

Who Invests in and What Drives Equity Ownership Around the World*

February 10, 2022

ABSTRACT

We exploit the increasing availability of international stock holdings data to examine ownership by different stakeholders in 46 markets. Home bias varies across countries, investor types, and is still much higher in emerging markets (EMs). Institutions have become more global but remain under-diversified. The country effect in institutional ownership of EM stocks is large and of similar economic significance as country factors in explaining EM stock returns. Institutions of different types and domicile continue to show strong preference for large firms but exhibit significant differences for the other firm characteristics. The preference of foreign institutions for cross-listed firms continues and is stronger in EMs. The firm characteristics that matter most for US institutions vary significantly across markets and especially in EM countries. Retail investors are mostly present in small and liquid firms.

Keywords: Institutional investors; emerging markets; international capital markets; large panel, shrinkage, LASSO, variable selection

JEL classification: C23, C51, C55, G15, G23, G32, G34.

*We are grateful for helpful comments from Olivier Scaillet, Francisco Urzua, Miziane Lasfar, Wilbur Chen(discussant), Erwin Hansen(discussant), Zeming Li(discussant), Sehoon Kim (discussant), Jianjian Jin (discussant) and seminar participants at the Bayes Business School, the Global Finance Conference 2021, SFI workshop research days, JIAR conference 2021, the World Finance Conference 2021, IRMC conference 2021, the Bristol Financial Markets Conference, Australasian Finance and Banking Conference, World Finance and Banking Symposium. We thank Christian B. Hansen for sharing the Matlab code for Cluster-LASSO.

I. Introduction

Institutional investors play a growing role in the international stock market. From 2000 to 2019, the share of common equity held by mutual funds, hedge funds, pensions, and other institutions increased from 55% to 73% of total market value in developed markets. The increase is more striking for emerging markets where institutional ownership almost doubled, moving from 24% to 46% (see Figure ??). In conjunction with the widespread liberalization of equity markets, these developments raise important questions as to their impact on the structure of global financial markets. Since the international asset pricing models that investigate valuation consequences of barriers to cross-national portfolio flows do not differentiate between different types of shareholders, understanding international stock holdings and investor preferences is a key step towards a more realistic representation of the global financial market.¹ It is equally important to understand what factors drive institutional and individual ownership, their evolution over time, the drivers of their observed portfolios and how these factors differ across developed markets (DMs) and emerging markets (EMs). Our paper offers new results on the distribution and dynamics of international stock holdings by institutions and retail investors and the determinants of DM and EM stock holdings at the aggregate and national levels.

Understanding the ownership structure and the preference of investors for EM stocks is important because compared to DMs, these markets are subject to greater investment barriers and are less integrated (see, for example, Bekaert and Harvey (1995), Carrieri, Errunza, and Hogan (2007), less efficient (see, for example, Bartram and Grinblatt (2021), and have higher frictions and trading costs with significant pricing effects (see, Bekaert, Harvey,

¹See for example, Stulz (1981), Errunza and Losq (1985), Eun and Janakiramanan (1986), De Jong and De Roon (2005), and Chaieb and Errunza (2007)

and Lundblad (2007), Chaieb, Errunza, and Langlois (2020). Market frictions could deter foreign institutional investors whereas, inefficiencies could result from a lack of institutional investors and/or prevalence of retail investors. Therefore, it is important to understand which group of investors own what kind of firms, why, and how this varies across DM and EM stocks. Further, we would expect country factors to contribute more in EMs compared to firm-specific factors.²

We exploit the increasing availability of firm level holdings data for institutional investors, and strategic stockholders such as insiders and government for DMs as well as for EMs. Accounting for ownership by the government and by insiders is especially important for EMs. We use FactSet stock holdings data for firms from a large sample of 24 DMs and 22 EMs over the period 2000-2019. The stakeholder groups include governments, insiders, and financial institutions. We decompose financial institutions by geographic origin: domestic, US, and foreign non-US; and by institution type: brokers, private banking, hedge funds, investment advisors, and long-term investors. Retail investors holdings are constructed as the residual after subtracting holdings by all entities that could be identified in FactSet. We provide an updated and comprehensive analysis of institutions' holdings, both in the aggregate and for different types of institutions. We also use the International Monetary Fund (IMF) Coordinated Portfolio Investment Survey (CPIS) equity investment flows over 2001-2019 for our sample of 46 markets to construct a home bias measure as in Bekaert and Wang (2009).

Our main findings can be summarized as follows. First, we confirm the well-documented home bias in equity around the world and its declining trend over time. Home bias varies across countries and is still much higher in EMs compared to DMs. Home bias varies also across investor types. As expected, retail investors, governments, and insiders have very strong home bias. Among institutional investors, investment advisors and long-term investors show higher international diversification, however, they invest in a limited range of

²For early evidence, see Lessard (1976) for DMs and Errunza and Padmanabhan (1988) for EMs. For more recent evidence, see Peng and Xiong (2006)

firms within each market. The number of stocks held vary significantly across institutions. The median number of firms held by investment advisors is around 100 in many DMs while it does not exceed 50 in many EMs. Didier, Rigobon, and Schmukler (2013) show a similar pattern of under-diversification based on US equity mutual fund holdings. On average across firms, retail investment among DMs decreased from 42% in 2000 to 13% in 2019 . It is higher in EMs and dropped from 82% in 2000 to 28% in 2019 (see Figure ??).

Second, we use pooled regression models estimated on panel data of 34621 non-US firms to identify which factors and which firm characteristics matter for institutional and retail investors. It is well known that institutional investors overweight large stocks (see, for example, Gompers and Metrick (2001) and Lettau, Ludvigson, and Manoel (2018) for evidence from the US market and Ferreira and Matos (2008) (henceforth FM) for evidence from DM countries). The panel regressions that pool observations across markets confirm that size is the most significant and highly robust factor associated with institutional ownership. Firms that are cross-listed on a U.S. exchange, and firms that have higher foreign sales and analyst coverage attract more foreign institutions. The cross-listing effect is stronger for EM firms. There are striking differences among DM and EM firms for the role of country variables. The most significant driver of investment in EM firms is the degree of market openness. This finding based on firm ownership is in line with earlier studies that examines market integration drivers using stock market returns data (see Bekaert, Harvey, Lundblad, and Siegel (2011)). Institutions prefer politically stable EMs that are English-speaking. More importantly, firm characteristics explain 73% and 46% of institutions' holdings for DMs and EMs. Country factors contribute 27% and 54% for DMs and EMs. The country effect in institutional ownership of EM stocks is of similar economic significance as country factors in explaining EM stock returns (see, for example, Griffin and Karolyi (1998), Carrieri, Errunza, and Sarkissian (2004), Bekaert, Hodrick, and Zhang (2009)). Our findings suggest that institutional investors tend to follow a country-level allocation more in EMs than in DMs. However, the significance of firm characteristics especially for US institutions show

that they tend to actively select which firms to invest in. We also examine ownership drivers by institution type, namely, investment advisors, long-term investors, and private banking. Similar to foreign institutions, investment advisors and long-term investors share a preference for large and visible stocks across both DM and EM markets. However, private banking overweight less visible firms.

Third, we investigate which firm characteristics matter most for US institutions within each market³. We use variable selection techniques at the country level to find a parsimonious set of firm characteristics that maximizes the explanatory power for firm ownership by US institutions. Specifically, we use a jackknife procedure and a Cluster-LASSO variable selection approach at the country level. These tests yield novel findings. We show that US institutions' preference for large stocks hold independent of where they invest. Analyst coverage, foreign sales, cross-listing, and liquidity matter greatly for US institutions when investing in DMs. The cross-listing effect is very strong when investing in many EMs. However, there is a large dispersion across countries in other firm characteristics. This is especially true for EM firms. The large heterogeneity in the set of firm characteristics that drive US institutions' holdings across countries implies the use of different investment strategies across markets.

One concern with our results is the measurement error in individual and institutional holdings. We run some validation experiments and use alternative data sources to specifically assess the extent of the retail holdings measurement error. Based on aggregate household equity investment from OECD, we find a significant upward bias that implies our measurement of retail holdings captures lack of disclosure by institutions⁴. However, the difference is stable over time and the overall dynamics are similar. We acknowledge that this is an important caveat to our results.

Our work is closely related to Ferreira and Matos (2008) and Aggarwal, Erel, Ferreira, and Matos (2011) who study institutional investor preferences and the effect of institutional

³We focus on US institutions since they transcend our sample of countries. On the other hand, the domestic and non-US institutions vary depending on the host country.

⁴The lack of disclosure by institutions is less severe for US institutions.

ownership on corporate governance. Our focus is instead on the ownership of firms by different stakeholders in both developed and emerging markets and the resulting implications on the global financial structure. Faias and Ferreira (2017) use equity holdings data for 45 countries over the period 2000-2010 to examine the role of institutional investors on stock return comovement. While we have similar country coverage of DMs and EMs, our interest is not limited to the institutional sector but also to the retail sector. In fact, we also use the information from two stakeholder ownership tables in FactSet ownership version 5 dataset (See also Kojien, Richmond, and Yogo (2020)), while past literature (see, for example FM, Ferreira, Matos, Pereira, and Pires (2017), Faias and Ferreira (2017)) focuses on institutional ownership from 13F and fund reported holdings.

Our work also adds to the empirical literature about home bias (see, for example, Cooper, Sercu, and Vanpee (2013), and we are the first to study comprehensively the home bias of different types of stakeholders and institutional investors. Our study is also related to the recent literature that uses institutional holdings data to infer demand system (see, for example, Kojien and Yogo (2019), and Kojien et al. (2020)). This literature runs the analysis at the institutional level and estimates the demand curve of institutions using portfolio weights of a given institutional sector, whereas our study centers at the firm level and studies the determinants of ownership by institutional and non-institutional investors. We find a strong country effect on institutions investment into EM stocks. We also uncover a lot of heterogeneity across countries in the set of firm characteristics that matter for US institutions and no clear style investing.

Our paper also contributes to an emerging literature that applies machine learning (ML) techniques to deal with the high-dimensionality challenge. We use Cluster-LASSO approach to better understand what factors drive the portfolio choices of US institutions. DeMiguel, Martin-Utrera, Nogales, and Uppal (2020), Feng, Giglio, and Xiu (2020), and Kozak, Nagel, and Santosh (2017) apply LASSO for selection of factors important for capturing the cross-section of returns. Bakalli, Guerrier, and Scaillet (2021) apply LASSO for selection of covari-

ates to model the time-variations in factor exposures. See Karolyi and Van Nieuwerburgh (2020) for a review of the recent ML application to identify the most relevant asset pricing factors.

The paper is organized as follows. Section II describes the data. Section III examines the investment bias for different type of investors. Section IV examines determinants of institutions and retail firm ownership. Section V concludes.

II. Data description

Our sample covers 46 countries.⁵ In our panel analysis we focus on the 45 non-US countries. We use two main types of data, namely, aggregate country-level data and firm-level data. Different data sources are detailed below.

A. Country-level Data

In the home bias literature, the most commonly used datasets are the two benchmark surveys conducted by the U.S. Treasury Department and the Federal Reserve Board in 1994 and 1997. The 1997 survey was part of an International Monetary Fund (IMF)-led initiative so-called the Coordinated Portfolio Investment Survey (CPIS). The CPIS became a regular survey with at least annual frequency since 2001. Over 80 markets participated in the CPIS by the end of 2019. The CPIS includes core and encouraged items. Core items include the geographical allocation of foreign securities holdings of all residents aggregated at the country level and encouraged items include decomposition of holders by residential sectors (central bank, deposit-taking corporations except central bank, other financial corporations, insurance corporations and pension funds, general government, nonfinancial corporations, households and non-profit institutions serving households (NPISH)). One limitation of the CPIS data is the difficulty in capturing cross-border portfolio investment by households that

⁵Though Taiwan and Hong Kong are not countries, we use the generic term country to refer to the location where listed companies are domiciled.

do not use the services of resident custodians. Consequently, domestic investment could be lower if retail investors use non-resident custodians to invest directly in foreign markets. But this channel is estimated to be relatively small for many participating countries (IMF, 2017). Empirical studies using more granular data on individual portfolios shed light on the investment behavior of retail investors, suggesting that it is unlikely for retail investors to bypass the CPIS and invest directly in foreign markets. See Bekaert and Wang (2009) for further discussion of CPIS data set and its limitations.

We also collect country-level variables from the WorldBank development indicators, FactSet, International Financial Statistics (IFS), and International Country Risk Guide (ICRG).

B. Firm-level data

We start with a stock universe consisting of all firms provided by the WorldScope database for the 45 non-US countries. We exclude financial firms (SIC codes 6000-6999) and apply standard name filters suggested by Griffin, Kelly, and Nardari (2010) and Chaieb, Langlois, and Scaillet (2020) to exclude non-equity entries. We also collect stock market returns (in USD) and firm characteristics from Datastream and WorldScope.

Similar to FM, we calculate firm-level ownership ratio as the ratio of USD market cap of ordinary shares (EQ), preferred shares (PF) and depository receipts (AD) held by a given type of investor to the firm’s total USD market cap.⁶ The firm-level ownership data are from FactSet. FactSet provides institutional holdings collected from regulatory reports, stock exchange announcements, company annual reports, and interviews with fund managers. We use annual data from 2000 to 2019 in our sample. We use FactSet ownership version 5 and obtain records from different source tables (see also Koijen et al. (2020)). We carry forward past reports similar to FM. We aggregate entity holdings by different stakeholder groups:

⁶To measure ownership by a given group of investors, we sum their positions in shares listed in local and foreign exchanges and in Depository Receipts (DRs) shares. As robustness, we examine ownership of securities listed in local exchanges excluding securities listed in foreign exchanges or DR shares. We confirm earlier findings that institutional investors primarily hold public firms through their common equity (see, for example, FM). However, in some markets and especially EMs such as Hungary, Russia, and Indonesia, foreign institutional investors hold significant ownership in public firms through their depository receipts.

institutions, insiders, government. We define retail ownership as the residual of ownership by all identifiable entities in FactSet.⁷ Past literature (see, for example FM, Ferreira et al. (2017), Faias and Ferreira (2017)) uses only 13F and fund tables in FactSet, which might exclude holdings information of other stakeholders from other sources.

