Are foreign institutional investors long-term investors?: Korean evidence

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Abstract

There has been limited research on the incentives foreign institutional investors face in foreign markets. We investigate whether foreign institutional investors are long term investors using the Korean stock market data. We measure the influence level of foreign institutions using the trading share of foreign institutions in the total trading volume of a firm as well as ownership of foreign institutions. We find a positive relationship between the influence level of foreign institutional investors and opportunistic earnings management. This result suggests that they have a short investment horizon and seek information-based trades. We also find that the positive relationship between foreign institutional investors and earnings management intensifies during periods of low market growth, and in firms with lower managerial ownership or firms unaffiliated with large conglomerates. These findings suggest that monitoring incentive and investment horizon of foreign institutional investors depend on economic environment, market growth and corporate governance characteristics in emerging markets.

Keywords: foreign institutional investors, investment horizon, opportunistic earnings management, market growth, corporate governance characteristics

JEL Classification: G14, G24, M41

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1. Introduction

Studies that investigate advanced capital markets find that institutional investors which hold large blocks of firms' common shares play a monitoring role by restraining opportunistic earnings management by management (Bushee 1998; Chung, Firth and Kim 2002; Hartzel and Starks 2003). However, some studies point out that institutional investors with short-term orientation may not act as monitors; instead, they may pressure firms' management to pursue short-term performance (Bushee 1998: Koh, 2003; Burns, Kedia and Lipson 2010; Velury and Jenkins 2006). Thus, these studies suggest that there may be a tight relationship between the investment horizon and monitoring effect of institutional investors.

While there is a growing body of studies that examine the incentives that domestic institutional investors face, research on the incentives that foreign institutional investors face in foreign markets has been very limited. Using Korean data, our study investigates empirically whether foreign institutional investors (international institutional investors) perform a monitoring role with a long-term perspective by suppressing opportunistic earnings management or pursue informed trading by either condoning or encouraging opportunistic earnings reporting. It is likely that emerging markets differ from advanced markets in respect to ownership structure, degree of information asymmetry, rationality of investors, market risk, characteristics of institutional investors, laws and regulations among others. The differences in market environment may bring about different investment objectives, investment time horizon and portfolio composition, which in turn may cause difference in monitoring incentive across institutional investor types. Therefore, taking advantage of Korean market data, which distinguish between trading activities by foreign and domestic institutional investors, we examine whether foreign and domestic institutional investors face different monitoring incentives.

This study has two objectives. First, by exploring the relationship between influence level and opportunistic earnings management, we investigate whether foreign instructional

investors act as monitors reducing information asymmetry about firms or pursue informed trades taking advantage of information asymmetry about firms. Unlike domestic institutional investors who tend to make investment decisions at the firm level, foreign institutional investors are able to make investment decisions at the market level. Therefore, if the Korean capital market offers greater economic reward for monitoring activities and presents lower monitoring costs than other markets, foreign institutional investors have an incentive to hold their equity positions longer and monitor the firms more actively in the Korean capital market. By contrast, if the Korean capital market offers less economic reward for monitoring activities and presents higher monitoring costs than other markets, foreign institutional investors have an incentive to pursue short-term profits by engaging in informed trading in the Korean stock market. From this perspective, we interpret the negative relationship between influence level of foreign institutional investors and opportunistic earnings management as evidence that foreign institutional investors play a monitoring role mitigating managerial myopia. In contrast, if the relationship between influence level of foreign institutional investors and opportunistic earnings management is positive, we infer that foreign institutional investors pursue short-term profits by overlooking or encouraging short-term oriented managerial behavior. That is, we evaluate indirectly intentions that foreign institutional investors have for holding equity positions in portfolio firms.

Second, we investigate factors that affect the monitoring effect or incentive for informed trading by foreign institutional investors. We expect that the monitoring effect or incentive for informed trading by foreign institutional investors depends on (i) economic environment of host (or investment target) countries, (ii) economic reward from monitoring or informed trading activity, (iii) costs of monitoring or informed trading activity. Specifically, we expect that active monitoring by foreign institutional investors will be observed in countries that offer structural environment amenable to long term investment, and in conditions conducive to reaping large reward from monitoring activities and face limited monitoring costs. By contrast, we expect that incentive for engaging in informed trading by foreign institutional investors will be observed in countries that offer structural environment inadequate for long term investment, and in conditions conducive to realizing poor reward from monitoring activities and face excessive monitoring costs. We use market growth and corporate

governance characteristics as proxies for monitoring benefits and costs and analyze whether the relationship between influence level of foreign institutional investors and earnings management on the proposed factors.

We investigate the monitoring effect of foreign institutional investors in Korean capital market for the following reasons. First, the Korean stock market have features that are unique and not found in advanced stock markets. (i) Korea is considered to be a civil law based-country, which is known to provide limited legal protection for investors compared to common law-based countries. (ii) Large conglomerates with many affiliate firms exist in which dominant shareholders influence, govern and manage the group firms by using affiliated firms. Their presence in the economy may contribute to increasing monitoring costs. (iii) Individual investors occupy a large share of trading activities as they have ready access to stock markets through advanced information technology infrastructure. The active stock market participation of individual investors facilitates sophisticated institutional investors with information advantage to materialize short-term profits. (iv) Additionally, Korean economy has a high export dependency, thus very sensitive to changes in international environment leading to a high systematic risk. Therefore, foreign institutional investors may be at an informational advantage relative to domestic investors as they are likely to have better access to information of global nature. The attributes discussed above may influence investment horizon and monitoring incentive of foreign institutional investors causing them to act differently in the Korean capital market than in advance capital markets.

Second, the institutional investors occupy a significant position in the Korean market compared to other emerging markets. Since the early 2000s they have been consolidating their place in the market experiencing cycles of expansion and stagnation. Therefore, we expect that the Korean capital market will serve as a useful venue to investigate the relationship between the market growth prospect and institutional monitoring. Furthermore, one can readily distinguish between domestic and foreign institutional investors in the Korean capital market. Since 2000s when the Korean capital market was opened, trading volumes for individual investors, domestic institutional investors and foreign investors are disclosed separately. The disclosure of trading volumes for various investor types in the Korean capital market makes it possible to measure the influence level of investor groups using their trading

shares. Furthermore, it offers a distinct advantage in studying the monitoring effect of domestic and foreign institutional investors compared with countries where the disclosure of institutional investors' trading information is not disaggregated,

We investigate whether foreign institutional investors are monitors or informed traders using the relationship between their influence level on firms and firms' opportunistic earnings management. We measure the foreign institutional investors' influence level in a given firm-year by dividing their total annual trading volume with the total annual trading volumes of all investors. Here we assume that the trading share of foreign institutional investors is an indicator of their influence on firms. As a supplementary measure of influence level, we also use the combined ownership of institutional blockholders where blockholders are defined as those shareholders with more than 5% of the firm's common stock.

On the other hand, to measure managerial short-term orientation, we use four measures of earnings management widely used in the accounting literature. Namely, they are (i) performance-adjusted discretionary accruals (Kothari et al. 2005), (ii) discretionary accruals adjusted with asymmetric conservatism (Ball and Shivakumar 2006), (iii) level of earnings smoothing (Leuz et al. 2003), and (iv) quality of discretionary accruals (Francis et al. 2005). We analyze the effect of two measures of influence level of foreign institutional investors on four measures of earnings management.

From the empirical study, we document the following. We find that there is a positive and statistically significant relationship between the influence level of foreign institutional investors and earnings management. In contrast, the relationship between the influence level of domestic institutional investors and earnings management is not statistically significant. Moreover, the positive and statistically significant relationship between the influence level of foreign institutional investors and earnings management is more acute during periods of low market growth. Furthermore, the positive and statistically significant relationship between the influence level of foreign institutional investors and earnings management observed during periods of low market growth is found primarily in forms with low managerial ownership and firms not affiliated with large conglomerates. These results suggest that foreign institutional investors are more likely to pressure firms that present them with lower influence costs. It is then possible that, using the information advantage in the market that foreign institutional

investors gain by causing these firms to pursue short-term performance, they realize short-term gains from informed trading.

We document that foreign institutional investors have incentive for short-term investment and their short-term investment orientation is more pronounced during periods of limited market growth and in firms with corporate governance characteristics that are more conducive to their influencing activities. Following the introduction in section 1, we present literature review and hypotheses development in section 2. We discuss measurement methods of key variables in section 3 and show empirical results in section 4. We present concluding remarks in section 5.

2. Literature review and hypotheses development

2.1 Investment horizon and monitoring effect of institutional investors

Institutional investors with large block ownership may influence firms either to create value taking a long-term perspective or to make short-term oriented decision-making to facilitate institutional investors' rent-seeking (Bushee 1998). Given the conflicting interest of institutional investors, researchers have examined empirically whether institutional investors inhibit or encourage managerial opportunism. Overall findings indicate that institutional investors with long investment horizon play a monitoring role mitigating opportunistic earnings management. On the other hand, some studies report that institutional investors with short investment horizon may pressure firms to pursue short-term performance goals and institutional investors engage in informed trading to profit from information asymmetry. The majority of studies indicate that institutional block investors tend to have long term investment horizon and are willing to exert influence to curb short-term orientation of management that includes earnings management, reduction of R&D expenditures among others (Bushee 1998; Chung, Firth and Kim 2002). Bushee (1998) reports that institutional investors with long investment horizon show greater monitoring effect than institutional investors with short investment horizon. In addition, Chung, Firth and Kim (2002) find that the larger the ownership of institutional investors is, the more institutional investors are able

to suppress earnings management that manipulates earnings up or down to meet earnings targets set by managers. Moreover, Hartzel and Starks (2003) report that institutional investors reduce agency problems between shareholders and managers by monitoring executive compensation decisions.

