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Drivers Behind the Monitoring Effectiveness of Global Institutional Investors: Evidence from Earnings Management

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Abstract

This paper studies the drivers behind the monitoring effectiveness of institutional investors in curbing earnings management in an international setting. We identify three distinct drivers and propose two competing hypotheses: the hometown advantage hypothesis predicts that because of proximity to monitoring information, domestic institutions have a comparative advantage over foreign institutions in deterring earnings management, whereas the global investor hypothesis predicts that foreign institutions have a comparative advantage because of their proclivity toward activism and ability to deploy superior monitoring technologies. Consistent with the hometown advantage hypothesis, in aggregate, domestic, but not foreign, institutional ownership is associated with less earnings management; the monitoring effectiveness of foreign institutions improves as they gain proximity to monitoring information. Consistent with the global investor hypothesis, the monitoring effectiveness of foreign institutions improves in environments of greater agency conflicts or weaker governance controls or when the gap in monitoring technology between foreign and domestic institutions widens.

JEL classification: G15; G2; G32; G34; M41

Keywords: Institutional investors; Earnings management; Corporate governance; Geographic distance

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1. Introduction

As global capital markets continue to liberalize and integrate, institutional investors are playing an increasingly important role in the world economy. According to the International Monetary Fund (IMF), assets under the management of institutional investors rose more than sevenfold since 1990 to around \$100 trillion in 2015.¹ Recognizing their sizeable global footprint and influence, policy makers from different countries are putting increasing pressure on institutional investors to play a more active governance role in their investee firms across jurisdictions. Despite their growing significance, we have incomplete knowledge about the economic drivers behind the monitoring effectiveness of institutional investors when they invest globally. In this paper, we aim to gain a richer understanding of this issue by analyzing the comparative monitoring advantages of domestic and foreign institutional investors in constraining earnings management. We are motivated to study this specific research question because: 1) the domestic-versus-foreign classification allows us to identify three distinct drivers behind the monitoring effectiveness of global institutional investors, and 2) extant theories and evidence offer conflicting predictions regarding which type—domestic or foreign institutional investors—is more effective in deterring earnings management.

Drawing from the literature, we posit that proximity to local information is the main driver behind the comparative monitoring advantage of domestic institutional investors. Monitoring effectiveness critically depends on information acquisition and processing costs. Compared to foreign peers, domestic institutional investors have an unparalleled advantage in acquiring and processing monitoring information because of their geographic, linguistic, and cultural proximity to local investee firms. While it is reasonable to argue that technological advances have significantly lessened the negative effect of distance on information acquisition and processing costs, a large body of literature on spatial economics and international finance suggests

¹ <http://www.imf.org/external/publications/index.htm>

that locals still enjoy a substantial comparative advantage over nonlocals in their ability to access more and better information concerning the hometown firms. For example, within national confines, Coval and Moskowitz (1999) find that the investment portfolios of even professional money managers, who should have state-of-the-art tools to acquire and process information over distance, exhibit a home bias, that is, a strong preference for locally headquartered firms. Across borders, Bae, Stulz, and Tan (2008) find in a sample of 32 countries that analysts who reside in a country make more precise earnings forecasts for firms in that country than non-resident analysts. They call this greater precision “local analyst advantage” and interpret it as evidence that local analysts are better informed than foreign analysts. Further, the earnings management literature establishes that information asymmetry between firms and external stakeholders is a necessary condition for opportunistic financial reporting (Ayers, Ramalingegowda, and Yeung 2011). This asymmetric information problem becomes especially acute in an international setting because in such settings the dimensions of proximity, or “distance,” expand beyond just physical distance to include distances in languages, regulations, cultural norms and so on. Information communicated through subtle hints such as intonation and body language is more easily lost over “distance” in an international setting. Therefore, motivated by extant literature, we propose the hometown advantage hypothesis, which predicts that because of their proximity to monitoring information, domestic institutional investors have a comparative advantage over their foreign peers in curbing earnings management.

For foreign institutional investors, we identify proclivity toward activism and superior monitoring technologies as the two key drivers behind their comparative monitoring advantage. Compared to domestic counterparts, foreign institutional investors are more independent monitors because they are less likely to have business dealings with local investee firms and are less prone to local political pressure (Gillan and Starks 2003; Tsang, Xie, and Xin 2016). Foreign institutions also have a deeper understanding of a broader set of governance tools due to their global

investment experience. That global knowledge and experience puts them in a better position to prod firms to adopt the best governance practices (Aggarwal, Erel, Ferreira, and Matos 2011). In addition, foreign institutions are equipped with superior monitoring technologies, because they have access to the global talent pool and possess the latest communication and analytical tools (Grinblatt and Keloharju 2000). We argue that these technological advantages allow foreign institutional investors to perform the governance function more effectively because superior technology reduces the very transaction costs that distance engenders, facilitates economies of scale (e.g., allowing foreign institutions to analyze common governance issues more efficiently and accurately), and lowers the costs of coordinating activist campaigns among shareholders. Consistent with these arguments, Ferreira and Matos (2008) find that firm value is more positively associated with foreign, rather than domestic, institutional ownership. Aggarwal et al. (2011) find that foreign, but not domestic, institutional investors affect a wide range of corporate governance attributes. Tsang et al. (2016) find that foreign institutional investors have a larger positive impact on firms' voluntary disclosure than domestic peers. Therefore, inspired by the existing literature, we propose the global investor hypothesis, which predicts that because of their proclivity toward activism and ability to deploy superior monitoring technologies, foreign institutional investors have a comparative advantage over their domestic peers in constraining earnings management.

To test the hypotheses, we construct a sample of 2,724 institutional investors that held stocks in 11,403 firms across 29 non-U.S. countries from 2001 to 2013. We find that in aggregate, domestic, but not foreign, institutional ownership is significantly associated with less earnings management. This result holds after we use alternative earnings management measures, control for relevant firm and country characteristics, and implement various robustness checks including two-way clustering at firm-year levels, country, industry, and/or firm fixed effects, and four different endogeneity checks.

To provide richer evidence for the hometown advantage hypothesis, we propose and test two corollaries—H1.a and H1.b. Given the importance of information acquisition and processing costs, it logically follows that the comparative advantage of domestic institutional investors over foreign counterparts in curbing earnings management is more (less) pronounced when information asymmetry is higher (lower) (H1.a). Following the literature, we use two sets of proxies to measure information asymmetry. First, to capture firm-level information asymmetry, we use firm size and analyst coverage (Coval and Moskowitz 1999; Armstrong, Guay, and Weber 2010). Second, to capture country-level information asymmetry, we use prevalence of insider trading and disclosure quality from La Porta, Lopez-de-Silanes, and Shleifer (2006). Consistent with H1.a, we find that the comparative advantage of domestic institutional investors over their foreign peers in constraining earnings management is more pronounced when investee firms are smaller, have fewer analysts following them, or are located in countries with more rampant insider trading or poor disclosure quality. H1.b predicts that as foreign institutional investors gain proximity to monitoring information, they close the gap in monitoring effectiveness between themselves and their domestic peers. Consistent with H1.b, we find that foreign institutions who share cultural traits similar to the host country or are familiar with the host country's accounting standards are as effective as domestic institutions in reducing earnings management. Notably, foreign institutions from the same geographic region are more effective than domestic institutions in curbing earnings management.

We propose and test two corollaries of the global investor hypothesis—H2.a and H2.b. Since proclivity toward activism is one of the two key drivers behind the comparative monitoring advantage of foreign institutional investors, we test whether this advantage is larger when agency conflict is more severe or corporate governance is weaker (H2.a). Consistent with H2.a, we find that foreign institutional investors are more effective at restraining earnings management in firms with higher, but not lower, levels of free cash flow and that ownership by foreign institutional

investors from common-law countries is associated with less earnings management in civil-law countries. Since superior monitoring technology is the other key driver, we test whether the comparative monitoring advantage of foreign institutional investors is larger when their technological superiority is more pronounced (H2.b). Consistent with H2.b, foreign institutional ownership is significantly related to less earnings management in emerging countries, but not in developed countries, and this relation is driven by foreign institutions from developed countries. Further, whereas domestic institutional ownership is significantly and more negatively linked to earnings management in developed countries than foreign counterparts, that statistical difference disappears in emerging countries.

Our paper makes several contributions. We provide insights into the economic drivers behind the monitoring effectiveness of global institutional investors, highlighting the conditions under which domestic and foreign institutions become more effective in restraining opportunistic financial reporting. Consequently, this paper extends the within-country results of hometown advantage to an international setting and reconciles the seemingly conflicting results in the literature. Specifically, Ayers et al (2011) and Chhaochharia, Kumar, and Niessen-Ruenzi (2012) find for U.S. firms that local institutions enjoy a hometown advantage over distant institutions in mitigating earnings management. This evidence appears to be in direct conflict with the growing evidence that foreign, but not domestic, institutional investors play a more effective governance role in their global portfolio firms (e.g., Ferreira and Matos 2008; Aggarwal et al. 2011; Tsang et al. 2016).

By highlighting that proximity to information is a key driver behind the monitoring effectiveness of global institutional investors, we complement the fledgling but rapidly growing literature on the influence of institutional investors around the world. Fang, Maffett, and Zhang (2015) find that U.S. mutual funds are instrumental in pushing for the global convergence of financial reporting practices. Tsang et al. (2016) find that foreign, rather than domestic,

institutional ownership leads to greater improvement in firms' voluntary disclosures. Our results help motivate the economic rationale behind such actions taken by foreign institutional investors. Lastly, by exploring the conditions for the comparative monitoring advantages of foreign and domestic institutional investors, this paper sheds light on the strengths and limitations of global investors in influencing corporate behaviors, thereby underscoring policy initiatives that can be taken to enhance the market discipline for corporations.

The remainder of the paper is organized as follows: Section 2 reviews the related literature and develops hypotheses; Section 3 describes the data and the key measures of institutional ownership and earnings management; Section 4 presents empirical results; and Section 5 concludes.

2. Prior literature and hypotheses development

We posit that the key driver behind the comparative advantage of domestic institutional investors in monitoring earnings management is their proximity to monitoring information. This conjecture is premised on two insights from the extant literature: 1) monitoring effectiveness critically depends on information acquisition and processing costs (Linck, Netter, and Yang 2008); and 2) information asymmetry should be of first-order importance to monitoring earnings management in an international setting. The central role that information asymmetry plays in investors' ability to acquire and process information necessary for restraining earnings management logically leads to the prediction that compared to foreign peers, domestic institutional investors have a comparative advantage in monitoring opportunistic financial reporting.

Compared to foreign peers, domestic institutional investors have an unparalleled monitoring advantage in acquiring and processing information relevant to a local investee firm due to their geographic, linguistic, and cultural proximity to not only the firm, but also to locals such as resident politicians, stock analysts, rating agencies, and news reporters. This unparalleled access

to local information is noted in the popular press and supported by voluminous empirical evidence. For example, a 2015 article in *The Wall Street Journal* reported that some investors had special access to top executives and “facts and body language [flew] from public companies to handpicked recipients.”² The literature finds that because of geographic proximity, locals have access to more and better information than non-locals (see, e.g., Coval and Moskowitz (1999) for professional money managers, Giannini, Irvine, and Shu (2013) for individual investors, Lerner (1995) for venture capitalists, Hau (2001) for professional traders, Malloy (2005) for equity analysts, and Butler (2008) for investment banks).

The earnings management literature shows that information asymmetry between firms and external stakeholders is a necessary condition for opportunistic financial reporting and plays a central role in determining whether investors can effectively monitor earnings management (Ayers et al. 2011; Chhaochharia et al. 2012). In addition, several other strands of literature demonstrate that information asymmetry is of critical importance in driving investors’ cross-border actions. For example, the literature on international portfolio allocation (see, e.g., Kang and Stulz 1997) identifies informational asymmetry as the main driver behind the concentration of portfolio investment in domestic assets known as the “home bias.” The literature on international goods and financial assets transactions underscores information asymmetry as the main determinant of the pattern of international transactions (see, e.g., Gordon and Bovenberg 1996; Portes and Rey 2005). Griffin, Nardari, and Stulz (2004) show that a model with perfect information cannot explain one of the stylized facts in international finance—the positive contemporaneous relationship between net equity flows and returns. Rather, a model in which foreign investors are less informed than domestic investors can explain the stylized fact. Therefore, based on these branches of literature, it

² *The Wall Street Journal*, September 27, 2015, “How Some Investors Get Special Access to Companies,” by Serena Ng and Anton Troianovski.

is reasonable to conclude that information asymmetry should be of first-order importance in monitoring earnings management in an international setting.

Particularly relevant to our study are Ayers et al. (2011) and Bae et al. (2008). Ayers et al. (2011) use geographic distance to proxy for the cost of acquiring monitoring information. Based on U.S. data, they find that local institutions enjoy a “hometown advantage” in that they are associated with less opportunistic financial reporting than distant institutions. Bae et al. (2008) find for a sample of 32 countries that analysts who reside in a country make more precise earnings forecasts for firms in that country than non-resident analysts. They call this greater precision “local analyst advantage” and interpret it as evidence that local analysts are better informed than foreign analysts. Following the literature (e.g., Bae et al. 2008; Ferreira and Matos 2008), we define domestic (foreign) institutional investors as those domiciled in the same (different) country in which the stock is issued, and propose the following hypothesis:

H1 (Hometown Advantage Hypothesis): Because of their proximity to monitoring information, domestic institutional investors have a comparative advantage over their foreign peers in constraining earnings management.

