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The Effects of Blockholder Dispersion on the Informativeness of Earnings: Evidence from Korea

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Abstract: This paper studies the relationship between blockholder dispersion and the informativeness of earnings using a sample of Korean companies. Investors prefer less volatile and more sustainable earnings and managers have incentives to manage earnings to meet investor demand. We show evidence that firms with dispersed ownership, which are likely to suffer from high levels of information asymmetry, smooth earnings in order to relieve investors' concerns regarding information asymmetry. Furthermore, our regression analyses on the relation between returns and future earnings reveal that earnings smoothing conducted by firms with dispersed ownership leads to higher informativeness of earnings. This study provides important implications for various financial statement users in interpreting firms' earnings sustainability, especially in the East Asian countries where a wide spectrum of ownership concentration structure exists.

Keywords: ownership structure; earnings sustainability; informativeness of earnings

1. Introduction

This study examines the effect of corporate blockholder dispersion on the informativeness of the reported earnings number. Under the separation of ownership and control where managers have conflicts of interest vis-à-vis outside shareholders, large shareholders—otherwise known as blockholders—can act as an effective corporate governance mechanism, as their large stakes in a firm provide them with incentives to monitor the firm and intervene in corporate affairs. Investors who have small ownership positions in the company, in contrast, have few incentives to support costly monitoring efforts and tend to free-ride. The monitoring of management is a public good for owners and only those investors with a large ownership stake provide this monitoring role [1–3]. As such, while concentrated ownership gives large shareholders incentives to monitor managers and try to solve some agency problems, firms with dispersed ownership are subject to greater agency problems, and hence information asymmetry between owners and managers is likely to be more severe [1,4–6].

Prior literature documents that to the extent that information asymmetry creates a market discount, managers of firms with dispersed ownership have incentives to provide more voluntary information in an attempt to relieve investors' concerns [4,7]. Extant studies empirically examine the relation between ownership dispersion and voluntary disclosure practices [7,8], and in their latest work, Garcia-Meca and Sanchez-Ballesta [7] conduct a meta-analysis and document a negative (positive) association between the level of ownership concentration (dispersion) and voluntary disclosures. This result can be interpreted to mean that, in general, managers of firms with dispersed ownership try to resolve agency problems by disclosing more voluntary information to investors. This paper is motivated

by the fact that providing voluntary disclosure is not the only method for providing information to investors. Corporations may communicate financial information to outside investors via two major avenues: through disclosure, or through formal inclusion in the financial statements [9]. While most prior studies have focused on disclosure practices as a way of providing information to the investing community, we focus on earnings management practices and examine whether firms with dispersed ownership increase the sustainability of earnings.

One of the methods that managers can use to improve the information that is contained in the financial statements is by conveying sustainable earnings [10–12]. Sustainable earnings mean that current earnings are a good predictor of future earnings, and, as opposed to volatile earnings, smooth earnings can be more informative to outside shareholders [13]. According to a survey by Graham, et al. [14], 79.7% of respondents indicated that they prefer smooth earnings because they believe that smoother earnings help analysts and investors predict future earnings. Empirical studies provide supporting evidence that firms with smoother earnings have returns that are more reflective of future earnings, and a value premium exists for firms that practice earnings smoothing, especially for firms in a low information environment [15,16]. This paper extends this line of research by examining the informative role of sustainable earnings in an agency problem context. The research questions are two-fold: (1) Do firms with dispersed ownership deliver a more sustainable earnings stream? (2) Does the sustainable earnings stream delivered by firms with dispersed ownership actually lead to increased information in the market?

Empirically, we use Korean data because the Korean context provides a powerful setting in which to study how the ownership concentration structure affects earnings sustainability under the context of an agency problem. The reasons are as follows: First, Korean firms exhibit a wide spectrum of ownership concentration structures, from well-dispersed to most-concentrated. If we were to conduct regressions using data from a country that is composed mostly of well-diversified firms (i.e., United States) or mostly of concentrated firms (i.e., many other East Asian countries), the data would lack variation in the independent variables (i.e., ownership concentration) and may lead to false implications. Second, the agency problem is more likely to be a concern in Korea compared to in the United States (U.S.) or the United Kingdom (U.K.) [17,18]. From the managers' perspective, earnings smoothing, which is one type of earnings management, can be a costly method of providing information (i.e., these costs include the loss of managerial reputation or future employment opportunities, and/or penalties imposed by the market when caught [19]). Therefore, under situations where the agency problem is not a big concern, managers may lack incentives to engage in any earnings management that is intended to reduce information asymmetry. Lastly, Korea is one of the few countries in which clean data regarding ownership structure is publicly available.

Using a large sample of Korean firms for the period from 1999 to 2014, we found that firms with dispersed ownership structure report a more sustainable earnings stream, proxied by the smoothness of earnings. This is consistent with the expectation that firms with dispersed ownership, which are likely to suffer from high levels of information asymmetry, try to reduce the volatility of earnings to relieve investor concerns and address market discount. More importantly, by examining the relation between returns and future earnings, we confirm that earnings smoothing conducted by firms with dispersed ownership leads to increased informativeness of future earnings compared to earnings smoothing conducted by firms with concentrated ownership. We also find an interesting result that earnings smoothing conducted by firms with concentrated ownership seems to garble information. This implies that only firms with dispersed ownership engage in earnings smoothing in an attempt to provide a more informative earnings number, and for firms under a different ownership structure, earnings smoothing may be conducted with other forms of managerial intent—to meet performance targets, protect their jobs, or maximize their compensation—that leads to garbled earnings information [20–22]. Overall, the results were consistent with our prediction that firms with dispersed ownership deliver a more sustainable earnings stream and that sustainable earnings of firms with dispersed ownership leads to an increased informativeness of earnings.

The potential contributions of this study are as follows: First, based on an ideal setting to test the effects of ownership concentration structure under an information asymmetry problem, we show that managers of firms with dispersed ownership try to reduce investor concerns by delivering more sustainable earnings numbers. While the predictions on the relationship between ownership structure and earnings smoothness have been suggested by prior papers, only a few studies using limited data have provided empirical evidence. For instance, Beattie, et al. [23] and Carlson and Bathala [24] show that income smoothing is negatively associated with percentage of external ownership shareholdings. However, the papers conduct regressions using limited sample sizes, with Beattie, Brown, Ewers, John, Manson, Thomas, and Turner [23] using 163 U.K. companies and Carlson and Bathala [24] using 265 U.S. companies. Also, other than the difficulty of collecting massive data, the reasons for the lack of empirical evidence may be due to the fact that the U.S. and the U.K. are countries that are composed of the most diffusely owned companies in the world [17,25,26]. In this study, we show the effect of ownership concentration structure using a massive dataset from Korean companies that displays a wide spectrum of ownership structures. Second, our paper contributes to the line of literature examining whether earnings smoothing improves the information conveyed by earnings [16,27]. Our results suggest that, where earnings smoothing conducted by firms with dispersed ownership improves the informativeness of earnings numbers, earnings smoothing conducted by firms with concentrated ownership may actually garble the information content of earnings.

The rest of the paper proceeds as follows. In the next section, we review related literature and develop our hypotheses. Section 3 describes our measurement construct and empirical model. Section 4 describes our sample and presents descriptive statistics. Section 5 presents the main results, and, finally, Section 6 concludes.

2. Prior Literature and Hypothesis Development

The separation of ownership and control in modern companies creates an agency problem that results in a conflict of interest between shareholders and managers. The source of this problem is that managers do not possess sufficient stakes in the firm. According to the traditional view of corporate governance, large shareholders can play a critical governance role as their high stakes provide them strong incentives to monitor the firm and limit managerial misconduct [28]. A large block split into multiple dispersed shareholders weakens the incentives to intervene in the firms' affairs, and dispersed shareholders are unlikely to incur the monitoring costs, leading to a standard free-rider problem [2,29]. Jensen [30] states that firms with dispersed ownership are worth less than firms with concentrated ownership because for firms with dispersed ownership structure, no investor will provide monitoring effort, and managers will act in their self-interest. Similarly, Shleifer and Vishny [3] state that ownership concentration is desirable as it leads to increased monitoring, reduced free-rider problems, and reduced agency problems. As such, firms with dispersed ownership are likely to suffer in a major way due to the agency problem.

