ENGAGING IN EARNINGS MANAGEMENT TO AVOID NEGATIVE EARNINGS

Imam Subekti

Universitas Brawijaya

Abstract

The purpose of this study is to investigate the earnings management behavior of companies listed in the Indonesia Stock Exchange (ISE). Specifically, the study investigates whether companies engaging in real earnings management or accrual management intent to avoid negative earnings; it also examines whether earnings management behavior supports efficient contracting or opportunistic behavior perspective. The sample of this study comprised 166 firm-years of manufacturing industrial sector during the period 2004 – 2005. Using multiple regressions, the study finds evidence that the companies engage in both earnings management, which are discretionary expenses (proxy of real earnings management) and accruals management. This evidence supports the studies of Graham, Harvey, & Rajgopal (2005) and Roychowdhury (2006). Another result shows that the real earnings management conducted by the companies is efficient partially, while the accruals management is opportunistic.

Keywords*: real earnings management, accruals management, efficient and opportunistic earnings management.*

Introduction

Lo (2007) argues that earnings management is the most provocative research topics in accounting and finance because the subject matter explicitly involves potential wrongdoing, mischief, conflict, cloak and dagger, and a sense of mystery. Earnings management refers to unobservable actions conducted by managers that are not easy to detect. The more sophisticated the manager, the more difficult it is to detect earnings management engaged by the manager (Healy & Wahlen, 1999). This means managers may use earnings management to harm someone else, particularly to mislead or manipulate users of financial statement. Therefore, earnings management research is able to provide useful information for users to make economic decisions.

Healy & Wahlen (1999:368) and Schipper (1989:92) state that: "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." It means that earnings management can be conducted by managers through judgment of accounting methods (accruals account) and (or) real operating transactions. Earnings management through judgment of accounting methods is widely known as accruals management. On the other hand, earnings management through real operating transactions is widely known as real earnings management.

According to the definition, earnings management has a lot in common with earnings quality; highly managed earnings have low quality (Lo 2007). Lo also stated that the absence of earnings management is not sufficient to guarantee high-quality earnings (or high-quality accounting numbers more generally), because other factors also contribute to the quality of earnings. This view is similar to argumentation's Ball & Shivakumar (2008) who suggested that high-quality earnings are conservative, while low-quality earnings are upwardly managed earnings.

This study investigates whether earnings management conducted by public companies in Indonesia is real earnings management or accruals management. In addition, it also examines whether earnings management is motivated by opportunistic behavior or efficient contracting. To a large extent, this study is motivated by Roychodhury (2006) who critised the weaknesses of previous earnings management studies that rely on analysis of accruals. Graham *et al.* (2005) find that managers are much more willing to engage in real earnings management than accruals management. One important issue is that, with the empowered to managers, they have the opportunity to choose real activities and or accrual accounts in engaging earnings management.

Study of earnings management based on firm real operating activities is a new approach (see Roychodhury 2006; Graham *et al.* 2005; Lo 2007; Myers, Myers & Skinner 2007). Most of earnings management studies focused on earnings management based on accruals accounts both in the West (developed countries) and the developing countries. The existence of literature that examines the earnings management based on firm real operating activities in developing countries, particularly in Asia (notably Indonesia) is rare. This study is an attempt to bridge this gap.

Scott (2003) describes that there are two types of earnings management conducted by firms: (a) efficient earnings management (i.e., to improve earnings informativeness in communicating private information) and (b) opportunistic earnings management (i.e., to mislead financial statement users in order to maximize manager's utility). Empirical evidence on whether earnings management is opportunistic or efficient is mixed. Burgstahler & Dichev (1997); Balsam, Bartov, & Marquardt (2002) found that earnings management based on discretionary accruals are consistent with the opportunistic view. Earnings management is consistent with opportunity view if earnings management proxy is not related or negative related to future performance. On the other hand, Subramanyam (1996), Gul, Lung, and Srinidhi (2000, 2003) and Krishnan (2003) conclude that the discretionary accrual as a proxy for earnings management is consistent with the efficient perspective. Earnings management is consistent with efficient view if earnings management proxy is positively related to future performance.

There has been extensive research on earnings management based on discretionary accruals; however, literature concerning comparison between earnings management based on discretionary accruals and real earnings management is sparse. Present study extends the previous study particularly in earnings management proxy not only based on discretionary accruals (accruals management) but also based on real operating activities (real earnings management). Further, we compare between accruals management and real earnings management in order to determine whether they support the efficient or opportunistic view.

Literature Review and Hypothesis Development

Earnings management motivation

There are many motivations for management to conduct earnings management such as to avoid violation of debt covenant, to increase compensation and bonus, to control other companies, tax saving, and performance, *etc*. Manager's opportunities to conduct earnings management become a trigger for researchers to investigate and evaluate earnings management actions. Motivations for earnings management that relate to the stakeholders include applying accounting information for: (1) contract between manager and stockholders (through compensation); (2) debt contract; and (3) information source for investors in stock market.

