

The Impact of Leverage on Real Earnings Management in Indonesia Non-Financial Listed Company for the Period 2009-2014

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ABSTRACT: *This study aims to investigate the impact of leverage utilization on Real Earnings Management (REM) in Indonesia Non-Financial Listed Company from period 2009 to 2014. The practice of real earnings management is measured using three proxies: abnormal operation cash flow, abnormal production cost, and abnormal discretionary expense. This research takes place in Indonesia, using the non-financial companies listed in Indonesia Stock Exchange (IDX) with six years sample observations. Measured separately, each proxy showed the significance result of the real earnings management activity with all negative association. This research's result reveals that leveraged companies are less likely to involve in REM.*

KEY WORD: *Abnormal Operation Cash Flow, Abnormal Production Cost, Abnormal Discretionary Expense, Earnings Management, Leverage, Real Earnings Management*

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I. INTRODUCTION

Earnings management entails the use of selective judgement in the choice of accounting policies and in structuring transactions to alter financial report so it is either mislead stakeholders or influence contractual outcome which depends on the accounting numbers being reported (Healy & Wahlen, 1999). This tendency questions the reliability and the information content of the reported earnings; and since non-reliability compromises relevance, there is thus, the need to look for the indicators that may likely improve the value relevance of the reported earnings. The fact that managers manage earnings when they have incentive to do so have since been established in the literatures (e.g. Healy, 1985). One of the ways managers manage earnings is the use of total or discretionary accruals (Dechow, Sloan & Sweeney, 1995). Unlike non-discretionary accruals like credit sales, accrued rent receivable/payable, for a given period which are expected; discretionary accruals which arise from managerial discretionary decisions like assessment for asset impairment, deciding the level of doubtful debt to provide for, among others, are at the discretion of the managers, and are otherwise called unexpected accruals. Large literature exists on the use of total or aggregate discretionary accruals in detecting earnings management, Healy (1985).

Studies documented that managers manage earnings using various strategies such as aggregate accruals (Healy, 1985), real transactions (Roychowdhury, 2006) and deferred tax expenses (Phillips, et al., 2003). Fortunately, studies as well documented that leverage impacts on accrual earnings management (Wasimullah, Toor & Abbas, 2010) as well as real earnings management (Mamedova, 2008). However, while some studies concluded that leverage constitutes a positive incentive to manipulate earnings using accruals and real transactions (e.g. Liu, 2011), others documented that leverage is a disincentive to the two earnings management strategies (e.g. Wasimullah, et al, 2010 and Mamedova, 2008, respectively). As cited in Herrmann, Inoe and Thomas (2001), a specific proxy for earnings management needs not to be discretionary all the time but need to be significant enough to matter. Considering that real earnings management may take the form of asset sales, Herrmann, et al., (2001) conducted a research to investigate the impact of asset sales on earnings forecast, using Japanese listed firms. In the work, having observed the predicted effect of leverage incentive on earnings management, they controlled for leverage ratio. They measured it as the ratio of long term liability to total assets. Their result shows that managers in Japanese listed firms employ the use of assets sales in years whose earnings seems to be below the prior year's forecast. They also discovered that leverage ratio has a positive impact on the proceeds from assets sales. This finding is no different from all but the foregoing findings on the impact of leverage on real earnings management Mamedova (2008). Nevertheless, the use of asset sales to proxy for real earnings management seems to leave out other possible real discretionary actions that may have

an incremental impact on cash flow. The objectives of this research is to explain the impact of leverage on the abnormal operation cash flow, abnormal production cost, and abnormal discretionary expense.

II. LITERATURE REVIEW

Leverage

According to Nissim and Penman (2003), leverage are of two kinds- the financial leverage (resulting from financing activities) and the operating leverage (resulting from operating activities), and both have impact on a firm's profitability. From another dimension, Welch (2011) defines the term leverage as, "the degree of sensitivity of value of equity ownership with respect to changes in the value of the firm". It is thus observable that firms with debts and or any non-debt long term liability in their financial structure are levered.

