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Dividend Policy and Earnings Management: Based on Discretionary Accruals and Real Earnings Management

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Abstract

In this paper, we attempt to identify the effect of high dividend payouts on earnings management by examining discretionary accruals and real earnings management. Firms experience pressure to payout dividends from institutional and foreign investors who pursue investments in firms with high dividend policies. In such cases, managers are likely to execute high dividend payouts to meet expectations. However, in the face of lower income or losses, it will be more difficult for managers to justify the high payout of dividends to stakeholders. Therefore, firms will prefer to payout dividends with sufficient income. In turn, managers are likely to depend on earnings management as a means to increase the income from which dividends are paid. Under this rationale, we study the effect of high dividend payouts on earnings management. Overall, the results of our main analysis reveal that a firm's high dividend policy is likely to increase the firm's earnings management. Thus, this result supports our main hypothesis that a firm's high dividend payout policy is likely to drive the firm's earnings management, especially through discretionary accruals, as firms have a significant motivation towards earnings management in midst of pressure to maintain dividend payouts.

Keywords*: Dividend Payout Ratio, Discretionary Accruals, Real Earnings Management*

1. Introduction

The total the total dividend payout ratio of the Korean listed firms in 2014 is reported to have increased by 30% since the prior year. In addition, the total amount of dividends has reached an unprecedented amount of 17 trillion won, which is 4 trillion won more than that of 960 firms in 2013.[1]This trend is driven by the increasing demand for more

[1] On February 22, 2015, KB Investment and Securities reported that the dividends of all listed firms in KOSPI and KOSDAQ increased by 32% from the prior year. The total amount of dividends was 17 trillion, which is the largest amount of annual dividends paid out in Korea. Among this record high dividends, Samsung Life Insurance earned dividend revenues of more than 300 billion won, an increase of 95.1billion won from the prior year. In addition, LG Electronics, Hyundai Mobis and GS also reported record-high dividend revenues. (Yonhap News 2015/02/22)

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dividends from market participants such as the government, customers and investors. In particular, the demand for increased dividends, mainly from institutional and foreign investors, has been concentrated on public companies. In addition, this dividend policy trend is increasingly encouraged by the government as an attempt to help stimulate the business cycle.

Until recently, the expansion of dividend payments has been repressed as the cash outflows of dividend payments are likely to increase the firm's bankruptcy risk amidst a high level of economic uncertainty. This trend was intensified due to the Asian financial crisis in 1998. Firms had come to prefer the sustainable accumulation of cash instead of executing dividend payments. However, this trend was argued to cause issues in terms of underinvestment and agency problems. The traditional aspect of finance theory suggests that excessive cash holdings generate surplus cash flows, which in turn causes agency problems (Jensen and Meckling, 1976).

In midst of such issues, firms around the world have increased the level of cash holdings as risk management has become an increasingly important factor. In addition, firms have established various programs for risk management, especially after the financial crisis in 2008. Korean firms have sustained their policies of risk management to reject excessive investments and prefer sustainable cash holdings since the Asian financial crisis. Before the 1990s, Korean firms implemented policies that focused on new investment opportunities to stimulate growth, but this trend was abruptly changed after the many cases of the firms that were completely disassembled after the Asian financial crisis. Therefore, in the following decade, large Korean firms maintained a high level of cash holdings, and in turn were able to maintain a high level of financial stability.

However, this trend is slowly faltering as market participants have realized that an appropriate dividend policy is likely to positively affect stock prices as well as dividend income. In addition, various papers suggest that dividends are the main determinant of a firm's future growth and value. In particular, Baker and Powell (2000) and Baker et al. (2001) assert that a strong intention to maintain a sustainable dividend payout is the most important factor for a firm's dividend policy and report that most firms exert efforts to provide consistent dividend payouts.[2] Furthermore, Brav et al. (2005) report that the effort to sustain a consistent level of dividend payout is a main determinant for dividend policy decisions, indicating that through their dividend decisions, managers convey their internal information on future expectations to market participants. This shows that a decrease in dividends can lead to negative consequences in market value. [3]

Thus, we attempt to identify the effect of high dividend payouts on earnings management by examining discretionary accruals and real earnings management. Firms experience pressure to payout dividends from institutional and foreign investors who pursue investments in firms with high dividend payouts. Managers consider these

[2]Baker et al. (2001) suggest that almost 50% of firms sustain their target payout-ratio through a survey. The survey results suggest that firms are likely to reveal their strong desire to hold a consistent dividend policy. Thus, the paper asserts that firms establish their payout ratio and dividend level to satisfy the demands of their stakeholders.