Healy (1985) finds that management compensation based on accounting numbers constitutes for manager to choose accounting method and procedure that can maximize his/her bonus. The empirical evidence is based on positive accounting theory. It attempts to explain and predict managers' choices of accounting policies. More specifically, it is an extension of the bonus plan hypothesis, which states that managers of firms with bonus plans will maximize current earnings. Furthermore, Healy states that by looking more closely at the structure of bonus plans, he/she comes up with specific predictions of how and under what circumstances managers will engage in earnings management.

One of the condition for bank to grant credit facilities to companies often rely on the firms' ability to meet certain ratio requirements such as working capital, debt to equity, dividend per share, as well as other restrictions with regard to firm accounting performance of management. Violation of debt contract covenant is a major concern. Companies with poor financial performance are highly likely to violate debt contract covenant. It creates incentive for management to conduct earnings management. Such engagement in earnings management aims to avoid or minimize violation of debt contract covenant (Daley & Vigeland 1983; Lys 1984; Bartov 1993; Watts & Zimmerman 1986:257-259). The researchers were applying real debt covenant and evidence showed that managers make use of the opportunity of accrual estimation and accounting method to improve earnings (DeFond & Jiambalvo 1994; Sweeney 1994; and DeAngelo, DeAngelo, & Skinner, 1994).

Another earnings management motivation is related to investors in stock market. Earnings management is motivated to avoid earnings decreases and losses. Burgstahler & Dichev (1997:102) argue that "earnings management to avoid earnings decreases is likely to be reflected in cross-sectional distributions of earnings changes in the form of unusually low frequencies if small earnings decrease and unusually high frequencies of small earnings increase. Similarly, management intention to avoid losses will be reflected in the form of unusually low frequency of small losses and unusually high frequencies of small positive earnings". It means that positive earnings in zero around are likely to be managed to avoid losses. They also find evidence that both cash flow from operating and changes in working capital have been manipulated to increase earnings.

Burgstahler & Dichev (1997) and Degeorge, Patel, & Zeckhauser (1999) find that earnings management are used by managers to exceed certain thresholds. The evidence shows that managers manage earnings to attain three thresholds: (1) to report profit, i.e. to achieve 1 cent or more in earnings per share; (2) to sustain recent performance, i.e. to meet or surpass the most recent level of comparable earnings (which, given seasonal variation, is the corresponding

quarter from the previous year); and (3) to meet analysts' expectations, i.e. to meet or exceed the consensus forecast of analysts.

Roychodhury (2006) also uses the behavior to avoid earnings losses to identify firms engage in earning management. Result of the study show that earnings management through real activities manipulation such as manipulation in cash flow from operating, production cost, and discretionary expenses is conducted by managers to avoid losses.

This study also applies similar approach to identify firms in engaging earnings management. Firms are considered to engage in earnings management if the firm-years have earnings per share (EPS) of zero up to Rp 50 (fifty Rupiah). Fifty Rupiah is equal to USD 0.006 (Assumption that 1 USD = Rp 9,000). Suspected firm based on EPS is more appropriate than based on return on assets (ROA) ratio as used by Roychodhury (2006) because this measurement represents real numbers rather than ROA ratio that has relative attribute.

Discretionary accruals as proxy for earnings management

Earnings management research development after income smoothing is application discretionary accruals or unexpected accruals as measurement proxy of earnings management. According to Kothari (2001), there are five well known time-series models of discretionary accrual in the literature. These are: (1) the Healy (1985) model, (2) the DeAngelo (1986) model, (3) the industry model used in Dechow and Sloan (1991), (4) the Jones (1991) model, and (5) the modified-Jones model by Dechow, Sloan, & Sweeney (1995). Of these, only the Jones and modified-Jones models are commonly used in research partly because they outperform the rest in term of specification and power (see Dechow et al., 1995).

Dechow *et al.* (1995) evaluates the power and specification of alternative discretionary accruals models. Their conclusion shows that the modified version of the model developed by Jones (1991) exhibits high power in detecting earnings management. They also conclude that "all of the models appear well specified when applied to a random sample; all models reject the null hypothesis of no earnings management at rates exceeding the specified test levels when applied to samples of firms with extreme financial performance". Finally, they find that "the models all generate tests of low power for earnings management...". (Dechow *et al.* 1995:193)

The other researchers using discretionary accruals (DA) as proxy for earnings management are DeAngelo *et al.* (1994), Subramanyam (1996), Gul *et al.* (2000, 2003), Bartov, Gul, & Tsui (2001), Louis & Robinson (2005). This earnings management measured by discretionary accruals is classified by Myers *et al.* (2007) as conventional earnings management model because the model has some limitations such as: first, DA has low explanatory power in many settings and can yield bias results for sample of firms with extreme earnings performance (see Dechow, *et al.* 1995; Guay, Kothari, & Watts 1996; Kothari, Leone, & Wasley 2005).

