

# The Effect of Audit Quality on Earning Management within Manufacturing Companies Listed on Indonesian Stock Exchange

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#### **Abstract**

Indonesia began to implement economic and tax reforms. Accordingly, it is important to explore further how managers of manufacturing companies listed on Indonesia Stock Exchange engage in earning management. Audit quality was measured by two different proxies; i.e., audit firm size and industry specialist auditors, while earnings management was measured by discretionary accruals. Meanwhile, leverage, firm size, and operating cash flow served as control variables. The sample involved in this study comprises of manufacturing companies listed on the Indonesia Stock Exchange; covering 420 firm-year observations from the fiscal years 2010 to 2013. This study applied a Multiple regression analysis in estimating the relationship between the audit quality and earning management. As hypothesized in this study, the results showed that audit quality and earning management are negatively related. The findings advance the current knowledge pertaining to audit quality and earning management relationship in the context of emerging economies such Indonesia.

**Keywords:** audit quality, earning management, Indonesian manufacturing companies

# 1. Introduction

It is widely recognized that auditing is a cornerstone in developing and enhancing the global economy and business firms. In context business environment, auditors are required to provide objective assessments concerning whether companies are managed responsibly and effectively to achieve the intended results. Andersen (2000) suggests the role of auditors could be distinguished into five: objectives, reporting lines, profession, and interactions with others. This is important for the companies to achieve achieve accountability, improve operations, and instill confidence among stakeholders. In this perspective, Al-Khaddash et al. (2013) are of opinion that the stakeholders need to gain assurance that the data being reported are properly measured and fairly presented. Accordingly, auditors must raise their capability and independency level, use appropriate tools, and provide advisory services to fulfill each of their roles.

There is a growing literature examining the relation between audit quality and earnings management, suggesting that the use of higher quality auditors is positively related to less earnings management (e.g., De Angelo, 1981; Healy and Wahlen, 1999). De Angelo (1981) holds that the size of the audit firm could be used as a proxy for audit quality because larger firms; presuming that larger audit firms are better equipped and are more independent. In other words, the audit quality increase as the size of the audit firm gets larger. In contrast, a number of studies provided evidence that Big Four auditors (as a proxy for higher quality audit) may not provide higher audit quality than non Big Four auditors (Yasar, 2013). In the context of Korea cases, for example, Jeong and Rho (2004) suggest that there is no difference in audit quality between Big Six and non Big Six auditors. The authors suggested that the earnings management practices are not influenced by auditors' intervention. It is actually depend on the institutional setting established and adhered to encourage high-quality audits. Likewise, in the context of Greece cases, Tsipouridou and Spathis (2012) found that there is no significant difference between earnings management practices of firms audited by Big Four auditors and non Big Four auditors. Al-Khaddash et al. (2013) are of opinion that audit firm size is irrelevant in the selection of an auditor. According to the authors, there might be several factors that affect audit quality; emphasizing audit quality is not just affected by audit firm size.

Considering Indonesia began to implement one of the most comprehensive tax reforms in Asia (Tanzi and Shome, 1992), accordingly, it is important to explore further how managers of Indonesian manufacturing industry listed in IDX engage in earning management. The rationale is that the economy nature in developed and developing countries might be different and become an important contingency. Furthermore, auditors have greater incentives not to disclose material misstatements in order to retain clients and maintain good relationship



to them. They are likely to go along with managers' intervention to engage in earnings management. Such a association could potentially affect the integrity of financial reporting, as Chen et al. (2006) suggested.

The rest of this paper is organized as follows. Section 2 includes a detailed review of the literature related to audit quality, earnings management, and hypotheses development that are to be tested in this study. Section 3 provides a discussion on the research methodology implemented in this study, including the data and sample selection process as well as models for testing the hypotheses. Section 4 concerns the results discussion. It starts with the discussion of the general characteristics of the sample, the results of the univariate analysis. The multivariate analysis results for testing the hypotheses is also reported and discussed in this section. Lastly, Section 5 provides the conclusion of the study. It comprises of a summary of the literature, hypotheses, research methods, and the findings of the tests and the implications of the findings. The limitations of the study as well as a discussion on future research areas will be discussed in this section.

#### 2. Literature review and hypothesis development

#### 2.1 Earning management

There is a growing attention on earnings management as manipulation methods that allow managers to meet reporting goals under a certain economic circumstances (Healy and Walen, 1999; Chen et al., 2006; Chen, 2010). In this perspective, Healy and Wahlen (1999) stated 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 practices". In addition, earning management is also could be referenced as a reasonable and legal management decision making and reporting, intended to achieve and disclose stable and predictable financial results (Chen, 2010). Meanwhile, Roychowdhury (2006) views earnings management as departures from normal operational practices that occur trough managerial intervention in the reporting process; i.e., via accounting estimates and methods and operational decisions as well.

