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## Factors Affecting Real Earnings Management: Additional Evidence of Infrastructure Sector

Annisa Feri<sup>a,1\*</sup>, Enok Rusmanah<sup>b2</sup>, Ketut Sunarta<sup>c3</sup>

<sup>a,b,c</sup>Pakuan University, Indonesia

<sup>1</sup>[enok.rusmanah@unpak.ac.id](mailto:enok.rusmanah@unpak.ac.id)\*

\*Enok Rusmanah

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*Abstract: This study aims to investigate the effect of corporate governance, leverage, and profitability on real earnings management. Our research focuses on the shifting practice from accrual-based earnings management to real-based earnings management, providing evidence of factors that affect real earnings management. The analytical method applied in this research is verification with the explanatory survey method. The data was tested with multiple linear regression tests, t-tests, F statistical tests, and coefficient of determination. Partial tests show that corporate governance, as proxied with institutional ownership, and leverage as proxied with Debt to Equity Ratio (DER), have no significant effect on real earnings management. However, profitability as proxied with Return on Assets (ROA) significantly affects real earnings management. A simultaneous test shows that overall corporate governance, leverage, and profitability do not affect real earnings management.*

**Keywords:** *Corporate Governance, Leverage, Profitability, Real Earnings Management*

**Abstrak:** Tujuan penelitian ini menguji pengaruh tata kelola perusahaan, leverage, dan profitabilitas terhadap manajemen laba riil. Terdapat pergeseran praktik dari manajemen laba berbasis akrual ke manajemen laba berbasis riil karena manipulasi laba akrual dianggap lebih mudah dideteksi oleh pengawas regulasi. Penelitian ini menggunakan metode analisis verifikasi dengan *explanatory survey*. Sampel penelitian diuji dengan uji regresi linier berganda, uji-t, uji statistik F, dan koefisien determinasi. Hasil uji parsial menunjukkan tata kelola perusahaan, dengan proksi kepemilikan institusional, dan leverage dengan proksi *Debt to Equity Ratio* (DER), tidak memiliki pengaruh signifikan terhadap manajemen laba riil. Namun, profitabilitas yang diproksikan oleh *Return on Assets* (ROA) secara signifikan mempengaruhi manajemen laba riil. Selanjutnya, pengujian simultan menunjukkan bahwa tata kelola perusahaan, leverage, dan profitabilitas secara keseluruhan tidak mempengaruhi manajemen laba riil.

**Kata kunci:** *Tata Kelola Perusahaan, Leverage, Profitabilitas, Manajemen Laba Riil*

### INTRODUCTION

Management is responsible for publishing reports regularly to confirm the company's performance. Reports are disclosed in the form of financial and non-financial information. As profit is the main objective of companies, information about the company's earnings is considered very important to externals. Further, profit is mostly regarded as the main indicator of company success. The level of success or failure can be seen from the profit generated. Therefore, the greater the profit earned, externals will consider the more efficient the management of resources by the company (Felicia & Chrisnanti, 2022).

Managers as parties who receive authority are responsible for maximizing the interests of company owners. However, managers also desire to fulfill their interests, thus this creates a conflict that triggers management or manipulation of earnings. Moreover, managers can influence the preparation of financial statements to increase or decrease profits following their interests (Santioso et al., 2020).

The form of management and manipulation of profit is called earnings management. Recently, there has been a shifting perspective that accrual-based earnings management has been changed to the activities of real earnings-based earnings management. Real earnings management refers to the manipulation of real business activities or transactions to achieve a desired financial result. Mostly this is due to accrual earnings manipulation is considered to be more easily detected by auditors or regulators compared to real decisions such as pricing and production. Moreover, accrual manipulation is also more risky because a deficit at the end of the fiscal year will tend to lead to accrual manipulation. On the other hand, real earnings cannot be manipulated easily to achieve the desired target. Hence, the reported profit which shows failure in achieving the target will impact the unsuccessful accrual-based strategy and lead managers to lose compensation (Roychowdhury, 2006). Therefore, this study is motivated to investigate real earnings management and the factors that influence it.