For the purpose of research, leverage tends to be measured in different manner. As Mamedova (2008) explained, there is no law or regulation that suggests how leverage should be measured. She added that however, two widely used methods are long term debt/book-value of equity (for accountants) and long term debt/market value of equity. Nissim and Pennman (2003) shared different opinion where they clarify that the standard measure of leverage should be the ratio of total liabilities to total assets. Agreeing with this view, Welch (2011) further clarified that leverage are often expressed in ratios and the numerator may comprise of financial liabilities only or financial plus non-financial liabilities, depending on the purpose of the ratio. Welch (2011) further criticized that it is not clear in the literature as to whether non-financial liabilities should be considered as debt, but it is clear that they should never be considered as equity, and yet the common measure of leverage (i.e. financial debt to total assets) commit this mistake.

Earnings Management

Earnings management emerges and is still seen as a principal issue in terms of unethical behavior which may lead to corporate failures in recent debates as referred to Uwuigbe et al. (2014). The practice of earnings management is also comprising of an "intentional manipulation" towards the financial information due to particular motives, either it is intended to mislead the investors or to gain some other investment-related benefits which decisions are made based on the accounting numbers (Watts and Zimmerman, 1986; Healy and Wahlen, 1999; Uwuigbe et al., 2012; Uwuigbe et al., 2014). Finance managers, who are the front-line members of the company with access to accounting number, take an advantage of earnings management to reach objectives at the cost of stakeholders (Uwuigbe et al., 2012; Uwuigbe, 2014).

Referred to Yero, 2012, accrual earnings management refers to a strategy for managing earnings through the use of accruals and is made possible due to the discretions allowed in GAAP (Sun & Rath, 2010). Based on the work of Wasimullah, et al., (2010), managers are able to shift earnings in different reporting periods. The argument is based on the fact that since accounting earnings is prepared and reported based on accrual concept 22 as opposed to cash basis, there is always a difference between the reported earnings and the reported cash-flow for any given period.

Real Earnings Management

Real earnings management can be viewed as the practice of manipulating the earnings and cash-flow to be reported through manipulating actual activities with cash-flow consequences (Roychowdhury, 2006). Through granting favorable credit terms to customers or increasing price discount, managers can accelerate sales which in turns has a direct bearing on a firm's income. Also managers can report higher operating margin by reducing fixed cost per unit through increase in production (which facilitates the spread of over-head cost over a larger number of units). The sale of fixed asset and the use of expenditures on research and development are also ways in which managers manage earnings through real activity (Mamedova, 2008). As Mamedova (2008) disclosed, Chen, Riz and Sivarama-krishnal (2008) also used the same in the following year. The second model used by Roychowdhury is where he examined three different proxies of real earnings management separately and then jointly examined their standardized coefficients. The three proxies are (1) abnormal cash flow (as discussed above), (2) abnormal discretionary expenses and (3) abnormal production cost. Finally, as explained above, is the sum of standardized coefficients from the three models. The first proxy (abnormal cash flow) is as explained in the previous paragraph above. The second proxy depicts that current year's discretionary expenses is a function of current year's sales (all scaled by total assets of the previous year). He defined current year's discretionary expenses as the aggregate of several expenses such as advertisement expenses, research and development expenses (R&D) and selling, general and administrative expenses (SG&A). Any portion of the sum of the discretionary sales that is not explained by current year's sales is real earnings management using discretionary expenses. In the same vein for the third one, he modeled current year's production cost as a function of current year's sales plus change in current year's sales plus change in previous year's sales (all scaled by previous year's total assets). He defines production cost as the aggregated cost of goods sold and change in inventory during the period.

In summary, he respectively termed the three sub-models as abnormal cash flow, abnormal production, and abnormal discretionary expenses. Hence, real earnings management is proxied by the aggregate of standardized coefficients of the three metrics.

