



The Influence of Profitability, Leverage, and Capital Intensity on Tax Avoidance in Energy Sector Companies Listed on the Indonesia Stock Exchange for the 2020-2024 Period

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ABSTRACT

This study examines the influence of profitability, leverage, and capital intensity on tax avoidance among energy sector firms listed on the Indonesia Stock Exchange over the 2020–2024 period. A quantitative approach is adopted, utilizing secondary data drawn from corporate financial statements. The sample comprises 35 energy sector companies, generating 175 observations through purposive sampling. The data were analyzed using multiple linear regression analysis with IBM SPSS Statistics Version 27. The findings reveal that profitability, proxied by Return on Assets (ROA), bears no significant relationship with tax avoidance. Conversely, leverage, measured by the Debt to Equity Ratio (DER), positively and significantly affects tax avoidance, while capital intensity demonstrates a negative and significant impact. When assessed collectively, all three variables simultaneously exert a significant effect on tax avoidance. These results underscore that tax avoidance behavior is shaped by a combination of financial determinants, particularly a firm's capital structure and asset composition. Subsequent studies are encouraged to incorporate additional variables such as corporate governance mechanisms and to broaden both the observation period and industry coverage

INTRODUCTION

Tax revenue is critical for promoting long-term economic growth and increasing public welfare. Through taxation, governments are able to finance public expenditures, infrastructure development, and a range of social programs targeted at improving the quality of life in society. In developing countries such as Indonesia, optimizing tax revenue has become increasingly important due to the growing fiscal needs and the rising demand for public spending. Therefore, the government continues to strengthen tax compliance, particularly in strategic sectors that contribute significantly to the national economy, such as the energy sector.

The energy sector has unique characteristics compared to other industries because it requires substantial capital investment, large fixed assets, and involves high operational risks. This sector includes industries such as oil and gas, coal mining, and other natural resource-based energy businesses that contribute significantly to state revenue. However, the complexity of operational activities and corporate structures within the energy sector may also create chances for businesses to employ aggressive tax planning strategies. One of the strategies commonly associated with corporate tax planning is tax avoidance, which refers to legal efforts undertaken by companies to minimize tax obligations by taking advantage of loopholes in tax regulations. Although tax avoidance is considered legal, such practices may reduce potential state revenue and weaken the effectiveness of the taxation system.

In Indonesia, tax avoidance remains an important issue, particularly in industries with complex business transactions and international operations. Practices such as transfer pricing and profit shifting are often associated with corporate efforts to reduce tax burdens. The OECD (2015), through its Base Erosion and Profit Shifting (BEPS) initiative, highlighted that multinational companies often transfer earnings to countries with lower tax rate, especially in natural resource-based industries. In addition, Global Witness (2019) reported indications of tax avoidance practices conducted by commodity companies through transfer pricing manipulation in international trade transactions. These findings indicate that tax avoidance remains a relevant issue that requires further empirical investigation, particularly regarding the financial factors that influence such practices.

Several previous studies suggest that company financial characteristics, such as profitability, leverage, and capital intensity, may influence tax avoidance behavior. Safitri and Mariani (2024) found that profitability has a significant effect on tax avoidance. Additionally, other research found that capital intensity and leverage might motivate businesses to engage in tax avoidance strategies (Ismaya Sumantri & Kurniawati, 2023; Santo & Nastiti, 2023; Ariyani & Arif, 2023). However, some studies have shown different results, indicating that profitability and leverage do not significantly affect tax avoidance (Triyanti et al., 2020; Fitri, 2024). In addition, several studies found that tax avoidance activities are not always strongly linked to capital intensity (Lestari & Suharna, 2024; Adirianto & Kuswanto, 2025).

These inconsistent findings indicate that the relationship between profitability, leverage, capital intensity, and tax avoidance remains inconclusive. Furthermore, most previous studies examined companies from various sectors in general and did not specifically focus on the energy sector, which has distinctive characteristics such as high capital intensity, large fixed asset investments, and complex operational activities that may affect corporate tax strategies. In addition, prior studies have paid limited attention to recent economic conditions, particularly during the 2020–2024 period, which includes the COVID-19 pandemic and the global economic recovery phase that potentially influenced corporate financial performance and tax policies.

Based on these research gaps, the purpose of this research is to re-evaluate the impact of profitability, leverage, and capital intensity on tax evasion in energy sector companies listed on the Indonesia Stock Exchange during the 2020–2024 period. It is anticipated that this study will offer more pertinent and contextual empirical evidence regarding the factors influencing tax evasion practices in the energy sector.

