

# REAL EARNINGS MANAGEMENT AND FIRM VALUE: EMPIRICAL EVIDENCE FROM MALAYSIA

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## ABSTRACT

*This research was conducted to study the connection between real earnings management (REM) activities and firm value. A sample of 6,216 suspected firms was collected from 2004 to 2011. We derived the relationship using the methods applied by Roychowdhury (2006). Using linear regression to determine the relationship of each REM activity of suspected firms with the firm value, we found a significant positive relationship between REM activities and firm value. When firms had more REM activities, the firm value increased. This outcome was caused by the existence of information asymmetry, which creates a friction between managers and shareholders. A significant relationship was also observed between leverage and firm value as well as between size and firm value. Thus, REM activities were concluded to increase firms' value.*

**Keywords:** *Real earnings management, firm value, information asymmetry*

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## Introduction

Most firms are attempting to expand their businesses to derive more profit to distribute dividends to their shareholders. Financial statements are presented to the shareholders in each annual general meeting, and the dividends are declared. However, some firms do not present the true figures in financial statements. Instead, they attempt to stage-manage the figures to show the utmost net profit for financial year-end reports.

After the Enron scandal and the collapse of Arthur Andersen in 2001 and with the introduction of tough measures in the Sarbanes–Oxley (SOX) Act of 2001, firm have shifted their ways in manipulating financial statements from accrual earnings management (AEM) to real earnings management (REM). The main objective is to manipulate the accounting figures without the knowledge of the auditors.

Thus far, limited studies have been conducted on REM, especially from the Malaysian perspective. Accordingly, this study provides an additional view about the REM activities in Malaysia as a developing country. Bhojraj, Picconi and Hribar (2009) and Cohen and Zarowin (2010) revealed that developing countries engage in REM instead of AEM, and concluded that REM is implemented in countries with strong investor protection.

Malaysia is a developing country that aims to become one of the leading developed countries by 2020. The quarterly news bulletin released by the Securities Commission of Malaysia (SC) in October 2009 announced that Malaysia continued to receive positive reports on its corporate governance framework, particularly on its investor protection regime. As stated in the bulletin, which was based on the World Bank's Doing Business 2010 Report, Malaysia retained its position at fourth place for investor protection for four consecutive years. Some of the dimensions covered in the investor protection were the transparency of transactions, the extent of directors' liability for self-dealing, and the ease of shareholders' suits. This economic backdrop compelled the current research to focus on the relationship between Real Earning Management (REM) as a proxy for Earning Management (EM) and the firm value.

This study addresses the following three types of REM: abnormal cash flow from operation, abnormal cost of goods sold, and abnormal discretionary expenses (Gunny, 2005). The study's emphasis is on the effect of each selected REM activity on the firm value. Among the three types of EM, namely, AEM, REM, and fraudulent accounting, REM is the most difficult EM activity that an auditor can detect (Ho and Sung, 2012).

The main objective of this research is to determine the relationship between REM activities and firm value. The specific objectives are as follows:

1. To determine the relationship between abnormal cash flow from operations (CFO) and firm value.
2. To examine the relationship between abnormal cost of goods sold (COGS) and firm value.
3. To determine the relationship between abnormal discretionary expenses (DISEXP) and firm value.

With Malaysia as the setting of this research, our work further contributes to the literature on EM, especially REM. It directly adds to the EM literature and then expands its contribution to the literature on earnings quality. This study also becomes a basis for future REM study in Malaysia.

The results of this study provide a better understanding of the relationship between REM and firm performance. They can help regulators, auditors, and academicians, among others, in identifying firms engaged in REM activities. They also provide information to the related parties, such as regulators and auditors, regarding the effect of REM activities on firm value.

## **Literature Review**

Although no explicit definitions of EM exist, various definitions have been quoted in previous literature. A worthy definition of EM is from Healy and Wahlen (1999; 2003):

*Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers. (Healy and Wahlen, 1999, p.368)*

From this definition, EM can be described as an intentional act, and the managers realize their actions to manipulate the accounting numbers. This act aims to portray the idea that the financial statements of a firm are in a good position to retain existing shareholders and to attract potential shareholders to invest in the company. EM also intends to obtain higher cash inflow to continue a firm's operation and to sustain the industry.