Second, this proxy also ignores the relation between cash flows and accruals; as a result, some nondiscretionary accruals are misclassified as discretionary causing a misspecification of these models (Subramanyam 1996). Third, the DA models are misspecification of and bias in which suggest that inferences about earnings management might not be accurate (Kothari, 2001). Fourth, the DA model has difficulties in documenting how managers achieve certain patterns in earnings distributions (Beaver *et al.* 2003; Dechow, Richardson, & Tuna 2003). The criticism related to methodological problem of earnings management are exacerbated by the fact that managers sometimes

manage earnings through "real" decisions; for example, by reducing research and development or advertising expenditure to meet benchmarks (Dechow & Sloan 1991; Bushee 1998; Roychowdhury 2006; Graham *et al.* 2005). It means that cash flows as well as accruals are managed, making it difficult for researches to unambiguously document earnings management (Myers *et al.* 2007).

These limitations of DA models motivated researchers motivation to apply earnings management based on real operating activities or real earnings management. This study also addressed the criticism of earnings management research based on DA models.

Although DA model has some limitations, this model is also needed to be compared to earnings management through real operating activities. Therefore, this study present hypothesis related between earnings management based on discretionary accruals (accruals management) and zero earnings threshold or to avoid negative earnings. The hypothesis is as follows:

H$_1$:	Earnings are managed through accruals accounts to avoid negative earnings.

Real earnings management

A number of earnings management studies discuss the possibility that managerial intervention in the reporting process can occur not only through accounting estimates and methods, but also via operating decisions. Several transaction policies generally intervened by managers are acceleration of sales, alterations in shipment schedules, and delaying of research and development (R&D) and maintenance expenditures (Healy & Wahlen 1999; Fudenberg & Tirole, 1995; Dechow & Skinner 2000).

Roychodhury (2006:337) defines real earnings management (earnings management through real activities manipulation) as "departures from normal operating practices, motivated by managers' desire to mislead at least some stakeholders into believing certain financial reporting goals have been met in the normal course of operating. These departures do not necessarily contribute to firm value even though they enable managers to meet reporting goals". This definition is consistent with Graham *et al.* (2005) survey evidence which find that: (a) financial executives impose some transaction policies to meet earnings targets such as zero earnings, previous period's earnings, and analyst forecast, and (b) the financial executives are willing to manipulate real activities to meet these targets. For example, aggressive price discounts to increase sales volumes and meet some short term earnings target can lead customers to expect such discount in future periods as well. This can imply lower margin on future sales. Overproduction generates excess inventories that have to be sold in subsequent periods and imposes greater inventory holding costs on the company.

Real earnings management is able to reduce firm value because these actions conducted in the current period to increase earnings can have negative impact on cash flows in future periods. However, financial executives are more likely to rely on real operating activities to manage earnings. Roychodhury (2006:338) describes that "financial executives indicate a greater willingness to manage earnings through real activities rather than accruals because accruals management is more likely to draw auditor or regulator scrutiny than real decision about pricing and production; and relying on accruals management alone entails a risk".

Early empirical evidence regarding real earnings management is related to the opportunistic reduction of Research & Development (R&D) expenditures to reduce reported expenses (Bens, Nagar, & Franco Wong 2002; Baber, Fairfield, & Haggard, 1991; and Bushee 1998). Bens *et al.* (2002) stated that managers

repurchase share to avoid EPS dilution. The managers partially finance them by reducing R & D expenses. This evidence support Baber et al. (1991) and Bushee (1998) study suggesting that reduction of R & D expenditure to meet earnings benchmarks.

Further evidence due to real earnings management is associated to reducing discretionary expenditures and/or capital investment than engaging in other managing method. These evidences are found by Graham *et al.* (2005) conducting survey toward the real earnings management. Graham *et al.* (2005) suggested that managers are much more willing to engage in real earnings management, particularly in reducing discretionary expenses and/or capital investment rather than accruals management.

Another empirical evidence of real earning management is associated with major real operating activities such as sales, cash flow, production, and administrative activities. Bartov (1993) finds evidence that firms with negative earnings tend to change their financial report to get higher profit through assets sales. Roychodhury (2006) documented the more comprehensive evidence related to real earnings management. He views the real earnings management as earnings management through real activities manipulation. The evidence includes manipulation in cash flow from operating, production cost, and discretionary expenses activities. Further, Roychodhury argues that the purpose of firms in engaging earnings management through the manipulations is to avoid losses or to meet zero earnings threshold.

Following Roychodhury (2006), this study investigates patterns in CFO, production costs, and discretionary expenses for firms close to zero earnings target. They are suspected to be managed to meet zero earnings target. CFO represents cash flow from operating as reported in the statement of cash flow. Production costs are defined as the sum of cost of good sold (CGS) and change in inventory during the period. Further, discretionary expenses are defined as sum of (a) advertising expenses, (b) R & D expenses, and (c) selling, general and administrative (SG&A) expenses. The following hypotheses are associated to earnings management through major real operation activities.

H_2: Earnings are managed through cash flow from operating to avoid negative earnings.

H_3: Earnings are managed through production cost to avoid negative earnings.

H_4: Earnings are managed through discretionary expenses to avoid negative earnings.

