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Local Institutional Investors and Corporate Monitoring: Evidence from Cross-Listed Korean Stocks in the US Market

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ABSTRACT

Using Korean firms that are cross-listed in the US market, this paper investigates whether there are standalone effects of geographic and market proximity of institutional investors on monitoring performance. We find that Korean institutional ownership is negatively associated with earnings management while the US institutional ownership has no impact on earnings management. This suggests that there is the geographic proximity advantage over the market proximity advantage in the emerging markets. Furthermore, we also show that the impact of geographic proximity is stronger for firms with high informational opacity.

KEYWORDS

Geographic proximity; market proximity; cross-listed firms; corporate governance; earnings management

JEL

G15; G23; G30; M41

1. Introduction

While institutional investors enjoy informational advantages over other retail investors (Alexander, Cici, and Gibson 2007; Yan and Zhang 2009), not all institutions have an equal informational advantage. Some institutional investors may enjoy a greater informational advantage due to their monitoring incentive (e.g., Cella, Ellul, and Giannetti 2013; Chen, Harford, and Li 2007; DeVault, Sias, and Starks 2019; Ferreira and Matos 2008; Gaspar, Massa, and Matos 2005; Parrino, Sias, and Starks 2003) and geographical advantage (e.g., Choe, Kho, and Stulz 2005; Dvořák 2005; Hymer 1960; Kim and Verrecchia 1994; Leuz, Lins, and Warnock 2008). Coval and Moskowitz (2001) and Baik, Kang, and Kim (2010) find that domestic institutional investors are more informed than foreign institutional investors. In contrast, foreign institutional investors may have less incentive to monitor firms due to their informational disadvantage and monitoring costs (e.g., Ayers, Ramalingegowda, and Yeung 2011).,

Although foreign institutions may not enjoy a geographic proximity advantage, they have superior ability to utilize global talent pools and sophisticated analytical methods to obtain private information that is less attainable to domestic institutions, which in turn enables them to better monitor firms (Albuquerque, Bauer, and Schneider 2009; Bailey, Mao, and Sirodom 2007; Ferreira and Matos 2008; Froot and Ramadorai 2008; Froot, O'Connell, and Seasholes 2001; Grinblatt and Keloharju 2000; Huang and Shiu 2009). Moreover, a strand of literature empirically shows that neither domestic nor foreign investors have informational advantage coming from geographical proximity (e.g., Kang and Stulz 1997; Seasholes and Zhu 2010).

In this paper, we tackle down such mixed evidence arguing that the comparative advantages of domestic and foreign institutions stem from a lack of separation between two elements of institutional distance; geographic and market proximity. Geographic proximity provides easier access to information on local firms, while market proximity allows institutions to effectively engage in market timing

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and execute trades more efficiently. While domestic institutions can benefit from both geographic and market proximity advantages in a local market, foreign institutions have, at most, a market proximity advantage, which can be stronger than that of domestic institutions.[1] Different to the prior literature, we exploit unique feature of the cross-listing and separate the two elements of institutional distance in our empirical analysis. We investigate whether the geographic or market proximity affect firm's earnings management. Given that the institutional investors have encouraged firm to provide the transparent and reliable financial information to them (Chung, Firth, and Kim 2002; Cornett, Marcus, and Tehranian 2008; Mitra and Cready 2005; Roychowdhury 2006), we believe that identifying the information proximity from the heterogenous institutional investors and examining which information proximity affects the earnings management help us better understand the role of institutional investors in shaping corporate decisions.

Using cross-listed Korean firms[2] in the United States (US) market, we are able to detach geographic and market proximity advantages. Since the cross-listed firms are listed in the US market, the US institutional investors have an edge on the market proximity while they face geographic barriers in monitoring into Korean firms. On the other hand, Korean institutional investors have geographic proximity advantage but their responses to the US institutional environment is relatively slow and limited. We argue that Korean institutional ownership represents geographical proximity advantage because of their strong business ties with Korean firms and their help to ease investment constraints (Del Guercio 1996). Further, we argue that the US institutions represent market proximity advantage as they constitute the largest group of professional managers investing into various type of firms including foreign stocks listed in the US market.

Using our sample of 1,217 firm-year observations from 2001 to 2021, we find a negative relationship between aggregate institutional ownership and the three earnings management variables. This is consistent with previous literature such as Chung, Firth, and Kim (2002) and Cornett, Marcus, and Tehranian (2008). When decomposing the aggregate institutional ownership into the US institutions, Korean institutions, and other institutions (institutions domiciled in other jurisdictions), we find that only Korean institutional ownership significantly reduces earnings management (improves earnings quality) but the US and other institutions do not significantly change earnings management. The evidence supports that the geographic proximity of institutional investors play an important role for firms that have different geographic and market proximity. Our findings imply that in emerging market, where there exist the information asymmetry between informed and uninformed investors, thereby the monitoring costs are high, the US institutions find it difficult to apply their global investment expertise in monitoring.

We further show that Korean institutions' monitoring influence on earnings management, driven by geographic proximity, is more evident in firms with high information uncertainty. This is consistent with Liu et al. (2018)'s finding that the domestic institutional blockholder monitoring is more effective in highly opaque firms. Baik et al. (2013) also demonstrates that institutions are less likely active in monitoring the firms with high information asymmetry due to associated high cost. Overall, this finding further supports our argument that the US institutions' global expertise and market superiority are not necessarily effective for institutional monitoring in the emerging market.

Lastly, we provide further evidence that our main results are robust. First, we use alternative earnings quality measures. Similar with our main results, we find that the ownership of Korean institutions is positively associated with earnings quality proxies (i.e., earnings persistence, value relevance, and timeliness) Second, our results remain unchanged after controlling firms' corporate governance index. Third, to address potential endogeneity issues, we conduct a two-stage regression analysis by utilizing variation in ownership originated from stock assignments to KOSPI 100 and 200 indices. We continue to find the significant declining effect of the instrumented Korean institutional ownership on earnings management.

Our study contributes to the literature in several ways. First, to the best of our knowledge, few studies document the comparative ownership of cross-listed stocks between domestic and foreign institutions. While there is an analysis with cross-listed Chinese firms by Chung, Sul, and Wang

(2021), there has not been many research on other countries. By exploiting Korean firms listed in the US market and examining the two proximities, we document the effectiveness of institutional monitoring on earnings management in the emerging market, thereby complement the burgeoning literature such as Chung, Sul, and Wang (2021). Second, we use a unique empirical framework to identify the individual effects of geographic and market proximity and provide novel evidence which connects the institutional distance and the institutional investors' monitoring. Third, our findings provide supporting evidence that domestic institutions have access to superior information.

In addition, our paper also adds to the ongoing debate about the monitoring role of institutional investors by exploring a new dimension of institutional monitoring. Prior studies examine the importance of institutional heterogeneity and institution types (e.g., dedicated vs. transient institutional investors, foreign institutional investors, institutional investors with multiple blockholdings, and common institutional investors) in corporate monitoring and earnings management (Bushee 1998; Kang, Luo, and Na 2018; Ramalingegowda, Utke, and Yu 2021; Tsang, Xie, and Xin 2019). Our study adds to this stream of literature, particularly Tsang, Xie, and Xin (2019), by showing that geographic proximity's domination of market proximity explains financial reporting quality in cross-listed Korean firms listed in the US market. Finally, our results provide important implications for global institutions' strategic asset allocation decisions. Geographical proximity is particularly important for monitoring corporate earnings management, so institutional investors should primarily consider domestic stocks traded in domestic markets.

The remainder of this paper is organized as follows: Section 2 discusses related literature. Section 3 describes our methodology and our sample. Section 4 presents our empirical analysis, and Section 5 concludes the paper.

2. Related Literature

The literature on institutional monitoring suggests that institutional investors typically constrain corporate earnings management. For example, Chung, Firth, and Kim (2002) show that the presence of large institutional holdings is negatively related to managers' tendency to adjust reported profits toward their desired levels. Similarly, Cornett, Marcus, and Tehranian (2008) and Mitra and Cready (2005) report that institutional ownership is negatively associated with the standard deviation and absolute value of discretionary accruals. Moreover, Roychowdhury (2006) finds that managers manipulate operating activities to avoid reporting losses. However, such activities are less prevalent in the presence of institutional investors. Nevertheless, there is no consensus in the literature on the role of domestic and foreign institutions in monitoring earnings management.