EM is also used for directors' remunerations, capital market, and political and debt propositions, among others. Managers attempt to boost remuneration for the directors and for themselves as it is exclusively for personal incentives. They also want to obtain the benefits from the shares and share options, and thus the market value of the company is directly increased. Sometimes, managers practice EM for tax purposes. Firms attempt to reduce their profit because it will directly reduce the tax they have to pay to the government.

Debt or leverage is positively related to EM. Debt is heterogeneous based on the amount of EM it triggers (Sercu, Bauwhede and Willinens, 2006). When a firm incurs a high debt level, the firm may benefit from the tax shield by avoiding interest payment, which eventually increases firm value.

Several articles on EM have been conducted in the context of Malaysia. Abdul Rahman, Mohamed Ali and Fairuzana (2006); Mohd. Saleh, Mohd. Iskandar and Mohid Rahmat (2005) found that EM is positively related to the board of directors and supports the view that larger boards appear to be ineffective in their oversight duties relative to smaller boards.

The presence of a fully independent audit committee reduces EM practices (Abdul Rahman, Mohamed Ali and Fairuzana, 2006). Firms with more knowledgeable audit committee members and hold more audit committee meetings record fewer EM compared with the other firms (Mohd

Saleh, Mohd Iskandar and Mohid Rahmat, 2007; Sharma, Sharma and Ananthanarayanan, 2011).

Auditors play an important role in ensuring high-quality financial statements. Studies have been conducted to examine auditors' behaviours in the presence of aggressive EM in the context of the Asian economic crisis because it affected Malaysia during the financial crisis in 1997. In this particular period, with the Big Five questionably supplying higher quality audits, the intention of this group of auditors was hypothesized to issue qualified opinions more recurrently than the non-Big Five firms when abnormal accruals were high (Johl, Jubb and Houghton, 2007; Karamanou and Vafeas, 2005).

According to Gunny's study in 2010, Schipper (1989) was the first to include real earnings to the definition of EM. She described it as follows:

*“A purposeful intervention in the external financial reporting process with the intention of obtaining some private gain... [a] minor extension of this definition would encompass “real” earnings management, accomplished by timing investment or financing decision to alter reported earnings or some subset of it.”*

REM is consummated by varying the underlying economic activities of the firm other than from the first to the last choice of accounting methods used, namely, fraudulent accounting and accrual management, to represent the underlying activities. REM is costlier than AEM, but managers still want to include it with the real earnings activities. Several reasons compel these activities to occur (Gunny, 2005; Gunny, 2010).

First, the risks are high for SEC scrutiny, and class action court case, ex post, is an aggressive accounting choice with respect to accruals. Second, the accounting flexibility of a firm may be inadequate, e.g., having insufficient liability to account for discretionary accruals. Third, managers are unable to decide on whether the accounting treatments for accruals should take place at the end of the period or not, as they are not sure which schedule is allowed by the auditor at that point in time (Gunny, 2005). Gunny (2005) found an adverse relationship between REM activities and future operating performance.

According to Roychowdhury (2006), a negative association exists between institutional ownership and real activities manipulation. The presence of growth opportunities, stock of inventories and receivables, and the presence of debt contributes to real activities manipulation. Real activities manipulation is used to avoid negative annual forecast errors.

Ho and Sung (2012) discovered two effects of REM activities. First, the equilibrium approach to arrive at the earnings target is to increase the price instead of cutting it once the demand falls short of expectation, as it can pass up the profit-reducing price war. Second, with a hybrid equilibrium that aims to preserve the opponent's ambiguity concerning a firm's objective type, the privately well-versed firm has the incentive to conceal its identity by taking a mixed strategy and charge first-period price higher than the separating equilibrium, impact from the informational. The price cuts in the second period become attractive because of the presence of tunnelling or after cross-shareholding in the firm (Ho and Sung, 2012).

REM is one of the potential consequences of the regulations' attempt to curb managers' discretion of EM. REM helps regulators to identify real earnings activities and to directly exclude them from financial statements or at least to mitigate them (Eldenburg, Gunny, Hee and Soderstrom, 2007).