According to Healy and Wahlen (1999), managers engage in earnings management for three reasons: capital-market motivation, contracting motivation, and regulatory motivation. This could be achieved through, for example, acceleration of sales, alterations in shipment schedules, and delaying of research and development and maintenance expenditures. Chen et al (2006) described managers engage in earnings management to minimise the cost of capital or political costs, or to maximise their compensation such as bonus plan and stock options. In this sense, the minimization of capital or political costs will work to the advantage of the companies, while compensation maximization will benefit management at the cost of shareholders. This earning management practices, in part can be mitigated by hiring high quality auditors, presuming that high quality auditors tend to offer higher quality of audit and produce higher information quality and credibility.

The engagement of executives in earnings management might occur trough accounting estimates and methods, and operational decisions as well. This intervention includes accruals manipulation in term of sales, shipment schedules, and research, development, and maintenance expenditures. Roychowdhury (2006) is of opinion that the engagement of executives in earnings management is by accrual manipulation, i.e., manipulation of accruals which has no direct cash flow consequences. This include under-provisioning for bad debt expenses and delaying asset write-offs. In addition, managers might engage in earning management through real activities manipulation during the year to meet certain earnings targets. This type of real activities manipulation, such as reductions in expenditures on research and development, will affects cash flows and in some cases, accruals.

#### 2.2 Audit quality

Audit quality has been conceptualized in different ways. Following De Angelo (1981), the audit quality could be referenced as "the market-assessed joint probability that an auditor will discover misstatement in the client's accounting system, and report the misstatement". In particular, the probability that an auditor will discover a misstatement represents the quality in terms of auditor knowledge and capability, while the probability that an auditor will report the misstatement is a measure of an auditor's independence level. Similarly, Suseno (2013) emphasizes that audit quality is normally related to the capability of the auditor to identify material misstatement in the financial statements. It is also concerned with the auditor willingness to disclose an unbiased audit report based on the audit result. De Angelo (1981) further suggests that audit quality is a function of the auditor's ability which is distinguished into two dimensional functions: technical capability and auditor independence. Technical capability dimension is concerned with its capability to detect material misstatements and errors in financial statements. Auditor independence dimension is concerned with the report of these materials misstatements and errors.

Audit quality measurement is a complex issue. Efforts in measuring audit quality can be distinguished as direct measures and indirect measures. Direct measures include financial reporting compliance with GAAP, quality control review, bankruptcy desk review and SEC performance. Meanwhile, audit firm size, auditor tenure, industry expertise, audit fees, economic dependence, reputation and cost of capital are indirect measures of audit



quality (Chadegani, 2011). Previous studies of audit quality and its measurement suggested the use of audit firm size as a proxy for audit quality; presuming the large audit firms tend to perform more powerful tests and are more likely to be associated with more precise information than are smaller audit firms (Al-Khaddash et al., 2013). Previous studies focusing on the relationship between audit quality and audit firm size have provide empirical evidence that audit firm size and audit quality are positively related. For example, Dopuch and Simunic (1982) found that audit firm size and the extent of audit work are positively related because larger audit firms have more resources with which to conduct audit prosecution.

According to Healy and Wahlen (1999), managers engage in earnings management with the intent of either misleading stakeholders about an entity's performance, or influencing contractual outcomes based on accounting numbers. Memis and Cetenak (2012) suggested that the extent of earnings management may depend on the company's auditor. In this matter, the company may adopt a more conservative approach to financial reporting in the face of a higher quality audit. Accordingly, literature also suggested audit quality as a measure of earnings quality. After the liquidation of Arthur Andersen in 2002, the so-called Big Eight audit firms dwindled to the Big Four audit firms, i.e., Deloitte Touche Tohmatsu, Pricewaterhouse Coopers (PwC), Ernst and Young, dan Klynveld Peat Marwick Goerdeler (KPMG). Researchers including DeAngelo (1981) and Dopuch and Simunic (1982) disclose that big audit firms offer higher quality of audit because they have greater monitoring strength to result in higher quality and credibility of financial information. These big four accounting firms, as a proxy for high audit quality, tend to have higher monitoring strength that enables them to produce higher information quality and credibility, as DeAngelo (1981) found

# 2.3 Audit quality and earning management relationship

One important role of auditing is to reduce agency costs between managers and firms' stakeholders. In this perspective, auditors are supposed to assist financial statement users by verifying the validity of financial reporting. However, this important role is not necessarily true in reality as (Chen, 2006). Titman and Trueman (1986) suggested that the information asymmetry between management and shareholders creates a suitable environment and an opportunity for managers to engage in earnings management. In addition, as Chen (2006) argued, managers also have self-interested incentives to take advantage of such information asymmetry to window-dress reported earnings. Therefore, shareholders need to rely on contracting and monitoring to reduce agency costs. In this sense, a high quality auditor can be an effective monitoring tool.

