

CORPORATE GOVERNANCE AND PROFITABILITY ON EARNINGS MANAGEMENT IN INDONESIAN INFRASTRUCTURE FIRMS: THE ROLE OF LEVERAGE

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ABSTRAK

Penelitian ini mengkaji pengaruh profitabilitas, ukuran kantor akuntan publik, dan proporsi komisaris independen terhadap manajemen laba, dengan leverage sebagai variabel mediasi. Penelitian ini berfokus pada perusahaan sektor infrastruktur yang terdaftar di Bursa Efek Indonesia (BEI) selama periode 2017 hingga 2022. Dengan menggunakan pendekatan managerial balance sheet dan analisis structural equation modeling, hasil penelitian menunjukkan bahwa ukuran kantor akuntan publik, komisaris independen, dan leverage berpengaruh signifikan terhadap manajemen laba. Profitabilitas dan ukuran kantor akuntan publik juga berpengaruh terhadap leverage. Selain itu, leverage memediasi hubungan antara profitabilitas dan manajemen laba, serta memediasi sebagian hubungan antara ukuran kantor akuntan publik dan manajemen laba. Temuan ini memberikan implikasi penting bagi peningkatan tata kelola perusahaan dan kualitas pelaporan keuangan, khususnya pada sektor yang sangat bergantung pada pembiayaan utang.

Kata Kunci: Manajemen laba, profitabilitas, ukuran kantor akuntan publik, komisaris independen, leverage

ABSTRACT

This study investigates the influence of profitability, audit firm size, and the proportion of independent commissioners on earnings management, with leverage as a mediating variable. The research focuses on companies in the infrastructure sector listed on the Indonesia Stock Exchange (IDX) between 2017 and 2022. Employing a managerial balance sheet perspective and structural equation modeling, the study finds that audit firm size, independent commissioners, and leverage significantly affect earnings management. Profitability and audit firm size also influence leverage. Furthermore, leverage mediates the relationship between profitability and earnings management and partially mediates the relationship between audit firm size and earnings management. These findings offer valuable implications for improving corporate governance and enhancing the quality of financial reporting, especially in sectors highly dependent on debt financing.

Keywords: earnings management, profitability, audit firm size, independent commissioners, leverage, infrastructure sector.



INTRODUCTION

The infrastructure sector is pivotal in the progress of the Indonesia's economy. The contribution of the construction sector (which is a sub-sector of infrastructure sector) to Indonesia's Gross Domestic Product (GDP) is 9.9% in 2023, making it the fifth biggest contributor. The following figure gives the comparison of the different contribution to GDP for several sectors in Indonesia (Annur, 2024; BPS, 2025; PUPR, 2024).

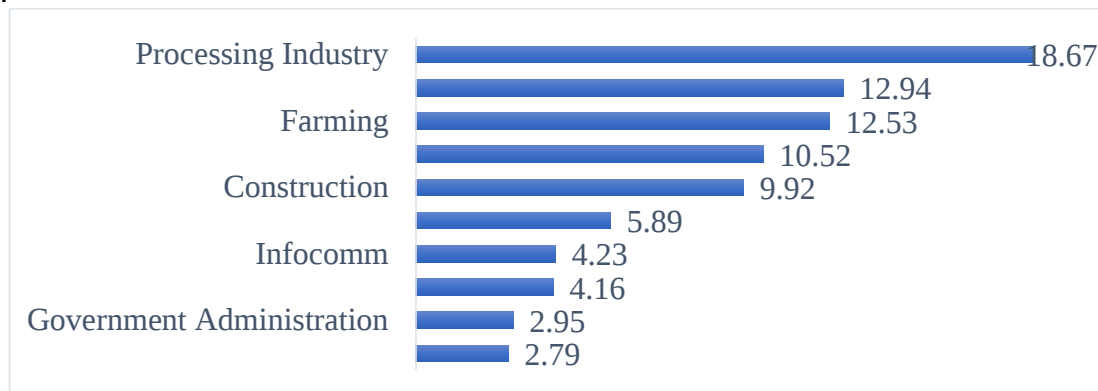
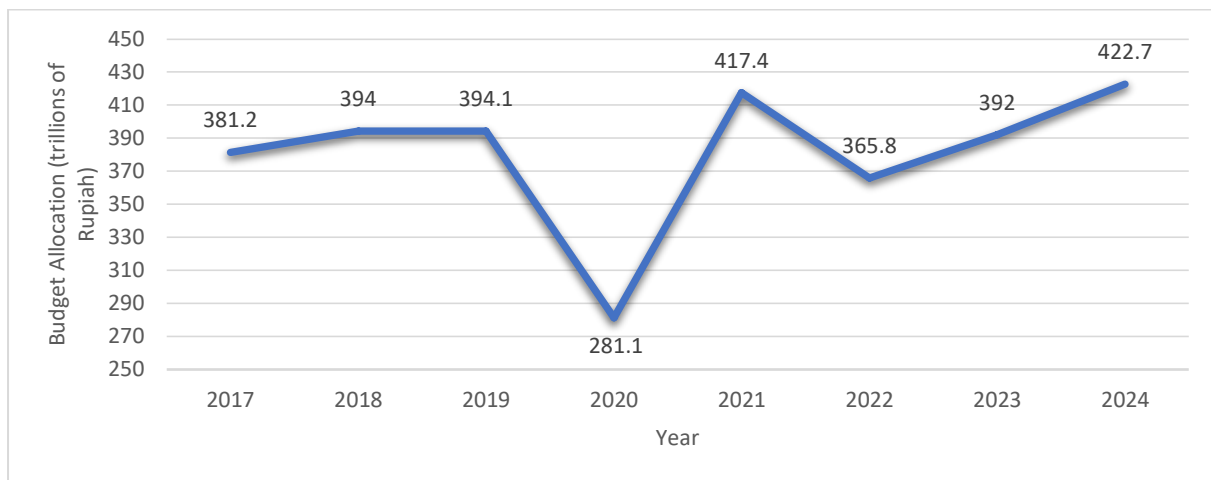


