Does Value Creation Drive Growth Illusion? An Evidence from Indonesia Stock Exchange

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Abstract:

The main aim of this study is to explore the illusion effect on the growth market of firm value, and to examine the value creation of manufacturing companies listed in the Indonesia Stock Exchange (IDX).

The study used pooled data of the manufacturing companies listed in the Indonesia Stock Exchange (IDX), and estimated the overvaluation using the model developed by Rhodes-Kropf, Robinson, and Viswanathan (2005). The real earnings management, based on overproduction and auditing, results on an increase in the valuation. However, the value of creating actions of the firms in the form of accrual management and real earnings management based on discretionary expense are less likely to significantly contribute to shape the overvaluation.

The findings are helpful for regulators to improve supervision to real earnings management based on overproduction and the use of the Big Four auditors to prevent any potential value creation that leads to misvaluation in the market, as well as for professionals, investors and analysts to evaluate the quality of accounting numbers, select a portfolio of stocks, and make lending decisions.

Unlike any previous studies highlighting the consequences of overvaluation and focusing on predicting the occurrence of overvaluation as a result of earnings management practices, this study mainly focuses on the earnings management as the cause of the overvaluation in the form of variables of accrual management and real earnings management based on discretionary expenses and overproduction.

Keywords: *Overvaluation, accrual management, real earnings management, value creation, growth illusion.*

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1. Introduction

Financial statements are important components of financial information capable of leading stakeholder decision to measure management performance, compensation plan and company assessment. Futhermore, the financial information reported affects investor decisions on capital allocation (Xu *et al.,* 2007). However, earnings management practices undertaken by managers are more likely to mislead stakeholders about the underlying economic performance of the company which in turn, influence the outcome of the contract mainly depending on the reported accounting figures (Healy and Wahlen, 1999). Financial information in the form of artificial profit by practising earnings management occurs when managers have deliberately used the consideration and assesment to manipulate the actual condition to achieve the target profit.

This study empirically examines how value creating actions affect firm market value being reflected in the condition of the overvaluation of the manufacturing companies listed in the Indonesia Stock Exchange (IDX), by estimating the overvaluation using the model developed by Rhodes-Kropf, Robinson, and Viswanathan (2005). Nonetheless, unlike any previous studies highlighting the consequences of overvaluation and focusing on predicting the occurrence of overvaluation as a result of earnings management practices, this study mainly focuses on the earnings management as the cause of this overvaluation. In addition, there is little empirical evidence on the relationship between Big 4 auditors and overvaluation.

Meanwhile, the audit quality of Big 4 auditors is perceived to be able to inhibit the occurrence of accrual management practices supported by their advantage in terms of experienced auditor, auditing resources, and good reputation (Zang, 2012). The article attempts to fulfil this literature gap by examining the influence of accrual management, real earnings management, and Big 4 auditor involvement on the overvaluation. More specifically, to predict the more explanative relationship between earnings management and overvaluation, this research separately examines earnings management methods, in the form of variables of accrual management and real earnings management based on discretionary expenses and overproduction.

2. Literature Review

Previous studies on earnings management have mainly focused on the three methods, namely accrual-based earnings management and its consequences (Allen *et al.,* 2013; Barton and Simko, 2002; Choy, 2012; Dechow *et al.,* 1995; Healy, 1985; Kasznik, 1999), real earnings management (Dechow *et al.,* 1995; Hribar *et al.,* 2006; Kothari *et al.,* 2012; Roychowdhury, 2006), and the mechanism of trade-off between accrual management and real earnings management (Badertscher, 2011; Braam *et al.,* 2013; Cohen *et al.,* 2008; Cohen and Zarowin, 2010; Zang, 2012; Grima and Caruana 2017; Suryanto and Thalassinos, 2017; Thalassinos *et al.,* 2013).

All these methods are apparently utilized by managers to achieve any planned target profit, which eventually lead to earnings management game. An explanative example is budgeting game, in which the manager is not paid for what he does; instead, he is paid for how he meets the target (Jensen, 2005). An empirical study of Graham *et al.* (2005) finds that 80% of Chief Finance Officers (CFO) is likely to decrease such discretionary expenses as R&D, advertising, and maintenance; and 55% of CFOs postpone realizing a new project in favor of meeting the target profit.