Becker et al. (1998) tested hypothesis concerning the relationship between audit quality and earning management. The used big audit firms as a proxy for audit quality and utilized cross-sectional Jones model to measured earning management. Based on samples of firms audited by big audit firms and samples of firms audited by non big audit firms, they found that big audit firms are more conservative. In this sense, it was found that the average of discretionary accruals is 1.5 to 2.1 per cent lower for samples of firms audited by big audit firms. This is in line with DeAngelo (1981), who argues that non big audit firms have greater incentives not to disclose material misstatements in order to retain clients and maintain good relationship to them. Khurana and Raman (2004) argue that the capability to detect as well as the independency level do disclose material misstatements in financial reports varies across audit firms. The authors claimed that big audit firms tend to spend more money and time for training and formal education for their auditors as an effort to enhance their auditors' capacity and capability. Meanwhile, Francis and Krishnan (1999) found that an increase in accrual revenue tend to lead to legal problems so that big audit firms tend to choose clients with lower accrual revenue to avoid legal problems and bad reputation.

In the context of Chinese cases, Chen et al. (2006) find that companies engaging in earnings management are more likely to receive modified audit opinions. Their finding suggested that, in order to meet the profitability requirements, asymmetric profitability requirements exacerbate managers' propensity to engage in earnings management. Francis and Krishnan (1999) argue that high-accrual companies have greater opportunity for engaging in earnings management. These companies are more likely to hire a big audit firm to provide assurance that earnings are credible. These companies also tend to respond to debt contracting and income-decreasing incentives by strategically reporting discretionary accruals and report lower discretionary accruals, consistent with big auditors constraining opportunistic reporting of accruals. In addition, they found that companies with incentives to decreasing discretionary accruals when they are audited by non big audit firms.

In sum, previous studies focusing on the relationship between audit quality and earning management generally suggested that auditor quality can play an important role to constrain earnings management. In the context of Indonesia case, this study hypothesizes that the Indonesian manufacturing companies audited by Big Four auditors will engage in less earnings management than the companies audited by non Big Four auditors.

# 3. Research methodology

# 3.1 Sample

The sample involved in this study comprises of manufacturing companies listed on the Indonesia Stock



Exchange (IDX) for the years 2010 - 2013. This study focuses on listed companies from manufacturing industry to reduce the effect of industry differences. The criteria applied in the sample selection: the targeted sample is non-regulated companies and is listed IDX in 2010 – 2013. This sample selection procedure yields a sample of 420 firm-year observations from the fiscal years 2010 to 2013.

#### 3.2 Variable measurement

#### 3.2.1 Dependent variable

The dependent variable in this study is earnings management. For the purpose of this study, discretionary accruals were applied to proxy for earnings management. The use of discretionary accruals to proxy for earnings management is eminent in the extant literature on earnings management (Gerayli et al., 2011). While discretionary accruals could be estimated using different ways, this study measure discretionary accruals by using pooled cross-sectional variation of the Modified Jones model. The following are formula applied in estimating of discretionary accruals.

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Non discretionary accruals (NDA)
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NDA_{it} = \beta_{1} \left( 1/A_{it\text{-}1} \right) + \beta_{2} \left( \Delta REV_{it} \, / A_{it\text{-}1} - \Delta REC_{it} \, / A_{it\text{-}1} \right) + \beta_{3} \left( PPE_{it} \, / \, A_{it\text{-}1} \right)
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#### Discretionary accruals (NDA)

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DA_{it} = (TA_{it}/A_{it-1}) - [\beta_1 (1/A_{it-1}) + \beta_2 (\Delta REV_{it}/A_{it-1} - \Delta REC_{it}/A_{it-1}) + \beta_3 (PPE_{it}/A_{it-1})]
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#### Total accruals (TA)

 $TA_t = IBEI_t - OCF_t$ 

where:

 $TA_{it}$  = total accruals for sample firm i in year t  $A_{it-1}$  = total assets for sample firm i in year t-l

 $\Delta REV_{it}$  = change in net revenues for sample firm i in year t  $\Delta REC_{it}$  = change in accounts receivable for sample firm i in year tPPE<sub>it</sub> = gross property plant and equipment for sample firm i in year t

 $TA_{it}$  = total accruals for sample firm i in year t $IBEI_t$  = income before extraordinary items of year t

 $OCF_t$  = net operating cash flows of year t

### 3.2.2 Independent variable

The independent variable in this study is audit quality. In particular, this study utilized two different measures as follows:

Auditors' size

The first independent variable being investigated in this study is the auditor size. Following Becker et al. (1998) suggestion, this study utilized Big Four auditors to proxy for higher audit quality and used non Big Four auditors to a proxy for lower audit quality. It is argued that Big Four auditors tend to spend more money and time for training and formal education for their auditors as an effort to enhance their auditors' capacity and capability (Khurana and Raman, 2004). This study set auditor size equal to 1 if the company audited by Big Four audit firm, otherwise, 0.

#### Industry specialization auditors

In addition to auditor size, this study also considers industry specialization auditors to be another proxy for audit quality (Krishnan, 2003). The rationale is that industry specialization auditors invest heavily in technologies, physical facilities, personnel, and organizational control systems that enable them to detect irregularities and misrepresentations more easily (Kanagaretnam et al. 2010).

# 3.2.3 Control variable

This study includes three control variables that are frequently used in previous studies to control for other relevant variables influencing discretionary accruals: i.e., size of firm (SIZE), operating cash flows (OCF), and leverage (LEV).

Firm Size

The first control variable included in the model of this study is firm size (SIZE). Following (Becker et al., 1998), SIZE is defined as the nature log (ln) of total assets. This variable is used to control the likely impact of firm size on the discretionary accruals of the sample firms.

# Operating cash flows

The second control variable included in the model of this study is operating cash flow (OCF). For the purpose of this study, OCF is defined as operating cash flow divide by total assets (Becker et al., 1998).

#### Leverage

Finally, the second control variable included in the model of this study is leverage (LEV). Referring to Becker et al. (1998), LEV is defined as ratio of total debt to total assets.



# 3.3 Estimation models and regression formula

In addition to conduct a number of univariate tests, this study employed a multiple regression analysis (MRA) to examine the relationship between the dependent variable (earning management) and the independent variable (audit quality). For this reason, this study regress discretionary accruals on a dummy variable indicating audit firm size and three control variables. Specifically, this study estimate the coefficients of the following regression model:

 $\beta_0 + \beta_1 \operatorname{Big}_{it} + \beta_2 \operatorname{SPEC}_{it} + \beta_3 \operatorname{SIZE}_{it} + \beta_4 \operatorname{LEV}_{it} + \beta_5 \operatorname{OCF}_{it} + e_{it}$  $DA_{it}$ 

where:

DA Discretionary accruals

dummy variable (1 if the firm is audited by a Big Four auditor, 0 BIG

otherwise)

SPEC dummy variable (1 if market share > 20 percent, and 0 otherwise)

firm size defined as natural log of firm's total assets SIZE

LEV ratio of total debt to total assets

OCF operating cash flows divided by total assets at fiscal year-end

the error term

#### 4. Results and discussion

#### 4.1 Descriptive statistics

Table 1 presents a summary of descriptive statistics of audit quality and earnings management variables in the context of Indonesian manufacturing companies listed on IDX. Audit quality was measured by two different proxies; i.e., auditor size and industry specialist auditors, while earnings management was measured by discretionary accruals. As depicted in Table 1, the values for discretionary accruals (DA) ranged between 0.348 and 1.298. The distribution of the values showed that the mean value of discretionary accruals was 0.611 point. It was also found that 59.0 percent of the sample is audited by the Big Four auditors.

Furthermore, it was found that, on average, 67.6 percent of the Indonesian manufacturing companies listed on IDX were audited by the industry specialist auditors. With respect to the leverage variable, the data presented in Table 1 shows that the mean value of ratio of total debt to total assets is 0.692. It indicates that 69.2 percent of total assets of listed Indonesian manufacturing companies are financed by debt. In other words, the companies operate with high level of financial leverage.