Figure 1. Contribution of Sectors to GDP

The contribution stems from the many National Strategic Project and their acceleration mandated by President Joko (Jokowi) Widodo since 2017. Trans-Java and Trans-Sumatra expressways which has a combined distance of more than 3000 km (Laksono, 2024), and the constructions of the new capital (Pinaria, 2024), Ibu Kota Nusantara (IKN) are just few of the many projects which had been pushed forward by President Jokowi's administrations. These projects are meant to increase the connectivity between islands and regions in Indonesia so that logistics and people could move more freely, increasing the ease of trading. Furthermore, the infrastructures building also helps with access to clean water, electricity and communications to increase the quality of life for Indonesians.

The allocation of budget to the construction sector had been fluctuating since 2017, but it shows an increasing trend, albeit slow. The increase in the allocation from 2017 to 2018 can be attributed to the 2018 Asian Games in the city of Jakarta and Palembang from 18th August to 2nd September 2018 (Adyatama, 2018). Furthermore, 2017 was the start of the construction of the Jakarta-Bandung High Speed Rail which was the first high speed rail project in South East Asia (CNN Indonesia, 2017). The reelection of Jokowi as the president of Republic of Indonesia gave a positive signal to the continuity of the acceleration of the Strategic National Project, one of which was the decision to move the Capital of Indonesia from Jakarta to *Ibu Kota Nusantara* (IKN). However, in 2020, there was a sharp decrease in the allocation of the budget in 2020 due to the COVID-19 pandemic which results in slowdowns or halt to the constructions projects due to the restrictions in the working hours and the number of workers in the constructions. Thereafter, the recovery from the Pandemic took place, and budget allocations recovers till 2024. Figure below shows the graph of budget allocations from 2017 to 2024.



Source: Business Indonesia (2024)

Figure 2. Budget Allocation to Infrastructure Sector (trillions of Rupiah)

The capital market facilitates the allocation of long-term funding through instruments such as bonds and equity, with share prices reflecting the intrinsic value of firms under the Efficient Market Hypothesis (Brealey et al., 2023). Financial reports play a critical role in conveying operational and performance-related information to capital market participants, allowing them to make informed predictions and investment decisions. Timely and accurate financial reporting is mandated by regulators such as the OJK, with penalties imposed for delays.

According to the IFRS Conceptual Framework (IFRS, 2018), financial reports should demonstrate faithful representation, comparability, timeliness, and understandability. Nevertheless, reporting standards allow managerial discretion, which opens the door for earnings management practices that exploit legal flexibility without breaching regulations (CFI, 2021). Scott (2015) defines earnings management as the strategic manipulation of financial statements by managers to mislead stakeholders or influence contractual outcomes. Two perspectives underlie earnings management: financial reporting and contractual. From the reporting point of view, firms may engage in income smoothing or avoid reporting losses to preserve reputation and investor confidence. From a contractual standpoint, managers may manage earnings to secure performance-based bonuses. Additionally, earnings management may be used to meet investor expectations or in the context of initial public offerings.

