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THE EFFECT OF CAPITAL INTENSITY, EARNINGS MANAGEMENT AND INDEPENDENT COMMISSIONERS ON TAX AVOIDANCE

Nila Senny [1]; Suparna Wijaya [2]

[1] 2210112042@mahasiswa.upnvj.ac.id, **Universitas Pembangunan Nasional Veteran Jakarta**
[2] suparnawijaya@upnvj.ac.id, **Universitas Pembangunan Nasional Veteran Jakarta**

Abstract
This study examines the effect of capital intensity, earnings management, and independent commissioners on tax avoidance in energy sector companies listed on the Indonesia Stock Exchange during the 2020–2024 period. Using a quantitative approach with secondary data from financial and annual reports, this study applies purposive sampling and obtains 59 companies with 180 firm-year observations. Tax avoidance is measured using three proxies, namely ETR, CETR, and BTD, to capture different perspectives. Data were analyzed using multiple linear regression with STATA 12. The results show that capital intensity positively affects tax avoidance when measured by ETR and CETR, but negatively affects tax avoidance when measured by BTD. Earnings management does not affect tax avoidance under the ETR model, but has a negative effect under the CETR and BTD models. Meanwhile, independent commissioners have no significant effect on tax avoidance across all three models.
Keywords: Capital Intensity; Earnings Management; Independent Commissioner; Tax Avoidance

INTRODUCTION

The increasingly rapid development of global business has driven the emergence of various new industrial sectors, one of which is the energy sector. The rise in global energy demand, coupled with the growing demand for energy sources, has made this sector one with promising economic prospects (International Energy Agency, 2025). Furthermore, strengthening the national economy is highly dependent on tax revenues, which are the primary source of state revenue, including in Indonesia (Putra, 2024). A high level of tax compliance plays a crucial role in supporting state financing, but for companies, taxes are viewed as a burden that can undermine financial performance, particularly profitability and liquidity (Yulianty & Sumanti, 2025).

Facing the pressure between tax obligations and performance demands, companies often employ tax avoidance strategies to legally reduce their tax burden by exploiting loopholes in existing tax regulations (Wahyuningtias et al., 2025). While not a legal violation, this practice has the potential to significantly reduce state revenues. The Tax Justice Network (2024) noted that global tax losses due to tax avoidance by multinational companies reach US$492 billion annually. In Indonesia, the tax ratio in 2024 was recorded at 10.08%, reflecting suboptimal state tax revenue (Wildan, 2025). The energy sector is capital-intensive with a high degree of dependence on large-scale fixed assets.

This situation opens up opportunities for companies to utilize fixed asset depreciation as a taxable profit reduction through the capital intensity mechanism (Maverick, 2023). Several studies have shown that capital intensity influences tax avoidance (Ramadani & Tanno, 2022), but other studies have found insignificant results (Aulia & Purwasih, 2022) and (Dewi & Merkusiwati, 2023). These differing findings indicate inconsistencies in research findings that require further study. In addition to capital intensity, earnings management strategies are also often associated with tax avoidance practices. Companies can manage earnings through accounting policies to reduce tax burdens (Edwien & Ruslim, 2025).

Several studies have found a significant relationship between earnings management and tax avoidance (Marfiana & Putra, 2021) and (Arizoni et al., 2020), while others have shown insignificant results (Hutapea & Herawaty, 2020) and (Fitri & Margie, 2024). These differing results underscore the complexity of tax avoidance behavior, which is influenced by various factors. From a corporate governance perspective, independent commissioners are expected to

act as a monitoring mechanism to suppress opportunistic management behavior, including in tax decision-making (Nurhidayat & Sulastri, 2025). Financial Services Authority Regulation Number 33/POJK.04/2014 requires independent commissioners to constitute at least 30% of the total board of commissioners.

However, the effectiveness of independent commissioners in suppressing tax avoidance practices remains a matter of debate. Several studies have found a significant effect (Susilowati & Kartika, 2023), while others have shown insignificant results (Nurhidayat & Sulastri, 2025). Based on this phenomenon and the gaps in previous research findings, this study aims to analyze the influence of capital intensity, earnings management, and independent commissioners on tax avoidance in energy sector companies in Indonesia. This study uses three tax avoidance proxies: ETR, CETR, and BTD, as well as two independent commissioner proxies, covering quality and proportion, to obtain a more comprehensive picture of corporate tax behavior.