Type of earnings management

There are two types of earnings management: efficient and opportunistic perspective. Earnings management is efficient if managers use their discretion to communicate private information about firm performance, which is yet to be reflected in the historical cost-based earnings. On the other hand, it is opportunistic if managers use their discretion to maximize their utility, thereby garbling earnings (Subramanyam, 1996). Therefore, this study examines whether real earnings management and accruals management are motivated by efficient or opportunistic objective by testing CFO, production costs, discretionary expenses, and discretionary accruals' ability to signal future performance. If earnings management is efficient, these earnings management proxies will have a positively significant relationship with future performance. If it is due to opportunistic behavior, these earnings management proxies will have a negative relationship or insignificant relationship with future performance.

Several studies find evidences that are consistent with the opportunistic view. Burgstahler & Dichev (1997) find that management engages in earnings management to avoid reporting losses or earnings decline. Balsam *et al.* (2002) find a negative relationship between unexpected discretionary accruals and stock returns around the earnings announcement date. These results indicate that the market views discretionary accruals as a result of opportunistic behavior.

In contrast, other studies find evidence that is consistent with the efficient view. Subramanyam (1996) concludes that discretionary accruals are efficient because they have a positively significant relationship with future profitability. This positive relationship describes the ability that discretionary accruals have to communicate information about a firm's future profitability to public. Gul *et al.* (2000 and 2003) and Krishnan (2003), following Subramanyam (1996), also find consistent evidence.

H_5 : There is a positive relationship between accruals management and future performance

H_{5a}: There is a positive relationship between accruals management and future EPS

H_{5b}: There is a positive relationship between accruals management and future CFO

H_6 : There is a positive relationship between real earnings management and future performance

H_{6a}: There is a positive relationship between real earnings management through CFO manipulation and future CFO.

H_{6b}: There is a positive relationship between real earnings management through production cost manipulation and future CFO.

H_{6c}: There is a positive relationship between real earnings management through discretionary expenses manipulation and future CFO.

H_{6d}: There is a positive relationship between real earnings management through CFO manipulation and future EPS.

H_{6e}: There is a positive relationship between real earnings management through production cost manipulation and future EPS.

H_{6f}: There is a positive a relationship between real earnings management through discretionary expenses manipulation and future EPS.

Methodology

Sample and data

The population of this study is public companies listed in Indonesia Stock Exchange (ISX) from 2004 to 2005. Sample of this study involved 166 firm-years of manufacturing industrial sector selected by purposive sampling method. The sample selection procedure is summarized in table 1. Given the primary focus on the zero targets, this study uses annual data for its tests. Further, the zero targets are probably more important at the annual level, since a number of firms are likely to report losses at the quarterly level due to seasonality in business. Audited annual losses is more reliable than quarterly. Thus, managers are likely to have greater incentives to avoid reporting annual losses.

Table 1
Sample selection prosedure

Total number of firms listed in the ISE as December, 2005 100%	356
Firms in non manufacturing sector indutrial (56%)	(199)
Firms listed in the ISE less than 1 years in 2004 (2%)	(6)
Firms with non-December 31 fiscal year (1%)	(2)
Annual report with non Rupiah currency (1%)	(5)
Annual report with negative equity (16%)	(56)
Incomplete data (1%)	(5)
Total sample firms 23%	83

This study focuses on manufacturing industrial sector. The services, trading, banks, and financial institution industrial sector are excluded due to requirements to calculate discretionary accruals (as accruals management proxy) under the modified Jones model (Dechow *et al.* 1995). This model is appropriate for firm in manufacturing sector. The models for normal or expected CFO, production costs, discretionary expenses are estimated by annually.

Data used in this study consist of accounting data (financial statement). Annual financial statements are obtained from Indonesian Capital Market Database (ICMD), and Indonesia Stock Exchange website (http://idx.co..id).

Estimation models

Real earnings management proxies comprise: (1) abnormal CFO, (2) abnormal production costs, and (3) abnormal discretionary expenses. Following Dechow *et al.* (1998) and Roychodhury (2006), this study expresses normal cash flow from operatings as a linear function of sales and change in sales in the current period. To estimate the model, we run the following cross-sectional regression for each sample year:

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

(1)
Where:
A_{t-1} is the total assets at the end of period t, St the sales during period t and $\Delta S_t = S_t - S_{t-1}$.

For each firm-year, abnormal cash flow from operating is the actual CFO minus the "normal" CFO calculated using estimated coefficient from the corresponding year model and the firm-year's and lagged totals assets. Normal production costs are estimated from the following year regression. This regression is derived from Dechow, Kothari, & Sweeney (1998) and Roychodhury (2006).

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

(2)
Discretionary expenses are also expressed as a linear function of contemporaneous sales. The relevant regression is as follows:

$$DISEXP_t / A_{t-1} = \alpha_0 + \alpha_1 (1/A_{t-1}) + \beta (S_{t-1}/A_{t-1}) + \varepsilon_t$$
(3)

Explanation:

CPO_t =   Cash flow from operating of firm i at year end t

$PROD_t$ =   Production cost of firm at year end t, where $PROD_t = COGS_t + \Delta INV_t$

$COGS_t$ =   Cost of good sold of firm at year end t, calculated as follows:

$$COGS_t / A_{t-1} = \alpha_0 + \alpha_1 (1/A_{t-1}) + \beta_1 (S_t/A_{t-1}) + \varepsilon_t$$
(4)