Earnings management (EM) remains a critical topic in financial reporting and corporate governance, with multiple factors influencing its practice. One of the primary factors is profitability, which, through the lens of agency theory (Jensen & Meckling, 1976), suggests that managers acting as agents may engage in EM to align reported earnings with personal incentives such as bonuses or job security. Highly profitable firms may engage in income smoothing to portray financial stability, while firms with lower profitability may inflate earnings to avoid negative market perceptions. This behavior is further supported by positive accounting theory, particularly the bonus plan hypothesis, where managers defer revenue recognition to maximize long-term compensation. Signaling theory also plays a role, as managers may manipulate earnings either to convey sustainability in profitable firms or to mitigate negative signals in underperforming ones.

The role of external auditors, specifically the size of audit firms, also influences EM. Large audit firms, particularly the Big 4, are seen as effective governance mechanisms capable of reducing EM due to their reputational capital and stringent audit practices. Managers are less likely to engage in aggressive income-increasing EM

under Big 4 scrutiny but may still utilize income-decreasing strategies (e.g., cookie jar reserves) for future benefits. Furthermore, the use of a Big 4 auditor can act as a positive signal to investors, enhancing perceptions of transparency and reducing agency costs.

Similarly, independent commissioners serve as internal governance mechanisms aimed at reducing agency conflicts. Their objectivity and oversight functions can constrain opportunistic managerial behavior. However, in certain contexts such as meeting future earnings targets or tax avoidance, even firms with high proportions of independent commissioners may tolerate income-decreasing EM, provided it aligns with long-term corporate interests and adheres to accounting standards.

Leverage emerges as a mediating variable in these relationships. Firms with high profitability typically have lower leverage, reducing the pressure to manipulate earnings to meet debt covenants. Conversely, highly leveraged firms face greater scrutiny from creditors, incentivizing income-increasing EM to maintain access to external financing. These dynamic positions leverage as a conduit linking profitability, audit firm size, and board independence to earnings management practices.

Thus, based on theoretical underpinnings and prior empirical evidence (e.g. Al-Ahdal et al., 2020; Chandra, 2015), this study examines the direct and indirect effects of profitability, audit firm size, and the proportion of independent commissioners on accrual-based earnings management, with leverage as a mediating variable, specifically within the infrastructure sector listed on the Indonesian Stock Exchange (IDX).

METHOD

Data and Sample Selections

Data were collected from a population of 55 firms listed in the infrastructure sector of the Indonesian Stock Exchange (IDX). The Initial Public Offering (IPO) of 19 of the 55 infrastructure firms are after 2016, and one firm was suspended during the observation years. In all, 35 firms were selected as the samples.

Measurements

Drawing on the previous research and literature, this study uses profitability, audit firm size and independent commissioner as the independent variable. The dependent variable is earning management, and the mediating variable is leverage. The following table illustrates the Variables Name, Acronym, and Formula Used.

Table 1 Measurement Used in this Research

Variables	Acronym	Formula (Measurement)
Profitability	Prof	$ROIC_{BT} = \frac{EBIT}{Invested\ Capital}$ (Hawawini & Viallet, 2019; Koh <i>et al.</i>, 2016)
Audit Firm Size	Aud	Value is 1 if audit firm is a Big 4 audit firm Value is 0 if audit firm is a non-Big 4 audit firm (Gonçalves <i>et al.</i>, 2021)
Independent Commissioner	IndCom	$IC = \frac{Total\ Independent\ Commissioner}{Total\ Commissioner\ in\ BOD}$ (Zaid <i>et al.</i>, 2020)

Leverage	Lev	$\text{Leverage} = \frac{\text{Total Debt}}{\text{Invested Capital}}$ (Hawawini & Viallet, 2019)
Earning Management	EM	$\frac{TA_{it}}{IC_{it-1}} = \beta_0 + \beta_1 \left(\frac{1}{IC_{it-1}} \right) + \beta_2 \left(\frac{\Delta Rev_{it} - \Delta Rec_{it}}{IC_{it-1}} \right) + \beta_3 \left(\frac{PPE_{it}}{IC_{it-1}} \right) + \beta_4 \left(\frac{ROIC_{it-1}}{IC_{it-1}} \right) + \varepsilon_{it}$ Modified Kothari Model

Source: Processed Data, 2025

Total accruals (TA_{it}) is measured by the difference in the between net earnings and cash flows from operating activities for a firm in a year t.