LITERATURE REVIEW

Agency Theory

Jensen & Meckling (1976) defines this theory as a relationship between an individual or group (the principal) who delegates responsibility to another party (the agent) to carry out all activities on behalf of the principal, including decision-making. According to Aulia & Purwasih (2022), the relationship between agency theory and tax audits is defined by the differing interests of the tax authorities and the company. Capital intensity is often exploited by management to optimize company finances by paying as little tax as possible to the government. Capital intensity itself is a financial strategy reflected in the allocation of company funds to fixed assets (Tri & Supriadi, 2025).

In agency theory, earnings management is one way management often manipulates financial reports to meet the expectations of owners or principals. Meanwhile, independent commissioners oversee management to ensure that every action taken is in line with shareholder interests. Agency theory serves as the basis for describing management behavior in exploiting existing loopholes, such as capital intensity and earnings management, to optimize a low tax burden. Furthermore, independent commissioners who hold control as a counterweight to conflicts of interest show how good governance can reduce agency problems, one of which is through controlling tax avoidance.

Positive Accounting Theory

Positive accounting theory continues to evolve in line with the need to predict the reality of accounting practices occurring in society based on the reasons that cause these events (Dwitayanti & Wijaya, 2017). This theory itself focuses on explaining the basis or pressures behind decisions regarding accounting standards (Watts & Zimmerman, 1978). In positive accounting theory, managers, shareholders, and regulators are depicted as rational individuals who seek to maximize existing loopholes for personal gain (Waluyani, 2023). This is also supported by Basyarahil & Gunawan (2023), who explain that this theory provides a basis for creating accounting policies regarding the consequences of existing decisions.

In this study, positive accounting theory helps explain the rationale behind accounting decisions made by management. These decisions are often driven by the motivation to maximize personal gain, whether through bonuses, incentives, or efforts to reduce pressure from shareholders or regulators. Therefore, this theory provides a relevant framework for understanding how earnings management, tax avoidance, and corporate governance are interrelated.

Tax Avoidance

Tax avoidance is defined as a company's strategy to legally avoid taxes by exploiting regulatory loopholes, where taxes are often viewed as a burden that reduces profits (Barli,

2018). While this method is not illegal, it carries significant risks if used excessively. Capital intensity and earnings management are often utilized by companies to minimize tax liabilities. In tax avoidance, the roles of capital intensity, earnings management, and independent commissioners are interrelated. There are three common types of measurements for this variable: Effective Tax Rate (ETR), Cash Effective Tax Rate (CETR), and Book-Tax Differences (BTD).

Capital Intensity

Capital intensity is defined as the quantity of fixed assets in a production process (Aljundi & Purwatiningsih, 2025). The larger the proportion of fixed assets within a business unit, the greater the depreciation incurred on those assets. This depreciation expense directly reduces the company's profit, thus reducing tax liabilities. In the energy sector, all operational activities require a significant amount of fixed assets. This opens up opportunities for implementing tax avoidance, which can reduce corporate tax liabilities. From a tax perspective, when a business entity invests excessively in fixed assets, it aims to reduce profits and thus lower the tax burden (Alghifari et al., 2021).

One way to identify a company engaging in this practice is by observing when the invested assets are very high, indicating a high likelihood of tax avoidance. However, if the opposite is found, the company is likely not engaging in tax avoidance (Komara et al., 2022). Chairunesia (2023) also noted that the higher the capital intensity ratio, the greater the likelihood of tax avoidance. Furthermore, companies with low capital intensity typically focus on increasing sales to boost profits, which in turn reduces fixed asset depreciation expenses (Sembiring et al., 2024). A study by Sulfati et al. (2024) found similar results, indicating a significant effect of capital intensity on companies engaging in tax avoidance activities. However, the opposite was found in a study by Hendayana et al. (2024), where capital intensity had no effect on tax avoidance.

Earnings Management

Earnings management is defined as a strategy aimed at modifying financial statements by increasing, decreasing, or smoothing existing profits, often known as discretionary accruals (Margie & Habibah, 2022). In this practice, management manipulates financial statements to present a company's performance as better than it actually is. This practice is closely related to management exploiting asymmetric information for tax avoidance (Zaman et al., 2024). With far-reaching and prolonged changes, the company's reputation risks being damaged externally and transparency in financial reporting is compromised.

