The effect of accrual earnings management and real earnings management on earnings persistence and cost of equity

Zumratul Meini[1], Sylvia Veronica Siregar[2]

[1] *University of Nasional, Sawo Manila Pejaten Pasar Minggu, Jakarta, 12520, DKI, Indonesia*
[2] *University of Indonesia, Campus UI Depok, Depok, 16424, West Java, Indonesia*

A B S T R A C T

There are two kinds of earnings management: accrual earnings management and real earnings management. This study aims to assess the effect of earnings management on earnings persistence and cost of equity on 155 firms listed on the Indonesia Stock Exchange during the 2001-2010 periods. Analysis in this study uses the Panel Regression Fixed Effect method. The result shows that accrual and real earnings management do not weaken earnings persistence. Furthermore, it was found that accrual earnings management has a positive effect on the cost of equity. Conversely, earnings management through real activity manipulation has a negative effect on the cost of equity. These results may indicate that investors are already aware of a firm's earnings management behaviors through discretionary accrual, but may still not be aware of the negative impact of earnings management through real activity manipulation.

A B S T R A K

Terdapat dua jenis manajemen laba: manajemen laba akrual dan manajemen laba riil. Penelitian ini bertujuan untuk menilai efek dari manajemen laba pada persistensi laba dan biaya ekuitas pada 155 perusahaan yang terdaftar di Bursa Efek Indonesia selama periode 2001-2010. Analisis dalam penelitian ini menggunakan metode Panel Regression Fixed Effect. Hasilnya menunjukkan bahwa manajemen laba akrual dan riil tidak melemahkan persistensi laba. Selanjutnya, ditemukan bahwa manajemen laba akrual memiliki efek positif pada biaya ekuitas. Sebaliknya, manajemen laba melalui manipulasi aktivitas riil memiliki efek negatif pada biaya ekuitas. Hasil ini mungkin menunjukkan bahwa investor sudah menyadari perilaku manajemen laba perusahaan melalui discretionary accrual, tapi mungkin masih tidak menyadari dampak negatif dari manajemen laba melalui manipulasi aktivitas riil.

1. INTRODUCTION

The importance of information about earnings of an enterprise may provide incentives for management to manage its earnings to make the entity looks good financially. Managers have a vested interest in the selection of accounting policies that are expected to maximize their utility (opportunistic) or provide private information to the users of financial statements (efficient). This is called earnings management (Scott 2009: 403).

Earnings management can not only be done using discretionary accrual, but also by manipulating real activities (real earnings management). Real earnings management not only affects earnings, but also operating cash flow (Roychowdhury 2006). According to Cohen et al. (2011) the terms 'manipulation of real activities', 'real activity management', and 'real earnings management' are interchangeable.

In Indonesia, many studies have examined accruals earnings management. Gumanti (2001) found no earnings management during IPO in Indonesia, while Saiful (2002), Assih et al. (2005), Amin (2007), Kusumawardhani & Siregar (2009) found contradicting results (i.e. IPO firms engage in earnings management). Siregar & Utama (2008) show that earnings management is significantly higher in firms with high family ownership which

* Corresponding author, email address: [1] zum.meini@gmail.com, [2] sylvia.veronica@ui.ac.id.

are not part of a business group than in other firms. Rahmawati et al. (2007) found evidence that earnings management is positively influenced by the information asymmetry.

Studies on real earnings management was initiated by Roychowdhury (2006). Since Roychowdhury, there have been several studies in Indonesia examining this type of earnings management. Sari (2008), Oktorina (2008), Sahabu (2009) found that firms engage in real earnings management, whereas Annisaa (2007) did not find evidence of the existence of real activity manipulation.

The existence of earnings management will affect the earnings quality. One indicator of earnings quality is earnings persistence (Dechow et al. 2010). It is interesting to examine the effect of earnings management on the persistence of earnings to determine whether earnings management will strengthen or weaken the earnings persistence.

Furthermore, we were also interested in examining the consequences of earnings management on investors. Francis et al. (2004) and Utami (2005) provide empirical evidence that earnings management has a positive effect on cost of equity capital. This means that investors respond to the phenomenon of earnings management by raising the expected rate of return of firms engaging in earnings management. However, the effect of real earnings management on cost of equity capital has not been investigated yet. There are a limited number of studies that examine both accrual earnings management and real earnings management on the earnings persistence and also its effect on the cost of equity capital.

2. THEORETICAL FRAMEWORK AND HYPOTHESES

Jensen & Meckling (1976) state that agency relationship arises when one or more individuals (principals) hire another individual (agent) and then delegate authority to the agent to make decisions on behalf of the principal. As an agent, the manager is morally responsible for optimizing the benefit to the owner (principal), but on the other hand, managers also have an interest to maximize their welfare, so it is most likely that the agent does not always act in the best interests of the principal.

If associated with the agency relationship characteristics, it is certain that the managers have better, more, and faster information than external parties, such as investors and creditors. This information asymmetry provides incentives to management to undertake earnings management in order to maximize their own welfare.

There are two types of earnings management: accrual earnings management and real earnings management. Some studies that use discretionary accruals, among others, are Healy (1985); DeAngelo (1988); Jones (1991); Dechow et al. (1995); DeAngelo et al. (1994); Subramanyam (1996); Kasznik (1999); Gul et al. (2000); Bartov et al. (2000); Dechow et al. (2002), and Kothari et al. (2005). While studies that use real activity were carried out by Roychowdhury (2006), Cohen et al. (2008), and Cohen and Zarowin (2010).

In Indonesia, study on earnings management provides mixed evidence, there is no earnings management through discretionary accruals (Gumanti 2001) and there is earnings management through discretionary accruals (Utami 2005; Amin 2007; Kusumawardhani & Siregar 2010).

The results on real earnings management activity studies are also mixed. Sari (2008) finds evidence of real earnings management through sales manipulation, overproduction, and reducing discretionary expenses. Oktorina (2008) finds evidence of manipulations of abnormal CFO. Whereas Annisaa (2007) does not find evidence of earnings management through real activities manipulation.

