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Controlling Ownership's Expropriation through Real Earnings Management and Its' Impact on Cost Of Equity Capital

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Abstract

Purpose -This paper discusses empirical research examining whether: 1) controlling owners' type affects cost of equity capital (COEC) and real earnings management (REM), 2) REM affects COEC, and 3) REM mediates the effect of controlling owners' type on COEC.

Design/methodology/approach–The research uses a sample of 132 publicly listed companies on the Indonesian Stock Exchange for the fiscal year that ends on December 31 in the year of 2011, 2012, and 2013 and the total observation consist of 396 firm-years. Cost of equity capital is estimated by using Ohlson Model, Real earnings management as mediating variable is measured by Roychowdhury model. Three models are used to calculate real activity manipulation based on operating activity, production cost, and discretionary expenditures. Control variables consist of corporate governance practices measured by corporate governance indices, ownership concentrated level measured by ownership ratio, firm's size measured by log total assets, and discretionary accruals measures by Modified Jones Model. Data used in this study is obtained from ICMD, Indonesian Stock Exchange database, and company annual reports.

Findings -This research finds evidence that the ownership type affects cost of equity capital, and RCFO except private ownership. With exception for GOV, ownership type affects production costs-based real earnings management (RPE) but all ownership types affect discretionary expenditures-based real earnings management (RDE). Moreover, RCFO, RPE, and RDE affect cost of equity capital. Finally, this research reports that RCFO mediates the effect of each ownership type on cost of equity except for private ownership (PRIV), RPE mediates the effect of each ownership type on cost of equity capital except for private ownership (PRIV) and government ownership (GOV) and RDE mediates the effect of each ownership type on cost of equity capital.

Originality/value - This study provides further evidence on the effect of controlling ownership on COEC and REM, the effects of REM on COEC, and evidence that REM mediates the effect of controlling owners' type on COEC.

Keywords: Cost of equity capital, real earnings management, RCFO, RPE, RDE

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1. Introduction

The ownership structure of most companies in the world are concentrated, in the form of pyramid, intercompany ownership, and are controlled by controlling shareholders

(La Porta et al. 1999). This phenomenon is also happened in developing countries like Indonesia (La Porta et al., 1999; Lukviarman 2004; Sanjaya 2010). Such ownership structure characteristic likely leads to controlling owners' expropriation risk by sacrificing non-controlling interests. Controlling owners have a strong incentive to do expropriation or utilize their controlling right by switching firm's resources, especially in the weak law enforcement environment (La Porta et al. 2002; Nam and Nam 2004; Zhu dan Ma 2009).

The risk of firm's resources takeover by controlling owners lead to a higher equity premium required by investors (Boubakri et al. 2010). Previous research find that ownership is associated with cost of equity (Aslan and Kumar 2012) and associated with bond yield-spreads and bond ratings (Boubakri and Ghouma 2010). Family ownership is associated with trade-off between improving family control and limiting the growth of alternative financing (Wu et al. 2007). Cost of equity is significantly higher for family firms than non-family firms (Boubakri et al., 2010). We predict that the types of controlling ownership affect cost of equity capital (COEC).

The controlling shareholder's expropriation, insiders, and managers could be performed either explicitly or implicitly by using earnings management through both discretionary accrual and real activities (Crocker and Slemrod 2007; Thomas, Herrmann, and Inoue, 2004, Graham, Harvey, and Rajgobal, 2005, Saanoun, Riahi, and Arab, 2013, Luo, Wan, and Cai, 2012; Johnson, et al., 2000; Bhaumik dan Gregoriou, 2010, Jian and Wong 2010). Yet, the controlling shareholder's expropriation level may be unequal. The family controlling interests may take a more private benefit than that of non-family shareholders (Surifah, 2014; Boubakri and Ghouma 2010; Wu et al. 2007). Therefore, this research predicts that the types of controlling ownership affect real earnings management (REM).

Discretionary accruals-based earnings management and real activity-based earnings management have economic consequences for the firms. They affect either firm's performance or firm's value (Roychowdhury 2006; Abbas and Rizwan 2007; Ewert and Wagenhofer 2005). Discretionary accruals-based earnings management has also other form of economic consequences such as enhancing cost of equity (Dechow et al., 1996, Francis et al. 2005; Bharath 2008; Gray et al. 2009; Utami, 2005). Nevertheless, there are limited previous researches which investigate the effect of real activity-based earnings management on cost of equity. Such previous research are performed by Kim and Sohn (2013) and Ge and Kim (2013). They find that the cost of capital is positively associated with the extent of earnings management through the real activities manipulation after controlling for the effect of the accrual-based earnings management (Kim and Sohn, 2013). Overproduction impairs credit ratings and that sales manipulation

and overproduction are associated with higher bond yield spreads. This imply that credit rating agencies and bondholders perceive real earnings management (REM) as a credit risk-increasing factor and thus require high risk premiums (Ge and Kim, 2013). This research predicts that REM affects cost of equity capital (COEC). The previous research report that the controlling ownership type affect cost of equity capital (COEC) and REM. Moreover, the REM affects COEC. Therefore, this research assumes that controlling owners expropriate through REM which affect cost of equity capital. Therefore, this research predicts that the REM acts as a mediator for the association between controlling owners' type and COEC.

This research is important for some reasons. First, controlling owners' expropriation phenomena on firm's resources are common in the case of Indonesian firms, such as the acquisition case (Trust Magazine, 2003), the liquidation of 16 banks and the operation suspend of seven banks in 1997. These cases are due to the weakness of corporate governance implementation (Zuang et al., 2000). Second, previous research investigates the effect of REM on COEC had not involved controlling owners' type. In the case of concentrated ownership structure, earnings management is performed on behalf of controlling owners. This, of course, will be different in the case of a spread ownership structure, where such earnings management is performed on behalf of their own-interest. Third, this research reviews the three variables - controlling owners' type, REM, and COEC – in a single research model. It hopefully will provide a more precise picture about the level of controlling owners' expropriation and economic consequence for the firms. The research objectives are provide empirical evidences whether: 1) controlling owners' type affects COC and REM, 2) REM affects COEC, and 3) REM mediates the effect of controlling owners' type on COEC.

The main contribution of this study to the existing literature is that, to our knowledge, it is the first study to examine the association between controlling owners' type, REM and COEC. The results will enrich the existing literatures about the controlling owners' expropriation risks through REM and its effect on COEC. Previous studies investigates the effect of REM on COEC (Kim and Sohn, 2013; Ge and Kim, 2013) and the effect of accrual earnings management (AEM) on cost of equity as well as cost of debt (Francis et al., 2004, 2005; Bharat et al., 2008; Gray et al, 2009; Utami, 2005); however, none pay attention to the controlling owners, which strongly suspect to affect significantly REM and COEC.