In contrast, some studies report that institutional investors with short investment horizon may overlook or encourage opportunistic earnings management and profit from informed trading using the temporary information asymmetry created through the opportunistic earnings management. Koh (2003) finds that the relationship between ownership of institutional investors and discretionary accruals is non-linear. Institutional investors with transient or short-term orientation induce managers to engage in opportunistic earnings management while institutional investors with long-term orientation limit managers' incentives to engage in opportunistic earnings management. Burns, Kedia and Lipson (2010) find a positive relationship between ownership of institutional investors and financial misreporting. They report that this effect is more pronounced in firms characterized by high monitoring cost reducing institutional investors' monitoring incentive and it is found in cases where institutional investors are likely to liquidate their equity position in the firms right after the financial restatement. Velury and Jenkins (2006) shows that concentrated institutional ownership can have a negative effect on the earnings quality. Maffett (2012) report that informed trading by international institutional investors is more severe if transparency of financial information is lower at both the firm and country level. He reports also that the negative relationship between informed trading by international institutional investors and transparency of financial information is more evident for transient institutional investors than dedicated institutional investors. Overall evidence of the literature indicates that the monitoring effect of institutional investors depends on the objective of equity ownership by institutional investors.

2.2 Influence of investment horizon, market growth and corporate governance characteristics on the monitoring and informed trading by institutional investors

Figure 1 shows the expected relationship between the influence level of foreign institutional investors and earnings management depending on three factors of monitoring

and informed trading by institutional investors. The first factor is investment environment at the country level. Maffett (2012) argues that international institutional investors have greater incentive for long-term investment in countries with high transparency thus are less likely to engage in informed trading while they are more likely to pursue short-term investment, thus, engage in informed trading in countries with low trenchancy. Findings of Maffett (2012) suggest that foreign institutional investors have a strong incentive to monitor firms in countries with information environment conducive to long-term investment, while they are likely to engage in informed trading in countries with information environment not conducive to long-term investment. For Panel A we assume that foreign institutional investors have a long term investment horizon in Korea. It shows the expected influence of three proposed factors on the monitoring effect as shown in the relationship between the influence level of foreign institutional investors and earnings management. For Panel B we assume that foreign institutional investors have a short term investment horizon in Korea. It shows the expected influence of three proposed factors on the informed trading as shown in the relationship between the influence level of foreign institutional investors and earnings management. We interpret the negative relationship between the influence level of foreign institutional investors and earnings management as evidence of monitoring effect and the positive relationship as evidence of informed trading.

The second factor is market growth. As the economic gain by foreign institutional investors from long-term investment is likely to increase with expected market growth, monitoring incentive is greater and informed trading incentive is lower during periods of high market growth than in periods of low market growth. In this way, market growth prospect can affect monitoring incentive and/or informed trading incentive. Therefore, we divide the sample period into the high and low market growth periods and study the monitoring and informed trading effects between two periods. We expect that monitoring incentive (informed trading incentive) is greater (less) during the high market growth period than the low market growth period.

The third factor is costs of monitoring (or costs of informed trading). Incentive for monitoring or informed trading is likely to decrease with costs that institutional investors incur in influencing firms. Costs of influencing managers of firms with high managerial

ownership are likely to be higher than firms with low managerial ownership. We also expect that foreign institutional investors' costs in influencing firms affiliated with large conglomerates controlled by dominant shareholders are likely to be higher than non-affiliated firms. Therefore, we use managerial ownership and firms' affiliation status with large conglomerates as measures of monitoring or informed trading costs.

Case 3 in Panel A corresponds to long-term investment horizon of foreign institutional investors, large economic benefits from monitoring and low monitoring costs. We expect a strong monitoring incentive represented by a strong negative relationship between influence level of foreign institutional investors and earnings management. In contrast, Case 8 in Panel B corresponds to short-term investment horizon of foreign institutional investors, small economic benefits from monitoring and low informed trading costs. We expect a strong informed trading incentive represented by a strong positive relationship between influence level of foreign institutional investors and earnings management. In this way, our study sheds light on the investment motivation of foreign institutional investors and factors that affect their motivation.

[Insert Figure 1 about here]

2.3 Research hypotheses

We formulate hypotheses based on the discussions shown in Figure 1. First, we analyze the relationship between the influence level of institutional investors and earnings management. We use trading volume data to measure the influence level of institutional investors. We also use the combined ownership of institutional blockholders as a supplementary measure of the influence level of institutional investors.

On the other hand, we use various measures of earnings management as a proxy of managerial opportunism. The measures we adopt for this study are (i) performance-adjusted discretionary accruals (Kothari et al. 2005), (ii) discretionary accruals adjusted with asymmetric conservatism (Ball and Shivakumar 2006), (iii) level of earnings smoothing (Leuz et al. 2003), and (iv) quality of discretionary accruals (Francis et al. 2005). If the

relationship between the influence level of institutional investors and earnings management is negative (-), then we interpret the finding as evidence of monitoring effect, if it is positive (+), then we interpret it as evidence of informed trading. We propose the following hypothesis that tests whether institutional investors are monitors or informed traders in the Korean capital market

Hypothesis 1. There is a zero or positive relationship between the influence level of institutional investors and earnings management in the Korean capital market, ceteris paribus.

Second, we investigate whether the effect of institutional investors on earnings management depends on whether institutional investors are foreign or domestic. The representative hypotheses that explain the differential effect of foreign investors are information asymmetry hypothesis and knowledge spillover hypothesis. The information asymmetry hypothesis holds that foreign investors realize lower investment performance than domestic investors as foreign investors are at an informational disadvantage than domestic investors (Brennan and Cao, 1997; Dvorak, 2005). In contrast, according to the knowledge spillover hypothesis, the monitoring by foreign institutions leads to better investment performance because they have higher expertise and talent (Grinblatt and Keloharju, 2000).

Recent studies seem to suggest that the monitoring effect of foreign institutional investors are conditional. Maffett (2012) shows that informed trading by international institutional investors increases with the lack of transparency in financial reporting. Furthermore, he presents evidence that the negative relationship between the transparency in financial reporting and the informed trading of international institutional investors is more pronounced in transient group than in dedicated group. In addition, Fang, Maffett, and Zhang (2015) find that the US based institutional investors have the tendency to convert the financial reporting methods of emerging market firms to the US financial reporting methods, the greater their ownership in these firms. The enhanced comparability thus realized reduces the information asymmetry of foreign institutional investors and increase the possibility of

their informed trading based on their superior international information.

Recent studies that examine the Chinese markets show that foreign institutional investors are effective monitors. Firth et al. (2010) argue that domestic institutional investors are not able to play an active role in maximizing shareholder wealth in China where mutual funds are under strong government influence. Additionally, Huang and Zhu (2015) report that compared to domestic institutional investors, foreign institutional investors are under less government influence; as a consequence they exert a greater influence on firms that are controlled by dominant shareholders. Guo, Huang, Zhang and Zhou (2015) find that Japanese firms with greater foreign ownership engage in more limited earnings management. They point out that after the Big Bang Accounting Reform in Japan the knowledge spillover effect by foreign institutional investors has effectively controlled earnings management.

We expect that the following unique economic characteristics of Korea can affect the information horizon and monitoring incentive of foreign institutional investors and produce effects which are different from those observed in other countries. (i) Korea is a divided country in which war risk is present. Adding to this, Korean economy has high export dependency exposing it to high macroeconomic and systemic risk. These characteristics have the potential to discourage foreign institutional investors' long-term investment in Korea. (ii) many firms in Korea are a part of large conglomerates and the dominant shareholders of the conglomerates have the ability to exert control over affiliated firms. Moreover, as large conglomerates often have financial firms such as brokerage houses, asset management firms and insurance companies as member firms, the domestic institutional investors may act as friendly blockholders of the affiliated firms of large conglomerates. As this corporate governance structure can increase monitoring cost of foreign institutional investors, their incentive for monitoring may decrease. (iii) Korea has shifted from fast growth until the middle of the first decade of 2000 to more modest growth ever since. The low economic growth potential may diminish long-term monitoring incentive and increase short-term informed trading incentive of foreign institutional investors. (iv) The short-sale regulation on foreign investors is not as strict in Korea compared to the short-sale regulation on domestic investors causing most of short-sales trades to be conducted by foreign institutions. In particular, individual investors occupy a high proportion of trades in Korea, foreign

institutional investors have the potential to realize a large profit from informed trading. These regulatory environment may induce short-term investment behavior of foreign institutional investors. (v) most of foreign institutional investors active in the Korean capital market are mutual funds. Therefore, foreign institutional investors tend to be short investment time horizon and may pursue short-term information based trades rather than engaging in long-term monitoring activities.

We expect that foreign institutional investors have short-term investment horizon on average and are motivated for informed trading based on these market characteristics and the characteristics of foreign institutional investors active in Korea. To test this prediction, we formulate the following hypothesis.

Hypothesis 2. There is a positive relationship between the influence level of foreign institutional investors and earnings management in the Korean capital market, ceteris paribus.

Third, the decision whether foreign institutional investors will perform monitoring role from a long term perspective or pursue short-term profit-taking through informed trading depends on three factors, namely, structural environment of host country, market growth prospect and corporate governance characteristics. If host countries present environment amenable to long-term investment, foreign institutional investors are likely to perceive long-term monitoring incentive. The monitoring effect of foreign institutional investors will be enhanced when monitoring activities lead to greater economic gains and monitoring costs are moderate. In contrast, if host countries present environment not amenable to long-term investment, foreign institutional investors are likely to pressure firms to pursue short-term profits and engage in informed trading based on their superior information of the firms. The rent-seeking behavior of foreign institutional investors will be enhanced when informed trading activities lead to greater economic gains and informed trading costs are moderate.

We posit that market growth prospect and corporate governance characteristics are determinants of benefits from monitoring (benefits from informed trading) and monitoring

costs (costs of informed trading). Studies that examine the Chinese market, which has a high growth prospect, finds evidence of the monitoring effect of foreign institutional investors (Firth et al. 2010; Huang and Zhu 2015). Chung et al. (2019) report that market growth level influences the monitoring effort of institutional investors using the Korean market data. For this reason, we use market growth level as a measure of monitoring benefit (benefit from informed trading). As Korea shows relatively high market and economic growth before 2008 Global Financial Crisis and relatively low market and economic growth after 2008 Global Financial Crisis. Therefore, we define the pre-2008 period as high growth period and post-2008 as low growth period.

