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The colors of investors' money: The role of institutional investors around the world ☆

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Abstract

We study the role of institutional investors around the world using a comprehensive data set of equity holdings from 27 countries. We find that all institutional investors have a strong preference for the stock of large firms and firms with good governance, while foreign institutions tend to overweight firms that are cross-listed in the U.S. and members of the Morgan Stanley Capital International World Index. Firms with higher ownership by foreign and independent institutions have higher firm valuations, better operating performance, and lower capital expenditures. Our results indicate that foreign and independent institutions, with potentially fewer business ties to firms, are involved in monitoring corporations worldwide.

JEL classification: G15; G24; G32; G34

Keywords: Institutional investors; Firm value; International capital markets; Monitoring

1. Introduction

A key factor in global capital markets is the fast growing importance of institutional investors. According to the International Monetary Fund (2005) (IMF), these professional investors manage financial assets exceeding US$45 trillion (including over US$20 trillion in equities). Assets under management of institutions have tripled since the early 1990s. Further, institutional investors are major players not just in developed markets; their role is rapidly growing in emerging market countries (see Khorana, Servaes, and Tufano, 2005).

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In this paper we examine what drives institutional investors to firms and what role these investors play. Gillan and Starks (2003) posit that the rise of professional money managers as a large shareholder group in corporations worldwide offers the potential for increased monitoring of firm management. Institutions' involvement can range from threatening the sale of shares to the active use of corporate voting rights or meetings with management.[1] We are interested in whether these large investors are effective in influencing corporate management and boards towards creating shareholder value. But there are reasons to expect that not all money managers are equally equipped or motivated to be active monitors. Foreign and more independent institutions are many times credited with taking a more active stance, while other institutions that have business relations with local corporations may feel compelled to be loyal to management. For example, Fidelity is reported to be more aggressive on governance issues in Europe, but it is relatively acquiescent in the U.S. where it manages several corporate pension accounts (Business Week, 2006; Davis and Kim, 2006). Further, several empirical studies suggest that independent investment advisers and mutual funds are active monitors (Brickley, Lease, and Smith, 1988; Almazan, Hartzell, and Starks, 2005; Chen, Harford, and Li, 2007).

There is little evidence on the monitoring role of institutional investors outside the U.S., so we offer a first exploration of this issue. Toward this end, we use a new comprehensive database of institutional stock holdings worldwide. The data set contains holdings at the stock-investor level of over 5,300 institutions in 27 countries, with positions totaling US$ 18 trillion as of December 2005. Thus, the institutional ownership data used in this paper represent nearly 40% of the world stock market capitalization.

For a better understanding of the role of institutional investors worldwide, we focus on non-U.S. firms in which institutions hold US$ 5.2 trillion.[2] These institutional investors, depending on their geographic origin, could be a U.S.-based mutual fund manager (like Fidelity), a non-U.S.-based pension or endowment fund (like Norway's State Petroleum Fund), or a domestic bank trust or insurance company (like BNP Paribas and AXA in France). Overall, U.S.-based institutions hold more than US$ 2 trillion overseas in non-U.S. stocks. This is matched by US$ 1.7 trillion held by non-U.S. foreign institutions and US$ 1.5 trillion by domestic institutions. Thus, while most research to date looks at U.S. institutions as the primary source of capital, we find that the three groups of professional investors worldwide have similar pools of capital.

We start by exploring the revealed stock preferences of these three different institutional investor clienteles (U.S., non-U.S. foreign, and domestic money managers), and investigating which firm- and country-level characteristics attract a particular group. Our results reveal preferences when investing at home, much like those that U.S. institutions exhibit in U.S. markets (Gompers and Metrick, 2001), but money managers exhibit specific preferences when investing abroad.

First, we find that all institutional investors, whatever their geographic origin, share a preference for the stock of large and widely held firms (i.e., companies without large controlling blockholders), of firms in countries with strong disclosure standards, and of firms located physically near their home market. Second, foreign and domestic institutional investors diverge in some stock preferences. Foreign institutional investors have a strong bias for firms in the Morgan Stanley Capital International (MSCI) World Index, firms that are cross-listed on a U.S. exchange, and firms that have external visibility through high foreign sales and analyst coverage. Domestic institutions underweight these same stocks. Foreign institutions also tend to avoid high dividend-paying stocks. Third, U.S. institutions diverge from non-U.S. foreign institutions in their preference for value over growth stocks, and a tendency to hold stocks in English-speaking countries and emerging markets. Thus, there is generally substantial diversity in the revealed stock preferences of various groups of institutional investors depending on their geographic origin.

Another dimension of investor diversity is institution type. We can characterize professional money managers as being of different "colors" in terms of their ability to actively monitor managers' decisions. Because of potential business ties with the firms in which they invest, not all money managers act as

[1]For analyses of the effects of selling shares on corporate governance, see Admati and Pfleiderer (2006) and Parrino, Sias, and Starks (2003). For surveys of shareholder activism, see Black (1999), Karpoff (2001), and Gillan and Starks (2007).

[2]We focus on non-U.S. firms for three reasons: (1) most existent institutional investor studies examine only U.S. firms (e.g., Gompers and Metrick, 2001); (2) most international corporate governance studies focus on non-U.S. firms (e.g., Doidge, Karolyi, and Stulz, 2004); and (3) results are not affected by the fact that the number of U.S. firms is much larger than that of any other country. We describe later in the paper some of the results for the sample of U.S. firms.

independent shareholders whose only consideration is shareholder value maximization. Following Brickley, Lease, and Smith (1988), Almazan, Hartzell, and Starks (2005), and Chen, Harford, and Li (2007), we divide institutions into two groups: independent institutions (mutual fund managers and investment advisers) and grey institutions (bank trusts, insurance companies, and other institutions). Independent institutions tend to be "pressure-resistant," while grey institutions tend to be "pressure-sensitive" or loyal to corporate management. For example, following Brickley, Lease, and Smith (1988), find that banks and insurance companies are more supportive of management actions than other types of institutional investors in antitakeover amendment proposals.

Using this classification, we first examine similarities and differences in investment preferences that may arise out of distinct investment mandates and objectives. We find that both types of institutions share a preference for large, widely held, and visible stocks consistent with findings in the U.S. market (Bennett, Sias, and Starks, 2003). The results also show that independent managers invest more in firms with liquid stock and firms in countries with strong legal environments, compared to grey managers (especially bank-controlled ones).

Next, we examine which colors of investors matter in terms of monitoring and influencing management decisions. We investigate whether there are effects of institutional ownership on firm performance, particularly for different groups of institutions. Monitoring is usually considered to cost less for independent than for grey institutions, because the latter have a disadvantage in pressuring corporate managers for changes, as this may harm their business relationships with the firm (Chen, Harford, and Li, 2007). Similarly, foreign institutional investors are often believed to play more of a role in prompting changes in corporate governance practices than domestic money managers (Gillan and Starks, 2003).

We conjecture that the presence of foreign and independent institutions with large stakes has the potential to enhance firm value through direct or indirect monitoring. By direct monitoring we mean the direct intervention of institutions in voicing the interest of shareholders to corporate management (e.g., in proxy contests). By indirect monitoring we mean the effect of institutions on firm valuation if they act as a group to divest their investment in a company, thereby pushing up its cost of capital. As an alternative hypothesis, the valuation gains associated with the presence of foreign and independent institutions can be transitory (rather than permanent), which is consistent with overvaluation or market timing. Recent work by Gozzi, Levine, and Schmukler (2006) and Sarkissian and Schill (2006) suggest that firms that access international markets have transitory valuation gains.

To test these monitoring effects, we regress Tobin's Q ratios of our global sample of firms on firm-, industry-, and country-level variables (as in Lins, 2003; Doidge, Karolyi, and Stulz, 2004), and also add the fraction of shares held by different groups of institutional investors. We find that ownership by foreign and independent institutions has a significantly positive impact on firm valuation, unlike ownership by domestic and grey institutions. Because institutional ownership is likely to be jointly determined by firms' Tobin's Q ratios and driven by other firm characteristics (as revealed by our tests on investor preferences), we re-estimate the Tobin's Q and institutional ownership equations as a system of simultaneous equations. We find consistent evidence of a strong positive relation between firm value and foreign and independent institutional ownership. No similar result obtains for domestic and grey investors.

To differentiate monitoring effects and overvaluation effects, we assess whether foreign and independent institutional ownership have a positive influence on a firm's operating performance and investment policy as well. We find a positive association of foreign and independent institutional ownership with return on assets (ROA) and net profit margin (NPM). Furthermore, we find that the presence of foreign and independent institutions also reduces capital expenditures ($CAPEX$), thereby suggesting that institutional investor pressure curtails a manager's incentives to (over)invest. Substantiating the monitoring interpretation of our findings, there is no similar relation between ownership by domestic and grey institutions and firm performance.

We contribute to the literature on corporate governance around the world in speaking to the debate on whether institutional investors' monitoring and activism are effective. For the U.S., the evidence so far is somewhat mixed. Parrino, Sias, and Starks (2003) find that institutional selling influences the decision of the board of directors to fire a CEO, while Gillan and Starks (2003) find typically modest stock price reactions to shareholder proposals by activist institutions. Other studies show that certain types of institutional investors

have some influence on specific corporate events such as antitakeover amendments (Brickley, Lease, and Smith, 1988), research and development expenditures (Bushee, 1998), executive compensation (Almazan, Hartzell, and Starks, 2005), and merger and acquisition decisions (Gaspar, Massa, and Matos, 2005; Chen, Harford, and Li, 2007).

Our study of the effects of the colors of the firm's shareholder base in an international capital markets setting is an important contribution to the literature. Other papers analyze firms' cost of capital and how it is potentially reduced by a larger investor base (Merton, 1987; Foerster and Karolyi, 1999) and by cross-listing shares in the U.S. as a bonding mechanism (Doidge, Karolyi, and Stulz, 2004; Doidge, Karolyi, and Stulz, 2007b). These authors document a positive valuation effect associated with cross-listing on a U.S. exchange. Our results go one step further to offer a direct link between foreign and independent institutional shareholder presence and firm performance because of the monitoring role these institutions serve. We interpret this positive valuation effect as a form of reputational bonding (Coffee, 2002; Stulz, 1999) that arises from the presence of highly reputable institutions as large shareholders, rather than the legal bonding associated with a U.S. cross-listing.[3]

We use a more comprehensive data set than other studies of the revealed preferences of institutional investors: domestic and foreign ownership in a single-destination country (the U.S. as in Gompers and Metrick, 2001; Japan as in Kang and Stulz, 1997; or Sweden as in Dahlquist and Robertsson, 2001); foreign holdings by investors from one single country (U.S. investors as in Aggarwal, Klapper, and Wysocki, 2005; Ammer, Holland, Smith, and Warnock, 2005; Leuz, Lins, and Warnock, 2005); country-level institutional holdings or blockholdings (Chan, Covrig, and Ng, 2005; Li, Moshirian, Pham, and Zein, 2006); holdings from just one class of institutions (mutual funds as in Covrig, Lau, and Ng, 2006); or holdings for a single year. There are, of course, challenges with our data, which we also discuss.

The remainder of the paper is organized as follows. Section 2 presents the institutional holdings data, the sample of firms, and other variables. In Section 3, we conduct our tests to determine which firm and country characteristics attract institutional investors. Section 4 studies the valuation effects of different groups of institutions, and also their impact on operating performance and capital budgeting decisions. Section 5 concludes and discusses the implications of our work.

2. Data description

2.1. Institutional investors holdings data

The stock holdings data are drawn from the FactSet/LionShares database, which is a leading information source for global institutional ownership.[4] Institutions, which are defined as professional money managers with discretionary control over assets (such as mutual funds, pension funds, bank trusts, and insurance companies), are frequently required to disclose publicly their holdings.

For equities traded in the U.S., FactSet/LionShares gathers institutional holdings from the mandatory quarterly 13F filings with the Securities and Exchange Commission (SEC) as well as by rolling up the holdings by individual mutual funds (N-30D filings with the SEC) managed by a particular fund management company. For equities traded outside the U.S., FactSet/LionShares collects ownership data directly from sources such as national regulatory agencies or stock exchange announcements (e.g., the Regulatory News Service in the U.K.), local and offshore mutual funds, mutual fund industry directories (e.g., European Fund Industry Directory), and company proxies and annual reports.

We use the historical filings of the FactSet/LionShares database from January 2000 through December 2005. We consider all types of stock holdings: ordinary shares, preferred shares, American Depositary Receipts (ADR), Global Depositary Receipts (GDR), and dual listings. We handle the issue of different

[3]Licht (2003) and Siegel (2005) claim that U.S. enforcement is not fully effective in the case of non-U.S. firms that list on a U.S. exchange, but the voluntary disclosure that results from cross-listing allows firms to bond themselves by building their reputation.

[4]FactSet/LionShares data feed financial information providers such as Reuters and the Wall Street Journal. The Bank of New York (www.adrbny.com) and J.P. Morgan (www.adr.com) rely on these data to report institutional holdings of ADRs.

reporting frequency by institutions from different countries by getting the latest holdings update at each year-end.[5] The data cover institutions located in 27 different countries (K) and stock holdings from 48 destination countries' stock markets (J).[6] This data set offers a unique worldwide $K \times J$ set of panel data (when aggregated at the country level) for each year over the 2000–2005 period. FactSet/LionShares provides holdings data for 5,337 different institutions in over 35,000 stocks worldwide, for a total market value of US$ 18 trillion as of December 2005.

Table A1 in Appendix A presents equity assets held by institutions domiciled in each country at the end of each year. U.S.-based institutions are by far the largest group of professional managers of equity assets. Table A1 shows the top five institutions by equity assets under management per country as of December 2005. Some of the leading institutions are fund families such as Barclays Global Investors, Capital Research and Management, and Vanguard in the U.S. Other institutions are divisions of banks (e.g., Dresdner Bank in Germany, Credit Agricole in France, UBS in Switzerland), insurance companies (e.g., AXA in France), and pension funds (e.g., Canada Pension Plan, or Norway's State Petroleum Fund managed by Norges Bank).

Table A2 presents the data in matrix form to summarize the holdings by country of origin of the institution (rows) and the destination stock market country (columns). Institutions covered by FactSet/LionShares manage a total of US$ 18 trillion of equity assets, of which US$ 5.2 trillion represents holdings in non-U.S. stocks in December 2005 (i.e., excluding the first column in the matrix—the U.S. as destination market). Focusing on all non-U.S. destination stock markets, we find that domestic institutional investors with a market value of holdings of US$ 1.5 trillion (the sum of the diagonal elements of the matrix) are nearly on an equal footing with U.S. institutions that hold US$ 2 trillion (the sum of the elements in the first row of the matrix) and non-U.S. foreign institutions with US$ 1.7 trillion (the sum of the off-diagonal elements). Thus, in aggregate, non-U.S. firms across the world attract money from three institutional investor clienteles with similar pools of assets.

Panel A of Table A3 shows the fraction of each country's stock market capitalization that was held by institutions in December 2005. Overall, according to FactSet/LionShares, institutional stock ownership accounts for 38.5% of world stock market capitalization. As expected, institutional ownership is highest in the U.S., but global institutional portfolio managers also hold large fractions of stock markets in countries such as Canada and Sweden. But not all stock issued by corporations can be held by institutions, as a significant fraction is closely held by large shareholders in some countries (Dahlquist, Pinkowitz, Stulz, and Williamson, 2003). Panel B of Table A3. shows that institutional stock ownership accounts for 49.9% of the world stock market float (market capitalization times one minus the percentage of closely held shares).

To our knowledge, FactSet/LionShares data have been used only by Li, Moshirian, Pham, and Zein (2006). However, in that study, the authors study only the determinants of institutional blockholdings (stakes greater than 5%) at the country level using a single year. To better understand both the comprehensiveness and the limitations of the FactSet/LionShares data coverage, we perform some comparisons using country-level aggregate statistics and alternative data sets.

First, the market value of equity holdings of US$ 18 trillion reported by FactSet/LionShares is somewhat lower than the total value of US$ 20 trillion reported in IMF statistics.[7] But FactSet/LionShares aggregate holdings are well above the holdings of the mutual funds segment as in Khorana, Servaes, and Tufano (2005) and Chan, Covrig, and Ng (2005). There are exceptions, however, as in the case of Japan and other Asian countries where the FactSet/LionShares coverage seems to be better for mutual funds than for

[5]Reporting requirements vary across the world in terms of the minimum value of assets under management. Reporting frequencies also vary across countries in our data set: quarterly (ES, FR, SE, US), semi-annual (AT, AU, BE, CA, DE, DK, FI, GR, HK, IE, LI, LU, NL, NO, PT, UK, ZA), and annual (JP, IT). For example, there is a European Union Directive (UCITS III) that requires investment companies to disclose their portfolio holdings at least semi-annually. The correspondence between country codes and names can be found in Table A1. We restrict our analysis to year-end institutional holdings, rather than quarterly, for consistency across countries.

[6]For a group of 21 countries (examples are Argentina, Brazil, China, and Czech Republic), LionShares/FactSet does not have institutional holdings coverage but does have holdings of foreign institutions in local stocks. We keep these stock positions in our tests, but our main results do not change if we restrict the sample to the 27 countries for which both domestic and foreign institutions' coverage is available.

[7]To calculate the IMF total equity holdings, we multiply assets under management by the aggregate equity allocation per investor type (insurance companies, pension funds, investment companies, and other) available for the major industrial countries.

other institutions such as pension funds, so the overall equity holdings are somewhat underestimated in our study.[8]

Second, we analyze how representative FactSet/LionShares cross-border equity holdings are relative to aggregate statistics on cross-border equity holdings. The Coordinated Portfolio Investment Survey (CPIS) conducted by the IMF provides the most comprehensive aggregate information on cross-border holdings, but includes equity holdings for all types of investors, institutional and retail alike. CPIS reports a total of US$ 2.6 trillion invested by U.S. investors overseas in non-U.S. firms versus US$ 4 trillion invested by other foreign non-U.S. investors in non-U.S. firms in 2004. The equivalent values in FactSet/LionShares are somewhat lower: US$ 2 trillion for U.S. investors, and US$ 1.7 trillion for non-U.S. foreign investors in non-U.S. firms (see Table A2), which can be explained by the fact that FactSet/LionShares covers only the institutional segment. Also, given that institutions have a greater presence in the U.S. than in other countries, the FactSet/LionShares data reveal a U.S. bias.[9]

Third, Panel C of Table A3 presents the domestic bias implicit in the FactSet/LionShares institutional holdings by country. The domestic bias (calculated as the logarithm of the ratio of the percentage invested domestically by institutions to the market weight of the domestic stock market in the world market) reported by FactSet/LionShares is close to the bias implied by the CPIS and Chan, Covrig, and Ng (2005). For example, for U.S. investors, the domestic bias is 71.7% in FactSet/LionShares, close to the 70.5% for all U.S. investors in CPIS and 60.3% in Chan, Covrig, and Ng (2005).

