



Audit Quality, Board Governance and Real Earnings Management – Indonesian Evidence

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Abstract

This paper outlines the research that investigates the impact of audit quality on earnings management with board governance moderation. Audit quality is proxied by audit firm size, while board governance is measured by board independence. This research used data on manufacturing companies listed on the Indonesia Stock Exchange in 2017-2021 and obtained 102 companies or 510 firm-year observances. This research found that a strong governance board encourages the quality of auditors to prevent real earnings management practices. When real earnings management is decomposed into three measures, the measure that produces the findings is consistent with aggregate real earnings management, only real management of production costs. Meanwhile, real earnings management of operating cash flows produces insignificant findings, while real management of discretionary expenditures produces opposite results. This research complements the previous literature on earnings management and the variables that influence it, both positive and negative influences.

Key terms: real earnings management, audit quality, board governance, firm size audit

JEL classification: M40, M41, M42

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Introduction

This paper describes research that investigates the impact of audit quality on earnings management with board governance moderation. This research was motivated by the inconsistency of previous research findings on the effect of audit quality on earnings management. Some previous studies reported positive influences, negative influences and no impact of audit quality on earnings management. Earnings management has become a significant concern for policymakers and regulators after the financial scandal of the early 20th century (Hassan *et al.*, 2023). Earning is essential data for understanding other things, such as contractual obligations, bonus plans, board remuneration and asset valuation (Alzoubi, 2018; El Ghoul *et al.*, 2016). Users use earnings information to make economic decisions, such as determining a company's financial position and credibility before lending funds to the company (Enomoto *et al.*, 2015; Ge & Kim, 2014). Shareholders also utilize earnings information to monitor the company's operational performance.

Nonetheless, decisions made by users can only be correct if they can identify the possibility of earnings manipulation (Bouaziz *et al.*, 2020). The impact of this earnings manipulation will be seen in the future when the company's real performance does not match the estimates. The quality of earnings is influenced by earnings





management practices (Sitanggang *et al.*, 2020). The chances of this manipulation increase if governance mechanisms are ineffective.

The quality of external auditors also influences earnings quality because external auditors are independent parties who provide guarantees about the quality of accounting figures. High-quality auditors can detect material misstatements, so restatements may likely need to be made to previous financial statements. However, capital markets tend to react negatively to previously audited financial reporting revisions because investors perceive revisions or restatements as audit failures in detecting material misstatements (Al-Shaer *et al.*, 2017; Palmrose *et al.*, 2004).

Although the role of external auditors is crucial in preventing earnings manipulation, previous research on the relationship between audit quality and real earnings management yielded inconsistent findings. Some studies report that the quality of audits proxied by audit firm size measures positively affects real earnings management (Cohen & Zarowin, 2010; Danyu, 2014; Inaam et al., 2012; Chi et al., 2011). Some studies report that audit quality negatively affects real earnings management (Debnath et al., 2022). When audit quality is proxied with the industry specialization auditor, audit quality negatively affects real earnings management (Nur et al., 2019; Hsu & Liao, 2023). It does not affect real earnings management (Debnath et al., 2022; Nugrahani & Ruhiyat, 2018).

This condition opens up further research opportunities by including other variables that affect the quality of accounting information as a moderation, that is board governance, to complement the existing literature, because board governance is one of the instruments that ensure the quality of accounting information (Gouiaa & Zéghal, 2014; Krismiaji *et al.*, 2016). Therefore, research questions can be formulated as follows:

Q1: How does the association between audit quality and earnings management moderate by board governance in companies listed on the Indonesia Stock Exchange in 2017-2021?

This research provides further evidence on the effect of audit quality and board governance on earnings management using Indonesian companies' data. Thus, the results of this study enrich the previous literature on audit quality, earnings management and board governance.

This paper is organized with the following systematics. After explaining the background, motivation, previous research, research opportunities (gaps), objectives and research questions in the introduction session, this article discusses the literature review and hypotheses formulation in part two. Furthermore, this paper describes the research method in part three, followed by the analysis and discussion of the research results in part four. In the last section, this paper concludes by outlining the conclusions, implications, limitations and opportunities for further research.