Several factors were identified as drivers for management to perform real earnings management. Referring to the study by Arlita et al (2019), corporate governance, proxied with institutional ownership, can affect managers to perform real earnings management. Meanwhile, the study by Rachman (2021) claims that leverage affects real earnings management. In addition, Evelyn & Salim (2022) and Santioso et al. (2020) state that profitability influences real earnings management.

Corporate governance is defined as a series of processes, policies, and rules that affect a company's direction, management, and control. Institutional ownership, such as shares owned by the government, legal entities, financial institutions, and other institutions, is one of the mechanisms of corporate governance. Institutional owners, due to their significant stake in the company, are often more involved in monitoring and influencing the company's activities, which can reduce the potential for unethical practices related to earnings management. This is because institutional share ownership can encourage tighter supervision of company activities, thus providing guarantees for the welfare of shareholders.

Leverage commonly is utilized to describe the extent to which the company's assets are financed by liabilities compared to its capital. There have been several ratios to measure the level of leverage. This study involved the debt-to-equity ratio (DER) to measure the leverage. The higher the level of the

company's leverage, the higher the liabilities. Thus, it is suspected that higher leverage can motivate management to carry out real earnings management to avoid delays in the settlements of liabilities.

Meanwhile, profitability refers to the company's ability to generate net income that is linked to elements such as sales, total assets, and equity. A high level of profitability signifies the company's success in earning substantial profits. The greater the potential return on investment, the more appealing the company becomes to investors. This study assesses the level of profitability by applying the return on assets (ROA) formula. This formula illustrates that a higher ROA indicates more efficient utilization of company assets, which enhances profits and often encourages management to engage in real earnings management.

This study seeks to explore further evidence regarding the impact of corporate governance, leverage, and profitability on real earnings management, thereby enhancing our understanding of earnings management in certain industries in Indonesia. The implications of our findings may significantly alter the perception of earnings management within the infrastructure sector. The sample data is sourced from the infrastructure sector companies listed on the Indonesia Stock Exchange from 2019 to 2023.

## **LITERATURE REVIEW**

### **AGENCY THEORY**

The study by Prayitno (2020) states that agency theory explains the relationship between shareholders as principals and management as agents. Agency theory refers to a contract in which the principal engages an agent to perform a service on the principal's behalf, involving the delegation of decision-making authority to the agent. Under agency theory, the principal who owns the resources authorizes the agent to act on their behalf. The existence of a contractual relationship between the principal and the agent results in the agent, who manages the company, having more information about the company than the principal. The imbalance of information between the principal and agent is called information asymmetry (Utama et al., 2023). This information asymmetry creates conflicts that arise due to the self-serving behavior of managers. Managers can manipulate earnings in the company's financial statements to persuade investors and cultivate a positive relationship with them, potentially encouraging investments of their capital (Sarah & Hernawaty, 2023).

### **EARNINGS MANAGEMENT**

According to Diri (2017), earnings management involves the use of management discretion within Generally Accepted Accounting Principles (GAAP) to prepare external financial reports. This practice exploits contractual vulnerabilities, stakeholders' limited understanding, and market information gaps. It manifests through various economic decisions, alterations in accounting treatment, or complex methodologies.

Earnings management is divided into two categories: accrual-based earnings management and real earnings management (REM). As noted by Santioso et al. (2020), identifying the type of earnings

management depends on whether it influences cash flow directly. Thus, REM is characterized as earnings manipulation that directly impacts a company's cash flow through operational changes.

#### REAL EARNINGS MANAGEMENT

Real earnings management was introduced by Roychowdhury (2006), who defined it as deviant actions taken by management to meet earnings targets. Similarly, Ayisi et al. (2021) describe real earnings management as altering the company's operational activities to boost current-period earnings.