Since we measure domestic retail investment as the residual after subtracting holdings by all entities identified in FactSet, this proxy is subject to measurement error and could be biased upward due to incomplete coverage of institutional investment. To evaluate the potential upward bias in retail investment, we compare our calculation with an alternate source, namely the household equity investment from OECD national accounts statistics. Because OECD data has limited country coverage, we can only conduct this comparison for a few countries. Online Appendix II-Figure 1 plots the aggregate household equity investment in *listed shares* from OECD and aggregate retail investment measured from FactSet. Although there is significant upward bias in case of Australia, France, Germany, Netherlands and UK, the bias seems small for the remaining 17 countries. Importantly, the two series show similar trends⁸.

We decompose total institutional ownership (io) along two dimensions, namely, by geographical origin and by institution type. Similar to FM, we break down institutional ownership based on institutions' location: domestic (io_dom), US (io_us) and foreign non-US (io_nus). We classify an institutional holding as foreign when the stock's country where the company is domiciled does not equal the institution's country where the investment company is domiciled. We also classify institutions by their type as in Kojien et al. (2020) into brokers,

⁷Several other papers also define the complement of institutional holdings as a proxy for individual investors ownership, see, for example, DeVault, Sias, and Starks (2019), Agarwal, Vashishtha, and Venkat-achalam (2018), and Choi, Gao, and Jiang (2020).

⁸The comparison also supports our assumption that the retail investor ownership measures households' investment in firms from their home country. However, our assumption that the retail investment is domestic does not hold for firms that are not listed in their country of domicile. This is the case for few Chinese firms that are only listed in the US or Hong Kong while not listed in China. Online Appendix II provides a finer analysis where we try to identify the location of retail investors using the exchange information of listed securities. We find that most of the retail investment is by local retail investors who trade local firms listed on their local markets. However, for few countries such as Canada, Israel, and some Chinese companies, the investment by foreign retail investors who trade the stocks listed in the foreign market is non-trivial.

investment advisors, hedge funds, private banking, and long-term investors (see Table ??). We merge ownership information into the firm universe constructed from WorldScope using common identifiers (ISIN, SEDOL, CUSIP). We set institutional ownership to zero where FactSet does not have a corresponding record as in FM. Online Appendix I provides details about the data construction process and Table ?? provides the definition of all firm-level and country-level variables used in this study. Our final sample contains records of 34621 non-US firms, totaling 247104 firm-year observations with firm-level variables available for our main regressions.

Table ?? presents, for each country, the number of firms and the value-weighted average across all firms of institutional (io), insider (insider), government (govt), and retail (retail) ownership as of December 2019. The average institutional ownership across all markets is 68% and the average foreign institutional ownership is 27%. Among foreign institutions, the value-weighted average ownership across all markets by US and non-US institutions are comparable, with averages, respectively, of 11% and 16%. However, the level of domestic and foreign institutional ownership varies considerably across countries. Domestic institutional ownership is higher in markets such as Denmark, Chile, India, Sweden, South Korea, and US and lower in markets such as Belgium, Indonesia, Mexico, and Switzerland. It is not surprising that some developed markets with well-established capital markets (such as Canada, Sweden, UK, and U.S.) also have a well-established domestic institutional sector. FM and Ferreira et al. (2017) show similar pattern in their sample of essentially DMs. As of December 2019, US institutional investment is the largest in Netherlands at 39.7%. Government ownership is significant in Austria, Colombia, Czech Republic, and Norway. Retail ownership is still quite prevalent in many DMs, such as Canada, New Zealand, and Japan but is small in Switzerland, UK, and US. It is also significant in many EMs. It is 25% or higher in 16 out of 22 EMs.

Table ?? provides summary statistics of the firm-level ownership (Panel A), firm characteristics (Panel B), and the country-level variables (Panel C) for the average DM observations

and average EM observations. Firm-level ratios are winsorized at the bottom and top 1%. The equally-weighted average of the proportion of market capitalization of DM firms owned by institutions is 36.5%, with a median of 28%. The value-weighted average has increased from 55% on 2000 to 73% on 2019 (see Figure ??). In EMs, institutional ownership equally-weighted average is 30.4% with a median of 15.3%. The value-weighted average doubled over the last two decades, moving from 24% in 2000 to 46% in 2019 (see Figure ??). The increase is due to growth and better coverage of domestic institutional investment. In DMs, the proportion of market capitalization owned by foreign institutions increased from 14% in 2000 to 28% in 2019 and the number increases from 41% in 2000 to 45% in 2019 for domestic institutional ownership. The increase in foreign and domestic institutional ownership in EMs are from 23% to 25% and from 1% to 21% respectively (see Figure ??). We run a Welch t-test for the difference in mean. The difference in average institutional ownership between DMs and EMs is statistically significant and stems essentially from lower domestic institutional investment in EMs (see Panel A of Table ??). On average, EMs have significantly higher government ownership but lower insider ownership compared to DMs.

We complement Tables ?? and ?? with Figures ??-?? that plot the trends in ownership. Figure ?? shows the value-weighted average of firm ownership for the four groups of investors (institution, insider, government, retail) over 2000-2019. For most DMs, the stock holdings is quite persistent by each group of investors over time. However, there are some interesting differences across markets. For example, Belgium and Sweden experienced an upward trend in institutional ownership, while New Zealand, Portugal and Spain witnessed a downward trend between 2002-2010. We observe more time variation in stock holdings for EMs.⁹ The upward trend in institutional holdings is significant for India. But some markets such as Hungary and Poland witnessed a significant drop in institutional ownership. Government ownership has trended down in China, India, Indonesia, and Thailand, while there is an upward trend in Colombia, Czech Republic, and Hungary.

⁹Part of this variation is due to changes in firm coverage over time.

Figure ?? plots the time-series of the average institutional ownership by institutions of different geographic origin. The variation in domestic, US, and foreign-non US institutional ownership is rather small for DMs and large in EMs. For Spain, the reversal in institutional holdings is mainly due to a drop in domestic institutional ownership.

Figure ?? plots the value-weighted ownership ratio for five types of institutional investors, namely, brokers, hedge funds, investment advisors, long-term investors, and private banking. Among institutional investors, investment advisors hold the largest fraction of the market in countries like Australia, Canada, France, Italy, Sweden, UK, and US but private banking hold the largest fraction of the market capitalization in countries like Austria, Belgium, Denmark, and Japan. Interestingly, there is quite significant variation over time in the ownership by investment advisors and private banking in both DMs and EMs. Investment advisors ownership trended up in Switzerland, but trended down in Finland. Ownership by private banking is quite high in many EMs. The average ownership of a firm by brokers and by hedge funds is minimal. For the clarity of presentation, in our subsequent analysis we focus on investment advisors, long-term investors, and private banking that have more significant ownership in public firms.

Panel B of Table ?? provides summary statistics on firm-level control variables. The mean market capitalization in DMs and EMs is \$1400 million and \$800 million.¹⁰ The mean book-to-market ratio is 0.88 and 0.89 in DMs and EMs.¹¹ Mean dividend yields are close to 2% in both DMs and EMs. The mean year ahead stock return is 11.6% in DMs and 15.6% in EMs. The mean stock return idiosyncratic volatility is 5.6% in both DMs and EMs. Turnover is 0.7 and 1.8, on average in DMs and EMs. On average, debt to assets ratio is 20% in DMs and 23% in EMs. The mean (median) ROE is 0.2% (6.4%) in DMs. The average EM firm is more profitable with a mean ROE of 6.5%. The investment ratio is comparable with an average DM and EM at around 6%. On average, sales growth is

¹⁰Because the dispersion of market value in EMs is larger than DMs, the mean of log market capitalization in EM is slightly larger than that in DMs despite the raw average market capitalization is larger in DMs.

¹¹Panel B of Table ?? reports the logarithmic of market cap and of book-to-market.

higher in EMs at 12% compared to 11% in DMs. Cash holdings are 18% of total assets on average in DMs and 16% in EMs. On average, the number of analysts following the stock of firms is 3 in DMs and 2 in EMs. Foreign sales are 21% of total sales on average in DMs and 13% in EMs. Finally, the ADR dummy shows that about 7% of DMs and 4% of EMs are cross-listed on a U.S. exchange. Panel C of Table ?? provides summary statistics on country-level control variables. Proxies for governance (legal), transparency (disc), political stability (pol), market development (mv/gdp), and market openness (openness) show that DMs are better governed, have lower political risk, are more open and more transparent than EMs.

III. Investment bias of different investors

In this section, we examine the level of home bias and lack of international diversification by different groups of investors.

A. Home-bias by investor type

It is well-documented that investors fail to optimally diversify internationally and exhibit home bias in their portfolio allocation. There is also evidence that home bias has trended down (see Cooper et al. (2013) for a review of the equity home bias) and that international diversification of institutional investors' portfolios has increased over time (see, for example, Didier et al. (2013), and Faias and Ferreira (2017)).¹²

To measure home bias, we use a similar approach to Bekaert and Wang (2009). The CPIS reports the source country j 's investment in the target country i , denoted as $I_{i,j}$, but does

¹²Due to limited availability of data on retail sector investment, most of the existing empirical evidence on home bias use data on mutual fund ownership (see, for example, Lau, Ng, and Zhang (2010) and Chan, Covrig, and Ng (2005)) or data on the foreign investment of all residents aggregated at the country level (see, for example, Dahlquist, Pinkowitz, Stulz, and Williamson (2003) and Warnock (2002)). Using micro level data on Swedish pension portfolios, Karlsson and Nordén (2007) show that individual investors exhibit home bias and tend to choose domestic funds from an investment menu. Based on U.S. individual investor data from a large discount brokerage house, Seasholes and Zhu (2010) show that individual investors have a local bias preferring stocks headquartered close to them.

not contain $I_{i,i}$, country i 's domestic investment. We measure domestic equity investment as the residual component of the total domestic market capitalization of country i , denoted as M_i , not accounted for by total non-resident investment from the rest of the world. The domestic equity investment of country i is expressed as,¹³

$$I_{i,i} = M_i - \sum_{j \neq i} I_{i,j}. \quad (1)$$

The actual weight of home investment in the overall equity portfolio of country i 's residents can be expressed as,

$$W_{i,i}^{act} = \frac{I_{i,i}}{\sum_j I_{j,i}}. \quad (2)$$

Let $W_{i,i}^{bm}$ denote the benchmark weight of country i . Assuming the World Capital Asset Pricing Model (WCAPM) holds, the benchmark weight is the relative market capitalization of country i in the world market portfolio,

$$W_i^{bm} = \frac{M_i}{\sum_j M_j}. \quad (3)$$

The raw home bias (HB_i^{raw}) of country i is the difference between the actual weight of home investment in the equity portfolio of country i and the benchmark weight of country i ,

$$HB_i^{raw} = W_{i,i}^{act} - W_i^{bm}. \quad (4)$$

Since the raw home bias measure is sensitive to the size of the domestic market, we could normalize the raw home bias by the maximum amount of home bias possible,

$$HB_i^{norm} = \frac{W_{i,i}^{act} - W_i^{bm}}{1 - W_i^{bm}} \quad \text{if } HB_i^{raw} > 0 \quad (5)$$

¹³The total market capitalization of domestic listed companies is sourced from the World Bank, Datastream, or Nasdaq Nordic annual statistics where applicable.

We calculate both home bias measures. They are close to each other, except that normalized home bias is higher for a few larger markets (U.S., Japan), which is consistent with the findings of Bekaert and Wang (2009). For the ease of presentation, we only show raw home bias in our figures.

We calculate the raw home bias measure of the aggregate portfolio of all residents. Figure ?? plots the home bias measure using CPIS data. Home bias is trending down in most DMs but remains high in Japan and Hong Kong. In EMs, home bias is very strong in most countries.

To check the comprehensiveness of the FactSet data coverage and the extent of home bias in institutional, government, and insiders' investment, we compare in Figure ?? the home bias measure of the aggregate portfolio of all entities (including domestic institutions, government, and insiders) that is identified in FactSet to the one measured from CPIS data. The aggregate level of home bias from FactSet is of similar size or lower than the one shown with CPIS data in most DMs and EMs. It is reassuring that the home bias measure calculated using CPIS data closely aligns with that calculated using FactSet aggregate data, indicating that entities in FactSet are representative of the investment pattern of the aggregate residents in a country. The difference between the CPIS based and FactSet based HB measure is due to limitations in data coverage. In particular, retail investment is not covered in FactSet. We also use the household foreign investment data from CPIS for markets that choose to report this item and OECD household total equity investment to calculate the proportion of household investment at home as one minus the proportion of foreign investment. Figure ?? plots the evolution of this number for markets where these two sources are available. The figure shows that 90% of household equity portfolio is invested at home, implying strong home bias for retail investors.

B. *Who are global investors?*

Next we examine the level of home bias by different groups of stakeholders and different types of institutions using FactSet data. Figure ?? plots the raw home bias measure of different types of institutions and stakeholders for entities that are identifiable in FactSet. First, as expected, governments and insiders almost invest entirely locally both in EMs and in DMs. In contrast, financial institutions have lower level of home bias in DMs but are strongly home biased in EMs. We see interesting differences in the level and dynamics among the different types of institutional investors. In most markets, investment advisors and long-term investors are the least home biased. Therefore, investment advisors and long-term investors are more likely to play a role in global risk-sharing and we call them the *global* institutional investors. Private banking, which include corporations, family offices, private banking portfolios, show the least home bias in Australia and UK while it shows similar level of home bias to insiders in markets like Canada, Singapore, and Taiwan.

