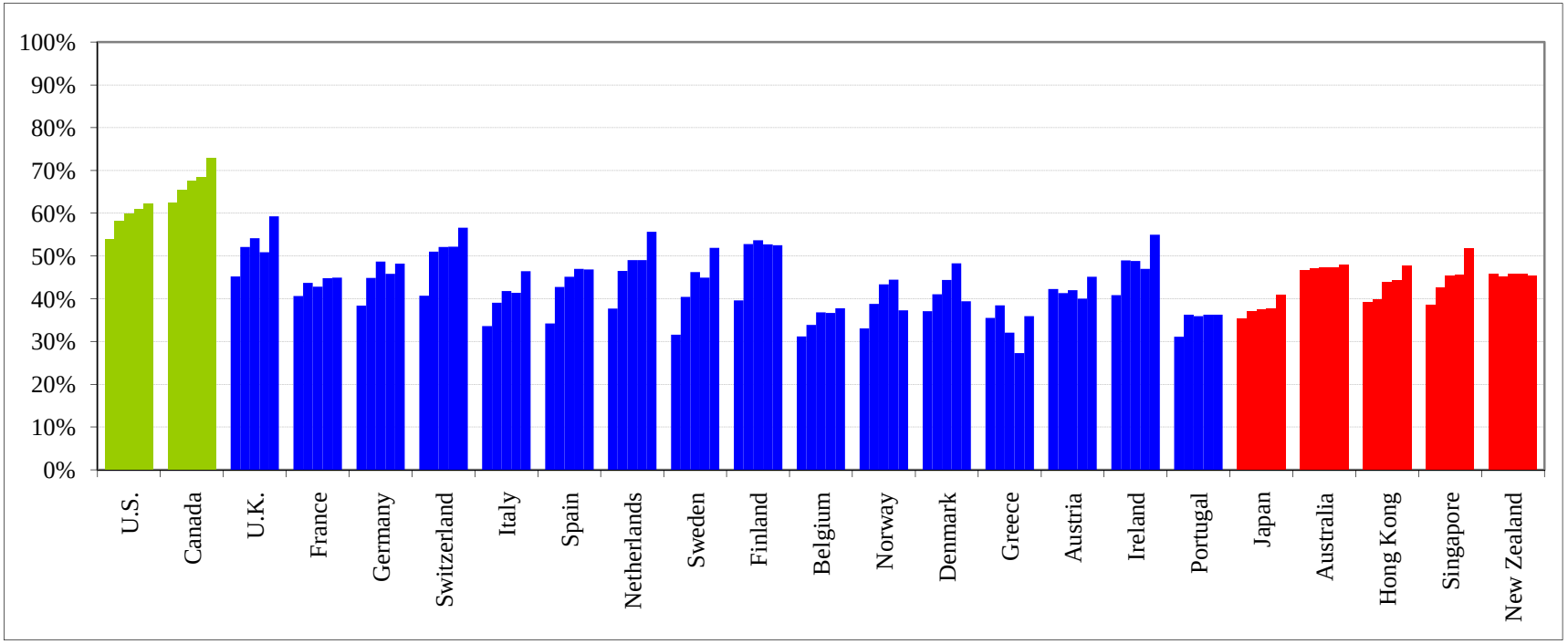


Figure 2
Total Institutional Ownership by Country and Year

This figure shows the average total institutional ownership by country and year in 2003-2007. Institutional ownership is the sum of the holdings of all institutions in a firm's stock, as a fraction of its year-end market capitalization.

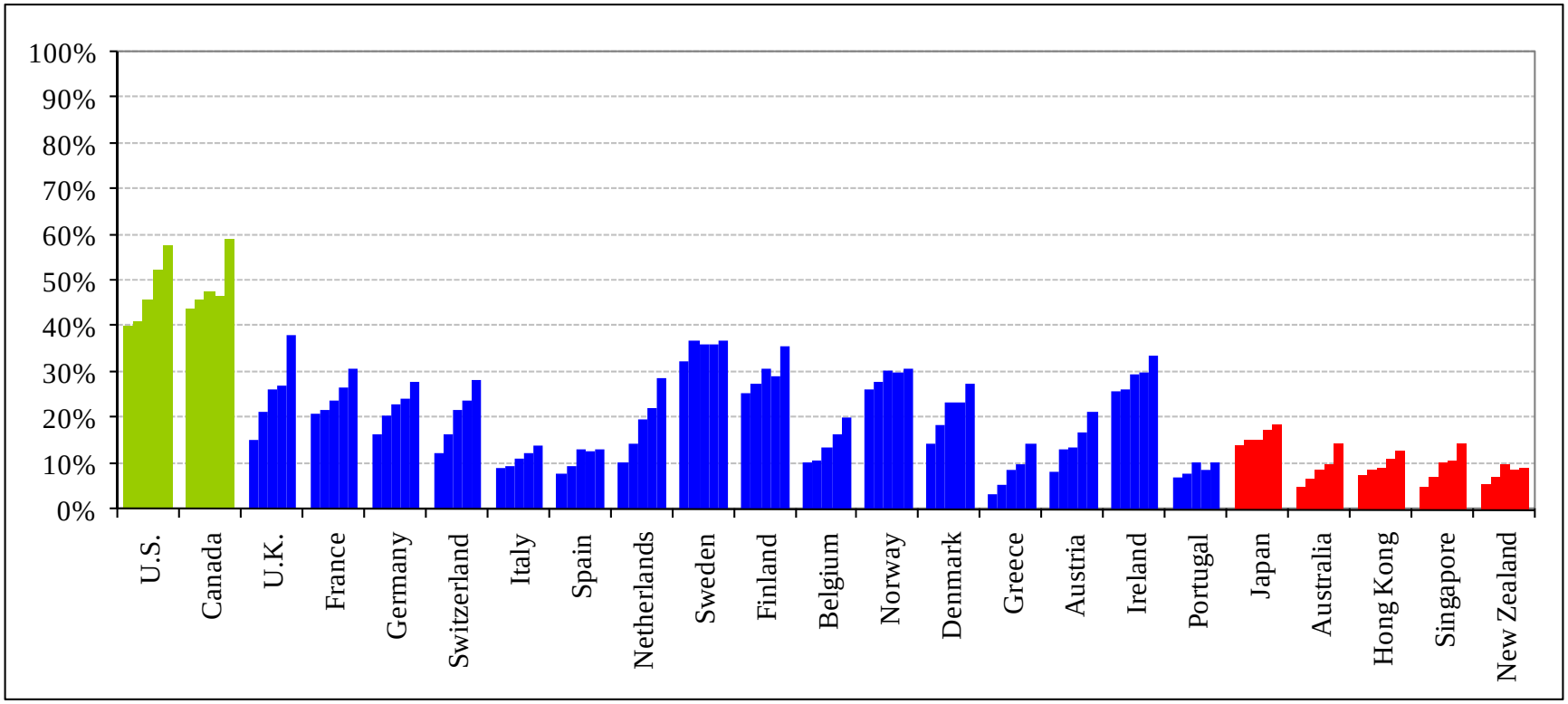
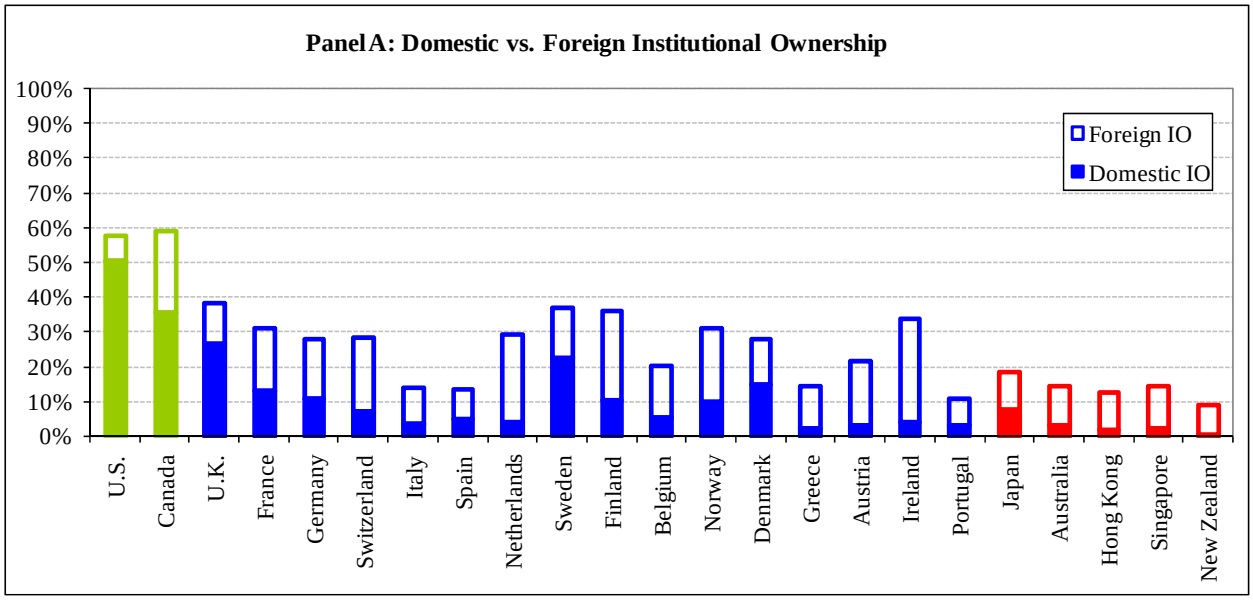


