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Determinants of Effective Tax Rates in Indonesia's Energy Sector

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Abstract: *Taxes serve as a fundamental source of state revenue, contributing to economic growth and enhancing societal well-being. However, the challenges of increasing tax revenue have become increasingly complex, especially in the energy sector, which significantly contributes to the national budget. This study examines how capital intensity, firm size, and Return on Assets (ROA) affect the Effective Tax Rate (ETR). This study examines firms listed on the Indonesia Stock Exchange (IDX) between 2018 and 2023, collecting data through purposive sampling. The data analysis employs multiple regression methods using panel data. The results indicate that capital intensity has a negative impact on ETR, firm size does not contribute significantly, and ROA also negatively affects ETR. These findings imply that the government can formulate strategies to address tax evasion in the energy sector, thereby optimizing tax revenue for the state*

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INTRODUCTION

A country's stable economy can be assessed from the perspective of macroeconomics, fiscal-monetary policy, and the general financial sector. Indonesia's finances are sound, characterized by steadily increasing state revenues and a stable trade balance. Tax revenue serves as one of the main financial sources for the Indonesian government. (Hamilton-Hart & Schulze, 2016 and Safuan et al., 2022). As a cornerstone of the state budget structure (Anggaran Pendapatan dan Belanja Negara, APBN), taxes drive development through the improvement and equitable distribution of infrastructure to support the nation's economic growth (Mardiasmo, 2021). Moreover, taxes serve as a vital source of funds for implementing development projects aimed at enhancing public welfare (Lestari, 2021). Figure 1 illustrates that state revenues from taxes have generally increased despite a significant decline in 2020 due to the escalation of the pandemic. Nevertheless, tax revenues have since recovered, surpassing the previous year's increases.

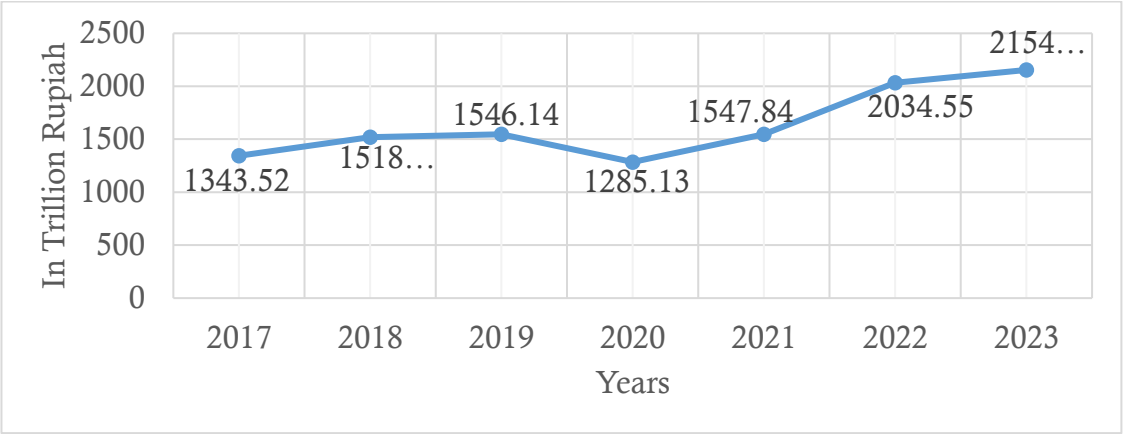

Figure 1. Tax Revenues in Indonesia
(Source: Government Procurement Policy Agency, 2025)

One of the key factors influencing tax revenue is taxpayer compliance. The government continuously strives to enhance taxpayer compliance by providing tax education and enforcement and modernizing the tax administration and reporting systems to facilitate tax-related processes. Taxes are mandatory and do not provide direct incentives, as stipulated in Article 1, Clause (1) of the Law on General Tax Provisions and Procedures. This leads taxpayers to perceive taxes as a financial burden, resulting in reluctance to fulfill their tax obligations (Widyastuti & Darma, 2022). For corporations, tax payments are mandatory annually, depending on the nature of their business. Consequently, the higher the profit earned, the greater the tax burden imposed. This situation encourages companies to adopt aggressive strategies to minimize their tax liabilities (Payne & Raiborn, 2018). In an attempt to manipulate taxable income, tax planning strategies-commonly referred to as tax aggressiveness-are implemented, either through legal means (tax avoidance) or unlawful practices (tax evasion).