Given the pivotal role of information asymmetry in institutions’ ability to constrain earnings management, we propose the following corollary of H1:

H1.a: The “Hometown Advantage” is more pronounced when information asymmetry is higher.

As the primary driver behind the comparative monitoring advantage of domestic institutional investors is their proximity to monitoring information, it naturally follows that their comparative advantage diminishes as foreign institutional investors gain proximity to monitoring information.

Therefore, we propose the following corollary of H1:

H1.b: As they gain proximity to monitoring information, foreign institutional investors close the gap in monitoring effectiveness between themselves and their domestic peers.

We posit that the main drivers behind the comparative monitoring advantage of foreign institutional investors are: 1) their proclivity toward activism, and 2) their ability to deploy superior monitoring technologies. Ample anecdotal and empirical evidence shows that foreign institutional investors, especially those from common-law countries, play a more active governance role than their domestic peers. For example, The Wall Street Journal reported that in Japan, in 2007, foreign investors such as the U.S. fund Steel Partners and the U.K. fund TCI submitted a record number of shareholder proposals and initiated engagement with the management, with the aim of improving corporate governance and returning value to shareholders. Although there was pressure from Japanese institutional investors as well, they were not viewed “as threatening in the way that foreign funds are.”³ Aggarwal et al. (2011) and Iliev, Lins, Miller, and Roth (2015) provide empirical evidence and exemplary cases in which foreign institutional investors influence governance outcomes via channels such as voting and proxy fights.

Four inherent characteristics of foreign institutional investors explain their proclivity toward governance activism. First, compared to domestic peers, foreign institutional investors are less likely to have business dealings with local investee firms and therefore are more independent monitors of the management (Gillan and Starks 2003; Aggarwal et al. 2011). Second, foreign institutional investors are less prone to local political pressure and therefore more resistant to non-shareholder value maximizing decisions by managers (Huang and Zhu 2015; Tsang et al. 2016). Third, compared to domestic peers, foreign institutional investors have a deeper understanding of a broader set of governance tools due to their global investment experience, and that global knowledge and experience place them in a better position to prod firms to adopt best governance practices (Aggarwal et al. 2011). Fourth, because of their sizable and expanding presence in the

³ The Wall Street Journal, July 13, 2007, “Signs of Hope for Japan’s Activists,” by Sebastian Moffett.

global capital market, institutional investors are under increasing pressure from various regulators and policy makers to play a more active governance role in their foreign investee companies.⁴

Compared to domestic peers, foreign institutional investors are better able to deploy superior monitoring technologies because they have access to the global talent pool and possess the latest communication and analytical tools (Grinblatt and Keloharju 2000). We argue that this technological advantage allows foreign institutional investors to perform the governance function more effectively and efficiently for three reasons. First, superior technology reduces the very transaction costs that distance engenders. For example, new technologies such as e-conferencing and e-proxy voting permit long-distance investors to more efficiently participate in shareholder meetings and exercise voting rights. Second, superior technology enables foreign institutional investors to take advantage of economies of scale, e.g., analyzing common governance issues more efficiently and accurately (Black and Coffee 1994). Third, superior technology lowers the costs of coordination among shareholders. Prior studies (e.g., Black and Coffee 1994; Gillan and Starks 2003) show that coordinated activism is more effective than activist campaigns waged by a single investor.

Particularly relevant to our study are Ferreira and Matos (2008) and Aggarwal et al. (2011).⁵ Ferreira and Matos (2008) find that firm value is more positively associated with foreign,

⁴ In recent years, many countries, including the U.K., Germany, the Netherlands, Japan, Turkey, and South Africa to name a few, have issued stewardship codes that aim to encourage a more active governance role by institutional investors in global equity markets.

⁵ In a contemporaneous working paper, Lel (2015) finds that foreign, but not domestic, institutional ownership is associated with less earnings management. To the extent that Lel's sample is dominated by emerging countries, his finding is consistent with the global investor hypothesis. Emerging countries comprise 68% of Lel's sample, compared to 24% in this study. Some of Lel's results are in contrast to the existing literature; Lel finds that total institutional ownership increases earnings management; Lel also finds that ownership by domestic institutional investors increases earnings management in common-law countries; see Section 4.1 in this paper for a brief summary of the existing literature on the relation between institutional investors and earnings management. Lel uses three earnings management measures (EM1, EM2, and EM3) and uses the principal component analysis to extract an aggregate earnings management measure (EM-Agg). For EM1, Lel finds that foreign institutional ownership significantly lowers earnings

rather than domestic, institutional ownership. Aggarwal et al. (2011) find that foreign, but not domestic, institutional investors affect a wide range of corporate governance attributes. Based on the prior literature, we propose the following hypothesis:

H2 (Global Investor Hypothesis): Because of their proclivity toward activism and ability to deploy superior monitoring technologies, foreign institutional investors have a comparative advantage over their domestic peers in constraining earnings management.

The argument of proclivity toward activism is built upon the premise that foreign institutional investors have a greater incentive and willingness to monitor than their domestic peers. This inclination to monitor should be stronger in an environment of higher agency costs or weaker governance controls (Linck et al. 2008; Aggarwal et al. 2011). Therefore, we propose the following corollary of H2:

H2.a: The comparative advantage of foreign institutional investors over their domestic peers in curbing earnings management is larger when agency problems are more severe or governance controls are weaker.

As superior monitoring technology is the other key driver behind the comparative monitoring advantage of foreign institutional investors (Miletkov, Poulsen, and Wintoki, 2016), we propose the following corollary of H2:

H2.b: The comparative advantage of foreign institutional investors over their domestic peers in curbing earnings management is larger when the gap in monitoring technology between them and their domestic peers is bigger.

3. Data and Methodology

3.1. Sample collection

Institutional ownership comes from FactSet, which is a leading provider of a broad spectrum of global data including financial, price, and governance data (<http://www.factset.com/>).

management, while domestic institutional ownership significantly increases it. For EM2, Le1 finds that foreign institutional ownership significantly increases earnings management, while domestic institutional ownership is insignificant. For EM3, Le1 finds domestic, but not foreign, institutional ownership reduces earnings management. For EM-Agg, Le1 finds that foreign, but not domestic, institutional ownership is associated with less earnings management.

We follow Ferreira and Matos (2008) in extracting the institutional ownership data from FactSet. We include in the sample all non-U.S. and non-financial firms. We collect accounting and stock price data from the COMPUSTAT Global database. Countries with less than 100 firm-year observations are excluded from the sample (Huang, 2000). After meeting the necessary data requirements, the final sample is an unbalanced panel of 66,286 firm-year observations from 2001 to 2013, including 11,403 firms, 2,724 institutional investors, and 29 countries.

3.2. Institutional ownership variables

We use three main variables to measure institutional stockholdings: total, domestic, and foreign institutional ownership. Following Ferreira and Matos (2008), total institutional ownership (*TOTAL*) is defined as the percent of stockholdings by all institutional investors; domestic institutional ownership (*DOMESTIC*) is the percent of stockholdings by all institutional investors domiciled in the same country in which the stock is issued; foreign institutional ownership (*FOREIGN*) is defined as the percent of stockholdings by all institutional investors domiciled in a country different from the country in which the stock is issued. Following Gompers and Metrick (2001) and Ferreira and Matos (2008), we calculate institutional ownership at the end of a calendar year and set the value to zero if a stock is not held by any institution in the FactSet database.

3.3. Earnings management measures

Following the literature, we construct three measures of earnings management: (1) performance-adjusted accruals (*EMI*) based on the method used in Chaney, Faccio, and Parsley (2011) and Ashbaugh, LaFond, and Mayhew (2003); (2) accruals (*EM2*) based on the piecewise-linear model developed by Ball and Shivakumar (2006) that incorporates asymmetrically timely recognition of economic gains and losses; and (3) the magnitude of accruals (*EM3*) used in Leuz,

Nanda, and Wysocki (2003) and Gopalan and Jayaraman (2012) that measures the extent to which insiders exercise discretion in reporting earnings.

For a more tractable presentation of our regression results, we follow the literature (Leuz, et al. 2003; Gopalan and Jayaraman 2012) and construct a composite measure of earnings management (*Agg. EM*) by combining *EM1*, *EM2*, and *EM3* using a principal component analysis. *Agg. EM* is our main variable to capture the extent of earnings management. Larger values of *Agg. EM* represent greater earnings management.

As one of our objectives is to ascertain whether the results of Ayers et al. (2011) and Chhaochharia et al. (2012) can be extended to an international setting, we follow their construction of earnings management proxies by using unsigned, accruals-based measures. However, for robustness, we also use alternative measures, including *signed EM1*, *signed EM2*, *signed EM3*, a signed composite measure (*Signed Agg. EM*), a small positive earnings dummy (*EM_Small*), and a measure of persistence of transitory loss components in earnings. Similar to *Agg. EM*, we construct *Signed Agg. EM* by combining *signed EM1*, *signed EM2*, and *signed EM3* using a principal component analysis. Following Burgstahler and Dichev (1997) and Barth, Landsman, and Lang (2008), we set *EM_Small* to one if after-tax earnings over assets fall within the range of [0.000, 0.015], or zero otherwise. To estimate the persistence of transitory loss components in earnings, we use Basu's (1997) serial dependence model as modified by Ball and Shivakumar (2005). Less persistence in negative earnings changes indicates higher earnings quality. Our main results hold using these alternative measures of earnings management. We report the regression results from estimating the baseline regression using unsigned *EM1*, unsigned *EM2*, unsigned *EM3*, *Signed Agg. EM*, and *EM_small* as the dependent variable in Appendix II. For ease of presentation, we do not report the regression results using the measure based on the Basu (1997) model; those results are available in the Internet Appendix. We winsorize all the measures of

earnings management at the 1st and the 99th percentile to alleviate the concern of extreme outliers. Appendix I provides definitions of all variables.

3.4. Univariate statistics

Table 1 lists alphabetically the 29 countries in our sample. Similarly to Aggarwal et al. (2011), Japan has the largest number of firm-year observations in the sample (18,204 firm years or 27.5% of the sample), whereas Ireland has the smallest number of firm-year observations (196 firm years or 0.3% of the sample). In Table 1, we also report by country the mean values of the aggregate earnings management measure (*Agg. EM*) and ownership by domestic (*DOMESTIC*) and foreign (*FOREIGN*) institutional investors. Greece (Canada) has the highest (lowest) level of earnings management and ranks 27th (3rd) in the level of domestic institutional ownership and 17th (12th) in the level of foreign institutional ownership. In addition, Table 1 reports the legal origin and the stage of the economic development of the sample countries. Following the literature, we use La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998)'s classification of legal origin. Our sample comprises 11 common-law countries and 18 civil-law countries. The classification of economic development is based on the MSCI Developed and Emerging Markets Indices that we obtain from Bloomberg. Our sample includes seven emerging countries and 22 developed countries.

Table 2 presents the descriptive statistics of key variables. The mean of the aggregate earnings management measure (*Agg. EM*) is 0.496. The average firm has 9.4 percent in total institutional holdings, 4.9 percent in domestic institutional holdings, and 4.6 percent in foreign institutional holdings. Each variable exhibits considerable variation with the standard deviation being 11.2 percent, 8.0 percent, and 6.9 percent, respectively. The descriptive statistics of our institutional ownership variables are in line with those reported in Ferreira and Matos (2008). For

example, they report a mean percent of 7.4, 3.8, and 3.6 for total, domestic, and foreign institutional stockholdings with a standard deviation of 12.6, 8.7, and 7.9 percent, respectively.

Table 3 reports the correlations between the main variables of interest. The composite earnings measurement measure (*Agg. EM*) is significantly and negatively related to all three measures of institutional ownership—total institutional ownership (*TOTAL*), domestic institutional ownership (*DOMESTIC*), and foreign institutional ownership (*FOREIGN*). As expected, *TOTAL* is highly correlated with *DOMESTIC* ($\rho=0.800$) and *FOREIGN* ($\rho=0.716$). Notably, the correlation coefficient between *DOMESTIC* and *FOREIGN* is small ($\rho=0.158$). The correlation coefficient between firm size (*SIZE*) and the natural logarithm of the number of analysts covering a firm (*ANALYST*) is the only other coefficient with a value greater than 0.5 in absolute terms.

4. Drivers behind monitoring effectiveness

4.1. Baseline results

To test H1 and H2, we estimate the following baseline model:

$$|EM_{ijkt}| = \alpha + \gamma INSTIT_OWN_{ijkt-1} + \beta X_{ijkt-1} + d_t + d_j + d_k + \varepsilon_{ijkt}, \quad \dots (1)$$

where *EM* is the aggregate earnings management measure (*Agg. EM*); *INSTIT_OWN* denotes the institutional ownership measures (*TOTAL*, *DOMESTIC*, and *FOREIGN*) for firm *i*; α is the intercept. *X* is a vector of firm and country controls; d_t denotes year dummies; d_j denotes industry fixed effects at the level of two-digit SIC codes; d_k denotes country fixed effects; and ε is the error term. Each specification is estimated using the ordinary least squares (OLS) method with robust standard errors adjusted for heteroscedasticity and firm-level clustering.

