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## Firm Value and Real Earnings Management: Moderating Role of Board Independence and CEO Duality

Adhitya Agri Putra<sup>1</sup> dan Meliza Putriyanti Zifi<sup>2</sup>

<sup>1</sup>Universitas Riau, email: adhitrebe@gmail.com

<sup>2</sup>Politeknik Caltex Riau, email: meliza@pcr.ac.id

### Abstrak

Penelitian ini menguji peran independensi dewan komisaris dan dualitas CEO sebagai variabel pemoderasi antara manajemen laba riil dan nilai perusahaan. Sampel penelitian yaitu 867 tahun-perusahaan manufaktur di Bursa Efek Indonesia 2012-2019. Independensi dewan komisaris terdiri dari proporsi, interlock, committee overlap komisaris independen. Dualitas CEO menggambarkan afiliasi antara CEO dengan anggota dewan komisaris. Manajemen laba riil diukur dengan aktivitas over sales, overproduction, dan discretionary expenses cutting. Nilai perusahaan diukur dengan Tobin's Q. Analisis data menggunakan regresi model fixed-effect sebagai pengujian hipotesis. Manajemen laba riil meningkatkan nilai perusahaan saat terjadi peningkatan proporsi, interlock, dan committee overlap dewan komisaris. Di sisi lain, manajemen laba riil berpengaruh negative terhadap nilai perusahaan pada saat terdapat dualitas CEO.

**Kata kunci:** nilai perusahaan, manajemen laba riil, independensi dewan komisaris, dualitas CEO

### Abstract

Research objective is to to examine the moderating role of board independence and CEO duality between real earnings management (hereafter REM) and firm value. Research sample consists of 867 manufacturing firm-year listed on the Indonesian Stock Exchange 2012-2019. Board independence includes a proportion of independent commissioners in the board, the interlock of independent commissioners. CEO duality refers to the affiliation between the CEO and the board of commissioners. REM is measured by over sales, overproduction, and discretionary expenses cutting activities. Firm value is measured by Tobin's Q. Data analysis uses fixed-effect regression analysis as hypotheses test. REM has a positive effect on firm value when the proportion of independent commissioner, interlock of the independent commissioner, committee overlap of the independent commissioner are higher. Further, REM reduces firm value when there is a CEO duality.

**Keywords:** firm value, real earnings management, board independence, CEO duality

### 1. Introduction

Since earnings are important to determine firm value, managers tend to manage reported earnings by engaging in earnings management. In this case, there is an effect of earnings

management on firm value. Earnings management has been an important issue. In 2002 Enron declares bankruptcy as an impact of earnings manipulation to hide financial difficulties [1]. The case of Enron leads to the formulation of the Sarbanes-Oxley Act (SOX). Although accounting fraudulent has been reduced, it occurs only in accrual earnings management [2], while real earnings management (hereafter REM) increases in the post-SOX period. Management rather to engage in REM than accruals earnings management since REM does not reach regulator and auditors awareness [3]. On one hand, REM leads to bigger real economic costs [4] and creates problems in the future [5]. For example, Roychowdhury [6] suggest the over-sales activities of discounts program or lean credit sales can rise the future sales reduction when a firm provide back the normal price or generate sales-return from credit sales. Also, Roychowdhury [6] remains the over-produced products rise more storage costs that cannot be recovered in the current year. It leads to value losses. On the other hand, REM can be an efficient or signaling mechanism to improve firm value. Gunny [7] found that, in the context of signaling, REM increases future performance. The REM suspects (beat earnings target) can also reduce the bad impact of REM on future earnings [8], [9]. Different from the opportunistic behavior, signaling REM can provide the information of a firm's quality to achieve higher subsequence performance [7]. In this case, REM does not always bring negative consequences to the firm which lead to firm value improvement. Inconsistencies about 'bad' or 'good' of REM happens because of unclear earnings management opportunistic or efficient contracting motivations [10].

Corporate governance is a mechanism to reduces opportunistic behavior [11]. Since the Enron case, firm board performance gains much attention as an evaluation of good corporate governance. Most board performance studies focus on board independence and leadership structure [12]. Unlike the one-tier system such as in the US, Indonesia performs the two-tier system that consists of the board of commissioners (non-executive directors) who hold supervisory and monitoring roles and the board of directors who hold executive functions. Board independence includes a proportion of independent commissioners' members, board interlock of independent commissioners' members, and committee overlap of independent commissioners' members. Leadership structure includes CEO duality. Since Indonesia has a two-tier board system, CEO duality is not seen by the double role of CEO and chief of the board but the relationship between CEO and other commissioners. Some studies find that board independence reduces opportunistic REM [13] and increases earnings quality [14] and firm value [15], while others find that CEO duality increases REM [16] and reduces firm value [15]. The previous gap provide inconsistent findings of REM as the impact of the absence of opportunistic behavior and signaling or efficient motivation factors [10]. In this case, board independence and CEO duality determine if REM is done opportunistically and reduces the firm value or efficiently and increases firm value.