LITERATURE REVIEW

Agency Theory

Agency theory, developed by Jensen and Meckling (1976), defines the relationship between stockholders as principals and management as agents in charge of company resources. In practice, differences in interests between shareholders and management may create agency conflicts, especially because management usually has greater access to internal company information. This information asymmetry can encourage managers to make decisions that benefit their own interests, including decisions related to financial and tax policies.

In the context of taxation, management may be motivated to implement tax minimization strategies aimed at lowering corporate tax liabilities and boosting net profits. Higher profits are often associated with better company performance, which may also affect management incentives and compensation. However, tax avoidance practices also carry risks, such as tax sanctions, increased audit scrutiny, and reputational damage that may negatively affect the company in the long term (Hanlon & Heitzman, 2010). Therefore, tax-related decisions can be viewed as part of management's effort to balance financial benefits and potential risks.

Trade-Off Theory

Trade-off theory suggests that firms establish their capital structure by weighing the advantages and drawbacks associated with debt financing. According to Modigliani and Miller (1963) and Myers (1984), one of the main advantages of debt financing is the tax benefit gained from interest expenses, which can reduce taxable income. This condition is commonly known as the tax shield effect.

Despite these benefits, excessive debt usage may increase financial risk including the risk of financial distress and inability to fulfill long-term financial commitments. Consequently, firms carefully manage their debt levels to attain an optimal capital structure. In relation to taxation, companies with higher leverage generally have greater opportunities to reduce tax expenses through interest deductions and other tax planning strategies.

Tax Avoidance

Tax avoidance encompasses lawful measures undertaken by firms to reduce their tax burden by exploiting loopholes or flexibilities available within existing tax regulations. This practice differs from tax evasion, which involves illegal actions that violate tax laws (Pohan, 2016). Companies may engage in tax avoidance through various methods, such as selecting certain accounting policies, utilizing tax incentives, or arranging transactions in ways that reduce taxable income (Dyrenge et al., 2008).

Despite its legal status, tax avoidance remains contentious as it potentially diminishes government revenue. Conversely, firms often regard it as a means to enhance operational efficiency and sustain profitability. This study employs the Cash Effective Tax Rate (CETR), calculated by dividing cash tax payments by pre-tax profit, as a proxy for tax avoidance. A lower CETR value signifies a greater degree of tax avoidance behavior.

Profitability

Profitability represents a firm's capacity to produce earnings through its assets and operational activities. This indicator is commonly used to evaluate management performance and operational efficiency. Companies with strong profitability generally demonstrate better financial performance and greater ability to maintain business sustainability.

This study uses Return on Assets (ROA), derived by dividing net income by total assets, as a measure of profitability. ROA reflects how efficiently a firm deploys its assets to generate earnings, where a higher value indicates superior resource management. Furthermore, profitability serves as a key metric for investors and stakeholders in evaluating a company's future prospects and competitive position.

Leverage

Leverage refers to the degree to which a firm relies on debt to fund its operations and investments. This study employs the Debt to Equity Ratio (DER), which compares total liabilities against total equity, as a measure of leverage. This ratio reflects the company's capital structure and provides an indication of its overall financial risk exposure.

Higher DER value indicates greater dependence on external debt financing. While debt offers financial advantages, particularly through interest expense tax deductions, excessive leverage may heighten the company's financial burden and vulnerability. Firms with substantial debt levels may struggle to meet their obligations, especially during periods of economic uncertainty.

Capital Intensity

Capital intensity denotes the share of fixed assets relative to a company's total assets, reflecting the extent of investment allocated to long-term assets such as property, plant, and equipment in supporting business operations.

This study measures capital intensity through the fixed assets to total assets ratio. This metric is especially applicable to energy sector firms, given their substantial reliance on infrastructure and fixed asset investment. Companies with high capital intensity heavily depend on long-term assets to sustain production and drive growth. Moreover, significant fixed asset ownership generates considerable depreciation expenses, which may affect taxable income and shape the company's tax planning approach.

The Effect of Profitability on Tax Avoidance

Profitability represents a firm's capacity to generate earnings, which directly determines the magnitude of its tax obligations. Firms with higher profitability tend to report greater taxable income, consequently bearing larger tax burdens. This circumstance motivates management to adopt tax management strategies in order to preserve after-tax earnings. From an agency theory perspective, management is incentivized to optimize financial performance, including by minimizing tax liabilities. Thus, as profitability increases, firms exhibit a stronger tendency toward tax avoidance as a means of tax efficiency. Empirical evidence suggests that profitability influences tax avoidance behavior, though findings remain inconsistent across studies (Zahara et al., 2024).