The results indicate that the ownership type affects cost of equity capital. The results also indicate that the ownership type affects RCFO except private ownership. With exception for GOV, the result also indicates that ownership type affects production

costs-based real earnings management (RPE) and discretionary expenditures-based real earnings management (RDE). Moreover, the results also indicate that operating cash flow-based real earnings management (RCFO), production costs-based real earnings management (RPE), and discretionary expenditures-based real earnings management (RDE) affects cost of equity capital. Finally, the results also show that operating cash flow-based real earnings management except for private ownership (PRIV), production costs-based real earnings management, except for private ownership (PRIV) and government ownership (GOV), and discretionary expenditures-based real earnings management mediate the effect of each ownership type on cost of equity capital

Our study also extends the extant REM literature as well. While several recent studies examine the issue of REM in various contexts, no previous research associates the three variables - controlling owners' type, REM, and COEC – in a single research model. Our results are consistent with the notion that REM is a new candidate for an information risk factor. Previous research investigate the effect of ownership type on cost of capital (Aslan and Kumar 2012; Boubakri and Ghouma 2010; Wu et al., 2007), the effect of ownership type on AEM (Haw et al., 2011; Sanjaya, 2011; Jaggi and Tsui, 2007; Fayoumi et al., 2010; Kim dan Yi, 2006), the effect of AEM on cost of capital (Francis et al., 2004, 2005; Bharat et al., 2008; Gray et al, 2009; Utami, 2005), and the effect of REM on cost of equity (Kim and Sohn, 2013; Ge and Kim 2013), however, none pay attention to the possibility of REM is utilized by controlling owners to hide or cover the private benefit taking which will be responded by outside stakeholder which in turns increase COEC.

The paper proceeds as follows: Section 2 reviews the extant literature and develops our research hypothesis. Section 3 describes sample and data sources, specifies our empirical model used for hypothesis testing, and explains how we measure our research variables, that is, the COEC, controlling owners' type, and REM. Section 4 presents the preliminary and main empirical results. Section 5 concludes the paper.

2. Literature Review and Hypotheses Development

This study uses agency theory which states that there is a separation of ownership (by principal) and control (by agent). This separation creates a conflict between principle and agent because the separation will give an incentive for agents to maximize their own utility and interest at the principle cost (Jensen and Meckling, 1976). Extant literatures show that the agency conflict is also happened between the controlling shareholder of the pyramidal group and public shareholders (Atmaja et al., 2011; Morck et al., 2005). In the circumstances where ownership consists of controlling shareholders and public

shareholders, generally controlling shareholders have a stronger incentive to perform resources expropriation at the cost of public shareholders.

Earnings management is the choice by a manager of accounting policies (accruals) or real actions that affect earnings so as to achieve some specific reported earnings objective (Scott, 2012). Earnings management consists of the choice of accounting policy (discretionary accruals) and real activities manipulation. Accruals management involves within-GAAP accounting choices that try to “obscure” or “mask” true economic performance (Dechow and Skinner, 2000). Real activities manipulation (RM) occurs when managers undertake actions that change the timing or structuring of an operation, investment, and/or financing transaction in an effort to influence the output of the accounting system (Xu et al., 2007). Real activities manipulation is a departure action from normal operational practices, motivated by managers’ desire to mislead at least some stakeholders into believing certain financial reporting goals have been met in the normal course of operations. The objective of real earnings manipulation is to meet or beat an earnings benchmark (Roychowdhury 2006). Real earnings management implies that manager deviates from an otherwise optimal plan of actions only to affect earnings, therefore, imposing cost to the firm (Ewert dan Wagenhofer, 2005).

Several researches about real earnings management had been performed. Roychowdhurry (2006) investigates about the association between real activities manipulation and the likelihood of loss in annual financial statements. He finds evidence consistent with managers manipulating real activities to avoid reporting annual losses. His research also finds evidence suggesting price discounts to temporarily increase sales, overproduction to report lower cost of goods sold, and reduction of discretionary expenditures to improve reported margins. Kang and Kim (2011) examine the association between corporate governance and real activity-based earnings management and extend it to firm performance. They find that the real activity-based earnings management is effectively controlled by a corporate governance system and that it has links between corporate governance and performance. Gunny (2010) identify firms that appear to engage a real activities manipulation (RM) to influence accounting system output so as to meet earnings benchmark and find that firm-years reflecting RM to just meet earnings benchmarks have higher subsequent firm performance. This result is consistent with managers attaining benefits that allow better future performance or signaling.

Other research about REM and AEM had performed by Zang (2012) who investigates about whether managers use real activities manipulation and accrual-based earnings management as substitutes in managing earnings. He finds significant positive relations

between the level of real activities manipulation and the costs associated with accrual-based earnings management, and also between the level of accrual-based earnings management and the costs associated with real activities manipulation, supporting the hypothesis that managers trade off the two approaches according to their relative costliness. There is a significant and negative relation between the level of accrual-based earnings management and the amount of unexpected real activities manipulation, consistent with the hypothesis that managers "fine-tune" accruals after the fiscal year-end based on the realized real activities manipulation (Zang, 2012).

Cohen et al. (2008) document that accrual-based earnings management increased steadily prior to the passage of the Sarbanes Oxley Act (SOX) in 2002, followed by a significant decline after the passage of SOX. Conversely, the level of real earnings management increased significantly after the passage of SOX, suggesting that firms switched from accrual-based to real earnings management methods after the passage of SOX because of the tighter watching for accounting practices. Cohen and Zarowin (2008) show that much companies are involved in two forms of earnings management, which are accrual-based earnings management and real earnings management activities around the seasoned equity offerings. Ewert and Wagenhofer (2005) show that managers switch from accrual-based earnings management to real earnings management activities in a tighter and tougher accounting standard practices environment.

Cost of capital is the expected return on a firm's stock (Lambert et al. 2007). Cost of capital is a function of dividend payout level, firm's growth, and earnings to price ratio (Botosan, 1997). This definition is consistent with standard asset pricing models in finance (Fama and Miller, 1972), and numerous studies in accounting that use discounted cash flow or abnormal earnings models to infer firms' cost of capital (Botosan, 1997). Cost of equity capital is calculated based on long-term financing available for the firm. Long-term financing comes from four sources: (1) long-term debt, (2) preferred shares, (3) common shares, and (4) retained earnings. Cost of long-term debt is current after tax cost of debt whereas cost of preferred shares is the annual preferred shares' dividend divided by outstanding preferred shares. Cost of common shares is the rate used by investors to discount future expected dividend (Purwanto, 2012).

2.1. Ownership Type and Cost of Equity

The firm's resources takeover risks made investors aware and force them to require a higher-equity premium from family firms (Boubakri et al. 2010). Control concentration raises agency costs of debt, and dominant shareholders trade off private benefits of

control against higher borrowing costs in choosing their ownership stakes (Aslan and Kumar, 2012).