According to Penman and Zhang (2002), good earnings quality can be used as an indicator of future earnings. They argue that high earnings quality will persist in the future. Thus, if the accounting procedure produces unsustainable earnings, the earnings are considered poor quality. Therefore, we aim to determine whether earnings management affects earnings persistence.

Gul et al. (2000) found a negative effect of earnings management through discretionary accruals for earnings persistence. Zhang (2006) also found that real earnings management through abnormal CFO lowers the persistence of earnings. This finding supports Mulford and Comiskey (2005), who suggest that the persistence of CFO and earnings will be reduced if CFO and earnings are related to an abnormal CFO. We expect that earnings management (accruals and real activities) has a negative impact on earnings persistence:

H1a: Accrual earnings management has a negative effect on earnings persistence
H1b: Real earnings management through abnormal CFO has a negative effect on earnings persistence
H1c: Real earnings management through abnormal production costs has a negative effect on earnings persistence
H1d: Real earnings management through abnormal discretionary costs has a negative effect on earnings persistence

Dechow et al. (1996) examined the causes and consequences of earnings manipulation. One of the aims was to determine the extent of earnings manipulation impact on the cost of capital. From the results of the comparative analysis between firms receiving sanctions from the SEC for alleged manipulation of earnings and control firms, they concluded that the cost of capital of SEC sanctioned firms is significantly higher compared to control firms. When a firm is proven to manipulate earnings, investors consider the firm as high risk because the reported performance does not correspond to the actual performance. Therefore, investors increase their expected rate of return (cost of equity capital) in those firms.

Stolowy & Breton (2000) conducted a literature study on earnings manipulation, which included earnings management, income smoothing, big bath accounting, and creative accounting. Stolowy & Breton (2000) explains that earnings manipulations are made solely based on management's desire to influence investors' perception of risk of the company. A higher level of earnings management indicates a higher risk of stock returns and consequently investors will raise the cost of equity capital. Petroni et al. (2000) and Francis et al. (2004) also found that the accrual earnings management has a positive effect on cost of equity capital. Utami (2005) found consistent evidence in Indonesia.

H2a : Accrual earnings management has a positive effect on cost of equity.

We did not find any study that examined the effect of real earnings management on the cost of equity capital. Following the same argument with accruals earnings management, we expect that earnings management through real activities manipulation will increase the cost of equity capital.

H2b : Real earnings management through abnormal CFO has a positive effect on cost of equity.

H2c : Real earnings management through abnormal production cost has a positive effect on cost of equity.

H2d : Real earnings management through abnormal discretionary cost has a positive effect on cost of equity.

3. RESEARCH METHOD

In this study, to test hypotheses 1a, 1b, 1c, and 1d persistence models were developed from Hanlon, Michelle (2005) and Atwood et al. (2010) by adding the variable of real activity management developed by Roychowdhury (2006).

$$NIBEI_{it+1} = \alpha + \beta_1 NIBEI_{it} + \beta_2 DAC1_{it} + \beta_3 DAC1 \times NIBEI_{it} + \beta_4 Abn\_CFO_{it} + \beta_5 Abn\_CFO_{it} \times NIBEI_{it} + \beta_6$$

$$Abn\_Prod_{it} + \beta_7 Abn\_Prod_{it} \times NIBEI_{it} + \beta_8 Abn\_Disc_{it} + \beta_9 Abn\_Disc_{it} \times NIBEI_{it} \quad (1)$$

$NIBEI_{it+1}$ = Net income before extraordinary item for firm i in year t+1

$NIBEI_{it}$ = Net income before extraordinary item for firm i in year t

$DAC1_{it}$ = Discretionary Accrual for firm i in year t Kothari et al. (2005)

Abn_CFO_{it} = Abnormal CFO for firm i in year t

Abn_Prod_{it} = Abnormal production costs for firm i in year t

Abn_Disc_{it} = Abnormal discretionary costs for firm i in year t

We predicted that the existence of accruals earnings management weakens persistence of current earnings on next year earnings ($\beta_3 < 0$). Real earnings management through sales manipulation occurs when abnormal CFO (Abn_CFO) is negative, therefore if abnormal CFO weakens earnings persistence then $\beta_5 > 0$. Real earnings management through overproduction occurs when abnormal production costs (Abn_Prod) are positive. The existence of abnormal production costs weakens earnings persistence if $\beta_7 < 0$. Firms are considered to be engaging in abnormal discretionary expenses when Abn_Disc is negative. Thus, real earnings management through discretionary cost reduction (Abn_Disc) weakens earnings persistence ($\beta_9 > 0$).

The research model to test hypotheses 2a, 2b, 2c and 2d was developed from Francis et al. (2004, 2005) and Utami (2005) by adding the variable of real earnings management by Roychowdhury (2006):

$$COE_{it} = \alpha + \beta_1 ABSDAC1_{it} + \beta_2 Abn\_CFO_{it} + \beta_3 Abn\_Prod_{it} + \beta_4 Abn\_Disc_{it} + \beta_5 Abn\_Size_{it} + \beta_6 Abn\_BM_{it} + \beta_7 Beta_{it} + \varepsilon_{it} \quad (2)$$

COE_{it} = Cost of equity calculated using CAPM

$ABSDAC1_{it}$ = Absolute value from discretionary accrual based on Kothari et al. (2005)

Abn_CFO_{it} = Abnormal CFO

Abn_Prod_{it} Abnormal production cost

Abn_Disc_{it} = Abnormal discretionary accrual

$Size_{it}$ = market capitalization

BM_{it} = book-to-market ratio

$Beta_{it}$ = beta

Based on a previous study (Siregar 2005; Sanjaya 2008) this study uses the absolute value of discretionary accruals as we focused on the magnitude of discretionary accruals not the direction (positive or negative).

Earnings management through discretionary accruals is expected to have a positive effect on cost of equity capital ($\beta_1 > 0$). Real earnings management through the manipulation of sales (Abn_CFO)

has a positive effect on cost of equity capital ($\beta_2 < 0$), real earnings management through overproduction (Abn_Prod) has a positive effect on the cost of equity capital ($\beta_3 > 0$), and real earnings management through discretionary cost reduction (Abn_Disc) has a positive effect on cost of equity capital ($\beta_4 < 0$).