Table 1. Fundamental Differences of Accrual Earnings Management And Real Earnings Management

	Accrual Based Earnings Management	Real Earnings Management
How?	The practice is done through choice of accounting principles	The practice is done through the real operating decision
In Which Process?	Financial reporting phase	Operating activities
Any Effect On Direct Cash Flow?	No	Yes

Hypothesis

Referred to the main reference journal, “The impact of Leverage on Real Earnings Management” which developed one hypothesis, in this research the researcher modified the hypotheses regarding the real earnings management is measured separately through three proxies: abnormal operation cash flow (res_cfo), abnormal production cost (res_prod), and abnormal discretionary expense (res_disexp). Derived from the original hypothesis (Companies with high leverage utilization are less likely to practice REM), this research’s hypotheses are as follows:

- H1: Companies with high leverage utilization are less likely to practice REM through Abnormal Operation Cash Flow
- H2: Companies with high leverage utilization are less likely to practice REM through Abnormal Production Cost
- H3: Companies with high leverage utilization are less likely to practice REM through Abnormal Discretionary Expense

III. METHODOLOGY

Based on type of research approach, this research is categorized as a quantitative research. This research takes six years range of period of time, from year 2009-2014. The sources of data were from the Indonesia Stock Exchange (IDX) and published annual reports of the firms that finally constituted the population of the study. Population for this research is all non-financial companies listed on Indonesia Stock Exchange (IDX), whereas the research’s sample is selected the all non-financial companies listed on Indonesia Stock Exchange for the period 2009-2014 with sufficient data. The sample was selected based on criteria written below that the researcher uses to become filters:

1. The audited annual report of selected non-financial companies was consistently-issued annually
2. Companies with insufficient data will be eliminated. The data that the researcher needs are
 - a) Operation cash flow of company x in period t
 - b) Total assets of company x in year t-1
 - c) Sales of company x in year t
 - d) Sales of company x in year t less sales of company i in year t-1
 - e) The sum of cost of goods sold and change in inventory of company x in year t
 - f) Sales of company i in year t-1 less sales of company i in year t-2
 - g) The sum of Research and Development (R&D) expenses and Selling, General & Administrative (SG&A) expenses of company i in year t
 - h) Total debt in year t
 - i) Total asset in year t

Research Model

There are three models for examine the real earnings management. The researcher uses abnormal operation cash flows (RES_CFO), abnormal production costs (RES_PROD), and abnormal discretionary expenses (RES_DISEXP).

Abnormal Operation Cash Flow (RES_CFO)

To obtain the value of abnormal operation cash flow, the researcher used the model from Zamri et. al (2013) and Roychowdhury (2006), as follows:

$$CFO_{it}/A_{it-1} = \beta_1[1/A_{it-1}] + \beta_2 [Sales_{it}/A_{it-1}] + \beta_3 [\Delta Sales_{it}/A_{it-1}] + \epsilon_{it}$$

Where,

- CFO_{it} : Operation cash flow of company x in period t
- A_{it-1} : Total assets of company x in year $t-1$;
- $Sales_{it}$: Sales of company x in year t
- $\Delta Sales_{it}$: Sales of company x in year t less sales of company x in year $t-1$;
- ϵ_{it} : A residual term that captures the level of abnormal cash flow of company x in year t .

Abnormal Production Cost (RES_PROD)

To obtain the value of abnormal production cost, the researcher used the model from Zamri et. al (2013) and Roychowdhury (2006), as follows:

$$PROD_{it}/A_{it-1} = \beta_1[1/A_{it-1}] + \beta_2 [Sales_{it}/A_{it-1}] + \beta_3 [\Delta Sales_{it}/A_{it-1}] + \beta_4 [\Delta Sales_{it-1}/A_{it-1}] + \epsilon_{it}$$

Where,

- $PROD_{it}$: The total of cost of goods sold and change in inventory of company x in year t ;
- $\Delta Sales_{it-1}$: Sales of company x in year $t-1$ less sales of company x in year $t-2$

Abnormal Discretionary Expense (RES_DISEXP)

To obtain the value of abnormal discretionary expense, the researcher used the model from Zamri et. al (2013) and Roychowdhury (2006), as follows:

$$DISEXP_{it}/A_{it-1} = \beta_1[1/A_{it-1}] + \beta_2 [Sales_{it-1}/A_{it-1}] + \epsilon_{it}$$

Where,

- $DISEXP_{it}$: The total of Research and Development (R&D) expenses and Selling, General & Administrative (SG&A) expenses of company x in year t ; and all other variables are as previously defined