Literature review and hypotheses development

This research uses agency theory because earnings management is an implication arising from agency relationships. Agency theory explains and predicts the agency relationship between principals and agents (Jensen & Meckling, 1976). An agent is a party authorized by the principal to manage a company to generate benefits for the principal. In practice, agents only sometimes work for the principal's interests, but tend to work to meet their interests, thus creating problems in agency relationships.

One problem that arises from the agency relationship is information asymmetry, that is the difference in information about the company between the information received and owned by the principal and the information owned by the agent. To assure that the company information received and owned by the principal is quality information, not engineered, not manipulated by agents, specific instruments are needed, namely audits of financial statements conducted by external auditors (Fossung *et al.*, 2022; Jensen & Meckling, 1976; Watts & Zimmerman, 1983), and monitoring instruments in the form of corporate governance (ElKelish, 2018).

The relationship between audit and earnings management has been researched before. For example, audit quality was more effective in limiting earnings management in countries with solid governance mechanisms (Alhmood *et al.*, 2020; Gopalan & Jayaraman, 2011). Incentives to manage earnings decreased with the existence





of effective corporate governance (Dyck & Zingales, 2004). Previous research has shown that industry specialists and Big Four auditors negatively affect earnings management (Nur *et al.*, 2019). Rhee *et al.* (2021) used Big 10 auditors to measure audit quality and reported that Big 10 auditors are more likely to control earnings manipulation than non-Big 10 auditors. Chen *et al.* (2011) report that Big Four auditors restricted earnings management practices. Research conducted by Ge & Kim (2014) found that in the event of a conflict or convergence of reporting incentives, Big Four auditors are more effective than non-Big Four companies in limiting earnings management. However, Badertscher (2011), which used data from the UK, France and Germany, found that the quality of Big Four auditors varies depending on the effectiveness of corporate governance. Hassan *et al.* (2023) prove that the negative relationship between governance mechanisms and earnings management increases when Big Four auditors audit companies. Based on these studies, the research hypothesis is formulated as follows:

H1: Big Four auditor is more effective in limiting earnings management if strong corporate governance exists.

Chan et al. (2015) and Marra et al. (2011) state that earnings management obscures the company's performance, giving rise to information asymmetry. Agency theory states that high-quality audit decreases information asymmetry between agents and principals (Commerford et al., 2016). Corporate governance is necessary to overcome agency conflicts (Aksar & Ahmed, 2022). The ability of audit companies to limit earnings management varies according to the auditor's quality. High-quality auditors are more likely to detect the presence of dubious accounting practices, and when things are distorted, the auditors will report these irregularities in the report (Kim & Sohn, 2013). Thus, high-quality audits effectively deter earnings manipulation because the detected earnings management practices can damage management's reputation and degrade the company's value.

On the other hand, corporate governance mechanisms minimize the expropriation of managers' resources by ensuring that managers use company assets effectively to benefit creditors and investors (Ahmed *et al.*, 2022). Therefore, corporate governance moderates the relationship between audit quality and earnings management. Therefore, the researchers formulated the research hypothesis as follows:

H2: Corporate governance moderates the relationship between audit quality and earnings management.

Research methods

The population used in this study was all companies listed on the Indonesia Stock Exchange (IDX). Samples were selected using purposive sampling techniques. The first requirement is a public company listed on the IDX from 2017-2021. The second requirement is that such enterprises belong to the manufacturing industry. The third criterion is that these companies have publicly available information. The data comes from the company's website and the capital market database (www.idx.co.id). The unit analysis used in this study is the firm year. The reasons for choosing a manufacturing company are twofold. First is that a manufacturing company is the most comprehensive enterprise in its activities to represent the features of the industry or other sectors. The second reason is that from the data point of view, especially the data needed to measure real earnings management. Manufacturing companies have all the required data.