To the extent that the agency problem creates market discounts [1], managers of firms with dispersed ownership have incentives to deliver more information as a means of relieving shareholder concerns and counteracting the market discount [31,32]. According to a seminal paper by Fama and Jensen [4], a dispersed ownership structure incentivizes a firm to provide voluntary information to shareholders. Among extant empirical papers examining the association between firms' ownership concentration structure and voluntary disclosure practices [33–36], Garcia-Meca and Sanchez-Ballesta [7] conducted a meta-analysis of 27 empirical studies and documented a negative association between the level of ownership concentration and the amount of voluntary disclosures, which is consistent with the assertion that firms with dispersed ownership are more likely to disclose voluntary information to investors. With the additional evidence that voluntary disclosure leads to returns that are more reflective of future earnings [8], overall, prior papers suggest that managers of firms with dispersed ownership disclose more voluntary information to investors, and that voluntary disclosure increases the informativeness of earnings.

While most prior studies focused on disclosure practices as a route for providing information, we placed our focus on firms' earnings management practices. Not only can managers provide information through disclosures, but managers can also conduct earnings management with the purpose of delivering private information about their firms. Under the reporting flexibility provided by the financial reporting standards, managers have discretion to choose among accounting alternatives and can use their discretion to reduce the variability of earnings over time and improve the sustainability of earnings. Analytical studies including those of Lambert [37] and Demski [38] demonstrated that smooth earnings are more informative, and a number of empirical studies complemented these analytical models [11]. Also, Shaw [9] explored the interaction between corporate disclosure and earnings management practices, and documented that firms with higher-quality disclosures smooth their earnings more aggressively compared to firms with lower-quality disclosures. This finding can be interpreted as evidence of two complementary channels available to provide private information to the investing community. In this paper, we focus on earnings smoothing as a method of increasing earnings sustainability and thereby meeting investors' information demand.

Tucker and Zarowin [16] calculate earnings smoothness as a negative correlation between discretionary accruals and unmanaged earnings, and the paper shows that firms with smooth earnings have higher earnings informativeness, measured as the extent to which changes in current stock returns are reflected in future earnings. Allayannis and Simko [15] further develop the idea of the informativeness of smooth earnings and document a value premium for firms that practice smooth earnings. They also show that earnings smoothing is more valuable in a low information environment, supporting the informativeness role of sustainable earnings. These studies provide evidence that earnings smoothing can serve as a mechanism through which managers deliver private information to the market.

In this paper, we expected that firms with dispersed ownership, which are likely to suffer from high levels of information asymmetry, will try to reduce the volatility of earnings and deliver a more sustainable earnings number to relieve investor concerns. Investors prefer less volatile and more sustainable earnings and managers may manage earnings to meet investors' demand [39]. We do not expect firms with concentrated ownership structures to engage in earnings smoothing, because these firms are expected to suffer less from information asymmetry between owners and managers. Consistent with this reasoning, we formally present the first hypothesis as follows:

Hypothesis 1 (H1). *Firms with dispersed ownership have a smoother income stream than firms with concentrated ownership.*

However, there are also studies that report earnings smoothing as garbling, rather than improving, the information content of earnings. According to this view, if managers artificially smooth earnings, then the earnings number fails to depict the true financial performance of the firm, and thereby decreases the informativeness of earnings [27,40]. In a recent study, Chen, et al. [41] provided evidence of a positive relation between earnings smoothing and stock price crash risk and interpreted the results as managers smoothing earnings in order to hide bad news. In light of this opposing view (i.e., that earnings smoothing may garble the information content of earnings), a positive relationship between blockholder dispersion and earnings smoothness does not necessarily mean that earnings smoothness is the result of managerial intent to relieve the information asymmetry problem.

Accordingly, after we confirmed with H1 that firms with dispersed ownership exhibit smoother earnings, we needed to assess whether earnings smoothing actually increases the informativeness of future earnings for firms with dispersed ownership. If we failed to find higher informativeness of earnings for firms that report smooth earnings under dispersed ownership structure, then our first hypothesis that firms with dispersed ownership conduct earnings smoothing to provide information could not be defended. These arguments led to our second hypothesis:

Hypothesis 2 (H2). *Earnings smoothing by firms with dispersed ownership leads to increased informativeness of future earnings compared to earnings smoothing by firms with concentrated ownership.*

We tested the hypotheses using Korean data. The level of ownership concentration for Korean firms is in-between the highly-diffused U.S. situation and highly-concentrated broader East Asian situation [42,43]. Tirole [26] wrote that “ownership is extremely dispersed in the United States,” and Denis and McConnell [25] stated that “ownership is, on average, significantly more concentrated in non-US countries than it is in the US.” For the East Asian situation, Claessens, Djankov, and Lang [42] showed that, among East Asian countries, Korean firms exhibit relatively low levels of ownership concentration. Korean firms, which exhibit a wide spectrum of ownership concentration structures, can increase the power of our empirical tests. Also, the level of minority shareholder protection through legal enforcement is generally weaker in Korea compared to the U.S., and as such, the agency problem is more likely to be prevalent in Korea [17,18]. Furthermore, unlike in the U.S., Korean companies lack disciplinary pressures from the capital market that can correct managerial behavior [44]. Because our hypotheses were based on the idea that firms with dispersed ownership conduct earnings smoothing to alleviate investors’ concerns regarding agency problems, the Korean situation offered an ideal setting.

3. Research Method

3.1. Measurement of Earnings Smoothness

We employed two commonly used measures for calculating earnings smoothness. First, we followed Leuz, Nanda and Wysocki [27] and use the ratio of variability of income to variability of cash flows, σ_{NI}/σ_{CFO} , with both calculated over a five-year period. We used scaling by the cash flow from operations to control for differences in the variability of economic performance. Because a lower value indicates smoother earnings, we multiplied by (-1) so that a higher value implies smoother earnings ($SMT1 = -\sigma_{NI}/\sigma_{CFO}$). While this calculation is simple to implement, it has a limited ability to differentiate between smoothness from the natural stability of operations and smoothness from managers’ discretionary smoothing activities.

Following Tucker and Zarowin [16], we adopted a second measure of earnings smoothness ($SMT2$), which is measured as the negative correlation between the change in discretionary accruals and the change in pre-managed income. For estimating discretionary accruals, we used the Jones model, which is modified by Kothari, et al. [45]. Specifically, we conducted cross-sectional regressions for the following equation:

$$Accruals_t = a (1/Assets_{t-1}) + b \Delta Sales_t + c PPE_t + d ROA_t + \mu_t \quad (1)$$

where *Accruals* is total accruals; $\Delta Sales$ is change in sales; *PPE* is gross property, plant, and equipment; and *ROA* is the return on assets, each of which are deflated by the beginning-of-year total assets (*Assets*). According to Dechow et al. [46], among different models, a modified version of the Jones model is shown to provide the most powerful tests in capturing earnings management. The Jones model includes $\Delta Sales$ and *PPE* to control for the effect of changes in a firm’s economic circumstances on accruals, and a modified version adds *ROA* as an additional control because prior studies suggest that the Jones model is mis-specified for firms with either high-performance or poor-performance [45,46]. We conducted the regression on all firms in the same industry each year, and required at least 10 observations in each industry-year. Discretionary accruals (*DA*) were estimated as the deviations from the fitted values of Equation (1), and pre-managed income (*PMI*) was calculated as net income minus discretionary accruals. We calculated earnings smoothness as the Spearman correlation between the change in discretionary accruals (ΔDA) and the change in pre-managed income (ΔPMI). This measure has the advantage of separating income into discretionary and nondiscretionary components, and treating discretionary components as a proxy for managerial discretion to smooth earnings. As a more negative

correlation signifies discretionary income smoothing, we also multiplied this measure by (-1) so that larger coefficients indicated higher earnings smoothness ($SMT2 = -Corr(\Delta DA, \Delta PMI)$).

