

# AUDIT QUALITY ON EARNINGS MANAGEMENT AND FIRM VALUE

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*This study aims to investigate the effect of audit quality (measured by the size of the audit firm and industry specialization) on earnings management (accrual and real activities earnings management) and on firm value. This study uses samples from Indonesian Stock Exchange with 912 firm-years for the period 2006 to 2009. The results show that firms audited by industry-specialist auditors have lower accrual earnings management, but higher real activities earnings management. On the other hand, firms audited by the Big 4 has higher accrual earnings management than firms audited by non-Big 4. This may occur because firms probably find difficulties to engage in accrual earnings management when audited by industry-specialist auditors, hence they choose the real earnings management instead. However, the size of the audit firm can decrease the real activities earnings management. These findings suggest that accrual earnings management and real activities earnings management are used in substitute by management. This study also shows that real activities earnings management has negative impact on firm value.*

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*Keywords: audit quality, audit firm size, auditor industry specialization, accrual earnings management, real activities earnings management, firm value.*

## INTRODUCTION

Healy & Wahlen (1999) and Scott (2009) divide earnings management into two forms. First, accrual earnings management which is the selection of accounting policies or estimates to achieve the expected of earnings in the corridor of standard. Second is the earnings management through real activities manipulation that uses the amount of time and/or magnitude of the operational decisions in order to achieve the earning target.

Recently, some studies in US have find that after SOX enactment, managers tend to use real activities earnings management than accrual earnings management (Graham et al., 2005; Roychowdhury, 2006; Cohen et al., 2008). Yu (2008) suggests this change occur because accounting and financial reporting standards become more stringent. The use of accrual earnings management is also more risky because of larger possibility of being discovered by external auditors and regulators (Cohen et al., 2008). However, real activities earnings management is very costly for the company because of the possibility of negative cash flows in the future periods due to managers initiative to increase earnings in the current period (Yu, 2008; Cohen & Zarowin, 2010).

Earnings management practices is a chronic disease of opportunist manager in running the company and its antidote has not yet been discovered (Sensi, 2007). However, prevention efforts are always con-

ducted to minimize these practices, one of which is the implementation of good corporate governance (Dechow et al., 1996; Beasley, 1996; Murhadi, 2009).

One of the attributes of the corporate governance framework associated with the supervision function is accountant (Cadbury, 2000). Public accountants play a role in giving opinions on the fairness of financial statements, and they are independent auditors from outside the company (Cadbury, 2000).

High quality auditors have ability to minimize earnings management (Becker et al., 1998; Cai et al., 2005). One measure of audit quality is audit firm size (usually Big 4 vs Non Big 4). Study in Indonesia by Sanjaya (2008) shows that firms audited by Big 4 has lower earnings management than firms audited by Non Big 4. Siregar & Utama (2006) and Rajhi & Azibi (2008), however, find no difference between Big 4 auditors and non Big 4 in reducing earnings management.

Another measure of audit quality is based on auditor industry specialization. According to Craswell et al. (1995), audit firms reputation is developed from industry-specific expertise. This industrial knowledge and experience determine auditors' competences. Industry-specialist auditors will provide higher quality audit and will also provide good signal for investors. Krishnan (2003) find that specialist auditors are able to minimize earnings management (discretionary accruals) of firms audited by industry specialist are lower than discretionary accruals of firms whose auditor is not specialist.

The relationship of audit quality, earnings management, and firm value has been examined separately in previous studies. The failure of Arthur Andersen's audits on Enron has provided negative effect on Enron's stock price (Chaney & Philipich, 2002, in Rajhi & Azibi, 2008). This shows that high quality of audit will give a positive

reaction in stock prices which directly enhance shareholders' value. Demski (2004) finds that earnings management is negatively affecting firm's performance.

Based on the explanation above, this study aims to examine the effect of audit quality (the size of audit firm and auditor industry specialization) on earnings management (accrual earnings management and real activities earnings management) and on firm value. Previous studies mostly examines the relationship between audit quality and accrual earnings management, while this study, in addition to accrual earnings management, will also include real activities earnings management.