2.2. Institutional ownership measures

We first define total institutional ownership (*IO_TOTAL*) as the sum of the holdings of all institutions in a firm's stock divided by market capitalization at the end of each calendar year. We sum institutional positions in local and ADR shares. Following Gompers and Metrick (2001), we set institutional ownership variables to zero if a stock is not held by any institution in FactSet/LionShares.[10]

We consider first the colors of institutional ownership according to the geographic origin of the institution:

- Domestic Institutional Ownership (*IO_DOMESTIC*): Sum of the holdings of all institutions domiciled in the same country in which the stock is issued as a percentage of market capitalization.
- Foreign Institutional Ownership (*IO_FOREIGN*): Sum of the holdings of all institutions domiciled in a country different from the country the stock is issued in as a percentage of market capitalization. We split foreign institutional ownership into the percentage of shares held by U.S. domiciled institutions (*IO_FOREIGN_US*) and non-U.S. (foreign) domiciled institutions (*IO_FOREIGN_NUS*).

We also consider the colors of institutional ownership according to the institution type. Following Chen, Harford, and Li (2007), we classify institutions according to the potential for business ties to a corporation as independent versus grey institutions[11]:

[8]Although we do not focus on U.S. stocks in our analysis, we also compare our data with the aggregate 13-F holdings for U.S. stocks from Thomson Financial Services (TFS, formerly CDA/Spectrum). The TFS holdings number of US$ 11.6 trillion in December 2005 matches almost exactly the first element in the matrix of Table A2.

[9]With respect to U.S. data, there are additional sources to compare the FactSet/LionShares holdings against. A survey of U.S. Treasury statistics based on reports from U.S. custodians estimates that U.S. investors held $2.6 trillion in non-U.S. stocks in 2004 (similar to CPIS). The FactSet/LionShares covers only the institutional segment, so the equivalent figure in our data is US$ 2 trillion for U.S. institutional holdings overseas. Additionally, data from the Federal Reserve Board's Flow of Funds indicate that foreign investors held $1.9 trillion in U.S. stocks in 2004. The equivalent figure in the FactSet/LionShares is $1.2 trillion (see the first column of the matrix in Table A2) as it covers only institutional (and not all) foreign investors.

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

[11]Naturally, the reader should be cautioned that relying on institutional categories to classify institutions on their activism is not perfect: (1) an institution is assigned to the institutional category where it has the largest fraction of its assets under management, though it may manage simultaneously several investment vehicles—such as bank trusts and mutual funds; (2) there are cross-country differences between definitions of institutional categories; and (3) there may be "shades of grey" in the demarcation of activism among institutions such as bank trusts and mutual funds.

- Independent Institutional Ownership (*IO_INDEP*): Percentage of shares held by mutual fund managers and investment advisers. These institutions are more likely to collect information and face less regulatory restrictions or have fewer potential business relationships with the corporations they invest in. We anticipate this group to 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*): 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, one can think of these groups of institutions as having higher monitoring costs. We anticipate this group to be more loyal to corporate management and thus to hold shares without reacting to management actions that are not in line 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."

Using these institutional ownership variables we explore the colors of investors (geographic or institutional type) in terms of their willingness to be more or less active in monitoring manager actions. We expect foreign and independent institutions to be better equipped to play a monitoring role or to take more activist stances.

Table A3 offers aggregate statistics of institutional ownership by stock market. We can see that in most markets outside the U.S., foreign institutional holdings exceed those of domestic money managers. The presence of independent versus grey investors varies across countries. For example, foreign institutions matter more in France, while in Sweden domestic money managers hold a higher fraction of the market. The holdings of independent and grey managers are equally matched in both countries.

For some insight into our institutional ownership measures consider the cases of the largest French (Total SA) and Swedish (Ericsson Telefon AB) companies in December 2005 and their top ten institutional investors:

Total SA				Ericsson Telefon AB			
Market capitalization = US$154 billion				Market capitalization = US$51 billion			
Total institutional ownership = 48.4%				Total institutional ownership = 43.6%			
Domestic = 11.5%, Foreign = 36.8% (US = 14.6%)				Domestic = 19.9%, Foreign = 23.8% (US = 11.3%)			
Independent = 26.7%, Grey = 21.4%				Independent = 22.0%, Grey = 21.3%			
Top 10 Institutions:				Top 10 Institutions:			
Name (country code)	Type	Hold	Shares	Name (country code)	Type	Hold	Shares
Ecureuil Gestion (FR)	Inv Adv	1.9%	Local	Robur Fonder (SE)	Mut Fund	2.7%	Local
Fidelity (US)	Inv Adv	1.8%	ADR	Handelsbanken (SE)	Bank Tr	2.5%	Local
Crédit Agricole Mg (FR)	Bank Tr	1.8%	Local	NLocalea Inv Mg (SE)	Inv Adv	1.8%	Local
IXIS Asset (FR)	Mut Fund	1.7%	Local	Alecta Pensions (SE)	Pen Fund	1.6%	Local
Wellington (US)	Mut Fund	1.2%	ADR	SEB Invest. Mg (SE)	Mut Fund	1.5%	Local
Capital Res & Mg (US)	Inv Adv	1.1%	Local	Fjärde AP-fonden (SE)	Pen Fund	1.4%	Local
Deka Investment (DE)	Bank Tr	0.8%	Local	Oppenheimer Funds (US)	Inv Adv	1.3%	Local
BNP Paribas Mg (FR)	Bank Tr	0.7%	Local	Första AP-fonden (SE)	Pen Fund	1.2%	Local
Fidelity Inv Intl (UK)	Mut Fund	0.7%	Local	Andra AP-fonden (SE)	Pen Fund	1.1%	Local
UBS Global Mg (CH)	Bank Tr	0.7%	Local	Fidelity Mg (US)	Inv Adv	1.0%	ADR

We can see in this example that foreign investors are relatively more present in Total SA than in Ericsson AB, although these companies list domestic (Ecureuil Gestion or Robur Fonder), U.S. (Fidelity), and foreign non-U.S. institutions (Deka Investment and UBS Global Mg) among their leading shareholders.

Also, investors choose local shares or ADRs differently, even among U.S. institutions (like Fidelity versus Capital Research Management). Additionally, we can see that independent and grey institutions are equally important in Total SA and Ericsson Telefon AB.

2.3. Sample construction and summary statistics

The initial sample includes all firms in the Datastream/WorldScope (DS/WS) database excluding financial firms (SIC codes 6000-6999) for the years 2000 through 2005. We combine this sample of firms with the institutional holdings data from FactSet/LionShares at the end of each year using SEDOL codes (only for non-U.S. firms), CUSIP codes (only for U.S. firms), and ISIN codes. The firm-level stock market and financial data are drawn from DS/WS. We use several data sources to determine which non-U.S. firms are cross-listed in the U.S., when they initiated and ended the listing, and the type of listing (exchange-listed or non-exchange-listed).[12] The final sample includes 11,224 unique non-U.S. firms, for a total of 38,064 firm-year observations for which we have data for the main variables of interest. Table B1 in Appendix B details the definitions and data sources for all variables. Table 1 provides summary statistics on institutional ownership variables and firm- and country-level control variables (we winsorize financial ratios such as return on equity and leverage at the bottom and top 1% levels).

Average total institutional ownership by domestic institutions is 7.4% for non-U.S. firms but this is an equally weighted average, and institutional ownership is higher among large firms (in the last row of Panel A of Table A3, we can see that the value-weighted institutional ownership for the sample of non-U.S. firms is 19.1%). Furthermore, as discussed earlier, when we correct for shares that are closely held, total institutional ownership is 27.9% of market float (Panel B of Table A3). When we categorize total institutional ownership by the institution's geographic origin, we find that average (equal-weighted) domestic institutional ownership (3.8%) and foreign institutional ownership (3.6%) are similar. When we categorize total institutional ownership by institution type, we can see that ownership by independent institutions (5.0%) is greater, on average, than by grey institutions (2.4%).

The average non-U.S. firm in the sample has a market capitalization of US$ 157 million, 14.9% are MSCI index members, and 3.9% are cross-listed on a U.S. exchange. About 27% of the observations are from English-speaking countries.

3. Determinants of institutional ownership

We investigate the determinants of institutional ownership worldwide, in particular, the fraction held by different institution groups. We first examine the preferences of domestic versus foreign institutions. We then examine the preferences of independent versus grey institutions. Finally, we conduct several robustness checks and consider extensions of our primary results.

3.1. What attracts foreign and domestic institutions?

We start by examining which firm- and country-level characteristics drive foreign versus domestic institutional ownership in non-U.S. firms. Table 2 presents the estimates of the institutional ownership panel regressions: total, foreign (divided into U.S.-based and non-U.S.-based), and domestic. We estimate two specifications: (1) one with firm- and country-level variables; and (2) one with firm-level variables and country fixed effects.[13] For total institutional ownership, we also run a first specification in Table 2 with only firm-level variables. This specification exhibits a high R^2, suggesting that firm-level characteristics explain a considerable

[12]Data on non-U.S. firms listing in the U.S. market (Level 2 and 3 ADRs, over-the-counter, and Rule 144a private placements) are obtained from the major depository institutions, Citibank, Bank of New York, JP Morgan, and Deutsche Bank. We add to this information data collected directly from the stock exchanges on the ordinary listings of non-U.S. firms (including Canadian and Israeli firms that list directly on the U.S. exchanges).

[13]Following Petersen (2007), the standard errors of these panel data regressions are adjusted for clustering at the firm level and include year dummies to account for residual correlation across years for a given firm (time-series dependence) and residual correlation across firms in a given year (cross-sectional dependence).

Table 1
Summary statistics
This table reports mean, median, standard deviation, minimum, maximum, and number of observations (*N*) of variables for the sample of non-U.S. firms. All variables are as defined in Table B1 in Appendix B. The sample period is from 2000 to 2005. Financial firms are omitted (SIC 6000–6999).

		Mean	Median	Std Dev	Min	Max	*N*
Panel A: Institutional ownership variables							
Total institutions	*IO_TOTAL*	0.074	0.015	0.126	0.000	1.000	38,064
Foreign institutions	*IO_FOREIGN*	0.036	0.004	0.079	0.000	1.000	38,064
Foreign U.S. institutions	*IO_FOREIGN_US*	0.017	0.002	0.054	0.000	1.000	38,064
Foreign non-U.S. institutions	*IO_FOREIGN_NUS*	0.019	0.000	0.046	0.000	1.000	38,064
Domestic institutions	*IO_DOMESTIC*	0.038	0.001	0.087	0.000	1.000	38,064
Independent institutions	*IO_INDEP*	0.050	0.010	0.090	0.000	1.000	38,064
Mutual funds	*IO_MUTUALz*	0.015	0.000	0.040	0.000	1.000	38,064
Investment advisers	*IO_INVEST*	0.035	0.006	0.067	0.000	1.000	38,064
Grey institutions	*IO_GREY*	0.024	0.001	0.054	0.000	1.000	38,064
Bank trusts	*IO_BANK*	0.015	0.000	0.038	0.000	1.000	38,064
Insurance companies	*IO_INSURANCE*	0.006	0.000	0.022	0.000	1.000	38,064
Other institutions	*IO_OTHER*	0.003	0.000	0.020	0.000	1.000	38,064
Panel B: Valuation, operating performance, and investment variables							
Tobin *Q*	*Q*	1.318	1.078	0.924	0.364	21.633	36,421
Return on assets	*ROA*	0.025	0.036	0.120	−1.881	0.370	36,841
Net profit margin	*NPM*	−0.008	0.027	0.288	−4.185	0.546	36,362
Capital expenditures	*CAPEX*	0.049	0.035	0.049	0.000	0.363	36,034
Panel C: Firm-level control variables							
Market capitalization (log)	*SIZE*	11.964	11.870	1.942	5.075	19.418	38,064
Book-to-market (log)	*BM*	−0.165	−0.159	0.916	−3.437	3.195	38,064
Investment opportunities	*INVOP*	0.104	0.052	0.292	−0.848	2.899	38,064
Stock return annual	*RET*	0.000	0.021	0.501	−2.450	1.643	38,064
Turnover	*TURN*	0.712	0.346	1.155	0.000	10.387	38,064
Dividend yield	*DY*	0.022	0.016	0.024	0.000	0.145	38,064
Return on equity	*ROE*	0.033	0.064	0.324	−6.293	1.252	38,064
Idiosyncratic variance	*SIGMA*	0.167	0.092	0.239	0.000	3.747	38,064
MSCI membership dummy	*MSCI*	0.149	0.000	0.356	0.000	1.000	38,064
Leverage	*LEV*	0.252	0.237	0.178	0.000	1.032	38,064
Cash	*CASH*	0.125	0.089	0.123	0.000	0.902	38,064
Closely held shares	*CLOSE*	0.457	0.461	0.232	0.000	0.981	38,064
ADR exchange-listed dummy	*ADR*	0.039	0.000	0.193	0.000	1.000	38,064
Analyst coverage	*ANALYSTS*	3.457	1.000	5.803	0.000	51.000	38,064
Foreign sales	*FXSALES*	0.178	0.000	0.276	0.000	1.000	38,064
Global industry Tobin *Q*	*GLOBAL_Q*	1.207	1.130	0.272	0.817	4.582	38,064
Panel D: Country-level control variables							
Legal regime quality index	*LEGAL*	28.984	34.280	12.074	0.000	50.000	38,018
Disclosure index	*DISC*	5.586	5.600	0.635	3.700	6.500	38,018
Average distance (log)	*DISTANCE*	8.937	9.056	0.249	8.340	9.568	38,018
English language dummy	*ENGLISH*	0.268	0.000	0.443	0.000	1.000	38,018
GDP per capita (log)	*GDP*	9.748	10.151	1.093	6.094	11.155	38,018
Market capitalization to GDP	*MCAP*	1.032	0.814	0.752	0.046	3.749	38,018

part of the variation in institutional ownership. We also run standardized regressions as in Bennett, Sias, and Starks (2003) to identify the crucial determinants of institutional ownership in a firm (see Panel A of Table 4).

The results in Table 2 show that institutional investors around the world, whether foreign or domestic, share many common preferences on their stock investments. The major common drivers of institutional ownership are *SIZE* and *CLOSE*. All institutional money managers have a strong preference for the stock of large firms (*SIZE*). This is consistent with findings in Falkenstein (1996) and Gompers and Metrick (2001) for the U.S.

Table 2
Determinants of institutional ownership

This table reports estimates of coefficients of the annual time-series cross-sectional firm-level regression of total institutional ownership, foreign institutional ownership by all institutions, U.S. institutions and non-U.S. institutions, and domestic institutional ownership as a percentage of market capitalization for non-U.S. firms. The firm-level regressors include log market capitalization (*SIZE*), log book-to-market equity ratio (*BM*), investment opportunities (*INVOP*), stock return (*RET*), turnover (*TURN*), dividend yield (*DY*), return on equity (*ROE*), idiosyncratic variance (*SIGMA*), MSCI index membership dummy (*MSCI*), leverage (*LEV*), cash holdings (*CASH*), closely held shares (*CLOSE*), and ADR exchange-listed dummy (*ADR*). The country-level regressors include legal regime index (*LEGAL*), disclosure index (*DISC*), log average geographic distance (*DISTANCE*), English language dummy (*ENGLISH*), log GDP per capita (*GDP*), and market capitalization to GDP (*MCAP*). Refer to Table B1 in Appendix B for variable definitions. The sample period is from 2000 to 2005. Financial firms are omitted (SIC 6000–6999). The robust *t*-statistics in parentheses are adjusted for clustering at the firm-level. Coefficients significant at the 5% level are in boldface.

	Total institutions			Foreign institutions	Foreign US inst.	Foreign non-U.S. inst.	Domestic institutions
SIZE	**0.0124**	**0.0130**	**0.0138**	**0.0090**	**0.0051**	**0.0041**	**0.0041**
	(18.39)	(18.27)	(19.25)	(18.71)	(14.08)	(15.54)	(9.15)
BM	**−0.0157**	0.0004	**−0.0025**	0.0013	**0.0021**	−0.0007	−0.0008
	(−13.13)	(0.34)	(−2.20)	(1.52)	(3.59)	(−1.49)	(−1.08)
INVOP	**0.0176**	**0.0130**	**0.0067**	**0.0072**	**0.0022**	**0.0054**	**0.0064**
	(6.08)	(4.87)	(2.55)	(4.45)	(2.09)	(4.87)	(3.03)
RET	**−0.0062**	0.0018	−0.0006	**0.0043**	**0.0026**	**0.0017**	**−0.0028**
	(−4.19)	(1.32)	(−0.49)	(4.54)	(3.71)	(3.17)	(−2.85)
TURN	**−0.0073**	0.0001	0.0011	−0.0005	−0.0002	−0.0003	0.0006
	(−11.25)	(0.11)	(1.57)	(−0.97)	(−0.55)	(−0.89)	(1.73)
DY	**0.1399**	−0.0111	0.0124	**−0.0657**	**−0.0743**	0.0037	0.0512
	(3.45)	(−0.29)	(0.36)	(−2.60)	(−3.63)	(0.33)	(1.94)
ROE	0.0035	**0.0050**	0.0040	0.0012	−0.0010	**0.0020**	0.0029
	(1.31)	(2.00)	(1.68)	(0.66)	(−0.65)	(2.25)	(1.67)
SIGMA	**0.0286**	**0.0129**	**0.0100**	**0.0107**	**0.0046**	**0.0076**	0.0043
	(8.39)	(4.13)	(3.34)	(4.80)	(2.69)	(4.86)	(1.84)
MSCI	**0.0221**	**0.0309**	**0.0288**	**0.0432**	**0.0211**	**0.0214**	**−0.0125**
	(5.40)	(8.06)	(8.22)	(14.90)	(10.02)	(13.91)	(−6.11)
LEV	**−0.0519**	−0.0093	**−0.0160**	−0.0066	0.0002	**−0.0070**	−0.0035
	(−9.36)	(−1.83)	(−3.40)	(−1.84)	(0.08)	(−3.50)	(−1.08)
CASH	**−0.0241**	**0.0327**	**0.0259**	**0.0290**	**0.0213**	**0.0067**	0.0030
	(−2.98)	(4.27)	(3.55)	(5.49)	(5.18)	(2.59)	(0.57)
CLOSE	**−0.1354**	**−0.0901**	**−0.0831**	**−0.0346**	**−0.0160**	**−0.0191**	**−0.0562**
	(−26.27)	(−20.18)	(−18.21)	(−11.56)	(−7.82)	(−10.45)	(−19.55)
ADR	**0.0601**	**0.0447**	**0.0362**	**0.0668**	**0.0499**	**0.0216**	**−0.0205**
	(6.26)	(4.55)	(4.12)	(7.44)	(6.79)	(4.80)	(−5.51)
LEGAL		**0.0006**		**−0.0008**	**−0.0002**	**−0.0006**	**0.0014**
		(4.50)		(−8.41)	(−2.82)	(−10.80)	(16.38)
DISC		**0.0338**		**0.0089**	**0.0047**	**0.0047**	**0.0253**
		(9.78)		(3.11)	(2.37)	(2.94)	(13.39)
DISTANCE		**−0.1477**		**−0.0204**	−0.0029	**−0.0166**	**−0.1276**
		(−33.08)		(−7.56)	(−1.60)	(−9.58)	(−35.82)
ENGLISH		**0.0442**		**0.0070**	**0.0122**	**−0.0056**	**0.0372**
		(12.30)		(2.49)	(6.06)	(−3.61)	(16.12)
GDP		**−0.0116**		0.0005	−0.0010	0.0011	**−0.0123**
		(−7.21)		(0.36)	(−1.10)	(1.63)	(−13.86)
MCAP		**−0.0149**		0.0005	**−0.0029**	**0.0032**	**−0.0157**
		(−10.36)		(0.41)	(−3.76)	(5.43)	(−19.39)
Country dummies	No	No	Yes	No	No	No	No
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.220	0.338	0.413	0.254	0.168	0.196	0.326
Number of firms	11,224	11,219	11,224	11,219	11,219	11,219	11,219
N	38,064	38,018	38,064	38,018	38,018	38,018	38,018

market and in Dahlquist and Robertsson (2001) for the Swedish market. Firm size is an important factor in international investment because institutions have concerns about liquidity and transaction costs. A one-standard deviation increase in firm size (i.e., an increase from US$ 157 million to US$1.1 billion for the average market capitalization) is associated with a 2.5 percentage point increase in total institutional ownership. All institutional investors hold fewer shares of firms that are closely held or that are associated with concentrated control rights (*CLOSE*). Leuz, Lins, and Warnock (2005) and Doidge, Karolyi, Lins, Miller, and Stulz (2006) find that U.S. institutions invest less in poorly governed firms, that is, firms with large block ownership by insiders (e.g., managers and families).