3.2. Measurement of Blockholder Dispersion

We used a blockholder dispersion measure that is suggested by Konijn et al. [47]. In searching for the relationship between blockholder dispersion and firm value, Konijn, Kräussl, and Lucas [47] measured ownership concentration as the scaled *Herfindahl* index, where scaling is performed using the total combined block ownership of the largest five blockholders (Equation (2)).

$$Herfindahl = \frac{(\%Block1)^2 + (\%Block2)^2 + \dots + (\%Block5)^2}{[(\%Block1) + (\%Block2) + \dots + (\%Block5)]^2} \quad (2)$$

While most papers that focus on the effect of ownership concentration structure use the fraction of shares owned by the total (or top 5) blockholders [23,48], the *Herfindahl* index has the advantage of measuring the dispersion across different blockholders. Specifically, the *Herfindahl* index can separate out the effect of dispersion from the effect of total combined block ownership [47]. As a low value of the *Herfindahl* index implies a high dispersion, for ease of interpretation we multiplied the *Herfindahl* index by (-1) and renamed it as the dispersion index (*DISP*).

3.3. Research Design

To test H1, which predicts a positive relationship between blockholder dispersion and earnings smoothness, we estimated the OLS regression of the following equation:

$$RSMT_t = \beta_0 + \beta_1 RDISP_t + \beta_2 SIZE_t + \beta_3 LEV_t + \beta_4 BM_t + \beta_5 SALESVOL_t + \beta_6 SALESGRW_t + \beta_7 OPLEV_t + \beta_8 AVGO CF_t + \beta_9 OPCYCLE_t + \beta_{10} POSTSOX_t + \sum_t Year_t + \sum_k Industry_k + \varepsilon_t \quad (3)$$

where $RSMT_t$ is the fractional rank of either the variability of income to the variability of cash flows multiplied by (-1) ($RSMT1$) or the correlation between the change in discretionary accruals and the change in pre-managed income multiplied by (-1) ($RSMT2$); $RDISP_t$ is the fractional rank of blockholder dispersion measure calculated as the scaled *Herfindahl* index using the ownership of the largest five blockholders and multiplied by (-1) ; $SIZE_t$ is the logarithm of total assets; LEV_t is the total leverage scaled by total assets; BM_t is the book-to-market ratio measured as book value of equity scaled by market value of equity; $SALESVOL_t$ is the standard deviation of sales scaled by lagged total assets for at least three of the last five years; $SALESGRW_t$ is the annual change in sales scaled by the prior year sales; $OPLEV_t$ is the net property, plant, and equipment scaled by total assets; $AVGO CF_t$ is the average operating cash flow over the last five years scaled by lagged total assets; $OPCYCLE_t$ is the natural log of the length of the firm's operating cycle; $POSTSOX_t$ is a dummy variable equal to 1 for the years from 2005 onwards. Consistent with Tucker and Zarowin [16], we used fractional-ranking, which is calculated as the raw rank divided by the number of observations. For example, among the numbers from 1 to 10, the fractional-rank of 1 (10) is 0.1 (1). We rank-classified our earnings smoothness measure (*SMT*) and blockholder dispersion measure (*DISP*) based on year because *SMT* and *DISP* have uneven distribution and may lead to incorrect inferences on the informativeness of earnings. Also, because our main variables $RSMT_t$ and $RDISP_t$ were defined over a five-year period, we used five-year averages of all the control variables. The coefficient on $RDISP$ (β_1) captures the effect of blockholder dispersion on earnings smoothness after controlling for fundamental features of a firm that may affect earnings smoothness. Consistent with H1, we predicted that β_1 will be positive if firms with dispersed ownership report a smoother earnings stream.

In selecting control variables, we followed prior literature and include variables to control the fundamental features of a firm's operating environment [49]. We expected a positive coefficient on *SIZE* as larger firms face higher political concerns [50], a positive coefficient on *LEV* as firms with high leverage have incentives to smooth earnings to reduce the costs of debt [51], a positive (negative)

coefficient on *BM* (*SALESGRW*) as mature firms have more accounting flexibility, and a positive coefficient on *AVGOFC* as earnings smoothing is compared against the operating cash flows of a firm. Also, with LaFond, et al. [52] findings that firms with less volatile sales, less investment in fixed assets, and longer operating cycles report smoother earnings, we expected negative coefficients on *SALESVOL*, *OPLEV*, and a positive coefficient on *OPCYCLE*. We also included *POSTSOX* to control for the legislative change in accounting during the sample period. Specifically, while a series of accounting scandals in the U.S. led to an enactment of the Sarbanes–Oxley (SOX) Act in 2002, Korea enacted its own version of SOX in year 2004, which was implemented for years starting in April 2004. Year and industry dummies are included to account for time variations and industry effects. We winsorized all continuous control variables at 1 and 99 percent.

H2 predicts that earnings smoothing conducted by firms with dispersed ownership increases the informativeness of earnings compared to the earnings smoothing conducted by firms with concentrated ownership. To test this hypothesis, we followed Tucker and Zarowin [16] and investigated the association between current stock returns and future earnings, which is referred to as the future earnings response coefficient (FERC). Specifically, in order to assess the different levels of informativeness of earnings, which depend on whether the earnings smoothing is conducted by firms with dispersed ownership or by firms with concentrated ownership, we classified our sample into subsamples based on the level of blockholder dispersion and separately estimated the OLS regression of the following equation [16,53]:

$$R_t = \gamma_0 + \gamma_1 X_{t-1} + \gamma_2 X_t + \gamma_3 X_{t3} + \gamma_4 R_{t3} + \gamma_5 RSMT_t + \gamma_6 RSMT_t \times X_{t-1} + \gamma_7 RSMT_t \times X_t + \gamma_8 RSMT_t \times X_{t3} + \gamma_9 RSMT_t \times R_{t3} + \sum_t Year_t + \sum_k Industry_k + \varepsilon_t \quad (4)$$

where R_t is the cumulative buy-and-hold return for the fiscal year; X_{t-1} and X_t are earnings for years $t - 1$ and t , respectively, scaled by the beginning of year market value of equity; X_{t3} is future earnings, measured as the sum of earnings for years $t + 1$ through $t + 3$, scaled by the beginning market value of equity; R_{t3} is future returns, measured as the cumulative buy-and hold return for years $t + 1$ through $t + 3$; $RSMT_t$ is the fractional rank by year of either *SMT1* or *SMT2*; and $DISP_t$ is the fractional rank by year of the blockholder dispersion index (*DISP*). Year and industry dummies were included to account for time variations and industry effects.

The coefficient on X_{t3} (γ_3) is the FERC, which is used as a proxy for the informativeness of future earnings. Our main variable of interest was the two-way interaction term between earnings smoothness, and future earnings ($RSMT_t \times X_{t3}$), which captures the effect of earnings smoothness on the FERC. If firms smooth earnings to increase the informativeness of earnings, returns will be more reflective of future earnings, and the FERC should be higher. For instance, using U.S. data, Tucker and Zarowin [16] reported a positive coefficient on $RSMT \times X_{t3}$, suggesting that a higher-smoothing firm's earnings is more informative than a lower-smoothing firm's earnings. Our H2 predicted the coefficient on this interaction term will be higher for the subsample of firms with dispersed ownership compared to the subsample of firms with concentrated ownership.

We assessed the informativeness of smooth earnings via using the FERC as opposed to the ERC with the following reasons provided by Tucker and Zarowin [16]: (1) Assuming that stock price efficiently impounds all publicly available information, information about a firm's future earnings is reflected in the change in current stock price well before a firm reports its earnings. With the market efficiency assumption, Collins, Kothari, Shanken, and Sloan [53] modeled the return-earnings relation using future earnings, and Tucker and Zarowin [16] expanded this model to include interactions with the earnings smoothing measure to capture whether earnings smoothing leads to increased information about future earnings in the stock market. If earnings smoothing increases the informativeness of earnings, returns should be reflecting more information about future earnings. (2) A higher ERC can result from lower firm risk and/or greater earnings persistence. While ERC may be capturing other firm characteristics, FERC offers a better measurement for capturing the informativeness of future earnings.