Ultimate ownership and family control have a positive and significant effect on bond yield-spreads, and a negative and significant effect on bond ratings (Boubakri and Ghouma 2010), which means that the higher cost of debt. Control in the hands of widely held financial firms has a positive effect on bond ratings *only*, while State control has no effect on either bond yield-spreads or ratings. Boubakri and Ghouma (2010) also find that a higher protection of debt holders' rights generally reduces bond yield-spreads and increases bond ratings. Family controlled or controlled and managed firms make financing decisions by trading-off between maintaining family control and the firm's limited growth financing alternatives (Wu et al. 2007). Following the crisis, family control is related to a higher cost of equity. This suggests that the crisis made investors aware of the potential entrenchment of controlling families, prompting them to require a higher-equity premium from family firms (Boubakri et al., 2010). Based on the description above, the hypothesis can be stated in alternative form as follows:

H_1: Ownership type affects cost of equity capital.

2.2. Ownership Type and Earnings Management

Expropriation of controlling shareholders, insiders, and managers could be performed and hidden through both accrual earnings management and real activities earnings management. For instance, insiders cover private benefit taking by using accrual earnings management (Crocker and Slemrod, 2007). Earnings management can also be performed through real activities such as transaction with affiliated companies (Thomas. Herrmann, and Inoue, 2004), reducing research and development cost, reducing advertising and maintenance costs, and delaying to start new projects (Graham, Harvey, and Rajgobal, 2005), over-production, sales discount, discretionary expenditure, and general and administrative expenses (Roychowdhury, 2006), through related party transactions and excessive executive compensation (Saanoun, Riahi, and Arab, 2013), through tunneling transaction (Luo, Wan, and Cai, 2012; Johnson, et al., 2000; Bhaumik and Gregoriou, 2010), and propping through related party transactions (Jian dan Wong 2010).

Expropriation level of controlling owners is different to each other. Family controlling owners may take more private benefit than the others (Surifah, 2014). Family controlled firms, through ownership and management have a greater potential expropriation risks than other firms have (Boubakri and Ghouma 2010; Wu et al. 2007). Therefore, we

predict that ownership type affects real earnings management. This kind of earnings management may be performed through production costs, discretionary expenditures, and operating cash flows. Based on the description above, the hypothesis can be stated in alternative form as follows:

H_{2a}: Ownership type affects operating cash flows-based real earnings management.

H_{2b}: Ownership type affects production cost-based real earnings management.

H_{2c}: Ownership type affects discretionary expenditures-based real earnings management.

2.3. Real Earnings Management and Cost of Equity Capital

Discretionary accrual-based earnings management and real activities-based earnings management have economic consequences. For instance, real earnings management negatively affects future cash flows (Roychowdhury, 2006). Abbas and Rizwan (2007) find negative relationship between discretionary accruals and firm value, and this lead to worst investment decision (McNichols and Stubben, 2008). Earnings management also decreases long-term profitability (Ewert and Wagenhofer, 2005). Managers aware of this consequences, and this is in line Graham et al. (2005) who find that managers will manipulate real activities to meet earnings target, even if it will decrease long-term firm's value.

Earnings management has other economic consequences in the form of increasing in cost of capital. Several empirical evidences show that accrual-based earnings management is associated with cost of capital (Dechow et al., 1996, Francis *et al*., 2004; Bharat *et al*., 2008; Gray *et al*, 2009; Utami, 2005). Dechow et al. (1996) documented that manipulating earnings experience significant increases in their costs of capital when the manipulations are made public. Poorer accruals quality is associated with larger costs of debt and equity (Francis et al., 2005). Accounting quality affects the choice of the market, with poorer accounting quality borrowers preferring private debt, i.e., bank loans. Lower accounting quality borrowers face substantially higher loan spreads, stricter non-price contract terms for loan maturity and collateral (Bharat *et al*., 2008). Accruals quality as a proxy of information risk is positively associated with cost of debt and cost of equity. Poor accrual quality is positively associated with high cost of quality (Gray et al., 2005). Accruals-based earnings management positively affects cost of equity capital (Utami, 2005)

There is limited study, if any, investigates the effect of real activities-based earnings management on cost of capital. Kim and Sohn (2013) find that the cost of capital is

positively associated with the extent of earnings management through the real activities manipulation after controlling for the effect of the accrual-based earnings management. Real earnings management activities exacerbate the information quality of earnings used by outside investors, and thus the market demands a higher risk premium for these activities, which is incremental to the risk premium for the accrual-based earnings management. Moreover, Ge and Kim (2013) find that overproduction impairs credit ratings and that sales manipulation and overproduction are associated with higher bond yield spreads. These results imply that credit rating agencies and bondholders perceive real earnings management as a credit risk-increasing factor and thus require high risk premiums. Based on the description above, the hypothesis can be stated in alternative form as follows:

H_{3a}: Operating cash flow-based real earnings management affects cost of equity capital.

H_{3b}: Production costs-based real earnings management affects cost of equity capital

H_{3c}: Discretionary expenditures-based real earnings management affects cost of equity capital.

2.4. Real Earnings Management, Ownership Type, and Cost of Equity Capital.

Hypothesis one, two, and three are interrelated to each other and there are causality relationship among them in which ownership type affects real earnings management whereas real earnings management affects cost of equity capital. The causality relationship is stated based on theory and it will be specifically analyzed by using path analysis (Ghozali, 2011). Based on the relationship, real earnings management mediates the effect of ownership type on cost of equity capital. Based on the description above, the hypothesis can be stated in alternative form as follows:

H_{4a}: Operating cash flow-based real earnings management mediates the effect of each ownership type on cost of equity capital.

H_{4b}: Production costs-based real earnings management mediates the effect of each ownership type on cost of equity capital.

H_{4c}: Discretionary expenditures-based real earnings management mediates the effect of each ownership type on cost of equity capital.

2.5. Corporate Governance and Cost of Equity Capital

Firm-level corporate governance has a significantly negative effect on the cost of equity capital in emerging markets (Chen et al. 2009). This corporate governance effect is more pronounced in countries that provide relatively poor legal protection. These results are consistent with the finding from McKinsey's surveys that institutional investors are willing to pay a higher premium for shares in firms with good corporate governance, especially when the firms are in countries where the legal protection of investors is weak (Chen et al. 2009). Weak governance firms have lower equity returns, worse operating performance, and lower firm's value, but only in noncompetitive industries. Weak governance firms in noncompetitive industries are more likely to be targeted by hedge funds, suggesting that investors take actions to mitigate the inefficiency which in turn increase cost of debt (Giroud and Mueller 2011). Firms that have higher quality boards with a greater advisory presence borrow at lower interest rates (Fields et al. 2012). Based on the description above, this research predicts that control variable – corporate governance – negatively affect cost of equity capital.

2.6. Corporate Governance and Real Earnings Management.

Previous researches investigated real earnings management argue that real activities-based earnings management is opaque to outside stakeholders and difficult to detect (Graham et al., 2005; Zang, 2012, Ge and Kim, 2013) because they are not subject to external monitoring and scrutiny by auditors and regulators. Real earnings managements are more difficult for average investors to understand, and are normally less subject to monitoring and scrutiny by board, auditors, regulators, and other outside stakeholders. Consequently, REM may not be effectively controlled by corporate governance mechanisms (Kim and Sohn, 2013; Jaggi et al., 2009). In contrary, Kang and Kim (2011) find that real activity-based earnings management is effectively controlled by a corporate governance system and that it has links between corporate governance and performance. This provides the importance of corporate governance which could effectively constrain real activity-based. Therefore, this research predicts that control variable – corporate governance – negatively affects real earnings management.