Research variables

The dependent variable used in this research is real earnings management (REM), measured using a model initiated by Roychowdhury (2006). There are three models to measure real earnings management: abnormal cash flow, abnormal production costs and abnormal discretionary costs. The models used are as follows:

$$CFO_{t}/A_{t-1} = \alpha_{0} + \alpha_{1}(1/A_{t-1}) + \beta_{1}(S_{t}/A_{t-1}) + \beta_{2}(\Delta S_{t}/A_{t-1}) + \epsilon_{t} \quad (1)$$

$$PROD_{t}/A_{t-1} = \alpha_{0} + \alpha_{1}(1/A_{t-1}) + \beta_{1}(S_{t}/A_{t-1}) + \beta_{2}(\Delta S_{t}/A_{t-1}) + \beta_{3}(\Delta S_{t-1}/A_{t-1}) + \epsilon_{t} \quad (2)$$

$$DISEXP_{t}/A_{t-1} = \alpha_{0} + \alpha_{1}(1/A_{t-1}) + \beta(S_{t-1}/A_{t-1}) + \epsilon_{t} \quad (3)$$





Where:

 CFO_t/A_{t-1} – operating cash flow in the year of t divided by total assets in the year of t-1;

 $\alpha_t(1/A_{t-1})$ – intercept divided by total asset in the year of t-1;

 S_t/A_{t-1} – sales revenue in the year of t divided by total assets in the year of t-1;

 $\Delta S_t/A_{t-1}$ – sales revenue in the year of t minus sales revenue in the year of t-1 divided by total assets in the year of t-1;

 $PROD_t/A_{t-1}$ – production cost in the year of t divided by total assets in the year of t-1, calculated as follows: $PROD_t = COGS_t + \Delta INV_t$;

 $\Delta S_{t-1}/A_{t-1}$ – the change in sales revenue from the year of t-1 divided by total assets in the year of t-1;

 $DISEXP_{t}/A_{t-1}$ – discretionary expenditure in the year of t divided by total assets in the year of t-1;

 S_{t-1}/A_{t-1} – sales revenue in the year of t-1 divided by total assets in the year of t-1;

 ϵ_t – error term year t.

The regression equations (1), (2) and (3) result in normal operating cash flow, normal production costs and normal discretionary costs. This study requires abnormal operating cash flow, abnormal production costs and abnormal discretionary costs. Then, the abnormal value in real management is calculated by subtracting the total real cash flow, real production costs and real discretionary costs with normal operating cash flow, normal production costs and normal discretionary costs. The residual value (abnormal values) of the three equations combined is a REM number, a dependent variable for testing hypotheses.

The independent variable is audit quality. There are several ways to measure audit quality, including the size of firm audits (Big Four or non-Big Four), audit fees, audit tenure audits, audit specializations, and others. In this study, researchers use the audit firm size. This study also used several control variables, namely company size (SIZE), which was measured using a natural log of total assets, and debt-to-asset ratio (LEV), which was measured by dividing total debt by total assets. SIZE is used to control variations in company size because company size is the dominant factor that affects various aspects of a company's operations. LEV is used because companies with high debt ratios are more likely to have financial problems, which, in turn, impacts the level of earnings management.

Model specifications

To test the hypothesis, the researchers use the following equation:

$$REM_{it} = \alpha_{it} + \beta_1 ASI_{it} + \beta_2 BIND_{it} + \beta_3 ASI \times BIND_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \epsilon_{it}$$
 (4)

REM is real earnings management measured by summing the value of abnormal operating cash flows, abnormal discretionary costs and abnormal production costs. ASI is audit quality measured by the audit firm size. BIND is board independence, a measure of board governance. SIZE is the company's size and the control variable, LEV is leverage, that is the ratio of debt to assets and the control variable, and ϵ is the residue. There are three models of measuring real earnings management: operating cash flow, discretionary expenditures and production costs. Therefore, equation (4) is expanded by detailing REM into REMC, real earnings management operating cash flow, REMD, real earnings management discretionary expenditure, and REMP, real earnings management production costs, as follows:

$$REMC_{it} = \alpha_{it} + \beta_1 A Q_{it} + \beta_2 B G_{it} + \beta_3 A Q \times B G_{it} + \beta_2 S I Z E_{it} + \beta_3 L E V_{it} + \epsilon_{it}$$
 (5)

$$REMD_{it} = \alpha_{it} + \beta_1 A Q_{it} + \beta_2 B G_{it} + \beta_3 A Q \times B G_{it} + \beta_2 S I Z E_{it} + \beta_3 L E V_{it} + \epsilon_{it}$$
 (6)

$$REMP_{it} = \alpha_{it} + \beta_1 A Q_{it} + \beta_2 B G_{it} + \beta_3 A Q \times B G_{it} + \beta_2 S I Z E_{it} + \beta_3 L E V_{it} + \epsilon_{it}$$
 (7)