Such issue is especially interesting given the "international mobility of corporate governance" (Cumming et al. 2017). Foreign institutional ownership is the primary means of transferring corporate governance practices to local firms. With the higher criteria on good corporate governance and stricter monitoring practices, the foreign investors can enhance local firms' governance system. Among other factors, its monitoring effectiveness hinges on the differences between countries' legal and regulatory schemes where firms operate. Despite of the difficulties in adapting different institutional environment, some studies argue that foreign institutions can be effective independent monitors because they do not have business ties with local firms (Aggarwal et al. 2011; Gillan and Starks 2003). Also, Lel (2016) document the effective monitoring role of foreign institutional investors.

Compared to foreign institutions, domestic institutions are geographically closer to local firms. Thus they are more familiar with local laws, regulations, accounting rules, and the local culture. This geographical proximity advantage enables domestic institutions to reduce monitoring costs and to better align management's incentives with shareholders. The empirical evidence in the literature demonstrates that the domestic institutions are generally more effective at mitigating opportunistic financial reporting than foreign institutions (Ayers, Ramalingegowda, and Yeung 2011; Chhaochharia, Kumar, and Niessen-Ruenzi 2012; Kim et al. 2016).

Our study integrates the monitoring role of two different institutions (domestic and foreign) by examining the effect of distinct institutional distance on earnings management. We focus on a unique market setting – cross-listed Korean firms in the US market – to explain why the literature has produced incongruent findings. On the one hand, domestic institutions (Korean institutions) are geographically closer to domestic firms and are, therefore, more familiar with soft information such as local market competition, laws, regulations, and culture. Thus, domestic institutions have a geographic proximity advantage over foreign institutions in local markets (Chan, Covrig, and Ng 2005; Gehrig 1993; Leuz, Lins, and Warnock 2008). On the other hand, foreign institutions have superior ability to obtain private information that is unavailable to domestic institutions by using their global talent pools and more sophisticated analytical tools (Albuquerque, Bauer, and Schneider 2009; Grinblatt and Keloharju 2000). Thus, foreign institutions, that are from developed markets, better utilize the market information than their domestic counterparts (Bailey, Mao, and Sirodom 2007; Froot and Ramadorai 2008; Froot, O'Connell, and Seasholes 2001; Grinblatt and Keloharju 2000; Huang and Shiu 2009).

We argue that mixed evidence exists on the comparative advantages of domestic and foreign institutions because of the two separate aspects of institutional distance – geographic (i.e., familiarity with the investee firm) and market proximity (i.e., familiarity with the market in which the investee firm is traded). Geographic proximity provides institutions with easier access to information on local firms. In contrast, market proximity allows for a better understanding of market timing and economic conditions to facilitate more efficient trading strategies (e.g., sector rotation). When monitoring cross-listed Korean firms, domestic institutions benefit from both geographic and market proximity advantages, whereas foreign institutions (especially the US institutions) have, at most, a marginal market proximity advantage because they are closer to the US market. However, although Korean institutions also have market proximity, it is unclear whether their market proximity is stronger than that of foreign institutions. For example, foreign institutions from developed countries exert their experienced monitoring know-hows when investing developing countries.

Using a unique Korean setting, we differentiate between the advantages of institutions' geographic and market proximity in measuring monitoring performance. Our approach help foster a better understanding of prior empirical findings and provide insights into the relationship between institutions' informational advantage originated from the distance of institutions. Specifically, we examine the differences in the monitoring performance across US institutional investors and their Korean counterparts for the cross-listed Korean stocks on US exchanges. Because the US institutions face geographic barriers to accessing information about firms headquartered in Korea, and Korean institutions are distant from US exchanges, US institutions have a market proximity advantage, while Korean institutions have a strength in the geographic proximity. This distinction allows us to directly compare how both proximity advantages drive institutional monitoring performance.

3. Sample

3.1. Sample Selection

The sample is collected from multiple sources. First, we identify cross-listed stocks in the US using the FactSet database. We also consider two stock types (i.e., ordinary shares and ADRs) and three major US stock exchanges (i.e., NYSE, NASDAQ, and AMEX). We collect data on stock returns and firm characteristics from CRSP and COMPUSTAT, respectively. Our data on global institutional holdings are derived from the Thomson Reuters Global OP Ownership database, which includes institutional and mutual fund portfolios and the declared holdings of non-financial companies and individuals. Furthermore, we consider all financial and non-financial institutions using consolidated holdings (Type 1) data. Because institutions from different countries have different reporting frequencies, we follow Ferreira and Matos's (2008) data-cleaning procedure to obtain the latest holding information for each institution at year-end.[3]

We use a data extrapolation method to expand the sample coverage. Specifically, if an institution displays a one-year reporting gap between disclosure dates, we impute the holdings of the missing year using the previous year's data, assuming that the institution follows a buy-and-hold strategy. If there is a two-year reporting gap, and an institution reports identical holdings in its two adjacent disclosures, we backfill the holdings of the missing years using the most recently available holdings before the gap.[4] After merging the firm-level characteristics from various sources, the initial sample consists of 1,472 firm-year observations. Among the observations, we exclude financial and utility firms. Thus, our final sample comprises 1,217 firm-year observations from 538 firms from the 2001–2021 sample period.

3.2. Variables

3.2.1. Institution Classification

We classify global institutions into three groups based on their domicile country: the United States (IO_US), the country where firms are incorporated (IO_KOR), and other (IO_OTH). We hypothesize that institutions domiciled in the country where the firms are incorporated (e.g., Korean institutions domiciled in Korea and owning Korean stocks traded on US exchanges) have a monitoring advantage on Korean firms because of their physical distance as well as cultural familiarity. In contrast, since the US institutions are familiar with the institutional environment of US market (such as regulations, and accounting standards), the US institutions are expected to excel their strength more than other institutions in terms of market proximity and better utilize this advantage to assess and monitor the cross-listed firms.

Table 1 reports that the average institutional investor holdings of cross-listed forms is 3.84% over the sample period, which is less than that of typical US firm stocks. We find that Korean institutions (IO_KOR, 2.12%) take the largest ownership, followed by the US institutions (IO_US, 1.32%) and other institutions (IO_OTH, 0.40%). US institutions usually manage diversified portfolios, so it is not surprising to see that they are actively involved in emerging market stocks. For example, US hedge funds are known to possess informational advantages and use aggressive trading strategies (Brav, Jiang, and Kim 2015; Collin-Dufresne and Fos 2015). Thus, it is understandable that they would exploit such advantages by investing in Korean firms, which generally have high information asymmetry.

Table 1. Descriptive statistics.

Variable	Mean	SD	5th Pctl.	25th Pctl.	Median	75th Pctl.	95th Pctl.
EM1	0.1743	0.3981	0.0064	0.0271	0.0551	0.1981	0.5912
EM2	0.1152	0.0792	0.0381	0.0593	0.0976	0.1251	0.2251
EM3	0.6312	4.3431	0.0037	0.0241	0.0575	0.1151	0.5791
IO	0.0384	0.1747	0.0020	0.0166	0.0462	0.1241	0.5231
IO_KOR	0.0212	0.0532	0.0000	0.0005	0.0027	0.0188	0.0945
IO_US	0.0132	0.1377	0.0013	0.0136	0.0174	0.0952	0.3966
IO_OTH	0.0040	0.0410	0.0000	0.0000	0.0000	0.0000	0.0017
Asset	8.9558	1.9061	5.5204	7.7047	9.1533	10.3975	11.7933
DOE	0.5337	0.2117	0.1700	0.3998	0.5459	0.6695	0.8493
ROA	0.0373	0.1428	−0.1040	0.0138	0.0459	0.0837	0.1720
MB	7.7848	61.3585	0.2440	1.0117	1.7067	3.1129	8.6723
Sales_G	0.6477	22.7498	−0.2223	−0.0143	0.0797	0.1957	0.5489
STD_Sales	0.0280	0.1730	0.0000	0.0037	0.0142	0.0316	0.0824
STD_OCF	0.0264	0.0683	0.0000	0.0051	0.0153	0.0333	0.0745
Firm_Age	0.0957	0.1135	0.0040	0.0261	0.0613	0.1250	0.3061
RND_Exp	0.0264	0.0641	0.0000	0.0000	0.0008	0.0267	0.1306
HHI	0.3416	0.2616	0.0558	0.1326	0.2664	0.4864	0.9622

Notes: This table presents the mean, standard deviation, 5th percentile, 25th percentile, median, 75th percentile, and 95th percentile values of the variables in our sample. The sample consists of 1,217 firm-year observations for the sample period 2001–2021. The variables are winsorized at the 1% and 99% levels.