## LITERATURE REVIEW

### Auditor Size and Earnings Management

According to DeAngelo (1981), large audit firms have greater probability to detect and reveal error in financial statements. Larger size also makes them more able to withstand the pressure of clients who want clean or unqualified opinion, and also to control earnings management by corporate management (Boone et al., 2010).

Cai et al. (2005) show that the larger the size of audit firm, the lower the amount of earnings management. Meutia (2004) also find consistent result that firms audited by Big 5 have lower absolute discretionary accruals compared to firms audited by non Big 5. This suggests that the Big 5 are more qualified to detect accrual earnings management. Sanjaya (2008) also show that Big 4 is able to prevent and reduce accrual earnings management. Based on this explanation, the hypothesis is as follows:

H1a: Auditor size has negative effect on accrual earnings management.

Cohen et al. (2008) find that managers use more earnings management through real activities earnings management compared to accrual after Sarbanes Oxley Act. The increasingly strict regulations and account-

ing standards make the manager can no longer be flexible enough to use accrual earnings management in achieving its earnings targets, prompting the management to use earnings management through real activities. Real activities earnings management does not violate the rules in accounting standards, so that if they were found, it is not a financial fraud or causing earnings restatement (Carcello et al., 2006). Therefore, with the increasing regulatory and accounting standards in Indonesian, we predicted that firms audited by big audit firms who are more limited to engage in accruals earnings management, will tend to use earnings management through real activities. Therefore, hypothesis is as follows:

H1b: Auditor size has negative effect on real activities earnings management.

### **Industry-Specialist Auditor and Earnings Management**

Industrial specialization affects the nature of audit experience and expertise development that makes an industry specialist auditors are more able in identifying and determining what issues and problems in particular (Solomon et al., 1999). Krishnan (2003) find that firms not audited by industry specialist auditors have on average 1.2% higher discretionary accruals than discretionary accruals reported by firms audited by industry specialist auditors.

Balsam et al. (2003) show that industry-specialist auditor can impede the accruals earnings management by the management. Behn et al. (2008) also find that the Big 5 auditors with industry-specialist have a higher audit quality than the Big 5 auditors without industrial specialization. Therefore we have following hypothesis:

H2a: Firms audited by industry specialist auditors has lower accrual earnings management than firms audited by non industry specialist auditors.

Firms audited by an industry-specialist

auditor will be at risk when using the accrual earnings management in achieving the earnings targets, so that there is a tendency that management uses real activities to achieve the earnings target. Yu (2008) find that firms audited by industry specialist auditors have real activities manipulation larger than companies audited by non-industry specialist auditors. Based on this explanation, the hypothesis is formulated as follows:

H2b: Firms audited by industry-specialist auditors has higher real activities earnings management than firms audited by non industry-specialist auditors.

### **Auditor Size and Firm Value**

Choi and Jeter (1992) using a sample of public firms in the United States, test the stock price response from investors on the financial statements audited by Big 4 and non-Big 4. The result shows that the ERC of the Big 4 client is significantly higher than non-Big 4 clients. Ardiati (2005) also find that the market reacted positively to firms audited by large audit firm, as the market assumes that the financial statements audited by large audit firm is more reliable than the financial statements audited by small audit firm. This indicates that good audit quality will give a positive reaction in stock prices, which will increase firm value. We expect auditor size will have positive effect on firm value:

H3: Auditor size has negative effect on firm value.

### **Industry-Specialist Auditor and Firm Value**

Foster (1986), in Barry (2004), suggest that stock returns are influenced by the credibility of information source. According to Solomon et al. (1999), by having specialization in certain industry will make industry-specialist auditors higher ability to identify and determine issues and problems in particular industry. Thus, industry-special-

ist auditors will provide a higher audit quality (Craswell et al., 1995). The use of industry-specialist auditors then will provide good signal to the market, and hence we expect investors appreciate more if firms are audited by industry-specialist auditors:

H4: Firms audited by industry-specialist auditors has higher firm value than firms audited by non industry-specialist auditors.

### Earnings Management and Firm Value

Earnings is considered has good quality if it can be used by the users of financial statements to make better decisions, and can be used to predict future cash flows (Bernard & Stober, 1998). Opportunistic earnings management will lower the quality of earnings reported by management. Investors give lower valuation for lower earnings quality.