Earnings Persistence

The persistence of profits is derived from the regression coefficients of net income before extraordinary items in year t ($NIBE_t$) on net income before extraordinary items in year $t+1$ ($NIBE_{t+1}$), where β_1 indicates the persistence of earnings.

$$NIBE_{t+1} = \alpha + \beta_1 NIBE_t + \varepsilon_t \qquad (3)$$

Cost of Equity Capital

Cost of equity capital is measured by using the Capital Asset Pricing Model (CAPM). The CAPM measurement formula is as follow:

$$COE_t = Rf + \beta_1 Rp \qquad (4)$$

COE_t = Cost of equity
Rf = Risk free rate
β_1 = Beta
Rp = Country risk premium

The cost of equity measurement in this study uses data already available from the Bloomberg database in Bapepam-LK.

Accrual Earnings Management

Accrual earnings management is measured using discretionary accruals. Discretionary accrual used in this study employs Kothari et al. (2005).

$$DAC_{it} = \frac{TAC_{it}}{TA_{it-1}} - \left\{ \alpha_1\left[\frac{1}{TA_{it-1}}\right] + \alpha_2\left[\frac{\Delta REV_{it}}{TA_{it-1}} + \frac{\Delta REC_{it}}{TA_{it-1}}\right] + \alpha_3\left[\frac{PPE_{it}}{TA_{it-1}}\right] + \alpha_4 ROA_{it} \right\} \qquad (5)$$

DAC_{it} = Discretionary accrual for firm i in year t
TA_{it-1} = Total assets for firm i in year t-1
ΔREV_{it} = Net sales for firm i for year t – net sales for firm i for year t-1
ΔREC_{it} = Receivable for firm i for year t – receivable for firm i for year t-1
PPE_{it} = Plant, property and equipment for firm i in year t
ROA_{it} = Return on asset for firm i in year t

Real Earnings Management
Abnormal CFO

Abnormal CFO in this study was measured by estimating the value of sales manipulation developed by Roychowdury (2006):

$$Abn\_CFO_{it} = \frac{CFO_{it}}{A_{it-1}} - \left\{ \alpha_0 + \alpha_1\left(\frac{1}{A_{it-1}}\right) + \beta_1\left(\frac{S_{it}}{A_{it-1}}\right) + \beta_2\left(\frac{\Delta S_{it}}{A_{it-1}}\right) \right\} \qquad (6)$$

$\frac{CFO_{it}}{A_{it-1}}$ = Cash flow operations for firm i in year t scaled by total assets in year t-1

$\frac{S_{it}}{A_{it-1}}$ = Sales for firm i for year t scaled by total assets in year t-1

$\frac{\Delta S_{it}}{A_{it-1}}$ = Sales for firm i year t minus sales in year t-1 scaled by total assets for year t-1.

Abnormal Production

In the same way, the measurement of abnormal production costs was also conducted using formula:

$$Abn\_Prod_{it} = \frac{PROD_{it}}{A_{it-1}} - \left\{ \begin{array}{l} \alpha_0 + \alpha_1\left(\frac{1}{A_{it-1}}\right) + \beta_1\left(\frac{S_{it}}{A_{it-1}}\right) + \\ \beta_2\left(\frac{\Delta S_{it}}{A_{it-1}}\right) + \beta_3\left(\frac{\Delta S_{it-1}}{A_{it-1}}\right) \end{array} \right\} \qquad (7)$$

$\frac{PROD_{it}}{A_{it-1}}$ = Production costs for firm i in year t scaled by total assets in year t-1, where $PROD_t = COGS_t + \Delta INV_t$

$\frac{S_{it}}{A_{it-1}}$ = Sales for firm i in year t scaled by total assets in year t-1

$\frac{\Delta S_{it}}{A_{it-1}}$ = Sales for firm i in year t minus sales in year t-1 scaled by total assets in year t-1

$\frac{\Delta S_{it-1}}{A_{it-1}}$ = Changes in sales for firm i in year t-1 scaled by total assets in year t-1

Abnormal Discretionary Expenses

The final variables to be measured are the abnormal discretionary expenses:

$$Abn\_Disc_{it} = \frac{DISC_{it}}{A_{it-1}} - \left\{ \alpha_0 + \alpha_1\left(\frac{1}{A_{it-1}}\right) + \beta_1\left(\frac{S_{it}}{A_{it-1}}\right) \right\} \qquad (8)$$

$\frac{DISC_{it}}{A_{it-1}}$ = Discretionary costs for firm i in year t scaled by total assets in year t-1

$\alpha_1\left(\frac{1}{A_{it-1}}\right)$ = Intercepts scaled by total assets for firm i in year t-1

$\frac{S_{it}}{A_{it-1}}$ = Sales for firm i in year t scaled by total assets in year t-1

The control variables in this study are firm size, book-to-market ratio, and beta. Firm size in this study is measured using market capitalization (Francis et al. 2004). Book-to-market ratio is converted into logarithmic form, following Francis et al. (2004). Beta is obtained from the Bloomberg database available at Bapepam-LK.

To test the sensitivity of the results of this study, we change the accrual earnings management measurement using Kasznik (1999):

$$DAC_{it} = \frac{TAC_{it}}{TA_{it-1}} - \left\{ \begin{array}{l} \alpha_1\left[\dfrac{1}{TA_{it-1}}\right] + \alpha_2\left[\dfrac{\Delta REV_{it}}{TA_{it-1}} - \dfrac{\Delta REC_{it}}{TA_{it-1}}\right] + \\ \alpha_3\left[\dfrac{PPE_{it}}{TA_{it-1}}\right] + \alpha_4\left[\dfrac{CFO_{it}}{TA_{it-1}}\right] \end{array} \right\} \quad (9)$$

ΔCFO = change in operating cash flow for firm i in year t.