Monitoring costs (costs of informed trading) may depend on corporate governance characteristics of firms in which foreign institutional investors invest. The influencing costs are likely to increase with the managerial ownership and are likely to be higher in firms that are affiliated with large conglomerates. Large (small) influencing costs decrease (increase) long-term investors' monitoring incentive and short-term investors' informed trading incentive. For this reason, we expect that firms' corporate governance characteristics (managerial ownership and affiliation status with large conglomerates) reflect monitoring costs (informed trading costs).

Stated otherwise, we expect that the long-term monitoring incentive will be high during high market growth period in firms with low managerial ownership and non-affiliated with large conglomerates. In contrast, we expect that the short-term informed trading incentive will be high during low market growth period in firms with low managerial ownership and non-affiliated with large conglomerates. To test this prediction, we propose the following hypothesis.

Hypothesis 3. The positive relationship between the influence level of foreign institutional investors and earnings management in the Korean capital market is more pronounced during low market growth periods and in firms with low managerial ownership (or in firms unaffiliated with large conglomerates), ceteris paribus.

3. Variable measurements

3.1 Opportunistic earnings management

For this study, we measure managerial opportunism using accounting numbers. A large number of accounting studies hold the view that it is desirable for earnings to closely track cash flows. (Jones, 1991; Dechow et al., 1995; Dechow and Dichev, 2002; Leuz et al., 2003; Kothari et al., 2005; Francis et al. 2005; Ball and Shivakumr, 2006). Following this approach, we use four methods based on accruals to measure managerial opportunism. The first measure is performance-adjusted discretionary accruals proposed by Kothari et al. (2005). They adjust discretionary accruals with performance factors as discretionary accruals are influenced by firm performance. The second measure is proposed by Ball and Shivakumr, 2006, who take into consideration the observation that firms recognize gains and losses asymmetrically. The third measure is the ratio of volatility of earnings to that of cash flows, which measures earnings smoothing. The higher the volatility of earnings relative to the volatility of cash flow is, the lower is the earnings smoothing. The lower income smoothing implies higher probability that managers use earnings opportunistically. The last measure is the volatility of abnormal accruals proposed by Francis et al. (2005), who estimate abnormal accruals over a certain time period using the relationship between earnings accruals and cash flows. Next, we discuss the four measurement methods in greater detail.

(1) Absolute value of performance-adjusted discretionary accruals (Kothari et al., 2005)

We calculate the absolute value of performance-adjusted discretionary accruals based on Kothari et al. (2005) as follows. First, $ACCR_{j,t}$ is the total accruals of firm j in year t, which is obtained as net income in year t minus cash flows from operating activities in year t. $\Delta REV_{i,t}$ and $\Delta REC_{i,t}$ are change in revenue of firm i in year t and change in accounts

receivable of firm j in year t, respectively. $\Delta PPE_{i,t}$ refers to change in property, plant, and equipment of firm i in year t. $A_{i,t-1}$ is the total assets of firm i at the end of year t-1. We estimate Model (1) by year-industry using the standard industry classification code. Using the estimated Model (1), we obtain the accruals unaffected by earnings management (non-discretionary accrual, NDA). Then, we calculate the unexpected accruals by subtracting nondiscretionary accruals from the total accruals. In order to adjust the accruals with performance, we form five portfolios per industry using the return on assets and calculate the average unexpected discretionary accruals of each portfolio ($Matching\ UE_ACCR_{j,t}$). From the unexpected discretionary accruals of an individual firm we subtract the average unexpected discretionary accruals of the portfolio to which the firm belongs. We take the absolute value of this difference ($ABSDA_{j,t}_K$) and use it as the measure of earnings management. We interpret a higher value of this measure as indicating greater earnings management.

$$\frac{ACCR_{j,t}}{A_{j,t-1}} = \beta_1\left(\frac{1}{A_{j,t-1}}\right) + \beta_2\left(\frac{\Delta REV_{j,t} - \Delta AR_{j,t}}{A_{j,t-1}}\right) + \beta_3\left(\frac{\Delta PPE_{j,t}}{A_{j,t-1}}\right) + \varepsilon_{j,t} \tag{1}$$

$$NDA_{j,t} = \widehat{\beta_1}\left(\frac{1}{A_{j,t-1}}\right) + \widehat{\beta_2}\left(\frac{\Delta REV_{j,t} - \Delta AR_{j,t}}{A_{j,t-1}}\right) + \widehat{\beta_3}\left(\frac{\Delta PPE_{j,t}}{A_{j,t-1}}\right)$$

$$UE_ACCR_{j,t} = \frac{TACC_{j,t}}{A_{j,t}} - NDA_{j,t}$$

$$ABSDA_{j,t}_K = \left|UE_ACCR_{j,t} - Matching\ UE_ACCR_{j,t}\right|$$

(2) Absolute value of discretionary accruals adjusted with asymmetric conservatisms (Ball and Shivakumr, 2006)

We estimate Model 2 by year-industry and use the absolute value of the exanimated error to measure earnings management. $ACCR_{j,t}$ is the total accruals of firm j in year t, which is net income in year t less cash flows from operating activities in year t. $A_{i,t-1}$, $\Delta REV_{i,t}$, $\Delta REC_{i,t}$, and $\Delta PPE_{i,t}$ are total assets, change in revenue, change in accounts receivable, and change in tangible assets, respectively. $CFO_{j,t}$ is the operating cash flow of firm j in year t. $DCFO$ is a dummy variable taking the value of 1 if it is negative and 0, otherwise. Lastly, ε is the error term. We use the absolute value of the error term (*ABSDA_BS*) as the second measure of earnings management.

$$\frac{ACCR_{j,t}}{A_{j,t-1}} = \beta_1\left(\frac{1}{A_{j,t-1}}\right) + \beta_2\left(\frac{\Delta REV_{j,t} - \Delta AR_{j,t}}{A_{j,t-1}}\right) + \beta_3\left(\frac{\Delta PPE_{j,t}}{A_{j,t-1}}\right) + \beta_4\left(\frac{CFO_{j,t}}{A_{j,t-1}}\right)$$

$$+ \beta_5 DCFO_{j,t} + \beta_6\left(\frac{CFO_{j,t}}{A_{j,t-1}}\right) x DCFO_{j,t} + \varepsilon_{j,t} \tag{2}$$

$$ABSDA_{j,t}_BS = \left| \varepsilon_{j,t} \right|$$

(3) Earnings smoothing (Leuz et al., 2003)

Faced with temporary shocks in earnings, managers may smooth earnings by dampening fluctuations in earnings, which would enhance informativeness of earnings. In this regard, earnings smoothing can be interpreted as a measure of earnings quality (Chaney and Lewis, 1995; Demsky, 1998). Following Leuz et al. (2003) we regard cash flows as an indicator of unsmoothed earnings and use the ratio of the volatility of earnings to the volatility of cash

flows to measure earnings smoothing. We obtain the standard deviation of the ratio of earnings to assets as well as the standard deviation of the ratio of operating cash flows to assets for five years from year t-4 to year t. Then, we divide the former by the latter as shown in equation (3) to obtain the earnings smoothing measure. We interpret a lower value of the measure as indicating greater earnings smoothing.

$$Smoothness_{j,t} = \frac{\sigma(NI_{j,t})}{\sigma(CFO_{j,t})} \tag{3}$$

3.1.2. Measurement of discretionary accruals quality (Francis et al. 2005)

Francis et al. (2005) measure accruals quality in two steps. First, the abnormal accruals (v_{jt}) of firm *i* in year *t* is estimated using equation (4) at the year-industry level. Then, the standard deviation of the abnormal accruals of firm *i* in the five years preceding year *t* is calculated. Francis et al. (2004, 2005) define this standard deviation as the accruals quality (*AQ*) of firm *i* in year *t*. In Equation (4), TCA_{jt} is the total current accruals of firm *i* in year *t*. A_{jt} is the total assets of firm *j* in year *t* computed as the average of the total assets of year *t* and year *t*+1. CFO_{jt} is the cash flow of operating activities of firm *j* in year *t* in the statement of cash flows. $\triangle REV_{jt}$ is the revenues of firm *j* in year *t* minus the revenues of firm *j* in year *t*-1. PPE_{jt} is the net fixed assets of firm *j* at the end of year *t*, and v_{jt} is the error term of Equation (4).

$$\frac{TCA_{j,t}}{A_{j,t}} = \varphi_0 + \varphi_1 \frac{CFO_{j,t-1}}{A_{j,t}} + \varphi_2 \frac{CFO_{j,t}}{A_{j,t}} + \varphi_3 \frac{CFO_{j,t+1}}{A_{j,t}} + \varphi_4 \frac{\Delta REV_{j,t}}{A_{j,t}} + \varphi_5 \frac{PPE_{j,t}}{A_{j,t}} + \nu_{j,t} \tag{4}$$

$$AQ_{j,t} = \sigma(\widehat{v_{j,t}})$$

Francis et al. (2004, 2005) argue that the fundamental operating risk of a firm influences the volatility of abnormal accruals (*AQ*) therefore, all of it is not a measure of the managerial opportunism. For this reason, they decompose accruals quality into an innate risk factor, which is subject to the firm's fundamental operating risk, and a discretionary risk factor, which is due to managerial discretion. Similarly, we decompose accruals quality into innate accruals quality and discretionary accruals quality. Equation (5) shows the relationship between accruals (AQ_{jt}) and variables that express operating risk. We estimate the innate accruals quality (*InnateAQ*) of firm *i* in year *t* using the predicted value of Equation (5), and the discretionary accruals quality (*DiscAQ*) of firm *i* in year *t* using the error term. We interpret a higher value of discretionary accrual quality as indicating greater opportunistic earnings management.

$$AQ_{j,t} = \beta_0 + \beta_1 SIZE_{j,t} + \beta_2 \sigma(CFO)_{j,t} + \beta_3 \sigma(Sales)_{j,t} + \beta_4 OperCycle_{j,t} + \beta_5 NegEarn_{j,t} + \varepsilon_{j,t} \quad (5)$$

$$InnateAQ_{j,t} = \widehat{AQ_{j,t}}$$

$$DiscAQ_{j,t} = AQ_{j,t} - \widehat{AQ_{j,t}}$$

$SIZE_{jt}$ is the natural log of the market capitalization (millions of Korean won) of firm *j* at the end of year *t*. $\sigma(CFO)_{jt}$ is the volatility of cash flows, and is estimated as the standard deviation of operating cash flows scaled by total assets over five years from year *t*-4 to year *t*.