ΔINV_t =   Change of finished good inventory of firm at year end t, calculated as follows:

$$\Delta INV_t / A_{t-1} = \alpha_0 + \alpha_1 (1/A_{t-1}) + \beta_1 (\Delta S_t/A_{t-1}) + \beta_2 (\Delta S_{t-1}/A_{t-1}) + \varepsilon_t$$
(5)

$DISEXP_t$ =   Discretionary expenses (include marketing, and general & administrative without accruals account) of firm at year end t

A_{t-1} =   Total assets of firm at year end t-1

S_t =   Sales of firm at year end t

ΔS_t =   Change of sales of firm at year t compared with sales at year end t-1

ΔS_{t-1} =   Change of sales of firm at year t-1 compared with sales at year end t-2

a, β =   Coefficient of regression

ε_t =   Error term at year end t

On the other hand, discretionary accruals as proxy for accruals management are calculated from modified Jones Model (Dechow et al., 1995) model. The regression model is as follows:

$$DA_{it} = TA_{it}/A_{it-1} - \left\{ \alpha_1 \left(1/A_{it-1}\right) + \alpha_2 \left(\Delta REV_{it} - \Delta REC_{it}\right)/A_{it-1} + \alpha_3 \left(PPE_{it}/A_{it-1}\right) \right\} + \varepsilon_{it}$$
(6)

Where:

TA_{it} =   Total accruals for firm i on year t

DA_{it} =   Discretionary accruals for firm i on year t

ΔREV_{it} =   Revenues of firm i on year t less revenues on year t-1

ΔREC_{it} =   Account receivable of firm i on year t less account receivable on year t-1

PPE_{it} =   Plant, property, and equipments of firm i on year t

A_{it-1} =   Total assets of firm i year t-1

ε_{it} =   Error term of firm i year t-1

Selection of suspect firm-years

Fig. 1 groups firm-years are classified into EPS intervals over range -500 to +500. Each interval is of width Rp 50, except for the first interval contains firm-years with EPS less than -450 and the 20th interval contains firm-years with EPS more than Rp 450. Fig. 1 is similar to that documented by prior literature, with the prominent upward shift the frequency of firm-years going from the left of zero to the right. Researchers have argued that it is likely that firm-years in the interval just right of zero manage their earnings to income marginally above zero (Roychodury 2006). Firm-years in this study are identified (suspected) to engage earnings management if the firm-years have earnings per share (EPS) of zero up to Rp 50 (fifty Rupiah). Fifty Rupiah is equal to USD 0.006 = 0.6 cent

(assumption that 1 USD = Rp 9,000). Suspect firm-years based on EPS is more appropriate than ROA ratio as used by Roychodhury (2006) because this measurement is real numbers rather than ROA ratio that has relative attribute. There are 55 suspect firm-years, the remaining sample of 111 are unsuspected firm-years to engage earnings management.

Figure 1.
Number of firm years by EPS interval
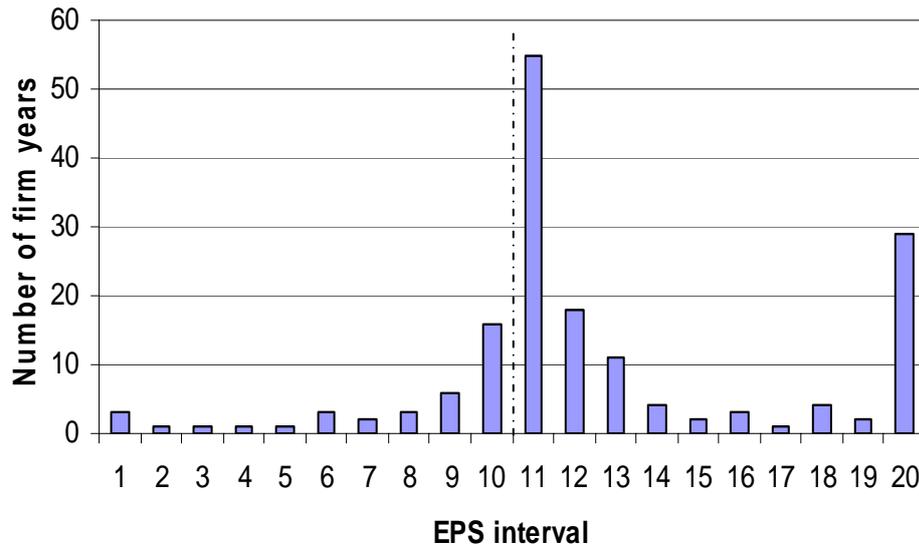
166 firm-years over the period 2004-2005 are classified into EPS interval over the range -500 to +500. Each interval is width Rp 50, except for the first interval contains firm-years with EPS less than -450 and the last interval contains firm-years with EPS more than 450.

Descriptive statistics

Table 2 presents descriptive statistics comparing the suspect firm-years with the rest of the sample. Almost all mean and median of variables of suspect firm-years are less than the rest of the sample, with exception of the mean and median for discretionary accruals of suspect firm-years. This means that earnings management is conducted by firms listed in ISE that have characteristics of such middle and small size, middle and low profitability. This observation is consistent with expectation that firms with low profitability tend to engage in earnings management.