The phenomenon of tax aggressiveness is not a new issue. As one of the largest contributors to state tax revenue, the energy industry has received significant attention in tax policy discussions. Several energy sector companies in Indonesia have been found to engage in tax aggressiveness, resulting in financial losses for the state (Mustofa & Tjaraka, 2022). PT Adaro Energy Indonesia Tbk. has implemented transfer pricing practices through its subsidiary in Singapore (Nafiati et al., 2023). Adaro sold coal below market prices, which another party then resold at a higher price. This strategy was employed to minimize tax liabilities, as Singapore is a tax haven. Such practices have caused substantial losses to the state due to the reduction in tax revenue.

Tax aggressiveness can be assessed through the Effective Tax Rate (ETR), which is determined by comparing income tax expenses to pre-tax earnings. A lower ETR value indicates more effective tax management (Evers et al., 2015 and Sahara & Oktafiani, 2022). The main objective of ETR is to evaluate the actual tax paid by a company in relation to the statutory tax rate (Christensen et al., 2022). This measurement serves as a reference for stakeholders in formulating policies and making informed decisions regarding corporate earnings management through effective tax planning strategies. Several factors influence the magnitude of ETR, including capital intensity, firm size, and Return on Assets (ROA).

Companies with large assets tend to have lower tax burdens because they benefit from depreciation expenses on fixed assets, which can reduce taxable income Efrinal &

Chandra (2021) and Nurkholisoh & Hidayah (2019) Discovered that capital intensity positively influences the Effective Tax Rate (ETR). However, Firmansyah & Kasir (2024) and Tarmidi & Okto (2022) reported that capital intensity negatively affects ETR. Additionally, studies by Prasetyo & Wulandari (2021) and Syamsuddin & Suryarini (2020) concluded that no significant relationship exists between capital intensity and ETR. Larger companies tend to have higher tax burdens (Batmomolin, 2018), which may lead them to adopt aggressive tax planning strategies to minimize their tax liabilities. Nyman et al (2022) and Panda & Nanda (2020) found that firm size positively influences ETR, whereas Gita et al (2021) presented differing results, suggesting that firm size negatively affects ETR. These findings also contradict the conclusions of Bandaro & Ariyanto (2020) and Prasetyo & Wulandari (2021), Who found no significant correlation between firm size and the Effective Tax Rate (ETR). Firms with greater profitability generally encounter higher tax rates (Drake et al., 2020), which may encourage them to seek ways to reduce their tax liabilities. Gita et al (2021) and Panda & Nanda (2020) examined the impact of corporate profitability on ETR and found a positive effect. However, Prasetyo & Arif (2020) and Saputri & Kasir (2024) argued that profitability has a negative impact on ETR. Moreover, Matanari (2022) asserted no significant relationship exists between profitability and ETR.

This research investigates the factors believed to impact a company's Effective Tax Rate (ETR), including capital intensity, firm size, and Return on Assets (ROA), which are linked to tax avoidance practices. Based on previous research, the novelty of this study lies in its application of agency theory to energy companies from 2018-2023. This research contributes to government efforts to address tax avoidance practices in Indonesia, enabling policymakers to mitigate the risk of reduced state revenue from taxation.