$\sigma(Sales)_{jt}$ is the volatility of sales, and is estimated as the standard deviation of sales scaled by total assets over five years from year *t*-4 to year *t*. $OperCycle_{jt}$ is the operating cycle, and is the natural log of the sum of the average recovery period of accounts receivable and the average recovery period of inventory. $NegEarn_{jt}$ is the frequency of loss, measured as the proportion of loss-making years over the 10 years preceding year *t*.

3.2 Influence level of foreign institutional investors

It is widely believed that institutional investors are able to monitor and even fire managers and influence their decision-making. Many researchers consider that their individual ownership or their collective ownership determine in part their influence level on firms' managers. Therefore, many preceding studies have used the institutional ownership as a measure of their influence level on target firms' managers. However, the total ownership of institutional investors in individual firms is not disclosed in Korea and the unavailability of the total institutional ownership has been an impediment in studying the monitoring effect of institutional investors. In this study, we propose two alternative measures of institutional ownership in order to overcome this data limitation.

The first measure is the share of trading volume by institutional investors of the total trading volume of firm i's stock in year t. Daily trading volumes reported for the following investor identities: institutions, foreigners and individuals) in Korea. Institutional trading consists of trading by domestic institutions, while foreign institutional trading is included in foreigners' trading volume. As most of foreign investors which trade in the Korean stock market are institutions, it is safe to assume that foreign trades represent trades by foreign institutional investors. We use trading share of institutional investors to measure the influence level of institutional investors on firms' management. We distinguish between the trading shares of domestic and foreign institutional investors as we explore the difference between the influence of domestic and foreign institutional investors on earnings management.

The second measure is based on the stock ownership of institutional blockholders, who own more than 5% of the firm's stock. While it is not possible to obtain the total ownership

of institutional investors, it is possible to obtain ownership information of institutional blockholders who own more than 5% of the firm's stock in Korea. Therefore, we use the combined ownership of institutional blockholders as the additional measure of influence level of institutional shareholders. Furthermore, we distinguish between domestic and foreign institutional blockholders and calculate the combined ownership of domestic and foreign institutional blockholders. Next, we show the measurement methods of the two proxies of institutional influence level in detail.

(1) Trading share of institutional investors by investor identity

Trading share of institutional investors (***INST_TR$_{it}$***) shown in equation (6) is the ratio of the sum of the daily buy and sell trading volume by both domestic and foreign institutional investors of firm i in year t to the total trading volume of firm i in year t. ***Domestic*** refers to domestic institutional investors, ***Foreign*** refers to foreign institutional investors, and ***Total Investor*** refers to all investors. ***Buy$_{itd}$*** refers to the buy volumes of firm i in year t in trading day d, and ***Sell$_{itd}$*** refers to the buy volumes of firm i in year t in trading day d. ***N*** refers to the total trading days in year t. Trading share of domestic institutional investors (***D_INST_TR$_{it}$***) and trading share of foreign institutional investors (***F_INST_TR$_{it}$***) shown in equations 7 and 8, respectively, are calculated similarly.

$$INST_TR_{i,t} = \frac{(\sum_{d=1}^{N} Domestic(Buy_{itd} + Sell_{itd}) + \sum_{d=1}^{N} Foreign(Buy_{itd} + Sell_{itd}))}{\sum_{d=1}^{N} Total(Buy_{itd} + Sell_{itd})} \tag{6}$$

$$D_INST_TR_{i,t} = \frac{\sum_{d=1}^{N} Domestic(Buy_{itd} + Sell_{itd})}{\sum_{d=1}^{N} Total(Buy_{itd} + Sell_{itd})} \tag{7}$$

$$F_INST_TR_{i,t} = \frac{\sum_{d=1}^{N} Foreign(Buy_{itd} + Sell_{itd})}{\sum_{d=1}^{N} Total(Buy_{itd} + Sell_{itd})} \tag{8}$$

(2) Ownership of institutional blockholders

We use the combined ownership of institutional blockholders who separately own more than 5% of the firm's stock as an alternative proxy for the influence level of institutional investors. In equations (9)-(11), $\boldsymbol{BLOCK_OWN_{it}}$ is the combined ownership of institutional blockholders who separately own more than 5% of the firm i's stock at the end of year *t*. $\boldsymbol{D_BLOCK_OWN_{it}}$ and $\boldsymbol{D_BLOCK_OWN_{it}}$ refer to the combined ownership of domestic and foreign institutional blockholders of firm i in year t, respectively. $\boldsymbol{D_BLOCK_N_{it}}$ and $\boldsymbol{F_BLOCK_N_{it}}$ refer to the number of common shares held by domestic and foreign institutional blockholders of firm i at the end of year t, respectively. $\boldsymbol{N_SHARE_{it}}$ refers to the total number of common shares outstanding of firm *i* at the end of year *t*.

$$BLOCK_OWN_{i,t} = \frac{(D_BLOCK_N_{i,t} + F_BLOCK_N_{i,t})}{N_SHARE_{i,t}} \tag{9}$$

$$D_BLOCK_OWN_{i,t} = \frac{D_BLOCK_N_{i,t}}{N_SHARE_{i,t}} \tag{10}$$

$$F_BLOCK_OWN_{i,t} = \frac{F_BLOCK_N_{i,t}}{N_SHARE_{i,t}} \tag{11}$$

4. Results

4.1 Sample and descriptive statistics

Our sample comprises non-financial firms listed on either the KOSPI or KOSDAQ markets from 2003 to 2014. We obtain accounting, trading volumes by investor types,

ownership shares, stock price and analyst data from FnGuide Data Guide Pro.[1] We measure variables at firm-year level and analyze the relationship between influence level of institutional investors and earnings management.

Panel A of Table 1 shows the descriptive statistics of variables used in this study. Dependent variables are measures of earnings management proposed in section 3.1, which are (ⅰ) performance-adjusted discretionary accruals (Kothari et al. 2005; *ABSDA_K*), (ⅱ) discretionary accruals adjusted with asymmetric conservatism (Ball and Shivakumar 2006; *ABSDA_BS*), (ⅲ) level of earnings smoothing (Leuz et al. 2003; *Smooth*), and (ⅳ) quality of discretionary accruals (Francis et al. 2005; *DiscAQ*). Independent variables are measures of the influence level of foreign institutional investors discussed in section 3.2. *INST_TR* is the trading share of institutional investors of a firm in a given year. Similarly, *D_INST_TR* and *F_INST_TR* are the trading shares of domestic and foreign institutional investors, respectively. Moreover, *BLOCK_OWN* is the combined ownership of institutional investors who individually own more than 5% of the common stock of the firm as measured at the end of the year. Similarly, *D_BLOCK_OWN* and *F_BLOCK_OWN* are the combined ownership of institutional blockholders, respectively.

We include control variables in the research models from two perspectives. The first set of control variables are firm characteristics which can influence earnings management. $LogAnalyst_{it}$ is the log of one plus the number of security firms that publish analyst reports. $SIZE_{it}$ refers to firm size and BM_{it} is the book-to-market ratio of firm's equity. $DEBT_{it}$ is the debt ratio and $CASH_IND_{it}$ is the industry-adjusted cash flow. $LagEM_{it}$ is one-year lag value of dependent variable. We include this lagged variable in regression equations for two reasons. One reason is that there is a reversal effect in earnings management so that the current earnings management may be affected by the last period's earnings management. Therefore, last period's earnings management is included in order to control for its reversal effect. The other reason is that there may be an endogenous relationship between the trading share or the ownership of institutional investors on one hand and earnings management. That

[1] FnGuide is a firm in Korea that offers widely used accounting, market and economic data and FnGuide Data Guide Pro is the retrieval system of the data offered by FnGuide.

is, while the trading share or the ownership of institutional investors may suppress or encourage earnings management, the size of earnings management may affect the trading share or the ownership of institutional investors. In an effort to control for the endogeneity problem, we include the lagged value of earnings management.

The second set of control variables are factors related to operating activities that influence changes in accruals. Francis et al. (2004, 2005) indicate that factors that influence changes in accruals include those that are related to operating activities and those that are related to managerial discretion. The focus of this study is on whether institutional investors suppress or increase opportunistic earnings management exacerbate. Therefore, our primary interest is the discretionary component of accruals. However, (1) performance adjusted discretionary accruals ($ABSDA_K_{it}$), (2) discretionary accruals adjusted for asymmetric conservatism ($ABSDA_BS_{it}$) and (3) earnings smoothing ($Smooth_{it}$) include changes in accruals due to innate operating risk. For this reason, when we use $ABSDA_K_{it,}$ $ABSDA_BS_{it,}$ and $Smooth_{it}$ as dependent variables, we include factors related to innate operating risk as control variables. Following Francis et al. (2004), we include volatility of operating cash flow ($\sigma(CFO)_{it}$), volatility of sales ($\sigma(Sales)_{it}$), operating cycle ($OperCycle_{it}$), frequency of reporting loss ($NegEarnRatio_{it}$), ratio of intangible assets to total assets ($Int_Intensity_{it}$), dummy variable indicating investment in intangible assets (Int_D_{it}) and ratio of tangible assets to total assets ($Cap_Intensity_{it}$) as control variables in regression equations. By contrast, we do not include factors related to operating risk as control variables when we use the quality of discretionary accruals ($DiscAQ_{it}$) as dependent variable. The reason for this is that factors related to operating risk are already removed from the quality of discretionary accruals as discussed in section 3.1. Detailed explanations of variables used in this study are found in Appendix.

Panel B of Table 1 shows the market index and economic growth rates during the sample period (2003-2014). The Korean economy as a whole shows relatively high growth and the Korean capital market also shows growth pre-2008 Global Financial Crisis, However, post-2008 Global Financial Crisis the Korean capital market is stagnant or depressed and the Korean economy shows a slower growth. We define the pre-2008 Global Financial Crisis period as high market growth period and the post-2008 Global Financial Crisis period as low

market growth period and compare the monitoring effect of foreign institutional investors between two periods.