The sample period spans 2004-2005. Suspect firm-years are firm-years with reported earnings per share (EPS) between 0 and 25. The numbers in parentheses are *t*-statistics from *t*-test for the differences in means, and *z*-statistics from Mann-Whitney tests for the differences in medians.

Table 2
Descriptive statistics

	Suspect firm-years		Rest of the sample		Differences in	
	Mean	Median	Mean	Median	Means (t-stat)	Medians (z-stat)
Full sample of 166 firm-years with 55 suspect firm-years						
Total assets (Rp million)	1,100,477	518,824	2, 697,806	571,0	-1,597,329** (-2.277)	-52,191 (-1.000)
Sales (Rp million)	1,138,472	631,079	3,298,195	713,872	-2,159,723** (-2.479)	-82,793 (-1.185)
Future cash flow of operating/ CFO (Rp million)	71,687	11,871	359,317	52,278	-287,630*** (-2.781)	-40,407*** (-2.760)
Current cash flow of operating/CFO (Rp million)	40,640	11,452	291,394	51,02	-250,754*** (-3.930)	-39,577*** (4.024)
Production cost	940,555	515,178	2,534,117	474,950	-1,593,562** (-2.287)	-40,228 (-0.304)
Discretionary expenses (Rp million)	161,013	44,310	456,948	91,797	-295,935** (-2.562)	-47,487*** (-2.760)
Future earnings per share/ EPS (Rp)	6	6	486	103	-480*** (-4.978)	-97*** (-5.932)
Current net income (Rp million)	11,188	5,828	288,751	37,334	-277,563*** (-3.514)	-31,506*** (-4.017)
Discretionary accruals	0.010	0.008	-0.005	-0.006	0.015 (0.717)	0.009 (1.079)
Return on assets	0.019	0.008	0.064	0.07	-0.045*** (-3.680)	-0.062*** (-4.043)
Plant, property and Equipment/ PPE (Rp million)	442,448	159,632	804,582	178,634	-362,134* (-1.762)	-19,002 (-.986)

*Significant at the 10% level. **Significant at the 5% level. ***Significant at the 1% level.

Table 3
Correlation table

	CFO	PRODT	DISCEXP	AbnCFO	AbnPROD	AbnDISEXP	DiscACCR	FutureCFO
PRODT/$_{A-1}$	-0.668**							
DISCEXP/$_{A-1}$	0.109	0.099						
AbnCFO	0.807**	-0.245**	0.150					
AbnPRODT	-0.583**	0.339**	-0.512**	0.722**				
AbnDISCEXP	0.299**	-0.280**	0.919**	0.164*	-0.557**			
DiscACCR	-0.373**	0.139	-0.014	-0.432**	0.157*	-0.066		
FutureCFO	0.286**	-0.195*	0.277**	0.177*	-0.230**	0.344**	-0.077	
Future EPS	0.151	0.074	0.197*	0.190*	-0.064	0.160*	0.180*	0.189*

**Significant at the 5% level. ***Significant at the 1% level
This table reports pooled Pearson correlation for the entire sample of 166 firm-years over the period 2004-2005.

Estimation model

Table 4 reports the regression coefficients of some regressions used to estimate "normal" level (see Section 3.2). The models are estimated using the entire sample of 166 firm-years. The table also reports the coefficients and t-statistics from standard errors. For the sake comparison, the table also comprises coefficient from the cross-sectional Jones Modified model for discretionary accruals prediction.

The coefficient for real earnings management are similar to predicted by Roychudhury (2006) and Dechow *et al.* (1998) who found that current sales and sales change is significant to predict abnormal operating activities, with the

exception of prior sales change. All the regression models for real earnings management are simultaneously significant at 1% level, prediction model for discretionary accrual by modified Jones Model likewise. The coefficient of deviation between revenue change and receivable change variable is however insignificant. It means that firm-years manage accruals management just based on fixed assets accounts without working capital accounts. The explanatory power of the models is quite high. The average adjusted R^2 is 34% for CFO, 88% for production costs, 15% for discretionary expenses, and 86% for discretionary accruals.

Table 4
Model parameters of the real earnings management (REM) and accruals management (AM)

	CFO_t/A_{t-1} (REM)	$PRODT_t/A_{t-1}$ (REM)	$DISCEXP_t/A_{t-1}$ (REM)	$TOTACCR_t/A_{t-1}$ (AM)
Intercept	0.438**	-0.307	-0.054	0.048
	(2.307)	(-0.956)	(-0.311)	(1.219)
$1/A_{t-1}$	-2.330**	2.219	0.794	-0.012***
	(-2.171)	(1.214)	(0.806)	(-7.246)
S_t/A_{t-1}	0.090**	0.599***	0.093***	
	(2.433)	(9.013)	(5.456)	
$\Delta S_t/A_{t-1}$	-0.354***	0.775***		
	(-6.546)	(8.313)		
$\Delta S_{t-1}/A_{t-1}$		-0.027		
		(-0.244)		
$\Delta REV_t/A_{t-1} - \Delta RECt/A_{t-1}$				0.700
				(1.398)
PPE_t/A_{t-1}				0.221***
				(9.950)
F-value	28.903***	309.346***	15.036***	248.802***
Adjusted R^2	0.337	0.882	0.145	0.858