C. *Limited investment scope of institutional investors*

Compared to less sophisticated retail investors, we would expect institutional investors to be more-investment-savvy and better at exploiting investment opportunities. Existing studies, however, have shown that institutional investors have their own limitations. U.S. equity mutual funds under-diversify by holding only a limited number of stocks (see, for example, Didier et al. (2013)). We investigate the investment scope of institutional investors in each market. We calculate the proportion of firms in a country with non-zero institutional ownership by *global* institutional investors. We categorize as *global*, the foreign institutional investors (along the location dimension), investment advisors and long-term investors (along the type dimension and with reference to our earlier findings that these investors show lower level of home bias). Figure ?? plots the time evolution of this percentage. The overall rank of markets is consistent with Table 1 of Didier et al. (2013). The figure shows that in most markets whether a DM or an EM, global institutional investors only invest in a limited

number of firms. Our results extend previous evidence of under diversification of U.S. equity mutual funds to the broader institutional sector. Figure ?? plots the median number of firms invested by each type of institutional investor. The median number of firms held by investment advisors is around 100 in many DMs while it does not exceed 50 in many EMs. In several DMs, the median number of firms held by investment advisors dropped significantly over time. For example, in Denmark, France, Italy, and Japan, the median number halved moving from 200 in 2000s to around 100 in the most recent period. For EMs, the lack of diversification is less severe in Chile, India and Taiwan. The median number of firms doubled from around 50 stocks in 2000s to around 100 over the more recent sample period.

We can conclude that first, home bias is still a pervasive phenomenon but the level of home bias varies across stakeholder types. As expected, retail investors, government and insiders are highly home biased. Institutional investors also have home bias but certain types of financial institutions, namely investment advisors and long-term investors, tend to be global investors and contribute to global risk sharing. Second, institutional investors in aggregate invest in only a limited number of stocks in each country and there is a considerable proportion of firms that are not invested by institutional investors.

This implies a market structure of different under-diversification by retail and institutional investors. Retail investors and domestic institutions invest mostly at home, whereas global institutions invest in a limited set of firms within each country. This observation is important to derive pricing implications.

IV. Determinants of firm ownership

This section investigates the determinants of institutional and retail ownership in DMs and EMs. We start with pooled panel regressions analysis. For institutions, we examine determinants of holdings by different institution groups, specifically domestic versus for-

eign (US and non-US) institutions. We also examine ownership drivers by institution type, namely, investment advisors, long-term investors, and private banking. Next, we examine, at the country level, the determinants of US institutional ownership in DMs and EMs. Do US institutions use similar investment strategies when they invest in DMs and in EMs? Which firm characteristics matter most? Our goal here is to find a parsimonious set of firm characteristics that maximizes the explanatory power for firm ownership. We use two statistical model reduction techniques; a simple jackknife procedure and a Cluster-LASSO approach.

A. Institutional and retail investor preferences in DM and EM firms

We first examine country and firm-level characteristics associated with firm ownership in non-US firms using panel pooled regressions. We expand FM analysis of determinants of institutional ownership in developed markets to emerging market firms and extend the sample to the most recent period. We also offer initial evidence on the determinants of retail ownership. Our baseline regression is specified as:

$$y_{i,t}^{g \in \mathcal{G}} = X'_{i,t-1}\beta + Z_{c,t-1}\gamma + \epsilon_{i,t}, \quad (6)$$

where $y_{i,t}^{g \in \mathcal{G}}$ is the firm-level ownership of firm i at year t aggregated by different groups of investors. $X'_{i,t-1}$ is a vector of firm i characteristics, and $Z_{c,t-1}$ is a vector of country c variables. All explanatory variables are one-year lagged.

Table ?? reports the estimates of the institution (total, domestic, US, foreign non-US) and retail ownership panel regressions for DMs and EMs. For all regression specifications, the standard errors are adjusted for two-way clustering by firm and year.

Total institutions (io) overweight larger firms in both DMs and EMs. A one-standard deviation increase in size for an average DM firm, that is an increase from \$1400 million to \$9300 million for the average market capitalization in DMs, is associated with a 10.4% increase in total institutional ownership. A one-standard deviation increase in size for an

average EM firm, that is an increase from \$800 million to \$5500 million for the average market capitalization in EMs, is associated with an increase of 6.7% in total institutional ownership. Our findings confirm the earlier evidence of institutional investors' larger demand for large stocks (see, for example, Gompers and Metrick (2001) for evidence based on the US and FM for evidence based on DMs). More recently, Lettau et al. (2018) find that US mutual funds overweight very large firms. All institutions invest more in profitable firms with high ROE whether in DM or EM countries. The common preference for profitable firms uncovered in FM extends to EM firms. All institutional investors hold fewer shares of highly levered firms in DMs. This is also the case in EMs except for domestic institutions. In their sample of DMs, FM show a significant preference for lower levered firms among non-US institutions but not for US or domestic institutions. Domestic and US institutions tend to avoid high idiosyncratic volatility stocks in DMs. Gompers and Metrick (2001) and FM do not uncover such aversion to high risk stocks. In both DMs and EMs, analyst coverage and ADR dummy are significantly positive for foreign but not domestic institutions. US institutional ownership is about three percentage points higher for DM firms with a U.S. cross-listing and is about nine percentage points higher for EM firms with a U.S. cross-listing. Foreign non-US institutions exhibit similar preference for cross-listed firms in both DM and EM countries though the coefficient is smaller in magnitude compared to US institutions. FM show similar difference in institutions preferences for cross-listing among domestic and foreign institutions for their sample of DM firms. Our results show stronger effect of cross-listing for EM firms.

Preference for liquidity (proxied with $turn$), value (proxied with bm or dy), winners (i.e stocks with recent positive past stock return, ret), and investment varies considerably among the different groups of investors and across DM and EM countries. Only domestic institutions in EMs show a preference for value, while non-US institutions overweight growth firms in EMs. No such preference is apparent in DM firms. FM show that US institutions overweight value stocks but Lettau et al. (2018) show that US mutual funds hold low BM

stocks. The coefficient on turnover is negative and significant in DMs and EMs except for US institutions investing in DM stocks. On aggregate, institutions seem to chase stocks with recent positive stock return in both DM and EM countries but the evidence is only strong for domestic EM institutions. Past literature (see, for example, Tesar and Werner (1995); Bohn and Tesar (1996); Grinblatt and Keloharju (2000) show that foreign institutions chase hot markets. Our results show weaker evidence for a return chasing effect.

There are striking differences among DM and EM firms for the role of country variables. The most significant driver of investment in EM firms is the degree of market openness. This finding based on firm ownership is in line with earlier studies that examine market integration drivers using stock market return data (see Bekaert et al. (2011) and Carrieri, Chaieb, and Errunza (2013). Institutions prefer politically stable EMs that are English-speaking.

Are country factors or firm characteristics more important in explaining firm ownership? And how does this vary in DMs vs EMs? We compute a variance decomposition, where the proportion of variance explained by a set of variables is calculated as the variance of fitted value using this set of variables as a proportion of the variance of the fitted value using all explanatory variables. The fraction due to firm characteristics equals,

$$var(\%)_{firm} = \frac{cov(X'_{i,t-1}\hat{\beta}, \hat{y}_{i,t}^{g \in \mathcal{G}})}{var(\hat{y}_{i,t}^{g \in \mathcal{G}})} \quad (7)$$

and the fraction due to country variables equals,

$$var(\%)_{country} = \frac{cov(Z'_{c,t-1}\hat{\gamma}, \hat{y}_{i,t}^{g \in \mathcal{G}})}{var(\hat{y}_{i,t}^{g \in \mathcal{G}})}. \quad (8)$$

A significant part of the cross-sectional variation in institutional holdings is explained by country-level factors in EMs. Firm characteristics explain 73% and 46% of institutions' holdings for DMs and EMs. Country factors contribute 27% and 54% for DMs and EMs. Specifically, for US institutions, country factors account for 30% of the explained variation in EMs while it is only 13% in DMs. The country effect in institutional ownership of EM stocks

is of similar economic significance as country factors in explaining EM stock returns (see, for example, Griffin and Karolyi (1998), Carrieri et al. (2004), Bekaert et al. (2009)). Our findings suggest that institutional investors tend to follow a country-level allocation more in EMs than in DMs. However, the significance of firm characteristics shows that institutions and especially US institutions tend to actively select which firms to invest in.

Retail investors whether in DMs or EMs share many common preferences on their stock investments. They overweight small, liquid, and low quality (low ROE) firms and seem to exhibit contrarian behavior as they underweight firms that performed well in the past year. Since retail ownership is measured as the residual and given earlier evidence on measurement errors and bias, we caution the reader that these are only preliminary findings on drivers of retail investment.

Table ?? shows the estimates of the panel regressions for institutions by type. Investment advisors, long-term investors, and private banking show similar strong preference for large firms when investing in DM or EM countries. When investing in EMs, all of them prefer to invest in firms from more open countries that are English speaking. Investment advisors and long-term investors show similar aversion to high risk stocks and a preference for profitable (high ROE) firms, and cross-listed firms with higher visibility (higher analyst coverage and foreign sales) when investing in DMs or EMs. They also prefer more liquid DM firms. They show preference for higher market cap to GDP when they invest in EMs. However, private banking institutions diverge quite significantly from investment advisors and long-term investors. Private banking overweight illiquid firms, high-risk firms, firms with lower foreign sales, lower analyst coverage, and non-cross listed firms. Country and firm variables contribute equally for investment advisors and private banking whether in DMs or EMs. For long-term investors, firm characteristics dominate country factors when investing in DMs but country factors are significant when they invest in EMs. The next section examines which firm characteristics matter most for US institutions across markets.

B. Which firm characteristics attract US institutional investors: evidence from country level analysis

Notwithstanding the role of country factors in aggregate for institutions, firm characteristics remain significant drivers, specifically for US institutions. What are the most important firm characteristics that could drive US institutional ownership? We use variable selection techniques to find a parsimonious set of factors among the 15 firm characteristics that maximize the explanatory power of US institutional ownership. We apply the variable selection techniques to our previous regressions (6), omitting country variables. We use two alternative variable selection methods. The first method is a jackknife procedure similar to that in Bekaert et al. (2011).

For each of the 15 firm level variables, we randomly sample from the 14 other variables. The number of additional variables and their identity are random and we force the selection to contain between eight and fifteen additional variables. For each set of selected variables, we perform the same regression (6) and calculate t-statistics using standard errors clustered two-way at the firm and year level. We drop variables with absolute value of t-statistics that is below one and then perform a second regression on the remaining set with the candidate variable. This procedure is repeated one thousand times for each candidate variable to construct confidence intervals on the coefficient. Those variables whose 90% confidence intervals exclude zero are included in our final specification.

Our second approach is the least absolute shrinkage and selection operator (LASSO) introduced by Frank and Friedman (1993) and Tibshirani (1996). We use a variant of LASSO, the Cluster-LASSO proposed by Belloni, Chen, Chernozhukov, and Hansen (2012). The LASSO estimator is defined as,

$$\hat{\beta} = \arg \min_b \sum_{i=1}^n \sum_{t=1}^T (y_{it} - \sum_{j=1}^p x_{ijt} b_j)^2 + \lambda \sum_{j=1}^p |b_j| \psi_j, \quad (9)$$

where $\lambda > 0$ is the over-all "penalty level" and ψ_j are variable-specific penalty loadings.

The penalty loadings are chosen to address heteroskedasticity, clustering and non-normality in model errors (see Belloni, Chernozhukov, and Hansen (2014)). Belloni, Chernozhukov, Hansen, and Kozbur (2016) prove that the Cluster-LASSO has good model selection properties under approximate sparsity and regulatory conditions. We relegate the details of the Cluster-LASSO to Appendix A.¹⁴

For the ease of presentation, we report our main results based on the regression output of the jackknife approach and underline variables that are also selected by the Cluster-LASSO approach. A full set of post-LASSO regression results for LASSO selected models are available upon request. Because the LASSO approach has a strong emphasis on constraining overfitting, it tends to select fewer variables than the jackknife procedure, but variables selected by LASSO are often also selected by the jackknife procedure. Table ?? and Table ?? show the variable selection results for US institutional ownership in DMs and EMs, respectively.

When we search for factors that are significant (at 5% level) and are selected by both methodologies across many DMs, we find that US institutional investment in DM firms is primarily driven by size, visibility proxies (foreign sales, analyst coverage, ADR dummy), and liquidity (turnover). The jackknife procedure selects size for all DM countries. The coefficient on size is positive and significant for all DMs. The Cluster-LASSO selects size in 16 DMs. The coefficient on each of the foreign sales, analyst coverage, ADR dummy are positive and significant in 11, 9, and 11 countries, respectively. Turnover is selected and is positive in 19 DMs by the jackknife and in 6 DMs by the Cluster-LASSO. It is positive and significant in 9 DMs. There is also a strong preference for cash-rich firms in 13 countries.

The other firm characteristics (sales growth, investment, dividend, dividend yield, lever-

¹⁴We treat LASSO as a genuine model-selection technique and as a robustness check of the simulation-based jackknife model selection. The objective of LASSO is typically for out-of-sample prediction, therefore regularized regression has a strong emphasis on guarding against overfitting to improve out-of-sample predictive performance. However, our objective is to reduce the complexity of the model and identify the most important determinants of firm ownership. Because of the additional penalty term in the LASSO objective function, LASSO induces a shrinkage bias, which is often alleviated by post-estimation OLS. For LASSO selected variables, we also perform post-LASSO OLS regression, results are available upon request.

age, ROE, BM, past stock return, idiosyncratic volatility) are either not selected or only selected by the jackknife procedure and when selected show different sign coefficients across DMs. Specifically, the aversion to leverage, the avoidance of high-risk stocks, and the preference for profitable firms that we find using pooled regressions (see Table ??) are only significant or marginally so in 4, 1, and 1 DMs, respectively. Past stock return and Book-to-Market are only selected in 4 DMs by the jackknife procedure. The coefficient is negative for BM but rather insignificant. Therefore, the absence of evidence for a return chasing effect and for a value tilt for US institutions that we uncover from the pooled regressions is confirmed with our country-level analysis.