[3] Choi (2015) documents that among 2,134 firms that recorded losses in the U.S., 304 paid dividends, and that number is 62 among 498 in Korea. This trend of paying dividends from losses is considered to be a problematic policy as mature firms are not likely to have many new investment opportunities. In addition, the interpretation of this trend is further complicated by tax effects and individual protection.

anticipations, which may lead them to choose to payout high dividends to live up to expectations on dividend policy decisions. However, if firms opt for high dividend payouts when faced with lower income or losses, stakeholders are not likely to approve this decision. Therefore, firms will prefer to execute dividend payouts from sufficient income, which may ultimately provide incentives to managers to depend on earnings management as a means to aggrandize their income. With this rationale, we attempt to study the effect of high dividend payouts on earnings management. We suggest our main contribution and empirical results as follows: Overall, the results of our main analysis present that a firm's dividend policy is likely to increase earnings management. Thus, this result supports our main assertion that a firm's high payout dividend policy is likely to drive earnings management because firms have a stronger motivation to engage in earnings management, especially through the use of discretionary accruals, to pay out retained earnings to shareholders. The remainder of the paper proceeds as follows: section 2 discusses the literature and our hypotheses; section 3 and 4 suggest the research methodologies and empirical analyses, and section 6 explains the results of additional tests; finally, section 7 is on our conclusion.

2. Literature Review and Hypotheses

Numerous researches examine the effect of an individual firm's dividend policies on various economic consequences. For example, dividend policies are found to be related to the firm's market value, making this a critical decision for managers. Lintner (1956) and Brav et al. (2005) report that managers are hesitant to cut off dividends and that they also dispose assets, lay off employees and raise external funds before changing their dividend policies, as an attempt to protect the firm from radical stock price crashes. In addition, Daniel et al. (2008) assert that firms that face the common set of covenants in debt contracts consistently manage their earnings to meet dividend restrictions set by debtors.

Furthermore, various papers suggest that the dividend policy is the main determinant for a firm's future growth and firm value. In particular, Baker and Powell (2000) and Baker et al. (2001) report that the tendency to sustain dividend payout is a very important factor in dividend policy and that most firms attempt to maintain a certain level of dividend payout ratio. In addition, Brav et al. (2005) assert that the effort to sustain a certain level of dividend payout is the main consideration in a dividend policy, finding that managers prefer to convey the firm's information in terms of future profitability and growth through dividends and try to avoid the negative effects of decreasing dividend payouts. This tendency to sustain a dividend payout is primarily based on how the stock market reacts to unexpected decreases or suspensions in dividend payouts. Furthermore, Kallapur (1994) reports that the earnings response coefficient increases when firms increase their dividend payout, after controlling for earnings persistence and the risk-free interest rate.

These results support the argument that firms are likely to conduct earnings management to sustain a certain level of dividend payouts. In particular, Liu and Espahbodi (2014) identify that firms that payout dividends are found to be more associated with earnings smoothing than firms that do not pay dividends.

Researchers have documented how earnings management is conducted to sustain dividend payouts. First, Daniel et al. (2008) suggest that managers are likely to attempt to increase earnings through discretionary accruals upon expectations that their firms are not likely to meet the earnings level required to sustain dividend payouts. Furthermore, such earnings management is not limited to discretionary accruals as Cohen and Zarowin (2010) and Zang (2012) document that real earnings management is associated with earnings management through discretionary accruals in that they generally can substitute each other. In addition, Nan and Espahbodi (2014) report that real earnings management is highly likely to be used to maintain dividend policies.

Thus, we suggest our main hypotheses based on prior research evidence as follows:

H1: Firms that payout a high level of dividends are likely to conduct earnings management through discretionary accruals.

H2: Firms that payout a high level of dividends are likely to conduct earnings management through real earnings management.

3. Methodology

3.1 Discretionary Accruals

This paper adopts the modified Jones Model suggested by Kothari et al. (2005) to measure a firm's earnings management through discretionary accruals as follows[4]:

$$DisAcc_{i,t} = (TA_{i,t}/A_{i,t-1}) - (\widehat{\beta_0}\left(\frac{1}{A_{i,t-1}}\right) + \widehat{\beta_1}\left[\frac{\Delta RET_{i,t} - \Delta REC_{i,t}}{A_{i,t-1}}\right] + \widehat{\beta_2}\left(\frac{PPE_{i,t}}{A_{i,t-1}}\right) + \widehat{\beta_3}\, lagged(ROA_{i,t-1})$$

Model (1)