After the world was hit by a major financial crisis in 1997–1998 and the financial scandal in 2001, the integrity of financial statements has been questioned. To prevent it from becoming worse, the SOX Act was introduced in 2002. The main intentions were to gain back investors' confidence in accountants and to maintain the high quality of financial statements. Changes have been made in EM prior to SOX and after the passage of SOX.

Cohen, Dey, and Lys (2007) observed whether the level of EM increased prior to the SOX and decreased when the SOX passage was publicly made known. As a result, following the passage of SOX, the level of AEM declined as the level of REM increased radically (Cohen, Dey and Lys, 2007). However, prior to the SOX passage, AEM activities increased from 1987 to 2001.

The subsequent stock returns can be resolute because they are related to REM. According to Li (2010), the less informative and persistent components of earnings, as well as any failure of stock prices to value the less persistent nature of these components, can be identified to study the behaviour of EM.

## **Evidence of REM**

### **Overproduction**

The high production cost for a given sales level is through sales manipulation as manipulated by the management either through abnormal price discounts or COGS expense (Roychowdhury, 2003). The managers attempt to increase the sales volume during the current year in an effort to increase the current reported earnings. The firm is said to sacrifice the future profits to book additional sales during this period by cutting prices or extending more lenient credit terms toward the end of the year. This is an effort to accelerate sales from the next fiscal year into the current year (Gunny, 2005).

### **Reduction of discretionary expense**

Selling, general, and administrative (SG&A) expense is included in this study because it is subjected to managerial discretion. The General Acceptance of Accounting Procedures have made a decision not to identify the intangible assets, such as brands, technology, customer loyalty, and human capital, as accounting assets because they are created by expenditures in either SG&A or advertising expenditure. This expenditure affects firms in the long run. The suspected firms tend to have low discretionary expense by carrying out REM (Ghaemi, Dorosti and Masoumi, 2012; Roychowdhury, 2003).

## **Theoretical Judgment and Hypothesis Development**

### **Agency theory**

According to Eisenhardt (1989), agency theory is an important yet controversial theory. A conflict of interest is expected between manager and shareholder, as the manager attempts to minimize the earnings of the company to benefit himself. This action violates the concept of agency theory, as the main responsibility of an agent is to maximize the shareholder's wealth (Jensen and Meckling, 1976).

Agency theory can also cause asymmetric information to be spread within the firm. The use of appropriate governance mechanisms can help avoid this problem (Wooi and Ming, 2010). Doing so can indirectly increase the transparency and credibility of the agent in performing his daily task. Furthermore, the inclusion of a variable cash bonus in the employment contract needs to be done to satisfy managers. This mechanism can reduce the tendency to incur agency problems (Eisenhardt, 1989).

### **Hypothesis development**

REM reveals managers' private information about future firm performance if the REM firms' operating performance in the subsequent years is impossible to distinguish from the control firms. Future earnings may offset the REM in the current period when managers already know about this information (Graham, Harvey and Rajgopal, 2004). In other words, the suspected REM firms use this information to manipulate the accounting figures for the current period. This finding consistently agrees with previous literature that future performance from managers' expectation is associated with EM (Altamuro *et al.*, 2003; DeFond and Park, 1997; Roychowdhury, 2006; Subramanyam, 1996). Therefore, the current study proposes that REM activities have a significant negative relationship with firm value.

In determining the effect of each type of real activity-based manipulation, this study conducts three types of REM, namely, abnormal CFO, abnormal COGS, and abnormal DISEXP. The proposed hypotheses are as follows:

Hypothesis 1: The abnormal CFO has a negative relationship with firm value.

Hypothesis 2: The abnormal COGS has a significant negative association with firm value.

Hypothesis 3: The abnormal DISEXP has a negative relationship with firm value.