Data analysis and discussion

Univariate analysis

Based on the sampling process, this study obtained data on 102 manufacturing companies from 2017 to 2021, so observations were obtained from as many as 510 firm years. Table 1 presents descriptive statistics





of sample data. The results show that all variables used in the scoring model have a reasonable degree of variation. On average, sample companies have a positive REM (except REMP). This result suggests that the company in the sample is engaged in manipulating real earnings and above. Real earnings management ranges from -11.09 to 28.81, with a mean of 0.03, a median of 0.15 and a standard deviation of 2.61. REM consists of REMC, REMD and REMP, each having mean (median) values of 0.02 (-0.11), 0.02 (-0.11) and -0.08 (0.09). The mean shows that the direction of real earnings management is positive, except for REMP earnings management, which has a negative direction. Table 1 also shows that the company size varies significantly, with a range between 4.12 to 8.66, with a mean (median) of 6.23 (6.13). In contrast, financial leverage shows a broader variation with a range of 0.04 to 7.65 and a mean (median) of 0.62 (0.51).

Table 1. Descriptive statistics

	Minimum	Maximum	Mean	Standard deviation
REMC	-0.347	14.132	0.023	1.231
REMD	-0.757	14.218	0.024	1.189
REMP	-10.389	2.940	-0.081	1.084
REM	-11.085	28.809	-0.033	2.613
LEV	0.037	7.649	0.616	0.675
SIZE	4.119	8.655	6.234	0.732
ASI	0.000	1.000	0.400	0.490
BIND	0.001	1.500	0.440	0.206

■ Bivariate analysis

Pearson and Spearman correlations between variables are calculated and presented in Table 2. Testing of the correlation matrix for independent variables in Table 2 shows the absence of a correlation coefficient above 0.8. The correlation between BIND and ASI is 0.157. This correlation shows that there is no problem with multicollinearity. Table 2 also shows that the correlation between ASI and REM is positively and significantly correlated at 5%. In contrast, the correlation between BIND and REM is positive, although not significant. The correlation between the interaction variables of ASI x BIND with REM is positive and significant at the level of 1%. This condition is an early indication that independent variables affect dependent variables. Nonetheless, more comprehensive testing will be done through regression analysis.

Table 2. Pearson correlation

	REMC	REMD	REMP	REM	LEV	SIZE	ASI	BIND
REMD	0.869**							
REMP	0.034	0.033						
REM	0.881**	0.878**	0.446**					
LEV	-0.024	-0.038	0.112*	0.017				
SIZE	0.155**	0.098*	0.118**	0.166**	-0.025			
ASI	0.123**	0.102*	-0.030	0.092*	-0.073	0.352**		
BIND	0.105*	0.084	-0.078	0.054	-0.105*	0.067	0.157**	
ASI x BIND	0.179**	0.153**	0.009	0.158**	-0.067	0.336**	0.902**	0.378**

^{**, *:} Correlation is significant at 0.01 and 0.05, respectively.





■ Multivariate analysis

Before the hypothesis test is carried out, a classical assumption test is first carried out. From the test, it was concluded that there was no violation of the classical assumptions and no outliers in the tested data. To test the hypothesis which stated that audit quality positively affects real earnings management, a regression model (4) is used. The regression Model 4 is broken down into four models. The regression Model 4a is used to test the effect of individual audit quality on real earnings management, whereas Model 4b is used to test the influence of individual boards of governance on real earnings management, and Model 4c is used to test both variables simultaneously on real earnings management, without being interpreted. Model 4d is used to examine the effect of board of governance moderation on real earnings management. The results of the analysis are presented in the following Table 3.