Figure 3
Institutional Ownership by Location and Legal Origin

Panel A shows the average institutional ownership by foreign and domestic institutions at the end of 2007. Domestic (foreign) institutional ownership is the sum of the holdings of all institutions domiciled in the same country (in a different country) in which the stock is listed, as a fraction of its year-end market capitalization. Panel B shows the average institutional ownership by the institutions' country legal origin. Common (civil) is the sum of the holdings of all institutions domiciled in countries that have common (civil) law, as a fraction of the firm's market capitalization.



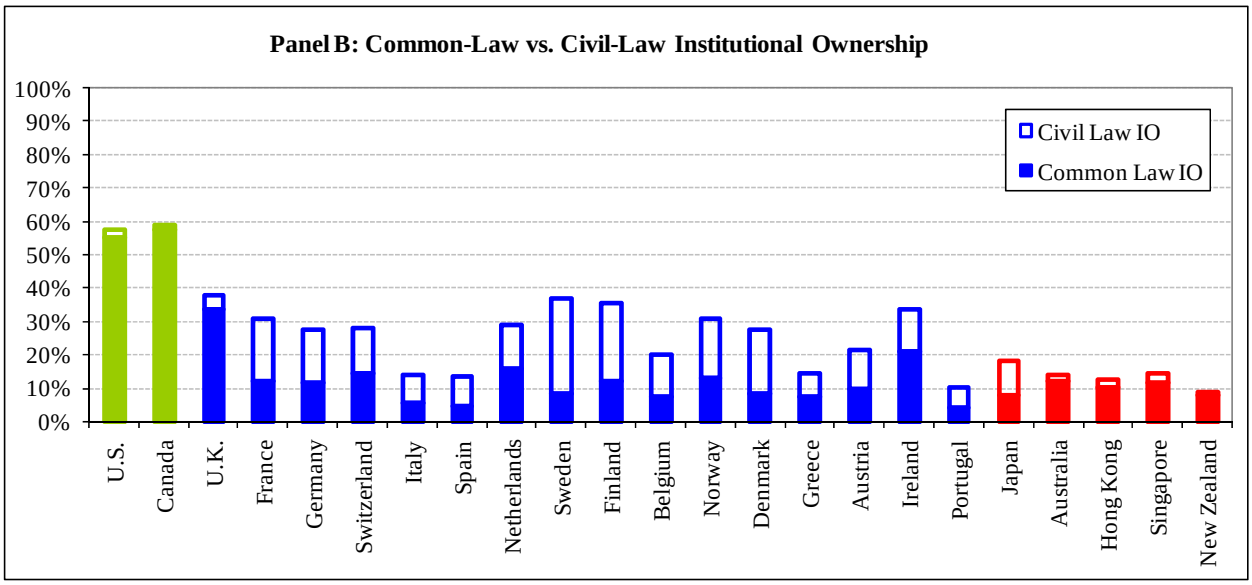


Table 1
Number of Firms by Country and Year

This table shows the number of firms that have both firm-level governance and institutional ownership data by country and year, and the market capitalization of the companies as a fraction of the Worldscope total market capitalization by country at the end of 2008. The row titled "Total ex U.S." refers to the number of non-U.S. firms, which is our sample in the main regression tests.

Country	2004	2005	2006	2007	2008	% Market Capitalization
Australia	72	117	118	117	83	75%
Austria	16	17	18	18	18	56%
Belgium	19	24	27	27	27	79%
Canada	161	164	188	188	127	75%
Denmark	21	21	22	22	21	78%
Finland	27	28	30	30	27	85%
France	72	83	87	87	80	71%
Germany	80	83	90	90	86	82%
Greece	42	43	43	43	31	70%
Hong Kong	32	65	65	65	56	93%
Ireland	15	15	16	16	15	81%
Italy	41	69	73	72	70	86%
Japan	491	584	598	598	581	39%
Netherlands	44	43	44	44	33	66%
New Zealand	14	17	18	18	18	72%
Norway	20	21	23	23	22	81%
Portugal	13	14	14	14	14	88%
Singapore	53	59	60	60	54	70%
Spain	35	53	57	56	55	83%
Sweden	40	40	47	46	46	78%
Switzerland	54	56	61	61	59	81%
U.K.	194	514	519	518	460	84%
U.S.	4,776	5,202	5,152	4,853	4,624	96%
Total ex U.S.	1,556	2,130	2,218	2,213	1,983	71%

Table 2
Firm-Level Governance Index

This table shows the average governance index (GOV_{41}) by country and year. GOV_{41} is the percentage of the 41 governance attributes that a firm meets, as described in Appendix A. An index of 100% means that a firm has adopted all 41 governance provisions. The column titled average yearly change shows the average annual change in GOV_{41} in 2004-2008.

Country	2004	2005	2006	2007	2008	Average Yearly Change
Australia	46.6%	47.0%	47.2%	47.3%	48.0%	0.3%
Austria	42.2%	41.3%	42.0%	40.0%	45.1%	0.7%
Belgium	31.2%	33.8%	36.8%	36.7%	37.8%	1.6%
Canada	62.4%	65.4%	67.4%	68.5%	72.8%	2.6%
Denmark	37.0%	41.0%	44.3%	48.2%	39.4%	0.6%
Finland	39.6%	52.8%	53.7%	52.7%	52.5%	3.2%
France	40.6%	43.7%	42.8%	44.8%	44.9%	1.1%
Germany	38.4%	44.9%	48.7%	45.8%	48.2%	2.5%
Greece	35.5%	38.4%	32.1%	27.3%	35.9%	0.1%
Hong Kong	39.3%	39.8%	43.9%	44.2%	47.7%	2.1%
Ireland	40.8%	48.9%	48.8%	47.0%	55.0%	3.5%
Italy	33.6%	39.1%	41.8%	41.4%	46.4%	3.2%
Japan	35.2%	37.0%	37.4%	37.7%	40.9%	1.4%
Netherlands	37.7%	46.5%	49.0%	49.0%	55.7%	4.5%
New Zealand	45.6%	45.2%	45.7%	45.7%	45.4%	-0.1%
Norway	33.0%	38.8%	43.4%	44.4%	37.3%	1.1%
Portugal	31.1%	36.2%	35.9%	36.2%	36.2%	1.3%
Singapore	38.5%	42.5%	45.2%	45.4%	51.8%	3.3%
Spain	34.2%	42.8%	45.1%	47.0%	46.8%	3.2%
Sweden	31.6%	40.4%	46.2%	44.9%	51.9%	5.1%
Switzerland	40.7%	51.0%	52.1%	52.2%	56.6%	4.0%
U.K.	45.2%	52.1%	54.1%	50.8%	59.3%	3.5%
U.S.	53.8%	58.1%	59.9%	60.9%	62.2%	2.1%

Table 3
Institutional Ownership by Country and Year

The table shows the average total institutional ownership by country and year. Institutional ownership is the sum of the holdings of all institutions in a firm's stock, as a fraction of its year-end market capitalization. Domestic (foreign) institutional ownership is the percentage of total institutional holdings of all institutions domiciled in the same country (in a different country) in which the stock is listed at the end of 2007, as a fraction of total institutional ownership . Common (civil) law is the percentage of total institutional holding of all institutions domiciled in countries that have common (civil) law at the end of 2007, as a fraction of total institutional ownership.