## Research Methodology

### Sample Selection and Data Collection

The sample firms were chosen from the Main Board of Bursa Malaysia Sendirian Berhad (BMSB). The sample consisted of all the industrial sectors in BMSB and listed on the Main Market except for mining, infrastructure project, and hotel companies because of the unavailability of data and the size of the industry, which is relatively small compared with that of the selected industrial sectors ([www.bursamalaysia.com](http://www.bursamalaysia.com)). These samples were selected for their homogeneous characteristics of the listing requirement by BMSB which will have accurate contribution in both comparison and results. As stated in the 2011 Budget Speech by Prime Minister Datuk Seri Najib Bin Tun Razak, these selected core activities in each sector play a major part in helping the economic growth of Malaysia (<http://www.nst.com.my>). Consistent with previous studies (Altamuro *et al.*, 2003; DeFond and Park, 1997; Roychowdhury, 2006; Subramanyam, 1996), the current study excluded the financial firms under FIA 2013 because of their different regulatory requirements.

The current study used the financial data obtained from the Data Stream Thompson Reuters. This study considered the sample from the year end of 2004 to the year end of 2011 to determine the effect on firm value two years after the Enron Corporation and Arthur Andersen corporate scandals.

Initially, the sample consisted of 7,736 firm-years. However, after excluding the companies listed under FIA and because of the unavailability of data, the initial sample of suspected firms to be included for the next sample selection process decreased to 6,216 firm-years, as shown in Table 1.

Table 1: Initial Sample of Suspected Firms

Year 2004 to 2011	Total
Initial sample	7,736
( - ) Companies under BAFIA	(288)
( - ) Unavailability of data	(1,232)
	<b>6,216</b>

### Selection of Suspected Firm

The 6,216 firm-years were then tested using the REM models of Roychowdhury (2006), which had been used previously by Gunny (2005). The suspected firms were chosen on the basis of the standardized residual ( $\epsilon_t$ ), which has a positive value based on linear regression. These firms were suspected to be engaged in REM activities based on the results from the equations below. These suspected firms were tested against Tobin's Q to determine their relationship with firm value.

Equations 1 to 3 were used to determine the suspected firms engaged in REM activities.

#### 1. Normal Level of CFO

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

Where: CFO<sub>t</sub> = Cash flow from operations (current year)  
 A<sub>t-1</sub> = Total assets (previous year)  
 S<sub>t</sub> = Sales (current year)  
 $\Delta S_t$  = Change in sales (current year)

Equation 1 is an expectation model for the level of normal CFO intensity based on Gunny's (2005) study and then implemented by Roychowdhury (2006). A residual value is considered to have existed if the normal intensity of CFO varies with the actual amount of CFO.

## 2. Normal Level of COGS

$$\text{COGS}_t / \text{At-1} = \alpha_0 + \alpha_1 (1 / \text{At-1}) + \beta_1 (\text{St} / \text{At-1}) + \varepsilon_t \quad (2)$$

Where: COGS<sub>t</sub> = Cost of goods sold (current year)  
 At-1 = Total assets (previous year)  
 St = Sales (current year)

Equation 2 is based on Roychowdhury's (2006) study. The residual value comes from suspected firms engaged in abnormal COGS. A residual value is considered to have existed if the normal intensity of COGS varies with the actual amount of COGS.

## 3. Normal Level of DISEXP

$$\text{DISEXP}_t / \text{At-1} = \alpha_0 + \alpha_1 (1 / \text{At-1}) + \beta_1 (\text{St-1} / \text{At-1}) + \varepsilon_t \quad (3)$$

Where DISEXP<sub>t</sub> = Discretionary expenses (current year)  
 At-1 = Total assets (previous year)  
 St-1 = Sales (previous year)

Equation 3 is also based on Roychowdhury's (2006) study. A residual value is also considered to have existed if the normal intensity of DISEXP varies with the actual amount of DISEXP. The number of suspected firms engaged in each real earnings activity is quite high. A total of 1,027 firms were suspected to be engaged in abnormal CFO; 1,819 suspect firms were engaged in abnormal COGS; and 1,635 suspect firms were engaged in abnormal DISEXP, as shown in Tables 2, 3, and 4, respectively.