3.2.2. Earnings Management

Following the literature, we construct three measures of earnings management: (1) performance-adjusted accruals (*EM1*) based on 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), which incorporates a timely asymmetrical recognition of economic gains and losses; and (3) the magnitude of accruals (*EM3*) used by Leuz, Nanda, and Wysocki (2003) and Gopalan and Jayaraman (2012), which measures the extent to which insiders exercise discretion in reporting earnings.

Specifically, our first earnings management measure (*EM1*) is the absolute value of the difference between total current accruals (*ACC*) and expected performance-adjusted accruals (*EPACC*). Following Dechow, Sloan, and Sweeney (1995), we compute *ACC* as follows:

$$ACC_{it} = (\Delta \mathrm{CA}_{it} - \Delta \mathrm{CL}_{it}) - (\Delta Cash_{it} - \Delta STD_{it} + \Delta DEP_{it}), \tag{1}$$

where *CA* stands for total current assets, *CL* for total current liabilities, *Cash* for cash and cash equivalents, *STD* for short-term debt included in current liabilities, *DEP* for the depreciation and amortization expenses for firm *i* in year *t*, and Δ represents a first-difference operator. All variables are scaled by lagged total assets to reduce heteroscedasticity. To compute $EPACC_{it}$, we estimate the following regression:

$$ACC_{ijkt} = \beta_0 + \beta_1 \frac{1}{TA_{ijkt-1}} + \beta_2 \frac{\Delta Sales_{ijkt}}{TA_{ijkt-1}} + \beta_3 ROA_{ijkt-1} + \beta_4 Inflation_{kt-1} + \beta_5 GDP\_growth_{kt-1} + \varepsilon_{ijkt}, \tag{2}$$

where *TA* stands for total assets, *Sales* for net sales, and *ROA* for earnings before extraordinary items over total assets for firm *i* operating in industry *j* (based on the two-digit Standard Industrial Classification (SIC) codes) domiciled in country *k* in calendar year *t*. Following Chaney, Faccio, and Parsley (2011), we include inflation (*Inflation*) and real per capita GDP growth (*GDP_growth*) to control for each country's business cycles. From the annual cross-sectional industry (two-digit SIC) regression model, we estimate the predicted value of ACC (EPACC_{it}).

Our second measure of earnings management (*EM2*) is the absolute value of the difference between total current accruals (*ACC*) and expected accruals (ACC_{BS}). The expected accruals are estimated using the piecewise cash flow model developed by Ball and Shivakumar (2006). We estimate the following regression to obtain $ACC_{BS,}$:

$$ACC_{it} = \beta_0 + \beta_1 \mathrm{CF}_{it} + \beta_2 DCF_{it} + \beta_3 (DCF_{it})(\mathrm{CF}_{it}) + \varepsilon_{it}, \tag{3}$$

where *CF* stands for operating income minus accruals, as in Ball and Shivakumar's (2006) model, and *DCF* is a dummy variable that equals one if *CF* is less than zero, and zero otherwise. We calculate the predicted *ACC* (ACC_{BS}) by using the estimated coefficients$\hat{\beta}_1$, $\hat{\beta}_2$, and $\hat{\beta}_3$ from the regression in Equation (3).

Our third measure of earnings management (*EM3*) is the magnitude of accruals relative to the magnitude of operating cash flows (Gopalan and Jayaraman 2012; Leuz, Nanda, and Wysocki 2003):

$$TAC_{it} = \frac{|ACC_{it}/TA_{it-1}|}{|CF_{it}/TA_{it-1}|}, \tag{4}$$

where $|ACC_{it}/TA_{it\text{-}1}|$ is the absolute value of total current accruals scaled by lagged total assets, and $|CF_{it}/TA_{it\text{-}1}|$ is the absolute value of operating income minus accruals, scaled by lagged total assets (Leuz, Nanda, and Wysocki 2003). We winsorize all earnings management measures at the 1st and 99th percentiles to alleviate concerns of extreme outliers.

3.2.3. Control Variables

We consider several control variables to evaluate the incremental impact of institutional investors on earnings management following previous literature (e.g. Ayers, Ramalingegowda, and Yeung 2011;

Barth and Kasznik 1999; Barth, Beaver, and Landsman 2001; Becker et al. 1998; Chung, Firth, and Kim 2002; Dechow, Sloan, and Sweeney 1996; DeFond and Park 1997; Dichev and Skinner 2002; Helwege and Liang 1996; Kim et al. 2016, 2016; Roychowdhury 2006). Our firm-specific characteristic variables include the natural logarithm of total assets (*Asset*); financial leverage (*DOE*); return on assets (*ROA*); market-to-book value ratio (*MB*); growth in sales (*Sales_G*); the 5 years standard deviations of sales and operating cash flows ($STD\_Sales_{i,t}$ and $STD\_OCF_{i,t}$);the natural logarithm of the years since firm is established (*Firm_Age)*; the research and development expenditures (*RND_Exp*). Table 1 provides the descriptive statistics of the variables and Appendix provides the detailed definitions for the variables. In Table 1, we find that the proxies for earnings management vary significantly across cross-listed Korean firms on US exchanges.

4. Empirical Results

4.1. Univariate Correlation

We start our analysis with Pearson's contemporaneous correlation coefficients between the institutional ownership and earnings management variables.[5] In Table 2, IO_KOR is significantly and negatively correlated with all earnings management variables (EM1, EM2, and EM3) at the 5% level or lower. However, we find no significant and negative relationships between IO_US/IO_OTH and the other earnings management variables. Table 2 does not reveal any causal links because the correlations are contemporaneous. We postulate that institutional monitoring takes time to affect a firm's earnings management because firms' financial statements are audited and disclosed publicly at the end of each fiscal year. Thus, we examine the relationship between the lagged institutional ownership and the earnings management in subsequent years.

4.2. Total Institutional Ownership and Earnings Management

We use the Fama and MacBeth (1973) cross-sectional regression approach to evaluate the incremental effect of institutional ownership on earnings management. Specifically, we first run cross-sectional regressions of lagged institutional ownership on earnings management for each year and then average the estimated coefficients of the annual regressions over the sample period. We adjust the *t*-statistics for Newey and West's (1994) autocorrelation in all models using three lags. This multivariate setting controls for additional factors that may affect a firm's earnings management. The variables are summarized in the Appendix, and the results are presented in Table 3. For the regressions of EM1, EM2, and EM3, the coefficients of IO are negative and statistically significant at the 10% level or lower, suggesting that larger institutional ownership restrains earnings management more effectively.

Table 2. Correlations.

	EM1	EM2	EM3	IO	IO_KOR	IO_US	IO_OTH
EM1	1						
EM2	0.2523	1					
	[0.0135]						
EM3	0.1351	−0.0824	1				
	[0.1242]	[0.5521]					
IO	−0.0789	0.4564	−0.0353	1			
	[0.4419]	[<.0001]	[0.6812]				
IO_KOR	−0.0718	−0.0067	−0.0481	0.0561	1		
	[0.0151]	[0.0017]	[0.0002]	[<.0001]			
IO_US	−0.0781	0.4311	−0.0251	0.8712	−0.0341	1	
	[0.2254]	[0.4812]	[0.3511]	[<.0001]	[0.0151]		
IO_OTH	−0.1125	0.3241	−0.0871	0.8912	0.4092	0.7612	1
	[0.1241]	[0.0952]	[0.4819]	[<.0001]	[0.0001]	[<.0001]	

Notes: This table shows Pearson's contemporaneous correlation coefficients between the key variables used in the sample. The values in the brackets are the relevant *p*-values.

Table 3. Impact of total institutional ownership on earnings management.