Furthermore, Roychowdhury (2006) has also identified three primary methods for real earnings management. First, companies might use sales manipulation techniques, like providing significant discounts or more favorable credit terms, to temporarily boost sales volume. Second, they could minimize discretionary expenses by reducing spending in areas like research and development (R&D), advertising, sales, and general administration. Finally, firms may choose to overproduce—creating more products than needed—anticipating that higher output will lower fixed costs per unit and ultimately enhance profits.

#### CORPORATE GOVERNANCE

Utama et al. (2023) stated that corporate governance is a set of rules that governs the relationship among various parties involved in a company or organization, aimed at regulating and overseeing company activities to achieve its objectives. From an agency perspective, effective corporate governance is necessary to prevent conflicts of interest between owners and managers that could affect company performance.

The concept of corporate governance was introduced to achieve a higher level of transparency in the management of companies for those who use financial statements. Furthermore, corporate governance aims to enhance company performance by overseeing management activities and ensuring accountability to stakeholders in accordance with established regulations. One mechanism of corporate governance is institutional ownership. Institutional ownership serves to monitor company management more closely. This type of ownership fosters a stricter and more effective level of supervision over company performance, ensuring that it is consistently maintained and improved, ultimately generating profits for shareholders.

The research conducted by Nastiti & Susanto (2022) demonstrated that institutional ownership influences management decisions regarding real earnings management. The findings of this study align with the earlier research by Evander & Ratnaningsih (2018), which indicates that higher institutional ownership within a company correlates with a reduced likelihood of real earnings management. However, differing results emerged in the study by Kartika et al. (2020), which suggests that the composition of institutional ownership, whether high or low, does not alter management behavior concerning real earnings management. Therefore, according to this study, institutional ownership does not affect real earnings management. Based on previous research, the first hypothesis is formulated as follows:

H1 : Institutional ownership affects real earnings management.

#### LEVERAGE

According to a study by Kasmir (2019), the leverage ratio generally reflects a company's ability to settle all liabilities, including both short-term and long-term maturities, in the event of the company's dissolution. While leveraging can boost returns for shareholders, a high level of leverage also involves increased risks, such as challenges in meeting liabilities and the potential for bankruptcy. This stems from uncontrolled liabilities, leading to a significant burden. One key ratio used for leverage analysis is the debt-equity ratio (DER). As noted by Kasmir (2019), DER helps to assess the amount of funds supplied by creditors in relation to the company owners.

Evelyn and Salim (2022) claimed that the debt-to-equity ratio (DER) has a negative and insignificant effect on real earnings management, leading to the conclusion that the capital source provided by creditors through liabilities does not influence management to engage in real earnings management. In contrast, Putri (2020) asserted that DER affects real earnings management, suggesting that a higher DER ratio motivates management to adopt real earnings management practices. In other words, a higher DER ratio creates an opportunity for management to engage in real earnings management. Thus, the hypothesis proposed is:

H2 : Debt to Equity Ratio (DER) affects real earnings management.

#### PROFITABILITY

Kasmir (2019) asserts that profitability is a ratio frequently used to evaluate a company's ability to generate profit. Profitability serves as a crucial indicator for assessing the company's performance in earning revenue. This reflects the effectiveness of company management and can act as a measure of operational success, as well as an essential consideration for long-term investors. Therefore, a higher profitability value indicates a greater level of profit earned. One of the profitability ratios that can be utilized is the return on assets (ROA). ROA is a formula employed to evaluate the company's ability to generate profits using all its assets. Investors also commonly use ROA as a measure of company performance, with a high ROA value signaling a higher level of profit for investors.

Lengkong et al. (2019) stated that company size can mitigate the effect of ROA on real earnings management practices. However, research from Devi and Iskak (2018) and Evelyn and Salim (2022) indicates that ROA has a positive effect on real earnings management. Consistent with the research of Evelyn and Salim (2022), Santioso et al. (2020) also provided evidence that profitability has a positive and significant effect on real earnings management. Based on previous studies, it can be concluded that a stable level of profitability and greater net income indicate that the company's growth and performance are strong. Consequently, investors are confident in making investment decisions. Therefore, the hypothesis can be formulated as follows:

H3 : Return on Asset (ROA) affects real earnings management.