There are also common investment preferences among different groups of institutions in terms of other stock characteristics. For example, all institutions have a tendency to invest in companies with investment opportunities and proven profitability (*INVOP* and *ROE*), consistent with the "prudent man" rules that professional money managers are likely to follow (Del Guercio, 1996). However, contrary to the predictions of the "prudent man" rules, institutional ownership is higher for high idiosyncratic volatility stocks (*SIGMA*). Gompers and Metrick (2001) also find that money managers in the U.S. do not particularly avoid high risk stocks.[14]

But the three different groups of managers display diverse investment preferences in terms of other stock characteristics. Institutions' preferences diverge mainly on two factors: *MSCI* and *ADR*. Both U.S. and other foreign investors have a bias for companies in the MSCI World Index, the leading index used in international asset management as shown by the positive *MSCI* coefficient. Index membership matters as foreign institutional ownership is roughly four percentage points higher for MSCI firms. The negative *MSCI* coefficient for domestic institutions indicates that this investor group fills the void in non-MSCI stocks. Additionally, foreign investors prefer to invest in cross-listed firms. The positive *ADR* coefficient for both U.S. and non-U.S. foreign institutional investors illustrates the positive effect of cross-listing on a U.S. exchange.[15] Foreign institutional ownership is roughly six percentage points higher for firms with a U.S. cross-listing. When they invest domestically, institutions do not seem to prefer cross-listing firms. This finding is consistent with the results in Ammer, Holland, Smith, and Warnock (2005) for U.S. investors. In untabulated regressions, we control for selection bias (i.e., firms with higher foreign ownership are more likely to cross-list in the first place) and find that the positive relation between cross-listing and foreign ownership is robust.[16]

In a simple but more direct attempt to isolate the cross-listing effect, we identify the 118 firms that cross-listed on a U.S. exchange during the 2000–2005 period. We conduct an event study to compare the level of institutional ownership around the cross-listing date. Fig. 1 shows that firms that cross-list experience an increase in their median foreign institutional ownership from about 4.2% one year prior to the listing to over 8.3% two years after or 12.1% three years after the listing. The increase in foreign holdings occurs both in ADR and local shares. For example, holdings by U.S. institutions rise on median from 1.7% to 3.2% in local shares and from 0% to 2% in ADRs (from one quarter prior to the listing to three years after). Even though not all trading is retained by the U.S. exchanges, more foreign investors invest directly in the firm's home market. This speaks to the flow-back phenomenon in cross-listings, that is, after an initial blip in U.S. trading, trading moves back to the domestic exchange (Karolyi, 2003; Halling, Pagano, Randl, and Zechner, 2007). Overall, cross-listing seems to be associated with higher ownership by U.S. and non-U.S. institutions.

The three different groups of managers also display diverse investment preferences in terms of other stock characteristics. U.S. institutions have a preference for value stocks (high *BM*). Gompers and Metrick (2001) find weak evidence (although strengthening over their sample period) that U.S. institutions favor value stocks, possibly to exploit the value anomaly. Our result shows that U.S. institutions also pursue such an investment strategy internationally. Foreign institutions are also prone to chase stocks with recent positive stock return

[14]Several authors such as Roll (1988) and Morck, Yeung, and Yu (2000) interpret idiosyncratic volatility as a measure of stock price informativeness, and in this sense institutions seem to prefer to invest in stocks that are informationally efficient. This interpretation is not without controversy, however; see Griffin, Kelly, and Nardari (2006).

[15]We only consider exchange-listed ADRs (Level 2 and 3) as only these firms are required to follow U.S. GAAP as well as stricter SEC reporting and compliance requirements.

[16]A previous version of this paper explored the cross-listing effect in more depth using a treatment effects model that estimates jointly the equation of interest, institutional holdings, and the propensity of a non-U.S. firm to list its shares on a U.S. exchange. The results confirm the additional boost in U.S. and non-U.S. foreign ownership associated with the cross-listing. More details on this analysis are available from the authors upon request.

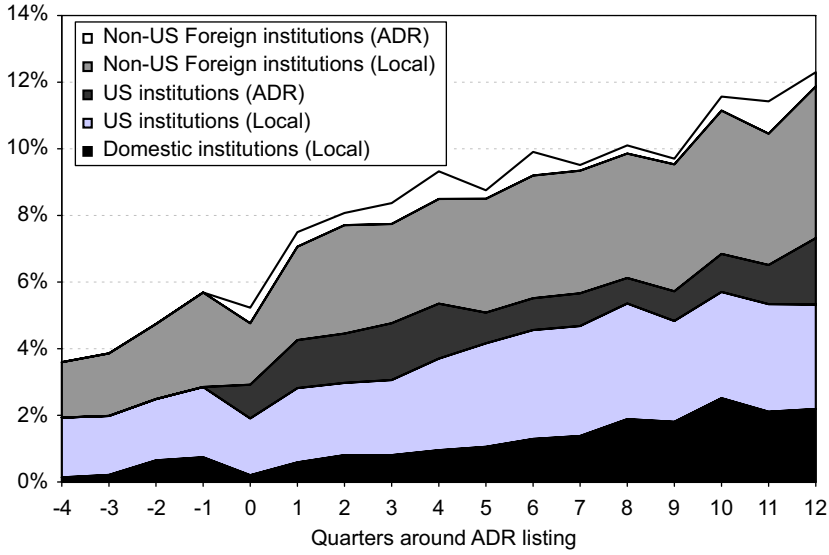

Fig. 1. Median institutional ownership around cross-listing. This figure plots median institutional ownership in local and ADR shares as a percentage of market capitalization using a sample of 118 cross-listings on U.S. exchanges from 2000 to 2005. The areas give institutional ownership (from bottom to top) of domestic institutions in local shares (2.2% three years after listing), U.S. institutions in local shares (2% three years after listing), U.S. institutions in ADRs (2.2% three years after listing), non-U.S. foreign institutions in local shares (4.6% three years after listing), and non-U.S. foreign institutions in ADRs (0.4% three years after listing). Domestic institutions holdings in ADRs are insignificant so they are not shown in the figure.

performance (*RET*) and domestic investors seem to exhibit contrarian behavior. This is consistent with some ideas that foreign institutions represent hot money chasing hot markets (Tesar and Werner, 1995; Bohn and Tesar, 1996; Grinblatt and Keloharju, 2000). Furthermore, domestic institutions prefer high dividend-paying stocks (*DIV*), but foreign institutions seem to avoid them, perhaps because of tax withholding concerns (Dahlquist and Robertsson, 2001; Ammer, Holland, Smith, and Warnock, 2005). Gompers and Metrick (2001) find that U.S. mutual funds seem averse to stocks with high dividend yields.

Finally, we look at country-level variables. All institutions reveal a preference for stocks from countries with good disclosure standards (*DISC*). Investors prefer stocks from countries that are physically closer to their local market (*DISTANCE*). U.S. institutions show a clear preference for English-speaking countries (*ENGLISH*) and less developed markets (*MCAP*), while non-U.S. institutions reveal the opposite. These findings illustrate that groups of institutional investors have different reasons for investing abroad. The quality of a country's legal environment (*LEGAL*) is positively related to the presence of domestic institutional investors, but we find the opposite result with respect to attracting foreign institutions. This is contrary to what the law and finance literature would suggest (La Porta, Lopez-de-Silanes, Shleifer, and Vishny, 1998). Our interpretation is that an investor's decision to invest abroad balances weak shareholder protection against strong investment prospects or diversification benefits. This argument may explain why U.S. investors seem to prefer emerging markets over European markets when investing overseas.

3.2. What attracts independent and grey institutions?

We now examine the revealed preferences of different types of institutions, particularly independent institutions (mutual funds and investment advisers) versus grey institutions (bank trusts, insurance companies, and others). Different types of institutions are subject to distinct investment mandates and regulations. This may cause them to prefer investing in stocks that most help them satisfy investment constraints such as those of the prudent man rules (Del Guercio, 1996).

Table 3 presents estimates of the determinants of institutional ownership by institution type. In aggregate, independent and grey institutional investors share many common investment preferences. They have a strong

Table 3
Determinants of independent and grey institutional ownership

This table reports estimates of coefficients of the annual time-series cross-sectional firm-level regression of institutional ownership by independent institutions (mutual funds and investment advisers) and grey institutions (bank trusts, insurance companies, and other institutions) as a percentage of market capitalization for non-U.S. firms. The firm-level regressors include log market capitalization (*SIZE*), log book-to-market equity ratio (*BM*), investment opportunities (*INVOP*), stock return (*RET*), turnover (*TURN*), dividend yield (*DY*), return on equity (*ROE*), idiosyncratic variance (*SIGMA*), MSCI index membership dummy (*MSCI*), leverage (*LEV*), cash holdings (*CASH*), closely held shares (*CLOSE*), and ADR exchange-listed dummy (*ADR*). The country-level regressors include legal regime index (*LEGAL*), disclosure index (*DISC*), log average geographic distance (*DISTANCE*), English language dummy (*ENGLISH*), log GDP per capita (*GDP*), and market capitalization to GDP (*MCAP*). Refer to Table B1 in Appendix B for variable definitions. The sample period is from 2000 to 2005. Financial firms are omitted (SIC 6000–6999). The robust *t*-statistics in parentheses are adjusted for clustering at the firm-level. Coefficients significant at the 5% level are in boldface.

	Independent institutions	Mutual funds	Investment advisers	Grey institutions	Bank trusts	Insurance companies	Other institutions
SIZE	**0.0084**	**0.0029**	**0.0055**	**0.0049**	**0.0029**	**0.0014**	**0.0007**
	(16.18)	(12.22)	(14.51)	(16.64)	(13.40)	(13.53)	(6.01)
BM	−0.0002	−0.0005	0.0004	0.0006	−0.0002	−0.0002	**0.0011**
	(−0.17)	(−1.49)	(0.67)	(1.31)	(−0.63)	(−0.73)	(5.92)
INVOP	**0.0076**	**0.0019**	**0.0062**	**0.0054**	**0.0050**	0.0008	−0.0003
	(3.91)	(2.40)	(3.87)	(4.17)	(4.93)	(1.24)	(−0.78)
RET	0.0018	0.0008	0.0008	−0.0009	−0.0004	**−0.0010**	0.0002
	(1.70)	(1.85)	(0.94)	(−1.35)	(−0.77)	(−2.96)	(0.77)
TURN	0.0008	**0.0005**	0.0003	**−0.0006**	**−0.0010**	**0.0002**	**0.0002**
	(1.51)	(2.25)	(0.67)	(−2.29)	(−5.43)	(2.86)	(2.50)
DY	0.0123	**−0.0256**	0.0344	−0.0162	−0.0153	0.0052	−0.0058
	(0.43)	(−2.06)	(1.58)	(−1.11)	(−1.57)	(0.81)	(−0.98)
ROE	0.0028	0.0008	0.0016	0.0012	0.0013	0.0000	0.0000
	(1.39)	(0.77)	(1.01)	(1.09)	(1.55)	(−0.03)	(0.03)
SIGMA	**0.0065**	**0.0032**	**0.0051**	**0.0088**	**0.0073**	**0.0026**	0.0007
	(2.56)	(2.40)	(2.35)	(5.24)	(5.53)	(2.49)	(1.12)
MSCI	**0.0195**	**0.0097**	**0.0090**	**0.0101**	**0.0062**	**−0.0011**	**0.0049**
	(6.88)	(7.33)	(4.54)	(6.74)	(5.97)	(−2.59)	(7.09)
LEV	**−0.0102**	**−0.0038**	**−0.0067**	0.0004	**−0.0033**	−0.0003	**0.0029**
	(−2.68)	(−2.29)	(−2.28)	(0.20)	(−2.10)	(−0.28)	(3.43)
CASH	**0.0220**	**0.0073**	**0.0139**	**0.0072**	0.0017	0.0001	**0.0037**
	(3.91)	(2.73)	(3.22)	(2.31)	(0.79)	(0.04)	(3.01)
CLOSE	**−0.0562**	**−0.0167**	**−0.0404**	**−0.0335**	**−0.0226**	**−0.0089**	**−0.0020**
	(−17.69)	(−11.08)	(−17.29)	(−16.59)	(−15.54)	(−11.07)	(−2.39)
ADR	**0.0357**	**0.0124**	**0.0281**	**0.0125**	**0.0106**	0.0023	**0.0028**
	(4.62)	(3.12)	(4.67)	(2.90)	(2.91)	(1.37)	(2.07)
LEGAL	**0.0009**	**0.0001**	**0.0008**	**−0.0003**	**−0.0004**	**0.0002**	0.0000
	(9.23)	(3.37)	(10.59)	(−4.23)	(−8.06)	(6.87)	(0.78)
DISC	**0.0137**	**0.0113**	0.0025	**0.0206**	**0.0082**	**0.0033**	**0.0093**
	(5.39)	(9.48)	(1.32)	(14.76)	(8.40)	(9.03)	(12.39)
DISTANCE	**−0.0869**	**−0.0217**	**−0.0649**	**−0.0592**	**−0.0345**	**−0.0193**	**−0.0049**
	(−26.02)	(−15.80)	(−23.89)	(−30.85)	(−24.14)	(−19.71)	(−9.29)
ENGLISH	**0.0366**	**0.0056**	**0.0310**	**0.0061**	**0.0042**	**0.0056**	**−0.0041**
	(13.61)	(4.09)	(15.94)	(4.74)	(5.29)	(11.48)	(−6.62)
GDP	**−0.0076**	**−0.0049**	**−0.0030**	**−0.0045**	0.0001	**−0.0019**	**−0.0029**
	(−6.33)	(−8.67)	(−3.33)	(−7.84)	(0.29)	(−9.43)	(−11.98)
MCAP	**−0.0117**	**−0.0028**	**−0.0091**	**−0.0030**	−0.0003	**−0.0012**	**−0.0015**
	(−10.94)	(−5.89)	(−12.17)	(−5.32)	(−0.70)	(−5.87)	(−7.16)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.276	0.143	0.241	0.255	0.187	0.128	0.062
Number of firms	11,219	11,219	11,219	11,219	11,219	11,219	11,219
N	38,018	38,018	38,018	38,018	38,018	38,018	38,018

Table 4
Determinants of institutional ownership: robustness and additional tests

This table reports estimates of coefficients of the annual time-series cross-sectional firm-level regression of total institutional ownership, foreign institutional ownership, domestic institutional ownership, ownership by independent institutions (mutual funds and independent investment advisers), and ownership by grey institutions (bank trusts, insurance companies, and other institutions) as a percentage of market capitalization for non-U.S. firms. Panel A reports estimates of standardized regressions. Panel B reports estimates using the Fama-MacBeth estimation procedure. Panels C and D report estimates using additional explanatory variables. The firm-level regressors include log market capitalization (*SIZE*), log book-to-market equity ratio (*BM*), investment opportunities (*INVOP*), stock return (*RET*), turnover (*TURN*), dividend yield (*DY*), return on equity (*ROE*), idiosyncratic variance (*SIGMA*), MSCI index membership dummy (*MSCI*), leverage (*LEV*), cash holdings (*CASH*), closely held shares (*CLOSE*), ADR exchange-listed dummy (*ADR*), analyst coverage (*ANALYSTS*), and foreign sales (*FXSALES*). The country-level regressors include legal regime index (*LEGAL*), disclosure index (*DISC*), log average geographic distance (*DISTANCE*), English language dummy (*ENGLISH*), log GDP per capita (*GDP*), and market capitalization to GDP (*MCAP*). Refer to Table B1 in Appendix B for variable definitions. The sample period is from 2000 to 2005. Financial firms are omitted (SIC 6000–6999). The robust *t*-statistics in parentheses are adjusted for clustering at the firm-level. Coefficients significant at the 5% level are in boldface.