The hometown advantage hypothesis (H1) predicts that the coefficient estimate of domestic institutional ownership (*DOMESTIC*) is significantly negative and the coefficient size is larger than that of foreign institutional ownership (*FOREIGN*). In contrast, the global investor hypothesis (H2) predicts that *FOREIGN* enters Eq. (1) with a significantly negative sign, and its coefficient size is larger than that of *DOMESTIC*. We use a two-tail test to examine whether the

coefficient estimates of *DOMESTIC* and *FOREIGN* are significantly different from each other because we view whether H1 or H2 dominates as an empirical question. When we test the corollaries of H1 and H2, we use a one-tail test because each corollary makes specific directional predictions.

We examine the effect of total institutional ownership (*TOTAL*) to better engage the extant literature. The corporate governance literature has long argued that institutional investors play a prominent monitoring role because they have the economic incentive and knowledge sophistication to be effective monitors (Gillan 2006). Consistent with this argument, Mitra and Cready (2005), Cornett, Marcus, and Tehranian (2008; 2009) and Chhaochharia, Kumar, and Niessen-Ruenzi (2012) find a negative relation between total institutional ownership and earnings management.⁶ Therefore, we expect *TOTAL* to enter Eq. (1) with a significantly negative sign.

We include in the baseline model a customary set of control variables by following the literature. For firm characteristics, we consider firm size (*SIZE*), profitability (*ROA*), growth opportunities (*MTB* and *SALEGROWTH*), financial leverage (*LEV*), volatility of sales (*STDSALE*), capital intensity (*CAPITAL_INTENSITY*), and analyst coverage (*ANALYST*) (see, e.g., Klein 2002; Xie, Davidson, and DaDalt 2003; Chung, Firth, and Kim 2002; Gopalan and Jayaraman 2012). We also control for macroeconomic factors that potentially influence firm earnings, including a country's accounting standards (*ACC_STANDARD*), per capita GDP growth (*GDPGROWTH*), and the annual rate of inflation (*INFLATION*) (Leuz et al. 2003; Gopalan and

⁶ We note that Mitra and Cready (2005), Cornett et al. (2008 and 2009) and Chhaochharia et al. (2012) all use U.S. data. Specifically, Mitra and Cready (2005) study 373 industrial firms listed on the NYSE from 1991 to 1998. Cornett et al. (2008) study S&P100 firms from 1994 to 2003. Cornett et al. (2009) study the 100 largest banks from 1994 to 2002. Chhaochharia et al. (2012) use the intersection of firms from Compustat and Thomson Reuters 13F from 1980 to 2007. Chung, Firth, and Kim (2002) also find that institutional ownership reduces earnings management. They measure the monitoring by institutional investors using a dummy variable that equals one if institutional ownership for a firm is higher than the sample median in a given year.

Jayaraman 2012). Appendix I provides more details on the construction and data source of each variable.

In untabulated analysis, we perform a diagnostic analysis for the potential multicollinearity problem in the baseline model. *INFLATION* has the largest value of the variance inflation factor (VIF) of 5.52, followed by *GDPGROWTH* (VIF=3.81) and *ACC_STANDARD* (VIF=3.17). The relatively high VIF values of the three proxies for country characteristics are likely due to the inclusion of country fixed effects in the baseline model. VIFs of the remaining independent variables are less than three, with VIF values of *DOMESTIC* and *FOREIGN* less than two. The rule of thumb is that VIFs exceeding ten are signs of serious multicollinearity (O'Brien, 2007).

Column (1) of Table 4 reports the regression results from estimating the baseline model. The coefficient estimate of *DOMESTIC* is -0.353, suggesting that an increase of 10 percentage points in domestic institutional ownership is associated with less *Agg. EM* by 3.53 percentage points. In contrast, *FOREIGN* enters the equation with a negative but insignificant sign. The Wald test rejects the null with a better than one percent significance that the coefficients of *DOMESTIC* and *FOREIGN* are equal. Thus, the results support the hometown advantage hypothesis, but not the global investor hypothesis. In addition, the economic impact of *DOMESTIC* is meaningful when compared to other control variables. For example, an increase of 10 percentage points in *ROA* is associated with a 6.21 percentage-point decrease in *Agg. EM*. (the mean value and standard deviation of *ROA* are 2.3% and 11.4% respectively). The coefficient estimates of the control variables generally carry the predicted signs and are in line with the existing literature. For example, consistent with Klein (2002) and Chaney et al. (2011), we find that small firms are more likely than large firms to engage in opportunistic financial reporting.

To provide greater details for the baseline model, column (2) of Table 4 reports the estimation results when *TOTAL* is the only independent variable included in the regression, while

column (3) reports the estimation results when *DOMESTIC* and *FOREIGN* are the only independent variables included in the regression. Column (4) reports the benchmark regression when only the control variables are included in the regression. Consistent with column (1) and prior studies (Cornett et al. 2008 and 2009; Chhaochharia et al. 2012), *TOTAL* is significantly and negatively related to *Agg. EM* in columns (2) and (5).

Our model specification performs well when compared to the literature. Our baseline model explains 0.108 of the variation in *Agg. EM*. For comparison, Chhaochharia et al. (2012) report an adjusted R-squared of 0.099 when relating institutional ownership to absolute value of discretionary accruals estimated using the modified Jones model. Ayers et al. (2011) report an adjusted R-squared of 0.076 when relating the presence of local and distant institutional investors to absolute value of abnormal accruals. Cornett et al. (2008) report a higher adjusted R-squared (0.418) likely because they use a much more homogenous group of firms than either this paper or Chhaochharia et al. (2012) and Ayers et al. (2011). Cornett et al. (2008) study S&P100, which are the largest U.S. firms by market capitalization.

Endogeneity checks

An alternative explanation for the results in Table 4 is that domestic institutional investors are more skilled than foreign counterparts at identifying local firms with higher quality financial statements. In other words, our results arise not from domestic institutions being more effective monitors but from them being better stock pickers. It is worth noting that in the latter case, domestic institutions still enjoy local information advantages over foreign ones, which is a key ingredient for monitoring effectiveness if an investor chooses to monitor. It is also possible that foreign institutions systematically prefer certain types of firms and those firms happen to more opportunistically report earnings. In short, endogeneity may influence our results. To address this concern, we conduct four robustness checks: 1) a two-stage least-squares instrumental

variable (2SLS-IV) analysis; 2) a reverse casualty analysis; 3) the dynamic panel generalized-method-of-moments (GMM) analysis; and 4) a propensity-score-matching (PSM) analysis. Our results remain qualitatively similar in these robustness checks. To conserve space, we do not report the results in the paper, but make them available in the Internet Appendix.

Other robustness checks

We perform additional tests for more robustness. The results are reported in Appendix III. Column (1) reports the regression results when we estimate the baseline model replacing industry with firm fixed effects. Column (2) reports the estimation results of the baseline model when we replace firm-level clustering with country-level clustering. Column (3) reports the regression results when we estimate the baseline model using robust standard errors adjusted for heteroscedasticity and two-way clustering by firm and year. As missing institutional ownership values are set to zero, we follow the literature (e.g., Ferreira and Matos 2008) and re-run the baseline model using only observations with non-missing institutional ownership to mitigate the concern that the missing data may influence our inference. The results are reported in column (4). As Table 1 shows, Japan has a much larger number of firm-year observations than other countries. To alleviate the concern that one country may drive our results, similar to DeFond, Hung, and Trezevant (2007), we re-run the baseline model after excluding Japan from the sample. The results are reported in column (5). Although both the correlation matrix and the VIF analysis indicate that the multicollinearity problem is not a serious concern for this study, for additional robustness, we re-run the baseline model after dropping the domestic and foreign institutional ownership variables and including in their place the ratio of domestic institutional ownership over foreign institutional ownership. The results are reported in column (6). Column (7) reports the estimation results of the baseline model when we exclude the 2008 Global Financial Crisis (i.e., sample years from 2007 to 2009), as managers' incentives to manage earnings and institutions' willingness to invest may

have been different in the crisis years. Column (8) reports the regression results when we add to the baseline model a cross-listing dummy (*CROSS_LISTING*), which is an indicator variable that equals one if a firm is cross-listed on a foreign exchange, including the cross-listing of common shares, global depository receipts (GDRs), and American depository receipts (ADRs). Last, we control for the governance characteristics of investee firms by adding to the baseline model the G-index. The G-index is a composite measure of 41 firm-level governance attributes and comes from Aggarwal et al. (2011). The results are reported in column (9). We lose a substantial number of observations when we impose the data requirement of G-index, because the sample of Aggarwal et al. (2011) covers large firms in developed countries from 2004 to 2008, while our sample consists of a larger number of smaller firms, includes developing countries, and spans 2001 to 2013. Our results hold in each of these robustness checks.

4.2. Additional evidence for the role of information asymmetry

H1.a predicts that the “Hometown Advantage” is more pronounced when information asymmetry is higher. To test H1.a, we partition the sample into two groups based on information acquisition and processing costs at the firm and country levels. H1.a predicts that the coefficient difference between $DOMESTIC_{t-1}$ and $FOREIGN_{t-1}$ is more negative in the subgroup with high levels of information costs than the coefficient difference in the subgroup with low levels of information costs. Given this specific directional prediction, we use a one-tail test to test H1.a.

To proxy for firm-level information acquisition and processing costs, we use median values of firm size and analyst coverage to separate firms into the subgroups of high and low levels of information costs. Due to more extensive media coverage and more intensive market scrutiny, a larger volume of information is produced for large firms and firms with more analyst coverage. Consequently, we expect investors in small firms and firms with shallow analyst coverage to face a higher level of information acquisition and processing costs. Panel A of Table 5

reports regression results when we estimate the baseline model separately for the subgroups. Consistent with H1.a, the coefficient difference between $DOMESTIC_{t-1}$ and $FOREIGN_{t-1}$ is significantly more negative when the investee firms are smaller (p -value=0.02) or when fewer analysts follow the investee firms (p -value=0.03). Consistent with Table 4 and the hometown advantage hypothesis, in each subgroup, $DOMESTIC_{t-1}$ is significantly and negatively related to earnings management, while $FOREIGN_{t-1}$ is consistently insignificant; further, in the subgroups of high information acquisition and processing costs, the coefficient estimates of $DOMESTIC_{t-1}$ and $FOREIGN_{t-1}$ are statistically different from each other. In untabulated analysis, we follow the literature (e.g., Agrawal and Chadha 2005; Bharath, Pasquariello, and Wu 2009) and use two alternative proxies to measure whether a firm faces a higher level of information acquisition and processing costs, namely whether a firm engages one of the Big-4 auditors (Deloitte, Ernst & Young, KPMG, and PwC) or has greater growth opportunities (defined as the market-to-book ratio being above median). We find qualitatively similar results: consistent with H1.a, the coefficient difference between $DOMESTIC_{t-1}$ and $FOREIGN_{t-1}$ is significantly more negative when an investee firm does not engage a Big-4 auditor (p -value=0.04) or has more growth opportunities (p -value=0.02). Additionally, $DOMESTIC_{t-1}$ is always significantly negative, while $FOREIGN_{t-1}$ is always insignificant.

To proxy for country-level information acquisition and processing costs, we use *Prevalence of Insider Trading* and *Disclosure Quality* from La Porta et al. (2006). *Prevalence of Insider Trading* is built upon responses from a survey that asks executives if “insider trading in your country’s stock markets is (1=pervasive, 7=extremely rare).” *Disclosure Quality* is an index constructed based on attorneys’ answers to questions regarding: 1) prospectus; 2) compensation; 3) shareholders; 4) inside ownership; 5) contracts irregular; and 6) transactions. Similarly to the firm-level analysis, we partition the sample based on median values of *Prevalence of Insider Trading* and *Disclosure Quality*. Consistent with H1.a, the comparative monitoring advantage of

domestic institutional investors over their foreign peers is significantly larger when the host country has more prevalent insider trading (p -value=0.03) or poorer disclosure quality (p -value=0.04). Consistent with H1 and earlier firm-level results, $DOMESTIC_{t-1}$ enters all the regressions with a significantly negative sign, while $FOREIGN_{t-1}$ is always insignificant.

4.3. Proximity in region, accounting standards, and culture

H1.b predicts that as foreign institutional investors gain proximity to monitoring information, they close the gap in monitoring effectiveness between themselves and domestic counterparts. To test H1.b, we explore three dimensions of proximity—whether a foreign institutional investor and its investee firm: 1) are located in the same geographical region, 2) use similar accounting standards, or 3) share similar cultural traits. H1.b predicts that the coefficient difference between $DOMESTIC_{t-1}$ and $FOREIGN_{t-1}$ is more negative than the coefficient difference between $DOMESTIC_{t-1}$ and the ownership variables for foreign institutional investors with one of those traits. Table 6 reports the regression results. For easy exposition, we report in Table 6 column (1) the estimation results of the baseline model that was initially reported in Table 4 column (1).