LITERATURE REVIEW

Agency Theory

Michael C. Jensen and William H. Meckling introduced agency theory in 1976. This theory explains the principal-agent relationship, highlighting the interaction between a principal and an agent (Bendickson et al., 2016b, 2016a and Huang et al., 2016). n corporate tax planning, agency theory illustrates the dynamic between management as agents and principals (owners or shareholders). These two parties do not always share the same interests, leading to agency problems. Such conflicts can have various implications, including their impact on corporate tax policies. As corporate managers, agents tend to act based on policies that allow them to achieve their targets optimally. In Indonesia, the self-assessment system provides agents with opportunities to minimize the company's tax burden (Evantri et al., 2022). By reducing tax expenses, companies can maximize their profits. However, such practices may harm the company's reputation. Moreover, these actions contradict the interests of principals, who prioritize maintaining the company's good standing and corporate image (Maulana, 2020).

Effective Tax Rate (ETR)

The Effective Tax Rate (ETR) measures a company's tax burden by calculating the ratio of income tax expense to pre-tax income. ETR is useful for assessing how effectively managers handle corporate tax management. A lower ETR value indicates efficient tax management (Evers et al., 2015 and Sahara & Oktafiani, 2022). The primary purpose of ETR is to evaluate the amount of tax a company must pay compared to the applicable tax rate. Companies with an ETR lower than the statutory rate are considered to have successfully optimized their tax burden minimization strategies. ETR is widely used as a tool for

companies to reduce their tax liabilities without violating tax regulations (Christensen et al., 2022). Under Indonesia's self-assessment system, companies can calculate their tax obligations. Higher earnings typically result in a more significant tax burden, making the current tax system an opportunity for businesses to implement effective and efficient tax management strategies.

Capital Intensity and Its Effect on ETR

Capital intensity indicates a company's efficiency in utilizing its assets to drive sales, with all fixed assets gradually depreciating over time. The depreciation expense incurred from using fixed assets can reduce a company's tax burden, as it is deductible from the company's taxable income for a specific period. As a result, companies with high fixed assets tend to have a lower tax burden, as they benefit from depreciation deductions. This reduction in taxable income ultimately leads to a lower Effective Tax Rate (ETR). Therefore, it can be concluded that capital intensity has a negative impact on ETR.

This argument aligns with the findings of Firmansyah & Kasir, 2024 and Tarmidi & Okto (2022), Which suggests that capital intensity negatively affects the Effective Tax Rate (ETR). This means that a higher level of capital intensity tends to reduce the ETR.

H_1: Capital intensity has a negative effect on ETR.

Firm Size and Its Effect on ETR

Firm size refers to a company's classification based on its assets' scale. Larger firms tend to have higher tax burdens (Batmomolin, 2018), Which encourages them to adopt tax planning strategies to minimize their liabilities. Given their broader operational scope, large companies have greater flexibility in designing more effective tax planning strategies, particularly in minimizing tax expenses. As a deduction from total revenue, large firms can reduce their tax burden more effectively. This aligns with agency theory, where agents (managers) seek to maximize company profits, partly by lowering corporate expenses, including taxes. Additionally, larger firms conduct more complex transactions in their operations than smaller firms, providing them with more opportunities to manage taxes efficiently through various transactions, ultimately achieving optimal tax savings. This may lead to a lower Effective Tax Rate (ETR).

This argument is supported by Gita et al (2021), Who discovered that firm size has a negative impact on the Effective Tax Rate (ETR). This suggests that the larger the firm, the lower its ETR.

H_2: Firm size has a negative effect on ETR.

Return on Assets (ROA) and Its Effect on ETR

Return on Assets (ROA) refers to a company's capability to generate profits from its assets. This measurement indicates whether a company has succeeded or failed in managing its earnings, serving as a reference for future profit-generating strategies. According to agency theory, managers ensure that tax burdens do not negatively impact their performance-based compensation or the company's profitability targets. This compels managers to reduce tax liabilities by optimizing other expenses to lower taxable income. Additionally, companies can increase revenue from non-taxable income sources, such as dividend income, which reduces their tax burden and contributes to a lower Effective Tax Rate (ETR). Therefore, It can be inferred that ROA negatively affects the Effective Tax Rate (ETR).

This reasoning aligns with the findings of Prasetyo & Arif (2020) and Saputri & Kasir (2024), who concluded that ROA negatively affects ETR. This implies that as ROA increases, ETR decreases.