Board independence brings the public interests as the main reason to reduces managerial opportunistic behavior. On the other hand, CEO duality shows that the supervisory and monitoring role by the board of commissioners is ineffective since the CEO affiliates with the member of commissioners. CEO duality will increase opportunistic REM and reduce firm value. Research objective is to examine the role of board independence and CEO duality leadership structure on the relationship between REM and firm value. This research provides new evidence of independent commissioner and CEO duality roles to determine whether REM is done opportunistically and reduces the firm value or efficiently and increases firm value in Indonesia that has different governance system (two-tier) from other Anglo-Saxon countries such as the US one-tier board. Research contribution is to filling the previous gap of REM and firm value (e.g.[5]–[9] by considering the role of board independence and CEO duality to shows the intention of REM engagement either as opportunistic behavior or efficient contracting motivation.

## 2. Hypotheses Development

### 2.1 Agency Theory

Agency theory explains the relationship between managers and shareholders where the main review of this theory is agency conflict [17]. On one hand, shareholders need to increase firm value by getting earnings information with higher quality so they can make accurate investment decision-making. On the other hand, managers tend to behave opportunistically to achieve own interests and avoid shareholders' needs of higher information quality by engaging in earnings management. In this case, weaker governance mechanism of commissioners and CEO raises more agency conflict and higher opportunist behavior [17]. Further, opportunist behavior can reduce firm value.

### 2.2 Signaling Theory

Signaling theory explains the firms' behavior to give a signal about private information to reduce information asymmetry [18]. It aims to tell the quality of the firms. REM can be a signaling mechanism to tell prospect of the firm [19]. Strong governance mechanism is the key to lead REM as signaling tool [20]. Strong governance mechanism includes the effectiveness of independent commissioners and non-dual CEO. In this case, information signaling can help firm to increase firm value with their quality that has been communicated.

### 2.3 Independent Commissioners, REM, and Firm Value

Independent proportion in the board of commissioners shows the independence level of the board of commissioners. Busirin et al. [21] find that a higher proportion of independent boards will mitigate earnings manipulation. On the other hand, a higher independence level indicates that the board of commissioners supports transparency and higher information quality from managers by allowing managers to engage in efficient REM to improve firm value. A higher proportion of independent commissioners strengthens the positive effect or weakens the negative effect of REM on firm value.

**H1: Proportion of independent commissioners moderates the effect of REM on firm value**

The interlock of independent commissioners exists when there are independent commissioners who have multiple directorships by serving two or more boards across firms, and thus creates an interlock between organizations [15], [25]. Interlock relationship creates an information channel [26], resources access [27], and uncertainty reduction [28] between firms. It brings higher effectiveness for independent commissioners to mitigate opportunistic REM by managers. Hashim and Rahman [29] find that board interlock provides open resources to increase earnings quality. Zona et al. [30] and Rutledge et al. [15] also find that the board interlocks increase firm performance and value. In this case, the interlock of independent commissioners supports the efficient REM to increase firm value.

**H2: Interlock of independent commissioners moderates the effect of REM on firm value**

Committee overlap of independent commissioners exists when there are independent commissioners who have a position in multiple committees of the firms' board [15]. Committee overlap provides knowledge transfers across committees [31]. It allows independent commissioners to be more knowledgeable and perform effective monitoring to reduce managers' opportunistic behavior [32]. Brandes et al. [33] find that committee overlap reduces information asymmetry. Lower asymmetry information leads to lower opportunistic REM. Rutledge et al. [15] find that information access across committees makes independent directors improve firms' performance.

**H3: Committee overlap of independent commissioners moderates the effect of REM on firm value**

### 2.4 CEO Duality, REM, and Firm Value

CEO duality shows that CEO has a dual role both as an executive and supervisor. It is an indicator of the CEO's power to fulfill their self-interests than shareholders' ones [15]. In a two-tier system like Indonesia, CEO duality refers to the condition where CEO has significant relationship with the member of the board of commissioners (non-executive directors) such as

family, financial, or business relationship [34]. Mather and Ramsay [35] find that CEO duality increases opportunistic earnings management. Effective monitoring occurs when there is no relationship between supervisory (non-executive board) and executive roles [36]. Cornett et al. [36] and Rutledge et al. [15] find that CEO duality reduces firm performance. In this case, CEO duality tends to engage in opportunistic REM and reduce firm value than an efficient one.