3. Research Design

3.1. Sample Selection

The sample used in this research is firms listed at the Indonesian Stock Exchange (IDX). The sample was selected using the purposive sampling technique. The first requirement is that it is a public company listed at the IDX from 2011 to 2013. The second requirement is that those firms should in manufacturing industry. The third criterion is that these firms have publicly available information. The data came from three sources, Indonesian Capital Market Directory (ICMD), www.idx.co.id, and company's website. The unit analysis used is firm-year.

3.2. Variable definition and Measurement

This research uses cost of equity as independent variable, ownership type as independent variable, and real earnings management as mediating variable. Control variables consist of corporate governance practices measured by corporate governance indices (Surifah, Rahmawati, and Krismiaji, 2015), ownership concentrated level measured by ownership ratio, firm's size measured by log total assets, and discretionary accruals measures by Modified Jones Model.

Cost of equity capital is calculated based on discount rate used by investors to present value future cash flows (Ohlson, 1995; Botosan, 1997; Purwanto, 2012). Cost of equity capital is estimated by using Ohlson Model as follows:

$$r = (B_t + X_{t+1} - P_t)/P_t \quad (1)$$

Where:

r = cost of equity capital.

B_t = book value per share period t.

X_{t+1} = earnings per share period t+1, estimated by using random walk model.

P_t = share price period t.

Share price in the period t (Pt) is the average of three days observation, which are one day before financial statement publication (t-1), at the day of financial statement publication (t), and one day after financial statement publication (t+1). The main consideration for using three days windows is that there is time lag between financial statement submission date and financial publication which usually one day lags, and

short window will minimize confounding effect (Purwanto, 2012). Earnings per share period t+1 is estimated using random walk model as follows:

$$E_{(Xt+1)} = Xt + \sigma \quad (2)$$

Where:

E ($_{Xt+1}$) = estimated earnings per share period t+1

X_t = earnings per share period t

σ = Drift term is the average of change in earnings per share for five years or since the year of go public.

Controlling owners' type as independent variable consists of private institution, family, foreign, and government. This variable is measured by ownership percentage and dummy variable. Real earnings management as mediating variable is measured by Roychowdhury model. We use three models to calculate real activity manipulation based on operating activity, production cost, and discretionary expenditures. The models are as follows:

$$CFO_t/A_{t-1} = \alpha_0 + \alpha_1(1/A_{t-1}) + \beta_1(S_t/A_{t-1}) + \beta_2(\Delta S_t/A_{t-1}) + \varepsilon_t \quad (3)$$

$$PROD_t/A_{t-1} = \alpha_0 + \alpha_1(1/A_{t-1}) + \beta_1(S_t/A_{t-1}) + \beta_2(\Delta S_t/A_{t-1}) + \beta_3(\Delta S_{t-1}/A_{t-1}) + \varepsilon_t \quad (4)$$

$$DISEXP_t/A_{t-1} = \alpha_0 + \alpha_1(1/A_{t-1}) + \beta(S_{t-1}/A_{t-1}) + \varepsilon_t \quad (5)$$

Where:

CFO_t/A_{t-1}: Operating cash flows for the year t scaled by total assets for year t-1.

$\alpha_1(1/A_{t-1})$: Intercept scaled by total assets for year t-1.

S_t/A_{t-1}: Sales revenue in the year t scaled by total assets for year t-1.

$\Delta S_t/A_{t-1}$: Sales revenue in year t minus sales revenue in year t-1 scaled by total assets for year t-1.

$PROD_t/A_{t-1}$: Production costs in the year t scaled by total assets for year t-1, where $PROD_t = COGS_t + \Delta INV_t$

$\Delta S_{t-1}/A_{t-1}$: Change of sales revenue in year t-1 scaled by total assets for year t-1.

$DISEXP_t/A_{t-1}$: Discretionary expenditures in year t scaled by total assets for year t-1.

S_{t-1}/A_{t-1}: Sales revenue in the year t-1 scaled by total assets for year t-1..

ϵ_t: *Error term* year t.

Regression equation (3), (4), and (5) results in normal operating cash flows, normal production costs, and normal discretionary expenditures. Since this research needs

abnormal operating cash flows, abnormal production costs, and abnormal discretionary expenditures, they must be calculated by scaling actual operating cash flows, actual production costs, and actual discretionary expenditures with previous year's total asset minus normal operating cash flows, normal production costs, and normal discretionary expenditures.

3.3. Data Analysis

This research uses panel data regression to test hypotheses 1, 2, and 3 because the data is a combination between time series data and cross section data. Generally least square (GLS) is used to estimate data panel. The GLS transforms original data in such way that the data meets normality and classic assumptions. The results are best linear unbiased estimators (Gujarati and Porter 2009). Hypotheses 4 is tested by using path analysis which is the extension of regression analysis to predict causality among variables (Ghozali, 2011). Path analysis is used to test relationship among independent variables, mediating variables, and dependent variables (Bhattacharya et al., 2012).

3.4. Model Specification

The main statistical method to test the hypotheses is the GLS regression. The GLS regression models are estimated are as follows

$$\begin{aligned} COEC_{it} &= \alpha_{it} + \beta_1 FAM_{it} + \beta_2 GOV_{it} + \beta_3 PRIV_{it} + \beta_4 FORG_{it} + \beta_5 PUBL_{it} \\ &+ \beta_6 OWNC_{it} + \beta_7 SIZE_{it} + \beta_8 CG_{it} + \beta_9 LEV_{it} + \varepsilon_{it}. \end{aligned} \tag{6}$$

$$\begin{aligned} RCFO_{it} &= \alpha_{it} + \beta_1 FAM_{it} + \beta_2 GOV_{it} + \beta_3 PRIV_{it} + \beta_4 FORG_{it} + \beta_5 PUBL_{it} \\ &+ \beta_6 OWNC_{it} + \beta_7 SIZE_{it} + \beta_8 CG_{it} + \beta_9 LEV_{it} + \varepsilon_{it} \end{aligned} \tag{7}$$

$$\begin{aligned} RPE_{it} &= \alpha_{it} + \beta_1 FAM_{it} + \beta_2 GOV_{it} + \beta_3 PRIV_{it} + \beta_4 FORG_{it} + \beta_5 PUBL_{it} \\ &+ \beta_6 OWNC_{it} + \beta_7 SIZE_{it} + \beta_8 CG_{it} + \beta_9 LEV_{it} + \varepsilon_{it} \end{aligned} \tag{8}$$

$$\begin{aligned} RDE_{it} &= \alpha_{it} + \beta_1 FAM_{it} + \beta_2 GOV_{it} + \beta_3 PRIV_{it} + \beta_4 FORG_{it} + \beta_5 PUBL_{it} \\ &+ \beta_6 OWNC_{it} + \beta_7 SIZE_{it} + \beta_8 CG_{it} + \beta_9 LEV_{it} + \varepsilon_{it} \end{aligned} \tag{9}$$