This finding aligns with Marfiana & Putra (2021), who stated that such actions can result in inaccurate representations of the company's economic reliability. A contributing factor to this practice is the tendency of investors to focus more on earnings information as a measure of a company's performance (Alianda et al., 2021). From a tax perspective, profit, as one of the bases for tax calculations, is a triggering factor for agency problems, which have implications for corporate earnings management. As profits increase, so do the taxes imposed on companies (Arizoni et al., 2020).

The implementation of earnings management as a form of tax avoidance within companies was also found in previous research by Hong et al. (2022), which explained a positive relationship between earnings management and tax avoidance. The more earnings adjustments a company makes through discretionary accruals, the lower its effective tax rate. However, the opposite was found in other research, which found no relationship between earnings management and tax avoidance (Hutapea & Herawaty, 2020).

Independent Commissioner

An independent commissioner is defined as an external party within the board of commissioners whose function is to monitor the company's operations independently, without

any personal ties to the company's owners (Nurhidayat & Sulastri, 2025). The establishment of this commissioner board within a business unit aims to provide oversight of management performance, ensure transparency, mitigate agency problems, and ensure regulatory compliance. Given their crucial role within a company, independent commissioners must possess the competence and a firm stance in carrying out their duties. Without adequate competence in business, law, and finance, management can exploit loopholes to circumvent oversight.

According to Financial Services Authority Regulation Number 33/POJK.04/2014, a company must have a minimum of 30% of the total number of commissioners. Independent commissioners must have an ideal proportion in accordance with existing regulations and must also possess good qualities to ensure the fulfillment of their roles and functions. This is supported by research (Susilowati & Kartika, 2023), which found that independent commissioners have a negative effect on tax avoidance. However, a different finding was found in research by Aulia & Irawan (2025), where independent commissioners showed no effect on tax avoidance.

The Effect of Capital Intensity on Tax Avoidance

The company's substantial investment in fixed assets. These fixed asset investments allow the company to utilize depreciation expenses as a deduction from taxable income, potentially reducing tax liabilities through tax avoidance practices. While providing short-term fiscal benefits, this strategy can have long-term implications that require careful consideration by management.

Companies in the energy sector are generally capital-intensive (Maverick, 2023). From an agency theory perspective, management, as an agent, tends to utilize high levels of capital intensity to minimize tax burdens through depreciation mechanisms, in line with the principal's interest in maximizing corporate profits. Previous research by Ramadani & Tanno (2022) and Dewi & Oktaviani (2021) indicates that capital intensity has a positive effect on tax avoidance. Based on theory and previous studies, the first hypothesis in this study is:

H1: Capital Intensity Has a Positive Effect on Tax Avoidance

The Effect of Earnings Management on Tax Avoidance

According to Apriadi et al. (2022), earnings management is defined as an activity undertaken by management intentionally to obtain personal or organizational benefits in activities related to financial reporting. In agency theory, earnings management is one of the agency conflicts between management and shareholders. Management, which has direct access and more information about the company's financial condition, may exploit opportunities to engage in earnings management to meet their personal goals, such as bonuses or performance-based incentives.

With this advantage, management may seek opportunities within existing regulations, both accounting and taxation, to achieve their desired goals. The implementation of tax avoidance through earnings management is indeed quite effective in reducing corporate taxes. This aligns with research on the effect of earnings management on the implementation of tax avoidance, supported by previous research by Marfiana & Putra (2021) and Arizoni et al. (2020), which showed that earnings management has a positive effect on the implementation of tax avoidance. Based on theory and the results of previous studies, the second hypothesis in this study is:

H2: Earnings Management Has a Positive Effect on Tax Avoidance

The Influence of Independent Commissioners on Tax Avoidance

According to Financial Services Authority Regulation Number 33/POJK.04/2014, an independent commissioner is a member of the board of commissioners from outside the company and meets the following criteria: no direct or indirect shareholdings, no affiliations,

no individual working within the company, and no business relationship with the company. Independent commissioners play a crucial role in a company, overseeing and ensuring that all operational activities are carried out in accordance with predetermined objectives and comply with the law.