Earnings management run by top managers purposively tricking the market to create overvalued equity. Managers are likely to always try to extend the duration of the overvaluation by undertaking back accrual and real earnings management, as well as by substantially manipulating Generally Accepted Accounting Principles (GAAP) (Badertscher, 2011). However, this act eventually negatively affects the firm market value when the market has been able to know the growth illusion practised; the market value of the firm will fall down because the overvaluation will eventually return (Jensen, 2005; Thalassinos *et al.,* 2012a; 2012b; 2015; Allegret *et al.,* 2016).

In addition, the use of auditing services carried out by auditors of the four largest accounting firms, namely Delloite Touche Tohmatsu, Price Water Coopers, Ernst & Young and KMPG (hereinafter referred to as the Big Four auditors), is able to contribute to the overvaluation, as their reputation and qualified specialized resources are capable of convincing the investors of a high quality of auditing by creating overvalued firm (Houmes *et al.,* 2013; Wang *et al.,* 2012; Houmes *et al.,* 2013; Wang *et al.,* 2012).

The underlying theoretical concept of this study is the agency cost theory developed by Jensen (2005), highlighting that managers through earnings management and auditor activity are possibly able to considerably contribute to overvaluation. The activities of earnings management through accrual management, real earnings management based on discretionary expense and overproduction, and the use of the Big 4 auditors can provide incorrect information exceeding the expectations of market growth performance, and thus, the market is very likely to be affected by the impact of the illution growth. Consequently, the extent to which the company undertakes the value creation through earnings management and the use of the Big 4 auditors can improve the overvaluation.

3. Hypotheses

Overvaluation is often defined as a deviation of a company true market value (Rhodes-Kropf *et al.,* 2005). The manager tends to be involved in the practice of earnings management by inflating the firm value in the form of accrual management and real earning management to maintain the condition of overvalued equity, to increase profits, and to meet profit growth expectations (Dechow *et al.,* 2000). On the other hand, overvaluation has consequences on earnings management. Chi and Gupta (2009) found that overvaluation impacts more intensively on accrual

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management actions in the following period. The involvement of companies with earnings management is basically to maintain the overvaluation of stock prices. Badertscher (2011) showed that in the early stages of the overvaluation, companies are more often involved in the accrual management and then, replaced by real earning management. Thus, a longer company involvement in overvaluations is increasingly likely to engage in non-GAAP earnngs management.

Furthermore, overvaluation has consequences on company restatement or indication of low earnings quality. Efendi *et al.* (2007) found that the restatement signs apparently appear from the company overvaluation conditions in the years prior to engaging in non-GAAP earnings management. This can explain that incentives are usable to encourage managers to take action to maintain the overvalued stock price. Other empirical evidence found that when investors learn of the earnings restatements of overvalued companies, these investors are likely to evaluate previous overvaluation, that subsequently results in a loss of investor confidence in the company manager (Marciukaityte and Varma, 2008). Thus, this hypothesis is proposed as:

H1: The higher the accrual management, the higher the overvaluation.

Both accrual management and real earning management based on discretionary expenses and overproduction are the forms of value creation executed by managers to increase profits to meet the market expectation. These practices are done by manipulating earnings, in which the managers are able to present an artificial profit. Consequently, this may result in a decreased quality of accounting numbers, and possibly bring managers to budgeting game, to manipulate the target profit (Jensen, 2005).

Once the target profit is reached, the market responds to it positively. Market views that the company has an improved performance and experienced a positive growth. This increases the optimism of the market resulting in an increased equity of the overvalued company. However, the market is necessarily not able to know that such growth is not the actual performance. In other words, the market receives the wrong signal regarding the company's performance. Thus, there is misinformation between the market and the manager since the performance improvement is actually only a growth illusion as the market misjudges the company value.

There is interplay between earnings management and overvaluation. Chaney and Lewis (1995) found that earnings management affects firm value. This action, led by the manager, aims to maximize value which ultimately results in the investor's information asymmetry. Doyle *et al.* (2007) revealed that low quality earnings are associated with low accrual quality. Barton and Simko (2002) showed the relationship between earnings quality and overvaluations by providing evidence in which bad information of company fundamentals is related to overvaluation. Therefore, two hypotheses can be stated as follows:

H2: The higher the real earning management of discretionary expenses, the higher the overvaluation.
H3: The higher the real earning management of overproduction, the higher the overvaluation.