Table 3. Regression analysis

$REM_{it} = \alpha_{it} + \beta_1 ASI_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \epsilon_{it}$	(4a)
$REM_{it} = \alpha_{it} + \beta_1 BIND_{it} + \beta_2 SIZE_{it} + \beta_3 LEV_{it} + \epsilon_{it}$	(4b)
$REM_{it} = \alpha_{it} + \beta_1 ASI_{it} + \beta_2 BIND_{it} + \beta_3 SIZE_{it} + \beta_4 LEV_{it} + \epsilon_{it}$	(4c)
$REM_{it} = \alpha_{it} + \beta_1 ASI_{it} + \beta_2 BIND_{it} + \beta_3 ASI \times BIND_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \epsilon_{it}$	(4d)

11-11-11 ON P1-10-11 P2-11-11 P3-10-11 P3-1-11 ON				\ - <i>I</i>	
Variable	Model 4a	Model 4b	Model 4c	Model 4d	
	Coefficient	Coefficient	Coefficient	Coefficient	
Intercept	-0.620 ***	-0.117 **	-0.822 **	-0.630 ***	
ASI	0.071 ***		0.116 ***	0.118 ***	
BIND		-0.142 ***	-0.201 ***	-0.027 ***	
ASI x BIND				-0.456 ***	
LEV	0.181 ***	0.186 ***	0.182 ***	0.183 ***	
SIZE	0.169 ***	0.159 ***	0.160 ***	0.146 ***	
Adjusted R ²	0.207	0.209	0.213	0.218	
F-statistic	45.390 ***	45.893 ***	35.455 ***	29.520 ***	

^{***, **, *:} Coefficient is significant at the 0.01 level, 0.05 and 0.1, respectively.

The 3-column table of Model 4a shows that ASI positively affects real earnings management. The same results were obtained when ASI testing was carried out simultaneously with BIND using Model 4c and Model 4d. The 3-column table of Model 4b shows that BIND negatively affects real earnings management, and these results are consistent when BIND is tested in conjunction with ASI using Model 4c and Model 4d.

The Model 4d is the primary model used to test hypotheses. Hypothesis 1 states that audit quality is more effective for limiting earnings management if the company has strong corporate governance. The results in Table 3 above prove this hypothesis. When audit quality is proxied by audit firm size (ASI) functions alone, audit quality cannot detect the presence of earnings management. A positive coefficient proves that higher audit quality improves real earnings management. This result follows the findings of previous research conducted by Cohen and Zarowin (2010), Danyu (2014), Inaam et al. (2012) and Chi et al. (2011). This positive result is in line with the findings of research conducted by Kim et al. (2010), which proves that real earnings management is more difficult to detect its existence by auditors, because it is almost the same as the company's daily operational activities.





(7)

Model 4d also proves hypothesis 2, which states that corporate governance moderates the relationship between audit quality and earnings management. A negative and significant BIND coefficient of 1% in the Model 4d shows that BIND, a proxy of board governance, negatively affects real earnings management. When ASI is combined with BIND, the result is negative and significant at 1%. This result shows that strong board governance involvement makes audit quality more effective in detecting real earnings management practices. In other words, board governance also improves the ability of auditors to limit the occurrence of real earnings management. These results also confirm previous research conducted by Debnath *et al.* (2022), Nur *et al.* (2019) and Hsu and Liao (2023), which found that audit quality negatively affects real earnings management.

■ Additional analysis

Additional analysis is done to obtain a more detailed picture of the results of the analysis. This is performed by detailing the measure of real earnings management in Model 4 into three models: real earnings management of operating cash flows in Model 5, real earnings management of discretionary expenditures in Model 6, and real earnings management of production costs in Model 7. The results of the analysis are presented in Table 4 below.