*Significant at the 10% level. **Significant at the 5% level. ***Significant at the 1% level.
This table reports the estimated parameters in the following regressions:
(a) $CFO_t/A_{t-1} = \alpha_0 + \alpha_1(1/A_{t-1}) + \beta_1(S_t/A_{t-1}) + \beta_2(\Delta S_t/A_{t-1}) + \varepsilon_t$ (7)
(b) $PRODT_t/A_{t-1} = \alpha_0 + \alpha_1(1/A_{t-1}) + \beta_1(S_t/A_{t-1}) + \beta_2(\Delta S_t/A_{t-1}) + \beta_3 (\Delta S_{t-1}/A_{t-1}) + \varepsilon_t$ (8)
(c) $DISCEXP_t/A_{t-1} = \alpha_0 + \alpha_1(1/A_{t-1}) + \beta_1(S_t/A_{t-1}) + \varepsilon_t$ (9)
(d) $TOTACCR_t/A_{t-1} = \alpha_0 + \alpha_1(1/A_{t-1}) + \beta_1(\Delta REV_t/A_{t-1} - \Delta RECt/A_{t-1}) + \beta_2 (PPE_t/A_{t-1}) + \varepsilon_t$ (10)

Result

Earnings management comparison of suspect firm-years with the rest of the sample

The following regression is used to test whether firm-years engage in earning management using real activities and discretionary accruals or not presented at hypothesis one, two, and three the present study use the following regression:
$Y_t = \alpha + \beta_1(SIZE)_t + \beta_2(ROA)_t + \beta_3 (Suspect\_EPS)_t + \varepsilon_t$

(11)

In this case, the dependent variable, Y_t is abnormal CFO, abnormal production cost, abnormal discretionary accruals (proxies for real earnings management), and discretionary accruals (proxy for accruals management). Suspect EPS is an indicator variable that is set equal to one if firm-years belong to the earnings category just right of zero (firm-years suspected as firm-years engaging earnings management), and zero otherwise. This testing also uses control variable including variables: SIZE and ROA. SIZE is the logarithm of total assets at beginning of the year. ROA is the ratio of net income to total assets.

Table 5
Comparison of suspect firm-years with the rest of the sample for the real earnings management (REM) and accruals management (AM)

	Abnormal CFO (REM)	Abnormal Prod. Cost (REM)	Abnormal discr.exp (REM)	Discr accrual (AM)
Intercept	0.127	-0.245	0.159	0.146
	(0.696)	(-0.808)	(0.963)	(1.391)
SIZE	-0.024	0.047	-0.028	-0.035*
	(-0.750)	(0.893)	(-0.998)	(-1.913)
ROA	0.443**	-0.915***	0.540***	0.657***
	(2.245)	(-2.799)	(3.045)	(5.825)
Suspect_EPS	-0.048	0.083	0.078**	0.049**
	(-1.169)	(1.221)	(2.105)	(2.103)
F-value	2.777**	3.968***	6.088***	1.579***
Adjusted R^2	0.031	0.051	0.085	0.161

*Significant at the 10% level. **Significant at the 5% level. ***Significant at the 1% level.

This table reports the results of regression, over a period of two years from 2004 to 2005. The total sample includes 166 observations. The regressions being estimated are of the form

$Y_t = \alpha + \beta_1(SIZE)_t + \beta_2(ROA)_t + \beta_3 (Suspect\_EPS)_t + \varepsilon_t$

Each column presents the result of the above regression for different dependent variable, whose name appears at the top of the respective column. T-statistics are calculated using standard errors procedure. They are reported in parentheses.

Table 5 report the coefficient of pooled regression of 83 firms over the period 2004-2005, along with the corresponding t-statistics. The last column in table 5 provides empirical evidence on H_1 that the hypothesis is supported, the coefficient on Suspect_EPS is 0,049 and significant at the 5% level (t=2.103). It indicates that suspect firm-years engaging in earnings management through accruals account. On the other hand, coefficient of Suspect_EPS for dependent variables: Abnormal CFO, and Abnormal production costs are negative (-0.048), and 0.083 respectively. Both the coefficient are insignificant (t= -1.069 for abnormal CFO, and 1.221 for abnormal production costs). It means that H_2 and H_3 are not supported. The firms listed at ISE are not engaging real earning management through CFO and production costs activities manipulations.

Table 5 presents coefficient of Suspect_EPS for dependent variable discretionary expenses is 0.078 and significant at 5% level (t= 2.105). It means that H_4 is accepted. The firms listed at ISE are conducting earnings management through discretionary expenses. This results show that earnings management conducted by firms is discretionary accounts comprising accruals (i.e. business transactions conducted by firm without have effect on firm cash flow), and real account (i.e. business transactions conducted by firm that have effect on firm cash flow such as general, selling, administrative, and R & D expenses financed by cash).