Furthermore, to test the influence of institutional ownership, DER, and ROA on real earnings management simultaneously, the fourth hypothesis is stated as follows:

H4 : Institutional ownership, DER, and ROA simultaneously affect real earnings management.

## METHODS, DATA, AND ANALYSIS

The research is verified using the explanatory survey method. The typical data utilized in this research is quantitative and retrieved from secondary data sources. The data sources used in this study are financial reports within annual reports of companies in the infrastructure sector listed on the Indonesia Stock Exchange in 2019 - 2023.

In this research, the population involved 69 companies in the infrastructure sector listed on the Indonesia Stock Exchange (IDX) from 2019 to 2023. The sample was then selected using a purposive sampling method, including infrastructure sector companies that publish financial reports and are in rupiah currency. In addition, the companies selected as samples have not experienced losses for five consecutive years, namely from 2019 to 2023.

The data was tested with Statistical Program for Social Science (SPSS) software. The analysis model used is multiple linear regression analysis. Hence, a classical assumption test is carried out to get a good model, consisting of a multicollinearity test, autocorrelation test, heteroscedasticity test, and normality test. The real earnings management is calculated by one of the following method (Roychowdhury, 2006):

1. Real earnings management through abnormal cash flow operation (CFO)

$$\frac{CFO_t}{A_{t-1}} = \alpha + \alpha_1 \left( \frac{1}{\log A_{i,t-1}} \right) + \alpha_2 \left( \frac{SALES_{i,t}}{A_{i,t-1}} \right) + \alpha_3 \left( \frac{\Delta SALES_{i,t}}{A_{i,t-1}} \right) + \varepsilon_{i,t} \quad (1)$$

2. Real earnings management through production costs

$$\frac{PROD_{i,t}}{A_{i,t-1}} = \alpha + \alpha_1 \left( \frac{1}{\log A_{i,t-1}} \right) + \alpha_2 \left( \frac{SALES_{i,t}}{A_{i,t-1}} \right) + \alpha_3 \left( \frac{\Delta SALES_{i,t}}{A_{i,t-1}} \right) + \alpha_4 \left( \frac{\Delta SALES_{i,t-1}}{A_{i,t-1}} \right) + \varepsilon_{i,t} \quad (2)$$

3. Real earnings management through discretionary expenses

$$\frac{DISCEXP_t}{A_{t-1}} = \alpha + \alpha_1 \left( \frac{1}{\log A_{i,t-1}} \right) + \alpha_2 \left( \frac{SALES_{i,t}}{A_{i,t-1}} \right) + \varepsilon_t \quad (3)$$

With,

$CFO_{i,t}$  : Cash flow from operating activities in company i year t.

$PROD_{i,t}$  : Total cost of goods sold and inventory changes in company year t

$DISCEXP_t$  : Total selling and marketing expenses and general and administrative expenses

$A_{i,t-1}$  : Total assets from sale i in year t -1

$SALES_{i,t}$  : Sales of company i in year t

$\Delta SALES_{i,t}$  : Sales of the company i in year t minus sales of the company i in year t-1

$\varepsilon_{i,t}$  : error term in year t

Meanwhile, the formula and variable indicators used in this study can be seen in the variable operationalization table as follows:

**Table 1.** Variable Operationalization

Indicator	Size	Scale
Institutional Ownership	$\frac{\text{Number of Shares Owned by Institutions}}{\text{Total Number of Shares Outstanding}}$	Ratio
Leverage	$\text{DER} = \frac{\text{Total Liabilities}}{\text{Equity}}$	Ratio
Profitability	$\text{Return On Asset} = \frac{\text{Net Profit}}{\text{Total Asset}}$	Ratio
Real Earnings management	$\frac{\text{CFO}_t}{A_{t-1}} = \alpha + \alpha_1 \left( \frac{1}{\log A_{i,t-1}} \right) + \alpha_2 \left( \frac{\text{SALES}_{i,t}}{A_{i,t-1}} \right) + \alpha_3 \left( \frac{\Delta \text{SALES}_{i,t}}{A_{i,t-1}} \right) + \varepsilon_{i,t}$	Ratio

Source: Data processed, 2024.