Furthermore, real earnings management through abnormal CFO, abnormal production costs, and abnormal discretionary expenses, are divided into 2 groups, RM_1 and RM_2 (Cohen and Zarowin 2010). According to Cohen and Zarowin (2010) the grouping is made to match the direction of the real activities manipulation measurement magnitude. RM_1 is the sum of abnormal discretionary expenses multiplied by -1 and abnormal production costs. RM_2 is the sum of abnormal CFO multiplied by -1 and abnormal discretionary costs multiplied by -1. The more positive the values of RM_1 and RM_2, the stronger the indication that the company is performing real earnings management. Regression tests are conducted against both of these measurements to see whether there are differences in the conclusions of the main models, both the persistence model and the model of equity capital cost.

Petroni et al. (2000) correlate discretionary accruals to the cost of equity capital. Their study uses beta as the measurement of cost of equity capital. Therefore a sensitivity analysis is also conducted by replacing cost of equity using CAPM with beta. The final sensitivity test is conducted by using a calculation cost of equity capital by Utami (2005), where the formula of cost of equity capital is as follows:

$r = (B_t + E_{t+1} – P_t) /P_t$ (10)

r = cost of equity capital

B_t = book value per share on period t

E_{t+1} = earnings per share on period t+1

P_t = share market value on period t

Sample Selection

Sample selection criteria are as follows:
1. Financial industry firms are excluded because they are highly regulated so they could have

Table 1
Sample Selection

Criteria	N
Firms listed during year 1999-2010	452
Financial institutions	(75)
Incomplete data	(185)
Negative equity	(37)
Number of firms	155
Years	10
Total firm-years	1,550

different earnings management behaviors than other industries.
2. Firms do not have negative equity.
3. Firms have complete data.

Outliers are treated by winsorisation using 1% as the upper limit and lower limit. The result of sample selection is shown in Table 1.

4. DATA ANALYSIS AND DISCUSSION
Descriptive Statistics
Our samples are collected from eight industry sectors consisting of the Agricultural Industry (3 companies); Basic Industry and Chemicals (32 companies); Consumer Goods Industry (24 companies); Infrastructure, Utilities & Transportation (11 companies); Mining Industry (9 companies); Miscelaneous Industry (21 companies); Property, Real Estate, Construction and Building (17 companies); Trade, Services and Investments (38 companies).

Table 2 presents the descriptive statistics of all variables used in this study. Discretionary accruals in this study used two measurement models, namely DAC1 based on Kothari et al. (2005) and DAC2 based on Kasznik (1999). Mean DAC1 and DAC2, both show a positive number, which means that, on average, companies engage in income increasing earnings management.

According to Roychowdhury (2006) real earnings management occurs through abnormal CFO (Abn_CFO) if the abnormal CFO is a negative number. On average the Abn_CFO value indicates a positive number 0.01744, which means, on average, sample firms do not undertake real earnings management via abnormal CFO.

The average abnormal production costs (Abn_Prod) is -0.07404. Real earnings management occurs through the manipulation of the production cost if the abnormal production costs are positive (Roychowdury 2006). It can be seen that average real earnings management does not occur through abnormal production costs.

Table 2
Descriptive Statistics

Variables	Mean	Median	Maximum	Minimum	Std. Dev.
NIBEI	0.04832	0.03478	0.37077	-0.21744	0.08583
CFO	0.06921	0.05701	0.41840	-0.25157	0.11316
NDAC1	-0.01885	-0.02050	0.27063	-0.26225	0.08052
NDAC2	-0.02147	-0.02389	0.47760	-0.34363	0.11271
DAC1	0.00089	-0.00184	0.40125	-0.30883	0.11204
DAC2	0.00628	0.00384	0.29020	-0.27668	0.09077
COE	8.96972	7.02555	19.97830	-1.95080	4.51206
ABSDAC1	0.08046	0.05531	0.44321	0.00064	0.08294
ABSDAC2	0.06750	0.04719	0.38790	0.00052	0.06875
ABN_CFO	0.01744	0.01314	0.44941	-0.32910	0.12519
ABN_PROD	-0.07404	-0.01026	0.89363	-1.20321	0.33305
ABN_DISC	-1.20318	-0.04346	2.28348	-18.98921	3.31328
BETA	0.48240	0.44235	1.73180	-1.06340	0.39723
SIZE (Rp millions)	3,412,876	319,230	76,963,520	9,880	10,728,919
BM	1.34382	0.96398	7.25725	0.00004	1.37125

NIBEI = Net income before extraordinary items scaled by total assets; CFO = Cash Flows from Operating; NDAC1 = normal discretionary accrual Kothari et al. model (2005); NDAC2 = normal discretionary accrual Kasznik model (1999); DAC1 = discretionary accrual Kothrari model (2005); DAC2 = discretionary accrual Kasznik model (1999); COE= cost of equity; ABSDAC1 = absolute value of accrual discretionary Kothari et al. model (2005); ABSDAC2 = absolute value of accrual discretionary Kasznik model (1999); Abn_CFO = abnormal cash from operating activities; Abn_Prod = abnormal production cost; Abn_Disc = abnormal discretionary cost; Beta = non-systematic risk to firm; SIZE. = market capitalization in million rupiah; BM = Book to market ratio before being transformed into logarithmic scale (LogBM)

Table 3
Correlation – Persistence Model

	NIBEI	CFO	NDAC1	NDAC2	DAC1	DAC2	Abn_CFO	Abn_Prod	Abn_Disc
NIBEI	1								
CFO	.530***	1							
NDAC1	.264***	-.119***	1						
NDAC2	.055**	-.463***	.495***	1					
DAC1	.015	-.614***	-.316***	.281***	1				
DAC2	.189***	-.301***	-.082***	-.293***	.598***	1			
ABN_CFO	.364***	.781***	.025	-.327***	-.628***	-.336***	1		
ABN_PROD	-.142***	-.298***	-.070***	.067***	.285***	.204***	-.335***	1	
ABN_DISC	-.009	.049	.064**	.064**	-.111***	-.156***	.047	-.043	1

*** significant at α = 1% ** significant at α = 5%.

The average abnormal discretionary cost (Abn_Disc) across the sample of firms is -1.20318. According to Roychowdury (2006), Cohen et al. (2008) and Cohen and Zarowin (2010), the companies perform earnings management through discretionary cost reduction if abnormal discretionary is a negative number. From the firm data studied, sample firms engage in real earnings management through discretionary abnormal.