Type of earnings management comparison between accruals management and real earnings management

Analysis among accrual management, real earnings management and types of earnings management is shown in table 6 (comparison of type earnings management between the real earnings management and accruals management). Table 6 presents that accruals management measured by discretionary accruals are not significant to future performance measured future CFO and future EPS. The coefficient of discretionary accruals on future CFO (dependent variable) regression is actually positive (0,027) and negative (0.0164) on future EPS (dependent variable) regression, both coefficient are insignificant with t-value of 0.322 for future CFO regression and -0.164 for future EPS regression. This result indicates that earnings management engaged by firms through discretionary accruals (accruals management) are opportunistic behavior because the actions do not give firm future performance information to users. This action done by managers is likely to maximize their utility. It also means that all hypothesis five (H_{5a} and H_{5b}) are not supported by empirical evidence.

Table 6 also reports that real earnings management measured by abnormal CFO, abnormal production costs, and abnormal discretionary expenses have effect to future performance measured future CFO and future EPS indifferently. The first column shows coefficient for regression with future CFO as dependent variable. The coefficient of abnormal CFO is actually positive (0.146) and marginally significant at the 10% level (t = 1.784), positive (0.058) and insignificant (t = 1.093) for abnormal production cost, and positive (0.260) and significant at the 1% level (t = 4.001) for abnormal discretionary expenses.

This table reports the results of regression, over a period of two years from 2004 to 2005. The total sample includes 166 observations. The regressions being estimated are of the form

$$Y_t = \alpha + \beta_1(Abn.CFO)_t + \beta_2(Abn.PRODT)_t + \beta_3(Abn.DISCEPX)_t + \beta_4(DISCACC)_t + \varepsilon_t$$

Each column presents the result of the above regression for different dependent variable, whose name appears at the top of the respective column. T-statistics are calculated using standard errors procedure. They are reported in parentheses.

Table 6
**Comparison of type earnings management between the real earnings
management (REM) and accrual management (AM)**

	Future CFO	Future EPS
Intercept	0.074***	-0.212***
	(6.848)	(-4.413)
Abnormal CFO (REM)	0.146*	1.179***
	(1.784)	(3.234)
Abnormal Production cost (REM)	0.058	0.711***
	(1.093)	(3.015)
Abnormal Discretionary expenses (REM)	0.260***	0.965***
	(4.001)	(3.323)
Discretionary accruals (AM)	0.027	-0.164
	(0.322)	(-0.433)
F-value	6.556***	5.228***
Adjusted R^2	0.119	0.093

*Significant at the 10% level. **Significant at the 5% level. ***Significant at the 1% level.

The second column shows coefficient regression with future EPS as dependent variable. The coefficient of all real earnings management as independent variables are positive (1.179) and significant at the 1% level (t = 3.234) for abnormal CFO, positive (0.711) and significant at the 1% level (t = 3.015) for abnormal production costs, and positive (0.965) and significant at the 1% (t = 3.323) for abnormal discretionary expenses. These results indicate that hypothesis six (H_6) is supported partially by empirical evidence, because coefficient of abnormal production costs on future CFO (as dependent variable) regression is not significant.

This analysis result provides future evidence to with regards to inconsistent result about types of earnings management. These real earnings management results are consistent with empirical evidence found by Subramanyam (1996), Gul *et al.* (2000 & 2003), and Krishnan (2003) that earnings management is efficient and able to explain future firm profitability. In contrast, accrual management result is consistent with empirical evidence found by Burgstahler & Dichev (1997), and Balsam *et al.* (2002) that earnings management is a result of opportunistic behavior.

Conclusion

This paper complements the existing literature on earnings management in several ways. First, this study has confirmed empirical method to detect earnings management through real activities manipulation (particularly in discretionary expenses) developed by Dechow *et al.* (1998) and Roychodhury (2006). Generally in prior literature on earnings management, the focus has mostly been limited to the discretionary accruals.

Second, the paper documents empirical evidence that is consistent with earnings management around earnings thresholds found its evidence by Burgstahler & Dichev (1997) and Degeorge *et al.* (1999). Firm-years identified conducting earnings management is based earnings distribution. It means that among firm-years reporting small annual profits reflects earnings management to avoid losses. Earnings management conducted firm not only to meet debt covenant contract, political cost, and bonus plan hypothesis but also to avoid

losses or to meet zero earnings threshold. This evidence is consistent with studies of Hayn (1995), Burgstahler & Dichev (1997), Durtschi & Easton (2005), and Beaver, McNichols, & Nelson (2003). Most of literatures on earnings management are always related to events such: IPO, debt contracts, tax payment or financial restructuring.

Third, this paper provides evidence to support that real earnings management tends to be efficient contracting. While accruals management tends to relate to opportunistic behavior. The results are consistent with public perception that earnings management based on discretionary accruals is related to opportunistic behavior (Siregar & Utama 2008). This paper also identifies several questions for future research. One important issue is which of the real activities among operating cash flow, production costs, discretionary expenses, and accruals accounts will be chosen by the managers when manager has the flexibility to engage in all the earnings management tactics. Another area for further research is about measurement for future performance. Future research could include firm market performance and financial performance to test whether the types is of efficient contracting or opportunistic behavior.

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