In addition, the use of auditing services carried out by auditors of the Big Four, contributes to the valuation error or overvaluation, as their reputations as well as qualified and specialized resources are able to convince the investors of a high quality audit of firm value (Houmes *et al.,* 2013; Wang *et al.,* 2012). The use of the Big Four auditors is the proxy of audit quality (Habib *et al.,* 2014; Houmes *et al.,* 2013; Rusmin and Astami, 2014). In addition, the Big Four auditors have also been analysed to explain the manager behavior to aggressively exploit the accrual potential management (Francis *et al.,* 1999). Actually, a high quality audit should be able to make the firm value increase naturally, instead of resulting in an overvalued equity.

Although it is argued that the failure of the audit by the Big Four auditors possibly occurrs (Francis, 2004), the managers use the market confidence on the Big Four auditing reputation and quality in predicting the future earnings and cash flow to increase the overvalued equity. Furthermore, Zang (2012) found that the Big Four auditors are more likely to restrict the company's effort to manage earnings with accrual accounts. Badertscher (2011) also found no significant relationship between the Big Four and accrual management.

Wang *et al.* (2012) indicated a significant positive relationship between the Big Four auditors and overvaluation. Houmes *et al.* (2013) show a positive significant interaction between a highly valued equity proxied by the price to earnings ratio and audit quality. Moreover, the study found that management incentives related to a highly valued equity reduce the tendency of accrual management of high quality auditors. However, the degree of the influence of the Big Four audit quality and the overvaluation is different in each legal regime (Francis, 2004). More specifically, in a country with a legal system providing a greater protection to investors, including the ability to sue auditors, the Big Four auditors are likely to treat clients more conservatively (Francis and Wang, 2008). These results indicate that the Big Four audit quality is highly correlated with a country's legal system. Therefore, the research hypothesis is as follows:

H4: The use of Big Four auditor service significantly increases the overvaluation.

4. Research Design and Variable Measurement

The study was conducted in 2010-2014 and used the pooled data of the manufacturing companies listed in the Indonesia Stock Exchange (IDX). The pooled data were considered to be able to present more informative data characterized by a high variability, a low collinearity among variables, and the efficient degrees of

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freedom (Gujarati, 2004). The calculation of the sample was presented in the following Table 1. There were 142 manufacturing firms listed in the Indonesia Stock Exchange (IDX) during the observation period. A total of 24 companies were discarded because of insufficient data. Finally, a total of 118 firms for a period of 15 years (2010-2014) resulted in a panel sample of 590 firms.

Table 1. *Structure of the Sample*

Panel A: Description		
Firms listed in IDX	494	
Financial firms	(81)	
Non-financial firms	413	
Manufacture firms	142	
Other	271	
Panel B: Manufacture Firms		
Manufacture firms	142	
Insufficient financial data	(24)	
Available sample	118	
Undervaluation firms	0	
Overvaluation firms	118	
Final sample per year	118	
Panel C: Composition the final sample of manufacturing firms		
1	Cement	4
2	Ceramics, Glass, Porcelain	6
3	Metal and Allied Product	13
4	Chemicals	8
5	Plastics and Packaging	11
6	Animal Feed	4
7	Wood Industries	2
8	Pulp and Paper	6
9	Machinery and Heavy Equipment	0
10	Automotive and Components	12
11	Textile, Garment	14
12	Footwear	2
13	Cable	6
14	Electronics	1
15	Food and Beverages	12
16	Tobaco Manufactures	3
17	Pharmaceuticals	8
18	Cosmetics and Household	3
19	Houseware	3
Total the final sample per year	118	
Final sample in 2010-2014	590	

4.1 Data Analysis

The article estimates the overvaluation using the model developed by Rhodes-Kropf *et al.* (2005). The model states that if the market potentially makes mistakes in estimating discounted future cash flows; or the market does not have all information

being posessed by the managers, then the price to true value (mv) captures part of ln (M/B) associated with misvaluation.

Accordingly, the following ordinary least squares regression was used to test the model specification:

$$OVER_{it} = \alpha + \beta_1 AM_{it} + \beta_2 RMDISX_{it} + \beta_3 RMPROD_{it} + \beta_4 B4_{it} + \beta_5 ROA_{it} + \beta_5 SIZE_{it} + \beta_5 CFO_{it} + \varepsilon_{it}$$ (1)

in which $OVER_{it}$ is the overvaluation adopted from the metrics *of Rhodes-Kropf et al.* (2005); $RMDISX_{it}$ is the real earning management based on discretionary expenses; $RMPROD_{it}$ is the real earning management based on overproduction; $B4_{it}$ is a dummy variable taking the value of 1 for the use of the service of the Big Four auditors and 0 otherwise; ROA_{it} is the return on asset ratio; $SIZE_{it}$ is the natural log of total assets; CFO_{it} is the cash flow on total assets ratio.