$DisAcc_{i,t}$: Discretionary accruals for firm i at year t using the model of Kothari et al. (2005)
$TACC_{i,t-1}$: Total accruals for firm i at year t-1
$\Delta REV_{i,t}$: Change of sales at year t
$\Delta REC_{i,t}$: Change of account receivable at year t
$PPE_{i,t}$: PPE for company i at year t
$lagged(ROA)_{i,t-1}$: Profitability of total assets: NI/TA
$A_{i,t-1}$: Total assets at year t-1

We measure non-discretionary accruals based on firm-specific industry observations and a cross-sectional analysis from 2001 to 2012, as the instability of time series measures are likely to have decreased during the 2000s. If non-discretionary accruals are estimated with a time series model, the coefficient is likely to be biased. Thus, we prevent this measurement problem by following the models of DeFond and Jiambalvo (1994) and Subramanyam's (1996)[5].

3.2 Real Earnings Management

This paper uses Roychowdhury's (2006) model to estimate a firm's real earnings management as follows:

$$\frac{CFO_{it}}{Assets_{i,t-1}} = k_{1t}\frac{1}{Assets_{i,t-1}} + k_{2t}\frac{Sales_{it}}{Assets_{i,t-1}} + k_{3t}\frac{\Delta Sales_{it}}{Assets_{i,t-1}} + \varepsilon_{it}$$

Model (2)

Product cost ($Prod$) is defined as the sum of the cost of goods sold ($COGS$) and the change of inventory (ΔINV). If we assume a linear relation between COGS and current

[4] 'The model of Kothari et al. 2005 estimates discretionary accruals by incorporating firm performance in the modified Jones model. From this model, we estimate non-discretionary accruals (NDA) and then subtract NDA from total accruals. The final output of the calculation is discretionary accruals (DA).

[5]The coefficients estimated from the regression are applied to model (1) and (2) in order to measure discretionary accruals. The estimated absolute value is used to gauge the level of earnings management.

sales, we can derive the formula as follows:

$$\frac{COGS_{it}}{Assets_{i,t-1}} = k_{1t}\frac{1}{Assets_{i,t-1}} + k_{2t}\frac{Sales_{it}}{Assets_{i,t-1}} + \varepsilon_{it}$$

Model (3)

As inventory is closely associated with current sales, the change of inventory (ΔINV) can be estimated as follows:

$$\frac{\Delta INV_{it}}{Assets_{i,t-1}} = k_{1t}\frac{1}{Assets_{i,t-1}} + k_{2t}\frac{\Delta Sales_{it}}{Assets_{i,t-1}} + k_{3t}\frac{\Delta Sales_{i,t-1}}{Assets_{i,t-1}} + \varepsilon_{it}$$

Model (4)

By using the models (2) and (3), we can derive normal produce costs ($Prod$) as follows:

$$\frac{Prod_{it}}{Assets_{i,t-1}} = k_{it}\frac{1}{Assets_{i,t-1}} + k_{2t}\frac{Sales_{it}}{Assets_{i,t-1}} + k_{3t}\frac{\Delta Sales_{it}}{Assets_{i,t-1}} + k_{4t}\frac{\Delta Sales_{i,t-1}}{Assets_{i,t-1}} + \varepsilon_{it}$$

Model (5)

Finally, the discretionary expenses ($DiscExp$) are estimated from R&D expenses, advertisement expenses and S&A expenses.

$$\frac{DiscExp_{it}}{Assets_{i,t-1}} = k_{1t}\frac{1}{Assets_{i,t-1}} + k_{2t}\frac{Sales_{i,t-1}}{Assets_{i,t-1}} + \varepsilon_{it}$$

Model (6)

The measures from the models (4), (5), and (6) are calculated by subtracting an estimated value from the actual value. The measures are defined as abnormal operating cash flow, abnormal product costs and abnormal discretionary costs, respectively. In this paper, we use the sum of these three measures as dependent variables to identify our main hypotheses.

3.3 Research Models

We set the models to identify the relation between a firm's dividend payout ratio and earnings management as follows:

$$\begin{aligned}\mathrm{DisAcc_{i,t}} = {} & \alpha_0 + \alpha_1 PAYOUT_{\mathrm{i,t-1}} + \alpha_2\mathrm{SIZE_{i,t-1}} + \alpha_3\mathrm{MB_{i,t-1}} + \alpha_4\mathrm{ROA_{i,t-1}} + \alpha_5\mathrm{LEV_{i,t-1}} \\ & + \alpha_6\mathrm{BIG4_{i,t}} + \alpha_7\mathrm{MARKET_{i,t}} + \alpha_8\mathrm{OHOLD_{it}} + \alpha_9\mathrm{FHOLD_{i,t}} + \alpha_{10}\mathrm{INDUS_{i,t}} \\ & + \alpha_9\mathrm{YEAR_{i,t}} + \epsilon_{\mathrm{it}}\end{aligned}$$