Country	Total Institutional Ownership						Domestic vs. Foreign		Common vs. Civil	
	2003	2004	2005	2006	2007	Average Yearly Change	Domestic	Foreign	Common	Civil
Australia	4.8%	6.5%	8.7%	9.9%	14.3%	2.38%	22%	78%	85%	15%
Austria	8.3%	13.0%	13.7%	16.8%	21.3%	3.25%	13%	87%	45%	55%
Belgium	10.2%	10.7%	13.4%	16.2%	20.0%	2.45%	26%	74%	37%	63%
Canada	43.7%	45.8%	47.4%	46.7%	59.1%	3.85%	60%	40%	97%	3%
Denmark	14.1%	18.3%	23.5%	23.2%	27.6%	3.38%	53%	47%	30%	70%
Finland	25.3%	27.6%	30.7%	29.2%	35.7%	2.60%	28%	72%	35%	65%
France	20.7%	21.6%	23.7%	26.5%	30.9%	2.55%	41%	59%	39%	61%
Germany	16.6%	20.6%	22.8%	24.3%	27.7%	2.78%	37%	63%	42%	58%
Greece	3.4%	5.5%	8.4%	9.9%	14.3%	2.73%	12%	88%	51%	49%
Hong Kong	7.6%	8.5%	9.1%	10.9%	12.7%	1.28%	16%	84%	83%	17%
Ireland	25.9%	26.1%	29.6%	30.0%	33.5%	1.90%	11%	89%	63%	37%
Italy	9.2%	9.2%	11.0%	12.4%	13.8%	1.15%	23%	77%	39%	61%
Japan	13.9%	15.2%	15.1%	17.4%	18.3%	1.10%	41%	59%	44%	56%
Netherlands	10.4%	14.4%	19.7%	22.3%	28.9%	4.63%	13%	87%	55%	45%
New Zealand	5.4%	7.0%	9.9%	8.6%	9.0%	0.90%	8%	92%	87%	13%
Norway	26.3%	27.8%	30.3%	29.9%	30.7%	1.10%	32%	68%	43%	57%
Portugal	6.9%	7.8%	10.1%	8.6%	10.3%	0.85%	26%	74%	41%	59%
Singapore	4.8%	7.0%	10.2%	10.6%	14.5%	2.43%	17%	83%	79%	21%
Spain	7.8%	9.3%	13.0%	12.5%	13.3%	1.38%	35%	65%	34%	66%
Sweden	32.3%	37.0%	36.0%	36.1%	36.7%	1.10%	60%	40%	23%	77%
Switzerland	12.2%	16.6%	21.6%	23.9%	28.1%	3.98%	25%	75%	51%	49%
U.K.	15.3%	21.4%	26.2%	26.9%	37.9%	5.65%	70%	30%	89%	11%
U.S.	40.1%	41.1%	46.1%	52.6%	57.8%	4.43%	87%	13%	96%	4%

Table 4
Corporate Governance and Institutional Ownership

This table shows estimates of panel regressions of corporate governance on institutional ownership for non-U.S. firms from 2003 to 2008. The dependent variable is the governance index (GOV_{41}). The main independent variables are total institutional ownership (*IO_TOTAL*), ownership by foreign institutions (*IO_FOR*) and domestic institutions (*IO_DOM*), and ownership by institutions domiciled in common-law countries (*IO_COMMON*) and civil-law countries (*IO_CIVIL*). Refer to Appendix B for variables definition. All explanatory variables are lagged by one period. Panel A reports estimates of pooled ordinary least squares regressions with country, industry, and year dummies and standard errors corrected for country-level clustering. Panel B reports estimates of firm fixed-effects regressions with year dummies and standard errors corrected for firm-level clustering. Robust p-values are reported in parentheses. *, **, *** indicate significance at the 10%, 5%, and 1% levels.

Panel A: Pooled OLS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
IO_TOTAL	0.026***						
	(0.000)						
IO_FOR		0.035***		0.030***			
		(0.000)		(0.000)			
IO_DOM			0.025***	0.012			
			(0.005)	(0.427)			
IO_COMMON					0.036***		0.034***
					(0.000)		(0.000)
IO_CIVIL						0.023***	0.006
						(0.005)	(0.464)
SIZE	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.970)	(0.802)	(0.960)	(0.905)	(0.970)	(0.831)	(0.979)
SGROWTH	-0.002	-0.003	-0.002	-0.003	-0.002	-0.002	-0.002
	(0.525)	(0.494)	(0.593)	(0.501)	(0.527)	(0.567)	(0.524)
LEV	0.012***	0.013***	0.012***	0.013***	0.012***	0.013***	0.012***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.003)	(0.002)	(0.003)
CASH	-0.007	-0.009	-0.006	-0.008	-0.007	-0.008	-0.007
	(0.229)	(0.206)	(0.270)	(0.170)	(0.263)	(0.238)	(0.260)
CAPEX	-0.039	-0.039	-0.038	-0.039	-0.038	-0.038	-0.039
	(0.192)	(0.203)	(0.204)	(0.197)	(0.199)	(0.206)	(0.195)
MB	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**
	(0.014)	(0.021)	(0.012)	(0.017)	(0.014)	(0.017)	(0.014)
ROA	0.019*	0.020*	0.020*	0.020*	0.019*	0.020*	0.019*
	(0.092)	(0.084)	(0.075)	(0.082)	(0.094)	(0.073)	(0.094)
R&D	-0.032	-0.029	-0.034	-0.030	-0.032	-0.032	-0.032
	(0.401)	(0.462)	(0.375)	(0.439)	(0.427)	(0.388)	(0.424)
PPE	0.001	0.000	0.002	0.001	0.002	0.001	0.001
	(0.787)	(0.940)	(0.739)	(0.870)	(0.744)	(0.872)	(0.758)
FXSALE	0.002	0.002	0.003	0.002	0.003	0.003	0.002
	(0.500)	(0.596)	(0.355)	(0.565)	(0.436)	(0.433)	(0.461)
ANALYST	0.001***	0.001***	0.001***	0.001***	0.001***	0.001***	0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
CLOSE	-0.032**	-0.033**	-0.034**	-0.033**	-0.033**	-0.034**	-0.033**
	(0.023)	(0.024)	(0.024)	(0.022)	(0.026)	(0.024)	(0.024)
ADR	0.022***	0.021***	0.024***	0.021***	0.021***	0.024***	0.021***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Wald: *IO_FOR = IO_DOM*				12.50			24.51
(p-value)				(0.000)			(0.000)
Observations	7,576	7,576	7,576	7,576	7,576	7,576	7,576
R-squared	0.728	0.728	0.727	0.728	0.728	0.727	0.729

Panel B: Firm Fixed Effects

	(1)	(3)	(2)	(4)	(5)	(6)	(7)
IO_TOTAL	0.021***						
	(0.000)						
IO_FOR		0.023***		0.019*			
		(0.003)		(0.079)			
IO_DOM			0.020***	0.007			
			(0.009)	(0.536)			
IO_COMMON					0.029***		0.025**
					(0.001)		(0.049)
IO_CIVIL						0.019***	0.006
						(0.008)	(0.568)
SIZE	-0.008**	-0.008**	-0.008**	-0.008**	-0.008**	-0.008**	-0.008**
	(0.014)	(0.013)	(0.014)	(0.013)	(0.013)	(0.014)	(0.013)
SGROWTH	-0.001	-0.001	-0.000	-0.001	-0.001	-0.001	-0.001
	(0.839)	(0.850)	(0.865)	(0.850)	(0.847)	(0.845)	(0.841)
LEV	0.017	0.017	0.016	0.017	0.016	0.017	0.017
	(0.113)	(0.113)	(0.124)	(0.113)	(0.121)	(0.116)	(0.118)
CASH	-0.020*	-0.021*	-0.020*	-0.021*	-0.021*	-0.020*	-0.021*
	(0.095)	(0.092)	(0.097)	(0.094)	(0.091)	(0.094)	(0.092)
CAPEX	-0.058**	-0.058**	-0.057**	-0.058**	-0.058**	-0.058**	-0.058**
	(0.032)	(0.031)	(0.032)	(0.030)	(0.032)	(0.031)	(0.030)
MB	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(0.691)	(0.772)	(0.653)	(0.739)	(0.730)	(0.697)	(0.720)
ROA	0.026***	0.026***	0.025***	0.026***	0.026***	0.026***	0.026***
	(0.004)	(0.004)	(0.005)	(0.004)	(0.005)	(0.004)	(0.004)
R&D	0.081	0.083	0.086	0.083	0.087	0.083	0.085
	(0.415)	(0.408)	(0.386)	(0.407)	(0.393)	(0.399)	(0.397)
PPE	-0.012	-0.012	-0.012	-0.012	-0.011	-0.012	-0.012
	(0.347)	(0.360)	(0.345)	(0.352)	(0.366)	(0.344)	(0.357)
FXSALE	-0.001	-0.000	-0.000	-0.000	-0.001	-0.000	-0.001
	(0.932)	(0.947)	(0.975)	(0.946)	(0.914)	(0.989)	(0.921)
ANALYST	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(0.391)	(0.352)	(0.335)	(0.354)	(0.394)	(0.326)	(0.387)
CLOSE	-0.012	-0.012	-0.013	-0.012	-0.013	-0.013	-0.013
	(0.158)	(0.150)	(0.117)	(0.146)	(0.137)	(0.130)	(0.140)
ADR	0.022	0.022	0.023	0.022	0.022	0.023	0.022
	(0.254)	(0.260)	(0.231)	(0.255)	(0.259)	(0.234)	(0.256)
Wald*: IO_FOR = IO_DOM*				5.56			6.25
(p-value)				(0.004)			(0.002)
Observations	5,186	5,186	5,186	5,186	5,186	5,186	5,186
R-squared	0.873	0.873	0.873	0.873	0.873	0.873	0.873