Table 3 presents the correlations for all variables in the persistence model. DAC1 and DAC2 are negatively related to Abn_CFO. This correlation is consistent with Cohen and Zarowin (2010), where a company conducts accrual earnings management and real earnings management concurrently; and overproduction strategy has a positive effect on discretionary accruals while at the same time having a negative effect on abnormal CFO. As production levels increase, the fixed overhead costs are spread over more units, lowering the fixed cost per unit. As long as the reduction of fixed cost per unit is not surpassed by the increase in marginal cost per unit, the total cost per unit will decrease. This has implications for the lower COGS, and the

Table 4
Correlation – Cost of Equity Model

	COE	ABS DAC1	ABS DAC2	Abn_CFO	Abn_Prod	Abn_Disc	BETA	SIZE	LogBM
COE	1								
ABS DAC1	.120***	1							
ABS DAC2	.099***	.504***	1						
Abn_CFO	.062**	-.009	-.039	1					
Abn_Prod	-.015	.004	.000	-.335***	1				
Abn_Disc	.070***	-.065**	-.078***	.047	-.043	1			
BETA	.761***	.073***	.028	.050*	-.014	.064**	1		
SIZE	.199***	.015	-.062**	.244***	-.214***	.101***	.197***	1	
LogBM	-.010	.045	.031	-.107***	.125***	.091***	-.025	-.417***	1

*** significant at α = 1% ** significant at α = 5%.

Table 5
Accrual and Real Earnings Management

Variables	Mean	Std.Dev.	Prob.
ABSDAC1	0.080457	0.082943	0.0000***
ABSDAC2	0.067502	0.068746	0.0000***
Abn_CFO	0.017442	0.125185	0.0000***
Abn_Prod	-0.07404	0.333054	0.0000***
Abn_Disc	-1.20318	3.313281	0.0000***

ABSDAC1 = absolute value of discretionary accrual Kothari et al. model (2005); ABSDAC2 = absolute value of discretionary accrual Kasznik model (1999); DAC = discretionary accrual Kothari et al. model (2005); DAC2 = discretionary accrual Kasznik model (1999); Abn_CFO = abnormal CFO; Abn_Prod = abnormal production cost; Abn_Disc = abnormal discretionary cost
***significant at 1% **significant at 5% *significant at 10%

company reports better operating margins. This manipulation has a positive effect on accrual earnings management that aims to raise income for the period. In contrast, when the level of production increases, the company raises the cost of production and storage of the excessive products that are not recovered in the same period of the sale time. As a result, CFOs are lower than normal sales rate, thus giving a negative effect on abnormal CFO. Consistent with the explanation above, the correlation between discretionary accruals with abnormal production costs is significantly positive, where the correlation between the abnormal production costs with abnormal CFO is significantly negative.

Furthermore, the correlation between abnormal production costs and abnormal discretionary costs is significantly negative. This implies that managers undertake activities that produce abnormally high production costs while also reducing discretionary costs, as the overall goal of the manager is to report a profit as high as possible in the period.

The correlation for variables in cost of equity model is presented in Table 4. Accrual earnings management (ABSDAC1 and ABSDAC2) are significantly positively associated with cost of equity

capital (COE). While the correlation of real earnings management (Abn_CFO, Abn_Prod, and Abn_Disc) and cost of equity indicates the opposite direction towards the cost of equity capital.

Hypotheses Testing
From Table 5 we found evidence of earnings management through discretionary accruals. This finding corroborates with a previous study (Saiful 2002; Assih et al. 2005; Amin 2007), which states that public firms engage in earnings management.

Roychowdury (2006) states that real earnings management through sales manipulation occurs if the abnormal CFO was negative. Abnormal CFO does not occur because it shows the average is above 0. Earnings management through overproduction occurs if the abnormal production cost is positive. The average abnormal production cost is -0.07404. This indicates that not all companies perform real earnings management via abnormal production costs. The results of this study are consistent with Annisaa (2007).

Real earnings management through a reduction in discretionary costs occurs if an abnormal discretionary cost is negative. We found evidence of real earnings management occurring through

Table 6
Regression Result – Persistence Model

$NIBEI_{it+1} = \alpha + \beta_1 NIBEI_{it} + \beta_2 EM_{it} + \beta_3 EM_{it} \times NIBEI_{it} + \varepsilon_{it}$

	Prediction	Coefficient	t stat	Prob.		Adj. R2	F-stat	Sig.
$NIBEI_{it}$	+	0.3158	6.4306	0.0000	***	0.6076	14.925	***
Panel A								
CFO_{it}	+	0.30516	8.2956	0.0000	***	0.6023	14.449	***
$NDAC1_{it}$	+	0.17151	4.1924	0.0000	***			
$DAC1_{it}$	+/-	0.18055	5.2137	0.0000	***			
Panel B								
$NIBEI_{it}$	+	0.3292	6.8400	0.0000	***	0.6113	14.966	***
$DAC1_{it}$	+/-	-0.0499	-2.2203	0.0266	*			
$DAC1_{it}*NIBEI_{it}$	-	-0.0782	-0.3313	0.3702				
Panel C								
$NIBEI_{it}$	+	0.2850	6.2133	0.000	***	0.6162	15.260	***
ABN_CFO_{it}	+/-	0.0598	3.2967	0.000		***		
$ABN\_CFO_{it}*NIBEI_{it}$	+	0.2302	1.1116	0.133				
Panel D								
$NIBEI_{it}$	+	0.32216	5.9891	0.0000	***	0.6077	14.755	***
ABN_PROD_{it}	+/-	-0.01567	-1.8563	0.0636		*		
$ABN\_PROD_{it}*NIBEI_{it}$	-	0.06174	0.8112	0.2087				
Panel E								
$NIBEI_{it}$	+	0.29154	5.8915	0.000	***	0.6088	14.8208	***
ABN_DISC_{it}	+/-	0.00052	0.3463	0.7291				
$ABN\_DISC_{it}*NIBEI_{it}$	+	-0.01481	-1.2848	0.0995	*			
Panel F								
$NIBEI_{it}$	+	0.28233	5.5238	0.000	***	0.6169	14.7717	***
$DAC1_{it}$	+/-	-0.00699	-0.3849	0.700				
$DAC1_{it}*NIBEI_{it}$	-	-0.04849	-0.2118	0.4161				
ABN_CFO_{it}	+/-	0.04909	2.5153	0.012		**		
$ABN\_CFO_{it}*NIBEI_{it}$	+	0.29027	1.12156	0.1311				
ABN_PROD_{it}	+/-	-0.01166	-1.0984	0.1361				
$ABN\_PROD_{it}*NIBEI_{it}$	-	0.13825	1.5059	0.0661	*			
ABN_DISC_{it}	+/-	0.00037	0.2446	0.8068				
$ABN\_DISC_{it}*NIBEI_{it}$	+	-0.01176	-0.9541	0.1701				