From a positive accounting theory perspective, independent commissioners play a supervisory role, limiting management's freedom to adopt overly aggressive strategies such as earnings management or aggressive capital intensity. This is similar to the independent commissioner's role in agency theory, where this role serves as a governance mechanism, acting as a supervisor to minimize potential agency problems. Furthermore, this finding is supported by previous research by Nihayah & Oktaviani (2022) and Tamara & Saragih (2021), which found that independent commissioners negatively impact tax avoidance. Based on the theory and results of previous research, the third hypothesis of this study is:
H3: Independent Commissioners have a negative effect on Tax Avoidance.

METHODS

This quantitative study uses an empirical approach to statistically test the effect of capital intensity, earnings management, and independent commissioners on tax avoidance. The study population includes all energy sector companies listed on the Indonesia Stock Exchange (IDX) during the 2020–2024 period. The sample was selected using a purposive sampling method based on several criteria, including companies listed during the study period, publishing financial statements and annual reports, and possessing the necessary data to measure all study variables. Based on these criteria, 59 companies were selected, with a total of 180 observations.

The data used are secondary data in the form of financial statements and annual reports obtained from the official IDX website and the official websites of each company. Tax avoidance, as the dependent variable, is measured using three proxies: the Effective Tax Rate (ETR), the Cash Effective Tax Rate (CETR), and the Book-Tax Differences (BTD), which reflect the accrual perspective, the cash perspective, and the difference between accounting and taxable profit, respectively. Capital intensity is measured by the ratio of total fixed assets to total assets to reflect the company's asset structure, while earnings management is measured using discretionary accruals, which reflect the level of management intervention in earnings reporting.

Independent commissioners are measured by the ratio of the number of independent commissioners to the total board of commissioners as an indicator of the company's oversight mechanism. Commissioner quality is also assessed using rankings and dummies for education, competence, and work experience. Data analysis was performed using multiple linear regression with three regression models adjusted for each tax avoidance proxy. Testing was conducted partially to assess the effect of each independent variable on tax avoidance.

RESULTS AND DISCUSSION

Descriptive statistics show that measuring tax avoidance using three proxies yielded different average values: 0.1479056 for the Effective Tax Rate (ETR), 0.3893522 for the Cash Effective Tax Rate (CETR), and 0.0654369 for the Book-Tax Differences (BTD). These differences indicate that each proxy has different characteristics and sensitivities in representing tax avoidance practices. The higher standard deviation values for ETR and CETR compared to their averages indicate a high level of data variability, while BTD has a more stable data distribution, reflecting more consistent tax avoidance practices.

The capital intensity (CI) variable has an average value of 0.3452893, indicating that

approximately 34.5% of total assets of energy sector companies are in the form of fixed assets. The earnings management (EM) variable has an average value of -0.0683424, indicating a low tendency for earnings management practices in the sample companies. Meanwhile, independent commissioners measured through quality (QC) and proportion (PC) showed average values of 0.6107804 and 0.4384818, respectively, which reflect the relatively good quality of independent commissioners and a proportion that is close to regulatory requirements.

Table 1. Descriptive Statistics

	Obs	Mean	Std. Dev	Max	Min
ETR	180	0,1479056	0,7764792	-9,186381	1,868556
CETR	180	0,3893522	2,695904	-12,66071	30,06419
BTD	180	0,0654369	0,143328	-0,386371	0,6681466
CI	180	0,3452893	0,238392	0,0057994	0,863971
EM	180	-0,0683424	0,3204087	-2,495076	1,486149
QC	180	0,6107804	0,1965363	0,2857143	1
PC	180	0,4384818	0,1145315	0,25	1

Description:
ETR, CETR, BTD are Tax Avoidance; CI is Capital Intensity; EM is Earnings Management; QC is Quality of Independent Commissioners; PC is Proportion of Independent Commissioners

In conducting testing, selecting the right model is crucial. In this study, three types of models were tested for each dependent proxy used to determine the most appropriate model for each proxy. In the first model selection test, the researcher conducted a Chow test to determine whether the OLS/CEM or FEM model was suitable. The results of this test are as follows.