Model (7)

$$\begin{aligned}\mathrm{DisAcc_{i,t}} = {} & \alpha_0 + \alpha_1 HPAYOUT_{\mathrm{i,t-1}} + \alpha_2\mathrm{SIZE_{i,t-1}} + \alpha_3\mathrm{MB_{i,t-1}} + \alpha_4\mathrm{ROA_{i,t-1}} + \alpha_5\mathrm{LEV_{i,t-1}} \\ & + \alpha_6\mathrm{BIG4_{i,t}} + \alpha_7\mathrm{MARKET_{i,t}} + \alpha_8\mathrm{OHOLD_{it}} + \alpha_9\mathrm{FHOLD_{i,t}} + \alpha_{10}\mathrm{INDUS_{i,t}} \\ & + \alpha_9\mathrm{YEAR_{i,t}} + \epsilon_{\mathrm{it}}\end{aligned}$$

Model (8)

$$\begin{aligned}\mathrm{TREM_{i,t}} = {} & \alpha_0 + \alpha_1 PAYOUT_{\mathrm{i,t-1}} + \alpha_2\mathrm{SIZE_{i,t-1}} + \alpha_3\mathrm{MB_{i,t-1}} + \alpha_4\mathrm{ROA_{i,t-1}} + \alpha_5\mathrm{LEV_{i,t-1}} \\ & + \alpha_6\mathrm{BIG4_{i,t}} + \alpha_7\mathrm{MARKET_{i,t}} + \alpha_8\mathrm{OHOLD_{it}} + \alpha_9\mathrm{FHOLD_{i,t}} + \alpha_{10}\mathrm{INDUS_{i,t}} \\ & + \alpha_9\mathrm{YEAR_{i,t}} + \epsilon_{\mathrm{it}}\end{aligned}$$

Model (9)

$$\mathrm{TREM_{i,t}} = \alpha_0 + \alpha_1 HPAYOUT_{\mathrm{i,t-1}} + \alpha_2 \mathrm{SIZE_{i,t-1}} + \alpha_3 \mathrm{MB_{i,t-1}} + \alpha_4 \mathrm{ROA_{i,t-1}} + \alpha_5 \mathrm{LEV_{i,t-1}} + \alpha_6 \mathrm{BIG4_{i,t}} + \alpha_7 \mathrm{MARKET_{i,t}} + \alpha_8 \mathrm{OHOLD_{it}} + \alpha_9 \mathrm{FHOLD_{i,t}} + \alpha_{10} \mathrm{INDUS_{i,t}} + \alpha_9 \mathrm{YEAR_{i,t}} + \epsilon_{\mathrm{it}}$$

Model (10)

$DisAcc_{i,t}$: discretionary accruals for firm i at year t by using the model of Kothari et al. (2005)
$TREM_{i,t}$: real earnings management for firm i at year t
$PAYOUT_{i,t}$: firm's dividend payout ratio of firm j at year t
$HPAYOUT_{i,t-}$: dummy variable which takes on 1 if the firm j pays dividends on year t-1, and 0 otherwise
$SIZE_{i,t-1}$: the log value of market value of firm j at year t-1
$MB_{i,t-1}$: the market value of the equity divided by the book value of equity of firm j at year t-1
$ROA_{i,t-1}$: the return on assets of firm j at year t-1
$LEV_{i,t-1}$: the total debts divided by total assets of firm j at year t
$BIG4_{i,t}$: audit quality of firm j at year t
$OHOLD_{i,t}$: the holdings of the largest shareholder of firm j at year t
$FHOLD_{i,t}$: the holdings of foreign shareholders of firm j at year t
$MARKET_{i,t}$: market dummy of firm j at year t
$INDUS_{i,t}$: industry dummy of firm j at year t
$YEAR_{i,t}$: year dummy of firm j at year t
$\varepsilon_{\mathrm{i,t}}$: the residual value of firm i at t