NIBEI = net income before extraordinary item; CFO = cash flows from operation; NDAC1 = normal discretionary accrual Kothari model (2005); DAC1 = discretionary accrual Kothari model (2005); Abn_CFO = abnormal CFO; Abn_Prod = abnormal production cost; Abn_Disc = abnormal discretionary cost.
***siginicant at 1% **significant at 5%*significant at 10%.

abnormal discretionary spending. This finding is consistent with Sari (2008).

Before we examine the effect of earnings management on earnings persistence, earnings components persistence is examined, as performed by Xie (2001), to observe the persistence of the CFO, NDAC and DAC.

From the regression results in Table 6, current earnings are persistent to future earnings. Panel A provides evidence that the three components of earnings are persistent; the CFO is more persistent than DAC and NDAC, whereas DAC is more persistent than the NDAC.

Next, to test hypothesis 1a, we can see in Panel F that DAC1*NIBEIt is not significant, so hypothesis 1a is rejected. Thus, earnings management through discretionary accruals has not been proven to weaken the persistence of this year's earnings to next year's earnings. This could be due to efficient earnings management, or company management attempting to maintain positive earnings by consistently performing accruals earnings management

276

Table 7
Regression Result – Cost of Equity Model

$COE_{it} = \alpha + \beta_1 ABSDAC1_{it} + \beta_2 Abn\_CFO_{it} + \beta_3 Abn\_Prod_{it} + \beta_4 Abn\_Disc_{it} + \beta_5 Size_{it} + \beta_6 BM_{it} + \beta_7 Beta_{it} + \varepsilon_{it}$

Variable	Prediction	Coefficient	t-Statistic	Prob.	Sig.
C	None	-16.707	1.4261	0.0018	***
ABSDAC1	+	3.0042	1.8902	0.0771	*
ABN_CFO	-	1.4935	0.1127	0.0029	***
ABN_PROD	+	0.1267	1.0309	0.4551	
ABN_DISC	-	0.1123	8.7009	0.1513	
BETA	+	8.3304	3.9573	0.0000	***
SIZE	-	4.0965	3.9573	0.0000	***
LOGBM	+	4.0629	2.6334	0.0042	***
F-statistic		16.253			
Prob(F-statistic)		0.0000			
Adjusted R2		0.6132			

COE= cost of equity; ABSDAC1 = absolute value of discretionary accrual Kothari model (2005); ABN_CFO = abnormal CFO; ABN_PROD = abnormal production cost; ABN_DISC = abnormal discretionary cost; BETA = nonsystematic risk to firm; SIZE = firm size using logarithm of market capitalization; LOGBM = logarithm of book to market equity ratio.
***siginicant at 1% **significant at 5% *significant at 10%.

each year, so the presence of earnings management does not seem to weaken earnings persistence. An alternative explanation for this result is that income accrual earnings management reversals may occur over longer periods (e.g. in year t +2 or t +3), rather than in year t +1.

Examination of the persistence model was also conducted on real earnings management: abnormal CFO, abnormal production costs, and abnormal discretionary costs. From regression results in Panel F, we can see that Abn_CFO* NIBEIt is positive and not significant, so hypothesis 1b is rejected. When companies manipulate sales, earnings increase. It is possible that this real earnings management behavior leads to the apparent of real earnings management and does not weaken the persistence of this year's earnings to next year's earnings, but instead reinforces it, albeit temporarily.

Results from abnormal production costs (Abn_PROD*NIBEIt) shows significant positive effect on future earnings, which is inconsistent with our prediction, so it can be concluded that hypothesis 1c is rejected. This finding may be due to the company performing efficient earnings management, otherwise the impact of these new earnings management would appear in year t+2 or t+3. Another possible explanation may be that the company's management attempts to maintain positive earnings, so they perform real earnings management through overproduction in every year, therefore the presence of earnings management appears to strengthen earnings persistence.

Regression results show Abn_Disc*NIBEIt is

insignificant. Consistent with results of accrual earnings management and two other measures of real earnings management, discretionary cost reduction do not weaken earnings persistence.

From the regression analysis in Table 7 we can see that ABSDAC1 has a positive and significant effect on the cost of equity capital, so hypothesis 2a can not be rejected. This is consistent with Utami (2005) and Francis et al. (2004). Previous studies have shown that investors will increase the expected rate of return of firms that perform earnings management through discretionary accruals. The significance of the effect of discretionary accruals on cost of equity capital indicates that the market is aware that firms engage in accrual earnings management, and hence demand higher expected returns (e.g. higher cost of equity capital).

The effect of an abnormal CFO on the cost of equity capital is positive and significant, contrary to our prediction and thus hypothesis 2b is rejected. Real earnings management via abnormal production costs and through discretionary cost reduction also does not have a significant effect on cost of equity capital. Thus hypotheses 2c and 2d are rejected. The results of the regression analysis on real earnings management were not found to significantly affect the cost of equity capital. It is possible that investors are not yet aware of the negative impact of real earnings management. They may perceive firms engaging in real earnings management as having better earnings performance.

Beta significantly has positive effect on the cost of equity capital. This result implies that the investors strongly believe that the greater the value of

beta for the company, the higher the risk of the company, so they impose a high level of return on the company. This result is consistent with Francis et al. (2004). Size has a positive and significant impact on the cost of equity capital. This result is not consistent with previous studies. It is possible that investors consider the company even more subject to high interests, and that could affect the company's performance. Book-to-market ratio has a positive effect on the cost of equity capital. This result is consistent with Francis et al. (2004).