4.2 Measurement-Overvaluation

Moreover, to measure the variables examined**,** the study used the following formula to measure the misvaluation and the growth manipulation (Rhodes-Kropf *et al.,* 2005, Chi and Gupta, 2009; Efendi *et al.,* 2007; Fu, Lin *et al.,* 2011; 2013; Siougle, 2007). In the first stage, Rhodes-Kropf *et al.,* (2005) conducted a decomposition of M / B into two components:

$$M/B = M/V \times V/B$$ (2)

in which M/V is the reflection of misvaluation and V/B is the reflection of growth illusion.
In the second stage, this following logarithmic equation was used to represent the logarithmic value:

$$(m - b) = (m - v) + (v - b)$$ (3)

in which m is the market value; b is the book value; and v is the fundamental value.

Furthermore, in the third stage, equation 2 above was decomposed into three components, in which i is for firm; and t for a year:

$$m_{it} - b_{it} = \underbrace{m_{it} - v(\theta_{it}; \alpha_{jt})}_{\text{Firm-specific- error}} + \underbrace{v(\theta_{it}; \alpha_{jt}) - v(\theta_{it}; \alpha_j)}_{\text{Industry-level error}} + \underbrace{v(\theta_{it}; \alpha_j) - b_{it}}_{\text{Long-run valuation}}$$ (4)

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In order to operationalize equation 3, this study used the formula of *Rhodes-Kropf et al.,* (2005) by estimating $v(\theta_{it}; \alpha_{jt})$ and $v(\theta_{it}; \alpha_j)$. Hence, the following decomposed equation was then used:

$$m_{it} = \alpha_{0\,jt} + \alpha_{1\,jt}b_{it} + \alpha_{2\,jt}ni_{it}^+ + \alpha_{3\,jt}I_{(<0)}ni_{it}^+ + \alpha_{4\,jt}LEV_{it} + \varepsilon_{it} \tag{5}$$

in which m_{it} is the log value of market value; b_{it} is the log value of book value; ni_{it}^+ is the log value of net income; $I_{(<0)}$ is a dummy value taking the value 1 for negative net income and 0 otherwises; and LEV_{it} is the leverage ratio.

Furthermore, equation 5 was run by a cross-section regression to estimate the overvaluation of each firm every year. A high value of overvaluation is described by a high level of overvaluation and a low value is represented by low level.

4.3 Accrual Management

To measure the accrual management, this study has adopted Dechow *et al.'s* (1995) metrics of Modified Jones' Model (1991) assuming that the changes that occurr in credit sales in the current period are the object of earnings management.

$$\frac{TA_{it}}{A_{it-1}} = \alpha_1\left(\frac{1}{A_{t-1}}\right) + \alpha_2(\Delta R_{t-1}) + \alpha_3\left(\frac{PPE_t}{A_{t-1}}\right) + \varepsilon_t \tag{6}$$

in which TA_{it} is the total accrual of firms i in t period; A_{t-1} is the total asset in t; ΔR_{t-1} is the changes of net sales in t; PPEt is firm's property, plants, and equipment.

Furthermore, equation 6 was estimated by a cross-sectional regression. The estimated residual value of the discretionary accruals is a proxy of accrual-based earnings management.

4.4 Real earnings management

The measurement of real earnings management used the metrics developed by Dechow *et al.* (1998) and Roychowdhury (2006) representing abnormal discretionary expenses and abnormal production costs to explain the real earnings management (Braam *et al.,* 2013; Zang, 2012). The estimation of abnormal discretionary expenses used the following Roychowdhury's (2006) equation:

$$\frac{DISX_t}{A_{t-1}} = \alpha_0 + \alpha_1\left(\frac{1}{A_{t-1}}\right) + \alpha_2\left(\frac{S_{t-1}}{A_{t-1}}\right) + \varepsilon_t \tag{7}$$

in which DISXt is discretionary expenses or the number of R & D expenses, advertising, and Selling, General and Administrative Expenses (SG & A) in t period. The abnormal levels of discretionary expenses were measured by the residual