H_3: ROA has a negative effect on ETR.

RESEARCH METHOD

The scope of this research specifically focuses on companies operating within the energy sector and officially registered on the Indonesia Stock Exchange (IDX), as publicly listed on its official website (www.idx.co.id). This study leverages financial statement data published by these energy-sector entities, spanning a comprehensive analysis period from 2018 through 2023. Within this six-year timeframe, the total population comprised 78 distinct energy companies, collectively yielding 468 data points for detailed examination. To ensure representativeness and relevance, the selection of these companies employed a purposive sampling approach based on certain predefined criteria, which are elaborated further and presented comprehensively in Table 1.

Table 1. Detailed Calculation of Sample Selection Criteria

No	Company Identification	Outside Criteria	Meets Criteria
1	Financial reports that are publicly available and accessible for data extraction	(98)	370
2	Companies experiencing losses	(137)	233
3	Companies that have consistently published complete financial reports from 2018 to 2023	(119)	114
	Total Research Sample		**114**

Source: Processed Data (2025)

Prior proceeding to the analytical stage, it is crucial to establish clear definitions and precise measurement techniques for each variable considered in this research, the specifics of which are systematically outlined and summarized comprehensively in Table 2. To thoroughly explore the dynamics and interdependencies among the variables under study, this research applies multiple linear regression analysis, a robust statistical technique suited to evaluating how several independent variables simultaneously influence a particular dependent variable. Multiple linear regression is particularly beneficial in this context because it facilitates a nuanced understanding of individual variable contributions and their combined effect on the outcome variable, ensuring the results are both accurate and reliable. Therefore, the multiple linear regression equation developed specifically for this study, reflecting the hypothesized relationships among the selected variables, is formally presented as follows:

$$ETR_{i,t} = \alpha + \beta_1 CI_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 ROA_{i,t} + e_i$$

Table 2. Indicators for Research Variable Measurement

Research Variable	Description	Measurement Indicator
Effective Tax Rate (ETR)	Measured as the ratio of income tax expense to pre-tax income (Saragih & Halawa, 2022).	Effective Tax Rate (ETR) $= \frac{\text{Tax Expense}}{\text{Pre-tax Income}}$

Capital Intensity	Calculated as the proportion of fixed assets to total assets (Soelistiono & Adi, 2022).	Capital Intensity = $\frac{\text{Fixed Assets}}{\text{Total Assets}}$
Firm Size	Measured using the natural logarithm of total assets (Bansal, 2021).	Firm Size = LN (Total Assets)
Return on Assets (ROA)	Calculated as the proportion of after-tax income to total assets (Febrianti & Setyowati, 2024).	Return on Assets (ROA) = $\frac{\text{After-tax Income}}{\text{Total Assets}}$

Source: Processed Data (2025)

The typical effect regression model combines cross-sectional and time-series data without accounting for differences across time and individuals. This model can be assessed using the Ordinary Least Squares (OLS) approach. Meanwhile, the fixed effect regression model assumes that each individual possesses a unique intercept while the slope remains constant. This estimation approach is called the Least Square Dummy Variables (LSDV) technique. Conversely, the random effect model accounts for individual and time differences through error components. This method also assumes that errors can be correlated across time-series and cross-sectional data.

To determine the most suitable model for panel data regression analysis, the study employs several diagnostic tests that systematically compare alternative estimation approaches. Initially, the Chow test is utilized, primarily to differentiate and select the most appropriate model between the Fixed Effect Model (FEM) and the Common Effect Model (CEM). Specifically, this comparison is conducted using the F-test statistic to evaluate the presence or absence of individual-specific effects. Results from the Chow test indicate that both FEM and Random Effect Model (REM) provide better explanatory capabilities compared to the simpler CEM approach. Subsequently, to further refine model selection between FEM and REM, the Hausman test, originally introduced by Hausman (1978), is performed. This particular test leverages the H-statistic, which is distributed according to a chi-square distribution, with degrees of freedom equivalent to the total number of independent variables analyzed. Interpretation of the Hausman test hinges upon the significance of the null hypothesis (H_0): rejection of this hypothesis suggests that FEM is more statistically appropriate, whereas failure to reject implies the suitability of REM, as described by (Gujarati, 2014). Additionally, the Lagrange Multiplier (LM) test, recommended by (Hsiao, 2022), is applied specifically to distinguish between REM and CEM. The outcome of the LM test is straightforward: if the resulting p-value is below the significance threshold of 0.05, REM is statistically validated as the superior and thus preferable regression model for analyzing the panel data in question.