Table 2: Final Sample of Suspected Firms for the CFO Model

	2004	2005	2006	2007	2008	2009	2010	2011	TOTAL
Trading/ Services	23	24	26	27	17	20	26	25	188
Industrial Product	29	36	37	47	42	50	47	50	338

Consumer Product	23	27	26	19	17	22	21	22	177
Construction	2	5	6	4	5	4	5	5	36
Properties	13	16	16	13	12	16	17	19	122
Technology	6	9	8	5	6	8	8	9	59
Plantation	13	11	13	11	12	14	16	17	107
<b>FINAL SAMPLE</b>	<b>109</b>	<b>128</b>	<b>132</b>	<b>126</b>	<b>111</b>	<b>134</b>	<b>140</b>	<b>147</b>	<b>1,027</b>

Table 3: Final Sample of Suspected Firms for the COGS Model

	2004	2005	2006	2007	2008	2009	2010	2011	TOTAL
Trading/ Services	36	40	40	53	56	48	48	46	367
Industrial Product	74	91	96	98	94	99	91	107	750
Consumer Product	42	44	53	58	65	58	62	60	442
Construction	14	14	19	20	20	21	16	19	143
Properties	9	7	5	4	2	1	1	1	30
Technology	6	5	9	10	9	6	6	6	57
Plantation	4	3	4	4	5	4	3	3	30
<b>FINAL SAMPLE</b>	<b>185</b>	<b>204</b>	<b>226</b>	<b>247</b>	<b>251</b>	<b>237</b>	<b>227</b>	<b>242</b>	<b>1,819</b>

Table 4: Final Sample of Suspected Firms for the DISEXP Model

	2004	2005	2006	2007	2008	2009	2010	2011	TOTAL
Trading/ Services	43	48	58	57	56	58	62	69	451
Industrial Product	63	62	67	69	66	66	72	74	539
Consumer Product	40	46	53	51	50	49	66	61	416
Construction	4	3	4	6	5	5	4	5	36
Properties	7	11	6	4	8	5	8	10	59
Technology	5	4	6	8	8	12	11	13	67
Plantation	4	4	3	6	6	5	4	4	36
<b>FINAL SAMPLE</b>	<b>166</b>	<b>178</b>	<b>197</b>	<b>201</b>	<b>199</b>	<b>200</b>	<b>227</b>	<b>236</b>	<b>1,635</b>

A total of 4,481 firms were suspected to be engaged in earnings manipulation for eight consecutive years from 2004 to 2011. Thus, some of the firms engaged in more than one REM activities.

### Estimation models

$$\text{Firm Value} = \text{REM} + \text{Auditor} + \text{Firm Size} + \text{Leverage}$$

Below are the estimation models for each REM activity:

- i. Firm Value = CFO + Auditor + Firm Size + Leverage
- ii. Firm Value = COGS + Auditor + Firm Size + Leverage
- iii. Firm Value = DISEXP + Auditor + Firm Size + Leverage

#### 1. Abnormal CFO

$$\text{Tobin's } Q = \alpha_0 + \text{RES\_CFO} + \text{Aud} + \text{SIZE} + \text{LEV} \quad (1)$$

- Where Tobin's Q = market value of equity plus book value of short-term liabilities net of short-term assets, plus book value of long-term debt, divided by the book value of total assets
- RES\_CFO = residual cash flow from operation
- Aud = dummy variable of "1" if auditor is BIG4 (Deloitte, Ernst and Young, KPMG, PricewaterhouseCoopers) and "0" otherwise
- SIZE = natural logarithm of total assets
- LEV = total debt divided by the total assets

## 2. Abnormal COGS

$$\text{Tobin's } Q = \alpha_0 + \text{RES\_COGS} + \text{Aud} + \text{SIZE} + \text{LEV} \quad (2)$$

- Where Tobin's Q = market value of equity plus book value of short-term liabilities net of short-term assets, plus book value of long-term debt, divided by the book value of total assets
- RES\_COGS = residual cost of goods sold
- Aud = dummy variable of "1" if auditor is BIG4 (Deloitte, Ernst and Young, KPMG, PricewaterhouseCoopers) and "0" otherwise
- SIZE = natural logarithm of total assets
- LEV = total debt divided by the total assets