	Panel A: Standardized regressions					Panel B: Fama-MacBeth				
	Total inst.	Foreign inst.	Domestic inst.	Indep. inst.	Grey inst.	Total inst.	Foreign inst.	Domestic inst.	Indep. inst.	Grey inst.
SIZE	0.1994	0.2191	0.0919	0.1806	0.1768	**0.0126**	**0.0086**	**0.0041**	**0.0082**	**0.0046**
						(13.29)	(13.93)	(4.73)	(17.74)	(8.00)
BM	0.0028	0.0145	−0.0081	−0.0015	0.0108	−0.0008	0.0008	**−0.0014**	−0.0005	0.0000
						(−0.86)	(1.07)	(−2.76)	(−0.69)	(−0.07)
INVOP	0.0301	0.0264	0.0214	0.0247	0.0292	**0.0152**	**0.0082**	**0.0075**	**0.0085**	**0.0063**
						(3.16)	(2.21)	(3.35)	(2.84)	(2.31)
RET	0.0072	0.0267	−0.0160	0.0097	−0.0083	0.0018	**0.0051**	−0.0035	0.0018	−0.0006
						(0.39)	(2.23)	(−1.47)	(0.54)	(−0.30)
TURN	0.0007	−0.0075	0.0078	0.0098	−0.0123	0.0011	0.0000	0.0011	0.0014	−0.0003
						(0.75)	(0.01)	(1.23)	(1.35)	(−0.64)
DY	−0.0021	−0.0200	0.0142	0.0033	−0.0073	−0.0102	−0.0746	**0.0614**	0.0138	−0.0151
						(−0.45)	(−7.20)	(3.19)	(1.24)	(−1.13)
ROE	0.0128	0.0050	0.0107	0.0099	0.0074	**0.0082**	0.0039	0.0034	**0.0050**	0.0021
						(2.92)	(1.22)	(1.26)	(2.80)	(1.12)
SIGMA	0.0244	0.0322	0.0118	0.0172	0.0388	0.0071	**0.0083**	0.0007	0.0038	**0.0050**
						(1.45)	(2.36)	(0.26)	(0.88)	(2.67)
MSCI	0.0870	0.1936	−0.0508	0.0769	0.0667	**0.0283**	**0.0419**	**−0.0137**	**0.0179**	**0.0092**
						(5.84)	(8.28)	(−5.66)	(7.32)	(3.32)
LEV	−0.0130	−0.0148	−0.0072	−0.0202	0.0014	−0.0100	**−0.0066**	−0.0042	**−0.0098**	−0.0006
						(−1.90)	(−2.32)	(−1.66)	(−2.33)	(−0.67)
CASH	0.0318	0.0449	0.0042	0.0299	0.0165	**0.0294**	**0.0273**	0.0015	**0.0211**	0.0046
						(4.90)	(7.74)	(0.35)	(5.38)	(1.94)
CLOSE	−0.1658	−0.1012	−0.1494	−0.1449	−0.1447	**−0.0892**	**−0.0337**	**−0.0563**	**−0.0557**	**−0.0331**
						(7.30)	(6.46)	(7.59)	(7.43)	(6.90)
ADR	0.0683	0.1622	−0.0453	0.0763	0.0448	**0.0413**	**0.0646**	**−0.0215**	**0.0341**	**0.0109**
						(17.49)	(19.68)	(−5.28)	(16.66)	(11.69)
ANALYSTS										
FXSALES										
LEGAL	0.0588	−0.1231	0.1985	0.1168	−0.0629	**0.0006**	**−0.0008**	**0.0014**	**0.0009**	**−0.0003**
						(6.77)	(−3.48)	(6.93)	(15.08)	(−4.52)
DISC	0.1697	0.0709	0.1834	0.0966	0.2431	**0.0364**	**0.0112**	**0.0255**	**0.0160**	**0.0207**
						(7.14)	(8.81)	(4.97)	(3.75)	(5.08)
DISTANCE	−0.2917	−0.0640	−0.3640	−0.2403	−0.2740	**−0.1385**	**−0.0174**	**−0.1214**	**−0.0815**	**−0.0555**
						(−7.46)	(−7.29)	(−7.37)	(−8.12)	(−6.98)
ENGLISH	0.1549	0.0389	0.1885	0.1798	0.0499	**0.0400**	0.0049	**0.0352**	**0.0326**	**0.0064**
						(8.17)	(1.88)	(10.12)	(5.65)	(2.97)
GDP	−0.1002	0.0064	−0.1539	−0.0919	−0.0910	**−0.014**6	−0.0011	**−0.0138**	**−0.0097**	**−0.0053**
						(−4.18)	(−0.52)	(−4.95)	(−3.44)	(−4.25)
MCAP	−0.0889	0.0043	−0.1347	−0.0972	−0.0412	**−0.0117**	0.0010	**−0.0131**	**−0.0100**	**−0.0016**
						(−7.43)	(0.98)	(−5.23)	(−7.51)	(−6.28)
Number of firms	11,219	11,219	11,219	11,219	11,219	11,219	11,219	11,219	11,219	11,219
N	38,018	38,018	38,018	38,018	38,018	38,018	38,018	38,018	38,018	38,018

Table 4 (*continued*)

	Panel C: Analysts and foreign sales					Panel D: Country-level governance				
	Total inst.	Foreign inst.	Domestic inst.	Indep. inst.	Grey inst.	Total inst.	Foreign inst.	Domestic inst.	Indep. inst.	Grey inst.
SIZE	**0.0109**	**0.0071**	**0.0040**	**0.0074**	**0.0037**	**0.0127**	**0.0092**	**0.0036**	**0.0081**	**0.0049**
	(12.66)	(11.61)	(7.80)	(11.70)	(11.09)	(18.17)	(19.53)	(8.03)	(15.96)	(16.59)
BM	0.0004	0.0012	−0.0007	−0.0001	0.0006	0.0002	0.0011	−0.0009	−0.0003	0.0006
	(0.36)	(1.47)	(−0.97)	(−0.13)	(1.31)	(0.15)	(1.40)	(−1.26)	(−0.38)	(1.18)
INVOP	**0.0135**	**0.0077**	**0.0064**	**0.0079**	**0.0057**	**0.0129**	**0.0068**	**0.0066**	**0.0076**	**0.0053**
	(5.08)	(4.79)	(3.04)	(4.04)	(4.41)	(4.91)	(4.34)	(3.17)	(3.97)	(4.14)
RET	**0.0032**	**0.0055**	**−0.0027**	**0.0024**	−0.0001	0.0015	**0.0038**	**−0.0028**	0.0015	−0.0011
	(2.30)	(5.86)	(−2.69)	(2.30)	(−0.19)	(1.06)	(4.15)	(−2.83)	(1.50)	(−1.62)
TURN	0.0002	−0.0004	0.0006	0.0008	**−0.0005**	0.0009	−0.0004	**0.0013**	**0.0014**	−0.0004
	(0.32)	(−0.72)	(1.74)	(1.64)	(−2.00)	(1.32)	(−0.69)	(3.72)	(2.83)	(−1.55)
DY	−0.0067	**−0.0609**	0.0508	0.0142	−0.0135	−0.0148	**−0.0666**	0.0484	0.0095	−0.0170
	(−0.17)	(−2.40)	(1.92)	(0.49)	(−0.93)	(−0.39)	(−2.68)	(1.86)	(0.34)	(−1.18)
ROE	0.0046	0.0009	0.0028	0.0026	0.0010	**0.0054**	0.0012	**0.0034**	0.0031	0.0013
	(1.86)	(0.49)	(1.64)	(1.30)	(0.91)	(2.18)	(0.64)	(1.97)	(1.58)	(1.15)
SIGMA	**0.0116**	**0.0094**	0.0044	**0.0060**	**0.0080**	**0.0114**	**0.0102**	0.0032	**0.0053**	**0.0084**
	(3.73)	(4.20)	(1.87)	(2.35)	(4.78)	(3.65)	(4.60)	(1.38)	(2.10)	(5.04)
MSCI	**0.0261**	**0.0390**	**−0.0130**	**0.0172**	**0.0074**	**0.0303**	**0.0424**	**−0.0123**	**0.0192**	**0.0098**
	(6.41)	(12.37)	(−6.20)	(5.65)	(4.63)	(7.99)	(14.64)	(−6.11)	(6.84)	(6.49)
LEV	−0.0087	−0.0064	−0.0032	**−0.0099**	0.0007	−0.0087	−0.0057	−0.0039	**−0.0100**	0.0008
	(−1.73)	(−1.79)	(−1.00)	(−2.60)	(0.31)	(−1.74)	(−1.58)	(−1.23)	(−2.65)	(0.37)
CASH	**0.0337**	**0.0296**	0.0034	**0.0225**	**0.0077**	**0.0339**	**0.0294**	0.0038	**0.0229**	**0.0075**
	(4.43)	(5.66)	(0.65)	(4.04)	(2.51)	(4.43)	(5.58)	(0.73)	(4.08)	(2.42)
CLOSE	**−0.0889**	**−0.0336**	**−0.0561**	**−0.0557**	**−0.0329**	**−0.0352**	**−0.0553**	**0.0204**	−0.0068	**−0.0309**
	(−19.91)	(−11.20)	(−19.45)	(−17.43)	(−16.42)	(−2.91)	(−6.11)	(3.22)	(−0.79)	(−5.98)
ADR	**0.0414**	**0.0636**	**−0.0206**	**0.0343**	**0.0106**	**0.1921**	**0.1568**	**0.0430**	**0.1422**	**0.0615**
	(4.23)	(7.09)	(−5.57)	(4.45)	(2.50)	(7.40)	(6.29)	(5.76)	(6.76)	(5.47)
ANALYSTS	**0.0014**	**0.0012**	0.0002	**0.0007**	**0.0008**					
	(4.86)	(4.96)	(1.43)	(3.11)	(6.86)					
FXSALES	0.0075	**0.0112**	−0.0039	0.0020	**0.0054**					
	(1.90)	(3.98)	(−1.44)	(0.70)	(3.10)					
LEGAL	**0.0008**	**−0.0007**	**0.0014**	**0.0009**	**−0.0002**	**0.0017**	**−0.0010**	**0.0028**	**0.0018**	−0.0002
	(5.57)	(−6.93)	(16.21)	(9.91)	(−2.96)	(6.45)	(−5.31)	(17.24)	(9.62)	(−1.42)
DISC	**0.0305**	0.0054	**0.0255**	**0.0124**	**0.0186**	**0.0337**	**0.0093**	**0.0248**	**0.0136**	**0.0208**
	(8.55)	(1.84)	(12.88)	(4.69)	(13.16)	(9.87)	(3.32)	(13.13)	(5.42)	(14.78)
DISTANCE	**−0.1479**	**−0.0201**	**−0.1282**	**−0.0872**	**−0.0592**	**−0.1464**	**−0.0230**	**−0.1237**	**−0.0853**	**−0.0597**
	(−33.37)	(−7.73)	(−35.97)	(−26.29)	(−31.39)	(−33.18)	(−8.62)	(−35.29)	(−25.84)	(−32.00)
ENGLISH	**0.0448**	**0.0075**	**0.0373**	**0.0369**	**0.0064**	**0.0421**	**0.0083**	**0.0338**	**0.0347**	**0.0061**
	(12.57)	(2.73)	(16.19)	(13.80)	(5.07)	(11.98)	(3.01)	(15.05)	(13.18)	(4.82)
GDP	**−0.0113**	0.0007	**−0.0123**	**−0.0074**	**−0.0043**	**−0.0113**	−0.0004	**−0.0111**	**−0.0072**	**−0.0047**
	(−7.04)	(0.57)	(−13.81)	(−6.21)	(−7.62)	(−7.16)	(−0.35)	(−12.78)	(−6.13)	(−7.99)
MCAP	**−0.0161**	−0.0009	**−0.0155**	**−0.0121**	**−0.0037**	**−0.0138**	−0.0003	**−0.0138**	**−0.0106**	**−0.0030**
	(−10.99)	(−0.83)	(−18.33)	(−11.34)	(−6.26)	(−9.70)	(−0.24)	(−16.89)	(−10.11)	(−5.25)
CLOSE × LEGAL						**−0.0019**	**0.0007**	**−0.0027**	**−0.0017**	−0.0001
						(−4.61)	(2.54)	(−10.71)	(−5.71)	(−0.57)
ADR × LEGAL						**−0.0052**	**−0.0032**	**−0.0022**	**−0.0037**	**−0.0017**
						(−7.05)	(−4.69)	(−8.54)	(−6.38)	(−6.08)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.340	0.260	0.326	0.277	0.260	0.109	0.078	0.216	0.090	0.107
Number of firms	11,219	11,219	11,219	11,219	11,219	11,219	11,219	11,219	11,219	11,219
N	38,018	38,018	38,018	38,018	38,018	37,070	37,070	37,070	37,070	37,070

preference for large firms and visible firms (U.S. cross-listed and MSCI members), and firms with strong corporate governance indicators (widely held). When we run standardized regressions (see Panel A of Table 4), we find that *SIZE*, *MSCI*, and *CLOSE* and are the most important common factors driving institutional ownership.

There is, however, some variation in investment preferences of different types of institutions. Independent institutions are present more in liquid stocks (*TURN*), while grey institutions seem to shy away from these

stocks. This speaks to the liquidity versus monitoring trade-off that large investors face (e.g., Kahn and Winton, 1998). Our results indicate a complementary relation in that activist shareholders prefer easily traded shares from which they can pull out more quickly. Independent institutions also invest more in stocks with recent positive stock return performance, while grey institutions (especially insurance companies) seem to exhibit contrarian behavior. Insurance companies are the least sensitive to MSCI membership and U.S. cross-listing. Finally, we find more ownership by independent institutions in countries with a strong legal environment (*LEGAL*), but less ownership by grey institutions (especially bank trusts).

3.3. Robustness checks and additional tests

Table 4 presents several robustness checks and extensions of our primary results on investment preferences. Panel A of Table 4 presents the standardized regressions coefficients, which give an indication of the importance of each variable for institutional ownership, as discussed above.[17]

The presence of cross-sectional dependence is a potential concern with panel regression results. Our results so far account for time-series and cross-sectional dependence using firm-clustered standard errors and year dummies, as suggested by Petersen (2007). An alternative solution is to use the Fama-MacBeth procedure estimating a separate regression for each cross-section and then taking the time-series mean of the coefficients. Panel B of Table 4 shows that our results are robust to this procedure.

Our results are also robust in other ways. In the interest of brevity, in untabulated regressions we consider: (1) institutional ownership measured as a fraction of market float (instead of market capitalization); (2) the potential censoring of the dependent variable by estimating a Tobit model, as a considerable number of firms have zero institutional ownership; (3) a sample of firms of only the 27 countries that have institutions domiciled locally in our data set; (4) the ratio of the stock weight in the institutions' portfolio relative to the stock weight in the market portfolio to see which firms are overweighted and underweighted by investors; (5) a sample of firms that only have positive institutional holdings; and (6) industry dummies or standard errors clustered by country. Finally, as a benchmark exercise, we consider the determinants of institutional investment in U.S. stocks (instead of non-U.S. stocks). Our results match earlier findings by Gompers and Metrick (2001). Like these authors, we find a preference for large, liquid, and value stocks.

Panel C of Table 4 extends the results on institutional investor preferences in terms of the firm's external visibility. We address the role of a firm's visibility in more detail by adding as an explanatory variable the number of analysts covering a firm (*ANALYSTS*), a proxy for the level of information available to investors (Baker, Nofsinger, and Weaver, 2002), and the percentage of foreign sales (*FXSALES*), which is a proxy for "name value" abroad. We find that the firm's visibility serves to attract more foreign investment by institutions, but not domestic investment. Independent and grey institutions are both attracted by firm visibility.

Panel D of Table 4 examines how sensitive institutional money managers are to country-level governance, particularly the quality of legal institutions and enforcement (*LEGAL*). The results indicate that all institutional investors pay special attention to firm-level characteristics (in particular, those related to firm-level governance such as *ADR* and *CLOSE*) when they decide to invest abroad in countries with weak investor protection environments (i.e., countries with low scores for the variable). The interaction $ADR \times LEGAL$ variable has a negative and significant coefficient, implying less of a preference by foreign institutions for U.S. cross-listing stocks if the firm is originally from a country with strong investor protection. The interaction $CLOSE \times LEGAL$ variable is negative and significant, so institutions seem to avoid more closely held firms when these firms are located in countries with weak legal environments.

4. Institutional ownership and firm performance

We want to investigate the relation between institutional ownership and firm performance for non-U.S. firms in order to understand the role institutional investors play in monitoring and influencing management

[17]The interpretation of the standardized regression coefficient is the expected standard deviation change in the dependent variable (institutional ownership) given a one-standard deviation change in the independent variable.

decisions. Following Gompers, Ishii, and Metrick (2003) on the impact of corporate governance on firm performance, we first test the effect of institutional ownership on firm valuation.[18] The hypothesis is that foreign and independent institutional ownership is associated with higher firm value, as these institutions play a monitoring role. Next we check whether foreign and independent institutional ownership also have an influence on firms' operating performance and capital expenditures.

4.1. Impact on firm value

To investigate the relation between institutional ownership and firm value, we adopt Tobin's Q as a measure of firm value, calculated as the book value of total assets plus the market value of equity minus the book value of equity divided by total assets (Gompers, Ishii, and Metrick, 2003; Doidge, Karolyi, and Stulz, 2004).

We estimate regressions of a firm's Tobin's Q on variables associated with firm value such as *SIZE*, growth opportunities (*INVOP*), leverage (*LEV*), cash holdings (*CASH*), cross-listing (*ADR*), and median Tobin's Q for the firm's global industry following Doidge, Karolyi, and Stulz (2004). We also include country-level variables that are usually considered in the literature. Most important, we include the institutional ownership variables that are our focus, namely, total, foreign and domestic, and independent and grey institutional ownership.

It is well known that Tobin's Q is an imperfect measure of firm value. Gompers, Ishii, and Metrick (2006) point out several problems with using ordinary least squares (OLS) pooled cross-sectional and time-series regressions. A first problem is that Q is estimated with error. To alleviate this problem, we follow Gompers, Ishii, and Metrick (2006) in using median regressions and two alternative transformations of Q: $\log(Q)$ and $-1/Q$. A second problem is cross-sectional dependence across firms in a given year. We address this issue by using standard errors adjusted for clustering at the firm level. A third problem is that errors are correlated across time for a given firm (time-series dependence). We address this issue by including year dummies in our panel regressions (Petersen, 2007). In robustness tests, we also run Fama-MacBeth cross-sectional regressions as an alternative procedure. A final problem is the endogeneity of institutional holdings. This is particularly true in our context, given that we have reported results on what drives institutional investor ownership (see Section 3). We handle the potential endogeneity issue that firm valuation and institutional ownership are jointly determined in a system of simultaneous equations for ownership and firm's valuation using three-stage least squares.

Table 5 presents the estimates of the median panel regressions for Tobin's Q for the sample of non-U.S. firms located in countries with institutions domiciled locally.[19] We find a positive and significant relation between total institutional ownership and firm value in column (1). The *IO_TOTAL* coefficient is positive and statistically significant. McConnell and Servaes (1990) also find a positive effect of institutional equity ownership for U.S. firms. In columns (2)–(4) we disentangle the effects in terms of foreign and domestic institutional ownership. In column (2), we find that foreign institutions (*IO_FOREIGN*) have a positive and significant effect on firm value, but in column (3) there is no evidence that more domestic institutional ownership is associated with higher firm value. Column (4) includes both foreign and domestic institutional ownership as determinants of firm value, where we see that foreign institutional ownership remains positive and significant. These results hint at the value-enhancing role of foreign investors for corporations worldwide. Next, in columns (5)–(7) we find that independent institutional ownership (*IO_INDEP*) is associated with higher firm value, while grey institutional ownership is insignificantly related to firm value.

The magnitudes of the coefficients also indicate that the effects are economically significant. The coefficient on *IO_FOREIGN* in column (4) indicates that a ten-percentage point increase in institutional ownership is associated with an increase in Q by 0.039 (roughly 3% of the average Tobin's Q). The coefficient on *IO_INDEP* in column (7) indicates that a ten-percentage point increase in institutional ownership is associated with an increase in Q by 0.021 (roughly 2% of the average Tobin's Q). Overall, our results suggest that only

[18]Related work includes Klapper and Love (2004) and Durnev and Kim (2005), who find a positive relation between governance and valuation, and Gompers and Metrick (2001), who find a positive relation between stock returns and institutional ownership in the U.S.