Table 2. Chow Test

	Model 1 (ETR)	Model 2 (CETR)	Model 3 (BTD)
Prob > F	0,3504	0,0003	0,0000

Source: data proceed

Based on the test results, model 1 (ETR) has a value above 0.05, namely 0.3504, making the ETR model suitable for applying the OLS/CEM model in the next stage. However, this is in contrast to the results of models 2 and 3, which obtained values below 0.05, making both models more suitable for using FEM. Furthermore, in selecting this model, the Lagrange multiplier is the second test that must be performed after the Chow test.

Table 3. Langrange Multiplier Test

	Model 1 (ETR)	Model 2 (CETR)	Model 3 (BTD)
Prob > Chi2	1,0000	0,1567	0,0000

Source: data proceed

Based on the test results above, Models 1 and 2 have Prob > Chi2 values above 0.05, so both proxies are more suitable using OLS/CEM. Meanwhile, in Model 3, the Prob > Chi2 value shows the opposite result, so the most suitable model for Model 3 is REM. Finally, to determine which model is suitable for each proxy, the Hausman test is the determining test in this model selection.

Table 4. Hausman Test

	Model 1 (ETR)	Model 2 (CETR)	Model 3 (BTD)
Prob > Chi2	0,5995	0,6096	0,0096

Source: data proceed

Based on the results of the three model selection tests, it can be concluded that the Ordinary Least Squares/Common Effect Model (OLS/CEM) was selected for the ETR proxy, the Random Effect Model (REM) was selected for the CETR proxy, and the Fixed Effect Model (FEM) was selected for the BTD proxy. Furthermore, classical assumption tests were conducted to ensure that the models used were free from bias and suitable for use in testing the research hypotheses. The first classical assumption test was the normality test.

Table 5. Normality Test

	Model 1		Model 2		Model 3	
Variables	**Skewness**	**kurtosis**	**Skewness**	**kurtosis**	**Skewness**	**kurtosis**
TA	-0,6446041	8,156604	-0,3706937	7,462053	1,008246	6,446554
CI	0,5638683	2,191976	0,5638683	2,191976	0,5638683	2,191976
EM	-0,1433019	4,669848	-0,1433019	4,669848	-0,1433019	4,669848
QC	-0,3083555	1,900982	-0,3083555	1,900982	-0,3083555	1,900982
PC	1,22838	5,726825	1,22838	5,726825	1,22838	5,726825

Source: data proceed

To address extreme values, the data were winsorized to reduce the influence of outliers without eliminating observations, thereby improving data normality. For the ETR proxy, winsorization was applied at the 2% level to the tax avoidance and earnings management variables. For the CETR proxy, winsorization was applied at the 3% level for the tax avoidance variable and 2% for the earnings management variable. Meanwhile, for the BTD proxy, winsorization was applied at the 2% level to the earnings management variable. Following this treatment, the data satisfied the normality assumption. The multicollinearity test indicated the presence of multicollinearity in the ETR proxy, which was addressed through mean-centering. The CETR and BTD proxies showed no multicollinearity issues. After centering, all proxies were free from multicollinearity and suitable for further analysis.

In the autocorrelation test, the CETR proxy was not tested further due to the use of a Random Effects Model (REM) and was considered free from autocorrelation. The ETR proxy also showed no autocorrelation issues. However, autocorrelation was detected in the BTD proxy and was addressed using robust estimation. The heteroscedasticity test indicated no heteroscedasticity issues for the CETR proxy due to the REM specification. In contrast, heteroscedasticity was detected in the ETR and BTD proxies; therefore, robust estimation was applied. To ensure consistency across all regression models, robust estimation was also applied to the CETR proxy. Consequently, the regression results for all three tax avoidance proxies were consistent and reliable. Hypothesis testing for individual parameters was conducted using a one-tailed t-test to examine the direction of the relationship between the independent and dependent variables. The results of the partial tests are discussed in the following section.

Table 6. ETR Proxy T-Test

Variables	**Coefficient**	**Z**	**P> [z]**	**Hypothesis**	**Conclusion**
Constanta	0,2916957	7,72	0,000		
CI	-0,2709694	-3,37	0,0005*	H1 : +	H1 : accepted
EM	0,0622745	1,13	0,130	H2 : +	H2 : rejected
QC	-0,0360415	-0,40	0,343	H3 : -	H3 : rejected
PC	0,0212612	0,12	0,452	H3 : -	H3 : rejected

Source: data proceed

Based on Table 6, the capital intensity variable shows a negative coefficient on the ETR proxy, thus concluding that this variable has a positive effect on tax avoidance. Therefore, the first hypothesis is accepted for the ETR proxy. Meanwhile, for the other variables, the research hypothesis is rejected. Furthermore, similar results were found for the CETR proxy. The t-test results for these proxies are presented below.