Harrison (1977) examines differences in stock market reaction to discretionary accrual (DA) (measure of earnings management) and non discretionary accrual (NDA) changes. The results show that DA and NDA are associated with stock price. Stock returns are negative for change of DA whereas changes in stock return are positive for the NDA. These results indicate that earnings management accruals negatively impact firm value.

Zhang et al. (2006) also show negative effect of earnings management on firm value. They find that earnings management negatively affects firm value. According to Zhang et al. (2006) the use of accrual earnings management have a negative effect on Tobin's Q. Based on this explanation, the

hypothesis is as follows:

H5a: Accrual earnings management has negative effect on firm value

Ewert & Wagenhofer (2004), in the Gunny (2005), show that the increasing of stringent accounting standards makes the managers switch to use real activities manipulation, although it will have negative consequences (higher cost for firms) and consequently will decrease firm value. Hence, we predicted:

H5b: Real activities earnings management has negative effect on firm value.

### RESEARCH METHOD

Samples used in this study are public firms listed on the Indonesian Stock Exchange in 2006 – 2009, with following criteria:

1. Firms listed on the Indonesia Stock Exchange during the study period (2006-2009).
2. Firms not included in financial institutions.
3. Firms have complete data.

The data in this study obtained from OSIRIS database and Indonesian Capital Market Directory (ICMD), financial statements and independent auditors' report, IDX Website Statistics 2006-2009 from the Indonesian Stock Exchange and Capital Market Research Centre (PRPM), Indonesian Stock Exchange, and website Bapepam-LK.

Auditor size used is measured by the number of partners in audit firm (Wibowo, 2009). This study classifies audit firms following Wibowo (2009) and Adityasih (2010), as follows.

**Table 1 Classification of Audit Firms**

No.	Audit Firm Group	Number of Partners
I	Large Group ( <i>Big 4</i> )	> 10 people
II	Medium Group	6-10 people
III	Small Groups	<6 people

Industry-specialist auditors are measured following Krishnan (2003), Balsam et al. (2003), Herusetya (2009): the largest supplier of audit services in particular industry,

by calculating the percentage of the number of clients each audit firm has in one industry. Then, we classify audit firms as follows.

**Table 2 Classification of Industry-Specialist Auditor**

No.	Category	Criteria
1	Auditor	Big 4 (Big KAP), which has clients in the industry for at least 15%
2	Non industry-specialist auditor	Otherwise

Accrual earnings management is measured by discretionary accrual. The model used is performance matched Jones model (Kothari et al., 2005), as follows:

$$TAC_{it} / A_{it-1} = \beta_0 + \beta_1 / A_{it-1} + \beta_2 \Delta Sales_{it} / A_{it-1} + \beta_3 PPE_{it} / A_{it-1} + \beta_4 ROA_{it} + e_{it} \quad (1)$$

Where,

- TAC<sub>it</sub> = Total accrual firm i year t,
- A<sub>it-1</sub> = Total assets for firm i t-1,
- ΔSALES<sub>it</sub> = Change of company sales i year t-1 to t,
- PPE<sub>it</sub> = Fixed assets firm i year t,
- ROA<sub>it</sub> = Return on Assets firm i year t.

After obtaining the coefficients β<sub>0</sub>, β<sub>1</sub>, β<sub>2</sub>, β<sub>3</sub>, and β<sub>4</sub> then we estimate the amount of non discretionary accruals:

$$NDAC_{it} = b_0 + b_1 / A_{it-1} + b_2 \text{“} Sales_{it} / A_{it-1} + b_3 PPE_{it} / A_{it-1} + b_4 ROA_{it} \text{”} \quad (2)$$

Where:

- NDAC<sub>it</sub> = The estimated non-discretionary accruals for firm i year t,

Discretionary accruals is calculated by subtracting TAC from NDAC with the following formula:

$$DAC_{it} / A_{it-1} = TAC_{it} / A_{it-1} - [\beta_0 + \beta_1 / A_{it-1} + \beta_2 \Delta Sales_{it} / A_{it-1} + \beta_3 PPE_{it} / A_{it-1} + \beta_4 ROA_{it}]$$

Based on previous studies (Siregar, 2005; Sanjaya, 2008), we use absolute value of discretionary accruals because the purpose of this study is on the magnitude of discretionary accruals rather than its direction (positive or negative).