$$COEC_{it} = \alpha_{it} + \beta_1 RCFO_{it} + \beta_2 RPE_{it} + \beta_3 RDE_{it} + \beta_4 OWNC_{it} + \beta_5 SIZE_{it} + \beta_6 CG_{it} + \beta_7 LEV_{it} + \varepsilon_{it} \quad (10)$$

$$COEC_{it} = \alpha_{it} + \beta_1 FAM_{it} + \beta_2 GOV_{it} + \beta_3 PRIV_{it} + \beta_4 FORG_{it} + \beta_5 PUBL_{it} + \beta_6 RCFO_{it} + \beta_7 OWNC_{it} + \beta_8 SIZE_{it} + \beta_9 CG_{it} + \beta_{10} LEV_{it} + \varepsilon_{it} \quad (11)$$

$$COEC_{it} = \alpha_{it} + \beta_1 FAM_{it} + \beta_2 GOV_{it} + \beta_3 PRIV_{it} + \beta_4 FORG_{it} + \beta_5 PUBL_{it} + \beta_6 RPE_{it} + \beta_7 OWNC_{it} + \beta_8 SIZE_{it} + \beta_9 CG_{it} + \beta_{10} LEV_{it} + i_t \quad (12)$$

$$COEC_{it} = \alpha_{it} + \beta_1 FAM_{it} + \beta_2 GOV_{it} + \beta_3 PRIV_{it} + \beta_4 FORG_{it} + \beta_5 PUBL_{it} + \beta_6 RDE_{it} + \beta_7 OWNC_{it} + \beta_8 SIZE_{it} + \beta_9 CG_{it} + \beta_{10} LEV_{it} + \varepsilon_{it} \quad (13)$$

Where:

COEC: Cost of equity capital

FAM: Family control

GOV: Government

PRIV: Private

FORG: Foreign

PUBL: Public

RCFO: Real cash flow from operation: operating cash flow-based real earnings management.

RPE: Real production costs-based real earnings management.

RDE: Real discretionary expenditures: discretionary expenditures-based real earnings management.

CG: Corporate governance index

SIZE: Firm' size

OWNC: Ownership concentration

E: Error term

4. Data Analysis and Discussion

Based on the sampling process described, this study uses 132 firms in the year of 2011, 2012, and 2013 as data sample, so the total observation consist of 396 firm-years. Balanced data was used to perform GLS analysis. The first step in analysis is

to calculate descriptive statistics for each variable which are presented in Table 1. The Table shows that mean for private ownership is 43.50% and is the biggest number of all other ownership type, which is 3.4% for family ownership, 2.4% for government ownership, 25.2% for foreign ownership, and 24.3% for public ownership. This indicates that Indonesia firms' ownership is concentrated in private, foreign, and public ownership.

TABLE 1: Descriptive Statistic.

	Mean	Median	Maximum	Minimum	Std. Dev.
COEC	0.401	0.240	5.084	0.000	0.501
PRIV	0.435	0.527	0.994	0.000	0.342
FAM	0.034	0.000	0.900	0.000	0.096
GOV	0.024	0.000	0.927	0.000	0.132
FORG	0.252	0.000	0.990	0.000	0.362
PUBL	0.243	0.200	0.750	0.000	0.164
OWNC	0.706	0.726	0.994	0.000	0.173
RCFO	-0.003	-0.102	11.071	-0.271	0.970
RDE	-0.003	-0.109	11.108	-1.033	0.974
RPE	-0.002	0.097	3.392	-10.390	0.965
SIZE	12.164	12.076	14.656	10.025	0.746
LEV	0.568	0.503	5.959	0.002	0.515
CG	12.847	14.333	19.000	0.000	4.921

Mean for mediating variables are -0.003 for RCFO, -0.003 for RDE, and -0.002 for RPE show that the number is almost identical. This indicates that real earnings management, especially operating cash-based and discretionary-based has similar value. This also can be confirmed by median, maximum, and deviation standard values. For RPE, although has almost similar mean value to that of RCFO and RDE, they have quite different value for median, maximum, and minimum.

Mean for CG is 12.85 which indicates that CG best practice implementation is still weak. This may because a part of items in CG index are not mandatorily. Therefore, public corporations have not given enough attention to such items. Moreover, market mechanism is not strong enough to push enforcement of CG best practices. Nam and Nam (2004) find that there is a little, if any, market mechanism as an instrument to control public companies in Indonesia, republic of Korea, Thailand, and Malaysia.

Table 2 shows Pearson correlation between variables. It shows that COEC variedly correlated with other variables. Positive correlation is happened between COEC and FAM whereas negative correlation is happened between COEC and PRIV, COEN and

GOV, COEC and FORG, and COEC and PUBL. Operating cash flow-based real earnings management (RCFO) variedly correlated with each ownership type. Positive correlation is happened between RCFO and FAM, and RFCO and PUBL, whereas negative' correlation is happened between RCFO and PRIV, RCFO and GOV, and RCFO. Yet correlation between RCFO and PRIV is insignificant. Discretionary expenditures-based real earnings management (RDE) variedly correlated with each ownership type. Positive correlation is happened between RDE and PRIV, GOV, FORG, and PUBL, whereas negative correlation is happened between RDE and FAM.

Production costs-based real earnings management (RPE) variedly correlated with each ownership type. Positive correlation is happened between RPE and PRIV, FAM, FORG, and PUBL, whereas negative correlation is happened between RPE and GOV. These results show that COEC is correlated with each type of earnings management in that COEC negatively correlated with RCFO, but COEC positively correlated with RDE and RPE. Yet all of these correlations are significant and give initial support to hypotheses. Finally, the bivariate correlation will further tested with regression analysis.

4.1. Result

The regression analysis results to test the hypotheses are presented in Table 3. We use several model to test our hypotheses. We uses model 6 in Table 3 to test hypotheses 1 which states that ownership type affects cost of equity capital. The variables investigated are FAM, GOV, PRIV, FORG, PUBL, and OWNC. The result shows a negative and significant coefficient in the level $\alpha = 0.01$ ($p = 0.000$) for GOV (-4.225), PRIV (-0.403), FORG (-1.531), PUBL (-1.745), and positive significant in the level $\alpha = 0.01$ ($p = 0.000$) for FAM (5.052).

This result indicates that the ownership type affects cost of equity capital. Therefore, it can be concluded that hypotheses 1 (H1) is supported by the empirical data. Yet, the effect of each ownership type is varied. The results show that PRIV, GOV, FORG, and PUBL have negative coefficient. These indicate that the higher private ownership, government ownership, foreign ownership, and public ownership, the lower cost equity capital. However, FAM has positive coefficient which means that when family ownership increase, cost of capital is also increase.

These results confirm and consistent to previous research performed by Ashlan and Kumar (2012), Boubakri and Ghouma (2010), and Wu et al. (2007) who find that ownership type affects cost of equity capital. Although family ownership posses the lower abnormal discretionary expenditures, why does family ownership positively affect

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Table 2: Bivariate Analysis.