#### H4: CEO duality moderates the effect of REM on firm value

### 3. Research Method

#### 3.1 Sample

The sample consists of Indonesian Stock Exchange manufacturing firms. Manufacturing firms have interests to engage more in earnings management [37] because of sales uncertainty that comes from sales price adjustment from the distributor [38]. REM activities, especially overproduction also only relevant for manufacturing firms [6]. This research uses annual reports and financial statement data from 2012-2019. In Indonesia, the disclosure of board member and CEO affiliation and multiple positions is regulated first in 2012 based on the regulation of *Keputusan BAPEPAM-LK KEP-431/BL/2012* in 2012 and updated on the regulation *Surat Edaran Otoritas Jasa Keuangan 30 /SEOJK.04/2016* in 2016. Since firm value is a reflection of shareholders' wealth [39], firms with negative shareholder equity are eliminated. The net sample includes 867 firm-year as in table 1.

Table 1. Research Sample

Selection Criteria	Firm	Firm-Year
Manufacturing firms on the Indonesian Stock Exchange 2012-2019	124	992
Incomplete data	(8)	(64)
Total	116	928
Negative shareholders' equity		(61)
Net Sample		867

#### 3.2 Variables

In this research, firm value is the dependent variable. Firm value relates to shareholders' wealth that is described as stock market value. The firm value is occurred by calculating the value of Tobin's q [40]. As in equation 1,  $L$  is total liabilities. MVE is the market value of equity that is occurred by share price multiple by outstanding share. BVE is the book value of equity.

$$Tobins' Q = \frac{L + MVE}{L + BVE} \quad (1)$$

The independent variable is REM. REM includes over sales, overproduction, and discretionary expenses cutting activities. Estimation of over sales, overproduction, and discretionary expenses cutting activities is as in equations 2-4 [6]. The aggregate of REM activities is as in equation 5 [41], [42].

$$Operating\ Cash\ Flow_t = a + b_0 \frac{1}{Assets_{t-1}} + b_1 \frac{Sales_t}{Assets_{t-1}} + b_2 \frac{\Delta Sales_t}{Assets_{t-1}} + e_{Operating\ Cash\ Flow} \quad (2)$$

$$Production\ Cost_t = a + b_0 \frac{1}{Assets_{t-1}} + b_1 \frac{Sales_t}{Assets_{t-1}} + b_2 \frac{\Delta Sales_t}{Assets_{t-1}} + b_3 \frac{\Delta Sales_{t-1}}{Assets_{t-1}} + e_{Production\ Cost} \quad (3)$$

$$Discretionary\ expenses_t = a + b0 \frac{1}{Assets_{t-1}} + b1 \frac{Sales_{t-1}}{Assets_{t-1}} + e_{Discretionary\ expenses} \quad (4)$$

$$REM = -e_{Operating\ Cash\ Flow} + e_{Production\ Cost} - e_{Discretionary\ expenses} \quad (5)$$

Moderating variables include an independent proportion of commissioners' members in the board, the interlock of independent commissioners members, the committee overlap of independent commissioners members, and CEO duality. The independent proportion of commissioners' members is shown by the number of independent commissioners relative to the total member of commissioners [15]. The interlock of independent commissioners is measured by the number of independent commissioners who also hold at least two directorship positions in other firms divided by total independent commissioners [15]. The committee overlap of independent commissioners is proxied by the number of independent commissioners' members who hold the position at least in two board committees divided by total independent commissioners [43]. CEO duality is measured by a dummy variable. When CEO has family, financial, or business relationship with the other member of the board of commissioners, the score is one. When CEO has no family, financial, or business relationship with the other member of the board of commissioners, the score is zero. [34].