Compared to DMs, we observe more heterogeneity and more sparsity in the set of firm characteristics that are selected and in the signs of their coefficients for EM countries. When we search for factors that are significant (at 5% level) and are selected by both methodologies across many EMs, we find that US institutional investment in EM firms is primarily driven by size and cross-listing. The jackknife procedure selects size for most EMs. The coefficient on size is positive and significant in all EMs. The Cluster-LASSO selects size in 6 EMs. The jackknife procedure also selects ADR dummy in 17 EMs and its coefficient is positive and significant in 10 EMs. The preference of US institutions for liquidity is less striking when investing in EM firms compared to DM firms.

The aversion for leverage, the avoidance to high-risk stocks, and the preference for profitable firms that we find using pooled regressions (see Table ??) is only significant here in 3, 1, and 2 EMs, respectively. The evidence for a return chasing effect is weak in EMs. Past stock return is selected by the jackknife procedure and its coefficient is positive in 7 EMs but significant only for Philippines. Also, there is no evidence for a value tilt when investing in EM firms. BM is selected in 6 EMs but the coefficient is significant only for India and is negative implying US institutions prefer growth firms when they invest in India.

The large heterogeneity in the set of firm characteristics that drive US institutions' holdings across countries implies the use of different investment strategies across countries.

In summary, although there are some differences in the drivers of institutional holdings compared to past studies for DMs, by and large, the results based on pooled sample carry through to the most recent period. The results based on institution types are new and for the most part concur with our priors. For pooled EM sample, our findings exhibit differences *via-a-vis* those for DMs, for example the greater emphasis on country factor. Results at the country level suggest some significant differences in revealed preferences of US institutions investing in both DMs and EMs, which is especially true among EMs with substantial heterogeneity.

V. Conclusion

In view of the growing role of institutional investors in the international stock market and the widespread liberalization of equity markets, it is important to understand their impact on the structure of global financial markets. Indeed, understanding international stock holdings and investor preferences is a key step towards a more realistic representation of the global financial market. It is equally important to understand what factors drive institutional and individual ownership, and how these factors differ across developed markets and emerging markets.

We exploit the increasing availability of firm level holdings data for institutional investors, and strategic stockholders such as insiders and government for DMs as well as for EMs. We use FactSet stock holdings data for firms from a large sample of 24 DMs and 22 EMs over the period 2000-2019. The stakeholder groups include governments, insiders, and financial institutions. We construct retail investors holdings as the residual after subtracting holdings by all entities that could be identified in FactSet. We also decompose financial institutions by geographic origin: domestic, US, and foreign non-US; and by institution type: brokers, hedge funds, investment advisors, long-term investors, and private banking.

We confirm the well-documented home bias in equity around the world and its declining

trend over time. Home bias varies across countries and is still much higher in EMs compared to DMs. Home bias varies also across investor types. As expected, retail investors, governments, and insiders have very strong home bias. Among institutional investors, investment advisors and long-term investors show higher international diversification however, they invest in a limited range of firms within each market.

Our pooled regression models estimated on panel data of 34621 non-US firms over the period 2000-2019 suggest that size as the most significant factor reported by earlier studies carries through to the most recent period for institutional investors. Firms that are cross-listed on a U.S. exchange, and firms that have higher foreign sales and analyst coverage attract more foreign institutions. The cross-listing effect is stronger for EM firms. There are striking differences among DM and EM firms for the role of country variables. The most significant driver of investment in EM firms is the degree of market openness, a finding consistent with earlier studies that examine market integration drivers using stock market returns data. Firm characteristics explain 73% and 46% of institutional holdings for DMs and EMs. Country factors contribute 27% and 54% for DMs and EMs similar to the economic significance of country factors in explaining EM stock returns. We also examine ownership drivers by institution type, namely, investment advisors, long-term investors, and private banking. The results based on institution types are new and for the most part concur with our priors. Similar to foreign institutions, investment advisors and long-term investors share a preference for large and visible stocks across both DMs and EMs. However, private banking overweight less visible firms.

We use a jackknife procedure and a Cluster-LASSO variable selection techniques at the country level to find a parsimonious set of firm characteristics that maximize the explanatory power for firm ownership by US institutions. We show that US institutions prefer large stocks. When investing in DMs, analyst coverage, foreign sales, cross-listing, and liquidity matter greatly for US institutions. The cross-listing effect is very strong when investing in many EMs. The large heterogeneity in the set of firm characteristics that drive US institu-

tions' holdings across countries, especially in EMs, implies the use of different investment strategies across countries.

Appendices

A. Cluster-LASSO variable selection

This section describes the Cluster-LASSO regression used for country-level variable selection. The LASSO regression chooses the coefficients to minimize the sum of squared residuals plus a penalty term that penalizes the size of the model through the sum of absolute values of the coefficients. Because LASSO imposes $\ell - 1$ penalty, it sets some of the coefficients exactly to zero, and in doing so removes some regressors from the model. The LASSO estimator is defined as,

$$\hat{\beta} = \arg \min_b \sum_{i=1}^n \sum_{t=1}^T (y_{it} - \sum_{j=1}^p x_{ijt} b_j)^2 + \lambda \sum_{j=1}^p |b_j| \psi_j. \quad (10)$$

Solving the problem requires two tuning parameters: the main penalty level λ and covariate specific loadings ψ_j . The main penalty parameter specifies the amount of regularization in the LASSO procedure and balances over-fitting and bias concerns.

$$\begin{aligned} \lambda &= 2c\sqrt{nT}\Phi^{-1}(1 - \gamma/(2p)) \\ c &= 1.1, \quad \gamma = \frac{0.1}{\log(n)}. \end{aligned} \quad (11)$$

The covariate-specific loadings allows us to handle errors with within-cluster correlation, heteroskedasticity and non-normality. The intuition is that penalty loadings captures the variability in learning about the coefficient β_j and the penalty parameters are chosen to be large enough to dominate the noise in estimating model coefficients. Hence coefficients whose magnitude is not big enough relative to sampling noise would be set exactly to zero in the LASSO solution so the probability that the correct model being chosen will be higher than a conventional confidence level. Cluster-LASSO is a data-dependent way of choosing

the penalty loadings:

$$\begin{aligned}\psi_j &= \sqrt{\frac{1}{nT} \sum_{i=1}^n u_{ij}^2} \\ u_{ij} &= \sum_{t=1}^T x_{ijt} \epsilon_{it}.\end{aligned}\tag{12}$$

In practice, the values of the penalty loadings are infeasible because they depend on unobservable errors ϵ_{it} . An iterative algorithm is used to estimate initial residuals and penalty loading until convergence.

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Tables

var	mean.dm	sd.dm	min.dm	median.dm	dm	mean.em	sd.em	min.em	median.em	em
io	4.660	10.574	0.000	0.000	435685	2.994	8.398	0.000	0.000	246515
iodom	2.455	6.747	0.000	0.000	435685	1.827	6.885	0.000	0.000	246515
iofor	2.205	6.242	0.000	0.000	435685	1.167	4.240	0.000	0.000	246515
ious	1.062	3.697	0.000	0.000	435685	0.528	2.364	0.000	0.000	246515
ionus	1.143	3.610	0.000	0.000	435685	0.639	2.461	0.000	0.000	246515
ioeu	0.559	1.993	0.000	0.000	435685	0.209	1.036	0.000	0.000	246515
iouk	0.375	1.765	0.000	0.000	435685	0.168	0.976	0.000	0.000	246515
ia	4.000	9.132	0.000	0.000	435685	1.999	5.379	0.000	0.000	246515
hf	0.149	1.168	0.000	0.000	435685	0.029	0.375	0.000	0.000	246515
lt	0.118	0.477	0.000	0.000	435685	0.067	0.376	0.000	0.000	246515
pb	0.121	1.018	0.000	0.000	435685	0.011	0.298	0.000	0.000	246515
active	3.012	7.197	0.000	0.000	435685	1.471	4.239	0.000	0.000	246515
passive	0.987	2.723	0.000	0.000	435685	0.528	1.744	0.000	0.000	246515
govt	0.200	3.060	0.000	0.000	435685	0.351	3.663	0.000	0.000	246515
insider	23.244	28.891	0.000	8.000	435685	26.978	28.942	0.000	20.000	246515
retail	20.918	31.754	0.000	0.000	435685	19.962	31.489	0.000	0.000	246515
E	0.371	0.288	0.000	0.355	26100	0.351	0.270	0.000	0.318	6915
S	0.413	0.241	0.000	0.383	26100	0.414	0.253	0.002	0.403	6915
G	0.486	0.223	0.005	0.485	26171	0.487	0.226	0.001	0.490	6921
cash	0.213	0.220	0.000	0.137	275581	0.139	0.153	0.000	0.087	192729
ppe	0.182	0.249	0.000	0.045	435582	0.258	0.241	0.000	0.216	246477
lev	0.211	0.247	0.000	0.149	272258	0.259	0.243	0.000	0.221	191708
div	0.015	0.039	0.000	0.000	435472	0.020	0.042	0.000	0.000	246441
investment	0.070	0.098	0.000	0.036	276070	0.056	0.066	0.000	0.036	192958
gsales	1.138	0.572	0.045	1.049	236221	1.117	0.441	0.045	1.068	176142
gasset	1.006	0.003	1.000	1.005	236221	1.006	0.002	1.000	1.005	176142
roe	-0.117	0.578	-3.126	0.041	256554	0.022	0.364	-3.126	0.069	178302
roa	-0.086	0.364	-1.945	0.022	268383	0.034	0.147	-1.945	0.046	185653
npm	-2.055	9.355	-60.158	0.020	250664	-0.250	3.305	-60.158	0.040	190382
fsales	0.148	0.308	0.000	0.000	431620	0.090	0.235	0.000	0.000	245772
adr	0.039	0.193	0.000	0.000	435685	0.024	0.153	0.000	0.000	246515

Continue on the next page

var	mean.dm	sd.dm	min.dm	median.dm	dm.dm	mean.em	sd.em	min.em	median.em	em.em
ftse	0.012	0.108	0.000	0.000	435685	0.005	0.071	0.000	0.000	246515
analyst	1.464	3.929	0.000	0.000	435685	1.234	3.741	0.000	0.000	246515
dy	0.015	0.028	0.000	0.000	427840	0.017	0.033	0.000	0.002	240392
pe	25.080	35.059	0.200	15.392	232451	26.671	36.073	0.200	14.667	140778
bm	0.964	1.271	-3.772	0.680	276253	1.051	1.637	-3.772	0.648	192952
ivol	0.064	0.041	0.000	0.052	169800	0.063	0.031	0.004	0.056	137347
r2	0.198	0.159	0.000	0.162	169800	0.289	0.176	0.000	0.270	137347
fht	0.028	0.066	0.000	0.009	220259	0.013	0.038	0.000	0.004	173495
amihud	0.002	0.222	0.000	0.000	220016	0.000	0.026	0.000	0.000	173460
turn	1.459	199.503	0.000	0.262	298408	21.536	7373.901	0.000	0.518	205332
mom	0.177	3.551	-1.000	0.016	197530	0.401	24.469	-1.000	0.025	153496
logmv	17.816	2.434	9.210	17.850	435362	17.804	2.420	9.210	17.871	246461
logasset	18.393	2.538	6.908	18.499	276070	18.713	1.893	6.908	18.701	192958
logsales	18.201	2.917	6.908	18.562	250774	18.254	2.075	6.908	18.316	190411
gdp	10.614	0.215	9.811	10.625	435685	8.718	1.034	6.610	8.903	246515
stockmv	1.595	2.478	0.103	1.047	388477	0.792	0.481	0.103	0.755	237637
stocktrade	1.067	1.273	0.013	0.776	381852	0.707	0.625	0.007	0.493	243552
emission	13.092	1.001	10.734	13.402	363370	13.854	1.385	10.917	13.464	213478
pollution	11.682	3.512	5.861	11.705	197176	44.938	28.302	12.659	29.681	120160
trade	0.854	0.926	0.181	0.598	435685	0.682	0.392	0.210	0.539	246515
disc	7.770	1.766	0.000	8.000	409555	7.774	2.086	1.000	8.000	229597
EPI	65.686	9.791	30.410	63.400	290743	49.406	12.246	27.600	49.600	170742
WUI	0.071	0.066	0.000	0.060	435685	0.062	0.060	0.000	0.045	246515
inflation	0.014	0.013	-0.045	0.015	427825	0.041	0.046	-0.017	0.033	236934