The main variables in the models are as follows: first, we use the $DisACC_{\mathrm{it}}$& the $TREM_{\mathrm{it}}$as a dependent variable to measure earnings management behavior at time t. $\mathrm{PAYOUT_{i,t}}$,and $\mathrm{HPAYOUT_{i,t}}$ represent dividend policy and is our main variables of interest. In addition, we include the control variables ($SIZE_t$, MB_t , LEV_t , $ROA_t BIG4_t, OHOLD_t$, $FHOLD_t$, $MARKET_t$, $INDUS_t$ and $YEAR_t$) that are regarded to be determinants of earnings management. $SIZE_t$ represents the size of a firm at time t. Since large firms are likely to have a stronger monitoring system than small firms, we expect $SIZE_t$ to have a negative (-) relation with earnings management. MB_t is the market to book ratio, and higher MB_t represents growth prospects. In general, as growth firms are likely to manage their performance, we expect MB_t to be positively related to earnings management. LEV_t represents the firm's financial stability (leverage) at time t. Since firms with higher leverage are more likely to have higher financial risk, we expect LEV_t to be positively associated with the firm's earnings management. ROA_t represents the firm's profitability at time t. With higher profitability related to stable financial conditions, we expect a negative association with earnings management. Both $OHOLD_t$ and $FHOLD_t$ represent the ratio of the shareholdings of the largest shareholder and foreign investors, which are regarded as a determinants of earnings management through corporate governance. We also suggest $BIG4_t$, the dummy variable that takes on 1 if the firm is audited but a Big 4 auditor and zero otherwise as the proxy of financial transparency. Finally, we include industry dummies and year dummies to control the firm's fixed effect and time effect.

4. Sample and Results

4.1 Sample

Our research data is from the firms listed on KOSPI and KOSDAQ in the Korean market from the year 2001 to 2012. Financial firms are excluded from the sample due to differences in accounting methods.[6] In addition, as the test requires consistency in

[6] Before the adoption of K-IFRS in 2011, the reporting system differentiated general

measurement periods, we only include firms whose fiscal year ends in December. Furthermore, we only include sample firms that provide dividends during the firm's fiscal year. Finally, the total sample consists of 6,744 firm-year observations. We show descriptive statistics in <Table 1> as follows:

<Table 1>

4.2 Empirical Results

The empirical results confirm our main hypotheses that a firm's dividend policy is related to earnings management. <Table 2> shows the results of the correlation analysis of the main variables. First, $PAYOUT_t$ and $HPAYOUT_t$ are positively (+) correlated with $DisAcc_t$, the dependent variable, implying that a firm's high level of dividend payments is likely to induce earnings management behavior. For the control variables, firm size ($SIZE_t$), operating cash flows (CFO_t) and payout ratio ($PAYOUT_t$) were found to have a negative relation with the firm's earnings management behavior. On the other hand, a firm's leverage (LEV_t) is positively (+) related to the firm's earnings management.

<Table 2>

<Table 3> shows the effect of a firm's dividend policy on the firm's earnings management during the sample period, testing the first hypothesis that a firm's high payout policy behavior drives earnings management through discretionary accruals. First, the results in Panel A of <Table 3> are from the regression to identify the relation of a firm's dividend policy and the level of discretionary accruals. From Column (1) to Column (3) of Panel A in <Table 3>, a positive and significant coefficient is observed on $PAYOUT_t$ in the regression of a firm's earnings management behavior ($DisAcc_t$: Discretionary Accruals) on dividend policy (i> Coef: 0.002, t-value: 2.08, ii> Coef: 0.002, t-value: 2.22, iii> Coef: 0.002, t-value: 2.51). In addition, From Column (1) to Column (3) of Panel B in <Table 3>, a positive coefficient of $HPAYOUT_t$ is found on its regression with earnings management behavior ($DisAcc_t$: Discretionary Accruals) (i> Coef: 0.007, t-value: 1.61, ii> Coef: 0.008, t-value: 1.84, iii> Coef: 0.009, t-value: 2.07). These results indicate that a firm's high dividend payout policy drives earnings management through discretionary accruals.

<Table 3>

Furthermore, Panel A of <Table 4> is on the regression that tests the second hypothesis that a firm's high payout policy behavior drives real earnings management behavior. From Column (1) to Column (3) of Panel A in <Table 4>, a positive coefficient is found on $PAYOUT_t$, the independent variable for a firm's dividend policy, when regressed with $TREM_t$ (real earnings management) as the dependent variable (i> Coef: 0.001, t-value: 1.37, ii> Coef: 0.002, t-value: 1.64, iii> Coef: 0.002, t-value: 1.79). In addition, Panel B reports the results of the regression of the firm's real earnings management behavior on $HPAYOUT_t$. The coefficient of $HPAYOUT_t$ is positive in all columns (i> Coef: 0.004, t-value: 0.85, ii> Coef: 0.005, t-value: 1.25, iii> Coef: 0.006, t-value: 1.38) but shows a weaker relation than the results of table 3.