To test the sensitivity of the model, regression analysis is done by replacing DAC1 and ABSDAC1 variables using the model from Kothari et al. (2005) with variables DAC2 and ABSDAC2 using the model from Kasznik (1999). Sensitivity test results (untabulated) indicate CFO is consistently more persistent than discretionary accruals and discretionary accruals are more persistent than non-discretionary accruals. Earnings management through discretionary accruals also consistently do not weaken earnings persistence. Real earnings management via abnormal production costs and abnormal discretionary costs are also not proven to weaken the persistence of earnings. However, there is a difference in abnormal CFO real earnings management; using the model from Kasznik (1999) abnormal CFO earnings management significantly weakens the persistence of earnings. This difference might be due to the fact that the model from Kasznik (1999) uses CFO in its independent variables, so the impact of real earnings management via abnormal CFO is more significant when using the model from Kasznik (1999) compared to the model from Kothari et al. (2005).

A sensitivity test for cost of equity capital using the variable ABSDAC2 as the measurement in Kasznik's (1999) model, it was shown to provide similar results to the results of the model tests, namely earnings management through discretionary accruals having a positive effect on the cost of equity capital, while real earnings management negatively affecting the cost of equity capital. (A test also conducted using dummy variables to control the crisis year of 2008 and 2009, the test results also show that discretionary accruals is positively related to cost of equity capital.)

Furthermore, measurements were also made on real earnings management into 2 measurements RM_1 and RM_2, where RM_1 is the sum of the abnormal discretionary values multiplied by -1 and abnormal production costs. RM_2 is the sum of the abnormal discretionary cost multiplied by -1 and abnormal CFO multiplied by -1 (Cohen and Zarowin 2010). Using variables RM_1 and RM_2 (untabulated) still provides similar results to the main results for the persistence model. The effect of absolute discretionary accruals remains significantly positive on the cost of equity capital, while RM_1 and RM_2 have no significant effect on the cost of equity capital.

The final sensitivity tests are by replacing the measurement of the cost of equity capital using the CAPM calculation with beta and the measurement of the cost of equity model based on Utami (2005). Both test results are consistent with the main results, whereby the accrual earnings management has a positive effect on the cost of equity capital. Whereas real earnings management has a negative effect on cost of equity capital.

5. CONCLUSION, IMPLICATION, SUGGESTION AND LIMITATIONS

This study aims to determine the effect of earnings management, either through discretionary accruals and real activity, or through earnings persistence and cost of equity capital. We fond that firms listed on the IDX engage in accrual earnings management and real earnings management through discretionary cost reduction (Abn_Disc). Earnings management (accrual earnings management and earnings management through real activities manipulation) is not proven to weaken the persistence of current year earnings to next year earnings. The results of this study indicate that earnings management might be in the form of efficient contracting, or firms repeatedly engaging in earnings management, otherwise a negative impact of earnings management could occur over a longer period (t+2 or t+3). Earnings management through discretionary accruals has a significant positive effect on the cost of equity capital, which is consistent with previous studies (Utami 2005; Francis et al. 2004). This empirical evidence indicates that investors respond to accrual earnings management behavior by increasing the cost of equity capital on investments that they have in the company. On the contrary, investors have yet to capture earnings management through real activities manipulation. This could be due to a) investors have not noticed the negative effects of the manipulation of real activities, or b) investors were 'fooled' by real activities manipulation

This study has several limitations. There is a possibility that our discretionary accruals model can not accurately separate the components of discretionary and non-discretionary accruals. Earnings persistence tests only investigate the impact on next

year earnings (t+1) but do not study the impact on earnings in year t+2 or t+3. For further study it is preferable to distinguish the behavior of accrual earnings management from real earnings management in state-owned enterprises (BUMN) and non-state-owned enterprises (non BUMN) or companies with family and non-family ownership, which would enrich the study. It would also interesting examine the effect of earnings management (both discretionary accruals and real activities manipulation) on the cost of debt and firm value, and to examine the impact on long-term performance of the company.

REFERENCES

Amin, A 2007, 'Pendeteksian Earnings Management, Underpricing dan Pengukuran Kinerja Perusahaan Yang Melakukan Kebijakan IPO di Indonesia', *Simposium Nasional Akuntansi 10*, Makassar.

Rahman, A 2007, 'Earnings Management Melalui Accruals Dan Real Activities Manipulation Pada Initial Public Offerings Dan Kinerja Jangka Panjang (Studi Empiris Pada Bursa Efek Jakarta)', *Post graduate Thesis*, Pascasarjana Ilmu Akuntansi Fakultas Ekonomi - Universitas Indonesia.

Assih, P, AW Hastuti, and Parawiyati, 2005, 'Pengaruh Manajemen Laba pada Nilai dan Kinerja Perusahaan', *Jurnal Akuntansi dan Keuangan Indonesia*, 2 (2), pp. 125-144.

Atwood, TJ, MS Drake, and LA Myers, 2010, 'Book-tax Conformity, Earnings Persistence and the Association between Earnings and Future Cash Flows'. *Journal of Accounting and Economics*, 50, 111-125.

Bartov, E, F Gul, and J Tsui, 2000, 'Discretionary Accruals and Audit Qualifications', *Journal Accounting and Economics*, 30, pp. 421-452

Cohen, D, S Pandit, C Wasley, and T Zach, 2011, 'Measuring Real Activity Management', *Working Paper*, <http://papers.ssrn.com>.

Cohen, D, A Dey, and T Lys, 2008, 'Real and Accrual-based Earnings Management in the Pre and Post-Sarbanes Oxley Periods', *The Accounting Review*, 82 (3), pp. 757-787.

Cohen, D, and P Zarowin, 2010, 'Accrual-Based and Real Earnings Management Activities around Seasoned Equity Offerings'. *Journal of Accounting and Economics*, 50(1), pp. 2-19.