4. Data and Descriptive Statistics

4.1. Data

The process for identifying sample firms is summarized in Table 1. We started with all firms listed on the Korea Exchange (KRX) and identified those included in the TS2000, a database that provides Korean firms' financial statement information. The sample includes only publicly traded non-financial firms. The initial sample is composed of 33,307 firm-year observations for the fiscal years 1997 to 2017. Starting with this sample, we merged firms' financial data with ownership data obtained from the KIS-VALUE database and eliminated observations with less than two blockholders. As the FERC analysis requires the use of prior period earnings and future three-year summed earnings and returns, we were left with the final sample of 14,047 firm-year observations from years 1999 to 2014.

Table 1. Sample Selection Criteria.

Criteria	Firm-Years
Listed non-financial firm-year observations from 1997 to 2017	33,307
(Delete) observations for which block shareholders' ownership data are not available in KIS-Value database (firms should have at least two-block shareholders).	(1851)
(Delete) observations for which past earnings (X_{t-1}) are not available (i.e., observations from period 1997 to 1998).	(8660)
(Delete) observations for which future earnings (X_{t3}) and future returns (R_{t3}) are not available (i.e., observations from period 2015 to 2017).	(8104)
(Delete) observations for which control variables are not available.	(645)
Final sample from 1999 to 2014	14,047

Table 2 shows the distribution of sample firms' industry and year. Panel A shows the distribution of sample firms by industry, and shows that the most frequent industry is manufacturing, which accounts for 77.1% of the sample. Panel B shows the distribution of sample firm-years by year, demonstrating that the frequency of observations generally increases with the fiscal year.

Table 2. Sample Distribution.

Panel A. Distribution by Industry		
Industry	Firm-Years	Percent (%)
Manufacturing	10,834	77.13
Electricity, gas, steam, and air conditioning supply	143	1.02
Construction	652	4.64
Retail and wholesale trade	1105	7.87
Transportation	124	0.88
Broadcasting, information Service, and publishing	954	6.79
Professional and technical services	176	1.25
Business support services	59	0.42
Total	14,047	100.00
Panel B. Distribution by year		
Year	Firm-Years	Percent (%)
1999	356	2.53
2000	358	2.55
2001	376	2.68
2002	388	2.76
2003	707	5.03
2004	740	5.27
2005	924	6.58
2006	1052	7.49
2007	1062	7.56
2008	1086	7.73
2009	1092	7.77
2010	1126	8.02
2011	1114	7.93
2012	1188	8.46
2013	1245	8.86
2014	1233	8.78
Total	14,047	100.00

4.2. Descriptive Statistics

Panel A of Table 3 provides descriptive statistics for all the variables used in the analysis, and Panel B of Table 3 separates and compares the mean (and median) values of the variables for firms with dispersed ownership (i.e., firms with *DISP* higher than the median, constituting the High *DISP* group) and for firms with concentrated ownership (i.e., firms with a *DISP* lower than the median, constituting the Low *DISP* group). Both *SMT1* and *SMT2* are higher for the High *DISP* group compared to the Low *DISP* group, providing univariate support for our H1, which predicts a positive association between blockholder dispersion and earnings smoothness.

Table 3. Descriptive Statistics.

Panel A. Descriptive Statistics (n = 14,047)						
Variable	Mean	Std. Dev.	Q1	Median	Q3	
<i>DISP</i>	−0.488	0.238	−0.634	−0.416	−0.290	
<i>SMT1</i>	−1.026	0.962	−1.272	−0.736	−0.416	
<i>SMT2</i>	0.686	0.431	0.601	0.882	0.967	
<i>SIZE</i>	18.825	1.398	17.878	18.556	19.501	
<i>LEV</i>	1.140	1.547	0.390	0.775	1.381	
<i>BM</i>	1.543	1.332	0.695	1.198	1.962	
<i>SALESVOL</i>	0.188	0.160	0.086	0.142	0.235	
<i>SALESGRW</i>	0.096	0.364	−0.060	0.056	0.183	
<i>OPLEV</i>	0.188	0.136	0.085	0.161	0.264	
<i>AVGOCF</i>	0.043	0.069	0.008	0.045	0.083	
<i>OPCYCLE</i>	0.120	0.417	0.027	0.039	0.064	
<i>R_t</i>	0.209	0.796	−0.239	0.022	0.397	
<i>X_{t−1}</i>	0.055	0.605	−0.006	0.087	0.202	
<i>X_t</i>	0.061	0.473	−0.010	0.081	0.191	
<i>X_{t3}</i>	0.048	1.044	−0.113	0.200	0.478	
<i>R_{t3}</i>	0.578	1.492	−0.272	0.173	0.904	
Panel B. Mean and Median Differences by the Level of Blockholder Dispersion (<i>DISP</i>)						
Variable	Low <i>DISP</i> group (n = 7024)		High <i>DISP</i> group (n = 7023)		Mean Diff.	Median Diff.
	Mean	Median	Mean	Median		
<i>SMT1</i>	−1.111	−0.802	−0.941	−0.679	−0.169 ***	−0.123 ***
<i>SMT2</i>	0.652	0.860	0.721	0.900	−0.068 ***	−0.040 ***
<i>SIZE</i>	18.619	18.353	19.032	18.765	−0.412 ***	−0.412 ***
<i>LEV</i>	1.181	0.787	1.099	0.763	0.082 ***	0.024 ***
<i>BM</i>	1.380	1.063	1.706	1.347	−0.326 ***	−0.284 ***
<i>SALESVOL</i>	0.200	0.152	0.176	0.131	0.024 ***	0.020 ***
<i>SALESGRW</i>	0.100	0.055	0.092	0.056	0.008	−0.002
<i>OPLEV</i>	0.180	0.152	0.196	0.169	−0.017 ***	−0.017 ***
<i>AVGOCF</i>	0.037	0.040	0.049	0.049	−0.012 ***	−0.009 ***
<i>OPCYCLE</i>	0.125	0.040	0.115	0.039	0.011	0.000
<i>R_t</i>	0.191	−0.005	0.226	0.046	−0.035 **	−0.051 ***
<i>X_{t−1}</i>	0.023	0.065	0.088	0.109	−0.065 ***	−0.044 ***
<i>X_t</i>	0.027	0.058	0.094	0.100	−0.067 ***	−0.043 ***
<i>X_{t3}</i>	−0.053	0.139	0.150	0.252	−0.203 ***	−0.113 ***
<i>R_{t3}</i>	0.549	0.139	0.607	0.205	−0.058	−0.067 ***

Note: ** and *** denote significance at 5 percent and 1 percent levels, respectively. The significance of mean difference is based on *t*-statistics and the significance of median difference is based on *Z*-statistics.

Table 4 presents Pearson/Spearman correlation coefficients for our earnings smoothness measure, blockholder dispersion measure, and other control variables. The Pearson (Spearman) correlations are provided in the upper (lower) diagonal of the table. We confirmed that the earnings smoothness

measures (*SMT1* and *SMT2*) and blockholder dispersion index (*DISP*) are positively correlated with statistical significance.

Table 4. Correlation Table.