Earnings management through real activities is measured by estimating the value of sales manipulation (Roychowdhury, 2006; Oktorina, 2008). Estimated sales manipulation calculated by estimate the actual value of the company’s cash flows from operation (CFO) by calculating the actual CFO scaled by total assets prior year period. Then, calculating the estimated CFO manipulation of each industry type for each observation year by doing regressions using the estimated Roychowdhury (2006) model as follows.

$$CFO_{it} / A_{it-1} = \beta_0 + \beta_1 / A_{it-1} + \beta_2 Sales_{it} / A_{it-1} + \beta_3 \Delta Sales_{it} / A_{it-1} + e_{it} \quad (3)$$

Where:

- CFO<sub>it</sub> = Cash flow (cash flow) from operating company to company i year t,
- A<sub>it-1</sub> = Total assets of firm i year t-1,
- Sales<sub>it</sub> = Sales of the company i year t,
- ΔSales<sub>it</sub> = Change of company sales i year t-1 to t.

Abnormal CFO (ABCFO) is the difference between actual CFO of the company with normal CFO value (estimated from above regression).

The company allegedly engage in real activities manipulation through cash flow operations when the value of ABCFO is below 0 (negative), while companies not suspected of real activities earnings man-

agement if its ABCFO value is above 0 (positive) (Roychowdhury, 2006; Oktorina, 2008). Lower value of ABCFO indicates that firm engage in real activities manipulation.

Firm value is calculated using price to book value (PBV) ratio.

Model 1 is used to test hypotheses 1a and 2a:

$$DAC_{it} = a_0 + a_1 ASIZE_{it} + a_2 SPCL_{it} + a_3 LEV_{it} + a_4 SIZE_{it} + a_5 D07_{it} + a_6 D08_{it} + a_7 D09_{it} + e_{it}$$

Where:

- DAC = Absolute value of discretionary accruals
- ASIZE = Audit firm size
- SPCL = Industry-specialist auditor
- LEV = Leverage
- SIZE = Natural logarithm of total assets
- D07 = 1 if the observation in 2007 and 0 if otherwise
- D08 = 1 if the observation in 2008 and 0 if otherwise
- D09 = 1 if the observation in 2009 and 0 if otherwise

LEV is included as a control variable because according to Siregar (2005) and Puspanita (2009), there is a positive relationship between leverage with discretionary accruals. Firms with higher leverage tend to engage in earnings management to increase profits to avoid the breach of debt covenants. SIZE is included because firm size, according to Lee & Choi (2002) is negatively related to earnings management. Smaller companies tend to do more earnings management to avoid losses than large companies. Year dummy variables D07, D08, and D09 are included as control variables to account for adjusted mean differences of the dependent variable between years in the study period (Siregar, 2005).

Model 2 is used to test hypotheses 1b and 2b:

$$ABCFO_{it} = b_0 + b_1 ASIZE_{it} + b_2 SPCL_{it}$$

$$+ b_3 INVAR_{it} + b_4 D07_{it} + b_5 D08_{it} + b_6 D09_{it} + e_{it}$$

Where:

- ABCFO = Abnormal CFO
- ASIZE = Audit firm size
- SPCL = Industry-specialist auditor
- INVAR = Percentage of inventory and accounts receivable to total company assets

Inventory and accounts receivable is included as control variables because the greater percentage of inventories and receivables to total assets, management have more ability to manage earnings through real activities manipulation. Roychowdhury (2006) indicated a significant positive relationship between the inventory and accounts receivable with real activities manipulation.