	PRIV		FAM		GOV		FORG		PUBL		RCFO		RDE		RPE		OWNC		SIZE		LEV	CG
FAM	-0.106	*																				
GOV	-0.219	**	-0.060																			
FORG	-0.733	**	-0.131	**	-0.102	*																
PUBL	0.000		0.052		-0.040		-0.324	**														
RCFO	-0.036		0.020	**	-0.020	**	-0.050	**	0.065	**												
RDE	0.053	**	-0.010	*	0.030	**	0.070	**	0.071	**	0.655	**										
RPE	0.194	**	0.038	**	-0.080	**	0.152	**	0.057	**	0.015		0.021									
OWNC	0.226	**	-0.117	*	0.085		0.293	**	-0.366	**	-0.040		-0.040		0.014							
SIZE	0.070		-0.040		0.064		0.011		0.219	**	0.004		-0.010		0.024		0.178	**				
LEV	0.050		-0.070		-0.050		0.009		0.037		-0.010		-0.040		0.106	*	0.027		0.136	**		
CG	0.088		0.051		0.063		-0.080		0.172	**	0.059		0.026		0.091		0.074		0.303	**	0.030	
COEC	-0.050	**	0.000	**	-0.002	**	-0.045	**	-0.050	**	-0.010	**	0.030	**	0.030	**	-0.010		-0.040		-0.030	0.007

cost of equity capital? We suspect that this is because market less confident to family-owned-companies. Market is more confident to invest in non family-owned-companies, therefore cost of equity capital in non family-owned-companies lower than that of family-owned-companies. Some researchers find that family-controlled-companies are indicated to take private benefit more than non family-controlled-companies (Surifah, 2014; Boubakri and Ghoume, 2010; Wu et al., 2007). In this situation, market will invest in family-owned-companies when they offer a higher return, and this in turn increases their cost of equity capital.

Hypotheses 2a which states that ownership type affects operating cash flows-based real earnings management (RCFO) is tested by model 7. The result is presented in column Model 7 in Table 3. The variables of interests are FAM, GOV, PRIV, FORG, PUBL, and OWNC. The result shows a negative and significant coefficient in the level $\alpha = 0.01$ ($p = 0.000$) for GOV (-0.032) and FORG (-0.012), positive significant in the level $\alpha = 0.01$ ($p = 0.000$) for FAM (0.065) and PUBL (0.028), and insignificant for PRIV. This result indicates that the ownership type affects RCFO except private ownership. Therefore, it can be concluded that hypotheses 2a (H_{2a}) is partly supported by the empirical data. Yet, the effect of each ownership type is varied. The results show that GOV and FORG have negative coefficient. These indicate that the higher government ownership and foreign ownership lead to lower RCFO. However, FAM and PUBL have positive coefficient which means that when family ownership and public ownership increase, RCFO is also increase. Moreover, private ownership does not effect on RCFO.

Hypotheses 2b which states that ownership type affects production costs-based real earnings management (RPE) is tested by model 8. The result is presented in column Model 8 in Table 3. The variables of interests are FAM, GOV, PRIV, FORG, PUBL, and OWNC. The result shows a positive and significant coefficient in the level $\alpha = 0.01$ ($p = 0.000$) for PRIV (0.865), FAM (1.352), FORG (0.381), PUBL (0.531) and insignificant for GOV. Therefore, with exception for GOV, it can be concluded that hypotheses 2b (H_{2b}) is supported by the empirical data. These indicate that the higher private, family, foreign, and public ownership the higher is RPE, whereas government ownership does not have impact on RPE.

Hypotheses 2c which states that ownership type affects discretionary expenditures-based real earnings management (RDE) is tested by model 9. The result is presented in column Model 9 in Table 3. The variables of interests are FAM, GOV, PRIV, FORG, PUBL, and OWNC. The result shows a positive and significant coefficient in the level $\alpha = 0.01$ ($p = 0.000$) for PRIV (0.076), GOV (0.055), FORG (0.032), PUBL (0.193) and negative and significant coefficient in the level $\alpha = 0.05$ ($p = 0.000$) for FAM (-0.045). Therefore

it can be concluded that hypotheses 2c (H_{2c}) is supported by the empirical data. These indicate that the higher private, government, foreign, and public ownership the higher is RPE, whereas family ownership decreases RPE. The statistical results confirm previous researches which find that ownership type affects affiliated transactions-based real earnings management (Thomas, Herrmann, and Inoue, 2004), ownership type affects real earnings management through the reduction of research and development cost, the reduction advertising and maintenance costs, and the suspension to start new projects (Graham, Harvey, and Rajgobal, 2005). The higher abnormal operating cash flow, the better, because the company has a higher cash flow than the average industry cash flow. The analysis shows that cash flow of family-owned companies and public companies are higher than that of private, government, and foreign companies.

Family-owned companies have higher abnormal cash flow and lower abnormal discretionary expenditures. This probably the family owned companies tend to have a higher ability to lower discretionary expenditures, and this in turn will the higher operating cash flows. Government-owned companies tend to have the higher discretionary expenditures, and this lower operating cash flow. We suspect that government issues certain policies which increase discretionary expenditures in order to hide their private benefit they have had taken. In private and foreign companies, discretionary expenditures and production cost tend to be higher which lower operating cash flow, whereas in public companies, discretionary expenditures and production are high but the operating cash flow is also high. This indicates that the most optimal condition is that in public companies.

$$COEC_{it} = \alpha_{it} + \beta_1 FAM_{it} + \beta_2 GOV_{it} + \beta_3 PRIV_{it} + \beta_4 FORG_{it} + \beta_5 PUBL_{it} + \beta_6 OWNC_{it} + \beta_7 SIZE_{it} + \beta_8 CG_{it} + \beta_9 LEV_{it} + \varepsilon_{it} \quad (14)$$

$$RCFO_{it} = \alpha_{it} + \beta_1 FAM_{it} + \beta_2 GOV_{it} + \beta_3 PRIV_{it} + \beta_4 FORG_{it} + \beta_5 PUBL_{it} + \beta_6 OWNC_{it} + \beta_7 SIZE_{it} + \beta_8 CG_{it} + \beta_9 LEV_{it} + \varepsilon_{it} \quad (15)$$

$$RPE_{it} = \alpha_{it} + \beta_1 FAM_{it} + \beta_2 GOV_{it} + \beta_3 PRIV_{it} + \beta_4 FORG_{it} + \beta_5 PUBL_{it} + \beta_6 OWNC_{it} + \beta_7 SIZE_{it} + \beta_8 CG_{it} + \beta_9 LEV_{it} + \varepsilon_{it} \quad (16)$$

$$RDE_{it} = \alpha_{it} + \beta_1 FAM_{it} + \beta_2 GOV_{it} + \beta_3 PRIV_{it} + \beta_4 FORG_{it} + \beta_5 PUBL_{it} + \beta_6 OWNC_{it} + \beta_7 SIZE_{it} + \beta_8 CG_{it} + \beta_9 LEV_{it} + \varepsilon_{it} \quad (17)$$