## 3. Abnormal DISEXP

$$\text{Tobin's } Q = \alpha_0 + \text{RES\_DISEXP} + \text{Aud} + \text{SIZE} + \text{LEV} \quad (3)$$

- Where Tobin's Q = market value of equity plus book value of short-term liabilities net of short-term assets, plus book value of long-term debt, divided by the book value of total assets
- RES\_DISEXP = residual discretionary expenses

- Aud = dummy variable of “1” if auditor is BIG4 (Deloitte, Ernst and Young, KPMG, PricewaterhouseCoopers) and “0” otherwise
- SIZE = natural logarithm of total assets
- LEV = total debt divided by the total assets

## Findings and Discussion

### Descriptive Analysis

From the three tables on average, the standardized residual for all models is consistent with those in Altamuro *et al.* (2003), DeFond and Park (1997), and Subramanyam (1996). Firm size (Log TA) for all models is high given that the level of leverages for all models is on average. Firm size is consistent with those in Altamuro *et al.* (2003), DeFond and Park (1997), and Subramanyam (1996). For leverage (LEV) and type of auditor (Audit), all models have an average level and are consistent with those in previous research (Altamuro *et al.*, 2003; DeFond and Park, 1997; Subramanyam, 1996).

Table 5: Descriptive Statistics of Abnormal CFO

	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
TobinQ	-.18	1.04	.3822	.24662	.355	-.460
Standardized Residual	.00001	.15720	.0543373	.03937035	.772	-.352
LEV	.00	.07	.0158	.02092	1.083	-.258
logTA	3.37	7.18	5.4612	.55673	.456	.393
Audit	.00	1.00	.6105	.48787	-.454	-1.797

Note: This table presents the descriptive statistics of abnormal COGS for a sample of 1,027 firms.

Table 6: Descriptive Statistics of Abnormal COGS

	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
TobinQ	-.37	.91	.3916	.16784	.074	-.052
Standardized Residual	.00011	.72942	.1830994	1.5959151	1.213	.982
LEV	.00	.80	.2256	.17054	.461	-.567
logTA	.00	6.59	5.4259	.45983	-1.517	20.318
Audit	.00	1.00	.5184	.49980	-.074	-1.997

Note: This table presents the descriptive statistics of abnormal COGS for a sample of 1,819 firms.

Table 7: Descriptive Statistics of Abnormal DISEXP

	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
TobinQ	-.37	.94	.4241	.18188	.147	-.176
Standardized Residual	.00000	.24573	.0586867	.05625515	1.383	1.298
LEV	.00	.74	.2107	.16411	.661	-.212
logTA	.00	7.87	5.4488	.55009	.330	7.275
Audit	.00	1.00	.4954	.50013	.018	-2.002

Note: This table presents the descriptive statistics of abnormal DISEXP for a sample of 1,635 firms.

## Regression Analysis

This study applied linear regression, as shown in Table 8, for the same regression models. All three models have a significant relationship between standardized residual and firm value. However, only the COGS and DISEXP models have a negative significant relationship with firm value, whereas the CFO model has a positive significant relationship with firm value. This finding is consistent with those of Altamuro *et al.* (2003), DeFond and Park (1997), and Subramanyam (1996).

A positive relationship exists between firm value and the CFO model, and information asymmetry is considered one of its possible causes. Information asymmetry creates friction between management and shareholders/investors. Managers possess private information about the firm that the shareholders/investors do not have. This information enables managers to manage earnings (Richardson, 2000). EM occurs when asymmetry information exists between firms' management and firms' shareholders (Dye, 1988; Trueman and Titman, 1988).

All REM models have a significant positive relationship between leverage and firm value. Choi, Kim, and Lee (2010) used leverage as a control variable, as the firm that incurs high leverage or loss has greater possibility to be involved in EM. This outcome is normally accepted because firms experiencing difficulties in making earnings tend to manipulate their accounting figures to present profitable financial statements. According to Cheng and Tzeng (2011) and Jelinek (2007), leverage is positively associated with firm value.