Model 3 is used to test hypothesis 3, 4a, 4b, 5a, and 5b:

$$PBV_{it} = c_0 + c_1 ASIZE_{it} + c_2 SPCL_{it} + c_3 DAC_{it} + c_4 ABCFO_{it} + c_5 ROE_{it} + c_6 SIZE_{it} + c_7 D07_{it} + c_8 D08_{it} + c_9 D09_{it} + e_{it}$$

Where:

- PBV = Price to Book Value Ratio
- ASIZE = Audit firm size
- SPCL = Industry-specialist auditor
- DAC = Absolute discretionary accruals
- ABCFO = Abnormal CFO
- ROE = Return on equity
- SIZE = Natural logarithm of total assets

ROE is included because firms with good operational performance should have higher firm value than other firms. Yanivi (2010) find positive relation of performance on PBV. SIZE (firm size) is expected to have positive effect on firm value. Barnhart et al. (1994) find evidence of the positive effect of firm size on firm value.

## ANALYSIS AND DISCUSSION

The number of observations for this study is 912 firm-year observations. The

sample of companies consists of 8 different industries and the majority of the sample is trade and service industry as much as 232

observations of companies (25%). Table 3 summarizes the result of sample selection.

**Table 3 Sample Selection Result**

Companies listed on Indonesia Stock Exchange in 2006-2009	330
Financial institutions	(63)
Incomplete date	(32)
Total sample firms	235
Period (2006-2009)	4
Number of observations	940
Outliers	(28)
Final observations	912

Table 4 shows descriptive statistics of all variables used in this study. We can see that the average value of discretionary accruals (DAC) as the proxy for earnings management accruals average of 0.0710 with a standard deviation of 0.0604. This result indicates that the sample of firms conducting earnings management accruals is quite large. The average value of abnormal CFO (ABCFO) which becomes a proxy for earnings management through real activities

manipulation is 0.0014 and the standard deviation is 0.11042. ABCFO shows the average value close to 0 with small standard deviation. This may indicate that firms prefer to use earnings management via accruals rather than using real activities. PBV has a maximum value of 82.35 and a minimum value of 22.280, which shows the company's market value in our sample, has a fairly wide range.

<b>Panel A: Continuous Variables</b>				
	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>Std. Dev.</i>
DAC	0,000	0,3533	0,0710	0,0604
ABCFO	-0,359	0,4490	0,0014	0,1103
PBV	-22,280	82,3500	1,7752	4,1156
LEV	0,000	3,1300	0,5865	0,3869
TA	7.468	97.559.606	3.950.000	10.120.000
INVAR	0,000	0,9988	0,2981	0,1983
ROE	-6,084	6,0782	0,0740	0,5265
<b>Panel B: Categorical Variables - Audit Quality</b>				
	Category		N	Percentage
ASIZE	1 Large Group		386	42,32%
	2 Medium Group		192	21,05%
	3 Small Groups		334	36,62%
SPCL	1 Industry-specialist Auditor	252	27,63%	
	0 Non industry-specialist auditor		660	72,37%

DAC = absolute value of discretionary accruals; ABCFO = abnormal CFO; PBV = price book value in observation; LEV = ratio of debt to total assets; TA = total assets in millions; INVAR = ratio of inventory and accounts receivable to total assets, ROE = return on equity; ASIZE = 3

if the company audited by large group, 2 if the company audited by medium group, and 1 if the company audited by small groups; SPCL = 1 if the company audited by an industry-specialist auditor and 0 if audited by non-industry-specialist auditors.

ASIZE showed that large audit firms (Big 4) still dominate the market share in the Indonesia Stock Exchange, where 42.32% of our samples were audited by Big 4, middle audit firms are 21.05%, and small audit firms of 36.62%. SPCL shows that companies audited by the industry-specialist auditor are only 31.58% while the rest 68.42% are not audited by the industry-specialist auditor.

Model 1 regression results in Table 5 shows that ASIZE (audit firm size) has positive and significant impact on accrual earnings management so that hypothesis 1a was

rejected. Firms audited by large audit firms (Big 4), inconsistent with our prediction, have higher discretionary accruals compared with middle group and small group. Thus, large audit firm size does not necessarily reduce the practice of earnings management. This result is consistent with Herman (2009) which also finds that Big 4 audit firms provides lower quality of earnings than non-Big 4 audit firms. We do not find evidence that large audit firms have higher ability to limit the practice of accrual earnings management.