DeAngelo, L 1988, 'Discussion of Evidence of Earnings Managements from the Provision for Bad Debts'. *Journal of Accounting Study*, 26, pp. 32-40.

DeAngelo, H, L DeAngelo and D Skinner, 1994, 'Accounting Choice in Troubled Company'. *Journal of Accounting and Economics*, 17, pp.113-143.

Dechow, PM, and ID Dichev, 2002, 'The Quality of Accruals and Earnings: The Role of Accrual Estimation Errors', *The Accounting Review*, 77, pp. 35-59.

Dechow, PM, RG Sloan, and AP Sweeney, 1995, 'Detecting Earnings Management'. *The Accounting Review*, 70 (2), pp. 193-225

Dechow, PM, RG Sloan, and AP Sweeney, 1996, 'Causes and Consequences of Earnings Manipulation: An Analysis of Firms Subject to Enforcement Actions by the SEC', *Contemporary Accounting Study*, 13 (1), pp. 1-36.

Dechow, P, W Ge, and C Schrand, 2010, 'Understanding Earnings Quality: A review of the Proxies, Their Determinants, and Their Consequences', *Journal of Accounting and Economics*, 50 (2/3), pp. 344-401.

Francis, J, R LaFond, P Olsson, and K Schipper, 2004, 'Cost of Equity and Earnings Attributes', *The Accounting Review*, 79, pp. 967-1010.

Francis, J, R LaFond, P Olsson, and K Schipper, 2005, 'The Market Pricing of Accruals Quality', *Journal of Accounting and Economics*, 39, pp. 295-327.

Gul, AF, S Leung and B Srinidhi, 2000, 'The Effect of Investments Opportunity Set and Debt Level on Earnings-Returns Relationship and the Pricing of Discretionary Accruals', *Working Paper*, <http://papers.ssrn.com>.

Gumanti, TA 2001, 'Earnings Management dalam Penawaran Saham Perdana di Bursa Efek Jakarta', *Jurnal Riset Akuntansi Indonesia*, 4 (2), pp. 165-183.

Hanlon, M 2005, 'The Persistence and Pricing of Earnings, Accruals, and Cash Flows When Firms Have Large Book Tax Difference', *The Accounting Review*, 80, pp. 137-166.

Healy, P 1985, 'The Impact of Bonus Scheme on the Selection of Accounting Principles', *Journal of Accounting and Economics*, 7, pp. 85-107.

Jones, J 1991, 'Earnings Management during Import Relief Investigation. *Journal of Accounting*, 29 (2), pp. 193-228.

Kasznik, R 1999, 'On the Association between Voluntary Disclosure and Earnings Management', *Journal of Accounting Study*, 37, 57-81.

Kothari, SP, AJ Leone, and CE Wasley, 2005, 'Performance Matched Discretionary Accrual Measure', *Journal of Accounting and Economics*, 39, pp. 163-197.

Kusumawardhani, NAS and SV Siregar, 2010, 'Earnings Management Preceding IPO and its Relationship with Initial Firm Value at IPO and Post-IPO Firm Performance', *Asian Pasific Journal of Accounting and Finance*, 1, 51-65.

Oktorina, M and Y Hutagaol, 2008, Analisis Arus Kas Kegiatan Operasi dalam Mendeteksi Manipulasi Aktivitas Riil dan Dampaknya Terhadap Kinerja Pasar, *Simposium Nasional Akuntansi (SNA) XI*, Pontianak.

Penman, SH and X Zhang, 2002, 'Accounting Conservatism, the Quality of Earnings, and Stock Return', *The Accounting Review*, 77 (2), pp. 237-264.

Petroni, K, S Ryan, S, and J Wahlen, 2000, 'Discretionary and Non-Discretionary Revisions of Loss Reserves by Property Casualty Insurers: Differential Implications for Future Profitability, Risk, and Market Value', *Review of Accounting Studies*, 5 (2), 95-125.

Rahmawati, Y Suparno, and N Qomariyah, 2007, 'Pengaruh Asimetri Informasi terhadap Praktik manajemen Laba pada Perusahaan Perbankan Publik yang Terdaftar di Bursa Efek Jakarta', *Jurnal Riset Akuntansi Indonesia*, 10 (1), pp. 68-89.

Sahabu, S 2009, 'Manajemen Laba Melalui Akrual Dan Manipulasi Aktivitas Nyata Dan Pengaruhnya terhadap Kinerja Perusahaan yang Melakukan Right Issue', *Post graduate Thesis*, Pascasarjana STIE YKPN Yogyakarta.

Sari, RC 2008, 'Investor Protection, Real Activity Manipulation and Accrual Manipulation: Asian Comparison', *The 2nd Accounting Conference, 1st Doctoral Colloquium, and Accounting Workshop*, Depok.

Scott, William R 2009, *Financial Accounting Theory*. 6th edition. Prentice Hall.

Siregar, VS, and S Utama, 2008, 'Type of Earnings Management and Effect of Ownership Structure, Firm Size and Corporate Governance Practice: Evidence from Indonesia', *The International Journal of Accounting*, 43, pp. 1-27.

Siregar, SVNP 2005, 'Pengaruh struktur kepemilikan, ukuran perusahaan, dan praktik coorporate governance terhadap pengelolaan laba (earnings management) dan kekeliruan penilaian pasar', *PhD Dissertation*, Pascasarjana Universitas Indonesia.

Stolowy, H and G Breton, 2000, 'A Framework for the Clasification of Account Manipulation', *Working Paper*, <http://papers.ssrn.com>

Subramanyam, KR 1996, 'The Pricing of Discretionary Accruals', *Journal of Accounting and Economics*, 22, pp. 249-281.

Utami, W 2005, 'Pengaruh Manajemen Laba terhadap Biaya Modal Ekuitas (Studi pada Perusahaan Publik Sektor Manufaktur)', *Simposium Nasional Akuntansi 8*, Solo.

Xie, H 2001, 'The Mispricing of Abnormal Accruals', *The Accounting Review*, 76 (3), pp. 357-373.

Zhang, R 2006, 'Cash Flow Management, Incentives and Market Pricing', *Working Paper*, University of Colorado at Boulder.