When a firm has high leverage, the firm also has high firm value. However, this result contradicts that of the study by Rayan (2008), who found that the higher the level of leverage is, the lower the firm value. According to Modigliani and Miller's (M&M) Proposition II, one of the factors affecting firm value is the level of a firm's debt. As the debt level increases, the value of the firm also increases.

All the models have a positive relationship between size and firm value at 1%, except for the CFO model which has an insignificant negative effect on firm value. The other two results are significant at 1%. The CFO model that has an insignificant negative relationship is consistent with the study of Ali Saeedi and Iman Mahmoodi (2011), who found that a negative relationship exists between size and firm performance.

All models have a positive relationship between type of auditor and firm value, and this finding agrees with that of Beatty (1989). Clients who hire a more reputable audit firm (CPA firms) gain higher returns than those who hire less reputable audit firms (Beatty, 1989). Nonetheless, only the COGS model is significant at 1%. Overall, this study supports Hypotheses 2 and 3 but rejects Hypothesis 1.

Table 8: Regression Results of Each REM Activity

	CFO	COGS	DISEXP
<b>Variables</b>			
<b>(Constant)</b>	.282	.347	.168
<b>Standardized Residual</b>	1.469***	-.187***	-.272***
<b>LEV</b>	.640**	.030***	.019***
<b>logTA</b>	-.005	.015***	.038***
<b>Audit</b>	.580	.246***	.251
<b>R Square</b>	.074	.094	.087
<b>Adjusted R Square</b>	.071	.092	.085
<b>F statistics</b>	20.550***	47.091***	38.763***

*Note:*

This table shows the model summary of each REM activity in firm value.

R-square is the regression coefficient determination.

Adjusted R-square is the adjusted regression coefficient determination.

F-statistics is the indication of how much variation is explained by the regression equation.

Tobin's Q is a proxy for firm value; LEV is measured by total debts deflated by total assets; logTA is a proxy for size; Audit is a control variable of "1" if the auditor is BIG4 and "0" otherwise.

\*\*\*Significant at the 1% level

\*\*Significant at the 5% level

\*Significant at the 10% level

## Conclusion and Implications

This study finds an association between each REM activity and firm value. According to the regression analysis with the standardized residual, which is the proxy for REM, only the COGS and DISEXP models are negatively related to firm value among all three models. The results from both models are consistent with those of Altamuro *et al.* (2003), DeFond and Park (1997), and Subramanyam (1996). Only the CFO model has a positive relationship with firm value; this finding contradicts that of a previous study. The negative relationship between REM activities and firm value clearly indicates that the higher the involvement of managers in REM activities is, the lesser the firm value. However, the results may prove that information asymmetry exists, as information asymmetry is common in companies in which managers involved in the REM activities have access to information unknown to their shareholders (Richardson, 2000).

However, the present study reveals a positive relationship between REM, which is proxied by abnormal CFO, and firm value. This finding is inconsistent with that of Altamuro *et al.* (2003), DeFond and Park (1997), and Subramanyam (1996). Apart from the REM activities, this study also proves a positive relationship exists between leverage (LEV) and the firm value for all three models (Cheng and Tzeng, 2011; Choi, Kim and Lee, 2010; Jelinek, 2007). The higher the leverage is, the higher the firm value.

All the models have a positive relationship between size and firm value, except for the CFO model that has an insignificant negative effect on firm value. This result is consistent with that of Saeedi and Mahmoodi (2011). The larger the firm is, the higher the firm value. All models have a positive relationship between the type of auditor and firm value, but only the COGS model is significant (Beatty, 1989). That is, when the firm hires a more reputable audit firm, firm value increases.

As this study only focuses on the main types of REM, namely, abnormal CFO, abnormal COGS, and abnormal DISEXP, future studies should look into the other types of REM, such as the normal level of gains on asset sales, delaying or cutting the travel budget and maintaining expenses, and asset securitization (Graham, Harvey and Rajgopal, 2004).

Future research could also investigate the motivation behind the REM activities. Conducting a primary study is the best way to seek out this delinquency. Consequently, the study will be able to include opinions and viewpoints from the management and stakeholders on issues requiring measurement in mitigating EM, mainly in REM activities.

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