Research Model

The research model of this research is given in the following figure 3. The structural equation of the above model is given in the following:

$$\text{Lev} = Y_{11}\text{Prof} + Y_{12}\text{Aud} + Y_{13}\text{IndCom} + e1$$

$$\text{EM} = Y_{21}\text{Prof} + Y_{22}\text{Aud} + Y_{23}\text{IndCom} + Y_{31}\text{Lev} + e2$$

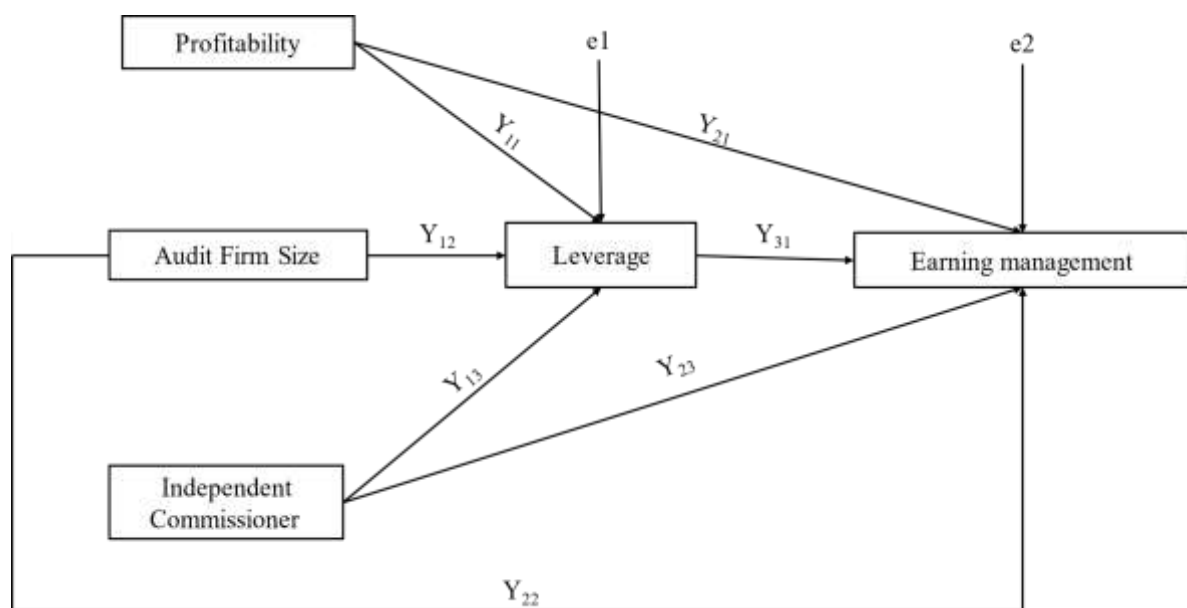


Figure 3. Research Model

HASIL DAN PEMBAHASAN

Table 2 presents the result of the PLS analysis for hypothesis testing, it can be seen from the table that profitability and earning management have no significant relationship. Audit firm size has a positive and significant impact on earning management. Independent commissioners have a negative and significant impact on earnings management. Leverage has a negative and significant impact on earning management. Profitability has a negative and significant relationship on leverage, audit firm size has a positive and significant impact on leverage, independent commissioner has a negative and significant impact on leverage.

Table 2 Result of PLS analysis for the Hypothesis Testing

Hypothesis	Independent	Dependent	Coefficient	P-value	Remark
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	Variable	Variable			
H ₁	Profitability	Earning Management	0.007	0.890	Not Significant
H ₂	Audit Firm Size	Earning Management	0.299	0.049	Significant
H ₃	Independent Commissioner	Earning Management	-0.127	0.002	Significant
H ₄	Leverage	Earning Management	-0.271	0.003	Significant
H ₅	Profitability	Leverage	-0.185	0.000	Significant
H ₆	Audit Firm Size	Leverage	0.596	0.000	Significant
H ₇	Independent Commissioner	Leverage	-0.188	0.013	Significant

Source: Processed Data, 2025

Table 3 shows the indirect effect from the leverage as a mediating variable. The relationship of profitability on earning management through leverage is positive and significant. The relationship of audit firm size on earning management through leverage is negative and significant. The relationship of independent commissioner on earning management through leverage is not significant.