Variable	<i>DISP</i>	<i>SMT1</i>	<i>SMT2</i>	<i>SIZE</i>	<i>LEV</i>	<i>BM</i>	<i>SALES VOL</i>	<i>SALES GRW</i>	<i>OPLEV</i>	<i>AVG OCF</i>	<i>OP CYCLE</i>	R_t	X_{t-1}	X_t	X_{t3}	R_{t3}
<i>DISP</i>	1	0.102	0.101	0.163	−0.037	0.154	−0.108	0.002	0.068	0.117	−0.018	0.027	0.111	0.127	0.134	0.034
<i>SMT1</i>	0.106	1	0.720	0.154	−0.133	0.125	−0.067	−0.004	0.049	0.251	−0.002	0.036	0.259	0.218	0.172	0.041
<i>SMT2</i>	0.099	0.765	1	0.165	−0.131	0.117	−0.101	−0.033	0.042	0.273	−0.004	0.018	0.244	0.171	0.167	0.041
<i>SIZE</i>	0.199	0.218	0.201	1	0.126	0.138	−0.175	0.000	0.194	0.249	−0.005	−0.002	0.155	0.156	0.128	−0.025
<i>LEV</i>	−0.031	0.010	−0.016	0.198	1	−0.034	0.109	0.011	0.128	−0.234	−0.019	−0.062	−0.268	−0.283	−0.185	−0.026
<i>BM</i>	0.178	0.214	0.196	0.182	−0.034	1	−0.137	−0.098	0.056	−0.011	−0.061	−0.242	0.080	0.082	0.077	0.273
<i>SALESVOL</i>	−0.128	−0.062	−0.075	−0.204	0.132	−0.154	1	0.058	−0.147	−0.135	0.063	0.002	−0.117	−0.091	−0.109	−0.052
<i>SALESGRW</i>	0.016	0.062	0.036	0.061	0.059	−0.107	−0.003	1	−0.002	−0.047	0.015	0.104	−0.028	0.142	0.048	−0.019
<i>OPLEV</i>	0.076	0.044	0.049	0.170	0.187	0.049	−0.147	0.047	1	0.254	−0.039	−0.014	0.023	0.015	0.067	0.021
<i>AVGOCF</i>	0.098	0.224	0.234	0.212	−0.279	−0.009	−0.086	0.059	0.289	1	0.018	0.069	0.369	0.355	0.354	0.083
<i>OPCYCLE</i>	0.004	0.054	0.061	0.094	0.021	−0.049	0.257	0.037	0.005	0.171	1	−0.010	−0.012	0.002	0.008	−0.012
R_t	0.075	0.094	0.064	0.071	−0.075	−0.251	−0.059	0.140	0.000	0.129	0.022	1	0.055	0.223	0.079	−0.148
X_{t-1}	0.170	0.329	0.287	0.274	−0.148	0.205	−0.112	0.071	0.061	0.429	0.073	0.139	1	0.361	0.291	0.056
X_t	0.181	0.305	0.244	0.251	−0.144	0.203	−0.101	0.264	0.052	0.406	0.066	0.395	0.542	1	0.406	0.082
X_{t3}	0.169	0.259	0.233	0.221	−0.110	0.267	−0.120	0.146	0.105	0.386	0.055	0.121	0.433	0.536	1	0.277
R_{t3}	0.058	0.085	0.078	0.017	−0.057	0.330	−0.098	0.009	0.053	0.135	−0.007	−0.134	0.105	0.154	0.432	1

Note: This table presents Pearson (upper diagonal)/Spearman (lower diagonal) correlations. The bold value denotes significance at 5%.

5. Empirical Results and Discussion

5.1. Main Results

The regression results testing H1 are presented in Table 5. Columns (1) and (2) show the regression results using *RSMT1* and *RSMT2* as dependent variables, respectively. The coefficients on *RDISP* are 0.031 and 0.026, and both of the coefficients are statistically significant, with respective *t-values* of 3.70 and 3.15. The results can be interpreted as indicating that a more dispersed ownership structure is associated with a smoother income stream. This is consistent with our first hypothesis, which states that firms with dispersed ownership are likely to suffer from high levels of information asymmetry, and managers of such firms try to relieve investors' concerns by providing a more sustainable earnings stream. Our results are also economically significant. Assuming all the other explanatory variables take their respective median values, when *RDISP* moves from the minimum (0) to the maximum value (1), *RSMT1* increases by 6.8% (from 0.45 to 0.49), and *RSMT2* increases by 5.8% (from 0.45 to 0.48).

Table 5. Blockholder Dispersion and Earnings Smoothing.

	Dep. Var. = <i>RSMT1</i> (1)			Dep. Var. = <i>RSMT2</i> (2)		
	Coeff. Est.	<i>t-stat.</i>	VIF	Coeff. Est.	<i>t-stat.</i>	VIF
<i>Intercept</i>	0.054	1.42		0.096 **	2.53	
<i>RDISP</i>	0.031 ***	3.70	1.06	0.026 ***	3.15	1.06
<i>SIZE</i>	0.019 ***	9.91	1.30	0.017 ***	9.18	1.30
<i>LEV</i>	−0.014 ***	−10.10	1.19	−0.013 ***	−8.25	1.19
<i>BM</i>	0.026 ***	10.71	1.43	0.021 ***	8.62	1.43
<i>SALESVOL</i>	0.013	0.84	1.14	−0.033 **	−2.06	1.14
<i>SALESGRW</i>	0.014 **	2.18	1.06	−0.010	−1.53	1.06
<i>OPLEV</i>	−0.100 ***	−5.26	1.32	−0.074 ***	−3.80	1.32
<i>AVGOCF</i>	0.897 ***	26.51	1.25	0.935 ***	26.52	1.25
<i>OPCYCLE</i>	0.010 *	1.80	1.18	0.008	1.28	1.18
<i>POSTSOX</i>	0.033 **	1.99	8.73	0.024	1.44	8.73
<i>Industry dummy</i>	Yes			Yes		
<i>Year dummy</i>	Yes			Yes		
<i>Adjusted-R²</i>	0.117			0.111		
<i>Observations</i>	14,047			14,047		

Note: This table reports OLS regression results; *, **, *** indicate significance at the 0.10, 0.05, and 0.01 levels, respectively. The significance level is calculated using the error clustered by firm and year; *RSMT1* (*RSMT2*) is a fractional ranking of *SMT1* (*SMT2*) by year, scaled 0 to 1; *RDISP* is a fractional ranking of *DISP* by year, scaled 0 to 1; *POSTSOX* is a dummy variable equal to 1 for the years from 2005 onwards.

Looking at the control variables, the coefficients on *SIZE*, *BM*, *AVGOCF*, and *OPCYCLE* show positive signs, and the coefficients on *OPLEV* show negative signs, suggesting that earnings smoothing is more prevalent for large, mature firms with longer operating cycle, and less investment in fixed assets. These results are consistent with the findings using U.S. data [52]. One notable difference identified in the Korean data is that earnings smoothness appears to be negatively associated with leverage (*LEV*). This seems to contradict the U.S. evidence, which shows that, as firms with smoother earnings bear lower borrowing costs [54,55], firms with high leverage have a greater tendency to engage in earnings smoothing. This seemingly contradictory finding may result from the close financial ties that Korean firms have with their banks [44], which reduce the need for such firms to engage in earnings smoothing to reduce borrowing costs.