Variable	EM1	EM2	EM3
Intercept	1.0891	0.0523	−0.5212
	(1.19)	(1.07)	(−1.01)
IO_{t-1}	−0.0683*	−0.0398*	−0.0401*
	(−1.98)	(−1.92)	(−1.97)
$Asset_{t-1}$	0.0293	0.0008	0.0862
	(1.08)	(0.31)	(1.29)
DOE_{t-1}	−3.3367	−0.0572	−0.0104
	(−1.01)	(−0.80)	(−0.04)
ROA_{t-1}	−1.3218	0.0355	−0.0218
	(−0.62)	(0.76)	(−0.07)
MB_{t-1}	0.1758	0.0019	0.0111
	(1.05)	(1.31)	(1.16)
$Sales\_G_{t-1}$	0.0094	0.0163**	0.0361
	(0.40)	(2.12)	(1.41)
STD_Sales_{t-1}	−0.0000	−0.0000	0.0001
	(−1.64)	(−0.86)	(1.03)
STD_OCF_{t-1}	−0.7688	−0.1256	−1.2083
	(−1.73)	(−1.43)	(−1.18)
$Firm\_Age_{t-1}$	−0.2324	0.0246*	0.2512
	(−0.84)	(1.83)	(0.86)
RND_Exp_{t-1}	1.9793	−0.0523	0.9843
	(1.31)	(−1.27)	(0.94)
HHI	−0.1390*	0.0102***	0.4117
	(−1.91)	(3.47)	(0.97)
Adjusted R^2	0.0782	0.0921	0.1152
Observations	1,217	1,217	1,217

Notes: This table shows the estimated results of regressing the aggregate institutional ownership on earnings management. *t*-statistics are in parentheses and adjusted for Newey and West's (1994) autocorrelations with three lags. ***,**, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

4.3. Proximity of Institutional Ownership and Earnings Management

Table 4 presents the main regression results on the effect of institutional ownership on earnings management, decomposed by proximity We examine the disparate influence of IO_US, IO_KOR, and IO_OTH to determine which of the three players is dominant for cross-listed Korean companies' earnings management. We find that IO_KOR is negatively and significantly associated with all types of earnings management, whereas both IO_US and IO_OTH are statistically insignificant. In terms of economic significance, one standard deviation increase in IO_KOR reduces EM1, EM2, and EM3 by approximately 0.8%, 3.1%, and 0.1%, respectively.[6] These results suggest that the advantage of the geographic proximity between the institutions and the invested company plays an important role in reducing the firm's opportunistic earnings management.[7]

There are several reasons for the weak-monitoring role of US institutions in cross-listed Korean firms. First, in our empirical setting, US institutions lack a geographic proximity advantage, which is crucial to the effectiveness of institutional monitoring. For example, Ayers, Ramalingegowda, and Yeung (2011) document that local institutional investors work harder to improve the financial reporting quality of local firms. Kim et al. (2016) and Liu et al. (2018) extend this analysis to the international setting and find comparable results. Second, the number of institutional blockholders in a firm is a more informative measure of monitoring incentives than the aggregate level of institutional ownership (Edmans 2009). In our sample, we find that few US institutional blockholders hold cross-listed stocks and that the related ownership is dispersed.[8] Lastly, our empirical analysis relates the lagged institutional ownership to post-one-year earnings attributes. In general, the literature suggests that institutional investors should demand sufficient time for monitoring efforts and realize them as governance

Table 4. Impact of proximity of institutional ownership on earnings management.

Variable	EM1	EM2	EM3
Intercept	1.1252	0.0891	−0.9821
	(1.14)	(1.46)	(−1.00)
IO_KOR_{t-1}	−0.0287**	−0.0671**	−0.0131*
	(−2.31)	(−2.28)	(−1.99)
IO_US_{t-1}	0.0401	0.0871	−0.0521
	(1.12)	(0.92)	(−0.52)
IO_OTH_{t-1}	−0.1195	0.0581	0.0212
	(−1.15)	(0.78)	(0.19)
$Asset_{t-1}$	0.0012	0.0839	−0.0040
	(0.49)	(1.29)	(−0.31)
DOE_{t-1}	−0.0279	0.2028	−0.0743
	(−0.67)	(0.85)	(−0.71)
ROA_{t-1}	0.0437	0.1271	0.7664
	(0.76)	(0.39)	(1.54)
MB_{t-1}	0.0006	0.0040	0.0066
	(1.61)	(0.91)	(1.16)
$Sales\_G_{t-1}$	0.0172**	0.0739*	−0.0079
	(2.07)	(1.77)	(−0.18)
STD_Sales_{t-1}	−0.0000	0.0001	−0.0000*
	(−0.65)	(1.05)	(−1.74)
STD_OCF_{t-1}	−0.0830	−1.0408	−0.8467
	(−1.28)	(−0.91)	(−1.53)
$Firm\_Age_{t-1}$	0.0272	0.3967	−0.3677
	(1.10)	(1.30)	(−1.25)
RND_Exp_{t-1}	−0.0713**	1.0174	1.9887
	(−2.24)	(0.75)	(1.30)
HHI	0.0109**	0.4411	−0.1477*
	(2.36)	(0.86)	(−1.97)
Adjusted R^2	0.0593	0.1109	0.1004
Observations	1,217	1,217	1,217

Notes: This table shows the estimated results of regressing the institutional ownership decomposed by geographical proximity on earnings management in Korean cross-listed stocks. *t*-statistics are in parentheses and adjusted for Newey and West's (1994) autocorrelations with three lags. ***,**, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

outcomes (Cite paper). However, given that US institutions are geographically distant from foreign-based firms, it is doubtful that their monitoring activities, such as changing governance structures or influencing management, would be completed within a year.[9]

4.4. Cross-Sectional Heterogeneity: Information Opacity

In this subsection, we examine the monitoring effectiveness of geographic and market proximity in the context of firms' information uncertainty. We hypothesize that it is more difficult to monitor firms with high information uncertainty and predict that the effect of geographic proximity on earnings management is more pronounced in high-opacity firms. We consider the level of R&D expenses as a gauge of information asymmetry. Firms with higher R&D expenses (*RND_Exp*) acquire a greater portion of firm value from intangibles and manufacture unique products. Thus, these firms are more likely to generate greater information opacity between managers and external shareholders (Aboody and Lev 2000; Armstrong et al. 2011). To test our prediction, for each year, we sort firms into four quartiles based on the *RND_Exp* of the previous year and repeat the analysis in Table 4. The results are presented in Table 5.

Panels A and B of Table 5 show the regression results for firms with high and low information opacity, respectively. We find that domestic institutions have stronger monitoring effects in the former case. In Panel A, the coefficients on IO_KOR are statistically significant at least 10% level. In contrast,

Table 5. The impact of proximity of institutional ownership on earnings management according to information opacity.

Variable	EM1	EM2	EM3
Panel A: Top R&D Expense Quartile (High Opacity)			
Intercept	0.1242**	0.0412***	−0.6744
	(2.89)	(3.20)	(−1.12)
IO_KOR_{t-1}	−0.0488**	−0.0331*	−0.0231**
	(2.28)	(−2.01)	(−2.19)
IO_US_{t-1}	−0.0598	0.0871	−0.0587
	(−0.87)	(0.91)	(−0.98)
IO_OTH_{t-1}	0.5412	−0.0871	0.0315
	(1.56)	(−0.51)	(0.27)
$Asset_{t-1}$	−0.0020	0.0002	0.0863
	(−0.18)	(0.06)	(1.27)
DOE_{t-1}	−2.8536	−0.0528	0.0361
	(−1.02)	(−0.78)	(0.13)
ROA_{t-1}	−1.7810	0.0355	−0.0632
	(−0.68)	(0.81)	(−0.22)
MB_{t-1}	0.0064	0.0005	0.0017
	(1.05)	(1.12)	(0.42)
$Sales\_G_{t-1}$	0.0056	0.0162*	0.0365
	(0.23)	(2.05)	(1.35)
STD_Sales_{t-1}	−0.0000*	−0.0000	0.0001
	(−1.74)	(−0.80)	(1.03)
STD_OCF_{t-1}	−0.7808	−0.1249	−1.1253
	(−1.63)	(−1.52)	(−1.08)
$Firm\_Age_{t-1}$	−0.2596	0.0263	0.2183
	(−0.90)	(1.61)	(0.75)
RND_Exp_{t-1}	2.0110	−0.0394	0.9903
	(1.33)	(−0.90)	(0.97)
HHI	−0.1378*	0.0100***	0.4149
	(−1.91)	(3.39)	(0.96)
Adjusted R^2	0.0825	0.1098	0.1208
Observations	305	305	305
Panel B: Bottom R&D Expense Quartile (Low Opacity)			
Intercept	0.1243***	0.0879***	−0.7635
	(3.08)	(3.65)	(−1.08)
IO_KOR_{t-1}	0.0781	0.0124	0.0221
	(0.89)	(0.91)	(0.89)
IO_US_{t-1}	0.0353	−0.0891	0.0312
	(1.43)	(−1.51)	(1.51)
IO_OTH_{t-1}	0.0501	0.0125	−0.0401
	(0.77)	(1.31)	(−0.89
$Asset_{t-1}$	−0.0020	0.0002	0.0863
	(−0.18)	(0.06)	(1.27)
DOE_{t-1}	−2.8536	−0.0528	0.0361
	(−1.02)	(−0.78)	(0.13)
ROA_{t-1}	−1.7810	0.0355	−0.0632
	(−0.68)	(0.81)	(−0.22)
MB_{t-1}	0.0064	0.0005	0.0017
	(1.05)	(1.12)	(0.42)
$Sales\_G_{t-1}$	0.0056	0.0162*	0.0365
	(0.23)	(2.05)	(1.35)
STD_Sales_{t-1}	−0.0001*	−0.0001	0.0001
	(−1.74)	(−0.80)	(1.03)
STD_OCF_{t-1}	−0.7808	−0.1249	−1.1253
	(−1.63)	(−1.52)	(−1.08)
$Firm\_Age_{t-1}$	−0.2596	0.0263	0.2183
	(−0.90)	(1.61)	(0.75)
RND_Exp_{t-1}	2.0110	−0.0394	0.9903