**Table 5 Regression Model 1 Results**

$$DAC_{it} = a_0 + a_1 ASIZE_{it} + a_2 SPCL_{it} + a_3 LEV_{it} + a_4 SIZE_{it} + a_5 D07_{it} + a_6 D08_{it} + a_7 D09_{it} + e_{it}$$

Variable	Prediction	Coefficient	t-stat	Sig.
Constant	?	0,077	4,611	0,0000 ***
ASIZE	-	0,014	4,352	0,0000 ***
SPCL	-	-0,013	-2,258	0,0120 **
LEV	+	0,012	2,276	0,0115 **
SIZE	-	-0,003	-2,668	0,0040 ***
D07	+/-	0,013	2,342	0,0095 ***
D08	+/-	0,013	2,242	0,0125 **
D09	+/-	0,008	1,511	0,0655 *
F-statistic		4,631		
Sig. (F-statistic)		0,000		
Adjusted R-squared		0,027		

DAC = absolute of discretionary accruals; ASIZE = 3 if the company audited by Large Group, Group 2 if the company audited by Medium Group, and 1 if the company audited by Small Groups; SPCL = 1 if audited by the industry-specialist auditor, 0 if not audited by the industry-specialist auditor; LEV = ratio of debt to total assets; SIZE = natural logarithm of total assets

\* Significant at 10% \*\* Significant at 5% \*\*\* significant at 1%

The study by Khurana and Raman (2004) which aims to see the difference of the financial statements credibility audited by Big 4 and non-Big 4 in several countries (the United States, Australia, Canada, and UK) find that higher quality audit by Big 4 only occurs in the United States, but does not in Australia, Canada, and England. This

is due to the risk of litigation in the United States is higher than other countries, thus, Big 4 tend to be very concerned about the quality of its audit.

Jeong and Rho (2004) examine whether there are differences in audit quality between Big 6 and non-Big 6 in Korea and find that their result is consistent with the results of

other studies in Korea, which show no difference in audit quality between Big 6 with a non-Big 6. This may be because economic and institutional environment in Korea does not demand a high quality audit services and the risk of litigation is small, therefore do not encouraging auditors to limit the opportunistic behavior of management.

Marchesi (2000), in Herusetya (2009), find that audit quality is compromised in some countries because the lack of rules regarding auditor independence, including in Indonesia. In addition, according to Kwon et al. (2007), Indonesia is among countries that have a weak legal system because of low law enforcement index<sup>1</sup>, which may indicate that big audit firms do not have strong motivations to restrict the behavior or accrual earning managements of their clients. Therefore, the size of the firm in the country with weak law enforcement cannot be a good proxy for audit quality.

Regression result shows SPCL has a negative and significant effect on DAC, hence hypothesis 2a cannot be rejected. This result supports Krishnan (2003) and Balsam et al. (2003) which shows that the more specialized an auditor is in certain industry the better audits quality they provide for their clients, because they have better understanding and knowledge about the environmental condition of the industry.

Our finding also supports Kwon et al. (2007) who find evidence that in countries

with low law enforcement index, clients audited by industry-specialist auditors have lower discretionary accruals. Therefore, industry-specialist auditor may serve as a better proxy for audit quality in countries with weak law enforcement system like Indonesia.

LEV has a positive and significant influence on the DAC. This finding is consistent with Siregar (2005) and Puspanita (2009) which show that accrual earnings management aims to reduce the likelihood of debt default. SIZE has negative and significant effect on DAC. This evidence is consistent with Lee & Choi (2002). Firm size usually is an indication of the availability of information about the firm. In general, larger firms have more information available and easily accessible compared to smaller firms. This may induce smaller firms to engage in earnings management because outsiders have limited information about them.

Model 2 regression result is presented in Table 6. The result shows that ASIZE has a positive and significant influence on ABCFO. Lower amount of ABCFO indicates that firms engage in real activities manipulation. This finding indicates that firms audited by large audit firm size have lower real activities manipulation, so that hypothesis 1b is not rejected. This finding shows that firms audited by large audit firm have smaller real activities manipulation compared with other firms. This result is different with the accrual earnings management result above.