Table I. Summary statistics

country	io	iodom	iofor	ious	ionus	ioeu	iouk	ia	hf	lt	pb	active	passive	govt	insider	retail
Australia	14.97	3.28	11.69	6.32	5.37	1.90	2.21	13.29	0.18	0.90	0.05	5.90	7.39	0.21	14.48	49.27
Austria	17.93	9.41	8.52	2.95	5.57	3.40	1.73	8.87	0.18	0.67	0.04	5.68	3.19	0.00	45.13	19.05
Belgium	13.85	0.64	13.22	7.18	6.04	3.48	1.87	11.80	0.52	0.85	0.20	6.86	4.94	0.00	48.67	27.59
Brazil	18.10	6.99	11.11	6.86	4.25	1.64	1.84	15.43	0.68	0.54	0.59	9.22	6.21	1.46	36.92	22.45
Canada	32.50	14.17	18.33	13.84	4.49	1.82	2.02	27.51	1.57	0.53	0.53	19.63	7.88	0.20	10.54	25.17
Chile	5.01	0.61	4.40	2.86	1.55	0.71	0.56	4.31	0.19	0.37	0.04	1.89	2.42	0.00	64.77	21.97
China	7.41	5.73	1.69	0.60	1.08	0.21	0.23	6.61	0.03	0.08	0.00	5.92	0.69	0.24	41.53	44.76
Colombia	3.03	0.00	3.03	2.60	0.43	0.18	0.18	2.71	0.19	0.07	0.03	0.59	2.12	44.25	28.72	9.20
Czech Republic	0.48	0.07	0.41	0.26	0.14	0.06	0.07	0.47	0.00	0.00	0.00	0.27	0.21	0.89	54.15	4.35
Denmark	28.74	1.11	27.63	12.03	15.60	8.53	5.56	24.65	1.07	1.59	0.37	14.71	9.94	0.25	17.25	48.76
Finland	19.67	2.74	16.93	5.66	11.27	7.42	3.44	16.01	0.46	1.24	0.12	9.30	6.72	7.94	14.87	35.37
France	21.80	4.26	17.54	8.38	9.16	4.72	3.52	18.26	0.34	0.86	0.21	11.08	7.18	2.54	32.40	24.72
Germany	23.20	5.53	17.67	7.59	10.08	5.20	3.83	18.96	0.59	1.03	0.14	11.62	7.34	2.67	29.91	29.24
Greece	8.30	1.24	7.07	4.01	3.06	1.49	1.12	6.89	0.18	0.32	0.02	4.38	2.51	1.18	46.00	12.12
Hong Kong	13.86	1.59	12.27	5.89	6.38	1.82	2.10	12.05	0.19	0.54	0.05	7.00	5.05	0.45	49.37	28.11
Hungary	12.65	0.13	12.52	5.62	6.90	3.20	2.52	11.48	0.39	0.30	0.00	6.46	5.02	18.20	21.28	4.68
India	15.83	6.63	9.20	4.78	4.42	1.09	1.49	14.75	0.17	0.35	0.04	9.72	5.03	1.59	48.74	27.88
Indonesia	5.14	0.42	4.71	2.38	2.33	0.69	0.77	4.43	0.10	0.30	0.03	2.24	2.19	0.11	69.84	20.50
Ireland	40.05	0.31	39.74	19.31	20.43	8.47	10.16	35.51	1.70	1.50	0.61	23.94	11.57	0.60	7.97	28.58
Israel	19.16	4.36	14.79	12.21	2.58	1.05	0.79	14.45	2.80	0.45	0.43	9.49	4.96	0.00	35.10	27.55
Italy	14.12	1.07	13.05	5.83	7.22	4.00	2.34	12.31	0.29	0.80	0.08	6.92	5.39	9.37	30.85	8.59
Japan	21.80	8.94	12.85	7.17	5.68	2.42	2.37	19.60	0.39	0.98	0.04	13.19	6.41	0.79	16.32	53.87
Malaysia	4.83	1.13	3.70	2.20	1.51	0.68	0.45	4.22	0.04	0.32	0.01	1.81	2.40	12.01	42.45	14.11
Mexico	13.51	1.88	11.63	7.83	3.80	1.34	1.65	11.39	0.68	0.58	0.30	6.49	4.90	0.04	44.34	33.91
Netherlands	31.58	0.64	30.94	15.13	15.80	7.01	7.22	28.51	0.71	1.33	0.36	17.02	11.50	0.41	26.11	30.34
New Zealand	12.10	2.24	9.87	4.81	5.06	1.92	1.44	9.85	0.07	1.95	0.03	4.53	5.32	7.78	15.15	42.85
Norway	19.56	8.83	10.73	4.11	6.62	4.06	1.86	15.03	0.27	0.00	0.12	9.47	5.55	3.42	28.52	23.69
Peru	7.92	2.58	5.35	3.52	1.83	0.49	0.90	4.86	0.18	0.05	0.07	3.94	0.92	0.00	63.82	10.86
Philippines	6.58	0.18	6.41	3.36	3.05	1.23	0.88	5.37	0.15	0.36	0.04	2.48	2.88	0.03	56.74	30.15
Poland	13.94	7.49	6.44	3.02	3.43	1.91	1.18	9.62	0.13	0.76	0.01	6.05	3.57	7.96	36.80	22.24
Portugal	19.46	1.46	18.00	5.71	12.28	6.79	4.43	16.35	0.26	1.30	0.10	10.98	5.36	4.84	45.40	10.27
Russia	7.47	0.34	7.13	3.73	3.40	1.46	1.55	6.48	0.11	0.27	0.02	3.57	2.91	6.63	33.51	20.45
Singapore	4.60	0.56	4.04	2.22	1.82	0.66	0.71	4.12	0.08	0.24	0.02	2.05	2.06	12.31	39.80	10.64
South Africa	19.74	4.74	15.00	8.03	6.97	2.75	3.33	16.99	0.99	1.02	0.09	9.45	7.53	9.93	21.80	5.45
South Korea	15.18	0.51	14.67	7.36	7.31	2.58	2.84	13.45	0.26	0.81	0.05	7.51	5.94	0.24	29.26	48.18

Continue on the next page

country	io	iodom	iofor	ious	ionus	ioeu	iouk	ia	hf	lt	pb	active	passive	govt	insider	retail
Spain	18.61	1.77	16.84	6.19	10.65	5.54	3.56	15.29	0.31	1.21	0.16	8.86	6.42	1.61	41.09	21.28
Sweden	32.63	15.18	17.45	7.53	9.92	5.73	3.52	26.87	0.56	1.41	0.09	17.66	9.21	1.35	19.73	36.16
Switzerland	31.31	5.61	25.70	13.72	11.99	5.96	4.46	27.64	0.49	1.95	0.49	14.50	13.14	0.02	11.24	50.11
Thailand	6.32	0.63	5.69	3.00	2.69	1.12	0.82	5.50	0.05	0.50	0.01	1.99	3.51	9.97	38.42	31.69
Turkey	6.44	0.07	6.37	3.03	3.34	1.16	1.77	5.65	0.10	0.35	0.03	2.93	2.72	0.03	63.34	23.50
UK	24.29	9.58	14.71	9.64	5.07	3.24	0.74	21.86	0.51	1.04	0.35	13.07	8.79	0.21	7.63	26.61

Table II. Value-weighted ownership (%) 2020

Table III. Determinants of retail and institutional ownership

This is the kitchen sink regression of institutional ownership by all institutions (all), domestic institutions (iodom), foreign US institutions (ious), foreign non-US institutions (ionus) and retail ownership (retail) onto the set of firm, industry and country variables. Dark shade indicates significance at 1%, medium shade indicates significance at 5% and light shade indicates significance at 10%

tiny

	Developed Markets					Emerging Markets				
	io	iodom	ious	ionus	retail	io	iodom	ious	ionus	retail
logmv	0.023 (0.002)	0.008 (0.001)	0.010 (0.001)	0.006 (0.000)	0.026 (0.003)	0.018 (0.001)	0.011 (0.001)	0.003 (0.000)	0.003 (0.001)	0.073 (0.003)
fht	-0.166 (0.048)	-0.143 (0.033)	-0.039 (0.014)	0.016 (0.010)	-0.908 (0.132)	0.021 (0.024)	0.019 (0.023)	-0.004 (0.007)	0.005 (0.007)	-0.233 (0.121)
mom	0.001 (0.001)	0.001 (0.000)	-0.000 (0.000)	0.000 (0.000)	0.001 (0.002)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
dy	-0.098 (0.038)	-0.056 (0.029)	-0.045 (0.013)	0.004 (0.011)	0.118 (0.087)	-0.041 (0.031)	-0.038 (0.031)	0.001 (0.006)	-0.004 (0.008)	0.235 (0.121)
ivol	-0.164 (0.059)	-0.110 (0.038)	-0.041 (0.018)	-0.012 (0.014)	-0.587 (0.101)	-0.148 (0.035)	-0.065 (0.035)	-0.041 (0.007)	-0.042 (0.008)	-0.185 (0.105)
bm	-0.001 (0.001)	-0.004 (0.001)	0.002 (0.000)	0.001 (0.000)	0.017 (0.003)	0.001 (0.001)	0.001 (0.001)	0.001 (0.000)	-0.000 (0.000)	0.011 (0.002)
gsales	-0.002 (0.001)	-0.001 (0.001)	-0.002 (0.000)	0.001 (0.000)	-0.008 (0.003)	-0.001 (0.001)	0.001 (0.001)	-0.002 (0.000)	-0.001 (0.000)	-0.003 (0.004)
roe	0.006 (0.001)	0.006 (0.001)	-0.001 (0.000)	0.002 (0.000)	-0.016 (0.004)	0.001 (0.001)	-0.001 (0.001)	0.000 (0.000)	0.001 (0.000)	0.003 (0.005)
div	-0.006 (0.024)	0.002 (0.016)	-0.024 (0.009)	0.016 (0.009)	-0.101 (0.044)	0.012 (0.033)	-0.006 (0.033)	-0.003 (0.006)	0.021 (0.006)	-0.312 (0.068)
lev	-0.021 (0.005)	-0.013 (0.003)	-0.008 (0.002)	-0.000 (0.002)	-0.022 (0.014)	-0.003 (0.004)	-0.000 (0.004)	-0.000 (0.001)	-0.002 (0.001)	0.002 (0.013)
cash	-0.003 (0.005)	-0.019 (0.004)	0.009 (0.003)	0.007 (0.002)	-0.010 (0.017)	0.011 (0.005)	0.010 (0.004)	0.001 (0.001)	-0.000 (0.001)	0.040 (0.023)
investment	0.012 (0.010)	0.010 (0.007)	0.001 (0.004)	0.001 (0.003)	0.161 (0.027)	-0.010 (0.009)	-0.008 (0.008)	-0.005 (0.002)	0.003 (0.002)	0.281 (0.037)
ppe	-0.003	0.000	0.000	-0.003	-0.048	0.000	0.004	-0.002	-0.002	-0.076

Continue on the next page

	Developed Markets					Emerging Markets				
	io	iodom	iOUS	ionus	retail	io	iodom	iOUS	ionus	retail
ftse	(0.005)	(0.004)	(0.002)	(0.002)	(0.013)	(0.004)	(0.003)	(0.001)	(0.001)	(0.016)
	-0.001	-0.010	0.004	0.006	0.044	-0.010	-0.042	0.017	0.014	-0.061
analyst	(0.012)	(0.006)	(0.004)	(0.004)	(0.016)	(0.012)	(0.006)	(0.007)	(0.005)	(0.025)
	0.005	0.001	0.002	0.002	-0.004	0.003	0.000	0.001	0.002	-0.009
adr	(0.001)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
	-0.017	-0.025	0.001	0.006	0.034	0.075	0.000	0.050	0.025	-0.104
fsales	(0.005)	(0.003)	(0.003)	(0.002)	(0.012)	(0.011)	(0.007)	(0.007)	(0.004)	(0.022)
	0.037	0.006	0.016	0.016	0.004	-0.000	-0.008	0.006	0.002	0.040
ibm	(0.005)	(0.003)	(0.002)	(0.001)	(0.008)	(0.005)	(0.004)	(0.001)	(0.001)	(0.017)
	0.021	0.020	0.001	0.000	0.095	0.023	0.032	-0.005	-0.004	0.003
igsales	(0.008)	(0.007)	(0.003)	(0.003)	(0.020)	(0.006)	(0.005)	(0.002)	(0.002)	(0.018)
	0.056	0.064	-0.004	-0.005	-0.120	0.076	0.055	0.005	0.017	0.003
iroe	(0.031)	(0.026)	(0.008)	(0.008)	(0.048)	(0.027)	(0.022)	(0.006)	(0.006)	(0.079)
	-0.027	0.076	-0.054	-0.049	0.175	0.076	0.062	-0.002	0.017	0.212
idiv	(0.053)	(0.040)	(0.017)	(0.016)	(0.084)	(0.041)	(0.035)	(0.011)	(0.008)	(0.086)
	-2.565	-1.013	-0.461	-1.091	0.312	-1.483	-0.672	-0.342	-0.469	-0.978
ilev	(0.963)	(0.701)	(0.381)	(0.273)	(1.449)	(0.543)	(0.303)	(0.257)	(0.225)	(2.106)
	-0.118	-0.050	-0.039	-0.029	-0.335	-0.088	-0.083	0.004	-0.009	0.044
icash	(0.040)	(0.031)	(0.014)	(0.013)	(0.085)	(0.035)	(0.030)	(0.007)	(0.007)	(0.076)
	0.095	0.045	0.013	0.037	-0.124	0.016	0.045	-0.018	-0.010	0.647
iinvestment	(0.051)	(0.035)	(0.019)	(0.016)	(0.111)	(0.044)	(0.040)	(0.014)	(0.010)	(0.126)
	0.029	0.052	0.019	-0.043	0.056	-0.005	0.092	-0.033	-0.064	-0.252
ippe	(0.088)	(0.063)	(0.033)	(0.025)	(0.184)	(0.078)	(0.069)	(0.021)	(0.018)	(0.223)
	0.027	0.011	-0.004	0.021	0.126	0.002	0.012	-0.009	-0.000	0.148
legal	(0.019)	(0.012)	(0.008)	(0.006)	(0.038)	(0.020)	(0.017)	(0.006)	(0.004)	(0.043)
	0.010	0.015	-0.002	-0.003	0.026	-0.006	-0.007	0.001	0.000	0.058
disc	(0.002)	(0.002)	(0.001)	(0.001)	(0.004)	(0.003)	(0.002)	(0.001)	(0.000)	(0.007)
	0.000	0.002	-0.001	-0.000	-0.004	-0.000	0.004	-0.002	-0.002	0.005
distance	(0.001)	(0.001)	(0.000)	(0.001)	(0.003)	(0.001)	(0.001)	(0.000)	(0.000)	(0.004)
	-0.131	-0.124	-0.006	-0.001	0.264	-0.118	-0.127	0.013	-0.003	-0.080
english	(0.017)	(0.013)	(0.006)	(0.005)	(0.028)	(0.024)	(0.024)	(0.006)	(0.005)	(0.052)
	0.082	0.066	0.031	-0.015	-0.047	-0.009	-0.019	0.004	0.005	-0.012
	(0.009)	(0.006)	(0.004)	(0.002)	(0.013)	(0.009)	(0.008)	(0.003)	(0.002)	(0.028)