(*Continued*)

Table 5. (Continued).

Variable	EM1	EM2	EM3
	(1.33)	(−0.90)	(0.97)
HHI	−0.1378*	0.0100***	0.4149
	(−1.91)	(3.39)	(0.96)
Adjusted R^2	0.0766	0.1313	0.1915
Observations	305	305	305

Notes: This table shows the estimated results of regressing the institutional ownership decomposed by proximity on the earnings management. In Panel A (Panel B), we split the sample in subgroups according to the top (bottom) R&D expense quartiles and report estimates from the regressions in Table 4, respectively. *t*-statistics are in parentheses and adjusted for Newey and West's (1994) autocorrelations with three lags. ***,**, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

the coefficients on IO_KOR do not reach statistical significance in lower opacity subsample. This finding supports the hypothesis that the effect of geographical proximity of domestic institutional monitoring is more pronounced in firms with greater information asymmetry.[10]

4.5. Robustness Tests

4.5.1. Alternative Earnings Quality Measures

Next, as a robustness test, we use alternative earnings quality measures and examine whether the relation between the proximity of institutional investors and earnings quality holds for other quality measures. In particular, we follow Francis et al. (2004) and test three alternative proxies to capture a firm's earnings quality: earnings persistence (*Persistence*), value relevance (*ValueRelevance*), and timeliness (*Timeliness*).[11] Earnings persistence reflects the stability of the current net income going forward.[12] Revsine, Collins, and Johnson (2002) find that earnings are of high quality when they are sustainable. Bodie, Kane, and Marcus (2002) define earnings quality as the expectation that the reported earnings are sustained. Penman and Zhang (2002) report that unsustainable earnings due to accounting treatments imply poor earnings quality. Following Ali and Zarowin (1992) and Francis et al. (2004), we compute the earnings persistence using the autoregressive model of order one (*AR1*):

$$X_{i,t} = \emptyset_{0,i} + \emptyset_{1,i} X_{i,t-1} + \nu_{i,t}, \tag{5}$$

where $X_{i,t}$ denotes the earnings per share of firm i in year t, computed as the net income ratio to the weighted average number of outstanding shares. We use time-series data on earnings per share for the five years from years $t-4$ to t and estimate the model coefficients for each firm-year by rolling the data window forward one year at a time. The coefficient $\Phi_{1,i}$ is a proxy for the earnings persistence:

$$Persistence = \emptyset_{1,i}. \tag{6}$$

If the estimated value of the proxy is closer to one, the earnings persistence is greater. A value closer to zero implies higher transitory earnings. Thus, a larger value of $\Phi_{1,i}$ indicates a stronger earnings persistence.

Prior literature shows that the value relevance has the explanatory power of accounting earnings concerning variations in stock returns (Barth, Beaver, and Landsman 2001; Collins, Maydew, and Weiss 1997; Francis and Schipper 1999; Lev and Zarowin 1999). Bao and Bao (2004) show that the relationship between firms' value and report that earnings improves as earnings quality increases. In line with the previous value relevance studies, Cheng and Subramanyam (2008) design a measure of earnings quality by focusing on to which extent accounting earnings explain the excess stock return in a fiscal year. The model specification is as follows:

$$ARET_{i,t} = \alpha_0 + \alpha_1 NI_{i,t} + \alpha_2 LOSS_{i,t} + \alpha_3 NI_{i,t} \times LOSS_{i,t} + \alpha_4 \Delta NI_{i,t} + \varepsilon_{i,t}, \tag{7}$$

where $ARET_{i,t,}$ denotes the cumulative market-adjusted excess return of firm i in year t. $NI_{i,t,}$ is the ratio of the net income of firm i in year t to the market value of equity at the end of year $t-1$. $LOSS_{i,t}$ is a dummy variable that takes a value of one if the net income of firm i in year t is less than zero ($NI_{i,t,}$ <0) and zero otherwise. $\Delta NI_{i,t}$ is the change in $NI_{i,t}$. To calculate the value relevance, we run a cross-sectional regressions using Equation (7), compute the residuals for each firm-year, and then multiply the squared residual by −1:

$$ValueRelevance = -\left(ARET_{i,t} - \widehat{ARET}_{i,t}\right)^2 \tag{8}$$

We use this measure as a proxy for value relevance. A larger value indicates that the stock price more relevantly reflects the accounting earnings information during the fiscal period, which implies higher-quality corporate disclosure.

Timeliness captures the extent to which accounting earnings contemporaneously reflect a firm's economic benefits (stock returns). Ball, Kothari, and Robin (2000) posit that accounting earnings should measure economic benefits, defined as the variation in the market value of equity. Timeliness utilizes the explanatory power of the reverse-regression equation that inversely applies a model analyzing the impact of accounting earnings on stock returns. Specifically, we measure timeliness as follows:

$$NI_{i,t} = \alpha_{0,i} + \alpha_{1,i}NET_{i,t} + \alpha_{2,i}RET_{i,t} + \alpha_{3,i}NET_{i,t} \times RET_{i,t} + \varepsilon_{i,t}, \tag{9}$$

where $NI_{i,t}$ is the ratio of the net income of firm i in year t to the market value of equity at the end of year $t-1$. $RET_{i,t,}$ denotes the 15-month cumulative return of firm i from the beginning of year t to the end of March in year $t+1$. $NET_{i,t,}$ is a dummy variable that takes a value of one if $RET_{i,t,}$ <0 and zero otherwise. Employing five-year data from years $t-4$ to t, we compute the adjusted R^2 of the above reverse-regression equation for each firm-year as a proxy for timeliness (Ball, Kothari, and Robin 2000; Bushman et al. 2004):

$$Timeliness = adjusted\ R^2_{i,t} \tag{10}$$

If the explanatory power of the variation in stock returns for the variation in earnings is large, it implies that stock prices promptly reflect accounting earnings.

Table 6 reports the positive and significant relationship between the three alternative measures of earnings quality and domestic institutional ownership of cross-listed Korean stocks. This result corroborates our baseline results that the impact of the geographical proximity of Korean institutions overwhelms that of the market proximity of US institutions for cross-listed Korean firms. US institutions are unlikely to enjoy a geographic proximity advantage because the monitoring costs due to physical distance exceed the benefits of monitoring. Rather, these institutions may strengthen their global talent pools and sophisticated analytical methods to obtain private information unavailable to domestic institutions (Albuquerque, Bauer, and Schneider 2009; Grinblatt and Keloharju 2000). This type of superior information compared to domestic counterparts diminish the benefits of active and direct monitoring. This explanation may help understand the significant monitoring of Korean institutions and the weak influence of US institutions for cross-listed Korean stocks.