Table 3 Indirect Effect Result

Hypothesis	Independent Variable	Mediating Variable	Dependent Variable	Coefficient	P-value	Remark
H ₈	Profitability	Leverage	Earning Management	0.050	0.018	Significant
H ₉	Audit Firm Size	Leverage	Earning Management	-0.162	0.025	Significant
H ₁₀	Independent Commissioner	Leverage	Earning Management	0.051	0.115	Not Significant

Source: Processed Data, 2025

The statistical results of H1 in **Error! Reference source not found.** indicate a positive but insignificant relationship between profitability and earnings management in infrastructure firms, as shown by a p-value of 0.890, which exceeds the 0.05 significance threshold. Consequently, the research hypothesis proposing a significant effect of profitability on earnings management is rejected. Although, theoretically, firms with high profitability may engage in income-decreasing earnings management to smooth income—such as through cookie-jar reserves—this study finds no significant empirical support for that relationship in the infrastructure sector. This finding contrasts with previous research (Asim & Ismail, 2019; Gonçalves et al., 2021; Hajawiyah et al., 2020; Lazzem & Jilani, 2018; Orazalin, 2020; Prawida & Sutrisno, 2021), which found profitability to be a significant determinant of earnings management. The deviation in results may be attributed to the unique characteristics of infrastructure firms. These companies are typically engaged in long-term, capital-intensive projects, where revenue is recognized using the percentage-of-completion

(PoC) method, as per PSAK No. 34. Profit is thus linked to project milestones rather than immediate operational outcomes, reducing the relevance and incentive for earnings management based on short-term profitability. Moreover, investor focus in this sector is less on profitability and more on project viability, while tight government oversight further limits managerial discretion in financial reporting. Hence, in the infrastructure context, profitability does not significantly drive earnings management behavior.

The statistical analysis of H₂ in **Error! Reference source not found.** reveals a significant positive relationship between audit firm size and earnings management in infrastructure companies, with a p-value of 0.045, which is below the 0.05 significance threshold. This finding indicates that larger audit firms, particularly the Big Four, have a significant influence on earnings management practices within the sector. Audit firm size is often associated with higher credibility, stronger adherence to regulations, and better corporate governance practices. Engaging a large audit firm signals to shareholders that the company is committed to transparency and financial integrity (Williams, 2024). However, contrary to the hypothesis developed in this study, the results show that larger audit firms are positively associated with income-increasing earnings management. This contradicts the conventional view that Big Four auditors restrict earnings manipulation. One possible explanation is the close relationship between large audit firms and their high-value clients in the infrastructure sector, which typically involves large-scale projects and substantial revenues. To maintain long-term engagements and client satisfaction, large audit firms may tolerate or even facilitate income-increasing earnings management. This allows managers to present favorable financial results and secure performance-based incentives. The findings suggest that, in practice, the reputational incentives of large audit firms may be outweighed by client retention motives. This opens the door for further research into alternative explanations and the underlying mechanisms of this unexpected association.

The statistical analysis of H₃ in **Error! Reference source not found.** indicates a significant negative relationship between independent commissioners and earnings management in infrastructure companies, with a p-value of 0.002, well below the 0.05 significance threshold. This suggests that the presence of independent commissioners significantly influences earnings management behavior, specifically in reducing it. Independent commissioners reflect the independence of the board of commissioners, serving as a crucial mechanism for oversight and control. Since independent commissioners have no vested interest in the company, their increasing proportion on board enhances board independence and strengthens corporate governance. In the context of earnings management defined as managerial actions to manipulate reported earnings this independence plays a critical monitoring role. A higher proportion of independent commissioners tends to discourage earnings manipulation, especially practices aimed at artificially inflating profits. The finding of the study suggested that in the infrastructure sector, independent commissioners are associated with the decrease in the earning management. This contrasts with audit firm's size which the use of the Big Four audit firm is instead encouraging earning management, thus suggesting that the use of more independent commissioners is better at discouraging the act of earning management. This finding contrasts with prior studies (Arlita et al., 2019; Orazalin, 2020).