[19]We consider the sample of non-U.S. firms of only 27 countries with institutions domiciled locally in our data set because the performance regressions include both domestic and foreign institutional ownership as explanatory variables. We want to make sure that there is data coverage for domestic institutions. Results (not tabulated here) using the sample of all non-U.S. firms are consistent with the finding that firms with higher foreign and independent ownership have higher firm valuation.

Table 5
Institutional ownership and firm value

This table reports estimates of coefficients of the annual time-series cross-sectional firm-level median regression of Tobin's *Q* for non-U.S. firms. Institutional ownership variables include total institutional ownership (*IO_TOTAL*), foreign institutional ownership (*IO_FOREIGN*), domestic institutional ownership (*IO_DOMESTIC*), ownership by independent institutions (mutual funds and independent investment advisers) (*IO_INDEP*), and ownership by grey institutions (bank trusts, insurance companies, and other institutions) (*IO_GREY*) as a percentage of market capitalization. Firm-level control variables include log market capitalization (*SIZE*), investment opportunities (*INVOP*), leverage (*LEV*), cash holdings (*CASH*), ADR exchange-listed dummy (*ADR*), and global industry Tobin's *Q* (*GLOBAL_Q*). The country-level regressors include legal regime index (*LEGAL*), disclosure index (*DISC*), log average geographic distance (*DISTANCE*), English language dummy (*ENGLISH*), log GDP per capita (*GDP*), and market capitalization to GDP (*MCAP*). Refer to Table B1 in Appendix B for variable definitions. The sample period is from 2000 to 2005. Financial firms are omitted (SIC 6000–6999). *t*-statistics are in parentheses. Coefficients significant at the 5% level are in boldface.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
IO_TOTAL	**0.1200**						
	(4.93)						
IO_FOREIGN		**0.3764**		**0.3922**			
		(10.57)		(10.89)			
IO_DOMESTIC			−0.0402	**−0.0666**			
			(−1.20)	(−2.06)			
IO_INDEP					**0.1947**		**0.2113**
					(5.81)		(5.55)
IO_GREY						0.0312	−0.0809
						(0.57)	(−1.28)
SIZE	**0.0650**	**0.0631**	**0.0679**	**0.0635**	**0.0651**	**0.0674**	**0.0654**
	(41.49)	(42.22)	(46.08)	(42.12)	(41.58)	(44.17)	(41.19)
INVOP	**0.1246**	**0.1259**	**0.1270**	**0.1240**	**0.1267**	**0.1273**	**0.1282**
	(13.47)	(14.39)	(13.89)	(14.13)	(13.52)	(13.88)	(13.68)
LEV	**0.0616**	**0.0590**	**0.0584**	**0.0570**	**0.0641**	**0.0591**	**0.0627**
	(3.72)	(3.77)	(3.57)	(3.63)	(3.82)	(3.61)	(3.73)
CASH	**0.5406**	**0.5526**	**0.5490**	**0.5499**	**0.5461**	**0.5462**	**0.5473**
	(23.40)	(25.29)	(24.06)	(25.09)	(23.36)	(23.88)	(23.39)
ADR	**−0.0416**	**−0.0673**	**−0.0429**	**−0.0738**	**−0.0448**	**−0.0408**	**−0.0448**
	(−2.87)	(−4.87)	(−2.98)	(−5.29)	(−3.05)	(−2.85)	(−3.06)
GLOBAL_Q	**0.3271**	**0.3266**	**0.3302**	**0.3277**	**0.3253**	**0.3298**	**0.3238**
	(32.60)	(34.41)	(33.27)	(34.40)	(31.99)	(33.14)	(31.82)
LEGAL	**−0.0029**	**−0.0025**	**−0.0026**	**−0.0024**	**−0.0030**	**−0.0027**	**−0.0030**
	(−7.69)	(−6.98)	(−6.97)	(−6.58)	(−7.79)	(−7.23)	(−7.92)
DISC	**0.1796**	**0.1857**	**0.1919**	**0.1863**	**0.1808**	**0.1889**	**0.1834**
	(17.12)	(18.96)	(18.56)	(18.71)	(17.14)	(18.17)	(17.22)
DISTANCE	**−0.0800**	**−0.0892**	**−0.1056**	**−0.0974**	**−0.0793**	**−0.0970**	**−0.0823**
	(−6.21)	(−7.79)	(−8.07)	(−7.76)	(−6.20)	(−7.72)	(−6.32)
ENGLISH	**0.0923**	**0.0927**	**0.1004**	**0.1007**	**0.0876**	**0.0969**	**0.0885**
	(8.52)	(9.11)	(9.34)	(9.76)	(7.99)	(9.07)	(8.06)
GDP	**−0.1261**	**−0.1294**	**−0.1265**	**−0.1277**	**−0.1288**	**−0.1271**	**−0.1276**
	(−20.57)	(−22.33)	(−20.88)	(−21.97)	(−20.74)	(−20.92)	(−20.54)
MCAP	**−0.0665**	**−0.0688**	**−0.0690**	**−0.0706**	**−0.0650**	**−0.0680**	**−0.0654**
	(−16.55)	(−18.19)	(−17.25)	(−18.39)	(−15.95)	(−17.15)	(−16.05)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of firms	7,942	7,942	7,942	7,942	7,942	7,942	7,942
N	27,324	27,324	27,324	27,324	27,324	27,324	27,324

foreign and independent institutions (with potential fewer business ties to firms) seem to be associated with a valuation premium.

Our results offer a direct link between foreign institutional shareholder presence and firm value. Other studies have identified cross-listing on a U.S. exchange as having unique governance and bonding benefits and thereby reducing firms' cost of capital (Doidge, Karolyi, and Stulz, 2004; Doidge, Karolyi, and Stulz, 2007b). When we control for institutional ownership, however, we do not find support for a direct cross-listing valuation premium. However, this finding is not inconsistent with the bonding hypothesis as institutional

ownership increases following cross-listing, especially by those institutions involved in monitoring such as foreign institutions (see Fig. 1). Institutional ownership may explain in part the premium and governance benefits for non-U.S. firms that list on a U.S. exchange.[20] Thus, we interpret this positive valuation effect as a form of reputational bonding (Coffee, 2002; Stulz, 1999) stemming from monitoring by highly reputable institutions, rather than the legal bonding associated with a U.S. cross-listing. Other control variable coefficients are generally consistent with previous findings: large firms, cash-rich firms, firms with investment opportunities, and more levered firms have higher valuations.

Table 6 presents several robustness checks of the relation between firm value and institutional ownership. Panels A and B use OLS regressions for $\log(Q)$ and $-1/Q$ to address the potential measurement error of Q. We also estimate standard errors adjusted for firm-level clustering to correct for the fact that errors are unlikely to be independent across time and include year dummies (Petersen, 2007). Panel C uses Fama-MacBeth cross-sectional OLS regressions (dependent variable is $\log(Q)$) to take into account the possibility that errors are not independent across firms.[21] In each panel we include three specifications in terms of institutional ownership variables: total; foreign and domestic; independent and grey.

The results in Panels A–C are consistent with our primary finding of a positive relation between firm value and foreign and independent institutional ownership. In contrast to Table 5, however, we do not find a positive relation between total institutional ownership and firm value. The evidence points toward the possibility that monitoring efforts come mainly from foreign and independent institutions, rather than all institutions. Indeed, the relation between firm value and domestic and grey institutional ownership is either insignificant or negative.

In Panel D we estimate median panel regressions of Tobin's Q including industry and country dummies (in addition to year dummies); there is no significant difference here from our primary findings. Finally, in Panel E of Table 6 we add interaction variables between institutional ownership and *INVOP* to examine whether the impact on valuation of monitoring by institutions is conditional on the level of investment opportunities available to a firm (i.e., how a unit of sales growth impacts firm value). We find that, indeed, the coefficients on the interaction variables of *INVOP* with *IO_FOREIGN* and *IO_INDEP* are positive and significant. This is consistent with the idea that the monitoring effects of foreign and independent institutions are stronger in firms with strong investment opportunities. The coefficients on *IO_FOREIGN* and *IO_INDEP* remain positive and significant.

One important concern is that institutional ownership is likely to be jointly determined with firm value and driven by similar firm and country characteristics. Given our results on the determinants of institutional investment (see Section 3), the issue is the direction of a causal relation between institutional ownership and firm value. For example, do foreign institutions prompt governance improvements in firms, or do firms with better governance attract more foreign capital? Which way does the causality run?

To address this issue, we re-estimate the Tobin's Q and institutional ownership regressions as a system of simultaneous equations.[22] Identification is achieved by the independent variables included in the institutional ownership equation that are not related to Tobin's Q, in particular, MSCI membership, dividend yield, and idiosyncratic volatility. For example, the inclusion of a stock in the MSCI index drives up foreign ownership, but it is not likely to directly affect firm value.[23]

Table 7 reports the results of three-stage least squares (3SLS) regressions of a system of simultaneous equations for $\log(Q)$ and each institutional ownership variable one at a time. We find that the positive effect of

[20]We find evidence of a positive cross-listing premium when we run valuation regressions similar to those in Doidge, Karolyi, and Stulz (2007b), that is, without controlling for institutional ownership. Indeed, the point estimate of the cross-listing (exchange-listed) coefficient implies a premium of roughly 12% in the 2000–2005 period. Recent papers argue that firm valuation benefits of internationalization are transitory and dynamic (Gozzi, Levine, and Schmukler, 2006; Sarkissian and Schill, 2006), and occur mainly before a cross-listing. Their internationalization events, however, include events other than U.S. exchange cross-listings such as over-the-counter ADRs and U.K. listings.

[21]We obtain similar results applying the Fama-MacBeth procedure for Tobin's Q median regressions.

[22]There are, of course, limitations to this analysis. Coles, Lemmon, and Meschke (2007) argue that a standard instrumental variables approach to identify the impact of ownership on valuations does not perform well.

[23]This empirical strategy is similar to the use of S&P 500 membership in U.S. studies (e.g., Clay, 2002). Index membership seems to drive institutional demand but is not expected to increase firm value, with the exception perhaps for transitory valuation gains associated with the added institutional ownership.

Table 6
Institutional ownership and firm value: robustness checks

This table reports estimates of coefficients of the annual time-series cross-sectional firm-level regression of Tobin's Q for non-U.S. firms. Panel A reports estimates of OLS regression of log Tobin's Q ($\log(Q)$). Panel B reports estimates of OLS regression of minus the reciprocal of Tobin's Q ($-1/Q$). Panel C reports estimates of Fama-MacBeth regressions of log Tobin's Q ($\log(Q)$). Institutional ownership variables include total institutional ownership (*IO_TOTAL*), foreign institutional ownership (*IO_FOREIGN*), domestic institutional ownership (*IO_DOMESTIC*), ownership by independent institutions (mutual funds and independent investment advisers) (*IO_INDEP*), and ownership by grey institutions (bank trusts, insurance companies, and other institutions) (*IO_GREY*) as a percentage of market capitalization. Firm-level control variables include log market capitalization (*SIZE*), investment opportunities (*INVOP*), leverage (*LEV*), cash holdings (*CASH*), ADR exchange-listed dummy (*ADR*), and global industry Tobin's Q (*GLOBAL_Q*). The country-level regressors include legal regime index (*LEGAL*), disclosure index (*DISC*), log average geographic distance (*DISTANCE*), English language dummy (*ENGLISH*), log GDP per capita (*GDP*), and market capitalization to GDP (*MCAP*). Refer to Table B1 in Appendix B for variable definitions. The sample period is from 2000 to 2005. Financial firms are omitted (SIC 6000–6999). t-statistics are in parentheses with clustering at the firm-level in the case of OLS regressions. Coefficients significant at the 5% level are in boldface.

	Panel A			Panel B			Panel C		
Regression type	OLS			OLS			Fama-MacBeth OLS		
Dependent variable	$\log(Q)$			$-1/Q$			$\log(Q)$		
IO_TOTAL	0.0238			0.0096			0.0744		
	(0.65)			(0.36)			(1.31)		
IO_FOREIGN		**0.2370**			**0.1069**			**0.2790**	
		(3.91)			(2.63)			(4.40)	
IO_DOMESTIC		**−0.1588**			**−0.0753**			−0.0980	
		(−3.41)			(−2.06)			(−1.28)	
IO_INDEP			**0.1302**			**0.1006**			**0.1087**
			(2.45)			(2.60)			(2.51)
IO_GREY			**−0.2143**			**−0.1976**			−0.0957
			(−2.58)			(−2.88)			(−1.23)
SIZE	**0.0709**	**0.0689**	**0.0713**	**0.0605**	**0.0596**	**0.0609**	**0.0722**	**0.0704**	**0.0725**
	(28.51)	(27.70)	(28.68)	(33.77)	(33.01)	(33.79)	(10.76)	(10.18)	(10.75)
INVOP	**0.1155**	**0.1156**	**0.1161**	**0.0883**	**0.0883**	**0.0888**	**0.1213**	**0.1209**	**0.1220**
	(8.99)	(9.03)	(9.05)	(9.36)	(9.39)	(9.44)	(4.66)	(4.63)	(4.72)
LEV	**−0.0583**	**−0.0605**	**−0.0566**	**0.0741**	**0.0731**	**0.0757**	−0.0468	−0.0492	−0.0466
	(−2.61)	(−2.71)	(−2.53)	(4.17)	(4.12)	(4.26)	(−1.33)	(−1.40)	(−1.34)
CASH	**0.5584**	**0.5524**	**0.5585**	**0.3107**	**0.3080**	**0.3109**	**0.5325**	**0.5265**	**0.5330**
	(13.56)	(13.41)	(13.57)	(10.85)	(10.74)	(10.85)	(6.37)	(6.27)	(6.36)
ADR	**−0.0773**	**−0.0959**	**−0.0780**	**−0.0820**	**−0.0905**	**−0.0826**	**−0.0821**	**−0.1007**	**−0.0825**
	(−2.93)	(−3.60)	(−2.97)	(−4.83)	(−5.25)	(−4.88)	(−4.09)	(−5.52)	(−4.16)
GLOBAL_Q	**0.2814**	**0.2814**	**0.2812**	**0.1959**	**0.1959**	**0.1958**	**0.3453**	**0.3445**	**0.3452**
	(18.33)	(18.36)	(18.31)	(18.36)	(18.37)	(18.35)	(5.24)	(5.37)	(5.28)
LEGAL	**−0.0029**	**−0.0024**	**−0.0031**	**−0.0023**	**−0.0021**	**−0.0025**	**−0.0025**	**−0.0020**	**−0.0026**
	(−4.98)	(−4.06)	(−5.27)	(−5.35)	(−4.75)	(−5.68)	(−5.83)	(−4.31)	(−6.64)
DISC	**0.1903**	**0.1939**	**0.1939**	**0.1669**	**0.1687**	**0.1702**	**0.1644**	**0.1681**	**0.1665**
	(12.06)	(12.36)	(12.29)	(13.63)	(13.83)	(13.86)	(13.20)	(12.76)	(12.76)
DISTANCE	**−0.0627**	**−0.0867**	**−0.0675**	**−0.0754**	**−0.0866**	**−0.0798**	**−0.0769**	**−0.0993**	**−0.0793**
	(−3.02)	(−4.11)	(−3.26)	(−5.06)	(−5.66)	(−5.33)	(−2.13)	(−2.81)	(−2.16)
ENGLISH	**0.0976**	**0.1055**	**0.0954**	**0.0604**	**0.0641**	**0.0586**	**0.0819**	**0.0902**	**0.0807**
	(6.07)	(6.56)	(5.93)	(4.84)	(5.11)	(4.69)	(3.33)	(4.02)	(3.28)
GDP	**−0.1112**	**−0.1110**	**−0.1110**	**−0.0797**	**−0.0796**	**−0.0795**	**−0.1086**	**−0.1082**	**−0.1089**
	(−10.79)	(−10.80)	(−10.78)	(−11.48)	(−11.49)	(−11.47)	(−12.25)	(−12.59)	(−12.78)
MCAP	**−0.0591**	**−0.0630**	**−0.0585**	**−0.0590**	**−0.0608**	**−0.0585**	**−0.0518**	**−0.0550**	**−0.0514**
	(−8.29)	(−8.85)	(−8.21)	(−9.97)	(−10.28)	(−9.90)	(−3.37)	(−3.57)	(−3.31)
Country dummies	No	No	No	No	No	No			
Industry dummies	No	No	No	No	No	No			
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes			
R^2	0.272	0.273	0.272	0.277	0.278	0.278			
Number of firms	7,942	7,942	7,942	7,942	7,942	7,942	7,942	7,942	7,942
N	27,324	27,324	27,324	27,324	27,324	27,324	27,324	27,324	27,324

Table 6 (*continued*)

	Panel D			Panel E		
Regression type	Median			Median		
Dependent variable	*Q*			*Q*		
IO_TOTAL	**0.0664**			**0.1347**		
	(3.00)			(5.44)		
IO_FOREIGN		**0.3195**			**0.3264**	
		(9.76)			(8.81)	
IO_DOMESTIC		**−0.1081**			−0.0114	
		(−3.72)			(−0.36)	
IO_INDEP			**0.1631**			**0.1796**
			(4.61)			(4.35)
IO_GREY			**−0.1176**			0.0433
			(−2.05)			(0.63)
SIZE	**0.0699**	**0.0682**	**0.0705**	**0.0647**	**0.0632**	**0.0649**
	(49.34)	(50.55)	(47.98)	(43.59)	(44.97)	(40.76)
INVOP	**0.0973**	**0.1014**	**0.1021**	**0.1412**	**0.1359**	**0.1372**
	(11.99)	(13.36)	(12.13)	(13.43)	(13.92)	(12.27)
LEV	**0.0773**	**0.0749**	**0.0778**	**0.0627**	**0.0609**	**0.0610**
	(5.29)	(5.48)	(5.13)	(4.01)	(4.17)	(3.63)
CASH	**0.5833**	**0.5673**	**0.5844**	**0.5454**	**0.5509**	**0.5422**
	(28.86)	(29.97)	(27.87)	(25.01)	(27.02)	(23.14)
ADR	**−0.0666**	**−0.0954**	**−0.0718**	**−0.0412**	**−0.0650**	**−0.0437**
	(−5.24)	(−7.89)	(−5.45)	(−3.01)	(−5.01)	(−2.97)
GLOBAL_Q	**0.3012**	**0.2986**	**0.2993**	**0.3276**	**0.3255**	**0.3266**
	(30.09)	(31.84)	(28.81)	(34.55)	(36.75)	(32.05)
IO_TOTAL× INVOP				**−0.1792**		
				(−3.05)		
IO_FOREIGN× INVOP					**0.4669**	
					(4.71)	
IO_DOMESTIC× INVOP					**−0.3138**	
					(−4.80)	
IO_INDEP× INVOP						**0.2621**
						(2.50)
IO_GREY× INVOP						**−0.7355**
						(−4.39)
LEGAL				**−0.0029**	**−0.0024**	**−0.0030**
				(−8.11)	(−7.07)	(−7.77)
DISC				**0.1787**	**0.1816**	**0.1795**
				(18.01)	(19.59)	(16.81)
DISTANCE				**−0.0804**	**−0.0999**	**−0.0829**
				(−6.61)	(−8.55)	(−6.35)
ENGLISH				**0.0928**	**0.1006**	**0.0897**
				(9.08)	(10.49)	(8.16)
GDP				**−0.1255**	**−0.1252**	**−0.1252**
				(−21.67)	(−23.15)	(−20.13)
MCAP				**−0.0667**	**−0.0701**	**−0.0652**
				(−17.58)	(−19.61)	(−16.00)
Country dummies	Yes	Yes	Yes	No	No	No
Industry dummies	Yes	Yes	Yes	No	No	No
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of firms	7,942	7,942	7,942	7,942	7,942	7,942
N	27,324	27,324	27,324	27,324	27,324	27,324

foreign and independent institutional ownership on Tobin's *Q* ratios is robust to endogeneity concerns. Overall, the results using 3SLS corroborate the findings in Tables 5 and 6 with respect to the positive impact on firm value of foreign and independent institutional investors (*IO_FOREIGN* and *IO_INDEP*). It is worth noting that we do not find the same result of institutions positively affecting firm valuations (in Panel E) for

Table 7
Institutional ownership and firm value: three-stage least squares regression

This table reports estimates of coefficients of the annual time-series cross-sectional firm-level regression of log Tobin's Q (log(Q)), and alternatively, total institutional ownership (*IO_TOTAL*) in Panel A, foreign institutional ownership (*IO_FOREIGN*) in Panel B, domestic institutional ownership (*IO_DOMESTIC*) in Panel C, ownership by independent institutions (mutual funds and independent investment advisers) (*IO_INDEP*) in Panel D, and ownership by grey institutions (bank trusts, insurance companies, and other institutions) (*IO_GREY*) in Panel E as a percentage of market capitalization for non-U.S. firms. The system of equations is estimated using three-stage least squares. Firm-level control variables include log market capitalization (*SIZE*), investment opportunities (*INVOP*), stock return (*RET*), turnover (*TURN*), dividend yield (*DY*), return on equity (*ROE*), idiosyncratic variance (*SIGMA*), MSCI index membership dummy (*MSCI*), leverage (*LEV*), cash holdings (*CASH*), closely held shares (*CLOSE*), ADR exchange-listed dummy (*ADR*), and global industry Tobin's Q (*GLOBAL_Q*). The country-level regressors include legal regime index (*LEGAL*), disclosure index (*DISC*), log average geographic distance (*DISTANCE*), English language dummy (*ENGLISH*), log GDP per capita (*GDP*), and market capitalization to GDP (*MCAP*). Refer to Table B1 in Appendix B for variable definitions. The sample period is from 2000 to 2005. Financial firms are omitted (SIC 6000–6999). t-statistics are in parentheses. Coefficients significant at the 5% level are in boldface.