Table 5
Corporate Governance, Institutional Ownership: The Role of Legal Origin

This table shows estimates of panel regressions of corporate governance on institutional ownership separately for non-U.S. firms located in civil-law (columns (1)-(4)) and common-law countries (columns (5)-(8)) from 2003 to 2008. The dependent variable in each regression is the governance index GOV_{41}. The main independent variables are total institutional ownership (*IO_TOTAL*), and ownership by foreign institutions (*IO_FOR*) and domestic institutions (*IO_DOM*). Refer to Appendix B for variables definition. All explanatory variables are lagged by one period. Panel A reports estimates of pooled ordinary least squares regressions with country, industry, and year dummies and standard errors corrected for country-level clustering. Panel B reports estimates of firm fixed-effects regressions with year dummies and standard errors corrected for firm-level clustering. Robust p-values are reported in parentheses. *, **, *** indicate significance at the 10%, 5%, and 1% levels.

Panel A: Pooled OLS

	Civil-Law Countries				Common-Law Countries			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
IO_TOTAL	0.018**				0.044***			
	(0.016)				(0.001)			
IO_FOR		0.031**		0.044***		0.039**		0.031*
		(0.014)		(0.005)		(0.028)		(0.088)
IO_DOM			0.010*	-0.023**			0.047***	0.043***
			(0.062)	(0.030)			(0.002)	(0.003)
SIZE	-0.002*	-0.002**	-0.002**	-0.002**	0.008***	0.007***	0.008***	0.008***
	(0.052)	(0.044)	(0.036)	(0.030)	(0.003)	(0.007)	(0.002)	(0.003)
SGROWTH	0.000	-0.000	0.001	-0.000	-0.010	-0.010	-0.010	-0.010
	(0.875)	(0.998)	(0.714)	(0.912)	(0.121)	(0.127)	(0.113)	(0.119)
LEV	0.014*	0.014*	0.014*	0.014*	0.011**	0.013**	0.010**	0.011**
	(0.082)	(0.081)	(0.086)	(0.078)	(0.030)	(0.017)	(0.036)	(0.039)
CASH	-0.003	-0.003	-0.003	-0.003	-0.006	-0.012	-0.003	-0.006
	(0.575)	(0.593)	(0.617)	(0.598)	(0.528)	(0.209)	(0.723)	(0.515)
CAPEX	-0.033	-0.034	-0.032	-0.032	-0.014	-0.017	-0.011	-0.013
	(0.180)	(0.177)	(0.205)	(0.195)	(0.805)	(0.791)	(0.841)	(0.820)
MB	0.000	0.000	0.000	0.000	0.000*	0.000*	0.001**	0.000**
	(0.728)	(0.778)	(0.753)	(0.880)	(0.052)	(0.051)	(0.042)	(0.036)
ROA	0.007	0.007	0.008	0.007	0.041***	0.041**	0.040***	0.041***
	(0.353)	(0.353)	(0.303)	(0.358)	(0.010)	(0.015)	(0.009)	(0.010)
R&D	0.020	0.022	0.020	0.024	0.028	0.029	0.027	0.030
	(0.575)	(0.549)	(0.595)	(0.528)	(0.434)	(0.449)	(0.400)	(0.422)
PPE	-0.004	-0.003	-0.004	-0.003	-0.005	-0.006	-0.004	-0.005
	(0.515)	(0.527)	(0.486)	(0.540)	(0.620)	(0.554)	(0.730)	(0.623)
FXSALE	0.002	0.002	0.003	0.002	-0.003	-0.004	-0.002	-0.003
	(0.566)	(0.615)	(0.459)	(0.582)	(0.446)	(0.377)	(0.631)	(0.470)
ANALYST	0.001***	0.001***	0.001***	0.001***	0.001	0.001	0.001*	0.001
	(0.001)	(0.001)	(0.001)	(0.001)	(0.121)	(0.118)	(0.070)	(0.127)
CLOSE	-0.015	-0.015	-0.016	-0.015	-0.057***	-0.060***	-0.060***	-0.058***
	(0.163)	(0.149)	(0.179)	(0.155)	(0.000)	(0.000)	(0.000)	(0.000)
ADR	0.029***	0.028***	0.029***	0.027***	0.005	0.007*	0.010**	0.006
	(0.000)	(0.000)	(0.000)	(0.001)	(0.119)	(0.073)	(0.018)	(0.104)
Wald: *IO_FOR = IO_DOM*				5.67				16.15
(p-value)				(0.016)				(0.004)
Observations	4,133	4,133	4,133	4,133	3,443	3,443	3,443	3,443
R-squared	0.523	0.524	0.521	0.525	0.676	0.672	0.674	0.675

Panel B: Firm Fixed Effects

	Civil-Law Countries				Common-Law Countries			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
IO_TOTAL	0.015***				0.025			
	(0.007)				(0.154)			
IO_FOR		0.021***		0.025**		0.015		0.011
		(0.005)		(0.041)		(0.538)		(0.661)
IO_DOM			0.012	-0.008			0.022	0.020
			(0.123)	(0.556)			(0.340)	(0.404)
SIZE	-0.006	-0.006	-0.006	-0.006	-0.012**	-0.012**	-0.012**	-0.012**
	(0.129)	(0.125)	(0.129)	(0.124)	(0.033)	(0.030)	(0.032)	(0.033)
SGROWTH	-0.001	-0.002	-0.001	-0.002	0.011	0.011	0.010	0.011
	(0.627)	(0.610)	(0.667)	(0.602)	(0.178)	(0.171)	(0.191)	(0.180)
LEV	0.019	0.019	0.019	0.019	-0.011	-0.011	-0.012	-0.011
	(0.129)	(0.128)	(0.143)	(0.130)	(0.561)	(0.580)	(0.553)	(0.559)
CASH	-0.010	-0.010	-0.010	-0.010	-0.055**	-0.055**	-0.054**	-0.054**
	(0.462)	(0.456)	(0.461)	(0.453)	(0.020)	(0.019)	(0.020)	(0.020)
CAPEX	-0.048*	-0.048*	-0.047*	-0.048*	-0.081	-0.080	-0.081	-0.082
	(0.085)	(0.080)	(0.090)	(0.081)	(0.196)	(0.202)	(0.196)	(0.196)
MB	0.000	0.000	0.000	0.000	-0.000	-0.000	-0.000	-0.000
	(0.542)	(0.583)	(0.553)	(0.606)	(0.745)	(0.704)	(0.798)	(0.764)
ROA	0.015	0.015	0.015	0.015	0.055**	0.054**	0.054**	0.054**
	(0.111)	(0.111)	(0.121)	(0.114)	(0.028)	(0.029)	(0.030)	(0.029)
R&D	0.153	0.154	0.157	0.155	-0.085	-0.080	-0.073	-0.078
	(0.192)	(0.193)	(0.182)	(0.194)	(0.589)	(0.612)	(0.635)	(0.619)
PPE	-0.000	0.000	-0.000	0.000	-0.021	-0.020	-0.021	-0.021
	(0.989)	(0.998)	(0.999)	(0.981)	(0.314)	(0.321)	(0.312)	(0.313)
FXSALE	-0.002	-0.002	-0.002	-0.002	0.001	0.002	0.001	0.001
	(0.809)	(0.801)	(0.850)	(0.798)	(0.901)	(0.898)	(0.912)	(0.902)
ANALYST	-0.000	-0.000	-0.000	-0.000	0.001**	0.001**	0.001**	0.001**
	(0.453)	(0.445)	(0.472)	(0.437)	(0.037)	(0.020)	(0.021)	(0.023)
CLOSE	-0.022**	-0.022**	-0.023**	-0.022**	-0.001	-0.001	-0.001	-0.001
	(0.038)	(0.038)	(0.027)	(0.040)	(0.971)	(0.959)	(0.940)	(0.948)
ADR	-0.017	-0.017	-0.016	-0.017	0.070***	0.071***	0.072***	0.071***
	(0.596)	(0.600)	(0.610)	(0.601)	(0.000)	(0.000)	(0.000)	(0.000)
Wald: *IO_FOR = IO_DOM*				4.05				0.52
(p-value)				(0.018)				(0.593)
Observations	3,469	3,469	3,469	3,469	1,717	1,717	1,717	1,717
R-squared	0.749	0.749	0.748	0.749	0.877	0.877	0.877	0.877