Table 7. CETR Proxy T-Test

Variables	Coefficient	Z	P> [z]	Hypothesis	Conclusion
Constanta	0,3291389	1,64	0,050		
CI	-0,3899588	-1,99	0,023**	H_1 : +	H_1 : accepted
EM	0,2979829	2,24	0,012**	H_2 : +	H_2 : rejected
QC	-0,2710634	-1,13	0,129	H_3 : -	H_3 : rejected
PC	0,5576819	1,58	0,056	H_3 : -	H_3 : rejected

Source: data proceed

Based on Table 7, the first hypothesis is accepted for this proxy, while the second and third hypotheses are rejected. Furthermore, the BTD proxy yields different results compared to the previous two proxies. The t-test results for this proxy are presented below.

Table 8. BTD Proxy T-Test

Variables	Coefficient	T	P> [t]	Hypothesis	Conclusion
Constanta	0,3105496	2,60	0,006		
CI	-0,5895818	-3,73	0,000*	H_1 : +	H_1 : rejected
EM	-0,1033742	-1,81	0,037**	H_2 : +	H_2 : rejected
QC	-0,0807108	-0,59	0,279	H_3 : -	H_3 : rejected
PC	0,0023398	0,02	0,491	H_3 : -	H_3 : rejected

Source: data proceed

Based on Table 8, the capital intensity variable has a coefficient of -0.5895818 with a probability value of 0.000, indicating a negative and significant effect on tax avoidance in the BTD proxy. This indicates that the higher the capital intensity, the lower the difference between a company's accounting and fiscal profits. The earnings management variable has a coefficient of -0.1033742 with a probability value of 0.037, thus having a negative and significant effect on tax avoidance in the BTD model.

This finding indicates that increasing earnings management practices tend to reduce the level of tax avoidance, as reflected in the difference between accounting and fiscal profits. Meanwhile, independent commissioners, measured by quality and proportion, show coefficients in opposite directions, but both are not statistically significant, with probability values of 0.279 and 0.491, respectively. Thus, independent commissioners do not have a significant effect on tax avoidance in the BTD proxy.

Capital Intensity has a positive effect on Tax Avoidance

The capital intensity variable in this study was tested using three tax avoidance proxies: ETR, CETR, and BTD, with the hypothesis that capital intensity has a positive effect on tax avoidance. The t-test results showed that capital intensity had a negative and significant effect on ETR and CETR, indicating a positive effect on tax avoidance. Low ETR and CETR values reflect a higher level of corporate tax avoidance (Kusufiyah & Anggraini, 2022) and (Susandy & Anggraeni, 2018). This finding suggests that energy sector companies with high capital intensity tend to utilize fixed asset depreciation expenses as a deduction from taxable profit, resulting in a lower corporate tax burden (Adriana & Mahpudin, 2025).

Conversely, for the BTD proxy, capital intensity was shown to have a negative and significant effect on tax avoidance, thus rejecting the research hypothesis for this proxy. These results indicate that high capital intensity is not always accompanied by a significant difference between commercial profit and taxable profit. These discrepancies in findings are due to differing perspectives on measuring tax avoidance. ETR and CETR focus on the amount of tax

paid, while BTD measures tax avoidance based on the difference between accounting and fiscal profit.

The results of the ETR and CETR proxies align with agency theory, which states that management seeks to reduce tax burdens to improve company performance efficiency. They are also consistent with research by Ramadani & Tanno (2022), Dewi & Oktaviani (2021), and Sinaga & Malau (2021). Meanwhile, the results of the BTD proxy align with positive accounting theory and are supported by research by Sinaga & Suardikha (2019) and Anjelina (2022), which shows that companies with high capital intensity and strict oversight tend to avoid significant differences between accounting and fiscal profit. These findings confirm that the effect of capital intensity on tax avoidance is highly dependent on the measurement approach used, making the use of more than one proxy essential to obtain a more comprehensive picture of a company's tax avoidance practices.