	Panel A		Panel B		Panel C		Panel D		Panel E	
Dependent variable	log(Q)	*IO*	log(Q)	*IO*	log(Q)	*IO*	log(Q)	*IO*	log(Q)	*IO*
IO_TOTAL	**0.7480**									
	(7.18)									
IO_FOREIGN			**1.0849**							
			(6.90)							
IO_DOMESTIC					**0.9324**					
					(5.16)					
IO_INDEP							**2.3784**			
							(12.55)			
IO_GREY									**−0.1979**	
									(−0.78)	
log(Q)		**−0.0245**		**−0.0119**		**−0.0180**		**−0.0324**		−0.0005
		(−26.95)		(−20.13)		(−27.26)		(−51.71)		(−1.28)
SIZE	**0.0549**	**0.0127**	**0.0549**	**0.0082**	**0.0650**	**0.0035**	**0.0379**	**0.0057**	**0.0730**	**0.0061**
	(20.60)	(25.48)	(20.00)	(25.35)	(35.42)	(9.80)	(12.41)	(16.00)	(29.97)	(27.32)
INVOP	**0.1116**	−0.0007	**0.1133**	0.0002	**0.1131**	**−0.0033**	**0.1139**	**−0.0094**	**0.1163**	**0.0042**
	(13.13)	(−0.31)	(13.46)	(0.15)	(13.28)	(−1.97)	(12.43)	(−5.56)	(13.93)	(4.12)
RET		**−0.0038**		0.0006		**−0.0049**		**−0.0025**		**−0.0021**
		(−2.51)		(0.62)		(−4.51)		(−2.45)		(−3.14)
TURN		**0.0038**		**0.0020**		**0.0016**		**0.0016**		**0.0017**
		(3.66)		(3.05)		(2.16)		(2.21)		(3.65)
DY		**−0.1164**		**−0.1657**		**0.0454**		**−0.0576**		**−0.0363**
		(−3.65)		(−7.98)		(1.97)		(−2.64)		(−2.51)
ROE		**0.0070**		0.0019		**0.0043**		0.0024		**0.0029**
		(3.31)		(1.40)		(2.79)		(1.65)		(3.00)
SIGMA		0.0012		0.0029		−0.0006		−0.0031		**0.0059**
		(0.39)		(1.46)		(−0.29)		(−1.48)		(4.29)
MSCI		**0.0196**		**0.0369**		**−0.0162**		**0.0094**		**0.0092**
		(8.71)		(25.18)		(−9.94)		(6.11)		(9.07)
LEV	**−0.0577**	**−0.0181**	**−0.0637**	**−0.0059**	**−0.0529**	**−0.0142**	**−0.0453**	**−0.0196**	**−0.0575**	−0.0004
	(−3.80)	(−4.44)	(−4.23)	(−2.25)	(−3.47)	(−4.81)	(−2.76)	(−6.51)	(−3.85)	(−0.24)
CASH	**0.5316**	0.0107	**0.5247**	**0.0178**	**0.5554**	**−0.0131**	**0.5096**	**−0.0088**	**0.5615**	**0.0083**
	(24.71)	(1.88)	(24.30)	(4.87)	(26.19)	(−3.18)	(21.89)	(−2.09)	(26.83)	(3.28)
CLOSE		**−0.0963**		**−0.0388**		**−0.0586**		**−0.0499**		**−0.0384**
		(−29.84)		(−18.69)		(−24.98)		(−21.26)		(−26.64)
ADR	**−0.0844**	0.0035	**−0.1327**	**0.0419**	**−0.0377**	**−0.0385**	**−0.0936**	**0.0084**	**−0.0770**	**−0.0049**
	(−6.33)	(0.99)	(−8.59)	(18.17)	(−2.46)	(−14.86)	(−6.49)	(3.17)	(−5.91)	(−3.07)
GLOBAL_Q	**0.2677**		**0.2711**		**0.2698**		**0.2290**		**0.2825**	
	(29.17)		(29.81)		(29.40)		(24.60)		(31.04)	
LEGAL	**−0.0041**	**0.0014**	**−0.0024**	**−0.0006**	**−0.0049**	**0.0021**	**−0.0070**	**0.0017**	**−0.0029**	**−0.0002**
	(−10.77)	(15.07)	(−6.83)	(−10.43)	(−9.36)	(31.01)	(−14.14)	(24.69)	(−8.55)	(−4.80)
DISC	**0.1320**	**0.0641**	**0.1618**	**0.0202**	**0.1432**	**0.0417**	**0.0864**	**0.0276**	**0.1992**	**0.0329**
	(10.44)	(24.86)	(15.61)	(12.12)	(10.66)	(22.25)	(6.49)	(14.48)	(15.44)	(28.68)

Table 7 (*continued*)

	Panel A		Panel B		Panel C		Panel D		Panel E	
Dependent variable	log(*Q*)	*IO*	log(*Q*)	*IO*	log(*Q*)	*IO*	log(*Q*)	*IO*	log(*Q*)	*IO*
DISTANCE	**0.0704**	**−0.1670**	**−0.0407**	**−0.0184**	**0.0823**	**−0.1480**	**0.1999**	**−0.0989**	**−0.0810**	**−0.0661**
	(3.18)	(−56.23)	(−3.50)	(−9.62)	(2.65)	(−68.62)	(8.17)	(−44.91)	(−3.89)	(−50.01)
ENGLISH	**0.0655**	**0.0334**	**0.0979**	−0.0025	**0.0578**	**0.0353**	0.0137	**0.0273**	**0.1000**	**0.0038**
	(6.01)	(12.59)	(10.01)	(−1.49)	(4.55)	(18.33)	(1.08)	(13.92)	(10.17)	(3.22)
GDP	**−0.1093**	0.0011	**−0.1092**	0.0010	**−0.1105**	0.0011	**−0.1050**	**0.0029**	**−0.1114**	−0.0006
	(−19.42)	(0.73)	(−19.58)	(0.98)	(−19.63)	(1.01)	(−17.23)	(2.62)	(−20.21)	(−0.91)
MCAP	**−0.0475**	**−0.0102**	**−0.0620**	**0.0047**	**−0.0422**	**−0.0146**	**−0.0304**	**−0.0077**	**−0.0601**	**−0.0015**
	(−11.78)	(−10.22)	(−16.97)	(7.26)	(−8.48)	(−20.19)	(−6.59)	(−10.41)	(−16.35)	(−3.47)
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R^2	0.243	0.381	0.255	0.258	0.239	0.364	0.111	0.282	0.272	0.312
Number of firms	7,942	7,942	7,942	7,942	7,942	7,942	7,942	7,942	7,942	7,942
N	27,324	27,324	27,324	27,324	27,324	27,324	27,324	27,324	27,324	27,324

holdings by grey institutions. Only pressure-insensitive institutions successfully exert direct monitoring (through intervention or "voice") or indirect monitoring (exiting or "voting with one's feet").

Our firm valuation results are robust in other ways. In untabulated regressions, we also consider: (1) a sample of firms that have only positive institutional holdings; (2) standard errors clustered by country or country random effects regressions; and (3) industry-adjusted Tobin's Q computed as Q minus its industry median.

4.2. Impact on operating performance and capital expenditures

We have presented evidence in support of the hypothesis that foreign and independent institutions (but not all institutions) have a positive effect on firm value because these institutions act as monitors. An alternative interpretation of these findings is that the presence of foreign and independent investors pushes the stock prices up at least temporarily if the market is not very liquid. To distinguish the monitoring interpretation from the overvaluation effect, we now test whether institutional presence is related to measures of firms' operating performance. We wish to see if, indeed, foreign and independent institutional investors positively influence how a firm is run as captured by non-stock market measures of firm profitability. This should happen only under the monitoring hypothesis.

Panels A and B of Table 8 present the results of median regressions of two profitability measures, return on assets (*ROA*) and net profit margin (*NPM*), following Gompers, Ishii, and Metrick (2003). We control for firm characteristics such as size and book-to-market and include industry and year dummies. The results support a positive relation between institutional ownership and firms' operating performance. As with the results for Tobin's Q, the relation between foreign and independent institutions and operating performance is positive and significant, while for domestic and grey institutional ownership the relation tends to be insignificant. This finding supports our interpretation that foreign and independent institutions are effective at monitoring corporate managers.

We also investigate whether institutional monitoring effectively reduces agency costs by curtailing managers' tendency to overinvest (Jensen, 1986), that is, undertake negative net present value projects to extract private benefits. Indeed, capital expenditures represent an important managerial decision that is likely to capture investors' attention. To test this idea, we estimate median panel regressions of capital expenditures (*CAPEX*) on our institutional ownership variables. Results are in Panel C of Table 8. There is a negative relation between institutional ownership and capital expenditures, but a significant and negative relation only in the case of foreign and independent institutions, which gives further support to the monitoring interpretation of our findings. Domestic and grey institutions, however, do not seem to mitigate management's tendency to overinvest.[24]

[24]Capital expenditures (*CAPEX*) are only a rough measure of overinvestment. We include industry dummies in the regression to effectively have deviations from the industry median as a proxy for the degree of overinvestment. Additionally, we obtain similar results (not tabulated here) using industry-adjusted *CAPEX* as a dependent variable to proxy for overinvestment following Servaes (1994).

Table 8
Institutional ownership, operating performance and capital expenditures

This table reports estimates of coefficients of the annual time-series cross-sectional firm-level median regression of return on assets (*ROA*), net (sales) profit margin (*NPM*), and capital expenditures (*CAPEX*) for non-U.S. firms. Institutional ownership variables include total institutional ownership (*IO_TOTAL*), foreign institutional ownership (*IO_FOREIGN*), domestic institutional ownership (*IO_DOMESTIC*), ownership by independent institutions (mutual funds and independent investment advisers) (*IO_INDEP*), and ownership by passive institutions (bank trusts, insurance companies, and other institutions) (*IO_GREY*) as a percentage of market capitalization. Firm-level control variables include log market capitalization (*SIZE*), investment opportunities (*INVOP*), leverage (*LEV*), cash holdings (*CASH*), ADR exchange-listed dummy (*ADR*), and log book-to-market equity ratio (*BM*). The country-level regressors include legal regime index (*LEGAL*), disclosure index (*DISC*), log average geographic distance (*DISTANCE*), English language dummy (*ENGLISH*), log GDP per capita (*GDP*), and market capitalization to GDP (*MCAP*). Refer to Table B1 in Appendix B for variable definitions. The sample period is from 2000 to 2005. Financial firms are omitted (SIC 6000–6999). *t*-statistics are in parentheses. Coefficients significant at the 5% level are in boldface.

	Panel A: Return on assets (*ROA*)					Panel B: Net profit margin (*NPM*)					Panel C: Capital expenditures (*CAPEX*)				
IO_TOTAL	**0.0127**					**0.0068**					**−0.0055**				
	(5.13)					(2.59)					(−2.56)				
IO_FOREIGN		**0.0206**	**0.0185**				**0.0259**	**0.0275**				**−0.0098**	**−0.0098**		
		(6.11)	(4.98)				(6.24)	(7.06)				(−3.15)	(−3.03)		
IO_DOMESTIC			**0.0075**					**−0.0082**					−0.0012		
			(2.26)					(−2.36)					(−0.40)		
IO_INDEP				**0.0169**	**0.0151**				**0.0131**	**0.0158**				**−0.0077**	**−0.0068**
				(5.29)	(3.99)				(3.66)	(4.07)				(−2.76)	(−2.12)
IO_GREY					0.0081					−0.0089					−0.0043
					(1.29)					(−1.39)					(−0.81)
SIZE	**0.0031**	**0.0031**	**0.0031**	**0.0032**	**0.0032**	**0.0054**	**0.0052**	**0.0052**	**0.0053**	**0.0054**	**0.0033**	**0.0034**	**0.0034**	**0.0033**	**0.0033**
	(17.86)	(19.73)	(17.91)	(19.37)	(17.97)	(28.80)	(26.96)	(28.90)	(28.91)	(29.76)	(21.74)	(23.29)	(22.34)	(22.96)	(22.36)
INVOP	0.0000	0.0002	0.0000	0.0001	0.0002	−0.0019	−0.0019	**−0.0021**	−0.0020	**−0.0024**	**0.0101**	**0.0101**	**0.0102**	**0.0100**	**0.0100**
	(−0.01)	(0.27)	(0.01)	(0.12)	(0.17)	(−1.89)	(−1.79)	(−2.15)	(−1.94)	(−2.36)	(12.20)	(13.05)	(12.66)	(12.66)	(12.46)
LEV	**−0.0385**	**−0.0387**	**−0.0387**	**−0.0384**	**−0.0384**	**−0.0397**	**−0.0398**	**−0.0397**	**−0.0395**	**−0.0396**	**−0.0040**	**−0.0040**	**−0.0040**	**−0.0043**	**−0.0040**
	(−22.78)	(−26.13)	(−23.87)	(−23.95)	(−22.86)	(−22.25)	(−21.90)	(−23.43)	(−22.09)	(−22.99)	(−2.68)	(−2.85)	(−2.81)	(−3.01)	(−2.75)
CASH	**−0.0165**	**−0.0168**	**−0.0167**	**−0.0162**	**−0.0164**	**0.0082**	**0.0079**	**0.0081**	**0.0083**	**0.0085**	**−0.0281**	**−0.0277**	**−0.0278**	**−0.0281**	**−0.0281**
	(−6.99)	(−8.13)	(−7.36)	(−7.22)	(−6.98)	(3.19)	(3.05)	(3.32)	(3.24)	(3.46)	(−13.70)	(−14.35)	(−13.92)	(−14.29)	(−14.11)
ADR	**−0.0110**	**−0.0112**	**−0.0114**	**−0.0108**	**−0.0110**	**−0.0040**	**−0.0064**	**−0.0066**	**−0.0040**	**−0.0039**	**−0.0039**	**−0.0035**	**−0.0036**	**−0.0038**	**−0.0038**
	(−7.45)	(−8.56)	(−7.93)	(−7.72)	(−7.47)	(−2.60)	(−4.00)	(−4.41)	(−2.55)	(−2.61)	(−3.05)	(−2.89)	(−2.83)	(−3.14)	(−3.09)
BM	**−0.0206**	**−0.0206**	**−0.0206**	**−0.0206**	**−0.0206**	**−0.0137**	**−0.0138**	**−0.0137**	**−0.0138**	**−0.0139**	**−0.0032**	**−0.0032**	**−0.0032**	**−0.0032**	**−0.0032**
	(−55.25)	(−63.13)	(−57.68)	(−58.17)	(−55.41)	(−34.81)	(−34.36)	(−36.62)	(−34.75)	(−36.32)	(−9.76)	(−10.35)	(−9.99)	(−10.18)	(−10.00)
LEGAL	**−0.0004**	**−0.0004**	**−0.0004**	**−0.0004**	**−0.0004**	**−0.0002**	**−0.0002**	**−0.0001**	**−0.0002**	**−0.0002**	**−0.0002**	**−0.0003**	**−0.0003**	**−0.0002**	**−0.0002**
	(−10.99)	(−11.73)	(−10.96)	(−11.76)	(−11.14)	(−4.23)	(−3.74)	(−3.03)	(−4.54)	(−4.68)	(−7.08)	(−8.14)	(−7.58)	(−7.02)	(−7.03)
DISC	**0.0188**	**0.0192**	**0.0189**	**0.0190**	**0.0188**	**0.0097**	**0.0093**	**0.0098**	**0.0096**	**0.0099**	**0.0146**	**0.0143**	**0.0143**	**0.0143**	**0.0145**
	(17.50)	(20.63)	(18.33)	(18.80)	(17.54)	(8.56)	(8.13)	(9.05)	(8.52)	(9.03)	(15.41)	(16.26)	(15.57)	(15.92)	(15.80)
DISTANCE	**0.0090**	**0.0070**	**0.0082**	**0.0086**	**0.0090**	**0.0101**	**0.0090**	**0.0072**	**0.0105**	**0.0099**	**−0.0034**	**−0.0027**	**−0.0029**	**−0.0034**	**−0.0036**
	(6.85)	(6.49)	(6.34)	(7.06)	(6.88)	(7.30)	(6.80)	(5.29)	(7.69)	(7.44)	(−2.95)	(−2.63)	(−2.50)	(−3.15)	(−3.25)
ENGLISH	−0.0020	−0.0012	−0.0016	**−0.0021**	−0.0020	**−0.0056**	**−0.0050**	**−0.0046**	**−0.0059**	**−0.0060**	0.0004	0.0003	0.0004	0.0004	0.0004
	(−1.78)	(−1.22)	(−1.47)	(−1.98)	(−1.77)	(−4.82)	(−4.27)	(−4.12)	(−5.07)	(−5.36)	(0.40)	(0.35)	(0.37)	(0.42)	(0.45)
GDP	**−0.0178**	**−0.0177**	**−0.0177**	**−0.0178**	**−0.0177**	**−0.0142**	**−0.0140**	**−0.0140**	**−0.0142**	**−0.0143**	**−0.0058**	**−0.0057**	**−0.0057**	**−0.0058**	**−0.0059**
	(−28.45)	(−32.31)	(−29.52)	(−29.93)	(−28.50)	(−21.55)	(−20.98)	(−22.43)	(−21.48)	(−22.43)	(−10.71)	(−11.14)	(−10.79)	(−11.17)	(−11.04)
MCAP	**0.0075**	**0.0072**	**0.0073**	**0.0076**	**0.0075**	**0.0077**	**0.0074**	**0.0072**	**0.0078**	**0.0079**	−0.0001	−0.0001	−0.0001	−0.0001	−0.0002
	(18.44)	(20.19)	(18.37)	(19.47)	(18.49)	(17.69)	(16.85)	(17.33)	(17.89)	(18.71)	(−0.41)	(−0.25)	(−0.31)	(−0.42)	(−0.46)
Industry dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of firms	8,034	8,034	8,034	8,034	8,034	7,942	7,942	7,942	7,942	7,942	7,766	7,766	7,766	7,766	7,766
N	27,584	27,584	27,584	27,584	27,584	27,215	27,215	27,215	27,215	27,215	26,955	26,955	26,955	26,955	26,955

The magnitudes of the coefficients indicate that the effects on operating performance are economically significant. The coefficients on *IO_FOREIGN* and *IO_INDEP* indicate that a ten-percentage point increase in institutional ownership is associated with an increase in *ROA* of roughly 8% relative to the sample mean. The effect on capital expenditures is also economically significant as a ten-percentage point increase in *IO_FOREIGN* or *IO_INDEP* is associated with a decrease in *CAPEX* of roughly 2% relative to the sample mean.