Table 6
Changes in Corporate Governance and Changes in Institutional Ownership

This table shows estimates of regressions of changes in corporate governance (ΔGOV_{41}) on changes in institutional ownership for non-U.S. firms from 2003 to 2008. The main independent variables are (lagged) changes in total institutional ownership (ΔIO_TOTAL), ownership by foreign institutions (ΔIO_FOR) and domestic institutions (ΔIO_DOM), and ownership by institutions domiciled in common-law (ΔIO_COMMON) and civil-law (ΔIO_CIVIL) countries. Refer to Appendix B for variables definition. All explanatory variables are lagged by one period. Panel A reports estimates of regressions of (yearly) changes in corporate governance from t-1 to t on changes in institutional ownership from t-2 to t-1. Panel B reports estimates of regressions of (long-run) changes in corporate governance in 2006-2008 on changes in institutional ownership in 2003-2005. Panel C reports estimates of regressions of (yearly) changes in corporate governance (divided by the average governance change for other firms in the same country) from t-1 to t on changes in institutional ownership (divided by the average ownership change for other firms in the same country) from t-2 to t-1. Regressions in Panels B and C include the control variables (coefficients not shown) used in Table 6. Regressions include country, industry, and year dummies. Robust p-values corrected for country-level clustering are reported in parentheses. *, **, *** reflects significance at the 10%, 5% and 1% levels.

Panel A: Yearly Changes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
ΔIO_TOTAL	0.014*						
	(0.074)						
ΔIO_FOR		0.015**		0.015*			
		(0.046)		(0.082)			
ΔIO_DOM			0.014*	-0.005			
			(0.077)	(0.619)			
ΔIO_COMMON					0.020***		0.022***
					(0.010)		(0.002)
ΔIO_CIVIL						0.009	-0.003
						(0.106)	(0.493)
GOV_{41}	-0.433***	-0.434***	-0.433***	-0.447***	-0.433***	-0.434***	-0.433***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
$\Delta SIZE$	-0.004	-0.004	-0.004	-0.006**	-0.004	-0.004	-0.004
	(0.119)	(0.112)	(0.123)	(0.045)	(0.119)	(0.116)	(0.119)
$\Delta SGROWTH$	-0.004	-0.004	-0.004	-0.004	-0.004	-0.004	-0.004
	(0.151)	(0.143)	(0.147)	(0.147)	(0.143)	(0.139)	(0.135)
ΔLEV	0.008	0.008	0.007	0.014	0.007	0.007	0.007
	(0.298)	(0.297)	(0.316)	(0.145)	(0.313)	(0.309)	(0.324)
$\Delta CASH$	-0.014	-0.014	-0.013	-0.010	-0.013	-0.013	-0.013
	(0.165)	(0.166)	(0.170)	(0.326)	(0.168)	(0.169)	(0.171)
$\Delta CAPEX$	-0.000	-0.001	-0.000	-0.009	-0.001	-0.001	-0.001
	(0.983)	(0.947)	(0.985)	(0.645)	(0.959)	(0.964)	(0.959)
ΔMB	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.840)	(0.780)	(0.874)	(0.587)	(0.789)	(0.839)	(0.780)
ΔROA	-0.005	-0.005	-0.005	-0.005	-0.004	-0.005	-0.004
	(0.676)	(0.707)	(0.678)	(0.790)	(0.725)	(0.707)	(0.748)
$\Delta R\&D$	0.026	0.026	0.028	0.035	0.027	0.028	0.028
	(0.548)	(0.546)	(0.515)	(0.690)	(0.527)	(0.521)	(0.519)
ΔPPE	-0.012	-0.011	-0.012	-0.016	-0.012	-0.011	-0.012
	(0.260)	(0.285)	(0.272)	(0.262)	(0.266)	(0.295)	(0.272)
$\Delta FXSALE$	-0.002	-0.002	-0.002	-0.003	-0.002	-0.002	-0.002
	(0.720)	(0.754)	(0.755)	(0.670)	(0.700)	(0.782)	(0.692)
$\Delta ANALYST$	0.000	0.000	0.000	-0.000	0.000	0.000	0.000
	(0.706)	(0.705)	(0.692)	(0.231)	(0.717)	(0.690)	(0.720)
$\Delta CLOSE$	-0.011**	-0.011**	-0.011**	-0.009	-0.011**	-0.011**	-0.011**
	(0.030)	(0.027)	(0.025)	(0.176)	(0.027)	(0.025)	(0.027)
ΔADR	0.014	0.015	0.015	0.017*	0.014	0.015	0.014
	(0.127)	(0.113)	(0.111)	(0.077)	(0.126)	(0.103)	(0.127)
Observations	5,677	5,677	5,677	5,677	5,677	5,677	5,677
R-squared	0.380	0.380	0.380	0.372	0.380	0.379	0.380

Panel B: Long-Run Changes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Δ*IO_TOTAL*	0.014*						
	(0.056)						
Δ*IO_FOR*		0.026**		0.038**			
		(0.041)		(0.014)			
Δ*IO_DOM*			0.007	-0.023			
			(0.378)	(0.110)			
Δ*IO_COMMON*					0.018**		0.007
					(0.039)		(0.664)
Δ*IO_CIVIL*						0.018*	0.013
						(0.080)	(0.418)
Observations	980	980	980	980	980	980	980
R-squared	0.407	0.408	0.406	0.409	0.406	0.407	0.407

Panel C: Ratio of Governance Changes to Country Average Governance Changes

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Δ*IO_TOTAL*	-0.001						
	(0.400)						
Δ*IO_FOR*		0.013***		0.015***			
		(0.001)		(0.003)			
Δ*IO_DOM*			0.002	0.004			
			(0.648)	(0.384)			
Δ*IO_COMMON*					0.001		0.001
					(0.421)		(0.413)
Δ*IO_CIVIL*						0.003	0.003
						(0.138)	(0.122)
Observations	5,654	5,654	5,654	5,654	5,654	5,654	5,654
R-squared	0.048	0.050	0.048	0.050	0.048	0.048	0.048

Table 7
Changes in Institutional Ownership and Changes in Corporate Governance

This table shows estimates of regressions of changes in institutional ownership from t-1 to t on changes in corporate governance (ΔGOV_{41}) from t-2 to t-1 for non-U.S. firms from 2003 to 2008. We estimate five models in which the dependent variables are changes in total institutional ownership (ΔIO_TOTAL), ownership by foreign institutions (ΔIO_FOR) and domestic institutions (ΔIO_DOM), and ownership by institutions domiciled in common-law (ΔIO_COMMON) and civil-law (ΔIO_CIVIL) countries. All explanatory variables are lagged by one period (i.e., are changes from t-2 to t-1). Refer to Appendix B for variables definition. Regressions include the control variables (coefficients not shown) used in Table 6. Regressions also include industry, country, and year dummies. Robust p-values corrected for country-level clustering are reported in parentheses. *, **, *** reflects significance at the 10%, 5% and 1% levels.