4.5.2. Proximity of Blockholder Ownership

Chen, Harford, and Li (2007) and Chung et al. (2015) argue that not all institutional investors have the incentive or ability to monitor firm management. Those studies find that institutions with large shareholdings focus on monitoring and enhance efficient corporate decisions. Hence, as an alternative measure of institutional monitoring ownership, we explore the effects of institutional blockholder shareholdings. We follow Chen, Harford, and Li (2007) and define an institutional investor as a blockholder if at least one of the following conditions are met: (1) hold at least 5% of the shares outstanding at the end of a given quarter, (2) hold at least 5% of the shares outstanding for the

Table 6. Impact of proximity of institutional ownership on earnings quality measures.

Variable	$Persistence_t$	$ValueRelevance_t$	$Timeliness_t$
Intercept	1.0351	1.1253	0.0337**
	(1.06)	(1.11)	(2.55)
IO_KOR_{t-1}	0.0431**	0.0371**	0.0171*
	(2.15)	(2.12)	(1.91)
IO_US_{t-1}	0.2151	0.2451	0.042
	(0.88)	(1.51)	(1.21)
IO_OTH_{t-1}	−0.8121	−0.7812	0.1251
	(−0.92)	(−0.89)	(0.81)
$Asset_{t-1}$	0.0293	0.0008	0.0862
	(1.08)	(0.31)	(1.29)
DOE_{t-1}	−3.3367	−0.0572	−0.0104
	(−1.01)	(−0.80)	(−0.04)
ROA_{t-1}	−1.3218	0.0355	−0.0218
	(−0.62)	(0.76)	(−0.07)
MB_{t-1}	0.1758	0.0019	0.0111
	(1.05)	(1.31)	(1.16)
$Sales\_G_{t-1}$	0.0094	0.0163**	0.0361
	(0.40)	(2.12)	(1.41)
STD_Sales_{t-1}	−0.0001	−0.0001	0.0001
	(−1.64)	(−0.86)	(1.03)
STD_OCF_{t-1}	−0.7688	−0.1256	−1.2083
	(−1.73)	(−1.43)	(−1.18)
$Firm\_Age_{t-1}$	−0.2324	0.0246*	0.2512
	(−0.84)	(1.83)	(0.86)
RND_Exp_{t-1}	1.9793	−0.0523	0.9843
	(1.31)	(−1.27)	(0.94)
HHI	−0.1390*	0.0102***	0.4117
	(−1.91)	(3.47)	(0.97)
Adjusted R^2	0.0532	0.0783	0.0935
Observations	1,217	1,217	1,217

Notes: This table shows the estimated results of regressing the institutional ownership decomposed by proximity on the alternative earnings quality measures. *t*-statistics are in parentheses and adjusted for Newey and West's (1994) autocorrelations with three lags. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

previous year, and (3) are classified as a dedicated or quasi-indexing institution, based on Bushee's (2001) definitions. We expect all such institutions to be more likely to engage in monitoring. Block_IO denotes the ownership of blockholders, and NonBlock_IO denotes the ownership of nonblockholders. We re-estimate the main regression models in Table 4 based on the blockholder and nonblockholder classification. In Table 7, we find that the ownership of Korean blockholders is negatively associated with three earnings management measures. The results are consistent with the those of Table 4 supporting that the geographical proximity of institutional investors is an important determinant in earnings management of cross-listed Korean firms.

4.5.3. Controlling for Corporate Governance

Our main findings may not be free from correlated omitted variable issues. Several other factors (e.g., corporate governance, board or audit committee characteristics, internal control systems, and auditor characteristics) may affect the relationship between institutional ownership and earnings management. Further, it is possible that cross-listed firms naturally have sound financial reporting compared to other firms. To ensure that our findings are not driven by the above factors, we control for the general corporate governance index of the cross-listed Korean companies.

Specifically, we utilize the corporate governance score (CGS) data constructed by the Korea Corporate Governance Service (KCGS). The KCGS annually reviews companies' governance ratings using disclosure materials, sustainability reports, media reports, and government agency data, goes through corporate feedback procedures, and announces revised data. The CGS offers a comprehensive matrix of corporate governance practices based on firm-level evaluation reports comprising public

Table 7. Impact of proximity of institutional blockholdings on earnings management.

Variable	EM1	EM2	EM3
Intercept	1.3784	0.0774***	−0.7645
	(1.14)	(5.46)	(−1.00)
Block IO_KOR$_{t-1}$	−0.0549**	−0.0615***	−0.0151*
	(−2.13)	(−2.67)	(−1.95)
Block IO_US$_{t-1}$	−0.0456	0.0135	−0.0853*
	(−0.83)	(0.19)	(−1.87)
Block IO_OTH$_{t-1}$	0.0131	0.0412	−0.0313
	(1.21)	(0.61)	(−1.08)
NonBlock IO_KOR$_{t-1}$	0.0521	0.0229	0.0224
	(1.11)	(1.21)	(0.35)
NonBlock IO_US$_{t-1}$	0.0411	0.0542	−0.0187
	(0.57)	(0.23)	(−1.09)
NonBlock IO_OTH$_{t-1}$	−0.098	0.0566	−0.0342
	(−0.81)	(0.76)	(−0.71)
Asset$_{t-1}$	−0.0020	0.0002	0.0863
	(−0.18)	(0.06)	(1.27)
DOE$_{t-1}$	−2.8536	−0.0528	0.0361
	(−1.02)	(−0.78)	(0.13)
ROA$_{t-1}$	−1.7810	0.0355	−0.0632
	(−0.68)	(0.81)	(−0.22)
MB$_{t-1}$	0.0064	0.0005	0.0017
	(1.05)	(1.12)	(0.42)
Sales_G$_{t-1}$	0.0056	0.0162*	0.0365
	(0.23)	(2.05)	(1.35)
STD_Sales$_{t-1}$	−0.0000*	−0.0000	0.0001
	(−1.74)	(−0.80)	(1.03)
STD_OCF$_{t-1}$	−0.7808	−0.1249	−1.1253
	(−1.63)	(−1.52)	(−1.08)
Firm_Age$_{t-1}$	−0.2596	0.0263	0.2183
	(−0.90)	(1.61)	(0.75)
RND_Exp$_{t-1}$	2.0110	−0.0394	0.9903
	(1.33)	(−0.90)	(0.97)
HHI	−0.1378*	0.0100***	0.4149
	(−1.91)	(3.39)	(0.96)
Adjusted R^2	0.0612	0.1244	0.1604
Observations	1,217	1,217	1.217

Notes: This table shows the estimated results of regressing the institutional blockholdings (nonblockholdings) decomposed by proximity on the earnings management. *t*-statistics are parentheses and adjusted for Newey and West's (1994) autocorrelations with three lags. ***,**, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

announcements, regulatory filings, and surveys. The score consists of the following six aspects of corporate governance: shareholder rights, board quality, information disclosure practices, audit quality, treatment of managerial negligence, and other negative factors. A firm with a high CGS is considered well-governed. We re-estimate the regressions after adding the CGS variable in the models in Table 4 and provide the results in Table 8. We lose some observations that do not have the governance variables and the sample size becomes 934. We find that the coefficient on CGS is negatively related to earnings management variables. The coefficients are statistically significant at the conventional level. This implies that the corporate governance aspects are important factors in determining earnings quality. More importantly, we find that the main findings do not alter even after controlling for the CGS variable. The evidence in Table 8 suggests that our main results are robust from the potential omitted variable issue.

4.5.4. Endogeneity Issue: Instrumental Variables Approach

In this subsection, we address the potential endogeneity issues by adopting an instrumental variable approach similar to that of Appel, Gormley, and Keim (2016), who examine the causal effect of institutional ownership on firm outcomes. In their setting, the bottom stocks in the Russell 1000

Table 8. Impact of proximity of institutional ownership on earnings management: Controlling for corporate governance effects.