Leverage Measurement

Following to Zamri et. al (2013) and Roychowdhury (2006), leverage is dividing the ratio of total liabilities to total assets.

$$\text{leverage ratio} : \frac{\text{Total Debts}}{\text{Total assets}}$$

Estimation Model

$$\begin{aligned} RES_CFO &= \beta_0 + \beta_1 LEV + \beta_2 INTEXP + \beta_3 ROA_{t-1} + \beta_4 AUDITOR + \epsilon_{it} \\ RES_PROD &= \beta_0 + \beta_1 LEV + \beta_2 INTEXP + \beta_3 ROA_{t-1} + \beta_4 AUDITOR + \epsilon_{it} \\ RES_DISEXP &= \beta_0 + \beta_1 LEV + \beta_2 INTEXP + \beta_3 ROA_{t-1} + \beta_4 AUDITOR + \epsilon_{it} \end{aligned}$$

Where,

- LEV : Leverage, total debts scaled by total assets for company x in year t ;
- $INTEXP$: net interest expense on short and long-term debt (total debt) for company x in year t ;
- ROA_{t-1} : previous-year income before extraordinary items scaled by total assets of company x in year $t-1$;
- $SIZE$: logarithm of assets of company x in year t ;
- $AUDITOR$: a dummy variable set, equal to 1 if company i is audited by a Big 4 auditor in year t and 0 otherwise;
- ϵ_{it} : a residual term of the model.

This research is using multiple linear regression model according to there are several independent variables in this research. To complete this method, the researcher needs to complete several tests to develop the

best and relevant research model for this research. The tests are normality test, classic assumption test (heteroscedastic test, autocorrelation test, multicollinearity test), and hypothesis test.

IV. RESULT AND DISCUSSION

Table 2. Descriptive Statistic Table Abnormal operation cash flow (RES_CFO), Abnormal Production Cost (RES_PROD), And Abnormal Discretionary Expenses (RES_DISEXP)

	RES_CFO	RES_PROD	RES_DISEXP	LEV	INTEXP	ROA	SIZE	AUDITOR
Mean	0.099831	0.518811	0.053894	0.490880	0.016865	0.045814	14.56164	-
Median	0.108283	0.604930	0.046441	0.469023	0.018061	0.040215	14.32835	0.000000
Maximum	0.174967	1.187441	0.112018	0.835070	0.033884	0.093562	18.26915	1.000000
Minimum	0.006713	0.104051	0.018007	0.203673	0.001748	0.011575	11.83436	0.000000
Std. Dev.	0.049674	0.333334	0.029167	0.159194	0.009251	0.021048	1.963115	-
Skewness	-0.305748	0.260271	0.559367	0.113370	-0.146590	0.166051	0.494218	-
Kurtosis	1.866750	1.866866	1.952670	2.090283	2.013057	2.024504	2.112089	-
Observation	480	480	480	480	480	480	480	480

Source: data was processed by the research using Eviews 9, July 2016

Descriptive Statistic of Abnormal Operation Cash Flow (RES_CFO)

From the table of descriptive statistic of res_cfo above, it shows the total observation is 480 observations, which represents data observation from 80 companies. The table shows the minimum value of the data is 0,006713 and the maximum value is 0,174967 with the mean value from 480 observations is 0,099831. The standard deviation of 480 observations is 0,049674 and the variance value is 0.002468. The value of mean and standard deviation represent the situation where the practice of real earnings management through the first proxy, abnormal operation cash flow, is relatively low (the mean value 0,099831 is less than 1) whereas the variance value 0,002468 is lesser than the mean value.

Descriptive Statistic of Abnormal Production Cost (RES_PROD)

From the table of descriptive statistic of res_prod above, it shows the total observation is 480 observations, which represents data observation from 80 companies. The table shows the value minimum of the data is 0,104051 and the maximum value is 1,187441 with the mean value from 480 observations is 0,518811. The standard deviation of 480 observations is 0,333334 and the variance value is 0,111112. The value of mean and standard deviation represent the situation where the practice of real earnings management through the second proxy, abnormal production cost, is relatively low (the mean value 0,518811 is less than 1) whereas the variance value 0,111112 is lesser than the mean value.