Dependent Variable	GOV_{41} Coefficient	Observations	R-squared
ΔIO_TOTAL	-0.054*	2,669	0.053
	(0.098)		
ΔIO_FOR	0.001	2,669	0.030
	(0.959)		
ΔIO_DOM	-0.050	2,669	0.059
	(0.198)		
ΔIO_COMMON	-0.054**	2,669	0.069
	(0.025)		
ΔIO_CIVIL	0.004	2,669	0.025
	(0.839)		

Table 8
Individual Corporate Governance Attributes and Institutional Ownership

This table shows marginal effect estimates (evaluated at the sample mean) of probit panel regressions of individual corporate governance attributes on institutional ownership for non-U.S. firms from 2003 to 2008. The dependent variables are dummy variables that take the value of one (individual attributes in Gov_{41}) if: the board has more than 50% of independent directors (*BOARD_INDEP*, item 3); board size is at greater than five but less than 16 (*BOARD_SIZE*, item 4); the chairman and the CEO are separated or there is a lead director (*CHAIRMAN_CEO*, item 7); the board is annually elected (*NO_STAGGERED_BOARD*, item 12); the audit committee is composed solely of independent outsiders (*AUDIT_COMMIT_INDEP*, item 26); auditors are ratified at the most recent annual meeting (*AUDITORS_RATIFIED*, item 27); the firm has a single class of shares (*SINGLE_CLASS*, item 28). The main independent variables are ownership by foreign institutions (*IO_FOR*) and domestic institutions (*IO_DOM*). Refer to Appendix B for variables definition. All explanatory variables are lagged by one period. Regressions include the control variables (coefficients not shown) used in Table 4. Regressions also include industry, country, and year dummies. Robust p-values corrected for country-level clustering are reported in parentheses. *, **, *** reflects significance at the 10%, 5% and 1% levels.

Dependent Variable	*IO_FOR*	*IO_DOM*	Observations	Pseudo R-squared
BOARD_INDEP	0.278**	-0.121*	7,576	0.399
	(0.016)	(0.074)		
BOARD_SIZE	0.195***	-0.113*	7,394	0.095
	(0.004)	(0.097)		
CHAIRMAN_CEO	-0.143*	0.211*	7,325	0.730
	(0.073)	(0.083)		
NO_STAGGERED_BOARD	0.156**	-0.148***	6,828	0.426
	(0.038)	(0.000)		
AUDIT_COMMIT_INDEP	0.056	0.107	7,576	0.437
	(0.403)	(0.161)		
AUDITORS_RATIFIED	0.017	-0.040	7,538	0.672
	(0.774)	(0.641)		
SINGLE_CLASS	0.005	-0.041	4,991	0.384
	(0.828)	(0.207)		

Table 9
Probit Regression of CEO Turnover and Institutional Ownership

This table presents estimates of probit panel regressions of CEO turnover on abnormal stock returns and institutional ownership for non-U.S. firms from 2003 to 2008. The dependent variable is CEO turnover, which equals one if the CEO at the end of the year is different from the CEO at the end of the previous year, and zero otherwise. The main independent variables are total institutional ownership in the company (*IO_TOTAL*), ownership by foreign institutions (*IO_FOR*) and domestic institutions (*IO_DOM*), and annual abnormal stock return (stock return minus local stock market index return) in U.S. dollars (*ABNORMAL_RET*). The mean interaction effect (shown at the bottom of the table) is the marginal effect of a change in the predicted probability of CEO turnover for a change in both the abnormal stock return and the institutional ownership using the method described in Ai and Norton (2003). Refer to Appendix B for variables definition. All explanatory variables are lagged by one period. Regressions include country, industry, and year dummies. Robust p-values adjusted for country-level clustering are reported in parentheses. *, **, *** reflects significance at the 10%, 5% and 1% levels.

	(1)	(2)	(3)
IO_TOTAL	-0.436**		
	(0.044)		
IO_TOTAL × ABNORMAL RET	-0.866***		
	(0.000)		
IO_FOR		-0.195	
		(0.446)	
IO_FOR × ABNORMAL RET		-0.897**	
		(0.011)	
IO_DOM			-0.718***
			(0.000)
IO_DOM × ABNORMAL RET			-1.220***
			(0.000)
ABNORMAL_RET	-0.041	-0.137***	-0.090*
	(0.395)	(0.004)	(0.081)
SIZE	0.037***	0.036***	0.025***
	(0.000)	(0.007)	(0.001)
Observations	3,955	3,955	3,955
Pseudo R-squared	0.067	0.065	0.067
Mean Interaction Effect:			
IO_TOTAL × ABNORMAL RET	-0.189***		
	(0.000)		
IO_FOR × ABNORMAL RET		-0.211***	
		(0.000)	
IO_DOM × ABNORMAL RET			-0.261***
			(0.000)

Table 10
Firm Value and Institutional Ownership

This table shows estimates of panel regressions of Tobin's Q on institutional ownership for non-U.S. firms from 2003 to 2008. The dependent variable is the governance index (GOV_{41}). The main independent variables are total institutional ownership (*IO_TOTAL*), ownership by foreign institutions (*IO_FOR*) and domestic institutions (*IO_DOM*). Columns (1)-(4) of Panel A report estimates of pooled OLS regressions with country, industry, and year dummies and standard errors corrected for country-level clustering. Columns (5)-(8) report estimates of firm fixed-effects regressions with year dummies and standard errors corrected for firm-level clustering. Columns (9)-(12) report estimates of regressions of changes in Tobin's Q from t-1 to t on changes in institutional ownership from t-2 to t-1 with country, industry, and year dummies and standard errors corrected for country-level clustering. Refer to Appendix B for variables definition. All explanatory variables are lagged by one period. Robust p-values are reported in parentheses. *, **, *** reflects significance at the 10%, 5% and 1% levels.

	Pooled OLS				Firm Fixed Effects				Changes			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
IO_TOTAL	-0.151				0.381				0.792***			
	(0.151)				(0.224)				(0.006)			
IO_FOR		0.391**		0.442***		0.492**		0.395***		0.874***		0.445**
		(0.035)		(0.006)		(0.046)		(0.001)		(0.000)		(0.045)
IO_DOM			-0.533***	-0.724***			0.443	0.180			0.957**	0.697
			(0.001)	(0.000)			(0.341)	(0.673)			(0.024)	(0.122)
SIZE	-0.209***	-0.105***	-0.217***	-0.219***	-0.506**	-0.508**	-0.506**	-0.507**	-0.143	-0.148	-0.139	-0.143
	(0.000)	(0.001)	(0.000)	(0.000)	(0.027)	(0.027)	(0.026)	(0.026)	(0.420)	(0.402)	(0.423)	(0.412)
SGROWTH	0.339*	0.315	0.336*	0.329	0.503*	0.503*	0.505*	0.503*	0.333	0.326	0.334	0.334
	(0.094)	(0.113)	(0.097)	(0.101)	(0.053)	(0.052)	(0.053)	(0.053)	(0.109)	(0.106)	(0.109)	(0.108)
LEV	0.277	0.176	0.289*	0.301*	-0.196	-0.192	-0.203	-0.193	-0.770***	-0.764***	-0.785***	-0.771***
	(0.102)	(0.284)	(0.088)	(0.068)	(0.689)	(0.692)	(0.677)	(0.691)	(0.000)	(0.000)	(0.000)	(0.000)
CASH	1.841***	1.932***	1.812***	1.784***	1.263**	1.257**	1.265**	1.259**	1.093***	1.083***	1.105***	1.092***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.039)	(0.038)	(0.040)	(0.040)	(0.000)	(0.000)	(0.000)	(0.001)
CAPEX	1.707***	2.157***	1.701***	1.674***	-1.099	-1.111	-1.104	-1.112	-1.644	-1.729	-1.627	-1.666
	(0.000)	(0.000)	(0.000)	(0.000)	(0.241)	(0.242)	(0.237)	(0.241)	(0.141)	(0.135)	(0.136)	(0.131)
ROA	0.536	0.657	0.539	0.535	-0.748	-0.745	-0.753	-0.746	-1.040***	-1.021***	-1.054***	-1.054***
	(0.667)	(0.636)	(0.663)	(0.665)	(0.146)	(0.144)	(0.144)	(0.147)	(0.004)	(0.002)	(0.005)	(0.004)
R&D	2.236**	2.589**	2.257**	2.301**	-1.695	-1.674	-1.625	-1.686	-1.027	-1.041	-0.933	-1.012
	(0.028)	(0.018)	(0.028)	(0.024)	(0.215)	(0.201)	(0.239)	(0.207)	(0.386)	(0.395)	(0.437)	(0.406)
PPE	-0.212**	-0.297***	-0.220**	-0.233**	0.153	0.161	0.149	0.154	-0.201	-0.162	-0.203	-0.200
	(0.039)	(0.009)	(0.035)	(0.024)	(0.515)	(0.509)	(0.512)	(0.506)	(0.521)	(0.572)	(0.517)	(0.520)
FXSALE	-0.109	-0.127	-0.112	-0.129	0.142	0.145	0.146	0.144	-0.025	-0.012	-0.013	-0.016
	(0.266)	(0.154)	(0.230)	(0.185)	(0.638)	(0.639)	(0.632)	(0.638)	(0.832)	(0.915)	(0.915)	(0.896)
ANALYST	0.050***	0.050***	0.050***	0.048***	-0.006*	-0.005*	-0.005	-0.005*	-0.007**	-0.007**	-0.007**	-0.007**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.094)	(0.089)	(0.123)	(0.095)	(0.014)	(0.012)	(0.017)	(0.014)
CLOSE	0.171	0.034	0.167	0.187	-0.085	-0.085	-0.105	-0.089	-0.106	-0.110	-0.134	-0.121
	(0.228)	(0.743)	(0.241)	(0.166)	(0.552)	(0.533)	(0.419)	(0.501)	(0.240)	(0.214)	(0.117)	(0.167)
ADR	0.085	0.166**	0.075	0.038	-0.031	-0.037	-0.010	-0.032	-0.057	-0.039	-0.032	-0.041
	(0.432)	(0.039)	(0.477)	(0.707)	(0.799)	(0.774)	(0.935)	(0.802)	(0.313)	(0.493)	(0.554)	(0.478)
Observations	7,302	7,302	7,302	7,302	5,075	5,075	5,075	5,075	5,408	5,408	5,408	5,408
R-squared	0.186	0.186	0.188	0.189	0.677	0.677	0.676	0.677	0.075	0.071	0.073	0.074