Variable	EM1	EM2	EM3
Intercept	1.3784	0.0774***	−0.7645
	(1.14)	(5.46)	(−1.00)
IO_KOR_{t-1}	−0.0212**	−0.0493**	−0.0124*
	(−2.27)	(−2.31)	(−1.97)
IO_US_{t-1}	0.0411	0.0542	−0.0187
	(0.57)	(0.23)	(−1.09)
IO_OTH_{t-1}	−0.098	0.0566	−0.0342
	(−0.81)	(0.76)	(−0.71)
CGS_{t-1}	−0.0312**	−0.0201*	0.0123*
	(2.01)	(−1.89)	(−1.95)
$Asset_{t-1}$	−0.0040	0.0012	0.0871
	(−0.31)	(0.52)	(1.31)
DOE_{t-1}	−0.0743	−0.0818	0.1314
	(−0.71)	(−0.85)	(0.42)
ROA_{t-1}	0.7664	−0.0023	−0.0279
	(1.54)	(−0.10)	(−0.10)
MB_{t-1}	0.0066	0.0006	0.0038
	(1.16)	(1.52)	(0.81)
$Sales\_G_{t-1}$	−0.0079	0.0180*	0.0768*
	(−0.18)	(2.04)	(1.78)
STD_Sales_{t-1}	−0.0000*	−0.0000	0.0001
	(−1.74)	(−0.63)	(1.05)
STD_OCF_{t-1}	−0.8467	−0.0656	−0.9073
	(−1.53)	(−1.01)	(−0.78)
$Firm\_Age_{t-1}$	−0.3677	0.0367	0.3779
	(−1.25)	(1.18)	(1.33)
RND_Exp_{t-1}	1.9887	−0.0518	1.0175
	(1.30)	(−1.48)	(0.77)
HHI	−0.1477*	0.0109**	0.4531
	(−1.97)	(2.38)	(0.86)
Adjusted R^2	0.0566	0.0823	0.0712
Observations	934	934	934

Notes: This table shows the estimated results of regressing the institutional ownership decomposed by proximity on the earnings management. *t*-statistics are in parentheses and adjusted for Newey and West's (1994) autocorrelations with three lags. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

naturally have lower institutional ownership levels than the top stocks in the Russell 2000 owing to the value-weighted index tracking used by institutions. Therefore, the variation in institutional ownership level is considered as exogenous. For our analysis, we use an similar identification strategy by exploiting the KOSPI 100 and KOSPI 200 indices. Because the 100 stocks included in the KOSPI 100 have the larger market capitalizations of the 200 stocks included in the KOSPI 200, institutions benchmarking the two indices place a larger weight on KOSPI 100 stocks than on other KOSPI 200 stocks, leading to exogenous variations in institutional ownership between the two groups of stocks.

Based on this identification strategy, we calculate instrumented institutional ownership as follows:

$$(Institutional\ Ownership)_{i,t} = \alpha + \beta_1 \cdot KOSPI100_{i,t} + \beta_2 \cdot Log(SIZE)_{i,t} + \beta_3 \cdot Year\ Dummy_t + \varepsilon_{i,t},$$

where $KOSPI100_{i,t}$ is an indicator variable taking a value of "1" if firm i is a member of the KOSPI 100 index in year t (the index is reconstituted annually in June) and $\log(SIZE)_{i,t}$ is the natural logarithm of the average daily market capitalization over one year ending in June in year t. Institutional ownership variables are measured at the end of September in year t.

Since we constrain the sample within the firms indexed in KOSPI 200, we lose substantial observations in sample, which in turn the cross-sectional regression approach is not feasible. Instead, we perform two-stage least squares regression using instrumented institutional ownership. We specifically follow the approach of Appel, Gormley, and Keim (2016) and, do not include other

Table 9. Endogeneity test: Instrumental variable approach.

Variable	EM1	EM2	EM3
Intercept	1.3784	0.0774***	−0.7645
	(1.14)	(5.46)	(−1.00)
Instrumented IO_KOR$_{t-1}$	−0.0335**	−0.0724**	−0.0125*
	(−2.25)	(−2.31)	(−1.91)
Instrumented IO_US$_{t-1}$	0.0395	0.0982	−0.0464
	(1.01)	(0.99)	(−0.12)
Instrumented IO_OTH$_{t-1}$	−0.1256	0.0646	0.0125
	(−1.03)	(0.88)	(0.05)
Asset$_{t-1}$	−0.0020	0.0002	0.0863
	(−0.18)	(0.06)	(1.27)
DOE$_{t-1}$	−2.8536	−0.0528	0.0361
	(−1.02)	(−0.78)	(0.13)
ROA$_{t-1}$	−1.7810	0.0355	−0.0632
	(−0.68)	(0.81)	(−0.22)
MB$_{t-1}$	0.0064	0.0005	0.0017
	(1.05)	(1.12)	(0.42)
Sales_G$_{t-1}$	0.0056	0.0162*	0.0365
	(0.23)	(2.05)	(1.35)
STD_Sales$_{t-1}$	−0.0000*	−0.0000	0.0001
	(−1.74)	(−0.80)	(1.03)
STD_OCF$_{t-1}$	−0.7808	−0.1249	−1.1253
	(−1.63)	(−1.52)	(−1.08)
Firm_Age$_{t-1}$	−0.2596	0.0263	0.2183
	(−0.90)	(1.61)	(0.75)
RND_Exp$_{t-1}$	2.0110	−0.0394	0.9903
	(1.33)	(−0.90)	(0.97)
HHI	−0.1378*	0.0100***	0.4149
	(−1.91)	(3.39)	(0.96)
Adjusted R^2	0.0335	0.0893	0.0783
Observations	132	132	132

Notes: This table shows the estimation results from the instrumented institutional ownerships decomposed by proximity on earnings management. *t*-statistics are in parentheses and computed using standard errors that are adjusted for firm clustering. ***, **, and * denote significance at the 1%, 5%, and 10% levels, respectively.

controls besides the ones above in the first-stage regression model. The second stage regression results are reported in Table 9. We find that the coefficients on the predicted IO_KOR are negative and significant. Similar with the results in Table 4, the coefficients on instrumented IO_US and IO_OTH are insignificant. Overall, we continue to find that Korean institutional investors reduce the cross-listed firms' earnings management.

5. Conclusion

In this paper, we aim to provide a new insight to understand the mixed results arise from the conflation of geographic proximity and market proximity. Using cross-listed Korean firms, we are able to differentiate between the two elements of proximity, and directly compare their influence on monitoring performance. Our main finding is that only Korean institutional investors are negatively associated with firms' earnings management while there is no statistically significant relationship between the US institutional ownership and earnings management. The evidence suggests that geographic proximity is a better determinant in earnings management relative to market proximity. Furthermore, we find that the advantage of geographic proximity is stronger for firms with high information opacity. We additionally show that the choice of alternative earnings quality measures does not alter the results.

Our findings help to reconcile the inconclusive evidence on the monitoring performance of domestic versus foreign institutions. It also provides important implications for the global asset allocation problem: institutions that value performance over diversification should primarily consider domestic stocks traded in domestic markets where institutions' geographic and market proximities coexist.

While there are other forms of earnings quality proxies commonly used in the US studies, we have not examined all possible earnings management proxies due to data limitations. Future research can examine the effects of geographical and market proximities on information intermediaries such as auditors or financial analysts. For example, it may be interesting to investigate whether the monitoring effects of the two proximities can be a substitute or complement in audit quality and whether they can improve the analyst forecast properties. Further, future research can examine how the two proximities affect Korean cross-listed firms' ESG (Environment, Social, and Governance) performance and tax avoidance activities as institutional investors access and value companies on ESG activities.