Next, Table 6 shows the results of the subsample analyses that compare the effects of earnings smoothing on the FERC among different levels of blockholder dispersion. We classified our sample into three subsamples based on the level of blockholder dispersion (the *Lowest*; *Middle*; and *Highest dispersion* subsamples) and separately estimated Equation (4). Panel A (Panel B) shows the results using *RSMT1* (*RSMT2*) as an earnings smoothing measure. Looking at Panel A of Table 6, we found that the coefficient on $RSMT_t \times X_{t3}$ is the lowest for the *Lowest dispersion* subsample, and highest for the *Highest dispersion* subsample. The results provide consistent evidence that, when compared to earnings smoothing conducted by firms with concentrated ownership, earnings smoothing conducted by firms with dispersed ownership leads to higher informativeness of future earnings. One interesting finding is that the coefficients on $RSMT_t \times X_{t3}$ show negative signs for all of the columns (Columns (1) to (3)) as opposed to the positive signs reported in Tucker and Zarowin [16]. The interpretation is that where Tucker and Zarowin [16] report higher informativeness of earnings for firms with smoother earnings, our results suggest that earnings smoothing conducted by Korean firms, in general, seems to decrease the informativeness of earnings and that the negative effect is mitigated with blockholder dispersion. This difference in empirical results may result from the fact that corporate ownership structures of Korean firms are relatively more concentrated than ownership structures of the U.S. firms. Tucker and Zarowin [16]'s results that use the U.S. data may reflect the fact that firms with dispersed ownership dominate the sample and lead to the overall result that firms with smooth earnings have a higher informativeness of earnings. Looking at the sum of the coefficients on X_{t3} and $RSMT_t \times X_{t3}$, we found that the sum is significantly negative for the *Lowest dispersion* and *Middle dispersion* subsamples (i.e., -0.077 for the *Lowest dispersion* subsample, and -0.065 for the *Middle dispersion* subsample). However, the sum of the coefficients became insignificant for the *Highest dispersion* subsample, indicating that high levels of blockholder dispersion act to offset the garbling effect of earnings smoothing and lead to higher informativeness of earnings. Panel B of Table 6 shows the results using *RSMT2* as an earnings smoothing measure. The results were qualitatively the same. We found that the coefficient on $RSMT_t \times X_{t3}$ is the lowest for the *Lowest dispersion* subsample, whereas it loses its statistical significance for the *Highest dispersion* subsample. Moreover, we found that the sum of the coefficients on X_{t3} and $RSMT_t \times X_{t3}$ is significantly negative for the *Lowest dispersion* and *Middle dispersion* subsamples (i.e., -0.069 for the *Lowest dispersion* subsample, and -0.038 for the *Middle dispersion* subsample), but becomes significantly positive for the *Highest dispersion* subsample (i.e., 0.007). This provides consistent evidence of higher informativeness of smooth earnings for firms with dispersed ownership.

To check the robustness of our results, we conducted a subsample analysis with dividing the total sample into different numbers of subsamples—two, and four—based on the level of blockholder dispersion. Regardless of the number of subsamples or proxy used for earnings smoothing, we found consistent results that the coefficient on $RSMT_t \times X_{t3}$ is lowest for the low dispersion subsample and highest for the high dispersion subsample. We omitted the results for brevity.

Overall, we show that firms with dispersed ownership structure are more likely to suffer from an information asymmetry problem and that managers of such firms try to reduce investor concerns by providing a sustainable earnings stream.

Table 6. Earnings Smoothing and Earnings Informativeness Depending on the Level of Blockholder Dispersion.

Panel A. RSMT1 Used									
	Dep. Var. = R_t								
	Lowest dispersion (1)			Middle dispersion (2)			Highest dispersion (3)		
	Coeff. Est.	t-stat.	VIF	Coeff. Est.	t-stat.	VIF	Coeff. Est.	t-stat.	VIF
Intercept	0.549 ***	4.25		0.365 ***	3.69		0.288 ***	3.47	
X_{t-1}	0.022	0.68	1.85	0.063 **	2.23	1.90	0.062 ***	2.59	1.79
X_t	−0.007	−0.12	2.17	0.074 *	1.66	2.14	−0.047	−1.41	1.92
X_{t3}	0.134 ***	5.86	3.80	0.080 ***	5.26	3.11	0.039 **	2.08	3.66
R_{t3}	−0.066 ***	−4.95	4.32	−0.038 ***	−3.47	4.10	−0.024 *	−1.72	4.82
RSMT1	−0.098 **	−2.17	1.38	−0.057	−1.26	1.42	−0.153 ***	−3.42	1.43
$RSMT1 \times X_{t-1}$	−0.260 **	−2.28	2.22	−0.285 ***	−2.64	2.48	−0.343 ***	−3.46	2.27
$RSMT1 \times X_t$	1.263 ***	6.28	2.54	0.808 ***	4.46	2.97	1.232 ***	10.26	2.46
$RSMT1 \times X_{t3}$	−0.211 ***	−2.68	3.63	−0.145 ***	−4.68	3.33	−0.052 *	−1.66	3.74
$RSMT1 \times R_{t3}$	0.045*	1.93	4.34	0.009	0.45	4.28	−0.015	−0.68	5.04
Industry dummy		Yes			Yes			Yes	
Year dummy		Yes			Yes			Yes	
Significant test of $X_{t3} + RSMT1 \times X_{t3}$ (F-value)		19.07 ***			14.24 ***			2.16	
Adjusted-R ²		0.284			0.289			0.294	
Observations		4683			4682			4682	
Panel B. RSMT2 used									
	Dep. Var. = R_t								
	Lowest dispersion (1)			Middle dispersion (2)			Highest dispersion (3)		
	Coeff. Est.	t-stat.	VIF	Coeff. Est.	t-stat.	VIF	Coeff. Est.	t-stat.	VIF
Intercept	0.566 ***	4.40		0.390 ***	3.92		0.309 ***	3.64	
X_{t-1}	0.029	0.90	1.77	0.043	1.65	1.82	0.060 **	2.24	2.02
X_t	−0.004	−0.07	2.31	0.081 *	1.69	2.27	−0.018	−0.50	2.22
X_{t3}	0.133 ***	5.75	3.98	0.067 ***	4.59	3.01	0.040 **	2.16	4.05
R_{t3}	−0.060 ***	−4.64	4.06	−0.038 ***	−3.36	4.06	−0.028 **	−1.99	4.56
RSMT2	−0.103 **	−2.29	1.32	−0.077 *	−1.85	1.34	−0.095 **	−2.07	1.33
$RSMT2 \times X_{t-1}$	−0.242 **	−2.08	2.20	−0.144	−1.41	2.38	−0.286 **	−2.18	2.55
$RSMT2 \times X_t$	1.127 ***	5.82	2.81	0.612 ***	3.53	2.97	0.835 ***	6.24	2.78
$RSMT2 \times X_{t3}$	−0.202 **	−2.52	3.86	−0.105 ***	−3.56	3.27	−0.033	−1.06	4.18
$RSMT2 \times R_{t3}$	0.033	1.50	4.04	0.010	0.50	4.26	−0.010	−0.41	4.72
Industry dummy		Yes			Yes			Yes	
Year dummy		Yes			Yes			Yes	
Significant test of $X_{t3} + RSMT2 \times X_{t3}$ (F-value)		19.64 ***			10.55 ***			2.79 *	
Adjusted-R ²		0.281			0.287			0.281	
Observations		4683			4682			4682	

Note: This table reports OLS regression results; *, **, *** indicate significance at the 0.10, 0.05, and 0.01 levels, respectively. The significance level is calculated using the error clustered by firm and year; RSMT1 (RSMT2) is a fractional ranking of SMT1 (SMT2) by year, scaled 0 to 1. The sample was divided into three subsamples each year, based on the blockholder dispersion measure (DISP): *Lowest dispersion*, *Middle dispersion*, and *Highest dispersion*.

5.2. Additional Analysis Controlling for Chaebol-Affiliated Firms

For this section, we conducted additional analysis that controls for Chaebol-affiliation. A Chaebol, which is a conglomerate of many companies run and controlled by family members, has played a crucial role in the growth of the Korean economy [56,57]. Major features of a Chaebol include a group of companies clustered around the parent company, and family members exerting control over all group affiliates through indirect pyramidal and circular ownership [58]. To relieve the concerns that our measure does not capture a block split into family members, we repeated our analysis with the sample divided into Chaebol firms and non-Chaebol firms. We expected our results to be driven by the non-Chaebol firms, and not to appear for the Chaebol firms that are controlled by the concentrated family owners. Chaebol affiliation is determined based on data provided by Korea

Fair Trade Commission (KFTC), and as the Chaebol classification data is available from year 2000, 356 observations are dropped in conducting analysis.