For the test of proximity in geographical region, we construct the variable of $FOREIGN_REGION_{t-1}$, which is the ownership by foreign institutional investors domiciled in the same subregion as the investee firm based on the classification of FactSet. There are 19 subregions in our sample: eastern, middle, northern, southern, and western Africa; central, south, and northern America; central, eastern, southern, south-eastern, and western Asia; eastern, northern, southern, and western Europe; the Caribbean; and Oceania. Column (2) reports the estimation results, where we use the baseline model to relate the extent of earnings management ($Agg. EM$) to $FOREIGN_REGION_{t-1}$. Consistent with H1.b, the coefficient difference between $DOMESTIC_{t-1}$ and $FOREIGN_{t-1}$ is significantly more negative than the coefficient difference between

$DOMESTIC_{t-1}$ and $FOREIGN_REGION_{t-1}$ (p -value=0.01). Notably, $FOREIGN_REGION_{t-1}$ carries a negative coefficient of a larger magnitude (-6.445) than does $DOMESTIC_{t-1}$ (-0.346); the coefficient equality test rejects the null ($DOMESTIC_{t-1}=FOREIGN_REGION_{t-1}$) with 0.08 significance. Collectively, column (2) results suggest that coming from the same geographical region enables foreign institutional investors to overcome the hometown advantage of domestic counterparts, leading them to be more effective than their domestic peers in mitigating earnings management.

For the test of proximity in accounting standards, we construct the variable of $FOREIGN_ACTG_{t-1}$, which is the ownership by foreign institutional investors whose home country uses accounting standards comparable to the host country. We obtain the data on the accounting standards of each country from Compustat Global. Column (3) reports the estimation results when we replace $FOREIGN_{t-1}$ with $FOREIGN_ACTG_{t-1}$ in the baseline model. Consistent with H1.b, $DOMESTIC_{t-1}$ minus $FOREIGN_{t-1}$ is significantly more negative than $DOMESTIC_{t-1}$ minus $FOREIGN_ACTG_{t-1}$ (p -value=0.07). Further, $FOREIGN_ACTG_{t-1}$ is significantly and negatively related to $Agg. EM$ and the F-test fails to reject the null of $DOMESTIC_{t-1}=FOREIGN_ACTG_{t-1}$, suggesting that by shrinking the “distance” in familiarity with the host country’s financial reporting practices, foreign institutional investors can become as effective as domestic counterparts in mitigating opportunistic financial reporting. Our results complement the recent evidence that the global harmonization of financial statements reduces information acquisition and processing costs, leading to greater foreign investment (DeFond, Hu, Huang, and Li 2011; Yu and Wahid 2014).

For the test of proximity in culture, we construct the variable of $FOREIGN_CULTURE_{t-1}$, which is the ownership by foreign institutional investors whose home country is similar in cultural tightness as the host country. The concept of cultural tightness was first introduced by Pelto (1968) and Triandis (1989) and later formalized by Gelfand, Nishii, and Raver (2006) and Gelfand

et al. (2011). The theory of cultural tightness posits that cultural tightness relates to preferred ways of gathering, processing, and evaluating information when solving problems (Gelfand et al. 2006 and 2011). If an investor is similar to the investee firm in gathering, processing, and evaluating information, it is reasonable to assume that the investor faces lower costs in acquiring and processing monitoring information with regard to that firm. We obtain the data on a country's cultural tightness from Gelfand et al. (2011). We rank countries into three groups based on their cultural tightness scores, and classify two countries as similar in cultural tightness if they are in the same tercile. Column (4) reports the regression results when we replace $FOREIGN_{t-1}$ with $FOREIGN_CULTURE_{t-1}$ in the baseline model. Consistent with H1.b, $DOMESTIC_{t-1}$ minus $FOREIGN_{t-1}$ is significantly more negative than $DOMESTIC_{t-1}$ minus $FOREIGN_CULTURE_{t-1}$ (p -value=0.03). In addition, $FOREIGN_CULTURE_{t-1}$ is significantly and negatively related to $Agg. EM$ and the F-test fails to reject the null of $DOMESTIC_{t-1}=FOREIGN_CULTURE_{t-1}$, suggesting that foreign institutions with similar cultural traits as investee firms can be as effective as domestic institutions in deterring earnings management.

Although the preceding analysis is useful in helping us gain a deeper understanding of how proximity to monitoring information drives the monitoring effectiveness of institutional investors in an international setting, we acknowledge that the exploration is far from complete. As the existing literature notes, some of the best monitoring outcomes result from “behind-the-scenes engagement” (Carleton, Nelson, and Weisbach 1998; Bauer, Clark, and Viehs 2013). While we can conjecture that domestic institutional investors are likely to have a comparative monitoring advantage over foreign counterparts in “behind-the-scenes engagement,” we lack the data to empirically test this conjecture. We also lack the data to explore other factors that potentially drive the comparative monitoring advantages of domestic and foreign institutional investors. For example, Lerner (1995) and Degryse and Ongena (2005) argue that transportation costs influence the number of on-site visits that can be made by monitors. Despite the limitations, the evidence in

this section is instructive in illustrating the drivers behind the monitoring effectiveness of global institutional investors, a subject that is in need of research especially given the tremendous growth of financial assets under their management in recent years.⁷

4.4. Proclivity toward activism

H2.a predicts that the comparative advantage of foreign institutional investors in curbing earnings management is larger when agency problems are more severe or governance controls are weaker. To test H2.a, we conduct two cross-sectional investigations—one based on the extent of agency conflicts at investee firms and the other based on the strength of a host country's governance controls.

In the first test, we separate the sample into two groups based on the median value of a firm's free cash flow (Jensen 1986; Lehn and Poulsen 1989). H2.a predicts that the coefficient difference between $DOMESTIC_{t-1}$ and $FOREIGN_{t-1}$ is more negative for investee firms with low levels of free cash flow than that difference for firms with high levels of free cash flow. In other words, H2.a predicts that because of their proclivity toward activism, foreign institutional investors gain monitoring effectiveness relative to their domestic peers in firms with greater agency conflicts as measured by free cash flow. As Table 7 panel A shows, we find the following supporting evidence for H2.a. First, $DOMESTIC_{t-1}$ minus $FOREIGN_{t-1}$ is significantly more negative for firms with low, rather than high, levels of free cash flow (p -value=0.03), which is consistent with the prediction of H2.a that the comparative advantage of foreign institutions over

⁷ It is currently infeasible to gather private-engagement data for a large sample study like ours. For example, Carleton et al. (1998) study private negotiations by a large U.S. pension fund—TIAA-CREF. Bauer et al. (2013) use the proprietary data of one large (anonymous) U.K. institution. Nonetheless, we did explore two additional dimensions of proximity to information: whether a foreign institutional investor and its investee speak the same language or have the same legal origin as classified in La Porta et al. (1998). As we do not find that these proximity traits impact the monitoring effectiveness of foreign institutional investors, we do not report the regression results to conserve space.

domestic institutions in curbing earnings management is larger in environments of high, rather than low, agency conflicts. Second, $FOREIGN_{t-1}$ is significantly negative (coefficient=-0.155) in the regression of High Free Cash Flow, but is insignificant (coefficient=0.083) in the regression of Low Free Cash Flow, suggesting again in line with H2.a that the monitoring effect of foreign institutional investors is more pronounced in environments of high, but not low, agency conflicts. Third, a coefficient equality test fails to reject the null of $DOMESTIC_{t-1}=FOREIGN_{t-1}$ for firms with high levels of free cash flow, but rejects the null for firms with low levels of free cash flow with 0.02 significance, suggesting, once again consistent with H2.a, that when agency costs are high, their comparative advantage in proclivity toward activism enables foreign institutional investors to overcome the proximity *dis*-advantage and become as effective as their domestic peers in restraining earnings management.

To more rigorously test H2.a, we deploy a finer classification of foreign versus domestic institutional investors—-independent foreign ($FOREIGN_INDEP_{t-1}$) versus independent domestic ($DOMESTIC_INDEP_{t-1}$) institutional investors. Results are reported in Table 7 columns (2) and (4). The literature (e.g., Linck et al 2008) establishes that independent monitors are more effective monitors. Therefore, a natural extension of H2.a is that independent foreign institutional investors have a more negative impact on earnings management. Following the literature (e.g., Brickley, Lease, and Smith 1988; Ferreira and Matos 2008), we classify mutual funds and independent investment advisors as independent institutional investors. The results become stronger when we use this finer classification: the coefficient difference-in-difference test (i.e., $DOMESTIC_INDEP_{t-1}$ minus $FOREIGN_INDEP_{t-1}$ across firms with low versus high levels of free cash flow) becomes more significant with 0.01 significance and the coefficient estimates of $DOMESTIC_INDEP_{t-1}$ and $FOREIGN_INDEP_{t-1}$ are negative and of larger magnitudes than those of $DOMESTIC_{t-1}$ and $FOREIGN_{t-1}$, respectively. To summarize, Table 7 panel A offers strong evidence in support of H2.a.

In the second test, we separate the sample into two groups based on the host country's legal origin. The law and finance literature shows that corporate governance is stronger in common-law countries as opposed to civil-law countries (La Porta et al. 1998; Aggarwal et al. 2011). H2.a predicts that the coefficient difference between $DOMESTIC_{t-1}$ and $FOREIGN_{t-1}$ is more negative in common-law countries than in civil-law countries. As Table 7 panel B shows, we do not find supporting evidence: the p -value is 0.44 for the one-tailed F-test that $DOMESTIC_{t-1}$ minus $FOREIGN_{t-1}$ is more negative in the common-law regression than in the civil-law regression.

To provide a sharper test, we further classify foreign institutional investors into two groups—those from common-law countries ($FOREIGN_COM_{t-1}$) and those from civil-law countries ($FOREIGN_CIV_{t-1}$). Aggarwal et al. (2011) find that institutional investors from common-law countries are more effective monitors than those from civil-law countries. Under this sharper contrast, three patterns emerge that are consistent with H2.a. First, of the four varying contracting conditions (i.e., the four outcomes based on the 2X2 matrix of a host country's legal origin vis-à-vis an institution's legal origin), we find the strongest result for $FOREIGN_COM_{t-1}$ in civil-law countries; specifically, only $FOREIGN_COM_{t-1}$ enters the regression with a significantly negative sign (t -value=-1.67). Second, one-tailed F-tests of whether $FOREIGN_COM_{t-1}$ and $FOREIGN_CIV_{t-1}$ are more negative in civil-law countries than in common-law countries (i.e., $\mathbf{COM}(FOREIGN_COM_{t-1}) > \mathbf{CIV}(FOREIGN_COM_{t-1})$ and $\mathbf{COM}(FOREIGN_CIV_{t-1}) > \mathbf{CIV}(FOREIGN_CIV_{t-1})$, respectively) yield a p -value of 0.06 and 0.05, respectively, suggesting that for both types of foreign institutions, they are more effective at monitoring opportunistic financial reporting in civil-law countries than in common-law countries, which is consistent with H2.a in that an increase in the comparative monitoring advantage of foreign institutional investors correlates positively with their monitoring effectiveness. Third, when we design a test that highlights the most extreme comparative monitoring advantage of foreign institutional investors,

we find the strongest result for their being effective at deterring earnings management—the one-tailed F-test for $\text{COM}(\text{DOMESTIC}_{t-1} - \text{FOREIGN_CIV}_{t-1}) < \text{CIV}(\text{DOMESTIC}_{t-1} - \text{FOREIGN_COM}_{t-1})$ yields a p -value of 0.04.⁸

Taken together, the overall results in Table 7 panel B are consistent with H2.a in that the comparative monitoring advantage of foreign institutional investors, particularly those from common-law countries, works to a greater effect in civil-law countries.

4.5. Superior monitoring technology

H2.b predicts that the comparative advantage of foreign institutional investors in curbing earnings management is larger when the gap in monitoring technology between them and their domestic peers is bigger. To test H2.b, we separate the sample into two groups—emerging countries (less sophisticated monitoring technology) and developed countries (more advanced monitoring technology)—based on the economic development of the host country. Again for a sharper test, we discriminate foreign institutional investors from developed countries ($\text{FOREIGN_DEVELOP}_{t-1}$) against those from emerging countries ($\text{FOREIGN_EMERG}_{t-1}$). Table 8 gives the regression results.