estimation value of the regression. A high residual value indicates an abnormal level of high discretionary expenses, while a low value shows low discretionary expenses. The following equation was used to explain the abnormal estimation of production cost (Roychowdhury, 2006):

$$\frac{PROD_t}{A_{t-1}} = \alpha_0 + \alpha_1 \left(\frac{1}{A_{t-1}}\right) + \alpha_2 \left(\frac{S_t}{A_{t-1}}\right) + \alpha_3 \left(\frac{\Delta S_t}{A_{t-1}}\right) + \alpha_4 \left(\frac{\Delta S_{t-1}}{A_{t-1}}\right) + \varepsilon_t \tag{8}$$

in which PRODt is the sum of the cost of goods sold (COGS) in t and inventory changes from t-1 to t; At-1 is the total assets in t-1; St is the net sales in t; ΔSt is the change in net sales from t-1 to t. An abnormal level of production cost was described as the estimated residual of this equation. The higher the residual the higher the amount of the excess of inventory; the higher the reported earnings the bigger the reduction of the cost of goods sold (COGS).

4.5 Audit Quality

Like some previous studies, this study made use of Big Four auditors as the proxy of audit quality (Habib *et al.,* 2014; Houmes *et al.,* 2013; Rusmin *et al.,* 2014) The score was dummy, in which 1 indicated the use of the Big Four and 0 if there was no use of it.

4.6 Control Variable

The study involved some control variables to examine the characteristics of the firms related to overvaluation. These are based on previous empirical studies showing that SIZE is positively related to q-ratio (Ameer, 2012), and Tobin's q as a proxy of firm market value (Davydov *et al.,* 2014). Furthermore, ROA and operating cash flow (OCF) are positively related to the price to earnings ratio of high-value equity as the reflection of overvaluation (Houmes *et al.,* 2013) as shown in Table 2.

Table 2. Variable Measurement

OVER	:	The market value condition did not reflected the true value and indicated with positive value of lnM/V (Rhodes-Kropf *et al.,* 2005)
AM	:	Accrual management (Modified Jones Model, 1991)
RMDISX	:	Real earning management based on discretionary expenses (Roychowdury, 2006)
RMPROD	:	Real earning management based on overproduction (Roychowdury, 2006)
B4 AF	:	Dummy variable to indicate the use of Big Four auditors
ROA	:	The ratio of net income to total asset (Control Variable)
SIZE	:	The firm size measured by the natural log of total assets (Control Variable)
OCF	:	Operating cash flows divided by total assets. Growth is annual change of net sales (Control Variable)

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5. Findings and Discussion

The mean and median value of overvaluation variables showed positive value of 0.984 and 0.945, respectively, indicating that the average value of the sample is in overvaluation. The minimum value was 0.848, also confirming the condition of overvaluation of the sample. The mean and median values of the accrual management were 0.021 and 0.023, respectively, reflecting that firms practice accrual management. However, there are some firms that do not practice it, indicated by the minimum value of accrual management of -1.222. Furthermore, the average rate of real earning management based on discretionary expenses (RMDISX) was quite high, indicated by the mean and median values of 1.700, and 0.047, respectively.

However, a contrast finding was presented by the negative values of the mean and median of the real earnings management based on overproduction (RMPROD). This indicates that the average level of this kind of real earning management is very low. However, the maximum value of 1.508 indicates that there are some firms practising this form of earning management. Furthermore, an average of 44% firms use the service of the Big Four auditors (Table 3).

Table 3. Descriptive Statistics

Variables	Mean	Minimum	Median	Maximum	Std. Dev	Prob
OVER	0.948	0.848	0.945	1.200	0.041	0.000
AM	0.021	-1.222	0.023	0.810	0.135	0.000
RMDISX	1.700	-0.790	0.047	0.372	0.152	0.000
RMPROD	-1.522	-0.634	-0.049	1.508	0.230	0.000
B4	0.440	0.000	0.000	1.000	0.496	0.000
ROA	0.061	-0.755	0.045	0.669	0.120	0.000
SIZE	14.093	9.266	13.937	19.181	1.591	0.000
CFO	0.078	1.138	0.064	1.138	0.161	0.000

The mean and median values of ROA were 0.061 and 0.045, respectively, indicating that the sample firms have the ratio of net income to total assets of 6.5%. This means that the average of firms have positive income or a good level of earnings ability. The value of natural logarithm to the mean and median values of SIZE were 14.093 and 13.937, respectively. Based on the exponential calculation or reversal of the natural logarithm to obtain absolute values, this result indicates that the average value of the total assets of the listed manufacturing firms is US$ 101,524,000. Lastly, the mean and median values of OCF were 0.078 and 0.064, respectively, showing that the average values of the ratio of the operating cash flow to the total assets are 7.8% and 6.4%. In other words, the amount of cash generated from normal business operations is positive and sufficient to finance the firms' activities.