RESULT AND DISCUSSION

Descriptive statistical analysis performed in this research offers an extensive characterization of the dataset by presenting critical measures such as minimum, maximum, mean, and standard deviation values for all variables considered. These statistical metrics, detailed explicitly in Table 3, underscore significant variability among key factors analyzed, including capital intensity, firm size, Return on Assets (ROA), and the Effective Tax Rate (ETR). Specifically, the variable representing capital intensity shows an average level of approximately 0.3379, accompanied by a standard deviation of 0.2516, highlighting a pronounced spread around its mean. The considerable distance between the

observed minimum value of 0.031 and the maximum value of 0.928 strongly indicates that asset management strategies differ widely among the sampled firms. Such disparities suggest that some companies heavily prioritize investment in fixed assets, reflecting a capital-intensive operational structure, while others adopt more conservative or diversified approaches toward asset allocation. Consequently, this significant heterogeneity emphasizes differing strategic orientations and resource utilization efficiency among the firms, thereby enriching the understanding of firm-specific characteristics within the broader energy sector context on the Indonesia Stock Exchange.

Firm size, operationalized as the natural logarithm of total assets, yields an average value of 29.631 with a standard deviation of 1.099, demonstrating a moderate yet meaningful variation among the sampled companies. The size range, extending from a minimum of 27.621 to a maximum of 32.317, clearly highlights notable differences in corporate scale within the studied group, potentially affecting various organizational decisions such as financing policies, operational effectiveness, resource allocation, and approaches to taxation. Meanwhile, profitability captured through the Return on Assets (ROA) reveals an average figure of approximately 6.85% and a comparatively high standard deviation of 11.23%. This considerable dispersion suggests substantial variability in the capability of companies to efficiently generate profits relative to their asset base.

The broad range in ROA, which spans from a minimal level of 0.09% to an exceptionally high level of 52%, further emphasizes marked differences in financial health, management competence, operational performance, and competitive positioning across firms within the sector. Additionally, the Effective Tax Rate (ETR) presents an average of 24.15% and a notable standard deviation of 9.87%, signifying a pronounced divergence in the tax liabilities faced by the companies under review. This variability, with a minimum ETR of only 2% contrasted against a maximum rate of 52.8%, likely arises from diverse practices and strategic decisions related to corporate taxation. Such discrepancies may be attributable to distinct corporate tax management policies, varying levels of utilization of available tax incentives, differences in regulatory frameworks, or diverse accounting practices, ultimately shaping firms' effective tax obligations significantly.

Table 3. Descriptive Statistical Test Results

Uraian	Value					
	N	Min.	Maks.	Median	Mean	Standard Deviation
Capital Intensity	114	0.031000	0.928000	0.249500	0.337900	0.251641
Firm Size	114	27621.00	32317.00	29648.00	29631.00	1099.017
ROA	114	0.009000	0.520000	0.068500	0.068500	0.112278
ETR	114	0.020000	0.528000	0.245000	0.241463	0.098660

Source: Processed Data (2025)

Prior to conducting hypothesis testing, this study implements a classical assumption test to verify that the dataset aligns with the fundamental prerequisites of statistical analysis. This step is essential to ensure the robustness and reliability of the regression model, minimizing potential biases and inaccuracies in interpretation. The classical assumption test encompasses three key evaluations: normality, multicollinearity, and heteroscedasticity tests, each of which serves to detect possible violations that could compromise the precision of the model's estimations. The normality test assesses whether

residuals conform to a normal distribution, the multicollinearity test examines the degree of correlation among independent variables, and the heteroscedasticity test evaluates whether the residual variance remains stable across different values of the independent variables. Ensuring that these assumptions hold is crucial for maintaining the integrity of the regression analysis. The detailed findings of these diagnostic tests are systematically outlined in Table 4.