$$COEC_{it} = \alpha_{it} + \beta_1 RCFO_{it} + \beta_2 RPE_{it} + \beta_3 RDE_{it} + \beta_4 OWNC_{it} + \beta_5 SIZE_{it} + \beta_6 CG_{it} + \beta_7 LEV_{it} + \varepsilon_{it} \quad (18)$$

$$COEC_{it} = \alpha_{it} + \beta_1 FAM_{it} + \beta_2 GOV_{it} + \beta_3 PRIV_{it} + \beta_4 FORG_{it} + \beta_5 PUBL_{it} + \beta_6 RCFO_{it} + \beta_7 OWNC_{it} + \beta_8 SIZE_{it} + \beta_9 CG_{it} + \beta_{10} LEV_{it} + \varepsilon_{it} \quad (19)$$

$$COEC_{it} = \alpha_{it} + \beta_1 FAM_{it} + \beta_2 GOV_{it} + \beta_3 PRIV_{it} + \beta_4 FORG_{it} + \beta_5 PUBL_{it} + \beta_6 RPE_{it} + \beta_7 OWNC_{it} + \beta_8 SIZE_{it} + \beta_9 CG_{it} + \beta_{10} LEV_{it} + \varepsilon_{it} \quad (20)$$

$$COEC_{it} = \alpha_{it} + \beta_1 FAM_{it} + \beta_2 GOV_{it} + \beta_3 PRIV_{it} + \beta_4 FORG_{it} + \beta_5 PUBL_{it} + \beta_6 RDE_{it} + \beta_7 OWNC_{it} + \beta_8 SIZE_{it} + \beta_9 CG_{it} + \beta_{10} LEV_{it} + \varepsilon_{it} \quad (21)$$

Hypotheses 3a which states that operating cash flow-based real earnings management (RCFO) affects cost of equity capital, hypotheses 3b which states that production costs-based real earnings management (RPE) affects cost of equity capital, and hypotheses 3a which states that discretionary expenditures-based real earnings management (RDE) affects cost of equity capital are tested by model 10 and the result is presented in column Model 10 in Table 3. The variables of interests are RCFO, RPE, and RDE. The result shows a negative and significant coefficient in the level α = 0.01 (p = 0.000) for RCFO (-0.019) and positive and significant coefficient in the level α = 0.05 (p = 0.000) for RPE (0.350) and RDE (0.069). Therefore it can be concluded that hypotheses 3a, 3b, and 3c are supported by the empirical data. These indicate that real operating cash flow decrease cost of capital. It means that the higher the abnormal operating cash flow, the lower the cost of equity capital. This is happened because investors are able to watch that the companies have a high cash flow which means they are low-risk rate companies. When the risk rate is low, investor will interest to invest although with low return. Real production costs (RPE) and real discretionary expenditures (RDE) positively affect cost of capital. This means that the higher the abnormal production costs and abnormal discretionary expenditures, the higher the cost of equity capital. Abnormal production costs and abnormal discretionary expenditures are indicators for company's operational inefficiency. Therefore, investors do not attract to invest to inefficient companies except they will get a high return. This of course will suffers the companies with increasing in cost of capital,

The statistical results confirm previous researches which find that real earnings management negatively affects future cash flows (Roychowdhury, 2006), accrual-based

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Table 3: Regression Analysis.

	Model 6		Model 7		Model 8		Model 9		Model 10		Model 11		Model 12		Model 13	
Variable	Coefficient		Coefficient		Coefficient		Coefficient		Coefficient		Coefficient		Coefficient		Coefficient	
Intercept	-18.188	***	0.062	***	-1.883	***	0.210	***	-9.177	***	-23.981	***	-8.084	***	-19.504	***
PRIV	-0.403	***	-0.000		0.865	***	0.076	***			-7.793	***	-0.026		-0.762	***
FAM	5.052	***	0.065	***	1.352	***	-0.045	**			5.729	***	2.500	***	5.399	***
GOV	-4.225	***	-0.032	***	-0.148		0.055	***			-4.766	***	-1.824	***	-4.356	***
FORG	-1.531	***	-0.012	***	0.381	***	0.032	***			-1.751	***	-0.766	***	-1.708	***
PUBL	-1.745	***	0.028	***	0.531	***	0.193	***			-2.116	***	-0.771	***	-2.037	***
OWNC	2.937	***	0.008	***	-0.021		-0.034	***	1.415	***	3.709	***	1.539	***	3.255	***
SIZE	1.483	***	-0.017	***	0.095	***	-0.031	***	0.732	***	1.969	***	0.646	***	1.575	***
LEV	-2.225	***	0.018	***	0.105	***	-0.012	***	-2.028	***	-2.112	***	-2.071	***	-1.989	***
CG	0.071	***	0.004	***	0.005	***	0.002	***	0.060	***	0.057	***	0.073	***	0.079	***
RCFO									-0.019	***	-0.028	***				
RPE									0.350	***			0.453	***		
RDE									0.069	***					0.228	***
Adj. R^2	0.238		0.685		0.316		0.713		0.093		0.313		0.126		0.235	
F-statistic	14.658	***	95.599	***	21.127	***	109.565	***	6.761	***	18.884	***	6.659	***	13.040	***

***, **, * show that coefficient is significant at 0.01, 0.05, and 0.1 respectively

earnings management is associated with cost of capital (Dechow et al., 1996, Francis *et al*., 2004; Bharat *et al*., 2008; Gray *et al*, 2009; Utami, 2005), earnings management also decreases long-term profitability (Ewert and Wagenhofer, 2005), that managers will manipulate real activities to meet earnings target, even if it will decrease long-term firm's value Graham et al. (2005), manipulating earnings experience significant increases in their costs of capital (Dechow et al. (1996), poorer accruals quality is associated with larger costs of debt and equity (Francis et al., 2005), and poor accrual quality is positively associated with high cost of quality (Gray et al., 2005).

Hypotheses 4a (H_{4a}) which predicts that operating cash flow-based real earnings management mediates the effect of each ownership type on cost of equity capital, hypotheses 4b (H_{4b}) which stated that production costs-based real earnings management mediates the effect of each ownership type on cost of equity capital and hypotheses 4c (H_{4c}) which stated that discretionary expenditures-based real earnings management mediates the effect of each ownership type on cost of equity capital are tested by model 11, model 12, and model 13 using path analysis and the results are presented in column Model 11, column Model 12, column Model 13 respectively in Table 3. Path analysis performs test to find direct effect, indirect effect and total effect. First step has been performed to find indirect effect of ownership type on cost of equity capital by running model 7, model 8, and model 9. The results are presented in Table 3. Second step is finding direct effect of ownership type on cost of equity capital with real earnings management as a mediating. These are done by running model 11, model 12, and model 12, and the results are presented in column Model 11, column Model 12, and column Model 13 respectively at Table 3.