H1: Profitability has a positive effect on tax avoidance.

The Influence of Leverage on Tax Avoidance

Leverage reflects the degree of debt utilization within a firm's financing structure, which can yield tax advantages through the tax shield mechanism. Interest payments on debt are deductible from taxable income, thereby directly lowering the company's tax liability. Drawing on trade-off theory, firms strategically employ debt to capture tax benefits while simultaneously managing associated risks. Consequently, higher leverage expands a company's opportunity to reduce its tax burden, both through direct tax shield effects and broader tax avoidance strategies. Prior studies confirm that leverage influences tax avoidance, though its significance varies depending on contextual conditions (Isdianawati & Fisher, 2025).

H2: Leverage has a positive effect on tax avoidance.

The Effect of Capital Intensity on Tax Avoidance

Capital intensity describes the composition of fixed assets within a firm's overall asset structure. Firms with elevated capital intensity incur substantial depreciation charges, which can be leveraged to reduce taxable income. As a non-cash expense, depreciation enables companies to lower their tax burden without directly impacting cash flow. Accordingly, greater capital intensity increases the likelihood that firms will utilize depreciation policies as a tax-saving mechanism. Recent empirical evidence supports the notion that capital intensity influences tax avoidance behavior, particularly among capital-intensive firms (Laihah & Widiasari, 2024).

H3: Capital intensity has a positive effect on tax avoidance.

Simultaneous Effect on Tax Avoidance

Overall, profitability, leverage, and capital intensity are financial factors that reflect the company's performance, funding structure, and asset characteristics. These three variables collectively shape a company's approach in managing its tax obligations.

H4: Profitability, leverage, and capital intensity simultaneously affect tax avoidance.

METHODOLOGY

This study employs a quantitative causal-associative research design to objectively examine the empirical relationships among the corporate variables under investigation. This approach enables systematic analysis of numerical financial data and facilitates hypothesis testing through rigorous statistical procedures. Secondary data sourced from audited annual reports of energy sector firms listed on the Indonesia Stock Exchange (IDX) for the 2020–2024 fiscal period serve as the empirical foundation. Data were gathered from official repositories, including the IDX official website (www.idx.co.id), individual corporate websites, and the Indonesian Capital Market Directory (ICMD). The study utilizes pooled data consisting of observations from energy sector firms over the 2020–2024 period, allowing for a more comprehensive empirical examination of the relationships among the variables under study.

The study population encompasses all 82 energy companies registered on the IDX. A non-probability purposive sampling technique was applied based on a set of predefined criteria to ensure data quality and analytical validity: (a) the company must remain continuously listed on the IDX throughout the 2020–2024 observation period; (b) the firm must have published complete and independently audited annual financial reports during the study window; (c) the financial statements must contain sufficient disclosures to compute all research variables, including CETR, ROA, DER, and capital intensity; (d) the company must not have experienced delisting or significant trading suspensions during the observation period; and (e) the dataset must be free from extreme outliers that could distort regression outcomes. After applying these criteria, 35 energy sector firms qualified as the final sample. With a five-year observation window, this yielded 175 observations for empirical analysis.

Table 1. Research Sample

No	Code	Company Name
1	ADRO	PT Adaro Energy Indonesia Tbk
2	ADMR	PT Adaro Minerals Indonesia Tbk
3	ITMG	PT Indo Tambangraya Megah Tbk
4	BYAN	PT Bayan Resources Tbk
5	PTBA	PT Bukit Asam Tbk
6	HRUM	PT Harum Energy Tbk
7	PGAS	PT Perusahaan Gas Negara Tbk
8	GEMS	PT Golden Energy Mines Tbk
9	BUMI	PT Bumi Resources Tbk
10	DOID	PT Delta Dunia Makmur Tbk
11	DSSA	PT Dian Swastatika Sentosa Tbk
12	CUAN	PT Petrindo Jaya Kreasi Tbk
13	ENRG	PT Energi Mega Persada Tbk
14	MEDC	PT Medco Energi Internasional Tbk
15	ELSA	PT Elnusa Tbk
16	AKRA	PT AKR Corporindo Tbk
17	RAJA	PT Rukun Raharja Tbk
18	MYOH	PT Samindo Resources Tbk
19	MBAP	PT Mitrabara Adiperdana Tbk
20	PTRO	PT Petrosea Tbk
21	PKPK	PT Perdana Karya Perkasa Tbk
22	APEX	PT Apexindo Pratama Duta Tbk
23	SURE	PT Super Energy Tbk
24	DEWA	PT Darma Henwa Tbk
25	BSSR	PT Baramulti Suksessarana Tbk
26	TOBA	PT TBS Energi Utama Tbk
27	PTIS	PT Indo Straits Tbk
28	TCPI	PT Transcoal Pacific Tbk
29	MTFN	PT Capitalinc Investment Tbk
30	ARTI	PT Ratu Prabu Energi Tbk
31	LEAD	PT Logindo Samudramakmur Tbk
32	WINS	PT Wintermar Offshore Marine Tbk
33	BIPI	PT Astrindo Nusantara Infrastruktur Tbk
34	RMKE	PT RMK Energy Tbk
35	IFSH	PT Ifishdeco Tbk