**Table 6 Regression Results Model 2**

$$ABCFO_{it} = b_0 + b_1ASIZE_{it} + b_2SPCL_{it} + b_3INVAR_{it} + b_4D07_{it} + b_5D08_{it} + b_6D09_{it} + e_{it}$$

Variable	Prediction	Coefficient	t-stat	Sig
(Constant)	?	-0,046	-3,588	0,0000 ***
ASIZE	+	0,031	5,636	0,0000 ***
SPCL	-	-0,021	-1,954	0,0255 **
INVAR	-	-0,029	-1,592	0,0560 *
D07	+/-	-0,003	-0,295	0,3840
D08	+/-	0,001	0,060	0,4760
D09	+/-	-0,004	-0,401	0,3440

F-statistic	6,725	
Sig. (F-statistic)	0,000	***
Adjusted R-squared	0,036	

ABCFO = Abnormal CFO; ASIZE = 3 if the company audited by Large Group, Group 2 if the company audited by Medium Group, 1 if the company audited by Small Groups; SPCL = 1 if audited by the industry-specialist auditor and 0 if audited by non-industry specialist auditors; INVAR = ratio of inventory and accounts receivable to total assets.

\* Significant at 10% \*\* Significant at 5% \*\*\* significant at 1%

Zang (2006) and Cohen & Zarowin (2008) find that managers switch to use real activities manipulation if it is more difficult for them to use accrual earnings management. We examine the correlation between accrual earnings management and earnings management through real activities manipulation. Table 7 shows that both earnings management has a negative correlation. This

negative correlation indicates that management use both earnings management as a substitute (alternative). This result is consistent with Zang (2006) and Cohen & Zarowin (2008). This negative correlation may also explain why we find firms audited by large accounting firm has higher accrual earnings management but lower real activities manipulation.

**Table 7 Correlation - DAC and ABCFO**

		ABCFO
DAC	Pearson Correlation	-0.751 ***
	Sig. (2-tailed)	0,0000
*** Significant at 1%		

As predicted, we find negative association between industry-specialist auditor and real earnings management. This result supports Yu (2008), who find that firms audited by industry specialist auditors perform earnings management through real activities manipulation to achieve its profit target because it is difficult for them to use the accrual of earnings management, due to higher risk of being detected by their auditors.

Table 6 also shows that management can use both earnings management as a substitute. When management could not use accrual earnings management to improve firm performance because their firms are audited by industry-specialist auditor, then management switch to use earnings management through real activities manipulation to achieve the expected profit targets.

This evidence is consistent with O'Keefe et al. (1994) who reported higher adherence to auditing standards by auditors with industry-specialist than auditors without specialized industry.

The percentage of inventory and accounts receivable to firms' total assets (INVAR) has positive and significant impact on earnings management through real activities manipulation, consistent with Roychowdhury (2006). The higher percentage of inventory and receivables to total assets provide management more ability to do earnings management through real activities manipulation. Inventories and accounts receivable can provide flexibility for managers to accelerate the recognition of sales discounts and sales while also lower the probability to be detected by stakehold-

ers and regulators (Roychowdhury, 2006).

Regression result for Model 3 is presented in Table 8. We can see that ASIZE have insignificant effect on PBV. Audit firm size do not have significant effect on firm value (hypothesis 4a is rejected). This result is not consistent with Choi & Jeter (1992) and Ardiati (2005), but supports Herusetya (2009) finding. Herusetya (2009) finds no evidence that markets react differently between firms audited by Big 4 and non Big 4.

Plausible explanation for this finding

may be because investors assume that audit quality of both audit firms (Big 4 and non Big 4) is not significantly different. Previous findings have also explained that larger audit firm in Indonesia does not guarantee to provide higher audit quality because of weak law enforcement (Kwon et al., 2007). Weak law enforcement, in conjunction with low risk litigation, provides limited motivation for auditors to limit opportunistic earnings management.