Overall, the results of <Table 3> and <Table 4> indicate that a firm's dividend policy is likely to increase the firm's earnings management. Thus, this result supports our

manufacturing firms and financial firms. However, this difference between general manufacturing firms and financial firms is not specified in K-IFRS as the newly adopted standards do not have special accounting rules for financial firms.

hypotheses that a firm's high payout dividend policy is likely to induce earnings management since firms have a significant motivation to engage in earnings management, especially by using discretionary accruals, to pay out retained earnings to shareholders.

<Table 4>

5. Conclusion

Recently, Korean firms have increased their payout ratio to satisfy investor demands and regulations. In particular, after the financial crisis in 1998, firms accumulated cash reserves from earnings as a risk management strategy, but this received public criticism from investors and regulators. Thus, many firms attempted to meet this demand and increase their payout ratio. This effort is likely to increase earnings management to expand the payout ratio and maintain the dividend policy to avoid the criticism from investors and regulators. Therefore, we expect that firms are likely to expand their earnings management to meet their target payout ratio.

Our empirical results and main contributions are as follows: Overall, the results of our main analysis present that a firm's dividend policy to pay a high level of dividends is likely to increase the firm's earnings management. This result supports our main hypothesis that a firm's high dividend payout policy is likely to induce earnings management as firms have a significant motivation to engage in earnings management, especially through the use of discretionary accruals, to pay out their retained earnings to shareholders and sustain that payment into the future.

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Table 1. Descriptive of Main Variables

Variable	Mean	STD	1Q	Median	3Q
DisAcc	0.09	0.15	0.03	0.07	0.12
PAYOUT	2.86	2.43	1.25	2.26	3.76
SIZE	18.43	1.68	17.27	18.08	19.20
MB	1.21	1.18	0.52	0.84	1.44
ROA	0.05	0.10	0.02	0.04	0.08
LEV	1.73	3.06	0.35	0.85	1.91
OHOLD	43.79	15.66	32.43	43.45	54.46
FHOLD	9.41	14.21	0.19	2.54	13.01

This table shows descriptive statistics for the variables used in the main regression analyses. All variables are defined in the Appendix (1).

Table 3-1. The Result of Main Regression(DA)

$$\mathrm{DisAcc}_{i,t} = \alpha_0 + \alpha_1 PAYOUT_{i,t-1} + \alpha_2 \mathrm{SIZE}_{i,t-1} + \alpha_3 \mathrm{MB}_{i,t-1} + \alpha_4 \mathrm{ROA}_{i,t-1} + \alpha_5 \mathrm{LEV}_{i,t-1} + \alpha_6 \mathrm{BIG4}_{i,t} + \alpha_7 \mathrm{MARKET}_{i,t} + \alpha_8 \mathrm{OHOLD}_{it} + \alpha_9 \mathrm{FHOLD}_{i,t} + \alpha_{10} \mathrm{INDUS}_{i,t} + \alpha_9 \mathrm{YEAR}_{i,t} + \epsilon_{it}$$

Model (7)

Independent variable $\mathrm{DisAcc}_{i,t}$	Dependent variable: absolute value of discretionary					
	Model 1		Model 2		Model 3	
Intercept	0.133	(4.92)	0.075	(2.52)	0.097	(2.90)
$PAYOUT_{i,t-1}$	0.002	(2.08)	0.002	(2.22)	0.002	(2.51)
$\mathrm{SIZE}_{i,t-1}$	-0.002	(-1.80)	0.001	(0.81)	0.001	(0.63)
$\mathrm{MB}_{i,t-1}$	0.015	(8.38)	0.013	(6.53)	0.012	(6.31)
$\mathrm{ROA}_{i,t-1}$	0.086	(4.83)	0.083	(4.63)	0.087	(4.85)
$\mathrm{LEV}_{i,t-1}$			0.001	(0.74)	0.000	(0.58)
$\mathrm{BIG4}_{i,t}$			0.004	(1.00)	0.005	(1.22)
$\mathrm{MARKET}_{i,t}$			-0.024	(-5.29)	-0.024	(-5.30)
$\mathrm{OHOLD}_{i,t}$					0.000	(-3.29)
FHOLD_{it}					0.000	(-0.79)
Year Dummy	Included		included		Included	
Industry Dummy	Included		included		Included	
F Value	11.65		11.36		10.88	
Adj R-Sq	0.032		0.036		0.037	
Number of observations	6,744		6,735		6,729	