Control variables include return on assets (ROA), firms' size (SIZE), sales growth (SG), assets growth (AG), big four auditors (BIG), z-score, (Z), and debt to equity ratio (DER). Variables of ROA, SIZE, SG, and AG aim to control the condition of profitability, firms' size, and firms' growth whether abnormal activities come from business conditions or REM activities [6]. ROA is generated by net income relative to the total assets. SIZE is calculated by the natural logarithm value of total assets. SG is measured by the sales growth relative to the previous sales. AG is measured by the asset growth relative to previous total assets. Variables of BIG, Z and DER aim to control auditor quality and financial health as the costs of REM [44]. BIG is measured by score 1 if firms' auditor is affiliated with big four and score 0 if otherwise. DER is calculated by the ratio of liabilities relative to equity. Z is measured by the z-score of Altman as in equation 6.

$$z = 1.2 \text{ working capital to total assets} + 1.4 \text{ retained earnings to total assets ratio} + 3.3 \text{ earnings before interest and tax to total assets} + 0.6 \text{ market value of equity to total liabilities} + 0.999 \text{ sales to total assets} \quad (6)$$

### 3.3 Analysis Model

Fixed-effect regression is used as analysis tool to examine the research hypotheses. The regression model is as in equation 7.

$$Q = \alpha + \beta_1 REM_t + \beta_2 REM \times PROP + \beta_3 REM \times INTERLOCK + \beta_4 REM \times OVERLAP + \beta_5 REM \times DUAL + \beta_6 PROP + \beta_7 INTERLOCK + \beta_8 OVERLAP + \beta_9 DUAL + \beta_{10} ROA + \beta_{11} SIZE + \beta_{12} SG + \beta_{13} AG + \beta_{14} BIG + \beta_{15} Z + \beta_{16} DER + e \quad (7)$$

Q is firm value. REM is real earnings management. PROP is the independent proportion of commissioners' members in the board. INTERLOCK is the interlock of independent commissioners. OVERLAP is the committee overlap of independent commissioners. DUAL is CEO duality. ROA is the return on assets. SIZE is the firms' size. SG is sales growth. AG is assets growth. BIG is auditor quality. Z is a z-score. DER is the debt-to-equity ratio. Hypotheses of H1-H3 are accepted if coefficients of  $\beta_2$ - $\beta_4$  are positive and significant. The hypothesis of H4 is accepted if the coefficient of  $\beta_5$  is negative and significant.

## 4. Results

### 4.1 Descriptive Statistics and Multicollinearity

Table 2. Descriptive Statistics and Multicollinearity

Panel A. Descriptive Statistics					
	Mean	Median	Maximum	Minimum	Std. Dev.
Q	1.6984	0.9688	23.2858	0.3041	2.4136
REM	0.0037	0.0024	0.8147	-1.7012	0.1913
PROP	0.4104	0.3750	1.0000	0.1667	0.1141
INTERLOCK	0.2499	0.0000	1.0000	0.0000	0.3775
OVERLAP	0.1398	0.0000	1.0000	0.0000	0.3016
DUAL	0.3875		1.0000	0.0000	
Panel B. Multicollinearity					
	VIF Value				
REM	1.9627				
REM x PROP	1.7633				
REM x INTERLOCK	2.2969				
REM x OVERLAP	1.1600				
REM x DUAL	2.0190				
PROP	1.1102				
INTERLOCK	1.0318				
OVERLAP	1.0859				
DUAL	1.1058				
ROA	1.1902				
SIZE	1.3367				
SG	1.0667				
AG	1.0576				
BIG	1.4609				
Z	1.2735				
DER	1.0444				

In table 2, panel A shows that the highest level of REM is 0.8147 while the lowest one is -1.7012. On average, each firm has a REM level of 0.0037 with a deviation of 0.1913. The highest firm value is 23.2858 while the lowest one is 0.3041. On average, each firm has a value of 1.6984 with a deviation of 2.4136. On average, each firm has a proportion of independent commissioners of 0.4104 where there are 41.04% of independent commissioners on the board with a deviation of 0.1141. On average, each firm has an interlock of independent commissioners of 0.24499 where there are 24.99% of independent commissioners who have at least two directorships position in other firms with its deviation of 0.1141. On average, each firm has a committee overlap of independent commissioners of 0.1398 where there are 13.98% of independent commissioners who have positions at least in two committees in the board with its deviation of 0.1141.