Similar to Table 7 panel B, when we use a coarse classification to measure the comparative monitoring advantage of foreign institutional investors, we fail to find supporting evidence for H2.b: the p -value is 0.20 for the one-tailed F-test that DOMESTIC_{t-1} minus FOREIGN_{t-1} is more negative in developed countries than in emerging countries, which is

⁸ FOREIGN_CIV_{t-1} is insignificant in civil-law countries but is significantly positive in common-law countries. Although the positive coefficient of FOREIGN_CIV_{t-1} is counterintuitive, it is consistent with the idea that these investors do not specialize in monitoring and face the largest monitoring *dis*-advantage in our 2X2 design (i.e., the legal origin of investee firms vis-à-vis the legal origin of institutional investors). The positive coefficient of FOREIGN_CIV_{t-1} is also consistent with the prevailing empirical findings that a firm tends to engage in opportunistic, or even value-destroying, activities when more of its stocks are owned by investors who do not specialize in monitoring (Bushee 1998; Chen, Harford, and Li 2007).

inconsistent with H2.b that foreign institutions gain in monitoring effectiveness relative to domestic institutions when their comparative advantage in monitoring technologies over their domestic peers' widens. However, when we design tests that more sharply highlight the comparative monitoring advantage of foreign institutional investors, we find supporting evidence for H2.b. Specifically, consistent with H2.b, $DOMESTIC_{t-1}$ minus $FOREIGN_EMERG_{t-1}$ is significantly more negative in developed countries than $DOMESTIC_{t-1}$ minus $FOREIGN_DEVELOP_{t-1}$ in emerging countries (p -value=0.02). Consistent with H2.b, while $FOREIGN_{t-1}$ is insignificant in developed countries, it is negatively and significantly related to earnings management in emerging countries and this negative relation is driven primarily by foreign institutional investors from developed countries. Whereas the coefficient of $DOMESTIC_{t-1}$ is significantly more negative than $FOREIGN_{t-1}$ with a p -value of 0.01 in the regression of development countries, these two coefficients are statistically indistinguishable in the regression of emerging countries (p -value=0.15), which lends additional support for H2.b and suggests that under this contracting condition, foreign institutions' comparative advantage in superior monitoring technology counterbalances their proximity *dis*-advantage, allowing them to be as effective monitors as domestic counterparts. The one-tailed F-test for $\mathbf{DEVELOP}(FOREIGN_DEVELOP_{t-1}) > \mathbf{EMERG}(FOREIGN_DEVELOP_{t-1})$ yields a p -value of 0.07, but is insignificant (p -value=0.18) for $\mathbf{DEVELOP}(FOREIGN_EMERG_{t-1}) > \mathbf{EMERG}(FOREIGN_EMERG_{t-1})$, underscoring again the important role that technological superiority plays in driving monitoring effectiveness.

To summarize, the overall results in Table 8 are consistent with H2.b in that the comparative monitoring advantage of foreign institutional investors, particularly those from developed countries, works to a greater effect in emerging countries where the gap in monitoring technology between foreign and domestic institutional investors is larger. The fact that we find evidence consistent with H2.b, as is the case with H2.a, only after deploying more accurate

proxies for the comparative monitoring advantage of foreign institutional investors in subsamples is consistent with the strong evidence found for the full sample. We find for the full sample that consistent with H1, because of proximity to monitoring information, domestic institutional investors are more effective than their foreign counterparts in constraining earnings management.

5. Conclusion

One key trend in the global capital market is the growth of financial assets under the management of institutional investors. Not surprisingly, researchers have taken a keen interest in recent years in analyzing the governance role that institutional investors play in their investee firms around the globe. This paper contributes to this growing literature by studying the economic drivers behind the monitoring effectiveness of global institutional investors. Drawing from several streams of literature, we identify three distinct drivers and propose two competing hypotheses to test their relative importance. Specifically, the hometown advantage hypothesis predicts that because of their proximity to monitoring information, domestic institutional investors have a comparative advantage over their foreign counterparts in curbing earnings management, whereas the global investor hypothesis predicts that because of their proclivity toward activism and ability to deploy superior monitoring technologies, foreign institutional investors have a comparative advantage over their domestic peers in constraining earnings management.

We find that in aggregate, domestic, but not foreign, institutional ownership is negatively related to the extent of earnings management, consistent with the hometown advantage hypothesis. Additionally, domestic institutional ownership becomes more negatively linked to earnings management relative to foreign institutional ownership when proximity to information becomes more important as measured by information asymmetry around the investee firms. As foreign institutional investors become more familiar with the host country's accounting practices and culture (i.e., shrinking the proximity advantage enjoyed by domestic counterparts), they become as

effective as domestic institutional investors in constraining earnings management. Notably, once we isolate conditions under which the comparative monitoring advantage of foreign institutions likely work to a greater effect, we also find evidence consistent with the global investor hypothesis: ownership by foreign institutional investors located in the same geographic region as the investee firms is more negatively related to earnings management than domestic institutional ownership; foreign institutional ownership is significantly and negatively related to earnings management in firms with higher, but not lower, levels of free cash flow; and ownership of foreign institutional investors from common-law countries (developed countries) is significantly and negatively related to earnings management in civil-law countries (emerging countries).

To use the analogy of a horse race, this paper goes beyond conducting a horse race—which type of institutional investors, domestic or foreign, is more effective in constraining earnings management. We analyze the characteristics of each horse and design different races to showcase the relative strengths of each horse. Therefore, our paper provides insight into the monitoring effectiveness of global institutional investors and reconciles the seemingly conflicting evidence in the existing literature—namely the international extension of US-based evidence in Ayers et al (2011) and Chhaochharia, Kumar, and Niessen-Ruenzi (2012) appears to be in direct conflict with the international evidence in Ferreira and Matos (2008) and Aggarwal et al. (2011).

This paper highlights future research areas. Corporate actions are myriad and varied. The argument of comparative monitoring advantage suggests that domestic institutional investors are likely to be more effective at some tasks but not others. By using earnings management, we likely select a type of corporate behavior that domestic, rather than foreign, institutional investors have the greater comparative advantage in inducing a desired outcome. Future research is needed to explore the comparative advantages of domestic and foreign institutional investors in performing other types of monitoring tasks to identify new drivers behind the monitoring effectiveness of global institutional investors. A more complete understanding of this subject is needed to inform

better policies, especially considering the increasing pressure around the world on institutional investors to play a more active governance role in their foreign investee firms.

More broadly, there are numerous governance mechanisms besides institutional investors (e.g., board of directors, compensation contracts, and stock analysts); each performs to various levels of effectiveness as a result of specific contracting conditions. A contemporaneous study by Miletkov et al. (2016) report that prior studies have produced conflicting evidence regarding the efficacy of foreign directors because these studies based their conclusion on a single or a few countries. In contrast, Miletkov et al. (2016) use a broad cross-section of countries and find that country-level characteristics (e.g., institutional quality and investor protection) influence the association between foreign directors and firm performance. Our paper and Miletkov et al. (2016) highlight the need for future research regarding the drivers behind the effectiveness of governance tools, particularly in international settings.

Appendix I: Variable definitions and data sources

This table provides definitions for all variables used in the study and the corresponding data source which we use to build the variable.

Variables	Definitions	Data Source
Panel A: Dependent variables - earnings management		
EM1	Absolute value of performance-adjusted discretionary accruals, calculated as the total current accruals minus expected performance-adjusted accruals based on the method used in Chaney et al. (2011) and Ashbaugh et al. (2003). Total current accruals (<i>ACC</i>) is calculated as $ACC_{it} = (\Delta CA_{it} - \Delta CL_{it}) - (\Delta Cash_{it} - \Delta STD_{it} + \Delta DEP_{it})$ where <i>CA</i> : Total current assets <i>CL</i> : Total current liabilities <i>Cash</i> : Cash and cash equivalents <i>STD</i> : Short-term debt included in current liabilities <i>DEP</i> : Depreciation and amortization expenses Δ, i, t denotes one year change in a variable, firm <i>i</i> , calendar year <i>t</i> , respectively	Compustat Global
EM2	Absolute value of discretionary accruals, calculated as <i>ACC</i> minus expected accruals estimated using the non-linear cash flow model developed in Ball and Shivakumar (2006)	Compustat Global
EM3	The magnitude of accruals, following (Leuz et al. 2003) $EM3 = ACC_{it} / TA_{it-1} + CF_{it} / TA_{it-1} $ where <i>TA</i> : Total assets <i>CF</i> : Operating income minus accruals	Compustat Global
Agg. EM	Composite measure of earnings management based on a principal component analysis of EM1, EM2 and EM3	Compustat Global
Signed Agg. EM	Composite measure of earnings management based on a principal component analysis of signed EM1, EM2 and EM3 (e.g., Hribar and Nichols 2007)	Compustat Global
EM_SMALL	Small positive earnings dummy, which equals one if after-tax earnings over assets fall within the range of [0.00, 0.015] (Burgstahler and Dichev 1997; Barth, Landsman, and Lang 2008)	Compustat Global
Panel B: Independent variables of interest - institutional ownership		
TOTAL	Percent of stockholdings by all institutions at the end of a calendar year; set to zero if a stock is not held by any institution	FactSet
DOMESTIC	Percent of stockholdings by all institutions domiciled in the same country in which the stock is issued at the end of a calendar year; set to zero if a stock is not held by any institution	FactSet
FOREIGN	Percent of stockholdings by all institutions domiciled in a country different from the country in which the stock is issued at the end of a calendar year; set to zero if a stock is not held by any institution	FactSet
FOREIGN_REGION	Percent of stockholdings by foreign institutions domiciled in the same geographical region as the firm in institutions' portfolios (investee firm)	FactSet
FOREIGN_ACTG	Percent of stockholdings by foreign institutions domiciled in countries that have adopted accounting standards similar to the host countries. We aggregate the ownership of foreign institutions whose country-level accounting standard is the same as the accounting standard (IFRS) adopted by the investee firm.	Compustat Global
FOREIGN_CULTURE	Percent of stockholdings by foreign institutions whose home country is similar in cultural tightness to the host country. Cultural tightness relates to preferred ways of gathering, processing, and evaluating information when solving problems (Gelfand et al. 2006 and 2011).	Gelfand et al. (2011)

	Countries are ranked into three groups based on their cultural tightness scores. We classify two countries as similar in cultural tightness if they are in the same tercile.	
DOMESTIC_INDEP	Domestic institutional investors are classified as independent if they are mutual funds and independent investment advisors.	FactSet
FOREIGN_INDEP	Foreign institutional investors are classified as independent if they are mutual funds and independent investment advisors.	FactSet
FOREIGN_COM	Percent of stockholdings by foreign institutions domiciled in a country with common-law legal origin	FactSet
FOREIGN_CIV	Percent of stockholdings by foreign institutions domiciled in a country with civil-law legal origin	FactSet
FOREIGN_DEVELOP	Percent of stockholdings by foreign institutions domiciled in a developed country	FactSet /Bloomberg
FOREIGN_EMERG	Percent of stockholdings by foreign institutions domiciled in an emerging country	FactSet /Bloomberg
Panel C: Other variables		
SIZE	Natural logarithm of the book value of total assets	Compustat Global
ROA	Earnings before extraordinary items divided by total assets	Compustat Global
MTB	Natural logarithm of the market-to-book ratio	Compustat Global
SALEGROWTH	$Sales_t / Sales_{t-1} - 1$	Compustat Global
LEV	Long-term debt plus current debt in liabilities over total assets	Compustat Global
STDSALE	Standard deviation of (sales / total assets) from years $t-5$ to $t-1$	Compustat Global
CAPITAL_INTENSITY	Fixed assets divided by lagged total assets	Compustat Global
ANALYST	Natural logarithm of the number of analysts following a firm in a given year	I/B/E/S
ACC_STANDARD	A dummy that equals one if the firm has adopted the International Financial Reporting Standards (IFRS) or US GAAP, zero otherwise	Compustat Global
GDPGROWTH	Annual growth rate in per capita GDP	World Bank (WDI)
INFLATION	Annual rate of inflation	World Bank (WDI)
CROSS_LISTING	Cross-listing dummy, which equals one if a firm is cross-listed on a foreign exchange, including the cross-listing of common shares, GDRs, and ADRs.	Factset
G-INDEX	Composite of 41 firm-level governance attributes	Aggarwal et al. (2011)

Appendix II: Alternative measures of earnings management

This table reports estimation results from panel regressions of earnings management on institutional ownership for non-U.S. firms from 2001 to 2013. Detailed variable definitions are given in Appendix I. Each regression includes a constant and year, industry (based on two-digit SIC codes), and country fixed effects (FE). Column of *Pred. Sign* provides expected directional relations between the dependent variable and the main independent variables of interest. We report in parentheses *t*-values adjusted for heteroscedasticity and firm-level clustering. *, **, and *** indicate significance level of less than 0.10, 0.05 and 0.01, respectively, based on a two-tailed test.