Table 11
Corporate Governance and Institutional Ownership: Two-Stage Least Squares

This table shows estimates of two-stage least squares (2SLS) regressions using panel data for non-U.S. firms from 2003 to 2008. Panel A reports results of the second-stage regressions, where the dependent variable is the governance index (GOV_{41}). The main independent variables are total institutional ownership (*IO_TOTAL*) and ownership by foreign institutions (*IO_FOR*) and domestic institutions (*IO_DOM*). Total and domestic ownership are instrumented with a dividend payment dummy (IV(1)). Foreign ownership is instrumented with several sets of variables: MSCI dummy (IV(1)); MSCI dummy and dividend payment dummy (IV(2)); dividend payment dummy and share turnover (IV(3)); MSCI dummy, dividend payment dummy and turnover (IV(4)); and net dividend tax (IV(5)). Panel B reports results from the first-stage regressions. Refer to Appendix B for variable definitions. All explanatory variables are lagged by one period. Regressions include the control variables (coefficients not shown) used in Table 4. Regression specifications IV(1)-IV(4) include industry, country, and year dummies. Regression specification IV(5) includes industry and year dummies and country-level control variables (GDP per capita, common law dummy and stock market capitalization/GDP). Robust p-values corrected for firm-level clustering are reported in parentheses. *, **, *** reflects significance at the 10%, 5% and 1% levels.

Panel A: Second-Stage Regressions of Corporate Governance

	IV(1)			IV(2)		IV(3)		IV(4)		IV(5)
Dependent Variable					GOV_{41}					
IO_TOTAL	0.081									
	(0.221)									
IO_FOR		0.314***		0.312***	0.308***	0.395**	0.388**	0.279***	0.269***	0.434***
		(0.000)		(0.000)	(0.002)	(0.026)	(0.029)	(0.000)	(0.000)	(0.005)
IO_DOM			0.108		-0.007		-0.030		-0.022	
			(0.222)		(0.933)		(0.740)		(0.779)	
Observations	7,576	7,576	7,576	7,576	7,576	7,400	7,400	7,400	7,400	7,044
R-squared	0.720	0.616	0.718	0.618	0.623	0.548	0.565	0.645	0.656	0.412
Hansen overidentification test				0.007		0.105		0.991	0.905	
(p-value)				(0.934)		(0.746)		(0.609)	(0.341)	

Panel B: First-Stage Regressions of Institutional Ownership

	IV(1)			IV(2)	IV(3)	IV(4)	IV(5)
Dependent Variable	IO_TOTAL	IO_FOR	IO_DOM	IO_FOR	IO_FOR	IO_FOR	IO_FOR
DIV	0.043***		0.032***	0.011	0.015*	0.013	
	(0.000)		(0.000)	(0.181)	(0.072)	(0.117)	
MSCI		0.031***		0.031***		0.035***	
		(0.000)		(0.000)		(0.000)	
TURN					0.008**	0.006**	
					(0.017)	(0.044)	
TAX_DIV							-0.245***
							(0.000)
Observations	7,576	7,576	7,576	7,576	7,400	7,400	7,044
R-squared	0.327	0.264	0.354	0.265	0.271	0.280	0.233
F-test of instruments	13.01	27.71	15.05	13.93	3.79	13.27	25.15
(p-value)	(0.000)	(0.000)	(0.000)	(0.000)	(0.023)	(0.000)	(0.000)

Table 12
Corporate Governance and Alternative Measures of Institutional Ownership

This table shows estimates of panel regressions of corporate governance on institutional ownership for non-U.S. firms from 2003 to 2008. The dependent variable is the governance index (GOV_{41}). The main independent variables are foreign ownership by U.S. institutions (*IO_FOR_US*) and non-U.S. institutions (*IO_FOR_NUS*), ownership by independent institutions (*IO_IND*) and non-independent/grey institutions (*IO_GREY*). Columns (1)-(6) of Panel A report estimates of pooled OLS regressions with country, industry, and year dummies and standard errors corrected for country-level clustering. Columns (7)-(12) of Panel A report estimates of firm fixed effects regressions with year dummies and standard errors corrected for firm-level clustering. Panel B reports estimates of regressions of changes in corporate governance (ΔGOV_{41}) from t-1 to t on changes in institutional ownership from t-2 to t-1 with country, industry, and year dummies and standard errors corrected for country-level clustering. Refer to Appendix B for variables definition. All explanatory variables are lagged by one period. Regressions in Panel A (Panel B) include the control variables (coefficients not shown) used in Table 4 (Table 6). Robust p-values are reported in parentheses. *, **, *** reflects significance at the 10%, 5% and 1% levels.

Panel A: Levels Regressions

	Pooled OLS						Firm Fixed Effects					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
IO_FOR_US	0.045***		0.033***				0.032**		0.021			
	(0.000)		(0.005)				(0.020)		(0.243)			
IO_FOR_NUS		0.051***	0.037***					0.034**	0.025			
		(0.000)	(0.001)					(0.035)	(0.199)			
IO_IND				0.069***		0.052***				0.055***		0.054**
				(0.000)		(0.005)				(0.000)		(0.020)
IO_GREY					0.027***	0.011					0.018***	0.001
					(0.002)	(0.326)					(0.002)	(0.947)
Observations	7,576	7,576	7,576	7,576	7,576	7,576	5,186	5,186	5,186	5,186	5,186	5,186
R-squared	0.728	0.728	0.728	0.728	0.728	0.728	0.873	0.873	0.873	0.873	0.873	0.873

Panel B: Changes Regressions

	(1)	(2)	(3)	(4)	(5)	(6)
IO_FOR_US	0.020**		0.019*			
	(0.016)		(0.097)			
IO_FOR_NUS		0.011	0.003			
		(0.291)	(0.802)			
IO_IND				0.037**		0.026*
				(0.048)		(0.091)
IO_GREY					0.015*	0.007
					(0.080)	(0.373)
Observations	5,677	5,677	5,677	5,677	5,677	5,677
R-squared	0.204	0.203	0.204	0.204	0.204	0.205

Table 13
Corporate Governance and Institutional Ownership: U.S. Firms

This table shows estimates of panel data regressions of corporate governance on institutional ownership for U.S. firms from 2003 to 2008. The dependent variable is the governance index (GOV_{41}). The main independent variables are total institutional ownership in the company (*IO_TOTAL*), and ownership by foreign institutions (*IO_FOR*) and domestic institutions (*IO_DOM*). Columns (1)-(4) of Panel A report estimates of pooled OLS regressions with industry and year dummies and standard errors corrected for firm-level clustering. Columns (5)-(8) of Panel A report estimates of firm fixed effects regressions with year dummies and standard errors corrected for firm-level clustering. Panel B reports estimates of regressions of changes in corporate governance (ΔGOV_{41}) from t-1 to t on changes in institutional ownership from t-2 to t-1 with industry and year dummies and standard errors corrected for firm-level clustering. Refer to Appendix B for variables definition. All explanatory variables are lagged by one period. Regressions in Panel A (Panel B) include the control variables (coefficients not shown) used in Table 4 (Table 6). Robust p-values are reported in parentheses. *, **, *** reflects significance at the 10%, 5% and 1% levels.