Descriptive Statistic of Abnormal Discretionary Expenses (RES_DISEXP)

From the table of descriptive statistic of res_disexp above, it shows the total observation is 480 observations, which represents data observation from 80 companies. The table shows the minimum value of the data is 0,018007 and the maximum value is 0,112018 with the mean value from 480 observations is 0,053894. The standard deviation of 480 observations is 0,029167 and the variance value is 0,000851. The value of mean and standard deviation represent the situation where the practice of real earnings management through the third proxy, abnormal discretionary expense, is relatively low (the mean value 0,053894 is less than 1) whereas the variance value 0,000851 is less than the mean value.

Descriptive Statistic of LEV

Leverage in this research represents the leverage ratio, which obtained from total liabilities scaled by total assets. Leverage ratio represents how much a company is financed by debt. In this research, the minimum value of leverage ratio of 480 observations is 0,203673, this means the least leverage ratio of a company is 0,203673, while the maximum value of the leverage ratio that the companies have is 0,835070. The mean value of 480 observations of 80 companies from 6 years observation year is 0,490880, which means from the research sample, the leverage ratio in average is 0,490880. The standard deviation of the total observation is 0,159194 and the variance of the samples is 0.025343.

Descriptive Statistic of INTEXP

Interest Expense here is defined as the amount of net interest both for short and long-term debt (total debt) that the companies have in year t. In this research, net interest expense is used as an independent variable and control variable all at once along with return on assets, the companies' size, and auditor. The minimum

value of the interest expense from the entire sample is 0,001748, the maximum value is 0,033884, and the table shows the mean value of the sample is 0,016865. The standard deviation of the sample is 0,009251 with the variance value 0,000086.

Descriptive Statistic of ROA

ROA is abbreviation of return on assets, in this research, according to the model, ROA used in this research is prior year return on assets value, which is obtained by, scaled the previous year income (before extraordinary items) to the total assets of company in year t. ROA is used as an independent variable and control variable. Based on the descriptive statistic above, the minimum value of the ROA is 0,011575 and the maximum value from total observation is 0,093562. From the total sample, the researcher obtained the mean value 0,045814. The standard deviation from the total sample is 0,021048 with the variance value 0,000443.

Descriptive Statistic of SIZE

Size in this research is a variable that determines the company’s size, which the value is obtained by transforming the amount of company’s total assets (in year t) to natural logarithm (ln) value. From the transformation results, based on the descriptive statistic table above, the minimum value of size of the entire sample is 11,83436 and the maximum value from the sample is 18,26915. These value means that the smallest size of company from total 80 companies is 11,834836 and the largest size of a company from total companies is 18,26915. The need to transform the company’s total assets value to natural logarithm is to simplify the number, which represents the company’s size. The standard deviation from the sample is 1,963115 and the variance of the data is 3,85384.

Descriptive Statistic of AUDITOR

In this research, auditor firms are used as an independent variable and a dummy variable, for a company which the annual report is audited by one of the big four auditor firms will be given value equal to 1 and if a company’s annual report is audited by an auditor firms other than the big four auditor firms will be given value equal to 0. The mean value of the total sample is 0,410256. Calculated using excel, the mode value of auditor is 0 which means the number of companies which are audited by non-big four audit firms are greater than the number of companies which are audited by big four audit firms.

Discussion

Table 3. Three Models Regression Result

	RES_CFO	RES_PROD	RES_DISEXP
LEV	0,0319*	0,0211*	0,0447*
INTEXP	0,0372*	0,2045	0,5974
ROA	0,0132*	0,8807	0,9261
SIZE	0,3011	0,1983	0,8956
AUDITOR	0,4416	0,8197	0,2650

(*significant at the 0,05 levels respectively. Data was processed by the researcher using Eviews 9, July 2016)

The result of this research shows that leverage utilization is negatively associated with the REM practice through the abnormal operation cash flow, abnormal production cost, and also abnormal discretionary expense. Negatively associated means the higher the companies use leverage, the less likely the companies involve in real earnings management, which also mean that leverage limits real earnings management. These results are obtained from the separated measurement using the Roychowdhury (2006) model in Zamri et. al (2013), the probabilities from three proxies regression result shows value less than the significance level at 95% ($\alpha=0,05$) with negative association.