Dep. Var. =	Pred. Sign	EM1 _t		EM2 _t		EM3 _t		Signed Agg. EM _t		EM_Small	
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
TOTAL _{t-1}	-	-0.043*** (-3.89)		-0.027*** (-3.68)		-0.385*** (-5.39)		-0.058*** (-5.72)		-3.543*** (-6.68)	
DOMESTIC _{t-1}	-		-0.068*** (-4.39)		-0.072*** (-7.75)		-0.532*** (-5.37)		-0.086*** (-5.21)		-5.070*** (-6.21)
FOREIGN _{t-1}	-		-0.021 (-1.20)		0.027** (2.43)		-0.224** (-2.09)		-0.046*** (-3.08)		-2.634*** (-3.19)
SIZE _{t-1}		-0.002** (-2.17)	-0.002** (-2.33)	-0.006*** (-11.54)	-0.007*** (-12.38)	-0.030*** (-5.66)	-0.032*** (-5.95)	-0.007*** (-8.44)	-0.007*** (-8.48)	0.123*** (3.92)	0.117*** (3.68)
ROA _{t-1}		-0.061*** (-5.38)	-0.061*** (-5.32)	-0.087*** (-11.31)	-0.085*** (-11.13)	-1.078*** (-15.64)	-1.073*** (-15.57)	-0.007 (-0.75)	-0.007 (-0.68)	-2.466*** (-14.85)	-2.436*** (-14.65)
MTB _{t-1}		0.006** (2.24)	0.006** (2.17)	0.019*** (10.52)	0.018*** (10.30)	-0.074*** (-4.41)	-0.075*** (-4.48)	-0.002 (-0.64)	-0.002 (-0.68)	-0.538*** (-6.90)	-0.539*** (-6.92)
SALEGROWTH _{t-1}		0.019*** (4.57)	0.019*** (4.58)	0.016*** (7.05)	0.016*** (7.06)	-0.005 (-0.26)	-0.005 (-0.26)	-0.003 (-1.16)	-0.003 (-1.14)	-0.199** (-2.33)	-0.197** (-2.31)
LEV _{t-1}		-0.008 (-1.09)	-0.008 (-1.01)	-0.018*** (-4.12)	-0.016*** (-3.69)	0.436*** (8.16)	0.441*** (8.24)	0.112*** (15.59)	0.112*** (15.58)	-0.144 (-0.66)	-0.133 (-0.61)
STDSALE _{t-1}		0.150*** (16.75)	0.149*** (16.72)	0.066*** (13.01)	0.065*** (12.96)	0.479*** (9.64)	0.477*** (9.61)	0.077*** (11.01)	0.077*** (10.97)	-0.012 (-0.06)	-0.018 (-0.10)
CAPITAL_INTENSITY _{t-1}		-0.002 (-0.61)	-0.002 (-0.59)	-0.014*** (-8.06)	-0.014*** (-7.96)	-0.311*** (-16.00)	-0.310*** (-15.96)	-0.064*** (-23.40)	-0.064*** (-23.39)	-1.135*** (-9.66)	-1.134*** (-9.65)
ANALYST _{t-1}		-0.001 (-0.85)	-0.001 (-0.98)	0.001 (0.84)	-0.000 (-0.05)	-0.022*** (-3.93)	-0.024*** (-4.13)	0.000 (0.01)	0.000 (0.02)	-0.291*** (-7.57)	-0.292*** (-7.60)
ACC_STANDARD _{t-1}		-0.006 (-1.57)	-0.006 (-1.52)	0.008*** (4.05)	0.008*** (4.29)	0.038* (1.81)	0.040* (1.89)	0.018*** (5.76)	0.018*** (5.76)	0.079 (0.74)	0.082 (0.77)
GDPGROWTH _{t-1}		-0.022 (-0.29)	-0.020 (-0.26)	-0.218*** (-6.25)	-0.214*** (-6.14)	-0.869** (-2.09)	-0.858** (-2.06)	0.566*** (9.36)	0.569*** (9.40)	-3.895** (-2.49)	-3.830** (-2.45)
INFLATION _{t-1}		-0.215** (-2.10)	-0.212** (-2.06)	-0.052 (-1.02)	-0.042 (-0.83)	2.274*** (4.00)	2.303*** (4.05)	0.177** (2.11)	0.178** (2.12)	-1.180 (-0.47)	-1.040 (-0.42)
CONSTANT, YEAR, INDUSTRY & COUNTRY FE		YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Number of observations		66,286	66,286	66,286	66,286	66,286	66,286	66,286	66,286	66,286	66,286
R-squared		0.227	0.227	0.181	0.182	0.058	0.058	0.223	0.223	0.091	0.091
F-stat DOMESTIC _{t-1} = FOREIGN _{t-1}			3.90		47.67		4.12		3.18		3.83
(<i>p</i> -value)			(0.05)		(<0.01)		(0.04)		(0.07)		(0.05)

Appendix III: Additional robustness tests

This table reports estimation results from panel regressions of earnings management on institutional ownership for non-US firms from 2001 to 2013. Variable definitions are given in Appendix I. Column of *Pred. Sign* provides expected directional relations between the dependent variables and the main independent variables of interest. Below the coefficient estimates in parentheses are *t*-values adjusted for heteroscedasticity and firm-level clustering. *, **, and *** indicate significance level of less than 0.10, 0.05 and 0.01, respectively, based on a two-tailed test.

	<i>Pred. Sign</i>	Firm FE	Cluster by country	Two-way clustering	Delete zero <i>INSTIT_OW</i>	Exclude Japan	RATIO	Excl. financial crisis	Add <i>CROSS_ LISTING</i>	Add <i>G_INDEX</i>
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
DOMESTIC _{t-1}	-	-0.201** (-2.23)	-0.353*** (-4.81)	-0.353*** (-6.60)	-0.366*** (-5.97)	-0.342*** (-5.70)		-0.355*** (-4.96)	-0.348*** (-6.10)	-0.131* (-1.89)
FOREIGN _{t-1}	-	0.050 (0.43)	-0.090 (-1.34)	-0.090 (-1.47)	-0.121* (-1.92)	-0.077 (-0.97)		-0.095 (-1.01)	-0.086 (-1.19)	0.037 (0.49)
DOMESTIC _{t-1} / FOREIGN _{t-1}	-						-0.002*** (-2.84)			
SIZE _{t-1}		-0.044*** (-2.90)	-0.023*** (-5.63)	-0.023*** (-8.64)	-0.019*** (-4.94)	-0.023*** (-5.72)	-0.025*** (-7.31)	-0.022*** (-5.48)	-0.023*** (-6.98)	-0.017 (-1.65)
ROA _{t-1}		-0.370*** (-6.40)	-0.621*** (-5.29)	-0.621*** (-5.86)	-0.669*** (-13.28)	-0.561*** (-14.01)	-0.648*** (-15.13)	-0.671*** (-13.66)	-0.626*** (-16.20)	-0.006 (-0.39)
MTB _{t-1}		-0.001 (-0.07)	-0.019* (-1.79)	-0.019 (-1.54)	-0.023** (-2.07)	-0.022** (-2.13)	-0.026** (-2.42)	-0.020 (-1.58)	-0.018* (-1.83)	-0.482*** (-2.99)
SALEGROWTH _{t-1}		0.007 (0.44)	0.033** (2.23)	0.033 (1.54)	0.046*** (2.73)	0.037*** (2.69)	0.035** (2.48)	0.048*** (2.80)	0.033** (2.46)	-0.058 (-1.26)
LEV _{t-1}		0.304*** (5.35)	0.228*** (3.51)	0.228*** (3.72)	0.163*** (4.54)	0.241*** (6.42)	0.228*** (6.73)	0.250*** (6.60)	0.230*** (7.28)	-0.083** (-2.22)
STDSALE _{t-1}		0.171*** (3.90)	0.397*** (9.49)	0.397*** (4.46)	0.393*** (10.06)	0.388*** (11.48)	0.397*** (12.23)	0.432*** (11.07)	0.399*** (13.05)	0.095 (1.24)
CAPITAL_INTENSITY _{t-1}		-0.063** (-1.96)	-0.160*** (-6.10)	-0.160*** (-4.50)	-0.150*** (-11.13)	-0.174*** (-11.65)	-0.154*** (-12.32)	-0.185*** (-12.86)	-0.159*** (-13.57)	-0.051*** (-3.73)
ANALYST _{t-1}		0.012** (2.06)	-0.010** (-2.52)	-0.010*** (-2.70)	-0.009** (-2.29)	-0.013*** (-3.14)	-0.016*** (-4.53)	-0.014*** (-3.16)	-0.010*** (-2.91)	-0.017*** (-3.22)
ACC_STANDARD _{t-1}		0.027* (1.77)	0.035 (1.60)	0.035* (1.82)	0.025* (1.73)	0.020 (1.42)	0.036*** (2.68)	0.043*** (2.98)	0.034*** (2.70)	-0.024 (-0.84)
GDPGROWTH _{t-1}		-0.314 (-1.02)	-0.418 (-0.81)	-0.418 (-0.66)	-0.443 (-1.31)	-0.409 (-1.40)	-0.304 (-1.08)	0.551 (1.55)	-0.442* (-1.69)	-1.189 (-1.71)
INFLATION _{t-1}		0.778* (1.83)	1.375 (1.64)	1.375** (1.98)	1.829*** (4.14)	0.651* (1.77)	1.647*** (4.50)	1.781*** (3.79)	1.385*** (4.02)	0.155 (0.26)
CROSS_LISTING									-0.174*** (-3.23)	
G_INDEX										-0.123 (-0.89)
CONSTANT, YEAR, FIRM, & COUNTRY FE		YES								
CONSTANT, YEAR, INDUSTRY, & COUNTRY FE			YES	YES	YES	YES	YES	YES	YES	YES
Number of observations		66,286	66,286	66,286	45,321	48,082	48,459	47,489	66,286	3,522
Adj. R-squared		0.223	0.108	0.108	0.107	0.104	0.110	0.119	0.108	0.099
F-stat DOMESTIC _{t-1} = FOREIGN _{t-1}		3.11* (0.08)	8.86*** (<0.01)	8.94*** (<0.01)	7.58*** (<0.01)	6.74*** (<0.01)		4.65** (0.03)	7.53*** (<0.01)	4.35** (0.05)

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TABLE 1

Countries in the sample

This table lists alphabetically countries used in this study. For each country, we also report country-level mean values of the aggregate earnings management measure (*Agg. EM*), ownership by domestic (*DOMESTIC*) and foreign (*FOREIGN*) institutional investors, and the legal origin and the stage of economic development of each country. The classification of legal origin is as defined in La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998). The classification of economic development is based on the MSCI Developed and Emerging Markets Indices obtained from Bloomberg. All variable definitions are given in Appendix I.

Country	N	Agg. EM	DOMESTIC	FOREIGN	Legal origin	Economic development
Australia	3,560	0.537	0.016	0.045	Common	Developed
Austria	371	0.384	0.024	0.100	Civil	Developed
Belgium	560	0.453	0.033	0.071	Civil	Developed
Canada	1,645	0.371	0.145	0.056	Common	Developed
Denmark	545	0.476	0.113	0.056	Civil	Developed
Finland	815	0.423	0.109	0.090	Civil	Developed
France	3,417	0.419	0.038	0.055	Civil	Developed
Germany	3,023	0.507	0.050	0.075	Civil	Developed
Greece	581	0.796	0.005	0.050	Civil	Developed
Hong Kong	2,369	0.767	0.013	0.052	Common	Developed
India	3,514	0.739	0.050	0.036	Common	Emerging
Ireland	196	0.460	0.009	0.133	Common	Developed
Italy	1,023	0.455	0.019	0.066	Civil	Developed
Japan	18,204	0.392	0.027	0.031	Civil	Developed
Malaysia	2,593	0.530	0.008	0.023	Common	Emerging
Netherlands	597	0.384	0.071	0.141	Civil	Developed
New Zealand	320	0.430	0.019	0.029	Common	Developed
Norway	876	0.516	0.110	0.069	Civil	Developed
Philippines	434	0.616	0.001	0.043	Civil	Emerging
Portugal	287	0.427	0.036	0.039	Civil	Developed
Singapore	1,955	0.611	0.009	0.038	Common	Developed
South Africa	1,122	0.475	0.065	0.044	Common	Emerging
South Korea	2,911	0.573	0.001	0.053	Civil	Emerging
Spain	604	0.493	0.044	0.060	Civil	Developed
Sweden	1,631	0.502	0.150	0.053	Civil	Developed
Switzerland	1,226	0.396	0.077	0.097	Civil	Developed
Taiwan	4,856	0.578	0.012	0.038	Civil	Emerging
Thailand	1,025	0.553	0.008	0.036	Common	Emerging
UK	6,026	0.477	0.175	0.042	Common	Developed

TABLE 2

Summary statistics

This table presents summary statistics for the key variables used in this study. The sample is constructed from the intersection of FactSet and Compustat Global, after excluding financial firms (SIC 6000-99) and imposing requisite data requirement. The sample consists of 66,286 firm-year observations or 2,724 institutions with equity holdings in 11,403 non-US firms across 29 countries from 2001 to 2013. All variables are winsorized at the one percent level at each tail. Detailed variable definitions are given in Appendix I.

Variable	N	Mean	Median	Std. Dev.	Pctl 25 th	Pctl 75 th
Panel A: Main dependent variables - earning management						
Agg. EM	66,286	0.496	0.263	0.865	0.158	0.495
EM1	66,286	0.126	0.061	0.163	0.025	0.148
EM2	66,286	0.083	0.041	0.127	0.017	0.090
EM3	66,286	0.689	0.357	1.389	0.196	0.626
Panel B: Main independent variables of interest - institutional ownership						
TOTAL	66,286	0.094	0.051	0.112	0.012	0.135
DOMESTIC	66,286	0.049	0.016	0.080	0.001	0.058
FOREIGN	66,286	0.046	0.016	0.069	0.003	0.060
Panel C: Other control variables						
SIZE	66,286	5.925	5.842	1.670	4.813	6.974
ROA	66,286	0.023	0.033	0.114	0.006	0.068
MTB	66,286	0.493	0.123	0.649	0.012	0.876
SALEGROWTH	66,286	0.106	0.052	0.381	-0.040	0.172
LEV	66,286	0.154	0.114	0.154	0.016	0.247
STDSALE	66,286	0.157	0.108	0.158	0.060	0.193
CAPITAL_INTENSITY	66,286	0.569	0.516	0.393	0.250	0.824
ANALYST	66,286	1.322	1.099	1.311	0.000	2.197
ACC_STANDARD	66,286	0.387	0.000	0.487	0.000	1.000
GDPGROWTH	66,286	0.024	0.022	0.028	0.009	0.037
INFLATION	66,286	0.020	0.018	0.024	0.001	0.029

TABLE 3

Correlation matrix

This table reports the correlation matrix for the key variables used in this study. We bolded correlation coefficients that are significant at 5% or better based on a two-tail test.