**Table 8 Regression Results Model 3**

$$PBV_{it} = c_0 + c_1ASIZE_{it} + c_2SPCL_{it} + c_3DAC_{it} + c_4ABCFO_{it} + c_5ROE_{it} + c_6SIZE_{it} + c_7D07_{it} + c_8D08_{it} + c_9D09_{it} + e_{it}$$

Variable	Prediction	Coefficient	t-stat	Sig.
(Constant)	?	0,885	1,962	0,0255 **
ASIZE	+	0,078	0,990	0,1615
SPCL	+	-0,068	-0,530	0,2985
DAC	-	0,051	1,063	0,1440
ABCFO	+	0,109	2,414	0,0080 ***
ROE	+	0,293	7,186	0,0000 ***
SIZE	+	0,039	1,243	0,1075
D07	+/-	0,249	1,946	0,0260 **
D08	+/-	-0,429	-3,308	0,0005 ***
D09	+/-	-0,244	-1,850	0,0325 **
F-statistic		14,432		
Sig. (F-statistic)		0,000	***	
Adjusted R-squared		0,251		

PBV = price-to-book value; ASIZE = 3 if the company audited by Large Group, Group 2 if the company audited by Medium Large, 1 if the company audited by Small Groups; SPCL = 1 if the company audited by industry specialist auditors and 0 if audited by the non-specialist auditors; DAC = absolute value of discretionary accruals; ABCFO = abnormal CFO; ROE = return on equity; SIZE = natural logarithm of total assets. Significant \*\* 5% \*\*\* significant 1%

We also do not find evidence that industry-specialist auditor has positive and significant effect on firm value, hence hypothesis 4b is rejected. This finding is not consistent with Balsam et al. (2003). Maybe because investors in Indonesia could not distinguish which auditor is industry-specialist auditor and which one is not. Or maybe they have their own criteria or definition about what they considered as industry-

specialist auditors.

DAC is not significantly affect PBV, so hypothesis 5a is also rejected. This finding is not consistent with Harrison (1977) and Zhang et al. (2006). Probably investors do not have enough information to determine whether firms are engaging in accrual earnings management. Another possible explanation is functional fixation of investor. Investors only see the bottom line as the

major criteria for their investment decision, regardless of how it is generated (Purnomo and Pratiwi, 2009).

ABCFO has a positive and significant effect on PBV. This indicates that earnings management through real activities manipulation significantly and negatively related to firm value so that the hypothesis 5b cannot be rejected. This result is consistent with Ewert & Wagenhofer (2004), in Gunny (2005), which find that real activities manipulation reduce firm value. Real activities manipulation is extremely costly for firms than accrual earnings management (Cohen & Zarowin, 2010) because of the the real effect on firm's operation. There is high possibility of negative future cash flows as a consequence of managers' initiatives to increase profits this year. This negative signal as a consequence will be valued negatively by investors.

ROE, as a control variable, has positive and significant effect on PBV. The market gives higher response for firms with good performance, consistent with Yanivi (2010). Whereas SIZE has insignificant effect on PBV.

## CONCLUSIONS

This study aims to examine the effect of audit quality (audit firm size and auditor industry specialization) on earnings management (accrual earnings management and real activities manipulation) and firm value. We find that auditor industry specialization can reduce the accrual earnings management, whereas the result for audit firm size shows that firms audited by large audit firm has higher discretionary accruals than firms audited by non large audit firm. We also find firms audited by industry specialist-auditor tend to engage in real activities manipulation, possibly due to difficulties to conduct accruals earnings management as they are audited by industry-specialist auditor. On the other hand, audit firm size has negative association with real ac-

tivities manipulation. Taken together, these results indicate that accrual earnings management and real activities manipulation are used as a substitute by management. Real activities manipulation by management reduces firm value while accrual earnings management does not has significant affect, probably because real activities manipulation has real negative consequences for firms' business.

## IMPLICATIONS

Our study provides indication that only industry-specialist auditors provide higher quality (reducing accrual earnings management), which provide input for regulator in making oversight policy to improve the quality of public accountants (auditors). This finding also indicates that the development of auditor expertise in a particular industry can improve the audit quality. Therefore, public accountants are expected to constantly improve their competence and expertise. Investors need to identify whether audit firm is an industry-specialist auditor. We also find that real activities manipulation reduce the firm value, which suggest that firms should aware of the negative consequences of their actions.

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