Earnings Management has a positive effect on Tax Avoidance

The t-test results indicate that the effect of earnings management on tax avoidance varies depending on the proxy used. For the ETR proxy, earnings management has no significant effect on tax avoidance, as indicated by a probability value of 0.130 (>0.05). This finding indicates that the accrual-based ETR is less sensitive in capturing tax avoidance practices occurring through cash activities. This result aligns with Fitri & Margie (2024) and Hutapea & Herawaty (2020). Conversely, for the CETR proxy, earnings management has a significant effect with a probability value of 0.012 (<0.05). A positive coefficient on CETR indicates that an increase in earnings management is followed by an increase in CETR, meaning a lower level of tax avoidance.

Therefore, earnings management has a negative effect on tax avoidance, and the research hypothesis is rejected. Consistent results are also found for the BTD proxy, where earnings management has a negative and significant effect on tax avoidance, indicating that companies tend to maintain a narrow gap between accounting and taxable profits. The differences in results between proxies reflect differences in the characteristics of tax avoidance measurements. The CETR and BTD proxies are better able to capture a company's actual tax behavior than the ETR.

These findings indicate that energy sector companies tend to implement earnings management using income-decreasing mechanisms (Octavia & Sari, 2022) and avoid simultaneously implementing earnings management and tax avoidance due to high regulatory and reputational risks (Ekawati, 2025). These results align with positive accounting theory and research by Imelda et al. (2025), Purbowati & Yuliansari (2019), and Azzahra & Prastiani (2024).

Independent Commissioners have a negative influence on Tax Avoidance

In this study, the independent commissioner variable was measured using two proxies: the quality of independent commissioners and the proportion of independent commissioners. The t-test results for the ETR proxy showed that neither the quality nor the proportion of independent commissioners significantly influenced tax avoidance, as indicated by probability values of 0.343 and 0.452, respectively (>0.05). Therefore, the third hypothesis was rejected for the ETR proxy. Similar results were also found for the CETR proxy. The quality of independent commissioners had a probability value of 0.129, while the proportion of independent commissioners was 0.056, both greater than 0.05. This indicates that independent commissioners have no significant effect on tax avoidance for the CETR proxy.

Furthermore, for the BTD proxy, the quality of independent commissioners had a probability value of 0.279 and the proportion of independent commissioners was 0.491, again indicating no significant effect on tax avoidance. Therefore, for all three tax avoidance proxies, the third hypothesis was consistently rejected. These findings indicate that although

independent commissioners play a role in corporate oversight and governance, technical decisions regarding taxation remain with management.In energy sector companies, independent commissioners' oversight tends to be focused on key risks such as energy sector regulatory compliance and environmental risk mitigation, rather than on tax avoidance strategies. Furthermore, the requirement for a minimum of 30% independent commissioners is often met through formalities, resulting in suboptimal oversight effectiveness (Andriyanto & Marfiana, 2021).

The results of this study align with positive accounting theory, which states that managers will choose policies that maximize their economic interests while still considering regulatory risks. These findings are also consistent with research by Susandy & Anggraeni (2018), Astriyasana et al. (2024), and Masrullah et al. (2018), which found that independent commissioners have no significant effect on tax avoidance. Thus, both in terms of quality and proportion, independent commissioners have not been able to become an effective control mechanism in suppressing tax avoidance practices in energy sector companies.

CONCLUSION

This study aims to analyze the influence of capital intensity, earnings management, and independent commissioners on tax avoidance in energy sector companies listed on the Indonesia Stock Exchange for the 2020–2024 period using three tax avoidance proxies: ETR, CETR, and BTD, as well as two independent commissioner proxies. The results show that capital intensity has a positive effect on tax avoidance for the ETR and CETR proxies, but a negative effect for the BTD proxies, indicating that the effect of capital intensity is contextual and highly dependent on the measurement approach used. Earnings management has no effect on tax avoidance for the ETR proxy, but a negative effect for the CETR and BTD proxies, indicating that earnings management practices in energy sector companies tend not to be used to increase tax avoidance. Meanwhile, independent commissioners, whether measured by quality or proportion, do not significantly influence tax avoidance for any of the proxies used, reflecting that strategic tax decisions are largely determined by management. These findings emphasize the importance of using more than one proxy in measuring tax avoidance to gain a more comprehensive understanding of corporate tax behavior.

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