[Insert Table 1 about here]

4.2 Influence level of institutional investors and earnings management

Tables 2 and 3 present the results of the analysis that investigates the effect of the influence level of institutional investors on earnings management. In Table 2 we report the results of regressing the influence level of institutional investors measured with trading volumes on earnings management measured with four proposed variables. The coefficients of institutional investors' trading volumes are 0.022, 0.027, 0.280 and 0.006 in Models (1) through (4), respectively and are statistically significant in all four models. This result suggests that firms with a higher proportion of institutional trading tend to experience more earnings management.

[Insert Table 2 about here]

In Table 3 we report regression analysis relating earnings management to institutional influence, which is measured with the combined ownership of institutions owning more than 5%. The coefficient of institutional ownership (Block_Own) is not statistically significant in either Model (1) or (2), whereas it is 0.316 and statistically significant at 1% in Model 3 and it is 0.008 and statistically significant at 5% in Model 4.

[Insert Table 3 about here]

From Tables 2 and 3, we do not find evidence of effective monitoring of management by institutional shareholders. To the contrary, we find that earnings management is greater in firms with greater institutional influence. This result suggests that institutional investors are short-term oriented in the Korean stock market and seek informed trading rather than monitoring management.

4.3 Relationship between the influence level of foreign institutional investors and earnings management

In Tables 4 and 5 we classify institutional investors into foreign and domestic institutional investors and investigate the relationship between their influence level and earnings management. In Table 4, we measure the influence level of foreign and domestic institutional investors using their trading share based on equations (7) and (8), then analyze their relationship with four measures of earnings management. The trading share of domestic institutional investors (*D_INST_TR*) does not show statistically significant relationship with any of the earnings management measures. By contrast, the coefficients of the trading shares of foreign institutional investors (*F_INST_TR*) are 0.055, 0.070, and 0.828 in models (1), (2), and (3) and they are all statistically significant at 1% level. This result suggests that foreign institutional investors have short-term as opposed to long-term investment time horizon. Therefore, they may pursue informed trades rather than monitoring management for long-term value creation.

In Table 5 we measure the influence level of foreign and domestic institutional investors using the combined ownership of institutional blockholders, then analyze their relationship with four measures of earnings management. In models (1) and (2), the coefficients of foreign and domestic institutional blockholders (*F_BLOCK_OWN and D_BLOCK_OWN*) do not show statistically significant relationship with any of the earnings management measures. By

contrast, the coefficients of the combined ownership of domestic institutional blockholders (*D_BLOCK_OWN*) are positive and statistically significant in models (3) and (4), while the coefficients of the combined ownership of foreign institutional blockholders (*F_BLOCK_OWN*) are positive and statistically significant in model (3). Thus, from table 5 as well, we do not find evidence of monitoring effect that domestic and foreign institutional investors restrain earnings management.

[Insert Table 4 about here]

[Insert Table 5 about here]

4.4 Market growth opportunity and monitoring incentive for foreign institutional investors (or informed trading incentive)

We posit that foreign institutional shareholders have an incentive to restrain managerial myopic behavior if they intend to invest for long term in the host countries; however, they have an incentive for informed-trading taking advantage of managerial myopic behavior, if they have short investment horizon. Moreover, we expect that the monitoring incentive (informed trading incentive) of foreign institutional shareholders will be greater in high (low) market growth period.

In Tables 6 and 7 we divide the sample period into high market growth period and low market growth period and investigate the relationship between their influence level and measures of earnings management in each period. Table 6 shows the results based on trading share as the measure of influence level of domestic and foreign institutional shareholders. Panel A shows the results of relatively high market growth period. Both the coefficient of trading share of domestic institutional investors (*D_INST_TR*) and that of foreign institutional investors (*F_INST_TR*) are not statistically different from 0. Panel B shows the results of relatively low market growth period. The coefficient of trading share of domestic institutional investors (*D_INST_TR*) are not statistically different from 0. By contrast, those of foreign institutional investors (*F_INST_TR*) are statistically significant in all four models. Panel C

shows the comparison of these coefficients between the high and low market growth periods. The coefficient of the trading share of domestic institutional investors (*D_INST_TR*) does not show statistically significant difference between the two periods. However, the coefficient of the trading share of foreign institutional investors (*F_INST_TR*) is larger during low growth period and the difference is positive and statistically significant. Results of Table 6 suggest that incentive for informed trade is greater in a low market growth period than in a high market growth period.

Table 7 shows the results based on the combined ownership of institutional blockholders as the measure of influence level of domestic and foreign institutional shareholders. In Panel A, which shows the results of relatively high market growth period, both the coefficient of trading share of domestic institutional investors (*D_BLOCK_OWN*) and that of foreign institutional investors (*F_BLOCK_OWN*) are not statistically different from 0. By contrast, in Panel B, which shows the results of relatively low market growth period, the coefficients of trading share of domestic institutional investors (*D_BLOCK_OWN*) are 0.020, 0.361 and 0.013 in Models 2, 3 and 4, and are statistically different from 0. By contrast, those of foreign institutional investors (*F_BLOCK_OWN*) are statistically significant in models 1, 2 and 3, and they are 0.041, 0.037 and 0.512, respectively. In Panel C, which shows the comparison of these coefficients between the high and low market growth periods, the difference in the coefficient of the trading share of domestic institutional investors (*F_BLOCK_OWN*) is statistically significant for models 1 and 4, with the t-statistics of the differences being 2.669 and 1.974. Results of Table 7 suggest that the positive relationship between combined ownership of foreign institutional blockholders and earnings management is larger during the low market growth period than during the high market growth period.

Overall results of Tables 7 and 8 suggest that foreign institutional investors face lower incentive for monitoring management as benefits of active monitoring are limited during the low market growth period. Instead, there is possibility that foreign institutional investors experience incentive to coerce managers to increase short-term performance measures and then profit from informed trades.

[Insert Table 6 about here]

[Insert Table 7 about here]

4.5 Effect of corporate governance characteristics on informed trading of foreign institutional investors

Earlier results show that earnings management increases with the influence level of foreign institutional investors during a low market growth period. These results suggest that foreign institutional investors tend to exhibit short-term orientation and their investment horizon may get even shorter in periods of limited profit opportunities (or of limited markets growth). That is, short investment horizons of foreign institutional investors reduce monitoring incentive and exacerbate incentive for informed-trading.

Furthermore, investment horizon and monitoring (informed trading) incentive of foreign institutional investors may depend on costs of influencing management. Therefore, we measure corporate governance characteristics using monitoring costs (or costs of informed trading), and analyze the influence of these costs on the informed trading of foreign institutional investors.

In Table 8 we divide the sample into four subsamples by market growth and managerial ownership, and analyze the relationship between the trading share of domestic and foreign institutional shareholders and measures of earnings management. We measure managerial ownership as the sum of the ownership of the largest shareholder and related parties. We classify firms into firms with majority managerial ownership and those with less than majority managerial ownership. We use one of four measures of earnings management as dependent variable in Panels A, B, C and D, respectively, and conduct the regression analysis for each group. For model 4, the coefficients of *F_INST_TR* are 0.130 (p=0.000), 0.187 (p=0.000), 1.437 (0.000), and 0.024 (p=0.032) in Panels A through D, respectively. They all are positive and statistically significant. These results indicate that the positive relationship between the influence level of foreign institutional investors and earnings management is more evident in firms with low market growth and low managerial ownership.

In Table 9 we divide the sample into four subsamples by market growth and firms'

affiliation status with large conglomerates, and analyze the relationship between the trading share of domestic and foreign institutional shareholders and measures of earnings management. We use firms' affiliation status with large conglomerates reported by the Korea Fair Trading Commission. We use one of four measures of earnings management as dependent variable in each of Panels A through D, and conduct the regression analysis for each group. For model 4, which corresponds to the subgroup of firms with low market growth and non-affiliated status, the coefficients of *F_INST_TR* are 0.092 (p=0.001), 0.142 (p=0.000), 1.543 (0.000), and 0.028 (p=0.012) in Panels A through D, respectively. The coefficients of *F_INST_TR* are larger in model 4 than in any other model indicating that the positive relationship between the influence level of foreign institutional investors and earnings management is most pronounced in firms with low market growth and non-affiliated firms.

Our results suggest that, as foreign institutional investors are likely to incur low influencing costs for firms with low managerial ownership and firms not affiliated with large conglomerates, foreign institutional investors with short investment horizon may coerce managers of these firms to inflate short-term performance. That is, foreign institutional investors' myopia may promote earnings management in targeted firms and exacerbate informed trading by foreign institutional investors.

[Insert Table 8 about here]

[Insert Table 9 about here]

5. Conclusion

This study investigates whether foreign institutional investors are long term investors. We address this issue by examining whether target countries' investment environment, market growth prospect, and corporate governance characteristics affect their motivation to actively monitor managerial opportunism. Using the Korean capital market that has some

unique characteristics, we investigate how opportunistic earnings management varies with the influence level of both domestic and foreign institutional investors. We expect that foreign institutional investors decide on the investment horizon taking into consideration host countries' economic environment, market growth prospect and firm characteristics among others. Specifically, we expect that foreign institutional investors with long investment horizon are motivated to restrain managerial myopia, whereas foreign institutional investors with short investment horizon are motivated to encourage managerial myopia, which they use for informed trading.

By examining how foreign institutional investors affect opportunistic earnings management, we shed light on whether foreign institutional investors have long investment horizon and act as monitors or have short investment horizon and act as informed traders. We also analyze whether monitoring incentive or informed trading incentive varies with market growth prospect and corporate governance characteristics. We measure the level of influence that foreign institutional investors have on firms they invest in using their trading share in the total trading volume. We construct four measures of earnings management and quantify the relationship between the influence level of foreign institutional investors and earnings management. We use the combined ownership of foreign institutional blockholders as a supplementary measure of the influence level of foreign institutional investors.