On the first proxy abnormal operation cash flow, the regression result for leverage has t-stat value of -0,963281 and probability value of 0,0319, with the level significance of 5% ($\alpha=0,05$), leverage is accepted and negatively significant associated with the abnormal operation cash flow. Theoretically, as mentioned in Zamri et. al (2013), since the finance managers have the authority upon the company’s cash flow management, they are also able to administer or control its condition, one of the example is reducing the agency cost using debts. Furthermore, the finance managers also have the responsibility to manage the interest payment and other principal expenses, which if not, the company will face a bankruptcy state. Additionally, Jensen (1986) stated that managers used debts as a control factor upon their optional accruals, in order to maximize company’s value,

which a marginal cost of debt counterbalances its marginal benefit in companies with large cash flow but low growth.

The Abnormal production cost (res_prod) proxy shows the leverage variable has t-stat value of -0.952921, coefficient value of -0.194811, and probability value of 0,0211. With the probability value of $0,0211 < \alpha (0,05)$, this means leverage value in the res_prod model is significant at significance level of 5%, it showed that companies with high utilization of leverage are less likely involved in real earnings management practice through the abnormal discretionary expense. Based on the result above, the hypothesis H3 is accepted which means the leverage affected the abnormal discretionary expense negatively. Several previous researches found positive association between leverage and real earnings management through abnormal production cost, Jaggi and Lee (2002) and Fung and Goodwin (2013) found a positive relation for leverage usage with earnings management which is also align with financial distress theory, and to keep away from debt contract violations reasons.

From the regression result above, for the third real earnings management proxy abnormal discretionary expense, leverage variable has t-stat value of -0.946708 and probability value of 0.0447. With the probability value of $0.0447 < \alpha (0,05)$, this means leverage value in the res_disexp model is significant at significance level of 5%, so companies with high utilization of leverage are seemed to be less likely get involved in real earnings management practice using the abnormal discretionary expense. Based on the result above, the hypothesis H3 is accepted which means the leverage affected the abnormal discretionary expense negatively.

Beside the main independent variable Leverage, the researcher also used control variables interest expense, return on assets, size, and auditor. From all the control variables, only interest expense and return on assets which are significance for the model abnormal operation cash flow while the other control variables are not significance at level of 95% in three models, these assumptions are obtained from the regression result which show the probabilities value of interest expense, return on assets, size, and auditor are more than 0,05 and it indicates that in this research, the control variables are not resulting significant impact on real earnings management through the three proxies.

Interest expense, with a coefficient of -0.193600 in the first proxy abnormal operation cash flow model has a significant negative association with real earnings management at significance level of 5%. This result supports Jensen (1986), who found that managers are responsible to reconcile both interest and principal expense payments. The higher the interest payment, the more it will limit managers exercise their discretionary accounts and hence indirectly keeping them away from earnings management practices. Return on assets is significantly positive in the first model of abnormal operation cash flow with a coefficient of 1.816812, this result is respectively consistent with Gunny (2010) who explained in his study that finance managers likely to utilize operation discretionary accounts, in order to beautify the company's performance or value.

V. CONCLUSION AND RECOMMENDATION

Leverage utilization is negatively associated to the practice of real earnings management using abnormal operation cash flow, abnormal production cost, and also abnormal discretionary expense. The findings showed that companies with high leverage utilization are less probably to involve in real earnings management practice using these three proxied metrics. The result is accepted at significance level of 5%. In this research, the researcher only used 82 companies as samples which are collected from the website of Indonesia Stock Exchange (IDX) and Thompson Reuters. For the next research, the researcher suggested to use more companies as a sample to examine a bigger impact and association between leverage and the practice of real earnings management in Indonesia. Beside the companies, the next researcher could observe a longer period of observation than this research, which the researcher only use 6 years of observations (2009-2014), the longer the observations, the more researcher could examine the significant impact of leverage on real earnings management. The next researcher could also pay attention to the control variables, they might be significant at the other level and beside, the research in this study is rarely found in Indonesia.

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