## RESULTS AND DISCUSSION

### DATA COLLECTION RESULTS

Seventeen infrastructure sector companies listed on the Indonesia Stock Exchange between 2019 and 2023 were identified based on the sample withdrawal criteria used. Descriptive statistics reveal that corporate governance with institutional ownership has a minimum value of 0.12, a maximum value of 0.95, and an average value of 0.65, accompanied by a standard deviation of 0.15. Leverage, measured by the debt-to-equity ratio, shows a minimum value of 0.04, a maximum value of 4.59, and an average value of 1.24, with a standard deviation of 1.04. Profitability has a minimum value of 0.001, a maximum value of 0.17, and an average value of 0.045, along with a standard deviation of 0.035. Real Earnings Management (REM), evaluated through abnormal cash flow from operations, exhibits a minimum value of -0.78, a maximum value of -0.14, and an average value of -0.048, with a standard deviation of 0.137.

### CLASSICAL ASSUMPTION TEST

#### MULTICOLLINEARITY

The results of the multicollinearity test indicate that the tolerance value of the corporate governance variable concerning institutional ownership (KI) is 0.692, which is greater than 0.10, and the VIF value is 1.446, which is less than 10, confirming the absence of multicollinearity. Similarly, the tolerance value of the leverage variable relative to the debt-to-equity ratio (DER) is 0.76, exceeding 0.10, and the VIF value is 1.316, under 10, indicating no multicollinearity. For the profitability variable, the tolerance value with the Return on Assets Ratio (ROA) is 0.764, greater than 0.10, and the VIF value is 1.309, less than 10, also showing no multicollinearity. According to the multicollinearity test provisions, the tolerance values for each of the corporate governance, leverage, and profitability variables exceed 0.10, while the Variance Inflation Factor (VIF) values for each remain below 10. Therefore, it can be concluded that the regression model does not exhibit multicollinearity.

#### AUTOCORRELATION

According to the autocorrelation test, the Durbin-Watson statistic stands at 1.831. In reference to the Durbin-Watson table, this study analyzes 3 variables from a total sample size of 85. Thus, for  $K = 3$  and  $T = 85$ , the Durbin-Watson critical values are  $dl = 1.575$  and  $du = 1.721$ . Additionally,  $4 - dl$  equals 2.425, while  $4 - du$  equals 2.279. It is observed that the computed  $du$  value of 1.721 is less than the  $d$  value of 1.831. Furthermore, the  $d$  value of 1.831 is less than the  $4 - du$  value of 2.279. This leads to the conclusion that, according to the Durbin-Watson criteria,  $du < d < 4 - du$ , or  $1.721 < 1.831 < 2.279$ , indicating that the data does not exhibit positive or negative autocorrelation.

#### HETEROSCEDASTICITY

On the other hand, the scatterplot test results indicated that the data points are distributed around the number 0, as well as both above and below it. Furthermore, the data points are not restricted to just above and below; their distribution is random and does not form a wavy pattern that widens and narrows. Therefore, based on the distribution of these points, heteroscedasticity does not occur.

#### NORMALITY

Furthermore, it can be seen that the significant value or asymp sig (2-tailed) is 0.200. According to the Kolmogorov-Smirnov normality test, the assumption of normality is satisfied if the significance value is greater than 0.05. Therefore, we can conclude that the data is normally distributed since the significance value of 0.200 exceeds 0.05 ( $0.200 > 0.05$ ). This indicates that the assumption of normality holds, and the regression model used can be confirmed to have a normal distribution.