This empirical evidence provides valuable information that the average of the firms conduct the action of value creation through accrual management, real earning

management based on discretionary expenses, and overproduction. The practice of the action was coincided with the overvaluation condition, indicating that firm market value is above the underlying value. In contrast, based on the finding, the sample firms had a good-enough operating cash flow, positive ROA, and large SIZE.

The multicollinearity test analyzing the relationship between the dependent and independent variables resulted in a correlation coefficient smaller than 0.8, indicating that the model is free from multicollinearity. In addition, a high correlation value (-0.782) of RMDISX and RMPROD showed an interdependence between both variables when the firms ran the actions of both real earning management based on discretionary expenses and based on overproduction that were not simultaneously executed (Table 4).

Table 4. *Correllations*

Variables	1	2	3	4	5	6	7	8
1. OVER	1							
2. AM	-0.059	1						
3. RMDISX	-0.295***	-0.030	1					
4. RMPROD	0.364***	-0.041	-0.782***	1				
5. B4 AF	0.220***	-0.005	-0.103***	0.182***	1			
6. ROA	0.240***	-0.194***	-0.335***	0.561***	0.273***	1		
7. SIZE	0.190***	-0.071*	0.051	0.016	0.444***	0.189***	1	
8. CFO	0.237***	-0.561***	-0.252***	0.233***	0.233***	0.559***	0.194***	1

Notes: ***$\rho < 0.01$ (two-tailed), **$\rho < 0.05$ (two-tailed), * $\rho < 0.10$ (two-tailed)

Primary model:

$$OVER_{it} = \alpha + \beta_1 AM_{it} + \beta_2 RMDISX_{it} + \beta_3 RMPROD_{it} + \beta_4 B4_{it} + \beta_5 ROA_{it} + \beta_5 SIZE_{it} + \beta_5 CFO_{it} + \varepsilon_{it}$$

OVER is overvaluation;. AM is .accrual management; RMDISX is real earning management based on discretionary expenses; RMPROD is real earning management based on overproduction; B4 AF dummy variable (1 and 0) to explain the use of Big Four auditors; ROA is ratio of net income to total asset; Size is firm size measured by the natural log of total assets; CFO is operating cash flows divided by total assets.

AM: $\frac{TA_{it}}{A_{it-1}} = \alpha_1 \left(\frac{1}{A_{t-1}}\right) + \alpha_2 (\Delta R_{t-1}) + \alpha_3 \left(\frac{PPE_t}{A_{t-1}}\right) + \varepsilon_t$

OVER: $m_{it} = \alpha_{0\,jt} + \alpha_{1\,jt} b_{it} + \alpha_{2\,jt} ni_{it}^+ + \alpha_{3\,jt} I_{(<0)} ni_{it}^+ + \alpha_{4\,jt} LEV_{it} + \varepsilon_{it}$

RMDISX: $\frac{DISX_t}{A_{t-1}} = \alpha_0 + \alpha_1 \left(\frac{1}{A_{t-1}}\right) + \alpha_2 \left(\frac{S_{t-1}}{A_{t-1}}\right) + \varepsilon_t$

RMPROD: $\frac{PROD_t}{A_{t-1}} = \alpha_0 + \alpha_1 \left(\frac{1}{A_{t-1}}\right) + \alpha_2 \left(\frac{S_t}{A_{t-1}}\right) + \alpha_3 \left(\frac{\Delta S_t}{A_{t-1}}\right) + \alpha_4 \left(\frac{\Delta S_{t-1}}{A_{t-1}}\right) + \varepsilon_t$

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5.1 Regression Result

The result of the multiple regression analysis showed that the variables of overvaluation (OVER), accrual management (AM), real earnings management based on discretionary expenses (RMDISX), and overproduction (RMPROD), the Big Four auditing (B4 affiliation) ratio of net income to total asset (ROA), firm size (Size) and operating cash flows (OCF) had a moderate level of determination reflected by the value of adjusted-R^2 of 0.176 and significant F-statistic reflected by p-value of <0.00. Accordingly, the independent variables were moderately capable of explaining the dependent variable.