Panel A: Levels Regressions

	Pooled OLS				Firm Fixed Effects			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
IO_TOTAL	0.033***				0.022***			
	(0.000)				(0.000)			
IO_FOR		0.051**		0.028		0.024*		0.019
		(0.019)		(0.124)		(0.077)		(0.176)
IO_DOM			0.033***	0.032***			0.024***	0.024***
			(0.000)	(0.000)			(0.000)	(0.000)
Observations	17,522	17,522	17,522	17,522	13,773	13,773	13,773	13,773
R-squared	0.430	0.424	0.430	0.430	0.902	0.901	0.902	0.902

Panel B: Changes Regressions

	(1)	(2)	(3)	(4)
IO_TOTAL	0.007**			
	(0.033)			
IO_FOR		0.008		0.006
		(0.381)		(0.484)
IO_DOM			0.008**	0.008**
			(0.028)	(0.032)
Observations	13,289	13,289	13,289	13,289
R-squared	0.092	0.091	0.092	0.092

Appendix A: Firm-Level Governance Attributes

This table presents the 41 governance attributes included in the governance index (GOV_{41}) organized into four subcategories: board, audit, anti-takeover provisions, and compensation and ownership. The data source is RiskMetrics.

	Panel A: Board
1	All directors attended 75% of board meetings or had a valid excuse
2	CEO serves on the boards of two or fewer public companies
3	Board is controlled by more than 50% independent outside directors
4	Board size is at greater than five but less than sixteen
5	CEO is not listed as having a related-party transaction
6	Compensation committee composed solely of independent outsiders
7	Chairman and CEO positions are separated, or there is a lead director
8	Nominating committee composed solely of independent outsiders
9	Governance committee exists and met in the past year
10	Shareholders vote on directors selected to fill vacancies
11	Governance guidelines are publicly disclosed
12	Annually elected board (no staggered board)
13	Policy exists on outside directorships (four or fewer boards is the limit)
14	Shareholders have cumulative voting rights
15	Shareholder approval is required to increase/decrease board size
16	Majority vote requirement to amend charter/bylaws (not supermajority)
17	Board has the express authority to hire its own advisers
18	Performance of the board is reviewed regularly
19	Board-approved succession plan in place for the CEO
20	Outside directors meet without CEO and disclose number of times met
21	Directors are required to submit resignation upon a change in job
22	Board cannot amend bylaws without shareholder approval or can do so only under limited circumstances
23	Does not ignore shareholder proposal
24	Qualifies for proxy contest defenses combination points
	Panel B: Audit
25	Consulting fees paid to auditors are less than audit fees paid to auditors
26	Audit committee composed solely of independent outsiders
27	Auditors ratified at most recent annual meeting
	Panel C: Anti-Takeover Provisions
28	Single class, common
29	Majority vote requirement to approve mergers (not supermajority)
30	Shareholders may call special meetings
31	Shareholders may act by written consent
32	Company either has no poison pill or a pill that is shareholder approved.
33	Company is not authorized to issue blank check preferred
	Panel D: Compensation and Ownership
34	Directors are subject to stock ownership requirements
35	Executives are subject to stock ownership guidelines
36	No interlocks among compensation committee members
37	Directors receive all or a portion of their fees in stock
38	All stock-incentive plans adopted with shareholder approval
39	Options grants align with company performance and reasonable burn rate
40	Officers' and directors' stock ownership is at least 1% but not over 30% of total shares outstanding
41	Repricing prohibited

Appendix B: Variables Definitions

Variable		Definition
Total institutional ownership	*IO_TOTAL*	Holdings (end-of-year) by all institutions as a fraction of market capitalization (FactSet/LionShares).
Foreign institutional ownership	*IO_FOR*	Holdings (end-of-year) by institutions located in a different country from the where the stock is listed as a fraction of market capitalization (FactSet/LionShares).
Domestic institutional ownership	*IO_DOM*	Holdings (end-of-year) by institutions located in the same country where the stock is listed as a fraction of market capitalization (FactSet/LionShares).
Common-law institutional ownership	*IO_COMMON*	Holdings (end-of-year) by institutions located in common-law countries as a fraction of market capitalization (FactSet/LionShares).
Civil-law institutional ownership	*IO_CIVIL*	Holdings (end-of-year) by institutions located in civil-law countries as a fraction of market capitalization (FactSet/LionShares).
U.S. foreign institutional ownership	*IO_FOR_US*	Holdings (end-of-year) by U.S. institutions as a fraction of market capitalization (FactSet/LionShares).
Non-U.S. foreign institutional ownership	*IO_FOR_NUS*	Holdings (end-of-year) by non-U.S. institutions as a fraction of market capitalization (FactSet/LionShares).
Independent institutional ownership	*IO_IND*	Institutional ownership by independent institutions (mutual funds and independent investment advisers) as a fraction of market capitalization (FactSet/LionShares).
Grey institutional ownership	*IO_GREY*	Institutional ownership by grey institutions (bank trusts, insurance companies, and other institutions) as a fraction of market capitalization (FactSet/LionShares).
Firm size	*SIZE*	Log of total assets in thousands of U.S. dollars (WS item 02999).
Sales growth	*SGROWTH*	Two-year geometric average of annual growth rate in net sales in U.S. dollars (WS item 01001).
Leverage	*LEV*	Total debt (WS item 03255) divided by total assets (WS item 02999).
Cash	*CASH*	Cash and short term investments (WS item 02001) divided by total assets (WS item 02999).
Capital expenditures	*CAPEX*	Capital expenditures (WS item 04601) divided by total assets (WS item 02999).
Market-to-book	*MB*	Market value of equity (WS item 08001) divided by book value of equity (WS item 03501).
Return on assets	*ROA*	Ratio of net income before extraordinary items (WS item 01551) plus interest expenses (WS item 01151) to total assets (WS item 02999).
Research & development expenditures	*R&D*	Research and development expenditures (WS item 01201) divided by total assets (WS item 02999).
Property, plant and equipment	*PPE*	Property, plant and equipment (WS item 02501) divided by total assets (WS item 02999).
Foreign sales	*FXSALE*	International annual net sales (WS item 07101) as a proportion of net sales (WS item 01001).
Analyst coverage	*ANALYST*	Number of analysts following a firm (IBES).

Variable		Definition
Insider ownership	*CLOSE*	Number of shares held by insiders (shareholders who hold 5% or more of the outstanding shares, such as officers and directors and immediate families, other corporations or individuals), as a fraction of the number of shares outstanding (WS item 08021).
Cross-listing dummy	*ADR*	Dummy that equals one if a firm is cross-listed on a U.S. exchange through a level 2-3 ADR or direct listing of ordinary shares, and zero otherwise (major depository institutions and U.S. stock exchanges).
Abnormal stock return	*ABNORMAL_RET*	Annual stock return minus the return on the stock market index (in U.S. dollars) of the country where the firm is listed (DS item RI).
Tobin's Q	*Q*	Total assets (WS item 02999) plus market value of equity (WS item 08001) minus book value of equity (WS item 03501) divided by total assets (WS item 02999).
Dividend payment dummy	*DIV*	Dummy that equals one if cash dividends (WS item 04551) are positive, zero otherwise.
MSCI dummy	*MSCI*	Dummy that equals one if a firm is a member of the MSCI All Country World Index, and zero otherwise.
Turnover	*TURN*	Share volume (DS item VO) divided by adjusted shares outstanding (DS item NOSH/AF).
Net dividend tax	*TAX_DIV*	Top marginal statutory personal income-tax rate imposed on dividend income after taking imputation systems, tax credits, and tax allowances into account (OECD).