The statistical findings of H₄ shown in **Error! Reference source not found.** show a significant negative relationship between leverage and earnings management in infrastructure companies listed on the Indonesia Stock Exchange (IDX), with a p-value of 0.003, well below the 0.05 significance level. This indicates that leverage has a significant influence on earnings management within this sector, with higher leverage

associated with a tendency toward income-decreasing earnings management. Leverage refers to the use of debt financing to fund operations or projects, with the expectation that the returns generated will exceed the cost of debt (CFI, 2024). Traditionally, firms with high leverage are viewed as high-risk due to their obligation to meet interest and principal repayments. In many cases, managers may engage in income-increasing earnings management to meet debt covenants or maintain investor confidence. However, the findings of this study show the opposite: firms with higher leverage in the infrastructure sector tend to reduce reported earnings. This unexpected result is consistent with Liu & Zhang (2021), but contrasts with Naz & Sheikh (2023). One plausible explanation lies in the nature of the infrastructure sector itself, where firms often rely on long-term debt financing. With average leverage levels exceeding 50% consistently over the six-year research period, infrastructure firms are under constant scrutiny from lenders who impose strict borrowing terms. To renegotiate better loan conditions or defer financial pressure, firms may intentionally reduce reported profits through income-decreasing earnings management, such as deferring revenues or accelerating expenses. This strategy allows firms to present a more conservative financial position, aligning with long-term project planning and regulatory expectations in the capital-intensive infrastructure industry.

The statistical analysis of H₅ in **Error! Reference source not found.** reveals a significant negative relationship between profitability and leverage in infrastructure companies, with a p-value of 0.000 well below the 0.05 threshold. This indicates that profitability significantly influences leverage decisions within the sector, where higher profitability is associated with lower levels of debt. Profitability reflects a firm's ability to generate earnings efficiently, while leverage indicates the extent to which a company relies on debt financing. According to Pecking Order Theory, firms prefer to finance operations using internal funds before seeking external sources such as debt. Therefore, companies with strong profitability are more likely to utilize retained earnings, reducing their need for external borrowing. Conversely, firms with lower profitability often resort to increased leverage to fund operations or investment needs. The findings of this study support the Pecking Order Theory and align with prior research by Al-Ahdal et al. (2020), Chandra (2015), Hamrouni et al. (2019), Rouf (2018), Suhardjo et al. (2022), though they contradict the results of (Chandra et al., 2020). The negative relationship is particularly relevant in the infrastructure sector, which is capital-intensive and characterized by high fixed costs, long project payback periods, and often narrow profit margins. In such contexts, increased debt can strain financial health due to growing interest in borrowings. Thus, higher profitability provides financial flexibility and reduces the necessity for leverage, reinforcing the theory that firms strategically prioritize internal financing to minimize financial risk and maintain long-term stability.

The statistical results of H₆ in **Error! Reference source not found.** indicate a significant positive relationship between audit firm size and leverage in infrastructure companies, with a p-value of 0.000, well below the 0.05 threshold. This suggests that the size of the audit firm (KAP) significantly influences the level of leverage in infrastructure firms listed on the Indonesia Stock Exchange (IDX). Audit firms, particularly those from the Big Four, play a crucial role in assessing the accuracy of financial statements and the soundness of managerial decisions, including risk management practices (Subitmele, 2022; Williams, 2024). Due to their reputation for rigorous audit standards, Big Four auditors often enhance the perceived credibility of the companies they audit. This improved credibility can signal financial soundness to external stakeholders, particularly lenders. The findings of this study suggest that

infrastructure firms audited by larger audit firms especially the Big Four, tend to have higher leverage. This is likely because the involvement of reputable auditors reduces the perceived risk for lenders, thus facilitating greater access to debt financing. In capital-intensive sectors like infrastructure, where long-term debt is commonly used to finance large-scale projects, such credibility is critical. The presence of a Big Four auditor acts as a positive signal to lenders, potentially lowering the perceived risk of default and enabling firms to secure larger loan amounts. Therefore, audit firm size not only influences financial reporting quality but also plays a strategic role in a firm's capital structure decisions.