Table 1. Descriptive statistics

Variables	Mean	Maximum	Minimum	Std. deviation
DA	0.611	1.298	0.348	0.179
BIG	0.590	1	0	0.494
SPEC	0.676	1	0	0.470
SIZE	6.144	8.209	3.064	0.769
LEV	0.692	0.915	0.388	0.127
OCF	0.068	0.411	0.015	0.033

BIG = dummy variable, 1 if the firm is audited by a Big Four auditor, 0 otherwise; SPEC = dummy variable, 1 if MS > 20 percent, and 0 otherwise; SIZE = firm size defined as log of firm's total assets; LEV = ratio of total debt to total assets; OCF = operating cash flows/total assets.

#### 4.2 Multivariate analysis

To obtain more insight with regard to the relationship between audit quality and earning management, then the independent variables were regressed on the dependent variable. Multiple regression analysis was applied to explore which variable are associated with the earning management. The results of this analysis are summarized in Table 2.



Table 2. The results of MRA

Variables	C6:-:	t-statistic	Collinearity statistics
v ariables	Coefficients		VIF
Intercept	0.254*	2.592	1.337
BIG	-0.481**	-3.697	1.214
SPEC	-0.258*	-2.458	1.635
SIZE	-0.352**	-3.304	1.471
LEV	0.326**	3.115	1.782
OCF	0.175	1.142	1.846
Adjusted R2	0.522		
Durbin Watson	3.167		
F-value	11.044		
P-value	0.000		

#### Notes

BIG = dummy variable, 1 if the firm is audited by a Big 4 auditor, 0 otherwise; SPEC = dummy variable, 1 if MS > 20 percent, and 0 otherwise; SIZE = firm size defined as log of firm's total assets; LEV = ratio of total debt to total assets; OCF = operating cash flows/total assets. \* = significant at 5 % level; \*\* = significant at 1 % level

The results presented in Table 2 revealed that BIG variable ( $\beta = -0.481$ ; p<0.01) was found negatively and significantly associated with discretionary accruals. Accordingly, the first hypotheses of this study was supported. This result indicates a significant and negative relationship between audit firm size and earning management. The results also indicated that variable SPECT ( $\beta = -0.258$ ; p<0.05) negatively and significantly related to discretionary accruals; indicating a significant and negative relationship between industry specialist auditors and earning management. This leads to support the second hypotheses of this study.

Furthermore, it was found that the coefficient of LEV ( $\beta$  = 0.326; p<0.01) is positively and significantly associated with discretionary accruals. This is in line with previous studies concerning the relationship between Leverage and discretionary accruals. It was also found that SIZE ( $\beta$  = - 0.352; p<0.05) is negatively and significantly associated with discretionary accruals. It means that the larger the firms, the lower the discretionary accruals. Meanwhile, the coefficient of OCF ( $\beta$  = 0.175) is not statistically significantly associated with discretionary accruals. To assess the presence of multicolinearity, this study examined variance inflation factor (VIF) for all the variables. As it emerged, all VIF values vary between 1.214 and 1.846, confirming that multicolinearity is not concerned in the model.

## 5. Conclussions

A number of studies have investigated the relationship between audit quality and earning management. However, most of these studies were conducted in the developed countries. Very little is empirically known pertaining to the relationship in emerging economies such Indonesia. The purpose of this study is to examine the effect of audit quality on earnings management through discretionary accruals in the Indonesian manufacturing companies listed on Indonesia Stock Exchange. In this sense, audit quality was measured by two different proxies; i.e., auditor size and industry specialist auditors, while earnings management was measured by discretionary accruals. This study hypothesis that audit quality and earnings management are negatively related. Based on a sample of 420 firm-year observations from the IDX for fiscal years 2010 to 2013, this study found that auditor firm size is negatively associated with the earnings management. The result indicates that Indonesian manufacturing companies audited big four auditors by will engage in less earnings management than those audited by non-big four auditors. This study also finds that Indonesian manufacturing companies audited by industry specialist auditors engage in less earnings management.

The results of this study support the finding of previous studies; suggesting the big size auditors are associated with reduced management discretion over earnings (Dopuch and Simunic, 1982; Becker et al., 1998; Francis and Krishnan, 1999). The results from examining the relationship between industry specialists auditor and earnings management also support the findings of previous studies (Krishnan, 2003; Dunn et., 2000); suggesting that auditor industry specialists can be used to constrain earnings management.

However, this study has several methodological and theoretical limitations that could be noted to point to lines for future research. First, the sample only covers five years of Indonesian data. Second, this study do not includes inflation and other economical factors on the figures related to financial statements. Accordingly, this study suggests future research should include other factors that may affect the occurrence of earnings management such as corporate governance mechanisms.



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