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 EM1	1.000																	
2 EM2	0.301	1.000																
3 EM3	0.098	0.164	1.000															
4 Agg. EM	0.347	0.316	0.881	1.000														
5 TOTAL	-0.038	-0.032	-0.063	-0.065	1.000													
6 DOMESTIC	-0.035	-0.030	-0.045	-0.053	0.800	1.000												
7 FOREIGN	-0.021	-0.016	-0.051	-0.045	0.716	0.158	1.000											
8 SIZE	-0.076	-0.182	-0.078	-0.078	0.256	0.015	0.404	1.000										
9 ROA	-0.062	-0.113	-0.101	-0.098	0.112	0.053	0.122	0.210	1.000									
10 MTB	0.027	0.093	-0.030	-0.019	0.347	0.316	0.202	-0.135	-0.005	1.000								
11 SALEGROWTH	0.054	0.108	0.006	0.034	0.034	0.027	0.023	-0.042	0.087	0.102	1.000							
12 LEV	0.043	-0.039	0.050	0.071	0.001	-0.020	0.026	0.276	-0.088	-0.019	-0.005	1.000						
13 STDSALE	0.134	0.144	0.095	0.117	-0.005	0.045	-0.061	-0.229	-0.082	0.148	0.079	-0.028	1.000					
14 CAPITAL_INTENSITY	-0.043	-0.102	-0.111	-0.093	-0.104	-0.102	-0.053	0.183	-0.029	-0.170	-0.092	0.206	-0.243	1.000				
15 ANALYST	-0.120	-0.112	-0.111	-0.129	0.420	0.215	0.437	0.516	0.145	0.193	-0.021	0.012	-0.101	0.021	1.000			
16 ACC_STANDARD	0.072	0.092	0.031	0.057	0.314	0.272	0.202	-0.040	-0.027	0.488	0.053	0.083	0.089	-0.157	0.034	1.000		
17 GDPGROWTH	0.027	0.040	0.022	0.034	-0.068	-0.069	-0.034	-0.043	0.122	-0.084	0.135	0.008	0.050	-0.024	-0.055	-0.173	1.000	
18 INFLATION	0.066	0.116	0.069	0.100	0.066	0.069	0.027	-0.104	0.082	0.064	0.137	0.137	0.124	-0.119	-0.093	0.154	0.438	1.000

TABLE 4

The impact of institutional investors on earnings management

This table reports estimation results from panel regressions of earnings management on institutional ownership using a sample of non-U.S. firms from 2001 to 2013. Dependent variable (*Dep. Var.*) is a composite measure based on a principal component analysis of three earnings management measures (*Agg. EM*). The main independent variables of interest are domestic (*DOMESTIC*) and foreign (*FOREIGN*) institutional ownership. All variable definitions are given in Appendix I. Each regression includes year, industry (based on two-digit SIC codes), and country fixed effects (FE). Column of *Pred. Sign* provides expected directional relations between the dependent variable and the main independent variables of interest. Below the coefficient estimates in parentheses are *t*-values adjusted for heteroscedasticity and firm-level clustering. *, **, and *** indicate significance level of less than 0.10, 0.05, and 0.01, respectively.

		<i>Dep. Var. = Agg. EM_t</i>					
	<i>Pred. Sign</i>	Baseline (1)	(2)	(3)	(4)	(5)	(6)
TOTAL _{t-1}	-		-0.503*** (-14.91)			-0.293*** (-7.42)	
DOMESTIC _{t-1}	-	-0.353*** (-6.19)		-0.508*** (-10.65)			-0.501*** (-10.11)
FOREIGN _{t-1}	-	-0.090 (-1.24)		-0.473*** (-7.72)			0.064 (0.91)
SIZE _{t-1}		-0.023*** (-6.87)			0.002 (0.71)	0.005* (1.76)	0.000 (0.03)
ROA _{t-1}		-0.621*** (-16.12)			-0.618*** (-16.11)	-0.609*** (-15.91)	-0.604*** (-15.75)
MTB _{t-1}		-0.019* (-1.90)			-0.072*** (-10.05)	-0.062*** (-8.49)	-0.062*** (-8.46)
SALEGROWTH _{t-1}		0.033** (2.44)			0.044*** (3.29)	0.045*** (3.30)	0.044*** (3.24)
LEV _{t-1}		0.228*** (7.23)			0.393*** (12.34)	0.380*** (12.02)	0.391*** (12.33)
STDSALE _{t-1}		0.397*** (12.99)			0.424*** (13.43)	0.423*** (13.43)	0.426*** (13.52)
CAPITAL_INTENSITY _{t-1}		-0.160*** (-13.63)			-0.181*** (-16.52)	-0.186*** (-16.98)	-0.184*** (-16.79)
ANALYST _{t-1}		-0.010*** (-2.92)			-0.063*** (-20.35)	-0.056*** (-17.77)	-0.058*** (-18.26)
ACC_STANDARD _{t-1}		0.035*** (2.73)			0.089*** (8.72)	0.102*** (9.74)	0.100*** (9.61)
GDPGROWTH _{t-1}		-0.418 (-1.60)			0.259 (1.57)	0.217 (1.32)	0.186 (1.13)
INFLATION _{t-1}		1.375*** (3.99)			2.137*** (9.05)	2.252*** (9.55)	2.238*** (9.47)
CONSTANT		0.513*** (10.96)	0.544*** (96.85)	0.543*** (96.54)	0.504*** (25.96)	0.496*** (25.55)	0.523*** (26.35)
YEAR, INDUSTRY & COUNTRY FE		YES	NO	NO	NO	NO	NO
Number of observations		66,286	66,286	66,286	66,286	66,286	66,286
Adj. R-squared		0.108	0.004	0.004	0.052	0.053	0.054
F-stat DOMESTIC _{t-1} = FOREIGN _{t-1}		7.58		0.17			40.47
(<i>p</i> -value)		(<0.01)		(0.68)			(<0.01)

TABLE 5

Additional evidence for the role of information costs

This table reports estimation results from panel regressions of earnings management on institutional ownership using a sample of non-U.S. firms from 2001 to 2013. The sample is partitioned into high and low levels of information acquisition costs (INFO costs-H and INFO costs-L, respectively) based on median values. All variable definitions are given in Appendix I. Each regression includes a constant and year, industry (based on two-digit SIC codes), and country fixed effects (FE). Column of *Pred. Sign* provides expected directional relations between the dependent variable and the main independent variables of interest. Below the coefficient estimates in parentheses are *t*-values adjusted for heteroscedasticity and firm-level clustering. *, **, and *** indicate significance level of less than 0.10, 0.05, and 0.01, respectively.

Panel A: Partition by firm-level information acquisition and processing costs

Dep. Var. = ΔEM_t	Firm Size			Analyst Coverage		
	Pred. Sign	Small (INFO costs-H)	Large (INFO costs-L)	Pred. Sign	Low (INFO costs-H)	High (INFO costs-L)
		(1)	(2)		(3)	(4)
DOMESTIC _{t-1}	-	-0.403*** (-5.09)	-0.295*** (-3.53)	-	-0.481*** (-5.41)	-0.182*** (-2.61)
FOREIGN _{t-1}	-	0.130 (0.73)	-0.100 (-1.45)	-	0.001 (0.01)	-0.053 (-0.81)
SIZE _{t-1}		-0.006 (-0.84)	-0.022*** (-4.32)		-0.023*** (-4.46)	-0.016*** (-3.86)
ROA _{t-1}		-0.584*** (-13.06)	-0.908*** (-11.09)		-0.593*** (-11.62)	-0.680*** (-12.39)
MTB _{t-1}		-0.001 (-0.07)	-0.019 (-1.41)		-0.016 (-1.04)	-0.016 (-1.21)
SALEGROWTH _{t-1}		0.014 (0.94)	0.086*** (3.04)		0.047*** (2.78)	-0.013 (-0.88)
LEV _{t-1}		0.212*** (4.52)	0.219*** (5.11)		0.322*** (7.22)	0.047 (1.19)
STDSALE _{t-1}		0.423*** (10.11)	0.376*** (8.54)		0.436*** (10.66)	0.287*** (7.23)
CAPITAL_INTENSITY _{t-1}		-0.164*** (-9.53)	-0.156*** (-9.95)		-0.217*** (-12.65)	-0.075*** (-5.51)
ANALYST _{t-1}		-0.021*** (-3.44)	-0.004 (-0.82)		-0.017 (-1.31)	-0.008 (-1.45)
ACC_STANDARD _{t-1}		0.030* (1.73)	0.028 (1.54)		0.049** (2.52)	0.017 (1.16)
GDPGROWTH _{t-1}		-0.833** (-2.46)	0.382 (0.91)		-0.608* (-1.83)	0.054 (0.12)
INFLATION _{t-1}		0.411 (0.88)	2.150*** (4.01)		1.158** (2.55)	1.442** (2.55)
CONSTANT, YEAR, INDUSTRY & COUNTRY FE		YES	YES		YES	YES
Number of observations		33,100	33,186		36,466	29,820
Adj. R-squared		0.094	0.121		0.098	0.102
F-stat DOMESTIC _{t-1} = FOREIGN _{t-1}		7.01***	3.00*		5.64**	1.82
(<i>p</i> -value)		(<0.01)	(0.08)		(0.02)	(0.18)
F-stat INFO costs-H (DOMESTIC _{t-1} - FOREIGN _{t-1}) < INFO costs-L (DOMESTIC _{t-1} - FOREIGN _{t-1})			4.47**			3.89**
(<i>p</i> -value)			(0.02)			(0.03)

Panel B: Partition by country-level information acquisition and processing costs

Dep. Var. = ΔEM_t	Prevalence of Insider Trading		Disclosure Quality	
	High	Low	Low	High
	Pred. (INFO costs-H)	Pred. (INFO costs-L)	Pred. (INFO costs-H)	Pred. (INFO costs-L)
	Sign	(1)	Sign	(4)
DOMESTIC _{t-1}	-	-0.463*** (-4.19)	-	-0.419*** (-5.42)
FOREIGN _{t-1}	-	-0.053 (-0.40)	-	-0.015 (-0.20)
SIZE _{t-1}		-0.013** (-2.11)		-0.027*** (-7.43)
ROA _{t-1}		-0.799*** (-11.11)		-0.676*** (-12.99)
MTB _{t-1}		0.001 (0.04)		-0.032*** (-2.59)
SALEGROWTH _{t-1}		0.035 (1.63)		0.014 (0.86)
LEV _{t-1}		0.367*** (6.74)		0.201*** (5.61)
STDSALE _{t-1}		0.472*** (8.62)		0.433*** (11.22)
CAPITAL_INTENSITY _{t-1}		-0.237*** (-10.37)		-0.132*** (-9.84)
ANALYST _{t-1}		-0.021*** (-3.50)		-0.008** (-2.11)
ACC_STANDARD _{t-1}		0.007 (0.32)		0.019 (1.16)
GDPGROWTH _{t-1}		-0.273 (-0.71)		-1.348*** (-4.12)
INFLATION _{t-1}		1.542** (-1.96)		1.598*** (3.17)
CONSTANT, YEAR, INDUSTRY & COUNTRY FE		YES		YES
Number of observations		26,742		45,550
Adj. R-squared		0.111		0.106
F-stat DOMESTIC _{t-1} = FOREIGN _{t-1}		4.97**		12.58***
(p-value)		(0.03)		(<0.01)
F-stat INFO costs-H (DOMESTIC _{t-1} - FOREIGN _{t-1}) < INFO costs-L (DOMESTIC _{t-1} - FOREIGN _{t-1})		3.61**		3.04**
(p-value)		(0.03)		(0.04)

TABLE 6

Proximity in region, accounting standards, and culture

This table reports estimation results from panel regressions of earnings management on institutional ownership using a sample of non-U.S. firms from 2001 to 2013. All variable definitions are given in Appendix I. Each regression includes a constant and year, industry (based on two-digit SIC codes), and country fixed effects (FE). Column of *Pred. Sign* provides expected directional relations between the dependent variable and the main independent variables of interest. Below the coefficient estimates in parentheses are *t*-values adjusted for heteroscedasticity and firm-level clustering. *, **, and *** denote significance level of less than 0.10, 0.05, and 0.01, respectively.