Overall, we find that the presence of foreign and independent institutions as shareholders has a positive impact on firm value and operating performance. Through their monitoring efforts, these groups of institutions seem able to reduce any tendency toward overinvestment. The same cannot be said for domestic and grey institutions; they do not have the same impact on firm performance and investment policy. Thus, we are confident that our results are not spurious and we can conclude that institutions with fewer business ties to firms are a powerful force in monitoring corporations around the world.

5. Conclusion

We use a comprehensive database of equity holdings over the 2000–2005 period to investigate the role of institutional investors around the world. Focusing on non-U.S. firms, we document that institutions are becoming prominent shareholders in companies worldwide. Investments by foreign institutions exceed those of domestic institutions in some markets. Foreign capital is not of a single color, in that U.S. and non-U.S. foreign institutions control comparable pools of capital.

We offer a global view of what attracts international institutions to invest in corporations around the world. We find that all institutional investors seek large firms and firms with strong governance indicators, but foreigners overweight firms in the MSCI index and firms cross-listed on a U.S. exchange. Some country-level factors are relevant (e.g., all investors prefer countries with strict disclosure standards), but a significant part of the cross-sectional variation in institutional holdings is explained by firm-level characteristics. This suggests that institutional money actively selects which firms to invest in, beyond just following country-level allocations. These findings support a substitution role, rather than a complementary role, for firm-level and country-level mechanisms, at least in institutional investors' portfolio decisions. This gives additional insights into research showing that firm-level governance levels are in large part driven by country characteristics (Stulz, 2005; Doidge, Karolyi, and Stulz, 2007a). Our findings suggest that investors do track firm-level governance indicators, and there is some hope for a "good firm" in a "bad" country.

Our findings suggest that some (but not all) institution groups are effective monitors of the firms they invest in. The presence of foreign and independent institutions enhances shareholder value. These institutions are able to exert pressure because they have fewer business relations with the firm to jeopardize, unlike domestic or grey institutions. Our tests show that firms held by foreign and independent institutions have higher valuations; there is no similar evidence for ownership by domestic and grey institutions. We also document that foreign and independent institutions are associated with better operating performance and reduced capital expenditures. These results are robust in several ways, including the potential endogeneity of institutional ownership. This positive performance effect is indicative of a form of reputational bonding that stems from firms associating with large and independent institutional investors.

As foreign and independent institutional investors are increasingly playing an important governance role in corporations around the world, we believe it is worth exploring in more depth the particular ways in which they exert their influence. In this paper we examine outcomes (Tobin's Q, return on assets, net profit margin, capital expenditures) rather than direct corporate choices (research and development expenditures, mergers and acquisitions decisions, CEO turnover and compensation). Institutional shareholders can push for change by directly voicing their interests to corporate management, or indirectly, by influencing managers' actions by exiting (the "Wall Street walk"). It would be interesting to look at the impact institutional investors have on changes in corporate governance practices in firms around the world as well as their role in specific corporate events.

Appendix A. FactSet/LionShares institutional ownership database

Table A1
Institutional stock holdings by country

This table reports the market value of stock holdings (in millions of US$) and number of institutions for each of the origin institution countries from 2000 to 2005 (end-of-year values). The column "Top Five Institutions" lists the five largest institutional managers by equity assets (in billions of US$) in December 2005.

		2000	2001	2002	2003	2004	2005	Top five institutions
United States (US)	Total equity assets	10,078,671	9,398,468	7,811,576	10,697,788	12,190,591	13,654,134	1: Barclays Global Investors NA (CA)—$674.9 bln
	Nr of institutions	2,162	2,359	2,498	2,705	2,972	3,233	2: Capital Research and Management Co.—$661.6 bln
								3: Fidelity Management and Research—$646.8 bln
								4: State Street Global Advisors—$456.5 bln
								5: Vanguard Group, Inc.—$375.9 bln
United Kingdom (UK)	Total equity assets	371,122	483,128	462,084	647,900	978,502	1,176,063	1: AMVESCAP Plc—$113.9 bln
	Nr of institutions	123	186	233	268	306	324	2: Fidelity Investments International (UK)—$95.1 bln
								3: JPMorgan Asset Management (UK)—$75.3 bln
								4: Schroder Investment Management (UK)—$60.6 bln
								5: INVESCO Asset Management—$44.0 bln
France (FR)	Total equity assets	285,796	304,345	284,878	441,077	516,189	630,562	1: AXA SA—$281.7 bln
	Nr of institutions	41	68	105	136	159	173	2: Crédit Agricole Asset Management—$41.7 bln
								3: IXIS Asset Management—$32.9 bln
								4: BNP Paribas Asset Management—$31.6 bln
								5: AXA Investment Managers Paris—$24.6 bln
Canada (CA)	Total equity assets	126,912	201,262	221,392	337,287	446,424	567,857	1: TD Asset Management, Inc.—$40.6 bln
	Nr of institutions	39	154	171	183	204	213	2: AIM Trimark Investments—$26.9 bln
								3: Jarislowsky, Fraser Ltd.—$26.9 bln
								4: CPP Investment Board—$26.6 bln
								5: CDP Capital World Markets—$25.4 bln
Germany (DE)	Total equity assets	117,654	236,506	283,450	341,853	417,054	491,007	1: Dresdnerbank Investment Management—$59.7 bln
	Nr of institutions	53	111	134	143	160	164	2: DWS Investment GmbH (Germany)—$45.5 bln
								3: Deka Investment GmbH—$39.4 bln
								4: Union Investment Privatfonds GmbH—$34.0 bln
								5: Universal-Investment-GmbH—$30.3 bln
Sweden (SE)	Total equity assets	26,322	52,705	65,785	114,632	168,080	188,958	1: Robur Fonder AB—$27.2 bln
	Nr of institutions	12	23	30	47	57	65	2: SEB Investment Management—$17.1 bln
								3: Handelsbanken Kapitalförvaltning—$16.1 bln
								4: Alecta Pensionsförsäkring, Ömsesidigt—$15.8 bln
								5: Nordea Investment Management—$12.9 bln
Japan (JP)	Total equity assets	48,165	38,027	40,046	94,490	166,068	209,396	1: Nomura Asset Management Co., Ltd.—$36.0 bln
	Nr of institutions	36	46	55	75	84	85	2: Fidelity Investments Japan Ltd.—$23.1 bln
								3: Nikko Asset Management Co. Ltd.—$14.9 bln
								4: Nomura Securities Co., Ltd.—$12.4 bln
								5: Daiwa Asset Management—$12.3 bln

Netherlands (NL)	Total equity assets	34,762	47,515	61,676	90,095	117,082	118,633	1: Stichting Pensioenfonds ABP—$24.9 bln 2: ABN AMRO Asset Management—$24.1 bln 3: Robeco Asset Management—$18.6 bln 4: ING Investment Management Advisors—$17.7 bln 5: AEGON Asset Management NV—$10.1 bln
	Nr of institutions	17	18	31	36	39	41	
Switzerland (SW)	Total equity assets	46,161	64,964	62,670	86,005	108,620	195,090	1: UBS Global Asset Management—$60.7 bln 2: UBS AG—$42.3 bln 3: Credit Suisse Asset Management—$14.3 bln 4: Capital International SA Switzerland—$9.5 bln 5: Swisscanto Portfolio Management AG—$8.3 bln
	Nr of institutions	35	57	89	120	156	165	
Italy (IT)	Total equity assets	17,237	60,202	57,053	87,380	100,612	101,587	1: CAAM SGR—$19.8 bln 2: Capitalia Asset Management SGR—$7.7 bln 3: Sanpaolo IMI Asset Management SG—$6.8 bln 4: Monte Paschi Asset Management SGR—$6.4 bln 5: Arca SGR SpA—$6.3 bln
	Nr of institutions	17	37	55	59	62	64	
Norway (NO)	Total equity assets	1,564	31,615	39,622	70,916	95,142	104,160	1: Norges Bank Investment Management—$64.2 bln 2: Folketrygdfondet—$7.5 bln 3: DnB NOR Kapitalforvaltning—$6.9 bln 4: Storebrand Kapitalforvaltning ASA—$5.5 bln 5: Stavanger Fondsforvaltning AS—$4.3 bln
	Nr of institutions	5	16	18	21	23	23	
Ireland (IE)	Total equity assets	20,043	33,973	31,444	41,992	58,049	57,716	1: Pioneer Investment Management (Ireland) Ltd—$20.1 bln 2: Fideuram Asset Management Ltd. (Ireland)—$16.0 bln 3: Bank of Ireland Asset Management Ltd. (Ireland)—$10.8 bln 4: AIB Investment Managers Ltd.—$4.5 bln 5: IG International Management Ltd.—$2.5 bln
	Nr of institutions	8	11	13	15	16	16	
Belgium (BE)	Total equity assets	25,905	32,248	30,256	43,143	52,269	60,289	1: Dexia Asset Management (Belgium) SA—$13.4 bln 2: KBC Asset Management (Belgium)—$13.4 bln 3: ING Investment Management (Belgium)—$13.1 bln 4: Fortis Investment Management SA (Belgium)—$9.5 bln 5: Banque Degroof SA—$4.0 bln
	Nr of institutions	9	20	25	28	30	30	
Denmark (DK)	Total equity assets	4,023	8,838	21,105	40,235	50,846	69,243	1: ATP Arbejdsmarkedets Tillægspension—$18.6 bln 2: Nordea Investment Management (Denmark) A/S—$12.3 bln 3: Danske Capital Denmark—$5.0 bln 4: Pensionskassernes Administration A/S—$3.8 bln 5: Lønmodtagernes Dyrtidsfond—$3.7 bln
	Nr of institutions	12	18	23	24	27	30	
Hong Kong (HK)	Total equity assets	15,702	14,780	16,705	31,487	41,988	55,742	1: Templeton Asset Management (Hong Kong) Ltd—$13.4 bln 2: JF Asset Management Ltd—$7.5 bln 3: Fidelity Investments Management (Hong Kong) Ltd—$7.4 bln 4: HSBC Halbis Partners (Hong Kong) Ltd—$4.7 bln 5: State Street Global Advisors (Asia) Ltd—$3.5 bln
	Nr of institutions	20	31	31	35	38	42	
Spain (ES)	Total equity assets	4,501	18,320	21,030	32,691	40,366	43,991	1: BBVA Gestion SGIIC SA—$5.7 bln 2: Invercaixa Gestion SGIIC—$3.3 bln 3: Bestinver Gestion SGIIC—$2.5 bln
	Nr of institutions	23	103	115	120	133	138	

Table A1 (*continued*)

		2000	2001	2002	2003	2004	2005	Top five institutions
								4: Urquijo Gestion SGIIC—$1.9 bln 5: Morgan Stanley Gestion SGIIC SA—$1.9 bln
Singapore	Total equity assets	7,340	9,935	12,574	21,781	31,870	47,197	1: Aberdeen Asset Management Asia Ltd—$10.9 bln
(SG)	Nr of institutions	22	33	38	43	46	46	2: Templeton Asset Management Singapore Ltd—$9.1bln 3: Schroder Investment Management (Singapore) Ltd—$4.5 bln 4: Pioneer Investment Management Ltd. (Singapore)—$2.6 bln 5: Deutsche Asset Management (Asia) Ltd—$1.8 bln
Finland	Total equity assets	751	5,324	10,300	22,629	30,939	32,937	1: Kuntien Eläkevakuutus—Local Gov Pensions Institution—$7.1 bln
(FI)	Nr of institutions	5	19	25	37	41	41	2: Keskinäinen Eläkevakuutusyhtiö Varma-Sampo—$5.5 bln 3: Keskinäinen Eläkevakuutusyhtiö Ilmarinen Mutual—$3.9 bln 4: Opstock Asset Management—$2.9 bln 5: Valtion Eläkerahasto—The State Pension Fund—$1.8 bln
Luxembourg	Total equity assets	1,355	11,188	10,983	19,556	25,411	32,996	1: SanPaolo IMI Asset Management Luxembourg SA—$8.3 bln
(LU)	Nr of institutions	8	33	40	55	62	63	2: DWS Investment SA (Luxembourg)—$6.0 bln 3: Dexia Asset Management (Luxembourg)—$4.0 bln 4: Nordea Bank SA (Luxembourg)—$3.0 bln 5: Banque de Luxembourg—$2.1 bln
South Africa	Total equity assets	1	73	4,515	8,341	16,169	20,099	1: Allan Gray Unit Trust Management Ltd.—$3.3 bln
(ZA)	Nr of institutions	2	3	29	29	32	34	2: Investec Asset Management Pty Ltd. (South Africa)—$3.1 bln 3: Old Mutual Asset Managers (South Africa) (Pty) Ltd—$3.1 bln 4: Coronation Management Co—$1.4 bln 5: Stanlib Asset Management Ltd—$1.3 bln
Australia	Total equity assets	3,326	3,453	3,922	5,990	15,403	34,647	1: Barclays Global Investors (Australia)—$4.0 bln
(AU)	Nr of institutions	6	9	15	17	39	57	2: Perpetual Investment Management—$3.7 bln 3: UBS Global Asset Management (Australia)—$2.8 bln 4: Australian Foundation Investment Co—$2.5 bln 5: Principal Global Investors (Australia)—$1.9 bln
India	Total equity assets	227	116	123	3,953	7,629	21,131	1: HSBC Asset Management (India)—$4.5 bln
(IN)	Nr of institutions	2	3	3	23	26	31	2: Fidelity Fund Management—$3.2 bln 3: UTI Asset Management Co—$2.7 bln 4: Franklin Templeton Asset Management—$1.7 bln 5: HDFC Asset Management Co—$1.5 bln
Austria	Total equity assets	2,348	3,323	4,078	5,513	7,315	9,793	1: Capital Invest KAG Austria—$2.0 bln
(AU)	Nr of institutions	11	24	28	34	35	37	2: Raiffeisen Kapitalanlage—$1.8 bln 3: Erste Sparinvest—Kapitalanlagen—$1.2 bln 4: Volksbanken Kapitalanlage Gesellschaft—$0.6 bln 5: Gutmann Kapitalanlage AG—$0.6 bln
Portugal	Total equity assets	927	903	1,383	2,502	3,310	3,618	1: CAIXAGEST Gestão de Fundos—$0.8 bln
(PT)	Nr of institutions	3	3	16	36	39	40	2: Millennium BCP Gestao de Fundos—$0.5 bln

								3: BPI Fundos—Gestão de Fundos—$0.5 bln 4: Santander Gestora de Fundos—$0.4 bln 5: Fidelidade-Mundial Seguros—$0.3 bln
Liechtenstein	Total equity assets	—	—	895	2,400	3,036	3,058	1: LGT Capital Management AG—$1.5 bln
(LI)	Nr of institutions	—	—	11	14	15	16	2: LLB Investment Partners AG—$1.1 bln 3: CATAM Asset Management AG—$0.2 bln 4: bfw Fondsleitung AG—$0.1 bln 5: Principal Vermoegensverwaltung AG—$0 bln
Poland	Total equity assets	—	—	—	1,091	2,823	4,523	1: Pioneer Pekao TFI SA—$1.5 bln
(PL)	Nr of institutions	—	—	—	14	15	16	2: BZ WBK AIB TFI—$1.0 bln 3: ING TFI—$0.6 bln 4: Credit Suisse Asset Management Polska—$0.3 bln 5: BPH TFI—$0.3 bln
Greece	Total equity assets	—	—	326	1,069	2,355	2,353	1: EFG Eurobank Mutual Fund Management—$1 bln
(GR)	Nr of institutions	—	—	16	18	22	22	2: Hellenic Investment Co. SA—$0.5 bln 3:Diethniki Mutual Fund Management Co—$0.2 bln 4: Alpha Asset Management—$0.1 bln 5: Proton Asset Management SA—$0.1bln
Other	Total equity assets	47,119	41,870	38,160	56,729	86,539	108,139	1: Templeton Global Advisors—$66.3 bln
	Nr of institutions	22	27	40	81	112	128	2: Orbis Investment Management—$10.9 bln 3: The Northern Cross Investments—$10.6 bln 4: Tewksbury Capital Management—$3.5 bln 5: Old Mutual Asset Managers (Bermuda)—$1.6 bln
All	Total equity assets	11,287,933	11,103,080	9,598,030	13,350,523	15,780,681	18,044,918	
	Nr of institutions	2,693	3,412	3,887	4,416	4,950	5,337	

Table A2
Cross-country institutional stock holdings

This table reports the distribution of the market value of stock holdings (in billions of US$) by origin institution countries (rows) and destination stock market countries (columns) in December 2005. Refer to Table A1 for country names.