We document a positive and statistically significant relationship between the influence level of foreign institutional investors and earnings management. This result suggests that foreign institutional investors view the Korean market as a venue for short-term capital gains than as a venue for long term investment. Additionally, we find that the positive relationship between the influence level of foreign institutional investors and earnings management intensifies during periods of low market growth. This finding suggests that market growth prospect affects foreign institutional investors' investment horizon and monitoring activities. We also investigate whether foreign institutional investors' influence on earnings management is affected by corporate governance characteristics. We find that the positive relationship between the influence level of foreign institutional investors and earnings management is more evident in firms with low managerial ownership and firms unaffiliated with large conglomerates during low growth periods. This result suggests that when foreign

institutional investors face market condition that encourages short-term investment orientation, the possibility of informed trading increases in regard to firms that present them with low influencing cost. This study makes contribution to the literature by measuring the influence level of foreign institutional investors using the unique Korean trading data that make distinction between domestic and foreign institutional investors, and then identifying the factors that influence foreign institutional investors' investment horizon and monitoring incentive.

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Figure 1. Relationship between foreign institutional investors' investment horizon, market growth prospect and corporate governance characteristics

Panel A. Foreign institutional investors have a long investment horizon: Expected relationship between foreign institutional investors' influence level and earnings management

	Large monitoring benefit Example: High market growth periods	Small monitoring benefit Example: Low market growth periods
Firms with high monitoring cost Example: High managerial ownership; firms affiliated with large conglomerates	<Case 1> ⇨ weak negative (-)	<Case 2> ⇨ zero (0)
Firms with low monitoring cost Example: Firms with low managerial ownership; firms not affiliated with large conglomerates	<Case 3> ⇨ strong negative **(-):** monitoring effect	<Case 4> ⇨ weak negative (-)

Panel B. Foreign institutional investors have a short investment horizon: Expected relationship between foreign institutional investors' influence level and earnings management

	Low informed trading incentive Example: High market growth periods	High informed trading incentive Example: Low market growth periods
Firms with high informed trading cost Example: High managerial ownership; firms affiliated with large conglomerates	<Case 5> ⇨ zero (0)	<Case 6> ⇨ zero (0) or weak positive (+)
Firms with low informed trading cost Example: Firms with low managerial ownership; firms not affiliated with large conglomerates	<Case 7> ⇨ zero (0) or weak positive (+)	<Case 8> ⇨ strong positive (+): informed trading

Appendix. Variable definitions

1. Dependent variables (opportunistic earnings management)

$ABSDA_K_{it}$	=	Absolute value of the performance-adjusted discretionary accruals of firm i in year t based on Kothari et al. (2005)
$ABSDA_BS_{it}$	=	Discretionary accruals of firm i in year t based on Ball and Shivakumar (2006)
$Smooth_{it}$	=	Earnings smoothing of firm i in year t; ratio of $\sigma(NI)_{it}$, standard deviation of the ratio of earnings to assets for five years from year t-4 to year t, to $\sigma(CFO)_{it}$, standard deviation of the ratio of operating cash flows to assets for five years from year t-4 to year t (Leuz et al. 2003).
$DiscAQ_{it}$	=	Quality of discretionary accruals based on Francis et al. (2005): First, the abnormal accruals of firm *i* in year *t* is estimated using the relationship between operating cash flows and accruals at the year-industry level. Then, the standard deviation of the abnormal accruals of firm *i* in the five years preceding year *t* is calculated; this standard deviation is defined as the accruals quality (*AQ*) of firm *i* in year *t*. Finally, innate accruals quality of firm *i* in year *t* is estimated and the discretionary accruals quality is obtained by subtracting innate accruals quality from accruals quality.

2. Explanatory variables (Influence level of institutional investors)

$INST_TR_{it}$	=	Trading share of institutional investors; ratio of the sum of the daily buy and sell trading volume by both domestic and foreign institutional investors of firm i in year t to the total trading volume of firm i in year t
$D_INST_TR_{it}$	=	Trading share of domestic institutional investors; ratio of the sum of the trading volume by domestic institutional investors of firm i in year t to the total trading volume of firm i in year t
$F_INST_TR_{it}$	=	Trading share of foreign institutional investors; ratio of the sum of the trading volume by foreign institutional investors of firm i in year t to the total trading volume of firm i in year t
$BLOCK_OWN_{it}$	=	Ownership of institutional investors who separately own more than 5% of the common stock of firm i at the end of year t
$D_BLOCK_OWN_{it}$	=	Ownership of domestic institutional investors who separately own more than 5% of the common stock of firm i at the end of year t
$F_BLOCK_OWN_{it}$	=	Ownership of foreign institutional investors who separately own more than 5% of the common stock of firm i at the end of year t

3. Control Variables

(1) Control Variables1 : Variable Related to Firm Characteristic

$Log_Analyst_{it}$	=	Natural log of one plus the number of security firms that publish analyst reports on firm i in year t
$SIZE_{it}$	=	Log of the market capitalization of firm i's equity (in billion Korean wons) at the end of year t
BM_{it}	=	Ratio of the market value to book value of equity of firm i in year t
$DEBT_{it}$	=	Ratio of total debt to total assets of firm i at the end of year t
$Cash_IND_{it}$	=	Industry-adjusted cash flow of firm i in year t; that is, ratio of a firm's cash flow minus industry median cash flow to firm's total assets.
Lag_EM_{it}	=	Year t-1 lag value of dependent variable (earnings management in year t)
$YEAR_D$	=	Year control dummies

(2) Control Variables2 : Variables Related to Operating Risk

$\sigma(CFO)_{it}$	=	Volatility of cash flows; standard deviation of operating cash flows scaled

		by total assets over five years from year *t*-4 to year *t*
$\sigma(sales)_{it}$	=	Volatility of sales; standard deviation of sales scaled by total assets over five years from year *t*-4 to year *t*
$OperCycle_{it}$	=	Operating cycle; natural log of the sum of the average recovery period of accounts receivable and the average recovery period of inventory
$NegEarnRatio_{it}$	=	Frequency of reporting loss, measured as the proportion of loss-making years over the 10 years preceding year *t*
$Int_intensity_{it}$	=	Ratio of intangible assets in total assets
Int_D_{it}	=	Dummy variable indicating firms with no intangible assets
$Cap_intensity_{it}$	=	Ratio of tangible assets to total assets

Table 1. Sample distribution

Panel A. Descriptive statistics of variables

	N	Mean	Standard deviation	Minimum	25	50	75	Maximum
Dependent Variables (Earnings Management Variables)								
ABSDA_K	13860	0.089	0.107	0.000	0.024	0.055	0.110	0.650
ABSDA_BS	13860	0.082	0.113	0.000	0.019	0.044	0.096	0.687
Smooth	13860	1.279	1.585	0.0216	0.445	0.790	1.449	11.677
DiscAQ	13860	-0.005	0.054	-0.206	-0.035	-0.011	0.016	0.198
Independent Variables (Institutional Trading Volume Ratio and Ownership)								
INST_TR	13860	0.117	0.160	0.000	0.016	0.038	0.148	0.619
D_INST_TR	13860	0.065	0.097	0.000	0.001	0.012	0.093	0.366
F_INST_TR	13860	0.050	0.071	0.000	0.009	0.023	0.052	0.306
BLOCK_OWN	13860	0.042	0.095	0.000	0.000	0.000	0.056	1.000
D_BLOCK_OWN	13860	0.030	0.081	0.000	0.000	0.000	0.000	1.000
F_BLOCK_OWN	13860	0.012	0.049	0.000	0.000	0.000	0.000	0.811
Control Variables 1 (Firm Characteristic Variables)								
Log_Analyst	13860	0.229	0.380	0.000	0.000	0.000	0.301	1.519
SIZE	13860	7.870	0.667	6.049	7.424	7.755	8.198	9.921
BM	13860	1.335	1.139	-4.785	0.606	1.078	1.770	7.426
DEBT	13860	0.440	0.225	0.001	0.268	0.435	0.588	1.364
Cash_IND	13860	-0.014	0.137	-0.650	-0.067	-0.006	0.052	0.617
Control Variables 2 (Operation Risk Measure Variables)								
σ(CFO)	13860	0.076	0.054	0.002	0.039	0.062	0.095	0.284
σ(sales)	13860	0.193	0.169	0.002	0.083	0.144	0.244	1.087
OperCycle	13860	2.050	0.401	0.592	1.909	2.085	2.264	3.473
NegEarnRatio	13860	0.283	0.321	0.000	0.000	0.200	0.600	1.000
Int_Intensity	13860	0.044	0.096	0.000	0.003	0.015	0.045	0.904
Int_D	13860	0.024	0.152	0.000	0.000	0.000	0.000	1.000
Cap_Intensity	13860	0.165	0.133	-0.248	0.062	0.135	0.236	0.580

Panel B. Macroeconomic environment

YEAR	Stock index (year-end index)		Economic growth rate (%)
	KOSPI	KOSDAQ	
2002	628	444	7.4
2003	811	449	2.9
2004	896	380	4.9
2005	1379	702	3.9
2006	1434	606	5.2
2007	1897	704	5.5
2008	1124	332	2.8
2009	1683	514	0.7
2010	2051	511	6.5
2011	1826	500	3.7
2012	1997	496	2.3
2013	2011	500	2.9
2014	1916	543	3.3

2015	1961	682	2.8

Table 2. Relationship between trading share of institutional investors and earnings management

	Dependent Variable: Measures of earnings management			
	(1) AbsDA_K	*(2) AbsDA_BS*	*(3) Smooth*	*(4) DiscAQ*
	Coefficient (p-value)	*Coefficient (p-value)*	*Coefficient (p-value)*	*Coefficient (p-value)*
Intercept	0.124***	0.218***	1.059***	-0.007
	(0.000)	(0.000)	(0.000)	(0.276)
INST_TR	**0.022*** **	**0.027*** **	**0.280*** **	**0.006** **
	(0.005)	**(0.001)**	**(0.001)**	**(0.050)**
Log_Analyst	0.008**	0.010***	-0.093***	-0.005***
	(0.017)	(0.005)	(0.007)	(0.000)
SIZE	-0.013***	-0.024***	-0.062***	0.001
	(0.000)	(0.000)	(0.007)	(0.168)
BM	-0.011***	-0.017***	-0.098***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.007)
DEBT	0.022***	0.026***	0.257***	-0.003*
	(0.000)	(0.000)	(0.000)	(0.061)
Cash_IND	-0.110***	-0.112***	-0.020	0.000
	(0.000)	(0.000)	(0.765)	(-0.932)
Lag_EM	0.092***	0.167***	0.712***	0.740***
	(0.000)	(0.000)	(0.000)	(0.000)
σ(CFO)	0.496***	0.247***	-4.665***	-
	(0.000)	(0.000)	(0.000)	
σ(sales)	0.011**	0.019***	0.392***	-
	(0.037)	(0.000)	(0.000)	
OperC	-0.004*	-0.003	-0.062***	-
	(0.073)	(0.218)	(0.004)	
NegE	0.040***	0.049***	0.699***	-
	(0.000)	(0.000)	(0.000)	
Int_Intensity	0.006	0.028***	0.459***	-
	(0.451)	(0.001)	(0.000)	
Int_D	0.013**	0.012**	0.170***	-
	(0.012)	(0.029)	(0.001)	
Cap_Intensity	-0.017***	-0.045***	-0.489***	-
	(0.005)	(0.000)	(0.000)	
Year_D	Included	Included	Included	Included
N	13860	13860	13860	13860
Adj. R2	0.300	0.309	0.649	0.585

*, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 3. Relationship between ownership of institutional large shareholders and earnings management

	Dependent Variable: Measures of earnings management			
	(1) AbsDA_K	*(2) AbsDA_BS*	*(3) Smooth*	*(4) DiscAQ*
	Coefficient (p-value)	*Coefficient (p-value)*	*Coefficient (p-value)*	*Coefficient (p-value)*
Intercept	0.106***	0.197***	0.893***	0.011*
	(0.000)	(0.000)	(0.000)	(0.064)
BLOCK_OWN	0.007	0.012	**0.316*** **	**0.008** **
	(0.428)	(0.197)	(0.000)	(0.019)
Log_Analyst	0.010***	0.013***	-0.065*	0.004***
	(0.001)	(0.000)	(0.053)	(0.000)
SIZE	-0.010***	-0.021***	-0.038*	0.002**
	(0.000)	(0.000)	(0.069)	(0.024)
BM	-0.011***	-0.017***	-0.096***	-0.001**
	(0.000)	(0.000)	(0.000)	(0.012)
DEBT	0.022***	0.025***	0.247***	-0.003**
	(0.000)	(0.000)	(0.000)	(0.037)
Cash_IND	-0.110***	-0.113***	-0.027	0.000
	(0.000)	(0.000)	(0.689)	(0.928)
Lag_EM	0.092***	0.167***	0.711***	0.740***
	(0.000)	(0.000)	(0.000)	(0.000)
σ(CFO)	0.496***	0.246***	-4.676***	-
	(0.000)	(0.000)	(0.000)	
σ(sales)	0.010**	0.018***	0.387***	-
	(0.049)	(-0.001)	(0.000)	
OperC	-0.004**	-0.003	-0.066***	-
	(0.047)	(-0.150)	(0.002)	
NegE	0.039***	0.048***	0.692***	-
	(0.000)	(0.000)	(0.000)	
Int_Intensity	0.006	0.028***	0.464***	-
	(0.477)	(-0.001)	(0.000)	
Int_D	0.013**	0.012**	0.171***	-
	(0.011)	(-0.027)	(0.001)	
Cap_Intensity	-0.018***	-0.046***	-0.497***	-
	(0.004)	(0.000)	(0.000)	
Year_D	Included	Included	Included	Included
N	13860	13860	13860	13860
Adj. R2	0.300	0.309	0.649	0.585

*, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 4. Relationship between institutional investor types and earnings management

	Dependent Variable: Earnings Management Variables			
	(1) AbsDA_K	(2) AbsDA_BS	(3) Smooth	(4) DiscAQ
	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)
Intercept	0.128***	0.223***	1.114***	-0.007
	(0.000)	(0.000)	(0.000)	(0.324)
D_INST_TR	0.005	0.000	-0.059	0.004
	(0.715)	(0.976)	(0.654)	(0.449)
F_INST_TR	**0.055*** **	**0.070*** **	**0.828*** **	**0.011**
	(0.001)	**(0.000)**	**(0.000)**	**(0.103)**
Log_Analyst	0.008**	0.010***	-0.092***	-0.005***
	(0.019)	(0.005)	(0.008)	(0.000)
SIZE	-0.013***	-0.024***	-0.070***	0.001
	(0.000)	(0.000)	(0.003)	(0.211)
BM	-0.011***	-0.017***	-0.098***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.008)
DEBT	0.022***	0.025***	0.255***	-0.003*
	(0.000)	(0.000)	(0.000)	(0.059)
Cash_IND	-0.110***	-0.113***	-0.023	0.000
	(0.000)	(0.000)	(0.736)	(0.914)
Lag_EM	0.092***	0.167***	0.712***	0.740***
	(0.000)	(0.000)	(0.000)	(0.000)
σ(CFO)	0.495***	0.244***	-4.696***	-
	(0.000)	(0.000)	(0.000)	
σ(sales)	0.011**	0.019***	0.395***	-
	(0.033)	(0.000)	(0.000)	
OperC	-0.004*	-0.003	-0.062***	-
	(0.078)	(0.230)	(0.004)	
NegE	0.039***	0.048***	0.691***	-
	(0.000)	(0.000)	(0.000)	
	0.006	0.028***	0.453***	-
	(0.475)	(0.001)	(0.000)	
Int_Intensity				
Int_D	0.013**	0.011**	0.169***	-
	(0.012)	(0.031)	(0.002)	
Cap_Intensity	-0.017***	-0.045***	-0.480***	-
	(0.007)	(0.000)	(0.000)	
Year_D	Included	Included	Included	Included
N	13860	13860	13860	13860
Adj. R2	0.300	0.309	0.649	0.585

*, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 5. Relationship between ownership of institutional investor types and earnings management

	Dependent Variable: Earnings Management Variables			
	(1) AbsDA_K	(2) AbsDA_BS	(3) Smooth	(4) DiscAQ
	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)
Intercept	0.106***	0.197***	0.891***	-0.011*
	(0.000)	(0.000)	(0.000)	(0.065)
D_BLOCK_OWN	0.003	0.007	0.287***	0.009**
	(0.787)	(0.508)	(0.006)	(0.015)
F_BLOCK_OWN	0.018	0.024	0.395**	0.004
	(0.261)	(0.145)	(0.018)	(0.560)
Log_Analyst	0.010***	0.013***	-0.065*	-0.004***
	(0.001)	(0.000)	(0.052)	(0.001)
SIZE	-0.010***	-0.021***	-0.038**	0.002**
	(0.000)	(0.000)	(0.070)	(0.024)
BM	-0.011***	-0.017***	-0.096***	-0.001**
	(0.000)	(0.000)	(0.000)	(0.011)
DEBT	0.022***	0.025***	0.249***	-0.003**
	(0.000)	(0.000)	(0.000)	(0.032)
Cash_IND	-0.110***	-0.113***	-0.027	0.000
	(0.000)	(0.000)	(0.686)	(0.921)
Lag_EM	0.092***	0.167***	0.711***	0.740***
	(0.000)	(0.000)	(0.000)	(0.000)
σ(CFO)	0.496***	0.246***	-4.675***	-
	(0.000)	(0.000)	(0.000)	
σ(sales)	0.010**	0.018***	0.388***	-
	(0.046)	(0.001)	(0.000)	
OperC	-0.004**	-0.003	-0.066***	-
	(0.050)	(0.158)	(0.002)	
NegE	0.039***	0.048***	0.692***	-
	(0.000)	(0.000)	(0.000)	
Int_Intensity	0.006	0.028***	0.463***	-
	(0.486)	(0.001)	(0.000)	
Int_D	0.013***	0.012**	0.172***	-
	(0.010)	(0.026)	(0.001)	
Cap_Intensity	-0.018***	-0.046***	-0.496***	-
	(0.004)	(0.000)	(0.000)	
Year_D	Included	Included	Included	Included
N	13860	13860	13860	13860
Adj. R2	0.300	0.309	0.649	0.585

*, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 6. Market growth opportunity and monitoring effect by institutional investor types: Analysis using trading shares of institutional investors

Panel A. Market growth period (2003~2007)

	Dependent Variable: Earnings Management Variables			
	(1) AbsDA_K	(2)AbsDA_BS	(3) Smooth	(4) DiscAQ
	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)
Intercept	0.051	0.123***	-0.153	-0.047***
	(0.141)	(0.001)	(0.645)	(0.000)
D_INST_TR	-0.019	-0.024	-0.171	0.000
	(0.389)	(0.306)	(0.428)	(0.965)
F_INST_TR	0.009	0.017	0.359	0.000
	(0.753)	(0.565)	(0.200)	(0.967)
Control Variables 1	Included	Included	Included	Included
Control Variables 2	Included	Included	Included	-
Year_D	Included	Included	Included	Included
N	4476	4476	4476	4476
Adj. R2	0.313	0.332	0.668	0.562

Panel B. Stagnant stock market period (2008~2014)

	Dependent Variable: Earnings Management Variables			
	(1) AbsDA_K	(2) AbsDA_BS	(3) Smooth	(4) DiscAQ
	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)
Intercept	0.213	0.318	1.805	0.015
	(0.000)	(0.000)	(0.000)	(0.068)
D_INST_TR	0.023	0.015	-0.011	0.007
	(0.129)	(0.342)	(0.947)	(0.261)
F_INST_TR	0.103***	0.125***	1.240***	0.019**
	(0.000)	(0.000)	(0.000)	(0.029)
Control Variables 1	Included	Included	Included	Included
Control Variables 2	Included	Included	Included	-
Year_D	Included	Included	Included	Included
N	9084	9084	9084	9084
Adj. R2	0.292	0.302	0.641	0.597

Panel C. Difference in regression coefficients between two periods (Post crisis period β - Pre crisis period β)

	Dependent Variable: Earnings Management Variables			
	(1) AbsDA_K	(2)AbsDA_BS	(3) Smooth	(4) DiscAQ
	(t-value)	(t-value)	(t-value)	(t-value)
D_BLOCK_OWN: difference in β	(1.299)	(0.509)	(0.749)	(1.411)
F_BLOCK_OWN: difference in β	(2.031)**	(2.460)**	(2.742)***	(1.832)*

*, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 7. Market growth opportunity and monitoring effect by institutional investor types by: Analysis using ownership of institutional block shareholders