	<i>Pred. Sign</i>	<i>Dep. Var. = Agg. EM_t</i>			
		Baseline (1)	(2)	(3)	(4)
DOMESTIC _{t-1}	-	-0.353*** (-6.19)	-0.346*** (-6.08)	-0.353*** (-6.19)	-0.356*** (-6.26)
FOREIGN _{t-1}	-	-0.090 (-1.24)			
FOREIGN_REGION _{t-1}	-		-6.445* (-1.84)		
FOREIGN_ACTG _{t-1}	-			-0.192* (-1.76)	
FOREIGN_CULTURE _{t-1}	-				-0.294*** (-3.02)
SIZE _{t-1}		-0.023*** (-6.87)	-0.024*** (-7.45)	-0.024*** (-7.47)	-0.024*** (-7.58)
ROA _{t-1}		-0.621*** (-16.12)	-0.621*** (-16.11)	-0.621*** (-16.09)	-0.621*** (-16.10)
MTB _{t-1}		-0.019* (-1.90)	-0.020** (-2.01)	-0.020** (-2.03)	-0.021** (-2.09)
SALEGROWTH _{t-1}		0.033** (2.44)	0.033** (2.47)	0.033** (2.45)	0.033** (2.45)
LEV _{t-1}		0.228*** (7.23)	0.231*** (7.34)	0.231*** (7.35)	0.232*** (7.37)
STDSALE _{t-1}		0.397*** (12.99)	0.396*** (12.97)	0.398*** (13.02)	0.398*** (13.02)
CAPITAL_INTENSITY _{t-1}		-0.160*** (-13.63)	-0.159*** (-13.65)	-0.159*** (-13.62)	-0.158*** (-13.58)
ANALYST _{t-1}		-0.010*** (-2.92)	-0.012*** (-3.59)	-0.012*** (-3.36)	-0.013*** (-3.93)
ACC_STANDARD _{t-1}		0.035*** (2.73)	0.034*** (2.70)	0.035*** (2.75)	0.034*** (2.69)
GDPGROWTH _{t-1}		-0.418 (-1.60)	-0.426 (-1.63)	-0.415 (-1.59)	-0.427 (-1.63)
INFLATION _{t-1}		1.375*** (3.99)	1.327*** (3.86)	1.389*** (4.04)	1.343*** (3.90)
CONSTANT, YEAR, INDUSTRY, & COUNTRY FE		YES	YES	YES	YES
Number of observations			66,286	66,286	66,286
Adj. R-squared			0.108	0.108	0.108
F-stat DOMESTIC _{t-1} = FOREIGN_REGION _{t-1} / ACTG _{t-1} / CULTURE _{t-1}			3.04*	0.32	0.31
(<i>p</i> -value)			(0.08)	(0.57)	(0.58)
Baseline (DOMESTIC _{t-1} - FOREIGN _{t-1}) < DOMESTIC _{t-1} - FOREIGN_REGION _{t-1} / ACTG _{t-1} / CULTURE _{t-1}			5.50**	2.15*	3.46**
(<i>p</i> -value)			(0.01)	(0.07)	(0.03)

TABLE 7

Proclivity toward activism

This table reports estimation results from panel regressions of earnings management on institutional ownership using a sample of non-U.S. firms from 2001 to 2013. In Panel A, the sample is separated into two groups based on the median value of free cash flow of the investee firms. In Panel B, the sample is separated into two groups based on whether the investee firms are located in countries with civil-law or common-law legal origins. All variable definitions are given in Appendix I. Each regression includes a constant and year, industry (based on two-digit SIC codes), and country fixed effects (FE). Column of *Pred. Sign* provides expected directional relations between the dependent variable and the main independent variables of interest. Below the coefficient estimates in parentheses are *t*-values adjusted for heteroscedasticity and firm-level clustering. *, **, and *** indicate significance level of less than 0.10, 0.05, and 0.01, respectively.

Panel A: Are foreign institutional investors more effective monitors in firms with greater agency problems?

<i>Dep. Var. = Agg. EM_t</i>	Free Cash Flow			
	Low (Agency costs-L)		High (Agency costs-H)	
	<i>Pred. Sign</i>	(1) (2)	<i>Pred. Sign</i>	(3) (4)
DOMESTIC _{t-1}	-	-0.293*** (-3.22)	-	-0.266*** (-4.31)
FOREIGN _{t-1}		0.083 (0.67)	-	-0.155* (-1.95)
DOMESTIC_INDEP _{t-1}	-	-0.411*** (-2.75)	-	-0.331*** (-3.73)
FOREIGN_INDEP _{t-1}		0.143 (0.77)	-	-0.231** (-2.04)
SIZE _{t-1}		-0.036*** (-7.59)		-0.018*** (-4.22)
ROA _{t-1}		-0.548*** (-10.35)		-0.231*** (-4.68)
MTB _{t-1}		-0.009 (-0.57)		-0.015 (-1.19)
SALEGROWTH _{t-1}		0.013 (0.77)		0.097*** (4.47)
LEV _{t-1}		0.153*** (3.54)		0.158*** (3.60)
STDSALE _{t-1}		0.374*** (9.60)		0.402*** (9.20)
CAPITAL_INTENSITY _{t-1}		-0.142*** (-7.52)		-0.105*** (-7.04)
ANALYST _{t-1}		-0.004 (-0.64)		-0.006 (-1.47)
ACC_STANDARD _{t-1}		0.046** (2.32)		0.023 (1.50)
GDPGROWTH _{t-1}		-0.911** (-2.25)		0.406 (1.31)
INFLATION _{t-1}		2.911*** (5.12)		0.160 (0.39)
CONSTANT, YEAR, INDUSTRY & COUNTRY FE		YES	YES	YES
Number of observations		35,590		30,996
Adj. R-squared		0.121		0.094
F-stat DOMESTIC _{t-1} = FOREIGN _{t-1}		5.42** (0.02)		1.20 (0.27)
(<i>p</i> -value)				
F-stat Agency costs-L (DOMESTIC _{t-1} - FOREIGN _{t-1}) < Agency costs-H (DOMESTIC _{t-1} - FOREIGN _{t-1})				3.45** (0.03)
F-stat Agency costs-L (DOMESTIC_INDEP _{t-1} - FOREIGN_INDEP _{t-1}) < Agency costs-H (DOMESTIC_INDEP _{t-1} - FOREIGN_INDEP _{t-1})				4.95*** (0.01)

Panel B: Are foreign institutional investors more effective monitors in countries with weaker corporate governance?

<i>Dep. Var. = Agg. EM_t</i>	<i>Pred. Sign</i>	Common Law (COM)		<i>Pred. Sign</i>	Civil Law (CIV)	
		(1)	(2)		(3)	(4)
DOMESTIC _{t-1}	-	-0.307*** (-3.82)	-0.305*** (-3.78)	-	-0.390*** (-5.02)	-0.400*** (-5.18)
FOREIGN _{t-1}	-	-0.047 (-0.30)		-	-0.038 (-0.50)	
FOREIGN_COM _{t-1}			0.104 (0.75)	-		-0.116* (-1.67)
FOREIGN_CIV _{t-1}			0.786** (2.22)			0.234 (1.57)
SIZE _{t-1}		-0.022*** (-3.38)	-0.023*** (-3.75)		-0.025*** (-6.82)	-0.026*** (-7.19)
ROA _{t-1}		-0.439*** (-8.63)	-0.437*** (-8.63)		-0.857*** (-13.67)	-0.861*** (-13.73)
MTB _{t-1}		-0.017 (-1.21)	-0.019 (-1.33)		-0.024* (-1.77)	-0.026* (-1.95)
SALEGROWTH _{t-1}		0.058*** (3.35)	0.058*** (3.35)		-0.009 (-0.45)	-0.009 (-0.45)
LEV _{t-1}		0.244*** (4.30)	0.243*** (4.29)		0.224*** (6.10)	0.225*** (6.14)
STDSALE _{t-1}		0.340*** (7.71)	0.340*** (7.72)		0.455*** (11.02)	0.456*** (11.04)
CAPITAL_INTENSITY _{t-1}		-0.214*** (-9.49)	-0.214*** (-9.49)		-0.149*** (-10.86)	-0.148*** (-10.83)
ANALYST _{t-1}		-0.014** (-2.23)	-0.018*** (-2.79)		-0.008** (-2.02)	-0.011*** (-2.80)
ACC_STANDARD _{t-1}		0.015 (0.79)	0.012 (0.63)		-0.003 (-0.16)	-0.002 (-0.10)
GDPGROWTH _{t-1}		0.130 (0.29)	0.112 (0.25)		-0.639* (-1.79)	-0.666* (-1.86)
INFLATION _{t-1}		0.708 (1.36)	0.701 (1.35)		1.152** (2.26)	1.198** (2.36)
CONSTANT, YEAR, INDUSTRY & COUNTRY FE		YES	YES		YES	YES
Number of observations		23,734	23,734		42,552	42,552
Adj. R-squared		0.105	0.105		0.112	0.112
F-stat DOMESTIC _{t-1} = FOREIGN _{t-1}		6.33***			9.20***	
(p-value)		(0.01)			(<0.01)	
F-stat COM (FOREIGN_COM _{t-1}) > CIV (FOREIGN_COM _{t-1})						2.48*
(p-value)						(0.06)
F-stat COM (FOREIGN_CIV _{t-1}) > CIV (FOREIGN_CIV _{t-1})						2.57*
(p-value)						(0.05)
F-stat COM (DOMESTIC _{t-1} - FOREIGN _{t-1}) < CIV (DOMESTIC _{t-1} - FOREIGN _{t-1})						0.03
(p-value)						(0.44)
F-stat COM (DOMESTIC _{t-1} - FOREIGN_CIV _{t-1}) < CIV (DOMESTIC _{t-1} - FOREIGN_COM _{t-1})						3.09**
(p-value)						(0.04)

TABLE 8

Superior monitoring technology

This table reports estimation results from panel regressions of earnings management on institutional ownership using a sample of non-U.S. firms from 2001 to 2013. The sample is separated into two groups based on whether the investee firms are located in emerging countries (*EMERG*) or developed countries (*DEVELOP*). All variable definitions are given in Appendix I. Each regression includes a constant and year, industry (based on two-digit SIC codes), and country fixed effects (FE). Column of *Pred. Sign* provides expected directional relations between the dependent variable and the main independent variables of interest. Below the coefficient estimates in parentheses are *t*-values adjusted for heteroscedasticity and firm-level clustering. *, **, and *** indicate significance level of less than 0.10, 0.05, and 0.01, respectively.

<i>Dep. Var. = Agg. EM_t</i>	Developed Countries (DEVELOP)		<i>Pred. Sign</i>	Emerging Countries (EMERG)		
	<i>Pred. Sign</i>	(1)		(2)	(3)	(4)
DOMESTIC _{t-1}	-	-0.303*** (-5.16)	-0.305*** (-5.20)	-	-0.380*** (-3.44)	-0.381*** (-3.44)
FOREIGN _{t-1}	-	-0.045 (-0.56)		-	-0.174** (-1.98)	
FOREIGN_DEVELOP _{t-1}			-0.060 (-0.68)	-		-0.169* (-1.87)
FOREIGN_EMERG _{t-1}			0.156 (0.83)			-0.292 (-0.67)
SIZE _{t-1}		-0.027*** (-7.76)	-0.027*** (-7.76)		-0.008** (-2.35)	-0.009** (-2.36)
ROA _{t-1}		-0.527*** (-12.90)	-0.527*** (-12.90)		-0.812*** (-15.29)	-0.813*** (-15.26)
MTB _{t-1}		-0.023** (-2.22)	-0.023** (-2.20)		0.052** (2.18)	0.052** (2.19)
SALEGROWTH _{t-1}		0.037** (2.44)	0.037** (2.43)		0.020* (1.89)	0.020* (1.91)
LEV _{t-1}		0.107*** (3.22)	0.107*** (3.21)		0.188*** (6.45)	0.189*** (6.46)
STDSALE _{t-1}		0.397*** (11.92)	0.397*** (11.93)		0.280*** (9.26)	0.281*** (9.26)
CAPITAL_INTENSITY _{t-1}		-0.125*** (-10.28)	-0.125*** (-10.27)		-0.185*** (-13.47)	-0.185*** (-13.49)
ANALYST _{t-1}		-0.008** (-2.04)	-0.008* (-1.96)		-0.016*** (-4.13)	-0.016*** (-4.13)
ACC_STANDARD _{t-1}		0.024* (1.78)	0.024* (1.79)		0.021* (1.67)	0.021* (1.66)
GDPGROWTH _{t-1}		-0.801** (-2.20)	-0.799** (-2.20)		0.196 (1.07)	0.199 (1.08)
INFLATION _{t-1}		1.470*** (2.60)	1.468*** (2.59)		-0.100 (-0.45)	-0.104 (-0.46)
CONSTANT, YEAR, INDUSTRY & COUNTRY FE		YES	YES		YES	YES
Number of observations		49,831	49,831		16,455	16,455
Adj. R-squared		0.105	0.105		0.124	0.124
F-stat DOMESTIC _{t-1} = FOREIGN _{t-1}		6.34***			2.07	
(p-value)		(0.01)			(0.15)	
F-stat DEVELOP (FOREIGN_ DEVELOP _{t-1}) > EMERG (FOREIGN_ DEVELOP _{t-1})						2.08*
(p-value)						(0.07)
F-stat DEVELOP (FOREIGN_ EMERG _{t-1}) > EMERG (FOREIGN_ EMERG _{t-1})						0.87
(p-value)						(0.18)
F-stat DEVELOP (DOMESTIC _{t-1} - FOREIGN _{t-1}) < EMERG (DOMESTIC _{t-1} - FOREIGN _{t-1})						0.71
(p-value)						(0.20)
F-stat DEVELOP (DOMESTIC _{t-1} – FOREIGN_ EMERG _{t-1}) < EMERG (DOMESTIC _{t-1} – FOREIGN_ DEVELOP _{t-1})						4.20**
						(0.02)