Institution	Destination stock market country																											
country	US	UK	FR	CA	DE	SE	JP	NL	CH	IT	NO	IE	BE	DK	HK	ES	SG	FI	LU	ZA	AU	IN	AT	PT	LI	PL	GR	Other	Total
US	**11,653**	286	119	237	91	23	236	111	115	29	13	19	10	8	31	30	11	31	9	18	34	28	5	3	0	2	5	499	13,654
UK	312	**371**	54	21	42	10	62	42	35	22	7	8	6	4	9	18	3	8	3	7	12	5	4	1	0	4	4	102	1,176
FR	307	17	**177**	3	23	2	12	17	9	14	1	2	6	1	1	9	0	4	2	1	0	1	1	1	0	1	1	20	631
CA	134	17	6	**361**	4	1	11	4	4	2	0	2	0	1	2	2	1	1	0	1	3	0	0	0	0	0	0	11	568
DE	70	48	68	2	**118**	5	21	34	23	23	3	4	6	2	3	26	1	10	1	0	3	1	2	1	0	1	2	13	491
SE	33	13	5	1	4	**93**	6	2	5	1	2	1	0	1	1	2	0	3	1	0	1	0	0	0	0	0	0	10	189
JP	43	3	1	1	1	0	**147**	1	1	0	0	0	0	0	3	0	0	0	0	0	3	1	0	0	0	0	0	5	209
NL	49	10	6	2	4	3	6	**13**	4	2	1	1	1	0	1	2	0	1	0	0	1	0	0	0	0	0	1	9	119
CH	86	11	9	3	9	1	10	6	**38**	3	1	1	1	0	1	3	0	2	0	1	1	0	1	0	0	0	0	7	195
IT	19	11	9	0	6	1	9	4	4	**25**	0	0	1	0	1	2	0	1	1	0	1	0	0	0	0	0	0	4	102
NO	30	12	6	2	4	4	6	3	4	2	**17**	1	1	1	1	2	0	2	0	0	1	0	0	0	0	0	0	4	104
IE	20	7	5	1	3	0	3	2	3	5	0	**1**	0	0	1	1	0	0	0	0	1	0	0	0	0	0	0	3	58
BE	11	6	8	0	5	1	2	4	2	3	0	1	**9**	0	0	3	0	1	0	0	0	0	0	0	0	0	1	2	60
DK	15	6	3	0	3	2	5	2	2	1	0	0	0	**18**	1	1	0	1	0	0	0	1	0	0	0	0	0	6	69
HK	1	2	0	0	0	0	3	0	0	0	0	0	0	0	**14**	0	2	0	0	1	2	3	0	0	0	0	0	26	56
ES	5	2	5	0	3	0	1	2	1	2	0	0	0	0	0	**19**	0	1	0	0	0	0	0	0	0	0	0	1	44
SG	1	1	0	0	0	0	6	0	0	0	0	0	0	0	6	0	**4**	0	0	0	3	4	0	0	0	0	0	21	47
FI	2	4	3	0	2	2	1	1	2	1	0	0	0	0	0	1	0	**12**	0	0	0	0	0	0	0	0	0	1	33
LU	8	4	3	0	2	1	3	1	2	2	0	1	0	0	1	1	0	1	**0**	0	0	0	0	0	0	0	0	3	33
ZA	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**16**	0	0	0	0	0	0	0	0	20
AU	4	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	**23**	0	0	0	0	0	0	2	35
IN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**21**	0	0	0	0	0	0	21
AT	2	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	0	0	2	10
PT	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	0	0	0	4
LI	1	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**	0	0	0	3
PL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**4**	0	0	5
GR	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**1**	0	2
Other	22	14	4	1	4	1	16	6	4	1	0	0	0	1	4	3	1	1	0	2	1	0	0	0	0	0	0	**21**	108
Total	12,829	851	491	638	329	151	567	258	260	138	48	41	43	39	80	125	26	79	18	48	91	67	18	9	0	14	17	772	18,045

Table A3
Institutional ownership by country

Panel A reports total institutional ownership, foreign institutional ownership by all institutions, U.S. institutions and non-U.S. institutions, domestic institutional ownership, ownership by independent institutions (mutual funds and independent investment advisers), and ownership by grey institutions (bank trusts, insurance companies, and other institutions) as a percentage of destination country stock market capitalization in December 2005. Panel B reports total institutional ownership, foreign institutional ownership by all institutions, U.S. institutions and non-U.S. institutions, domestic institutional ownership, ownership by independent institutions (mutual funds and investment advisers), and ownership by grey institutions (bank trusts, insurance companies, and other institutions) as a percentage of destination country stock market float (i.e., market value of stock that is not closely held and is investable by outside shareholders) in December 2005. Panel C reports the market weight (proportion that the country's stock market capitalization represents of the total market capitalization), domestic holdings (fraction that domestic institutional holdings represent of total institutional holdings), and domestic bias by origin institution country in December 2005. Domestic bias is calculated as the logarithm of the ratio of the domestic holdings by the market weight.

Panel A: Institutional ownership as % of market capitalization

	Market cap. ($ bln)	Total inst.	Foreign inst.	Foreign U.S. inst.	Foreign non-U.S. inst.	Domestic inst.	Indep. inst.	Mutual funds	Invest. adv.	Grey inst.	Bank trusts	Insur. comp.	Other inst.
U.S.	19,541	65.7	6.0		6.0	59.6	44.0	18.1	25.9	19.0	7.5	2.6	9.0
U.K.	4,231	20.1	11.3	6.8	4.6	8.8	12.8	3.6	9.2	7.2	4.0	2.4	0.8
France	2,332	21.1	13.5	5.1	8.4	7.6	11.1	3.7	7.4	9.9	6.7	2.6	0.6
Canada	1,657	38.5	16.7	14.3	2.4	21.8	27.7	11.5	16.2	9.6	4.1	1.4	4.1
Germany	1,568	21.0	13.5	5.8	7.7	7.5	10.3	3.0	7.3	10.6	8.4	1.5	0.7
Sweden	445	33.8	12.9	5.1	7.8	21.0	17.2	8.9	8.3	16.4	6.2	2.9	7.3
Japan	5,262	10.8	8.0	4.5	3.5	2.8	7.9	2.2	5.7	2.7	1.7	0.5	0.5
Netherlands	796	32.4	30.8	14.0	16.8	1.6	20.6	5.3	15.3	11.5	7.9	2.4	1.1
Switzerland	1,137	22.9	19.5	10.1	9.4	3.3	14.0	5.2	8.8	8.7	6.4	1.2	1.1
Italy	1,013	13.6	11.1	2.9	8.3	2.5	7.1	2.7	4.5	6.4	5.0	1.1	0.3
Norway	226	21.1	13.5	5.8	7.7	7.6	11.7	3.7	8.0	9.2	5.1	1.2	2.9
Ireland	133	30.5	29.7	14.4	15.4	0.8	20.0	7.1	12.9	9.6	6.7	1.5	1.4
Belgium	441	9.8	7.8	2.3	5.5	2.0	4.6	1.5	3.1	5.2	3.7	1.2	0.2
Denmark	189	20.5	10.9	4.4	6.5	9.6	8.1	2.7	5.4	12.3	4.0	0.6	7.6
Hong Kong	730	10.9	9.0	4.2	4.8	2.0	8.1	3.0	5.1	2.8	2.1	0.5	0.2
Spain	750	16.6	14.1	4.0	10.1	2.5	8.5	2.7	5.8	8.1	6.1	1.4	0.6
Singapore	240	10.8	9.2	4.6	4.6	1.7	8.2	3.4	4.9	2.5	1.7	0.5	0.3
Finland	235	33.8	28.7	13.1	15.6	5.1	18.8	6.4	12.3	14.7	8.1	2.2	4.4
Luxembourg	90	20.4	19.9	9.6	10.3	0.5	13.7	6.2	7.5	6.1	4.0	1.6	0.5
South Africa	426	11.2	7.4	4.3	3.1	3.7	8.6	1.8	6.8	2.4	0.9	1.2	0.2
Australia	987	9.2	6.8	3.4	3.4	2.4	6.8	2.3	4.5	2.4	1.3	0.7	0.3
India	420	15.9	11.0	6.7	4.3	4.9	13.5	5.3	8.2	2.0	1.6	0.2	0.3
Austria	138	13.2	12.2	4.0	8.2	1.1	7.7	2.6	5.1	5.5	4.5	0.8	0.2
Portugal	102	9.0	7.6	3.0	4.6	1.5	4.2	1.2	3.0	4.8	3.6	0.7	0.6
Liechtenstein	4	5.2	4.5	1.3	3.2	0.7	2.7	1.4	1.2	2.5	2.4	0.1	0.0
Poland	69	20.7	15.0	2.6	12.4	5.7	9.7	3.8	5.9	10.9	10.4	0.4	0.1
Greece	161	10.2	9.7	2.9	6.8	0.6	5.8	2.0	3.8	4.3	3.2	0.8	0.2
Other	3,561	21.7	21.1	14.0	7.1	0.6							
Total	46,884	38.5	10.4	4.3	6.1	28.1	26.3	10.3	16.0	12.3	5.7	1.9	4.6
Total Non-U.S.	27,343	19.1	13.5	7.3	6.2	5.6	11.7	3.9	7.8	6.8	4.2	1.4	1.1

Table A3 (*continued*)

	Panel B: Institutional ownership as % of market float														Panel C: Domestic bias		
	Closely held (%)	Market float ($ bln)	Total inst.	Foreign inst.	Foreign U.S. inst.	Foreign non-U.S. inst.	Domestic inst.	Indep. inst.	Mutual funds	Invest. adv.	Grey inst.	Bank trusts	Insur. comp.	Other inst.	Market weight (%)	Domestic holdings (%)	Domestic bias (%)
U.S.	10.6	17,465	73.5	6.7		6.7	66.7	49.2	20.3	28.9	21.2	8.3	2.9	10.0	41.7	85.3	71.7
U.K.	10.7	3,778	22.5	12.7	7.6	5.1	9.8	14.3	4.0	10.3	8.1	4.5	2.7	0.9	9.0	31.6	125.2
France	33.9	1,541	31.9	20.4	7.7	12.7	11.5	16.7	5.5	11.2	15.0	10.1	4.0	0.9	5.0	28.0	172.9
Canada	20.2	1,321	48.3	20.9	18.0	3.0	27.3	34.8	14.5	20.3	12.0	5.1	1.8	5.1	3.5	63.6	289.1
Germany	43.6	884	37.2	23.9	10.2	13.6	13.3	18.2	5.4	12.9	18.8	14.9	2.6	1.2	3.3	23.9	196.8
Sweden	22.3	346	43.6	16.6	6.6	10.0	27.0	22.1	11.5	10.7	21.1	8.0	3.7	9.4	1.0	49.4	395.1
Japan	31.1	3,624	15.6	11.6	6.5	5.1	4.0	11.5	3.2	8.3	3.9	2.5	0.7	0.7	11.2	70.0	183.1
Netherlands	19.8	638	40.4	38.4	17.4	21.0	2.0	25.7	6.6	19.1	14.4	9.9	3.1	1.4	1.7	11.0	186.6
Switzerland	24.4	859	30.2	25.8	13.3	12.5	4.4	18.5	6.9	11.6	11.6	8.4	1.6	1.5	2.4	19.2	208.2
Italy	32.0	689	20.0	16.3	4.2	12.1	3.7	10.5	3.9	6.6	9.5	7.3	1.7	0.5	2.2	24.8	244.3
Norway	49.4	114	41.7	26.7	11.5	15.2	15.0	23.0	7.2	15.8	18.2	10.1	2.4	5.7	0.5	16.5	352.9
Ireland	9.8	120	33.8	33.0	15.9	17.1	0.9	22.1	7.9	14.3	10.6	7.4	1.7	1.5	0.3	1.8	186.8
Belgium	44.6	244	17.7	14.0	4.1	9.9	3.7	8.3	2.7	5.5	9.3	6.7	2.2	0.4	0.9	14.8	275.5
Denmark	38.3	117	33.3	17.7	7.1	10.6	15.6	13.2	4.4	8.8	19.9	6.4	1.0	12.4	0.4	26.3	417.5
Hong Kong	60.8	287	27.9	22.8	10.7	12.2	5.1	20.6	7.6	13.0	7.1	5.4	1.2	0.5	1.6	26.0	281.5
Spain	36.7	475	26.3	22.3	6.3	16.0	4.0	13.4	4.3	9.2	12.8	9.6	2.2	0.9	1.6	43.2	329.6
Singapore	57.6	102	25.6	21.6	10.8	10.8	3.9	19.5	8.0	11.5	6.0	4.1	1.2	0.7	0.5	8.4	280.2
Finland	15.9	198	40.2	34.2	15.6	18.6	6.0	22.3	7.7	14.7	17.5	9.7	2.6	5.2	0.5	36.2	427.9
Luxembourg	49.6	45	40.4	39.5	19.1	20.4	0.9	27.2	12.3	14.9	12.2	8.0	3.1	1.0	0.2	1.3	191.0
South Africa	41.1	251	18.9	12.6	7.3	5.3	6.3	14.6	3.1	11.5	4.0	1.5	2.1	0.4	0.9	79.3	446.8
Australia	30.2	689	13.2	9.8	4.9	4.9	3.4	9.7	3.3	6.4	3.5	1.9	1.1	0.5	2.1	67.8	347.2
India	54.7	190	35.1	24.2	14.7	9.5	10.9	29.8	11.6	18.2	4.5	3.4	0.5	0.6	0.9	98.3	469.8
Austria	54.8	62	29.3	26.9	8.7	18.2	2.4	17.0	5.8	11.2	12.3	10.1	1.7	0.5	0.3	15.0	393.1
Portugal	42.7	58	15.8	13.2	5.2	8.0	2.5	7.3	2.1	5.2	8.5	6.2	1.2	1.1	0.2	41.0	524.1
Liechtenstein	58.1	2	12.4	10.8	3.0	7.8	1.6	6.4	3.4	3.0	6.0	5.7	0.3	0.0	0.0	0.9	463.1
Poland	58.2	29	49.4	35.8	6.2	29.6	13.5	23.2	9.1	14.2	26.1	25.0	0.9	0.2	0.1	86.2	637.5
Greece	48.6	83	19.9	18.8	5.6	13.2	1.1	11.2	3.9	7.3	8.4	6.3	1.6	0.5	0.3	39.0	473.1
Other	45.2	1,952	39.5	38.5	25.5	12.9	1.1								7.6	19.2	92.8
Total	22.9	36,164	49.9	13.5	5.5	7.9	36.4	33.3	13.1	20.2	15.5	7.2	2.5	5.9			
Total Non-U.S.	31.6	18,699	27.9	19.7	10.7	9.0	8.2	16.6	5.5	11.1	9.6	6.0	2.0	1.5			

Appendix B

Table B1
Variables definition

Variable		Definition
Panel A: Institutional ownership variables		
Total institutions	*IO_TOTAL*	Institutional ownership by all institutions as a percentage of market capitalization (LionShares)
Foreign institutions	*IO_FOREIGN*	Institutional ownership by foreign institutions as a percentage of market capitalization (LionShares)
Foreign U.S. institutions	*IO_FOREIGN_US*	Institutional ownership by U.S. foreign institutions as a percentage of market capitalization (LionShares)
Foreign non-U.S. institutions	*IO_FOREIGN_NUS*	Institutional ownership by non-U.S. foreign institutions as a percentage of market capitalization (LionShares)
Domestic institutions	*IO_DOMESTIC*	Institutional ownership by domestic institutions as a percentage of market capitalization (LionShares)
Independent institutions	*IO_INDEP*	Institutional ownership by independent institutions (mutual funds and independent investment advisers) as a percentage of market capitalization (LionShares)
Grey institutions	*IO_GREY*	Institutional ownership by grey institutions (bank trusts, insurance companies, and other institutions) as a percentage of market capitalization (LionShares)
Panel B: Valuation, operating performance and investment variables		
Tobin's *Q*	*Q*	Sum of total assets (WorldScope item 02999) plus market value of equity (Datastream item MV) minus book value of equity (WorldScope item 03501) divided by total assets
Return on assets	*ROA*	Return on assets (WorldScope item 08326)
Net Profit Margin	*NPM*	Net income before extraordinary items (WorldScope item 01551) divided by net sales (WorldScope item 01001)
Capital Expenditures	*CAPEX*	Capital expenditures (WorldScope item 04601) divided by total assets (WorldScope item 02999)
Panel C: Firm-level control variables		
Market capitalization (log)	*SIZE*	Log annual market capitalization in US$ (Datastream item MV)
Book-to-market (log)	*BM*	Log of the book-to-market equity ratio (market value is Datastream item MV and book value is WorldScope item 03501)
Investment opportunities	*INVOP*	Two-year geometric average of annual growth rate in net sales in US$ (WorldScope item 01001)
Annual stock return	*RET*	Annual (end-of-year) geometric stock rate of return (Datastream item RI)
Turnover	*TURN*	Annual share volume (Datastream item VO) divided by adjusted shares outstanding (Datastream items NOSH/AF)
Dividend yield	*DY*	Dividend yield (WorldScope item 09404)
Return on equity	*ROE*	Return on equity (WorldScope item 08301)
Idiosyncratic variance	*SIGMA*	Idiosyncratic variance estimated from a domestic market model for US dollar weekly returns
MSCI membership dummy	*MSCI*	MSCI member dummy, which equals one if a firm is a member of the MSCI All-country World Index
Leverage	*LEV*	Ratio of total debt (WorldScope item 03255) to total assets (WorldScope item 02999)
Cash	*CASH*	Ratio of cash and short term investments (WorldScope item 02001) to total assets (WorldScope item 02999)
Closely held shares	*CLOSE*	Number of shares held by insiders as a proportion of the number of shares outstanding (WorldScope item 08021)
U.S. cross-listing dummy	*ADR*	ADR dummy, which equals one if a firm is cross-listed on a U.S. exchange
Number of analysts	*ANALYSTS*	Number of analysts covering a firm as reported by I/B/E/S
Foreign sales	*FXSALES*	International annual net sales (WorldScope item 07101) as a proportion of net sales (WorldScope 01001)
Global industry Tobin's *Q*	*GLOBAL_Q*	Median Tobin's Q of firms in each two-digit SIC global industry

Table B1 (*continued*)

Variable		Definition
Panel D: Country-level control variables		
Legal regime quality index	*LEGAL*	Anti-director rights multiplied by the rule of law index (La Porta, Lopez-de-Silanes, Shleifer, and Vishny, 1998)
Disclosure quality index	*DISC*	Accounting transparency index (Global Competitiveness Report)
Average distance (log)	*DISTANCE*	Average bilateral distance in kilometers (log) between a country capital city and other capital cities
English language dummy	*ENGLISH*	English language dummy variable, which equals one when a country's official language is English (World Factbook)
GDP per capita (log)	*GDP*	Annual log gross domestic product per capita in US$ (World Bank WDI)
Market capitalization/GDP	*MCAP*	Annual ratio of stock market capitalization to gross domestic product in US$ (World Bank WDI)

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