Furthermore, the result showed that accrual management (AM) is unlikely to have a significant relationship with overvaluation (OVER). Accordingly, hypothesis H1 stating that a significant role of accrual management activity increases overvaluation is rejected. The firms that practice accrual management are less likely to be able to increase their firm value market to the point of overvaluation. Similarly, the result showed an insignificant relationship between real earnings management based on discretionary expenses (RMDISX) and overvaluation (OVER). Thus, hypothesis H2 revealing a significant effect of real earnings management based on discretionary expenses on the overvaluation is also rejected.

In contrast, the result showed that hypothesis H3 stating a significant influence of real earnings management based on overproduction on overvaluation is supported, indicated by a positive significant relationship between RMPROD and OVER. The value creation through overproduction practised by the firms increases the optimism and expectations of market in firm value growth. Ultimately, it is more likely to increase the overvaluation condition. This result is consistent with the findings of Barton and Simko (2002), Chaney and Lewis (1995) and Jensen (2005) presenting that a bad fundamental condition of firms characterized by a low earning quality is related to the management practice in the earnings management of overvaluation.

The finding further showed that the Big Four auditing is of positive significant relationship with overvaluation (OVER). This means that hypothesis H4 stating a significant effect of the use of the Big Four auditors on the overvaluation is supported. The finding is consistent with that of Houmes *et al.,* (2013) and Wang *et al.,* (2012) revealing a positive significant relationship between the audit quality that is reflected by the use of the Big Four auditing and the valuation error (Table 5).

Table 5. *AM, RMDISX, RMPROD, and OVER*

Independent Variables	Expected Sign	OLS Model
Constant	NA	0.892*** (58.359)
AM	+	-0.021 (-0.981)

RMDISX	+	-0.018
		(-1.042)
RMPROD	+	0.052***
		(3.759)
B4 AF	+	0.008
		(2.210)**
Control Variable		
ROA		0.013
		(0.544)
SIZE		0.003***
		(3.313)
OCF		-0.009
		(-0.444)
Adj-R²		0.176
F-Statistic		17.841***

Notes: ***$\rho < 0.01$ (two-tailed), **$\rho < 0.05$ (two-tailed), * $\rho < 0.10$ (two-tailed)

Primary   model:

$$OVER_{it} = \alpha + \beta_1 AM_{it} + \beta_2 RMDISX_{it} + \beta_3 RMPROD_{it} + \beta_4 B4_{it} + \beta_5 ROA_{it} + \beta_5 SIZE_{it} + \beta_5 CFO_{it} + \varepsilon_{it}$$

Moreover, of the control variables examined, it is only SIZE which has a significant relationship with OVER. This evidence reflected that the market optimism on earnings performance is more likely to increase if the firm size increases which in turn creates a profoundly high market value of the firm.

6. Conclusions

The empirical findings of this study reinforce the thesis of overvalued equity of Jensen (2005). Specifically, this study reveals that the managers are less likely to engange the value creation through real earnings management practices based on overproduction. The real earnings management based on discretionary expenses is also not capable of being the driving force to increase the market value of the firm to the point of overvaluation. Hovever, the real earnings management based on overproduction has a significant influence on overvaluation. Moreover, surprising evidence was obtained from the use of the Big Four auditors that are more likely to lead to the condition of market overvaluation, caused by overconfidence of market to the auditing quality, and manager practice to meet market expectations. Overall, these findings give valuable insight that not all the value creation created by managers is able to manipule market.

The findings imply that the regulators should improve supervision to real earnings management based on overproduction and the use of the Big Four auditors to prevent any potential value creation that leads to misvaluation on the market. For instance, the regulators need to reinforce any rules to reduce the overvaluation practices. For the professionals, investors and analysts, the findings are helpful to

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evaluate the quality of accounting numbers, select a portfolio of stocks, and make lending decisions. Any future research is expected to examine other contributors of overvaluation such as analysts, securities, commercial banks, law firms and others that lead to misinformation and mis-valuation which are the originator of overvaluation, and to estimate each of earnings management practices to provide a more detailed analysis contributing to the value creation.

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