The statistical analysis of H₇ in **Error! Reference source not found.** reveals a significant negative relationship between independent commissioners and leverage in infrastructure companies, supported by a p-value of 0.013, which is below the 0.05 significance level. This indicates that the proportion of independent commissioners on a company's board significantly influences its financial leverage, with higher independence associated with lower debt levels. Independent commissioners serve as an essential component of corporate governance, ensuring that management decisions align with shareholder interests and regulatory standards. A higher proportion of independent commissioners enhances board objectivity and reduces the likelihood of vested interests influencing strategic decisions. This improved oversight extends to financial matters, particularly decisions involving debt financing. Increased independence within the board typically results in more prudent and risk-averse financial strategies, including reduced reliance on external debt. In the context of the capital-intensive infrastructure sector, where long-term debt is often necessary to fund large-scale projects, this oversight becomes critical. The findings suggest that independent commissioners play a vital role in promoting responsible debt management by encouraging balanced and sustainable financing decisions. This result aligns with Almanía (2017) but contradicts studies such as Sheikh & Wang (2012) Tarus & Ayabei (2016), Zaid et al. (2020), highlighting a sector-specific dynamic. In essence, independent commissioners help mitigate excessive leverage by emphasizing risk monitoring and financial discipline, which is especially important in infrastructure projects that involve significant financial commitments and long-term planning.

This research examines both the direct and indirect relationship between profitability and earnings management. The direct relationship between these two variables is not significant as shown in **Error! Reference source not found.**, however, the leverage being the mediating variable is able to mediate the effect of the profitability on earning management (as shown by H₈ in **Error! Reference source not found.**). The positive and significant relationship suggests that a less profitable firm will have a higher dependence on leverage as shown by the negative relationship in H₅ (this is in line with pecking order theory), and with the increase in the leverage, the firm needed to renegotiate the debt, and in order to do that, such firms will resort to income decreasing earning management to signal weakness and renegotiate a better debt terms and conditions. This is in line with the positive accounting theory proposed by Watts & Zimmerman (1975). One such example of the infrastructure firm listed in IDX is PT. Adhi Karya Persero TBK (ADHI), which restructured its debt by obtaining approval from the general meeting of bondholders to modify the EBITDA covenant. PT. Waskita Karya (Persero) TBK (WSKT) also restructured its debt in the same way (Damara, 2024). Although these firms did not mention they reported lower earnings, the negotiations of the EBITDA covenants and the chronic repayments issue indicate downward earning management strategies as they seek leniency and extensions of their debt repayment from creditors. Evidence from the result of this study proved this prediction as that

ADHI has the average value of earning management of -0.3529 for 2017 to 2022 which indicates an income decreasing earning management. WSKT also showed a similar average value of -0.3357 in the same period.

Furthermore, this research examines both the direct and indirect relationship between audit firm size and earning management. The result shows that the direct effect of audit firm size on earning management is positive as shown in H₂, this indicates that firms still need to meet market expectations, but indirectly, it is significant, and negative shown in H₉. This shows partial mediation with suppression effect. One that is direct where an increase in the audit firm's size will increase the earning management, and one that is indirect where an increase in the audit firm's size will increase leverage, and the increased leverage will result in a decrease in earning management value. This suggests a complex dynamic where on the one hand, the use of a bigger audit firm points to the need for signaling in the direct association. On the other hand, the use of a larger audit firm allows the firm to be in a better position to secure financing, but in the process of securing larger financing, the firm needed to manage its earnings downwards to be able to negotiate better terms and conditions for the debt.

Lastly, this research examines both the direct and indirect effect of independent commissioner on earning management. The result shows that the direct effect of independent commissioner on earning management is negative and significant as shown by H₃. Indirectly, the relationship is not significant. This shows that the relationship is a direct one and not mediated by leverage. The direct result shows that more independent commissioners present result in the firms doing income-decreasing earning management. This indicates that there is a function shown by independent commissioner to push the act of earning management down.

CONCLUSIONS

This study contributes to the literature of financial management and corporate governance. Unlike most of the previous research, this study uses managerial balance sheets to calculate financial ratios. The use of the managerial balance sheet allows the user to look at the operational aspects of the decisions in a company and strip away accounting noise such as excess cash, non-operating investments and deferred taxes. Thus, managerially, the use of managerial balance sheet is more useful for long term planning. The interesting findings of this study is the role of the mediating variable "leverage" which act on the relationship between profitability and earning management, and the relationship of audit firm size and earning management. The study also found out that in infrastructure firm, the better governing mechanism is the presence of a higher number of independent commissioners rather than auditor firm size. These findings will enrich the literature of corporate governance and financial management literature. Due to the limitations of the study, further research that can be done is to use the same model in another sector or another index. Other variables can be also incorporated into the model to see their relationships.

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