Table 4. Classical Assumption Test Results

Classical Assumption	Testing Method	Test Score	Conclusion
Normality	Jarque-Bera Probability	0.678354 > α 0.05	Data follows a normal distribution
Multicollinearity	Variance Inflation Factor (VIF)	VIF < 10	No multicollinearity detected
Heteroscedasticity	Harvey Test	0.528933 > α 0.05	No heteroscedasticity detected

Source: Processed Data (2025)

The process of determining the appropriate regression model for analyzing panel data within this study involves several systematic and rigorous model specification tests, with comprehensive outcomes documented clearly in Table 5. Initially, the Chow test was employed to evaluate the presence of firm-specific effects, specifically aiming to choose between the Common Effect Model (CEM) and the Fixed Effect Model (FEM). The findings derived from this test revealed a significant probability value, clearly below the 0.05 threshold, indicating strong evidence against using the simpler CEM. Consequently, this suggests that incorporating fixed effects accounting for unobserved heterogeneity across companies would significantly enhance the explanatory capability of the model. Thus, at this initial stage, the Fixed Effect Model (FEM) emerges as superior when compared directly to the Common Effect Model in accurately capturing firm-specific characteristics within the panel data.

Nevertheless, the analysis proceeds by employing the Hausman test to further distinguish the suitability between the Fixed Effect Model (FEM) and the Random Effect Model (REM). The probability value generated from this examination notably exceeded the significance threshold of 0.05, specifically recorded at 0.8619, signifying that the Random Effect Model provides a better statistical representation of the data structure than the Fixed Effect Model. To reinforce and confirm this selection, the Lagrange Multiplier (LM) test was additionally conducted, aiming to validate whether the REM or the CEM is indeed most appropriate. The LM test resulted in a p-value below the critical 0.05 level, conclusively supporting the choice of REM over CEM. This final test outcome aligns coherently with the earlier results, further strengthening the decision to adopt REM as the final model. Ultimately, performing this comprehensive series of specification tests ensures the robustness and accuracy of the selected estimation method, aligning closely with the inherent characteristics and variability present within the dataset.

Table 5. Results of Chow Test, Hausman Test, and Lagrange Multiplier Test

Test of Type	F – Value	Chi – Sq Statistic	P - Value	Optimal Model
Chow Test (cross-section F Test)	3.209514	0	0.0003	Fixed Effect Model
Chow Test (cross-section Chi-square)	58.197628	0	0.0000	
Hausman Test (cross-section random)	0	0.747732	0.8619	Random Effect Model
Lagrange Multiplier-test Breusch-Pagan (Cross-section) (Both)	0	0	0.0001	Random Effect Model

Source: Processed Data (2025)

The findings obtained from the regression analysis, as clearly detailed in Table 6, offer significant insights regarding the factors influencing the Effective Tax Rate (ETR) within the examined energy-sector companies. The statistical outcomes indicate that the selected independent variables, namely capital intensity and Return on Assets (ROA), collectively demonstrate a meaningful yet partial explanatory power over variations in ETR, as reflected by an F-test probability value of 0.009017, substantially lower than the accepted significance level of 0.05. This result confirms that the independent variables, when considered together, indeed exert a statistically meaningful influence on ETR. Nevertheless, it is equally important to acknowledge the model's limitations, as demonstrated by the coefficient of determination (Adjusted R^2) of the regression model. With an Adjusted R^2 value indicating moderate explanatory power, the independent variables included capital intensity and ROA account for only a fraction of the overall variance in ETR. This suggests that numerous other external factors, potentially encompassing regulatory environments, managerial decisions, industry-specific tax incentives, accounting policies, or macroeconomic conditions, significantly contribute to ETR variability but were not integrated into this particular analytical framework. The robustness of the overall model is further validated by the F-test results, where the calculated significance level stands at 0.009017, comfortably below the established significance threshold of 0.05. Consequently, this confirms the reliability and validity of the employed regression framework in capturing at least part of the complex interplay between firm-specific characteristics and tax obligations within the context of Indonesian listed energy-sector companies