Panel A. Pre-financial crisis period (2003~2007)

	Dependent Variable: Earnings Management Variables			
	(1) AbsDA_K	(2)AbsDA_BS	(3) Smooth	(4) DiscAQ
	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)
Intercept	0.045	0.119***	-0.206	-0.048***
	(0.171)	(0.000)	(0.515)	(0.000)
D_BLOCK_OWN	-0.036	-0.029	0.073	-0.002
	(0.101)	(0.192)	(0.726)	(0.784)
F_BLOCK_OWN	-0.027	0.010	0.148	-0.004
	(0.397)	(0.757)	(0.622)	(0.736)
Control Variables 1	Included	Included	Included	Included
Control Variables 2	Included	Included	Included	-
Year_D	Included	Included	Included	Included
N	4476	4476	4476	4476
Adj. R2	0.313	0.332	0.668	0.561

Panel B. Financial crisis period (2008~2014)

	Dependent Variable: Earnings Management Variables			
	(1) AbsDA_K	(2) AbsDA_BS	(3) Smooth	(4) DiscAQ
	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)	Coefficient (p-value)
Intercept	0.163***	0.264***	1.397***	0.006
	(0.000)	(0.000)	(0.000)	(0.397)
D_BLOCK_OWN	0.015	0.020*	0.361***	0.013***
	(0.177)	(0.085)	(0.003)	(0.002)
F_BLOCK_OWN	0.041**	0.037*	0.512**	0.006
	(0.024)	(0.055)	(0.011)	(0.389)
Control Variables 1	Included	Included	Included	Included
Control Variables 2	Included	Included	Included	-
Year_D	Included	Included	Included	Included
N	9084	9084	9084	9084
Adj. R2	0.290	0.299	0.640	0.596

Panel C. Difference in regression coefficients between two periods (Post crisis period β - Pre crisis period β)

	Dependent Variable: Earnings Management Variables			
	(1) AbsDA_K	(2)AbsDA_BS	(3) Smooth	(4) DiscAQ
	(t-value)	(t-value)	(t-value)	(t-value)
D_BLOCK_OWN: difference in β	(1.301)	(1.261)	(1.270)	(1.650)*
F_BLOCK_OWN: difference in β	(2.669)**	(0.802)	(1.535)	(1.974)*

*, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 8. Effect of institutional investors on earnings management taking into consideration market growth opportunity (economic benefits of monitoring activities) and managerial ownership (costs of monitoring activities)

Panel A. Dependent Variables : AbsDA_K

	High market growth		Low market growth	
	High managerial ownership	Low managerial ownership	High managerial ownership	Low managerial ownership
	(1) Coefficient (p-value)	(2) Coefficient (p-value)	(3) Coefficient (p-value)	(4) Coefficient (p-value)
Intercept	0.028	0.060	0.095***	0.243***
	(0.617)	(0.155)	(0.008)	(0.000)
D_INST_TR	-0.005	-0.049	-0.023	0.039*
	(0.877)	(0.100)	(0.262)	(0.052)
F_INST_TR	-0.064	0.041	0.027	**0.130*** **
	(0.171)	(0.256)	(0.366)	**(0.000)**
Control Variables 1	Included	Included	Included	Included
Control Variables 2	Included	Included	Included	-
Year_D	Included	Included	Included	Included
N	1256	3520	2454	6630
Adj. R2	0.170	0.342	0.218	0.302

Panel B. Dependent Variables : AbsDA_BS

	High market growth		Low market growth	
	High managerial ownership	Low managerial ownership	High managerial ownership	Low managerial ownership
	(1) Coefficient (p-value)	(2) Coefficient (p-value)	(3) Coefficient (p-value)	(4) Coefficient (p-value)
Intercept	0.087*	0.140***	0.176***	0.379***
	(0.093)	(0.002)	(0.000)	(0.000)
D_INST_TR	-0.040	-0.031	-0.008	0.009
	(0.167)	(0.318)	(0.683)	(0.668)
F_INST_TR	0.007	0.023	0.005	**0.187*** **
	(0.895)	(0.546)	(0.877)	**(0.000)**
Control Variables 1	Included	Included	Included	Included
Control Variables 2	Included	Included	Included	-
Year_D	Included	Included	Included	Included
N	1256	3520	2454	6630
Adj. R2	0.180	0.347	0.213	0.312

Panel C. Dependent Variables : Smooth

	High market growth		Low market growth	
	High managerial ownership	Low managerial ownership	High managerial ownership	Low managerial ownership
	(1) Coefficient (p-value)	(2) Coefficient (p-value)	(3) Coefficient (p-value)	(4) Coefficient (p-value)
Intercept	0.711	-0.396	0.440	2.220***
	(0.184)	(0.333)	(0.351)	(0.000)
D_INST_TR	-0.306	-0.146	-0.173	-0.060
	(0.304)	(0.613)	(0.519)	(0.782)
F_INST_TR	0.425	0.322	0.750*	**1.437*** **

	(0.343)	(0.355)	(0.059)	**(0.000)**
Control Variables 1	Included	Included	Included	Included
Control Variables 2	Included	Included	Included	-
Year_D	Included	Included	Included	Included
N	1256	3520	2454	6630
Adj. R2	0.730	0.649	0.667	0.634

Panel D. Dependent Variables : DiscAQ

	High market growth		Low market growth	
	High managerial ownership	Low managerial ownership	High managerial ownership	Low managerial ownership
	(1) Coefficient (p-value)	(2) Coefficient (p-value)	(3) Coefficient (p-value)	(4) Coefficient (p-value)
Intercept	-0.051**	-0.044***	0.004	0.017
	(0.011)	(0.002)	(0.767)	(0.080)
D_INST_TR	-0.010	0.003	0.005	0.008
	(0.416)	(0.790)	(0.603)	(0.329)
F_INST_TR	-0.010	0.003	0.007	**0.024****
	(0.585)	(0.817)	(0.596)	**(0.032)**
Control Variables 1	Included	Included	Included	Included
Control Variables 2	Included	Included	Included	-
Year_D	Included	Included	Included	Included
N	1256	3520	2454	6630
Adj. R2	0.565	0.560	0.619	0.590

*, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table 9. Effect of institutional investors on earnings management taking into consideration large conglomerate affiliation (costs of monitoring activities) and market growth (economic benefits of monitoring activities)

Panel A. Dependent Variables : AbsDA_K

	High market growth		Low market growth	
	Affiliated with a large conglomerate	Not affiliated with a large conglomerate	Affiliated with a large conglomerate	Not affiliated with a large conglomerate
	(1) Coefficient (p-value)	(2) Coefficient (p-value)	(3) Coefficient (p-value)	(4) Coefficient (p-value)
Intercept	-0.049	0.067	0.186***	0.216***
	(0.458)	(0.107)	(0.000)	(0.000)
D_INST_TR	-0.053	-0.011	-0.024	0.032*
	(0.124)	(0.693)	(0.287)	(0.086)
F_INST_TR	-0.042	-0.009	0.078***	**0.092*** **
	(0.315)	(0.798)	(0.007)	**(0.001)**
Control Variables 1	Included	Included	Included	Included
Control Variables 2	Included	Included	Included	-
Year_D	Included	Included	Included	Included
N	704	4072	1280	7804
Adj. R2	0.243	0.331	0.171	0.301

Panel B. Dependent Variables : AbsDA_BS

	High market growth		Low market growth	
	Affiliated with a large conglomerate	Not affiliated with a large conglomerate	Affiliated with a large conglomerate	Not affiliated with a large conglomerate
	(1) Coefficient (p-value)	(2) Coefficient (p-value)	(3) Coefficient (p-value)	(4) Coefficient (p-value)
Intercept	0.101*	0.090**	0.194***	0.346***
	(0.057)	(0.039)	(0.000)	(0.000)
D_INST_TR	-0.037	-0.022	-0.023	0.016
	(0.176)	(0.427)	(0.294)	(0.415)
F_INST_TR	-0.058*	0.019	0.023	**0.142*** **
	(0.079)	(0.618)	(0.413)	**(0.000)**
Control Variables 1	Included	Included	Included	Included
Control Variables 2	Included	Included	Included	-
Year_D	Included	Included	Included	Included
N	704	4072	1280	7804
Adj. R2	0.131	0.335	0.155	0.310

Panel C. Dependent Variables : Earnings smoothing

	High market growth		Low market growth	
	Affiliated with a large conglomerate	Not affiliated with a large conglomerate	Affiliated with a large conglomerate	Not affiliated with a large conglomerate
	(1) Coefficient (p-value)	(2) Coefficient (p-value)	(3) Coefficient (p-value)	(4) Coefficient (p-value)
Intercept	0.619	-0.614	1.553**	1.938***

	(0.315)	(0.127)	(0.025)	(0.000)
D_INST_TR	-0.323	-0.125	-0.438	-0.017
	(0.315)	(0.632)	(0.226)	(0.931)
F_INST_TR	-0.304	0.287	0.336	**1.543*****
	(0.432)	(0.416)	(0.463)	**(0.000)**
Control Variables 1	Included	Included	Included	Included
Control Variables 2	Included	Included	Included	-
Year_D	Included	Included	Included	Included
N	704	4072		7804
Adj. R2	0.606	0.673		0.652

Panel D. Dependent Variables : DiscAQ

	High market growth		Low market growth	
	Affiliated with a large conglomerate	Not affiliated with a large conglomerate	Affiliated with a large conglomerate	Not affiliated with a large conglomerate
	(1) Coefficient (p-value)	(2) Coefficient (p-value)	(3) Coefficient (p-value)	(4) Coefficient (p-value)
Intercept	-0.070***	-0.045***	0.007***	0.017*
	(0.004)	(0.002)	(0.693)	(0.082)
D_INST_TR	0.004	-0.001	0.012	0.005
	(0.769)	(0.927)	(0.203)	(0.493)
F_INST_TR	-0.009	0.004	0.001	**0.028****
	(0.589)	(0.741)	(0.938)	**(0.012)**
Control Variables 1	Included	Included	Included	Included
Control Variables 2	Included	Included	Included	-
Year_D	Included	Included	Included	Included
N	704	4072	1280	7804
Adj. R2	0.520	0.565	0.585	0.598

*, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.