#### HYPOTHESIS TEST

**Table 2.** Partial Test Results (t-Test)

	Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-0,504	0,101		-4,988	0		
	KI	-0,06	0,117	-0,065	-0,512	0,610	0,692	1,446
	DER	0,011	0,016	0,084	0,688	0,493	0,760	1,316
	ROA	1,031	0,473	0,265	2,181	0,032	0,764	1,309

a Dependent Variable: REM

Source: SPSS, 2024

The  $\alpha$  value used is 0.05 and the values amounting to 1.989 and - 1.989. Based on the results of the hypothesis testing above, it is known that the significance value of institutional ownership is greater than 0.05, namely  $0.608 > 0.05$ . The value of institutional ownership is greater than the value of the institutional ownership. The value of  $-t_{count}$  is greater than the value of  $-t_{table}$  namely  $-0.515 > -1.989$ . Based on these results, it means that institutional ownership does not affect real earnings management.

The significance value of leverage with debt to equity ratio (DER) is greater than 0.05, namely  $0.493 > 0.05$ , besides that the value of  $-t_{count}$  is smaller than the value of  $-t_{table}$  ( $0.689 < 1.989$ ). Based on these results, it is concluded that DER does not affect REM. The significance value of the profitability variable with ROA is smaller than 0.05, namely  $0.033 < 0.05$ . The value of  $-t_{count}$  is greater than the value of  $-t_{table}$  namely  $2.174 > 1.989$ , so it can be concluded that RO) has a significantly positive effect on REM.

**Table 3.** Simultaneous Test Results (F Test)

	Model	Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0,142	3	0,047	2,625	
	Residuals	1,456	81	0,018		
	Total	1,597	84			

a Dependent Variable: REM

b Predictors: (Constant), ROA, DER, KI

Source: SPSS, 2024

The value seen in the F distribution percentage table for a probability of 0.05, with a value of  $df_1 = 3$  and value  $df_2 = 81$ , is 2.720. Based on the results in the table above, it is known that the significance value of 0.056 is greater than 0.056 or  $0.056 > 0.05$  and the value of  $F_{count}$  2.625 is smaller than the value of  $F_{table}$  0.720. Based on these two results, it can be concluded that the independent variables, namely institutional ownership (KI), Debt to Equity Ratio (DER), and Return On Asset (ROA) simultaneously do not affect REM.

**Table 4.** Determination Test Results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0	0,089	0,055	0,13405	1.831

a Predictors: (Constant), ROA, DER, KI

b Dependent Variable: REM

Source: SPSS, 2024

Adjusted R square of 0.055 or 5.5% indicates that 5.5% of the dependent variable (Y), namely real earnings management, can be explained or predicted by the independent variable (X), namely corporate governance, leverage, and profitability. The remaining 94.5% is influenced by other factors not included in this study.

## DISCUSSION

This study shows that corporate governance, measured by institutional ownership, and leverage, proxied by the Debt-to-Equity Ratio (DER), does not significantly influence real earnings management in infrastructure sector companies listed on the Indonesia Stock Exchange (IDX) during 2019-2023.

While institutional ownership is expected to serve as an effective monitoring mechanism and leverage to pressure management into careful actions, the findings of this study indicate that, in practice, these two factors are not sufficiently strong to deter management from engaging in real earnings management. This suggests a less effective role of institutional investors as sophisticated monitors of management performance and a lack of oversight from creditors regarding company liabilities.

Conversely, the findings indicate that profitability, measured by ROA, has a positive effect on real earnings management. A company's higher profitability increases the likelihood that it will engage in real earnings management to portray a better performance to investors and shareholders. While corporate governance, leverage, and profitability are significant factors affecting real earnings management practices, the study concludes that their combined effect is not sufficiently strong. This implies that additional factors may motivate management to undertake real earnings management.

## CONCLUSION

This study investigates how corporate governance, leverage, and profitability impact real earnings management. The findings reveal that profitability significantly enhances real earnings management. In contrast, corporate governance—measured through institutional ownership—and leverage do not show a notable impact on real earnings management. Additionally, neither corporate governance, leverage, nor profitability has a combined effect on real earnings management. The research also acknowledges limitations. Future studies may consider other variables to further explore the factors influencing real earnings management. Furthermore, extending the research period could provide deeper insights into the determinants of real earnings management.

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