Table 7 reports the results of H1 for non-Chaebol and Chaebol subsamples. Columns (1) and (2) report the results using *RSMT1* as an earnings smoothing measure, and Columns (3) and (4) show the results using *RSMT2* as a smoothing measure. By comparing Columns (1) and (2), we found that our results of blockholder dispersion led to smoother earnings to appear only for the non-Chaebol subsample. Specifically, we find a significantly positive coefficient on *RDISP* for the non-Chaebol subsample, and an insignificant coefficient on *RDISP* for the Chaebol subsample. The results provided evidence that Chaebol-affiliated firms, which are controlled by concentrated family members through indirect ownership, show no relation between dispersion and earnings smoothing. Columns (3) and (4) qualitatively show the same results.

Table 7. Blockholder Dispersion and Earnings Smoothing Depending on Chaebol-Affiliation.

	Dep. Var. = <i>RSMT1</i>						Dep. Var. = <i>RSMT2</i>					
	Non-Chaebol			Chaebol			Non-Chaebol			Chaebol		
	(1)			(2)			(3)			(4)		
	Coeff. Est.	t-stat.	VIF	Coeff. Est.	t-stat.	VIF	Coeff. Est.	t-stat.	VIF	Coeff. Est.	t-stat.	VIF
<i>Intercept</i>	−0.208 ***	−3.79		0.227 **	2.17		−0.029	−0.52		0.270 ***	2.59	
<i>RDISP</i>	0.035 ***	3.77	1.08	−0.014	−0.68	1.13	0.023 **	2.49	1.08	0.034	1.62	1.13
<i>SIZE</i>	0.032 ***	10.90	1.38	0.008 *	1.80	1.30	0.023 ***	7.69	1.38	0.009 *	1.92	1.30
<i>LEV</i>	−0.016 ***	−8.69	1.19	−0.012 ***	−2.86	1.27	−0.013 ***	−6.46	1.19	−0.018 ***	−4.32	1.27
<i>BM</i>	0.027 ***	9.21	1.50	0.012 **	2.38	1.59	0.025 ***	8.32	1.50	0.002	0.38	1.59
<i>SALESVOL</i>	−0.015	−0.84	1.14	0.146 ***	4.43	1.33	−0.074 ***	−4.24	1.14	0.128 ***	3.55	1.33
<i>SALESGRW</i>	0.013 **	2.04	1.06	0.052 *	1.71	1.09	−0.010	−1.53	1.06	0.050 *	1.79	1.09
<i>OPLEV</i>	−0.103 ***	−4.79	1.28	−0.054	−1.17	1.53	−0.088 ***	−4.03	1.28	0.022	0.47	1.53
<i>AVGOFC</i>	0.869 ***	24.03	1.25	0.665 ***	5.34	1.47	0.931 ***	24.54	1.25	0.640 ***	5.17	1.47
<i>OPCYCLE</i>	0.012 *	1.83	1.16	−0.004	−0.29	1.30	0.010	1.34	1.16	0.002	0.15	1.30
<i>POSTSOX</i>	0.065 ***	3.48	8.52	0.021	0.47	9.32	0.063 ***	3.37	8.52	−0.029	−0.65	9.32
<i>Ind. dummy</i>	Yes			Yes			Yes			Yes		
<i>Year dummy</i>	Yes			Yes			Yes			Yes		
<i>Adjusted-R²</i>	0.129			0.098			0.116			0.100		
<i>Observations</i>	11,749			1942			11,749			1942		

Note: This table reports OLS regression results; *, **, *** indicate significance at the 0.10, 0.05, and 0.01 levels, respectively. The significance level is calculated using the error clustered by firm and year; *RSMT1* (*RSMT2*) is a fractional ranking of *SMT1* (*SMT2*) by year, scaled 0 to 1; *RDISP* is a fractional ranking of *DISP* by year, scaled 0 to 1; *POSTSOX* is a dummy variable equal to 1 for the years from 2005 onwards.

Next, Table 8 shows the results of H2 with the consideration of Chaebol-affiliation. Specifically, we conducted FERC analysis with a two-by-three partition of the sample according to Chaebol-affiliation and blockholder dispersion. In Panel A, Columns (1) to (3) show the results using non-Chaebol observations with separate analysis conducted for *Lowest*, *Middle*, and *Highest dispersion* subsamples. The results are consistent with the results reported in Table 6. While the coefficient on $RSMT_t \times X_{t3}$ is significantly negative for the *Lowest* and *Middle dispersion* subsamples, it loses its statistical significance for the *Highest dispersion* subsample, indicating that earnings smoothing conducted by firms with dispersed ownership leads to higher informativeness of future earnings. On the other hand, Columns (4) to (6) show the results using Chaebol observations. We found that the coefficients on $RSMT_t \times X_{t3}$ are insignificant for all three Columns. The results indicated that the increased informativeness of sustainable earnings for firms with dispersed ownership is driven by non-Chaebol firms. Panel B repeats the analysis using *RSMT2* as an earnings smoothing measure and qualitatively shows the same results.

Table 8. Earnings Smoothing and Earnings Informativeness Depending on the Level of Blockholder Dispersion and Chaebol-Affiliation.