Notes

1. For example, foreign institutions from developed countries may have more experience with capital markets than domestic institutions in developing countries.
2. This study defines a cross-listing as the listing of a non-US firm's shares on US stock exchanges. Cross-listing differs from dual-listing, where a firm's shares are simultaneously listed on the stock exchanges of two countries.
3. US institutions with $100 million or more in managed equity assets must report their holdings quarterly to the SEC quarterly. Non-U.S. institutions are not subject to this requirement; as such, their reporting frequency ranges from quarterly to multi-annual.
4. For reporting gaps of more than three years, we do not backfill missing data to ensure data integrity.
5. We omit the control variables in Table 2 for brevity. A correlation table that includes the control variables is available upon request. The control variables show largely significant correlations with at least one of the earnings management variables.
6. For computation, the coefficients for IO_KOR on EM1, EM2, and EM3 are −0.0287, −0.0671, and −0.0131, respectively, and are multiplied by the standard deviation of IO_KOR (0.0532).
7. In an unreported robustness test, we re-estimate Table 4 using the independent variables obtained in year $t - 1$ and the dependent variables estimated from year t to t +4. This alternative time alignment of the variables does not materially change our baseline results.
8. For example, among the institution – firm observations, only 5% of the sample have an ownership level greater than 5%, a cutoff often used to identify blockholders.
9. We also test panel regression estimation approach with the inclusion of firm and year fixed effects (Petersen 2009). The results are qualitatively similar to those based on the cross-sectional estimation. In addition, to ensure that that our main findings in Table 4 are not disturbed by the multicollinearity issue, we conduct the variance inflation factor (VIF) test to examine whether there is a significant collinearity among dependent variables in Table 4. We find that the VIF value turns out to be 2.15. Since it is commonly accepted that multicollinearity is not serious if the value is less than 5, we believe that our main findings are not disturbed by the multicollinearity issue. Though unreported for brevity, the results are available upon request.
10. We test the statistical significance of the difference in coefficients for IO_KOR between the two subgroups by employing the Wald test that simultaneously estimates the models for top and bottom R&D expense firms. We find that the magnitude differences in the coefficients of IO_KOR between both firm groups are statistically significant at the 5% level or better. The results are available upon request.
11. As a robustness check, we also construct an earnings management measure using the methodology proposed by Kothari, Leone, and Wasley (2005). In unreported results, our main results remain unchanged. The results are available upon request.
12. Earnings persistence may reflect income smoothing, which is a form of earnings management. We address this by constructing an income smoothing measure using the methodology presented in Kothari, Leone, and Wasley (2005). Our results (not reported) show a strong effect of domestic institutional ownership on earnings persistence when controlling for income smoothing, suggesting that although earnings persistence and income smoothing may co-exist, their connotations and relations to institutional monitoring differ.

Disclosure Statement

No potential conflict of interest was reported by the author(s).

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APPENDIX

Definitions of variables used in tables.

Variable	Definitions
IO_Total	Total institutional ownership. The ownership is aggregated in firm-quarter frequency.
IO_KOR	Ownership of the institutions domiciled in Korea
IO_US	Ownership of the institutions domiciled in the US
IO_OTH	Ownership of the institutions domiciled in neither Korea nor the US
EM1	The absolute value of performance-adjusted discretionary accruals, calculated as the total current accruals minus the expected performance-adjusted accruals (Ashbaugh, LaFond, and Mayhew 2003; Chaney, Faccio, and Parsley 2011). The total current accruals (*ACC*) are calculated as follows: $ACC_{it} = (\Delta CA_{it} - \Delta CL_{it}) - (\Delta Cash_{it} - \Delta STD_{it} + \Delta DEP_{it})$, where *CA*: Total current assets *CL*: Total current liabilities *Cash*: Cash and cash equivalents *STD*: Short-term debt included in current liabilities *DEP*: Depreciation and amortization expenses, and Δ, *i*, and *t* denote the first-difference operator, firm, and calendar year, respectively. To compute expected performance-adjusted accruals, we estimate the following regression: $ACC_{ijkt} = \beta_0 + \beta_1 \frac{1}{TA_{ijkt-1}} + \beta_2 \frac{\Delta Sales_{ijkt}}{TA_{ijkt-1}} + \beta_3 ROA_{ijkt-1} + \beta_4 Inflation_{kt-1} + \beta_5 GDP\_growth_{kt-1} + \varepsilon_{ijkt}$, where *TA*: Total assets, Sales: Net sales *ROA*: Earnings before extraordinary items over total assets for firm *i* operating in industry *j* (based on the two-digit SIC codes) *Inflation*: Inflation *GDP_growth*: Real per capita GDP growth
EM2	The absolute value of discretionary accruals. It is the difference between total current accruals (*ACC*) and the expected accruals. The expected accruals is estimated using the nonlinear cash flow model (Ball and Shivakumar 2006). To obtain the expected accruals, we estimate the following regression: $ACC_{it} = \beta_0 + \beta_1 CF_{it} + \beta_2 DCF_{it} + \beta_3 (DCF_{it})(CF_{it}) + \varepsilon_{it}$, where CF: Operating income minus accruals DCF: A dummy variable that equals one if CF is less than zero, and zero otherwise.
EM3	The magnitude of accruals following Leuz, Nanda, and Wysocki (2003): $EM3 = \left\| ACC_{it}/TA_{it-1} \right| / \left| CF_{it}/TA_{it-1} \right|$, where ACC: Total accruals *TA*: Total assets *CF*: Operating income minus accruals
Asset	The natural logarithm of a firm's total assets
Block IO_KOR	Ownership of blockholders domiciled in Korea. We follow Chen, Harford, and Li (2007) and define an institutional investor as a blockholder if at least one of the following conditions are met: (1) holds at least 5% of the shares outstanding at the end of a given quarter, (2) holds at least 5% of the shares outstanding for the previous year, and (3) is classified as a dedicated or quasi-indexing institution (Bushee 2001).
Block IO_US	Ownership of blockholders domiciled in the US.
Block IO_OTH	Ownership of blockholders domiciled in neither Korea nor the US.
CGS	Corporate governance score (CGS) provided by the Korea Corporate Governance Service (KCGS).
DOE	Total debt scaled by the market value of equity
Firm_Age	The natural logarithm of the number of years since a firm was established
HHI	Herfindahl – Hirschman Index based on the two-digit SIC code
MB	The sum of the market value of equity, long-term debt, and short-term debt scaled by total assets
NonBlock IO_KOR	Ownership of nonblockholders domiciled in Korea.
NonBlock IO_US	Ownership of nonblockholders domiciled in the US.
NonBlock IO_OTH	Ownership of nonblockholders domiciled in neither Korea nor the US.

(*Continued*)

Variable	Definitions
Persistence	Earnings persistence. Following Ali and Zarowin (1992) and Francis et al. (2004), we compute the earnings persistence using the autoregressive model of order one (AR1): $X_{i,t} = \emptyset_{0,i} + \emptyset_{1,i} X_{i,t-1} + v_{i,t}$ where $X_{i,t}$: Earnings per share of firm i in year t and is computed as the net income to the weighted average number of outstanding shares. We use time-series data on earnings per share over the five years from years $t-4$ to t and derive the model coefficients for each firm-year by rolling the data window forward one year at a time. The coefficient $\emptyset_{1,i}$is the earnings persistence.
ROA	Earnings before interest and taxes (EBIT) scaled by total assets
RND_Exp	R&D expenditures scaled by total assets
Sales_G	Sales in year t minus sales in year t-1 scaled by sales in year t-1.
STD_Sales	The standard deviation of sales scaled by total assets over five years from year $t-4$ to year t
STD_OCF	The standard deviation of operating cash flows scaled by total assets over five years from year $t-4$ to year t
Timeliness	We measure timeliness as follows: $NI_{i,t} = \alpha_{0,i} + \alpha_{1,i} NET_{i,t} + \alpha_{2,i} RET_{i,t} + \alpha_{3,i} NET_{i,t} \times RET_{i,t} + \varepsilon_{i,t}$ where $NI_{i,t}$: Net income of firm i in year t scaled by the market value of equity at year $t-1$. $RET_{i,t}$: 15-month cumulative return of firm i from the beginning of year t to the end of March in year t+1. $NET_{i,t}$: A dummy variable that takes a value of one if $RET_{i,t} < 0$ and zero otherwise. We use the time-series data over five years from years $t-4$ to t and compute the adjusted R^2 of the above reverse-regression equation for each firm-year in year t as a proxy for timeliness (Ball, Kothari, and Robin 2000; Bushman et al. 2004).
Valuerelevance	We estimate value relevance as follows: $ARET_{i,t} = \alpha_0 + \alpha_1 NI_{i,t} + \alpha_2 LOSS_{i,t} + \alpha_3 NI_{i,t} \times LOSS_{i,t} + \alpha_4 \Delta NI_{i,t} + \varepsilon_{i,t}$ where $ARET_{i,t}$: Cumulative market-adjusted excess return of firm i in year t $NI_{i,t}$: Net income of firm i in year t scaled by the market value of equity at the end of year $t-1$ $LOSS_{i,t}$: A dummy variable that takes a value of one if the net income of firm i in year t is less than zero and zero otherwise. $\Delta NI_{i,t}$: The change in $\Delta NI_{i,t}$ We run a cross-sectional regressions to derive the residuals for each firm-year and then multiply the squared residuals by −1.