Table 4. Regression analysis

$REM_{it} = \alpha_{it} + \beta_1 ASI_{it} + \beta_2 ASP_{it} + \beta_3 ATEN_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \epsilon_{it}$	(4)
$REMC_{it} = \alpha_{it} + \beta_1 ASI_{it} + \beta_2 ASP_{it} + \beta_3 ATEN_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \epsilon_{it}$	(5)
$REMD_{it} = \alpha_{it} + \beta_1 ASI_{it} + \beta_2 ASP_{it} + \beta_3 ATEN_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \epsilon_{it}$	(6)

Variable	Model 4	Model 5	Model 6	Model 7	
	Coefficient	Coefficient	Coefficient	Coefficient	
Intercept	-0.630 ***	-0.365 ***	-0.093 ***	1.109 ***	
ASI	0.146 ***	0.316 ***	-0.082	0.253 ***	
BIND	-0.173 ***	-0.062 *	0.005 ***	-0.292 ***	
ASI x BIND	-0.456 ***	0.008	0.188 **	-0.145 **	
LEV	0.184 ***	-0.026 ***	0.079 *	0.048 ***	
SIZE	0.147 ***	0.114 ***	-0.015 ***	-0.093 ***	
Adjusted R ²	0.218	0.208	0.155	0.276	
F-statistic	29.520 ***	27.702 ***	19.792 ***	32.096 ***	

***, **, *: Coefficient is significant at the 0.01 level, 0.05 and 0.1, respectively.

 $REMP_{it} = \alpha_{it} + \beta_1 ASI_{it} + \beta_2 ASP_{it} + \beta_3 ATEN_{it} + \beta_4 SIZE_{it} + \beta_5 LEV_{it} + \epsilon_{it}$

Table 4 shows that among the three models of real earnings management details, Model 5, Model 6 and Model 7, only Model 7 is consistent with Model 4, i.e., aggregate real earnings management, although the significant value of the interaction variable is 5%, compared to Model 4, which has a significance of 1%. The Model column 5 indicates that the moderation variable of ASI x BIND is not significant in affecting the real earnings management of operating cash flow. BIND's ability to limit real earnings management of operating cash flows needs to be stronger. Although BIND has a negative regression coefficient, its value is not large enough, and the significance is only 10%. Therefore, if BIND cannot add to the auditor's ability to detect real earnings management of cash flow, because after these two variables have interacted, it is precisely the coefficient of insignificant regression, amounting to 0.008.





Model 6 in Table 4 shows that ASI has an insignificant negative regression coefficient of -0.082. This result means that the quality of the audit does not affect the earnings management of discretionary expenditures. Meanwhile, BIND has a positive and significant coefficient of 0.005. This result indicates that the board of directors encourages the real earnings management of discretionary expenditures. This result is likely due to the characteristics of discretionary expenditures that are the same as the normal operating expenses, so even the board of directors cannot detect them. Therefore, when these two variables interact, the interaction produces a positive and significant coefficient of 0.188. This result indicates that the combination of these two variables cannot prevent the occurrence of earnings management practices and even trigger an increase in earnings management practices.

Conclusion

This study investigates the effect of audit quality proxied by the size of the audit and the governance board proxied by the board independence of the real earnings management. This research resulted in the finding that the existence of strong board governance encourages the quality of auditors to prevent real earnings management practices. If real earnings management is decomposed into three measures, then the measure that produces the findings is consistent with aggregate real earnings management, only real management of production costs. Meanwhile, real earnings management of operating cash flows produces insignificant findings, while real management of discretionary expenditures produces opposite findings.

This research focuses on the behavior of real earnings management in manufacturing companies, so the number of samples is quite small. Thus, the scope of empirical findings only represents some of the industry companies operating on the Indonesian capital market. Therefore, future research can be carried out by involving more types of industries and sectors to obtain more comprehensive empirical findings. Secondly, the researchers used only one measure of audit quality, namely firm size audits, resulting in inconsistent findings between individual measures of real earnings management. Therefore, future research needs to be carried out using different and more comprehensive measures of audit quality. Thirdly, this study only used one board governance measure, board independence. For the research results to be more comprehensive, further research needs to be carried out using other sizes of board governance or even using the board governance index.

This research has implications for the literature on real earnings management. The findings of this research at least clarify the causes of inconsistencies in previous research findings on the effect of audit quality on real earnings management. Moreover, the results enrich the literature on the difficulty of detecting real earnings management practice, due to its similar characteristics to normal operations. The findings of this research provide additional insight that by having strong and effective corporate governance, auditors are helped to detect real earning management practices.

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