Continue on the next page

	Developed Markets					Emerging Markets				
	io	iodom	iOUS	ionus	retail	io	iodom	iOUS	ionus	retail
gdp	0.002 (0.018)	-0.010 (0.013)	-0.007 (0.004)	0.019 (0.005)	-0.057 (0.021)	-0.005 (0.005)	-0.005 (0.004)	0.000 (0.002)	-0.000 (0.001)	-0.048 (0.011)
stockmv	-0.010 (0.001)	-0.009 (0.001)	-0.003 (0.000)	0.001 (0.000)	-0.019 (0.001)	0.014 (0.008)	0.019 (0.007)	-0.001 (0.003)	-0.004 (0.002)	-0.110 (0.018)
inflation	-0.329 (0.216)	-0.408 (0.150)	-0.001 (0.081)	0.080 (0.055)	-1.699 (0.486)	-0.301 (0.070)	-0.324 (0.079)	0.020 (0.013)	0.003 (0.016)	0.235 (0.217)
pol	0.010 (0.003)	0.003 (0.002)	0.004 (0.001)	0.003 (0.001)	0.003 (0.005)	0.010 (0.002)	0.010 (0.003)	-0.000 (0.001)	0.001 (0.001)	-0.044 (0.008)
openess	0.050 (0.011)	0.029 (0.007)	0.019 (0.003)	0.002 (0.002)	0.001 (0.021)	-0.002 (0.003)	-0.006 (0.003)	0.003 (0.001)	0.001 (0.001)	-0.010 (0.008)
cdy	-0.041 (0.008)	-0.030 (0.008)	-0.013 (0.002)	0.002 (0.002)	0.009 (0.009)	0.907 (0.309)	0.416 (0.275)	0.178 (0.084)	0.313 (0.086)	-0.422 (0.581)
cmom	0.001 (0.006)	0.002 (0.005)	-0.001 (0.001)	-0.001 (0.001)	0.035 (0.006)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
sync	-0.030 (0.038)	-0.018 (0.023)	-0.013 (0.012)	0.001 (0.012)	-0.146 (0.053)	0.082 (0.022)	0.055 (0.020)	0.011 (0.004)	0.017 (0.005)	-0.375 (0.069)
cfht	- 12.883 (1.310)	-8.983 (1.317)	-3.315 (0.522)	-0.586 (0.787)	-8.365 (3.639)	-0.658 (0.600)	-0.879 (0.545)	-0.077 (0.093)	0.298 (0.227)	3.150 (1.585)
cbeta	0.023 (0.013)	0.006 (0.009)	0.008 (0.004)	0.010 (0.003)	-0.008 (0.019)	-0.005 (0.007)	-0.010 (0.006)	0.002 (0.002)	0.002 (0.002)	0.053 (0.020)
fx	-0.018 (0.009)	-0.014 (0.007)	-0.011 (0.003)	0.007 (0.002)	-0.014 (0.014)	-0.039 (0.019)	-0.014 (0.017)	-0.013 (0.004)	-0.012 (0.004)	0.243 (0.049)
fxvol	0.179 (0.127)	0.165 (0.099)	0.007 (0.028)	0.007 (0.024)	-0.399 (0.212)	0.349 (0.221)	0.129 (0.241)	0.148 (0.071)	0.072 (0.054)	-1.551 (0.713)
Observations	115,758	115,758	115,758	115,758	115,758	104,678	104,678	104,678	104,678	104,678
R-squared	0.457	0.340	0.312	0.329	0.176	0.244	0.139	0.324	0.304	0.198
firm	62.286	24.783	80.391	78.400	36.460	79.430	40.822	80.698	80.381	61.807
industry	2.096	2.257	3.671	2.633	3.925	2.057	3.333	2.016	2.353	3.864
country	35.618	72.960	15.938	18.967	59.614	18.513	55.845	17.286	17.267	34.329

Robust standard errors in parentheses

p<0.01, p<0.05, p<0.1

Table IV. Determinants of institutional ownership by institution type
This is the kitchen sink regression of ownership by passive investment advisors (passive), active investment advisors (active), hedge funds (hf), long-term investors (lt) onto the set of ALL firm, industry and country variables. Dark shade indicates significance at 1%, medium shade indicates significance at 5% and light shade indicates significance at 1%

	Developed Markets				Emerging Markets			
	passive	active	hf	lt	passive	active	hf	lt
logmv	0.007 (0.001)	0.013 (0.001)	0.001 (0.000)	0.001 (0.000)	0.003 (0.000)	0.007 (0.001)	0.000 (0.000)	0.000 (0.000)
fht	-0.015 (0.009)	-0.133 (0.036)	-0.024 (0.003)	0.002 (0.003)	-0.008 (0.005)	0.011 (0.016)	-0.002 (0.001)	-0.002 (0.001)
mom	0.000 (0.000)	0.001 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
dy	0.010 (0.009)	-0.083 (0.031)	-0.015 (0.004)	0.006 (0.003)	-0.004 (0.005)	-0.001 (0.019)	0.002 (0.001)	0.004 (0.001)
ivol	-0.013 (0.011)	-0.141 (0.043)	0.004 (0.004)	0.000 (0.003)	-0.041 (0.007)	-0.073 (0.020)	-0.002 (0.001)	-0.008 (0.001)
bm	0.001 (0.000)	-0.003 (0.001)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.001 (0.000)	0.000 (0.000)	-0.000 (0.000)
gsales	-0.001 (0.000)	-0.001 (0.001)	-0.000 (0.000)	-0.000 (0.000)	-0.001 (0.000)	0.002 (0.001)	-0.000 (0.000)	-0.000 (0.000)
roe	0.001 (0.000)	0.007 (0.001)	-0.001 (0.000)	-0.000 (0.000)	0.001 (0.000)	0.004 (0.001)	0.000 (0.000)	0.000 (0.000)
div	0.011 (0.006)	0.011 (0.019)	-0.011 (0.002)	0.000 (0.001)	-0.005 (0.004)	-0.014 (0.013)	-0.002 (0.001)	-0.001 (0.001)
lev	-0.002 (0.001)	-0.018 (0.004)	-0.000 (0.001)	0.000 (0.000)	0.001 (0.001)	-0.009 (0.002)	-0.000 (0.000)	0.000 (0.000)
cash	-0.005 (0.002)	-0.003 (0.004)	0.004 (0.001)	-0.001 (0.000)	-0.002 (0.001)	0.010 (0.003)	-0.000 (0.000)	-0.000 (0.000)
investment	0.001 (0.002)	0.014 (0.007)	0.005 (0.002)	-0.001 (0.000)	0.001 (0.002)	0.023 (0.005)	0.000 (0.000)	0.000 (0.000)
ppe	-0.004 (0.001)	-0.005 (0.004)	0.000 (0.001)	-0.001 (0.000)	-0.003 (0.001)	-0.009 (0.002)	-0.000 (0.000)	-0.000 (0.000)

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	Developed Markets				Emerging Markets			
	passive	active	hf	lt	passive	active	hf	lt
ftse	0.003 (0.003)	-0.007 (0.008)	-0.001 (0.001)	-0.000 (0.001)	0.007 (0.003)	-0.008 (0.008)	0.001 (0.001)	-0.001 (0.000)
analyst	0.001 (0.000)	0.003 (0.000)	0.000 (0.000)	0.000 (0.000)	0.001 (0.000)	0.002 (0.000)	0.000 (0.000)	0.000 (0.000)
adr	-0.001 (0.001)	-0.016 (0.004)	-0.002 (0.000)	-0.001 (0.000)	0.020 (0.003)	0.041 (0.007)	0.005 (0.001)	0.001 (0.001)
fsales	0.008 (0.001)	0.025 (0.003)	0.002 (0.001)	0.001 (0.000)	0.003 (0.001)	0.005 (0.002)	0.000 (0.000)	0.001 (0.000)
ibm	0.007 (0.002)	0.018 (0.007)	-0.000 (0.001)	0.001 (0.001)	0.000 (0.001)	0.013 (0.003)	-0.000 (0.000)	-0.000 (0.000)
igsales	0.004 (0.008)	0.044 (0.027)	0.003 (0.001)	-0.007 (0.002)	0.015 (0.005)	0.023 (0.014)	0.001 (0.001)	-0.002 (0.001)
iroe	0.005 (0.010)	-0.016 (0.039)	-0.011 (0.004)	0.000 (0.003)	0.008 (0.005)	0.071 (0.014)	-0.003 (0.002)	0.002 (0.002)
idiv	-0.548 (0.165)	-1.558 (0.718)	-0.124 (0.032)	-0.147 (0.053)	-0.372 (0.197)	-0.832 (0.278)	-0.020 (0.014)	-0.082 (0.023)
ilev	-0.003 (0.009)	-0.129 (0.033)	-0.003 (0.003)	0.008 (0.003)	0.002 (0.005)	-0.070 (0.012)	0.000 (0.001)	0.002 (0.001)
icash	0.047 (0.012)	0.029 (0.039)	0.002 (0.005)	0.023 (0.003)	-0.000 (0.008)	0.003 (0.021)	-0.001 (0.001)	0.002 (0.002)
iinvestment	0.012 (0.018)	-0.011 (0.063)	0.011 (0.010)	0.009 (0.004)	-0.032 (0.013)	-0.044 (0.039)	-0.003 (0.002)	-0.004 (0.003)
ippe	-0.004 (0.004)	0.025 (0.014)	-0.002 (0.002)	-0.002 (0.001)	-0.004 (0.003)	0.007 (0.008)	-0.000 (0.001)	-0.002 (0.001)
legal	0.002 (0.001)	0.009 (0.002)	-0.001 (0.000)	0.000 (0.000)	0.001 (0.000)	-0.005 (0.001)	-0.000 (0.000)	-0.000 (0.000)
disc	-0.001 (0.000)	0.001 (0.001)	-0.000 (0.000)	-0.000 (0.000)	-0.001 (0.000)	-0.002 (0.001)	-0.000 (0.000)	-0.000 (0.000)
distance	-0.003 (0.004)	-0.111 (0.011)	-0.007 (0.002)	0.007 (0.001)	-0.015 (0.005)	-0.063 (0.012)	0.001 (0.001)	-0.002 (0.001)
english	0.002 (0.002)	0.063 (0.007)	0.010 (0.001)	-0.001 (0.000)	0.003 (0.002)	-0.001 (0.005)	0.000 (0.000)	0.001 (0.000)
gdp	0.027	-0.019	-0.005	0.000	-0.003	0.001	0.000	0.001

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	Developed Markets				Emerging Markets			
	passive	active	hf	lt	passive	active	hf	lt
stockmv	(0.003)	(0.013)	(0.001)	(0.001)	(0.001)	(0.003)	(0.000)	(0.000)
	-0.001	-0.008	-0.001	-0.000	0.004	0.009	0.000	0.000
inflation	(0.000)	(0.001)	(0.000)	(0.000)	(0.002)	(0.004)	(0.000)	(0.000)
	-0.046	-0.336	-0.021	0.012	-0.030	-0.134	-0.000	-0.005
pol	(0.042)	(0.155)	(0.013)	(0.008)	(0.016)	(0.031)	(0.001)	(0.002)
	0.001	0.006	0.001	-0.000	0.000	0.007	-0.000	0.000
openess	(0.001)	(0.002)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)
	0.007	0.031	0.004	0.002	0.002	-0.003	0.000	0.001
cdy	(0.002)	(0.008)	(0.001)	(0.001)	(0.001)	(0.002)	(0.000)	(0.000)
	-0.004	-0.029	-0.004	0.002	0.272	0.611	0.004	0.041
cmom	(0.001)	(0.007)	(0.001)	(0.000)	(0.065)	(0.196)	(0.006)	(0.015)
	0.000	0.002	-0.000	-0.001	-0.000	0.000	0.000	-0.000
sync	(0.001)	(0.006)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
	-0.024	-0.021	0.001	0.004	0.012	0.041	0.001	0.003
cfht	(0.009)	(0.027)	(0.002)	(0.003)	(0.004)	(0.012)	(0.000)	(0.001)
	-2.497	-8.951	-0.519	-0.508	0.147	-0.200	-0.008	-0.009
cbeta	(0.377)	(0.875)	(0.090)	(0.087)	(0.170)	(0.338)	(0.012)	(0.017)
	-0.001	0.020	0.002	-0.000	0.002	-0.001	0.000	0.000
fx	(0.002)	(0.010)	(0.001)	(0.001)	(0.002)	(0.005)	(0.000)	(0.000)
	0.005	-0.016	-0.003	0.002	-0.022	-0.027	-0.001	-0.003
fxvol	(0.003)	(0.006)	(0.001)	(0.001)	(0.004)	(0.010)	(0.000)	(0.001)
	0.037	0.109	-0.001	0.002	0.275	0.183	0.006	0.022
	(0.027)	(0.101)	(0.008)	(0.009)	(0.078)	(0.120)	(0.004)	(0.008)
Observations	115,758	115,758	115,758	115,758	104,678	104,678	104,678	104,678
R-squared	0.383	0.401	0.075	0.252	0.352	0.272	0.079	0.113
firm	74.136	53.291	34.231	76.916	76.342	78.683	80.240	67.648
industry	1.784	2.429	8.320	6.992	1.920	2.162	2.952	4.778
country	24.080	44.279	57.449	16.091	21.739	19.155	16.807	27.574

Robust standard errors in parentheses

p<0.01, p<0.05, p<0.1

Table V R-square bound: this table reports the R-square of panel regression of institutional ownership and retail ownership including only firm, industry country, industry-country and time fixed effects.