Table 3-2. The Result of Main Regression(DA)

$$\mathrm{DisAcc}_{i,t} = \alpha_0 + \alpha_1 HPAYOUT_{i,t-1} + \alpha_2 \mathrm{SIZE}_{i,t-1} + \alpha_3 \mathrm{MB}_{i,t-1} + \alpha_4 \mathrm{ROA}_{i,t-1} + \alpha_5 \mathrm{LEV}_{i,t-1} + \alpha_6 \mathrm{BIG4}_{i,t} + \alpha_7 \mathrm{MARKET}_{i,t} + \alpha_8 \mathrm{OHOLD}_{it} + \alpha_9 \mathrm{FHOLD}_{i,t} + \alpha_{10} \mathrm{INDUS}_{i,t} + \alpha_9 \mathrm{YEAR}_{i,t} + \epsilon_{it}$$

Model (8)

Independent variable $\mathrm{DisAcc}_{i,t}$	Dependent variable: absolute value of discretionary					
	Model 1		Model 2		Model 3	
Intercept	0.138	(5.15)	0.079	(2.67)	0.102	(3.06)
$HPAYOUT_{i,t-1}$	0.007	(1.61)	0.008	(1.84)	0.009	(2.07)
$\mathrm{SIZE}_{i,t-1}$	-0.003	(-1.90)	0.001	(0.76)	0.001	(0.56)
$\mathrm{MB}_{i,t-1}$	0.015	(8.31)	0.013	(6.47)	0.012	(6,25)
$\mathrm{ROA}_{i,t-1}$	0.086	(4.84)	0.083	(4.64)	0.087	(4.85)
$\mathrm{LEV}_{i,t-1}$			0.001	(0.74)	0.000	(0.59)
$\mathrm{BIG4}_{i,t}$			0.004	(0.97)	0.005	(1.18)
$\mathrm{MARKET}_{i,t}$			-0.024	(-5.31)	-0.024	(-5.32)
$\mathrm{OHOLD}_{i,t}$					0.000	(-3.22)
FHOLD_{it}					0.000	(-0.73)
Year Dummy	Included		Included		Included	
Industry Dummy	Included		Included		Included	
FValue	11.56		11.29		10.8	
Adj R-Sq	0.032		0.035		0.037	
N.obs	6,744		6,735		6,729	

This table presents results from the regression analyses (H1) on the relation of dividend payout ratio (DR & DRD) and firm's earnings management (AbsDA). Across all regressions, the sample size is 6,744 for the models (7) and (8) using firm-years observations from 2001 to 2012. We suggest coefficient estimates with P-value at a significance level of 5%. Column 1 shows the coefficient value, wherein the dependent variable is AbsDA as the proxy of the firm's earnings management and the main independent variables are DR&DRD, representing the expansion of dividend payout ratio. Column 2 and 3 present the results from similar regression analyses as Column 1 with additional control variables. All variables are defined in the Appendix (1).

Table 4-1. The Result of Main Regression(REM)

$$\mathrm{TREM}_{i,t} = \alpha_0 + \alpha_1 PAYOUT_{i,t-1} + \alpha_2 \mathrm{SIZE}_{i,t-1} + \alpha_3 \mathrm{MB}_{i,t-1} + \alpha_4 \mathrm{ROA}_{i,t-1} + \alpha_5 \mathrm{LEV}_{i,t-1} + \alpha_6 \mathrm{BIG4}_{i,t} + \alpha_7 \mathrm{MARKET}_{i,t} + \alpha_8 \mathrm{OHOLD}_{it} + \alpha_9 \mathrm{FHOLD}_{i,t} + \alpha_{10} \mathrm{INDUS}_{i,t} + \alpha_9 \mathrm{YEAR}_{i,t} + \epsilon_{it}$$

Model (9)

Independent variable $\mathrm{TREM}_{i,t}$	Dependent variable: real activity management					
	Model 1		Model 2		Model 3	
Intercept	0.133	(4.77)	0.042	(1.37)	0.010	(0.28)
$PAYOUT_{i,t-1}$	0.001	(1.37)	0.002	(1.64)	0.002	(1.79)
$\mathrm{SIZE}_{i,t-1}$	-0.003	(-2.49)	0.002	(1.32)	0.004	(2.16)
$\mathrm{MB}_{i,t-1}$	-0.003	(-1.65)	-0.007	(-3.62)	-0.007	(-3.58)
$\mathrm{ROA}_{i,t-1}$	-0.016	(-0.87)	-0.022	(-1.19)	-0.019	(-1.05)
$\mathrm{LEV}_{i,t-1}$			0.001	(1.78)	0.001	(1.72)
$\mathrm{BIG4}_{i,t}$			0.014	(3.27)	0.014	(3.33)
$\mathrm{MARKET}_{i,t}$			-0.041	(-8.88)	-0.041	(-8.75)
$\mathrm{OHOLD}_{i,t}$					0.000	(0.50)
FHOLD_{it}					0.000	(-1.96)
Year Dummy	Included		included		Included	
Industry Dummy	Included		included		Included	
F Value	21.88		22.99		21.40	
Adj R-Sq	0.061		0.072		0.073	
Number of observations	6,774		6,765		6,759	