### 4.2 Regression Analysis

Table 3. Regression Analysis

Variable	Predicted Sign	Coeff.	t-Stats	Coeff.	t-Stats
REM	+/-	-1.0740	-3.8976***	-3.0936	-2.6743***

<i>REM x PROP</i>	+			7.8657	2.7931***
<i>REM x INTERLOCK</i>	+			1.1518	1.7355*
<i>REM x OVERLAP</i>	+			3.0455	1.7534*
<i>REM x DUAL</i>	-			-1.0200	-1.7623*
PROP	+			3.8601	8.3654***
INTERLOCK	+			0.0632	0.4705
OVERLAP	+			0.2994	1.7346*
DUAL	-			-0.3112	-2.8879***
ROA	+	-0.2555	-0.7098	-0.1561	-0.4480
SIZE	+	0.1843	4.9332***	0.1465	4.0492***
SG	+	-0.0084	-0.0355	-0.0346	-0.1508
AG	+	0.0112	0.1229	0.0776	0.8844
BIG	+	-0.1398	-1.1348	-0.1477	-1.2185
Z	+	0.3620	31.1396**	0.3599	32.1763***
			*		
DER	+/-	0.0267	4.0172***	0.0205	3.1885***
Constant		-5.0321		-5.346	
Adjusted R-squared		0.5961		0.6290	
F-statistic		160.7840***		92.7587***	
***significant in 0.01, *significant in 0.10					

In table 3, the interaction between REM and proportion of independent commissioner (*REM x PROP*) has a coefficient value of 7.8657 with a t-statistic of 2.7931 (significant 0.01). It indicates that the proportion of independent commissioners moderates the effect of REM on firm value. REM has a positive effect on firm value if the proportion of independent commissioners is higher. The result is consistent with Busirin et al. [21] who find that a higher proportion of independent reduce opportunistic behavior and Rutledge et al. [15], Vo and Nguyen [22], Palmberg [23], and Issarawornrawanich [24] who find that higher proportion of independent commissioners improve firm value and performance. The result confirms the signaling concept where strong governance mechanism that is provided by commissioner independence leads REM to give a signal of firm quality to improve firm value.

Variable of interaction between REM and interlock of independent commissioner (*REM x INTERLOCK*) has a coefficient value of 1.1518 with a t-statistic of 1.7355 (significant 0.10). It indicates that the interlock of independent commissioners moderates the effect of REM on firm value. REM has a positive effect on firm value if the interlock of the independent commissioner is higher. The result is consistent with Hashim and Rahman [29] who find that board interlock increases earnings quality and Zona et al. [30] and Rutledge et al. [15] who find that the board interlocks increases firm performance and value. The result supports the signaling concept where strong governance mechanism that is provided higher external knowledge of independent commissioner leads REM to give a signal of firm quality to increase firm value. Variable of interaction between REM and committee overlap of independent commissioner (*REM x OVERLAP*) has a coefficient value of 3.0455 with a t-statistic of 1.7534 (significant 0.10). It indicates that the committee overlap of independent commissioners moderates the effect of REM on firm value. REM has a positive effect on firm value if the committee overlap of the independent commissioner is higher. The result is consistent with Brandes et al. [33] who find that committee overlap reduces information asymmetry and Rutledge et al. [15] who find that information access across committees makes independent directors improve firms' performance. The result follows the signaling theory where strong governance mechanism that is provided higher knowledge of independent commissioner from internal firms' committees make REM to provide an information signaling of firm quality to add more value in the firm. Variable of interaction between REM and CEO duality (*REM x DUAL*) has a coefficient value of -1.0200 with a t-statistic of -1.7623 (significant 0.10). It indicates that CEO duality

moderates the effect of REM on firm value. REM has a negative effect on firm value if CEO has a duality role in the board which is as executive and supervisor. The result is consistent with Mather and Ramsay [35] who find that CEO duality increases opportunistic earnings management and Cornett et al. [36] and Rutledge et al. [15] who find that CEO duality reduces firm performance. The result complies the agency theory where dual CEO promotes weaker governance mechanism and leads REM become opportunist behavior to reduces firm value.

## 5. Conclusion

Research objective is to examining the moderating effect of board independence and CEO duality between REM and firm value. The result explains REM has a positive effect on firm value when the proportion of independent commissioner, interlock of the independent commissioner, committee overlap of the independent commissioner are higher. On the other hand, REM has a negative effect on firm value when there is a CEO duality. It confirms that board independence has effective monitoring by promoting efficient REM to improve firm value. The research implies regulator, investor, and firms to evaluate governance mechanism of independent commissioner and CEO duality to ensure REM can improve firm value. This research implies firms' corporate governance structure. First, firms are expected to add more independent commissioners to the board, choose independent commissioner who holds multiple directorship positions in other firms, and put independent commissioner in more committees to improve monitoring effectiveness. Second, firms are expected to choose independent CEO who has no family, financial, and business relationships with other members of the board of commissioner to improve monitoring effectiveness.

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