Column Model 11 at Table 3 shows that all ownership type variables are significant, therefore it can be concluded that all ownership type variables (PRIV, FAM, GOV, FORG, PUBL) directly affect cost of equity capital (COEC). Yet, testing result for Model 7 shows that PRIV statistically insignificant, so PRIV does not include in the model. Thus, it can be concluded that operating cash flow-based real earnings management mediates the effect of each ownership type on cost of equity capital, especially for FAM, GOV, FORG, and PUBL. Table 4 presents indirect effect, direct effect, and total effect for each ownership type on cost of equity capital. Column RCFO in Table 4 shows that family ownership (FAM), government ownership (GOV), foreign ownership (FORG), and public ownership (PUBL) have indirect effects differently. FAM and PUBL have negative effects whereas GOV and FORG have positive effects. In term of direct effect, as stated in column Model 11, all of ownership types have direct effect differently. FAM has direct positive effect and the rests have direct negative effect. Totally, ownership type affects

differently. FAM has direct positive effect and the rests have direct negative effect. Based on these results, it can be concluded that hypotheses 4a which predicts that operating cash flow-based real earnings management mediates the effect of each ownership type on cost of equity capital is supported by empirical data except for private ownership (PRIV).

Table 4: Indirect, Direct, and Total Effect.

	RCFO			RPE			RDE		
Variable	Indirect	Direct	Total	Indirect	Direct	Total	Indirect	Direct	Total
PRIV		-7.793	-7.793	0.197	-0.762	-0.565	0.034	-0.026	0.008
FAM	-0.002	5.729	5.727	0.308	5.399	5.707	-0.020	2.500	2.480
GOV	0.001	-4.766	-4.765		-4.356	-4.356	0.025	-1.824	-1.799
FORG	0.000	-1.751	-1.751	0.087	-1.708	-1.621	0.014	-0.766	-0.752
PUBL	-0.001	-2.116	-2.117	0.121	-2.037	-1.916	0.087	-0.771	-0.684

Column Model 12 shows that ownership type variables, except PRIV, are significant, therefore it can be concluded that FAM, GOV, FORG, PUBL directly affect cost of equity capital (COEC). Yet, testing result for Model 8 shows that GOV statistically insignificant, so GOV does not include in the model. Thus, it can be concluded that production costs-based real earnings management mediates the effect of each ownership type on cost of equity capital, especially for FAM, FORG, and PUBL. Column RPE in Table 4 shows that family ownership (FAM), foreign ownership (FORG), and public ownership (PUBL) have indirect effects differently. FAM has positive effect whereas FORG and PUBL have negative effects. In term of direct effect, as stated in column Model 12, all of ownership types have direct effect differently. FAM has direct positive effect and GOV, FORG, PUBL have direct negative effect. Totally, ownership type affects differently. FAM has direct positive effect and GOV, FORG, PUBL have direct negative effect. Based on these results, it can be concluded that hypotheses 4b which predicts that production costs-based real earnings management mediates the effect of each ownership type on cost of equity capital is supported by empirical data except for private ownership (PRIV) and government ownership (GOV).

Column Model 13 in Table 3 shows that all ownership type variables are significant, therefore it can be concluded that PRIV, FAM, GOV, FORG, and PUBL directly affect cost of equity capital (COEC). Moreover testing result for Model 9 also shows that PRIV, FAM, GOV, FORG, and PUBL statistically insignificant, thus PRIV, FAM, GOV, FORG, PUBL include in the model. Finally, it can be concluded that discretionary expenditures-based real earnings management mediates the effect of each ownership type on cost

of equity capital. Column RDE in Table 4 shows that PRIV, FAM, GOV, FORG, and PUBL have indirect effects differently. FAM has negative effect whereas PRIV, GOV, FORG and PUBL have negative effects. In term of direct effect, as stated in column Model 13, all of ownership types have direct effect differently. FAM has direct positive effect and PRIV, GOV, FORG, and PUBL have direct negative effect. Totally, ownership type affects differently. PRIV and FAM have direct positive effect and GOV, FORG, PUBL have direct negative effect. Based on these results, it can be concluded that hypotheses 4c which predicts that discretionary expenditures-based real earnings management mediates the effect of each ownership type on cost of equity capital is supported by empirical data.

We also predict that corporate governance negatively affect cost of capital and real-earnings management. The analysis results in all columns at Table 3 show that CG's coefficients are positive. These do not confirm our predictions. We suspect that corporate governance practices are still ineffective in developing countries environment compare to that of in developed countries.

5. Conclusion

This paper investigates whether: 1) controlling owners' type affects COEC and REM, 2) REM affects COEC, and 3) REM mediates the effect of controlling owners' type on COEC. The results indicate that the ownership type affects cost of equity capital, and hypotheses 1 (H1) is supported by the empirical data. The results also indicate that the ownership type affects RCFO except private ownership and therefore hypotheses 2a (H_{2a}) is partly supported by the empirical data. With exception for GOV, hypotheses 2b (H_{2b}) which states that ownership type affects production costs-based real earnings management (RPE) is also supported by the empirical data, moreover hypotheses 2c which states that ownership type affects discretionary expenditures-based real earnings management (RDE) is also supported by the empirical data.

Hypotheses 3a which states that operating cash flow-based real earnings management (RCFO) affects cost of equity capital, hypotheses 3b which states that production costs-based real earnings management (RPE) affects cost of equity capital, and hypotheses 3a which states that discretionary expenditures-based real earnings management (RDE) affects cost of equity capital are supported by the empirical data.. Hypotheses 4a (H_{4a}) which predicts that operating cash flow-based real earnings management mediates the effect of each ownership type on cost of equity capital is supported by empirical data except for private ownership (PRIV), whereas hypotheses 4b (H_{4b}) which stated that production costs-based real earnings management mediates the effect of each

ownership type on cost of equity capital is supported by empirical data except for private ownership (PRIV) and government ownership (GOV) and finally hypotheses 4c (H_{4c}) which stated that discretionary expenditures-based real earnings management mediates the effect of each ownership type on cost of equity capital is supported by the empirical data.

This research has implications. First, the results confirm the expectation that controlling owners' type affects COEC and REM. Practically, controlling owners suffers the higher risk and therefore they require the higher equity premium. Consequently, the different ownership type will affect COEC differently. Moreover, controlling ownership types with different interests do also affect REM differently. Second, the results also confirm that each type of REM affects COEC. Manipulation of earnings through production costs, operating cash flows, and discretionary expenditure could impair credit ratings and therefore they affect cost of equity capital. Third, the results also confirm that REM mediates the effect of controlling owners' type on COEC.

This research has limitations. The main limitation is that this research includes only data from manufacturing company. Consequently, analysis for each industry cannot be performed. This opens an opportunity to perform further research which involved more industry types. Another limitation is that this research involves data only from one developing country i.e. Indonesia. This probably could not give a big picture for similar research problem in other developing countries with different characteristics in term of regulation systems and their enforcement powers. Therefore further research could be done by involving data from other developing countries both in similar regions and different regions.

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