Table 4-2. The Result of Main Regression(REM)

$$\mathrm{TREM}_{i,t} = \alpha_0 + \alpha_1 HPAYOUT_{i,t-1} + \alpha_2 \mathrm{SIZE}_{i,t-1} + \alpha_3 \mathrm{MB}_{i,t-1} + \alpha_4 \mathrm{ROA}_{i,t-1} + \alpha_5 \mathrm{LEV}_{i,t-1} + \alpha_6 \mathrm{BIG4}_{i,t} + \alpha_7 \mathrm{MARKET}_{i,t} + \alpha_8 \mathrm{OHOLD}_{it} + \alpha_9 \mathrm{FHOLD}_{i,t} + \alpha_{10} \mathrm{INDUS}_{i,t} + \alpha_9 \mathrm{YEAR}_{i,t} + \epsilon_{it}$$

Model (10)

Independent variable $\mathrm{TREM}_{i,t}$	Dependent variable: real activity management					
	Model 1		Model 2		Model 3	
Intercept	0.138	(4.99)	0.046	(1.50)	0.014	(0.41)
$HPAYOUT_{i,t-1}$	0.004	(0.85)	0.005	(1.25)	0.006	(1.38)
$\mathrm{SIZE}_{i,t-1}$	-0.004	(-2.59)	0.002	(1.27)	0.004	(2.09)
$\mathrm{MB}_{i,t-1}$	-0.003	(-1.72)	-0.007	(-3.68)	-0.007	(-3.64)
$\mathrm{ROA}_{i,t-1}$	-0.016	(-0.86)	-0.022	(-1.18)	-0.019	(-1.05)
$\mathrm{LEV}_{i,t-1}$			0.001	(1.77)	0.001	(1.72)
$\mathrm{BIG4}_{i,t}$			0.014	(3.25)	0.014	(3.31)
$\mathrm{MARKET}_{i,t}$			-0.042	(-8.89)	-0.041	(-8.77)
$\mathrm{OHOLD}_{i,t}$					0.000	(0.56)
FHOLD_{it}					0.000	(-1.91)
Year Dummy	included		included		Included	
Industry Dummy	included		included		Included	
F Value	21.82		22.94		21.35	
Adj R-Sq	0.061		0.072		0.073	
Number of observations	6,774		6,765		6,759	

This table presents results from the regression analyses (H1) on the relation of dividend payout ratio (TREM & TREMDum) and the firm's real earnings management (AbsDA). Across all regressions, the sample size is 6,744 for the models (7) and (8) using firm-years observations from 2001 to 2012. We suggest coefficient estimates with P-value at a significance level of 5%. Column 1 shows the coefficient value, wherein the dependent variable is AbsDA as the proxy of the firm's earnings management and the main independent variables DR&DRD, representing the expansion of dividend payout ratio. Column 2 and 3 present the results from similar regression analyses as Column 1 with additional control variables. All variables are defined in the Appendix (1).

Table 2. Correlation Matrix of Main Variables

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]
[1] DA	1							
[2] PAYOUT	0.007	1						
	0.549							
[3] SIZE	0.022	-0.212	1					
	0.068	<.0001						
[4] MB	0.113	-0.18	0.378	1				
	<.0001	<.0001	<.0001					
[5] ROA	0.078	-0.036	0.049	0.11	1			
	<.0001	0.002	<.0001	<.0001				
[6] LEV	-0.039	0.029	0.047	-0.254	-0.136	1		
	0.001	0.013	<.0001	<.0001	<.0001			
[7] OHOLD	-0.037	0.145	-0.221	-0.168	0.035	-0.012	1	
	0.003	<.0001	<.0001	<.0001	0.003	0.295		
[8] FHOLD	0.006	-0.079	0.557	0.205	0.088	0.013	-0.21	1
	0.62	<.0001	<.0001	<.0001	<.0001	0.257	<.0001	

This table presents results from the Pearson Correlation analysis among the main variables used in the research models. We suggest coefficient estimates, among which the numbers in bold indicate significance at the 5% level. All variables are defined in the Appendix (1).