Panel A. RSMT1 Used																		
	Non-Chaebol									Chaebol								
	Lowest dispersion (1)			Middle dispersion (2)			Highest dispersion (3)			Lowest dispersion (4)			Middle dispersion (5)			Highest dispersion (6)		
	Coeff. Est.	t-stat.	VIF	Coeff. Est.	t-stat.	VIF	Coeff. Est.	t-stat.	VIF	Coeff. Est.	t-stat.	VIF	Coeff. Est.	t-stat.	VIF	Coeff. Est.	t-stat.	VIF
Intercept	−0.287 ***	−5.12		−0.244 ***	−4.10		−0.165 ***	−3.89		−0.366 ***	−2.70		−0.514 ***	−4.85		−0.249 ***	−2.80	
X_{t-1}	0.059	1.40	1.92	0.067 **	2.04	1.85	0.061 **	2.18	1.70	−0.166 *	−1.77	3.43	0.038	0.30	3.10	−0.181	−1.37	3.34
X_t	0.016	0.24	2.12	0.057	1.10	2.44	−0.059 *	−1.77	1.84	0.056	0.44	3.25	0.092	0.43	4.36	0.243 **	2.17	2.99
X_{I3}	0.125 ***	5.40	3.51	0.096 ***	4.13	3.81	0.039 **	1.97	3.67	0.122 **	1.97	6.79	0.075	1.39	6.18	0.078	1.49	7.40
R_{I3}	−0.064 ***	−4.58	4.13	−0.044 ***	−3.83	4.01	−0.028	−1.52	5.32	−0.057	−1.42	6.72	0.019	0.51	6.58	−0.017	−1.09	4.26
RSMT1	−0.077	−1.58	1.48	−0.093 **	−1.97	1.44	−0.162 ***	−3.08	1.47	−0.081	−0.74	1.28	0.021	0.19	1.79	−0.081	−0.96	1.50
$RSMT1 \times X_{t-1}$	−0.383 ***	−2.86	2.39	−0.325 ***	−2.69	2.48	−0.357 ***	−2.96	2.30	0.009	0.04	4.01	−0.077	−0.19	4.12	0.093	0.35	4.01
$RSMT1 \times X_t$	1.149 ***	6.08	2.54	0.963 ***	5.11	3.05	1.269 ***	9.17	2.46	0.916 ***	2.84	3.78	1.152 **	1.99	5.86	0.539 **	1.97	3.58
$RSMT1 \times X_{I3}$	−0.142 ***	−3.67	3.40	−0.157 ***	−3.77	3.85	−0.054	−1.59	3.68	−0.094	−0.99	6.46	−0.124	−1.23	7.25	−0.043	−0.48	7.73
$RSMT1 \times R_{I3}$	0.027	1.13	4.20	0.013	0.64	4.21	−0.017	−0.60	5.54	0.034	0.48	6.86	−0.045	−0.97	6.41	−0.019	−0.51	4.38
Industry dummy		Yes			Yes			Yes			Yes			Yes			Yes	
Year dummy		Yes			Yes			Yes			Yes			Yes			Yes	
Significant test of $X_{I3} + RSMT1 \times X_{I3}$ (F-value)		15.28 ***			8.72 ***			1.94			2.75 *			0.96			3.48 **	
Adjusted-R ²		0.279			0.309			0.305			0.384			0.352			0.390	
Observations		3898			4039			3812			699			520			723	
Panel B. RSMT2 used																		
	Non-Chaebol									Chaebol								
	Lowest dispersion (1)			Middle dispersion (2)			Highest dispersion (3)			Lowest dispersion (4)			Middle dispersion (5)			Highest dispersion (6)		
	Coeff. Est.	t-stat.	VIF	Coeff. Est.	t-stat.	VIF	Coeff. Est.	t-stat.	VIF	Coeff. Est.	t-stat.	VIF	Coeff. Est.	t-stat.	VIF	Coeff. Est.	t-stat.	VIF
Intercept	−0.296 ***	−5.31		−0.256 ***	−4.13		−0.167 ***	−3.86		−0.364 ***	−2.71		−0.483 ***	−4.52		−0.275 ***	−2.92	
X_{t-1}	0.075 *	1.70	1.91	0.046	1.51	1.82	0.074 **	2.35	1.99	−0.131	−1.56	2.64	−0.077	−0.58	3.06	−0.183	−1.35	3.36
X_t	0.041	0.72	2.34	0.080	1.33	2.51	−0.042	−1.19	2.09	−0.009	−0.08	2.76	0.264	1.02	4.46	0.253 **	2.04	3.48
X_{I3}	0.120 ***	5.53	3.63	0.074 ***	3.32	3.53	0.052 **	2.42	3.96	0.077	1.30	5.73	0.048	0.77	6.52	0.044	0.96	6.87
R_{I3}	−0.058 ***	−4.22	3.94	−0.045 ***	−3.78	4.06	−0.035 **	−1.97	4.59	−0.080 **	−2.23	5.96	0.030	0.79	5.20	−0.001	−0.05	5.03
RSMT2	−0.071	−1.46	1.37	−0.093 **	−2.12	1.35	−0.115 **	−2.19	1.35	−0.112	−1.06	1.29	−0.026	−0.21	2.01	−0.011	−0.13	1.43
$RSMT2 \times X_{t-1}$	−0.385 ***	−2.77	2.42	−0.189	−1.51	2.44	−0.386 ***	−3.25	2.75	−0.149	−0.77	3.10	0.324	0.85	4.36	0.089	0.34	4.31
$RSMT2 \times X_t$	0.873 ***	4.15	2.91	0.689 ***	3.15	3.04	0.915 ***	6.37	2.77	1.336 ***	4.69	3.25	0.653	1.25	6.06	0.409	1.56	4.32
$RSMT2 \times X_{I3}$	−0.121 ***	−3.24	3.60	−0.100 ***	−2.76	3.64	−0.055	−1.48	4.10	−0.025	−0.28	5.48	−0.061	−0.65	7.37	0.025	0.33	7.22
$RSMT2 \times R_{I3}$	0.015	0.66	3.97	0.017	0.77	4.28	−0.005	−0.18	4.71	0.064	1.10	5.63	−0.074	−1.52	5.05	−0.058	−1.46	5.38
Industry dummy		Yes			Yes			Yes			Yes			Yes			Yes	
Year dummy		Yes			Yes			Yes			Yes			Yes			Yes	
Significant test of $X_{I3} + RSMT2 \times X_{I3}$ (F-value)		16.86 ***			5.50 ***			3.15 **			2.31			0.30			3.85	
Adjusted-R ²		0.275			0.306			0.296			0.402			0.347			0.388	
Observations		3898			4039			3812			699			520			723	

Note: This table reports OLS regression results; *, **, *** indicate significance at the 0.10, 0.05, and 0.01 levels, respectively. The significance level was calculated using the error clustered by firm and year; RSMT1 (RSMT2) is a fractional ranking of SMT1 (SMT2) by year, scaled 0 to 1. The sample was divided into six subsamples each year, based on Chaebol-affiliation (Non-Chaebol and Chaebol) and blockholder dispersion (DISP; Lowest dispersion, Middle dispersion, and Highest dispersion).

6. Conclusions

The purpose of this study was to further extend previous studies by examining how a firms' ownership structure affects the informativeness of its reported earnings. Consistent with the idea that earnings smoothing can be conducted with the managerial intent to improve the sustainability of earnings, this paper shows that firms with dispersed ownership provide a smoother income stream and that earnings smoothing by firms with dispersed ownership leads to higher informativeness of earnings. This study offers insights to various financial statement users in interpreting firms' earnings sustainability, especially in the East Asian countries where the agency problem is likely to be severe. Specifically, the results of our study suggest that financial reporting practices and the informativeness of sustainable earnings may vary according to the ownership concentration structure. Market participants should be aware that where earnings smoothing conducted by firms with dispersed ownership improves the informativeness of earnings numbers, earnings smoothing conducted by concentrated ownership may lead to garbled information.

Our findings should be interpreted with the following caveats. First, although we used a dispersion measure that separates out the effect of dispersion from the effect of total fraction of shares owned by blockholders, we could not rule out the risk of measurement error in the dispersion proxy. For instance, if a block is dispersed among multiple family members but all the members take actions together, our proxy will classify such firms to have an ownership structure that is dispersed. We believe that our additional regressions that take the Chaebol structure into account can relieve some concerns. Second, where we examined the effect of ownership structure on corporate earnings smoothing, we cannot fully rule out the possibility that our empirical results may be driven by reverse causality (i.e., smooth earnings attracting dispersed ownership). However, we believe our basic argument, in which ownership structure affects earnings management incentives, is better supported by prior studies (see for example, Warfield, et al. [59], and Fan and Wong [60]) than the reverse argument that earnings characteristics determine a firm's ownership structure. Second, since our analyses used Korean data, our results would not necessarily be applicable to other Western countries, especially those that are composed mostly of well-dispersed firms (i.e., the U.S. or U.K.). We believe, however, that our findings can shed light on the more generalized situation in East Asian countries, where a wider spectrum of ownership concentration structures exist.

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Variable Definitions:

<i>DISP</i>	=	$(-1) \times \frac{(\%Block1)^2 + (\%Block2)^2 + \dots + (\%Block5)^2}{[(\%Block1) + (\%Block2) + \dots + (\%Block5)]^2}$;
<i>SMT1</i>	=	$(-1) \times$ the ratio of the standard deviation of net income to the standard deviation of cash flows, both calculated over a five-year period ($t - 4, t$);
<i>SMT2</i>	=	$(-1) \times$ the Pearson correlation between the change in discretionary accruals and the change in pre-managed income over a five-year period ($t - 4, t$);
<i>SIZE</i>	=	the natural logarithm of total assets;
<i>LEV</i>	=	total liability/total equity;
<i>BM</i>	=	book value of equity/market value of equity;
<i>SALESVOL</i>	=	the standard deviation of sales scaled by lagged total assets, over at least three of the last five years ($t - 4, t$);
<i>SALESGRW</i>	=	$(sales_t - sales_{t-1})/sales_{t-1}$;
<i>OPLEV</i>	=	property, plant and equipment/total assets;

$AVGOCF$	=	the average operating cash flow over the last five years scaled by lagged total assets;
$OPCYCLE$	=	the natural logarithm of firms' operating cycles: $(sales/360)/(average\ account\ receivables) + (cogs/360)/(average\ inventory)$;
X_{t-1}	=	net income _{t-1} /market value of equity _{t-2} ;
X_t	=	net income _t /market value of equity _{t-1} ;
X_{t3}	=	$(net\ income_{t+1}/market\ value\ of\ equity_t) + (net\ income_{t+2}/market\ value\ of\ equity_{t+1}) + (net\ income_{t+3}/market\ value\ of\ equity_{t+2})$;
R_t	=	Buy-and-hold return for fiscal Year t ;
R_{t3}	=	annually compounded stock return for fiscal Years $t + 1$ through $t + 3$.

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