The p-value for firm size is more significant than 0.05, indicating that firm size does not significantly affect ETR. This finding aligns with the studies conducted by Bandaro & Ariyanto (2020) and Prasetyo & Wulandari (2021), but contradicts previous research suggesting a relationship between firm size and ETR (Nyman et al., 2022 and Panda & Nanda, 2020). This discrepancy may be attributed to differences in the industry sectors analyzed, leading to varying results in the relationship between firm size and ETR.

Based on the Random Effect Model (REM) results, the regression equation illustrating the relationships among the variables is formulated as follows:

$$ETR= 0{,}433855 - 0.192841CI + 3.310006SIZE - 0.265086ROA + e_{it}$$

Table 6. Results of Multiple Regression Analysis

Variable	Prediction	Coefficient	Significance	Hypothesis
CI	-	-0.192841	0.0057*	Accepted
SIZE	-	3.310006	0.8271	Rejected
ROA	-	-0.265086	0.0125*	Accepted
Constant	0,433855			
R-squared	0.140360			
Adjusted Rsquared	0.106427			
F-statistic	4.136384			
Prob(F-statistic)	0.009017			

ETR is the dependent variable, representing the effective tax rate.
Meanwhile, CI (Capital Intensity), SIZE (Firm Size), and ROA (Return on Assets) are the independent variables that influence ETR.
*Significant at the 5% level.

Source: Processed Data (2025)

CONCLUSIONS

The results of this study provide empirical support for agency theory by examining key determinants of the Effective Tax Rate (ETR) and their implications for corporate tax behavior. The analysis reveals that capital intensity negatively influences ETR, as firms with substantial fixed assets leverage depreciation mechanisms to minimize tax liabilities, effectively lowering their overall tax obligations. In contrast, firm size exhibits no significant impact on ETR, suggesting that larger corporations are more inclined to adhere to tax regulations and compliance standards to safeguard their corporate reputation and maintain investor confidence. Furthermore, ROA demonstrates a negative relationship with ETR, indicating that highly profitable firms actively engage in tax optimization strategies, such as managing deductible expenses and structuring financial operations to mitigate their tax burden. These findings underscore the dynamic interplay between financial characteristics and tax planning decisions, reinforcing the relevance of agency theory in understanding corporate tax strategies and compliance behavior.

Future research should consider additional determinants of ETR, such as tax planning, leverage, audit committee, and liquidity. Further studies could also enhance findings through direct interviews with corporate entities. From a managerial perspective, this study provides insights for policymakers regarding tax avoidance practices in the energy sector. Specifically, regulatory authorities can use this information to minimize the risk of reduced state revenue from taxation and as a reference for stakeholders in policy evaluation and decision-making.

Future research should explore additional factors influencing Effective Tax Rate (ETR), including tax planning strategies, leverage, audit committee oversight, and liquidity, to provide a more comprehensive understanding of corporate tax behavior. Further studies could also strengthen empirical findings by incorporating qualitative approaches, such as direct interviews with corporate executives and tax professionals, to gain deeper insights into the decision-making processes behind tax-related strategies. From a managerial and policy perspective, this study provides valuable insights for regulatory authorities in tackling tax avoidance practices, particularly in the energy sector, Where taxation serves as a key driver of government revenue accumulation. By leveraging these findings, policymakers can implement more effective regulatory frameworks to mitigate

potential revenue losses while ensuring a fair and transparent tax system. Moreover, these insights serve as a strategic reference for stakeholders, enabling more informed policy evaluations and decision-making processes to enhance tax compliance and sustain economic stability.

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