	Developed Markets					Emerging Markets				
	io	iodom	ious	ionus	retail	io	iodom	ious	ionus	retail
Observations	435,685	435,685	435,685	435,685	435,685	246,515	246,515	246,515	246,515	246,515
R-squared	0.054	0.080	0.024	0.054	0.116	0.084	0.111	0.061	0.039	0.132
firm	0.664	0.616	0.619	0.595	0.630	0.577	0.516	0.664	0.557	0.530
industry	0.025	0.022	0.015	0.020	0.042	0.038	0.025	0.025	0.027	0.054
country	0.047	0.073	0.017	0.044	0.108	0.071	0.106	0.044	0.024	0.126
indctry	0.054	0.080	0.024	0.054	0.116	0.084	0.111	0.061	0.039	0.132

Table VI R-square bound: this table reports the R-square of panel regression of institutional ownership of different types, including only firm, industry country, industry-country and time fixed effects.

	Developed Markets				Emerging Markets			
	passive	active	hf	lt	passive	active	hf	lt
Observations	435,685	435,685	435,685	435,685	246,515	246,515	246,515	246,515
R-squared	0.042	0.051	0.018	0.050	0.053	0.075	0.013	0.031
firm	0.548	0.633	0.341	0.506	0.519	0.537	0.413	0.393
industry	0.021	0.022	0.009	0.033	0.028	0.032	0.006	0.020
country	0.035	0.046	0.017	0.043	0.040	0.065	0.010	0.028
indctry	0.042	0.051	0.018	0.050	0.053	0.075	0.013	0.031

Table VII. Determinants of retail and institutional ownership

This is the regression of institutional ownership by all institutions (all), domestic institutions (iodom), foreign US institutions (ious), foreign non-US institutions (ionus) and retail ownership (retail) onto the set of firm, industry and country variables. Dark shade indicates significance at 1%, medium shade indicates significance at 5% and light shade indicates significance at 1%

	Developed Markets					Emerging Markets				
	io	iodom	ious	ionus	retail	io	iodom	ious	ionus	retail
logmv	0.025 (0.002)	0.009 (0.001)	0.010 (0.001)	0.006 (0.000)	0.032 (0.003)	0.016 (0.001)	0.010 (0.001)	0.003 (0.000)	0.003 (0.001)	0.074 (0.002)
bm	0.000 (0.001)	-0.003 (0.001)	0.003 (0.000)	0.001 (0.000)	0.019 (0.003)	0.001 (0.001)	0.001 (0.001)	0.001 (0.000)	-0.000 (0.000)	0.008 (0.003)
turn	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.002 (0.000)
ivol	-0.197 (0.071)	-0.184 (0.041)	-0.035 (0.020)	0.021 (0.017)	-0.868 (0.098)	-0.153 (0.047)	-0.095 (0.038)	-0.029 (0.007)	-0.029 (0.012)	-0.256 (0.131)
mom	0.000 (0.001)	0.001 (0.000)	-0.001 (0.000)	0.000 (0.000)	0.002 (0.002)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)
div	-0.030 (0.025)	-0.009 (0.017)	-0.035 (0.010)	0.014 (0.009)	-0.142 (0.045)	0.009 (0.036)	-0.019 (0.038)	0.003 (0.006)	0.025 (0.007)	-0.286 (0.071)
dy	-0.149 (0.045)	-0.066 (0.033)	-0.068 (0.014)	-0.015 (0.014)	0.183 (0.089)	0.025 (0.035)	0.004 (0.034)	0.005 (0.008)	0.016 (0.010)	0.080 (0.169)
lev	-0.036 (0.005)	-0.017 (0.003)	-0.013 (0.002)	-0.006 (0.002)	-0.029 (0.015)	-0.008 (0.005)	-0.001 (0.004)	-0.002 (0.001)	-0.004 (0.001)	-0.014 (0.014)
roe	0.005 (0.002)	0.006 (0.001)	-0.002 (0.001)	0.001 (0.001)	-0.014 (0.004)	0.002 (0.001)	0.000 (0.001)	0.000 (0.000)	0.001 (0.000)	0.002 (0.006)
cash	0.011 (0.006)	-0.013 (0.004)	0.015 (0.003)	0.009 (0.002)	0.012 (0.015)	0.009 (0.005)	0.009 (0.005)	0.001 (0.002)	-0.001 (0.001)	0.098 (0.018)
gsales	-0.000 (0.001)	0.000 (0.001)	-0.002 (0.000)	0.001 (0.000)	-0.009 (0.003)	0.001 (0.002)	0.003 (0.002)	-0.002 (0.000)	-0.000 (0.001)	0.006 (0.006)
investment	0.031 (0.010)	0.020 (0.007)	0.008 (0.004)	0.003 (0.003)	0.129 (0.026)	-0.007 (0.010)	0.005 (0.008)	-0.009 (0.003)	-0.002 (0.003)	0.213 (0.035)
fsales	0.038 (0.005)	0.005 (0.004)	0.016 (0.002)	0.017 (0.001)	0.014 (0.007)	0.004 (0.004)	-0.005 (0.004)	0.006 (0.001)	0.002 (0.001)	0.030 (0.022)
analyst	0.004	0.000	0.002	0.002	-0.005	0.003	0.000	0.001	0.002	-0.009

	(0.001)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
adr	-0.021	-0.027	0.001	0.006	0.035	0.083	0.001	0.054	0.029	-0.148
	(0.005)	(0.004)	(0.003)	(0.002)	(0.012)	(0.012)	(0.007)	(0.007)	(0.004)	(0.024)
legal	0.010	0.016	-0.002	-0.003	0.029	-0.006	-0.007	0.000	0.000	0.059
	(0.002)	(0.002)	(0.001)	(0.001)	(0.004)	(0.003)	(0.003)	(0.001)	(0.001)	(0.009)
disc	-0.002	-0.001	-0.002	0.000	-0.009	-0.001	0.003	-0.002	-0.002	0.008
	(0.001)	(0.001)	(0.000)	(0.000)	(0.004)	(0.001)	(0.001)	(0.000)	(0.000)	(0.003)
distance	-0.129	-0.126	0.013	-0.016	0.322	-0.100	-0.116	0.014	0.002	-0.224
	(0.018)	(0.012)	(0.004)	(0.003)	(0.020)	(0.015)	(0.014)	(0.006)	(0.003)	(0.037)
english	0.071	0.056	0.026	-0.011	-0.062	-0.015	-0.019	0.002	0.003	0.043
	(0.009)	(0.006)	(0.003)	(0.002)	(0.013)	(0.007)	(0.008)	(0.002)	(0.001)	(0.029)
gdp	-0.008	-0.026	-0.009	0.027	-0.118	-0.004	-0.003	0.000	-0.001	-0.029
	(0.023)	(0.015)	(0.006)	(0.005)	(0.026)	(0.004)	(0.004)	(0.001)	(0.001)	(0.013)
stockmv	-0.011	-0.009	-0.002	0.000	-0.017	0.018	0.016	0.002	-0.000	-0.128
	(0.001)	(0.001)	(0.000)	(0.000)	(0.001)	(0.008)	(0.008)	(0.003)	(0.002)	(0.023)
openess	0.047	0.027	0.024	-0.004	0.031	-0.003	-0.008	0.003	0.003	0.008
	(0.011)	(0.008)	(0.003)	(0.002)	(0.016)	(0.003)	(0.003)	(0.001)	(0.001)	(0.014)
inflation	-0.074	-0.245	0.010	0.161	-2.014	-0.127	-0.218	0.050	0.041	-0.253
	(0.229)	(0.168)	(0.079)	(0.064)	(0.558)	(0.058)	(0.061)	(0.014)	(0.018)	(0.223)
pol	0.010	0.003	0.005	0.002	0.002	0.010	0.010	-0.000	-0.000	-0.056
	(0.004)	(0.002)	(0.001)	(0.001)	(0.005)	(0.004)	(0.003)	(0.001)	(0.001)	(0.010)
Observations	115,688	115,688	115,688	115,688	115,688	104,490	104,490	104,490	104,490	104,490
R-squared	0.427	0.309	0.289	0.315	0.163	0.228	0.124	0.312	0.282	0.177
firm	66.839	27.790	86.171	82.890	37.717	85.109	43.270	85.052	86.163	74.021
country	33.161	72.210	13.829	17.110	62.283	14.891	56.730	14.948	13.837	25.979

Robust standard errors in parentheses

p<0.01, p<0.05, p<0.1

Table VIII. Determinants of institutional ownership by institution type.

This is the regression of institutional ownership of different types onto the set of firm, industry and country variables. Dark shade indicates significance at 1%, medium shade indicates significance at 5% and light shade indicates significance at 1%

	Developed Markets				Emerging Markets			
	passive	active	hf	lt	passive	active	hf	lt

logmv	0.007	0.015	0.001	0.001	0.004	0.008	0.000	0.000
	(0.001)	(0.001)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)
fht	-0.007	-0.096	-0.022	0.003	-0.007	0.017	-0.002	-0.001
	(0.009)	(0.036)	(0.003)	(0.003)	(0.005)	(0.017)	(0.001)	(0.001)
mom	-0.000	0.001	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
dy	0.034	-0.004	-0.022	0.010	-0.002	0.019	0.001	0.006
	(0.010)	(0.033)	(0.004)	(0.003)	(0.005)	(0.017)	(0.001)	(0.002)
ivol	-0.013	-0.140	0.005	0.000	-0.040	-0.071	-0.002	-0.008
	(0.011)	(0.043)	(0.004)	(0.003)	(0.007)	(0.020)	(0.001)	(0.001)
bm	0.001	-0.002	0.000	0.000	0.000	-0.000	0.000	0.000
	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
gsales	-0.001	-0.001	-0.000	-0.000	-0.001	0.002	-0.000	-0.000
	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)
roe	0.001	0.006	-0.001	-0.000	0.001	0.004	0.000	0.000
	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)
div	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
lev	-0.002	-0.017	-0.000	0.000	0.001	-0.008	-0.000	0.001
	(0.001)	(0.003)	(0.001)	(0.000)	(0.001)	(0.002)	(0.000)	(0.000)
cash	-0.005	-0.002	0.004	-0.001	-0.002	0.010	-0.000	-0.001
	(0.002)	(0.004)	(0.001)	(0.000)	(0.001)	(0.003)	(0.000)	(0.000)
investment	0.001	0.010	0.004	-0.001	0.000	0.021	0.000	-0.000
	(0.002)	(0.007)	(0.002)	(0.000)	(0.003)	(0.004)	(0.000)	(0.000)
ppe	-0.004	-0.004	0.000	-0.001	-0.003	-0.008	0.000	-0.000
	(0.001)	(0.004)	(0.001)	(0.000)	(0.001)	(0.002)	(0.000)	(0.000)
ftse	0.005	0.001	-0.001	0.000	0.007	-0.004	0.001	-0.001
	(0.002)	(0.007)	(0.001)	(0.001)	(0.003)	(0.008)	(0.001)	(0.000)
analyst	0.001	0.003	0.000	0.000	0.001	0.003	0.000	0.000
	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
adr	0.000	-0.009	-0.001	-0.000	0.021	0.045	0.005	0.001
	(0.001)	(0.004)	(0.000)	(0.000)	(0.003)	(0.007)	(0.001)	(0.001)
fsales	0.008	0.024	0.002	0.001	0.003	0.004	0.000	0.001
	(0.001)	(0.003)	(0.001)	(0.000)	(0.001)	(0.002)	(0.000)	(0.000)

ibm	0.007	0.017	-0.000	0.001	0.000	0.012	-0.000	-0.000
	(0.002)	(0.007)	(0.001)	(0.001)	(0.001)	(0.003)	(0.000)	(0.000)
igsales	0.005	0.048	0.003	-0.007	0.015	0.024	0.001	-0.002
	(0.008)	(0.026)	(0.001)	(0.002)	(0.005)	(0.015)	(0.001)	(0.001)
iroe	0.003	-0.024	-0.012	0.000	0.008	0.068	-0.003	0.002
	(0.010)	(0.039)	(0.004)	(0.003)	(0.005)	(0.014)	(0.002)	(0.001)
idiv	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
ilev	-0.000	-0.118	-0.003	0.008	0.003	-0.068	0.000	0.002
	(0.008)	(0.033)	(0.003)	(0.003)	(0.005)	(0.011)	(0.001)	(0.001)
icash	0.047	0.027	0.001	0.023	-0.002	-0.006	-0.001	0.001
	(0.011)	(0.039)	(0.005)	(0.003)	(0.008)	(0.020)	(0.001)	(0.002)
iinvestment	0.016	0.007	0.012	0.010	-0.029	-0.027	-0.003	-0.003
	(0.019)	(0.064)	(0.010)	(0.004)	(0.013)	(0.039)	(0.002)	(0.003)
ippe	-0.005	0.021	-0.002	-0.002	-0.005	0.002	-0.000	-0.002
	(0.004)	(0.015)	(0.002)	(0.001)	(0.003)	(0.008)	(0.001)	(0.001)
legal	0.002	0.009	-0.001	0.000	0.001	-0.005	-0.000	-0.000
	(0.001)	(0.002)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)
disc	-0.001	0.001	-0.000	-0.000	-0.001	-0.002	-0.000	-0.000
	(0.000)	(0.001)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)
distance	-0.003	-0.110	-0.007	0.007	-0.015	-0.063	0.001	-0.002
	(0.004)	(0.012)	(0.002)	(0.001)	(0.005)	(0.012)	(0.001)	(0.001)
english	0.002	0.063	0.010	-0.001	0.003	-0.000	0.000	0.001
	(0.002)	(0.007)	(0.001)	(0.000)	(0.002)	(0.005)	(0.000)	(0.000)
gdp	0.027	-0.018	-0.005	0.000	-0.002	0.002	0.000	0.001
	(0.003)	(0.013)	(0.001)	(0.001)	(0.001)	(0.003)	(0.000)	(0.000)
stockmv	-0.001	-0.008	-0.001	-0.000	0.004	0.008	0.000	0.000
	(0.000)	(0.001)	(0.000)	(0.000)	(0.002)	(0.004)	(0.000)	(0.000)
inflation	-0.043	-0.325	-0.021	0.012	-0.030	-0.134	0.000	-0.005
	(0.042)	(0.156)	(0.013)	(0.008)	(0.016)	(0.030)	(0.001)	(0.002)
pol	0.001	0.006	0.001	-0.000	0.000	0.007	-0.000	0.000
	(0.001)	(0.002)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)
openess	0.007	0.031	0.004	0.002	0.002	-0.003	0.000	0.001
	(0.002)	(0.008)	(0.001)	(0.001)	(0.001)	(0.002)	(0.000)	(0.000)
cdy	-0.004	-0.028	-0.004	0.002	0.273	0.628	0.004	0.043
	(0.001)	(0.007)	(0.001)	(0.000)	(0.066)	(0.200)	(0.006)	(0.016)

cmom	-0.000	0.001	-0.000	-0.001	-0.000	0.000	0.000	-0.000
	(0.001)	(0.006)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
sync	-0.023	-0.018	0.001	0.004	0.012	0.041	0.001	0.003
	(0.009)	(0.028)	(0.002)	(0.003)	(0.004)	(0.012)	(0.000)	(0.001)
cfht	-2.568	-9.315	-0.555	-0.526	0.143	-0.224	-0.009	-0.011
	(0.386)	(0.874)	(0.092)	(0.090)	(0.173)	(0.348)	(0.012)	(0.017)
cbeta	-0.001	0.020	0.002	-0.000	0.002	-0.001	0.000	0.000
	(0.002)	(0.010)	(0.001)	(0.001)	(0.002)	(0.005)	(0.000)	(0.000)
fx	0.005	-0.015	-0.003	0.002	-0.023	-0.028	-0.001	-0.003
	(0.003)	(0.006)	(0.001)	(0.001)	(0.004)	(0.010)	(0.000)	(0.001)
fxvol	0.036	0.107	-0.002	0.002	0.274	0.181	0.006	0.022
	(0.028)	(0.103)	(0.008)	(0.009)	(0.078)	(0.118)	(0.004)	(0.008)
Observations	115,763	115,763	115,763	115,763	104,678	104,678	104,678	104,678
R-squared	0.385	0.407	0.075	0.254	0.353	0.276	0.079	0.117
firm	74.056	53.785	35.025	77.086	76.367	78.932	80.280	68.143
industry	1.758	2.372	8.265	6.753	1.911	2.082	2.960	4.639
country	24.185	43.842	56.710	16.161	21.722	18.987	16.761	27.218

Robust standard errors in parentheses

p<0.01, p<0.05, p<0.1

Table IX. Marginal effect of ESG on institutional ownership: this table reports the marginal effect of Asset 4 ESG pillar score on ownership by US and non-US foreign investors. Estimates that are significant at 5% is in bold.

country	ious			ionus		
	E	S	G	E	S	G
Austria	0.102	-0.039	0.066	0.101	-0.093	0.108
	(2.787)	(-1.305)	(2.446)	(1.901)	(-1.539)	(2.561)
Australia	0.013	-0.011	0.018	0.016	0.008	-0.004
	(1.930)	(-1.654)	(3.174)	(2.125)	(0.764)	(-0.525)
Belgium	0.026	0.052	0.085	0.038	0.066	0.075
	(1.449)	(2.458)	(6.113)	(1.758)	(2.675)	(4.309)
Brazil	0.001	0.043	0.071	0.037	0.007	0.010
	(0.050)	(2.039)	(5.487)	(4.374)	(0.823)	(1.615)
Canada	0.002	0.002	0.063	0.021	-0.000	0.056

	(0.175)	(0.197)	(5.166)	(1.782)	(-0.029)	(4.152)
Switzerland	-0.014	0.037	0.063	-0.000	0.009	0.071
	(-1.320)	(3.245)	(6.966)	(-0.016)	(0.577)	(5.316)
Chile	0.004	0.020	0.052	0.089	0.057	0.033
	(0.246)	(0.994)	(3.434)	(3.931)	(2.646)	(1.940)
Chi	0.035	-0.021	0.027	0.001	0.025	0.088
	(2.397)	(-1.116)	(2.275)	(0.041)	(1.146)	(4.633)
Colombia	0.019	-0.044	0.029	0.010	-0.026	0.041
	(1.369)	(-2.960)	(2.468)	(0.426)	(-1.136)	(2.148)
Czech Republic	-0.030	0.040	0.068	0.008	0.005	0.097
	(-2.687)	(3.499)	(7.552)	(0.771)	(0.450)	(9.793)
Germany	-0.004	0.043	0.037	0.002	-0.002	0.015
	(-0.582)	(5.349)	(5.356)	(0.395)	(-0.293)	(3.989)
Denmark	-0.013	0.046	0.023	-0.036	0.029	-0.022
	(-0.334)	(1.280)	(1.127)	(-1.387)	(1.215)	(-1.118)
Spain	-0.018	-0.008	0.063	-0.026	0.011	0.016
	(-2.304)	(-0.678)	(7.565)	(-1.818)	(0.566)	(1.041)
Finland	-0.059	0.017	0.035	0.102	-0.046	0.113
	(-1.484)	(0.266)	(0.593)	(2.325)	(-1.010)	(2.719)
France	-0.175	0.115	0.141	-0.018	0.118	-0.003
	(-1.601)	(1.352)	(2.853)	(-0.431)	(3.692)	(-0.148)
UK	0.032	0.019	0.029	0.038	0.033	0.113
	(3.101)	(1.290)	(2.557)	(1.898)	(1.298)	(5.613)
Greece	-0.011	0.013	0.016	-0.003	0.004	0.011
	(-3.994)	(3.770)	(5.829)	(-1.290)	(1.580)	(5.360)
Hong Kong	0.016	-0.015	0.010	0.012	-0.013	0.005
	(1.918)	(-1.599)	(1.382)	(1.463)	(-1.347)	(0.732)
Hungary	-0.087	0.023	0.092	-0.017	0.032	0.033
	(-1.476)	(0.354)	(2.219)	(-0.992)	(1.355)	(2.073)
Indonesia	0.012	-0.029	0.038	-0.013	0.070	0.092
	(0.553)	(-1.211)	(1.562)	(-0.621)	(3.131)	(4.239)
Ireland	-0.048	0.039	0.045	0.026	0.004	0.010
	(-1.996)	(1.816)	(2.148)	(0.691)	(0.085)	(0.250)
Israel	0.001	0.056	-0.016	0.102	0.094	-0.075
	(0.042)	(2.603)	(-0.979)	(2.365)	(1.966)	(-2.207)
India	-0.199	0.087	0.023	-0.146	0.012	0.019

	(-5.995)	(2.569)	(1.124)	(-4.713)	(0.332)	(0.818)
Italy	0.010	0.029	0.007	-0.011	0.036	0.029
	(1.215)	(3.059)	(0.943)	(-0.964)	(2.548)	(2.625)
Japan	-0.001	0.001	0.011	0.007	0.028	-0.022
	(-0.044)	(0.048)	(0.848)	(0.609)	(1.408)	(-1.573)
South Korea	-0.002	-0.020	0.014	-0.069	0.054	0.016
	(-0.174)	(-1.462)	(1.234)	(-3.336)	(1.885)	(0.701)
Mexico	-0.035	0.087	0.041	-0.010	0.038	0.074
	(-1.672)	(2.210)	(1.488)	(-0.554)	(1.674)	(4.322)
Malaysia	0.004	0.003	0.034	-0.018	0.003	0.005
	(0.305)	(0.224)	(2.984)	(-1.907)	(0.237)	(0.488)
Netherlands	-0.031	-0.007	0.030	0.019	-0.034	0.027
	(-3.410)	(-0.718)	(3.951)	(1.765)	(-2.908)	(2.992)
Norway	-0.032	0.015	-0.015	-0.016	-0.010	0.052
	(-2.799)	(1.351)	(-1.680)	(-0.838)	(-0.496)	(3.245)
New Zealand	0.006	-0.005	0.005	0.006	-0.015	0.005
	(1.796)	(-1.800)	(3.114)	(1.155)	(-2.865)	(1.617)
Peru	0.040	0.104	0.017	0.016	0.050	0.007
	(0.973)	(0.890)	(1.231)	(0.191)	(0.214)	(0.334)
Philippines	-0.041	0.107	0.064	-0.081	-0.211	-0.014
	(-0.775)	(2.678)	(1.630)	(-0.883)	(-4.273)	(-0.206)
Poland	-0.039	0.013	0.007	-0.044	0.034	0.022
	(-2.244)	(0.866)	(0.498)	(-2.308)	(1.972)	(1.600)
Portugal	0.004	-0.006	-0.009	0.001	-0.017	0.003
	(0.550)	(-0.759)	(-1.208)	(0.067)	(-1.677)	(0.423)
Russia	-0.152	0.121	-0.146	-0.074	0.030	-0.112
	(-1.587)	(1.525)	(-2.153)	(-1.267)	(0.411)	(-2.008)
Sweden	-0.035	-0.009	0.013	0.051	0.021	-0.029
	(-2.136)	(-0.583)	(1.151)	(3.129)	(1.030)	(-2.228)
Singapore	-0.069	0.027	0.027	-0.059	0.034	0.041
	(-4.861)	(2.558)	(1.793)	(-3.781)	(2.367)	(2.885)
Thailand	-0.016	0.022	0.001	-0.003	0.015	-0.001
	(-1.558)	(1.973)	(0.126)	(-0.219)	(0.822)	(-0.121)
Turkey	-0.048	0.040	0.031	-0.006	0.023	0.012
	(-3.812)	(2.145)	(3.023)	(-0.633)	(2.282)	(1.704)
South Africa	-0.042	0.038	0.007	-0.018	-0.016	0.029

(-2.794) (2.326) (0.547) (-1.118) (-0.670) (1.464)

Table X. Pooled regression of ownership by us institutional investors, uk institutional investors and europe institutional investors on firm and country-level ESG variabls in DM.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	iOUS	iOUK	iOEU	iOUS	iOUK	iOEU	iOUS	iOUK	iOEU
E	-0.017 (0.008)	0.004 (0.004)	0.023 (0.005)						
S				0.010 (0.006)	0.005 (0.005)	0.030 (0.005)			
G							0.032 (0.006)	0.007 (0.003)	0.015 (0.003)
beta	0.026 (0.006)	0.007 (0.002)	0.001 (0.001)	0.024 (0.006)	0.008 (0.002)	0.001 (0.002)	0.024 (0.006)	0.008 (0.002)	0.002 (0.002)
logmv	0.016 (0.001)	0.004 (0.001)	0.004 (0.001)	0.013 (0.001)	0.004 (0.001)	0.005 (0.001)	0.012 (0.001)	0.004 (0.001)	0.006 (0.001)
bm	-0.003 (0.002)	-0.000 (0.001)	-0.004 (0.001)	-0.005 (0.002)	0.000 (0.001)	-0.003 (0.001)	-0.005 (0.002)	0.000 (0.001)	-0.002 (0.001)
epi	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)
emission	-0.001 (0.002)	-0.007 (0.001)	-0.013 (0.001)	-0.000 (0.002)	-0.006 (0.001)	-0.012 (0.001)	-0.001 (0.002)	-0.007 (0.001)	-0.013 (0.001)
pollution	-0.006 (0.001)	-0.001 (0.000)	0.000 (0.000)	-0.006 (0.001)	-0.001 (0.000)	0.000 (0.000)	-0.005 (0.001)	-0.001 (0.000)	0.000 (0.000)
Observations	6,845	6,845	6,845	6,845	6,845	6,845	6,864	6,864	6,864
R-squared	0.107	0.064	0.246	0.105	0.064	0.251	0.111	0.065	0.233

Robust standard errors in parentheses

p<0.01, p<0.05, p<0.1

Table XI. Pooled regression of ownership by us institutional investors, uk institutional investors and europe institutional investors on firm and country-level ESG variabls in EM.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	iOUS	iOUK	iOEU	iOUS	iOUK	iOEU	iOUS	iOUK	iOEU
E	0.013 (0.012)	0.011 (0.005)	0.004 (0.002)						
S				0.037 (0.012)	0.022 (0.005)	0.006 (0.002)			
G							0.050 (0.012)	0.023 (0.005)	0.010 (0.003)
beta	-0.011 (0.006)	-0.008 (0.002)	-0.004 (0.001)	-0.011 (0.006)	-0.007 (0.002)	-0.004 (0.001)	-0.011 (0.006)	-0.007 (0.002)	-0.004 (0.001)
logmv	0.008 (0.002)	0.003 (0.001)	0.002 (0.000)	0.007 (0.002)	0.003 (0.001)	0.002 (0.000)	0.007 (0.002)	0.003 (0.001)	0.002 (0.000)
bm	-0.004 (0.001)	-0.003 (0.001)	-0.001 (0.000)	-0.003 (0.001)	-0.002 (0.001)	-0.000 (0.000)	-0.004 (0.001)	-0.003 (0.001)	-0.001 (0.000)
epi	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	-0.000 (0.000)	0.000 (0.000)
emission	0.002 (0.003)	0.001 (0.001)	-0.000 (0.001)	0.003 (0.003)	0.001 (0.001)	-0.000 (0.001)	0.003 (0.003)	0.001 (0.001)	-0.000 (0.001)
pollution	-0.000 (0.000)								
Observations	1,917	1,917	1,917	1,917	1,917	1,917	1,920	1,920	1,920
R-squared	0.048	0.083	0.065	0.063	0.107	0.068	0.075	0.106	0.075

Robust standard errors in parentheses

p<0.01, p<0.05, p<0.1