Source: processed by the author (2026)

The operationalized within this empirical model are categorized into dependent and explanatory frameworks. The main dependent variable in this study is corporate tax avoidance, measured using the Cash Effective Tax Rate (CETR) proxy. CETR is obtained by dividing cash tax payments by pre-tax profit, where lower values reflect a higher degree of tax avoidance behavior. Conversely, the exogenous (independent) domain consists of three primary corporate financial attributes: 1. Profitability, operationalized via Return on

Assets (ROA) to evaluate how efficiently corporate management converts its aggregate asset base into net accounting earnings. 2. Financial Leverage, measured by the Debt to Equity Ratio (DER), reflecting the firm's capital structure and its reliance on debt relative to equity financing. 3. Capital Intensity, measured by the ratio of fixed assets to total assets, indicating the firm's investment proportion in long-term operational assets such as property, plant, and equipment. To evaluate the statistical significance of the explanatory factors on corporate tax behavior, the data were analyzed using multiple linear regression analysis. The econometric model is expressed through the following equation:

$$TA = \alpha + \beta_1ROA + \beta_2DER + \beta_3CAPIN + \varepsilon$$

Prior to hypothesis testing, classical assumption tests were conducted to ensure the validity of the regression model. These tests include the normality test, multicollinearity test, heteroscedasticity test, and autocorrelation test. Furthermore, hypothesis testing was performed using the t-test to assess the partial effect of each independent variable, the F-test to evaluate the simultaneous effect of all independent variables, and the coefficient of determination (R^2) to determine the explanatory power of the model. All statistical tests were conducted at a significance level of 5 percent ($\alpha = 0.05$).

RESULTS

This study presents findings derived from the analysis of dependent and independent variables using secondary data. The research aims to examine the influence of profitability, capital intensity, and leverage on tax avoidance among energy sector companies listed on the Indonesia Stock Exchange (IDX) over the 2020–2024 period. The sample comprises 35 energy sector companies, yielding a total of 175 panel data observations.

Table 2. Results of Descriptive Statistical Test
Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	175	0.03	0.11	0.0652	0.02045
Leverage_DER	175	0.53	2.25	1.2865	0.45425
Capital_Intensity	175	0.27	0.59	0.4193	0.07821
Tax_Avoidance_CETR	175	0.16	0.30	0.2247	0.03299
Valid N (listwise)	175				

Source: processed data, SPSS 27 output (2026).

Based on Table 2, the ROA variable records a minimum of 0.03 and a maximum of 0.11, with a mean of 0.0652 and a standard deviation of 0.02045, suggesting relatively stable yet moderately low profitability across sampled firms. Capital intensity ranges from 0.27 to 0.59, averaging 0.4193 with a standard deviation of 0.07821, indicating a reasonably adequate proportion of fixed assets to support operations. The DER variable spans from 0.53 to 2.25, with a mean of 1.2865 and a standard deviation of 0.45425, reflecting considerable reliance on external debt financing with notable variation among firms. The CETR variable

ranges from 0.16 to 0.30, averaging 0.2247 with a standard deviation of 0.03299, suggesting a relatively low to moderate level of tax avoidance, implying that most firms tend to maintain reasonable tax compliance.

Table 3. Normality Test Results (Kolmogorov-Smirnov)

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Unstandardized Residual	0.052	175	.200*	0.988	175	0.146

Source: processed data, SPSS 27 output (2026)

Based on the One Sample Kolmogorov-Smirnov test in Table 3, the Asymp. Sig. (2-tailed) value of 0.200 exceeds the 0.05 threshold, confirming that the residuals follow a normal distribution. Therefore, the normality assumption is satisfied, and the analysis may proceed to subsequent stages.

Table 4. Multicollinearity Test Results

Model	Collinearity Statistics	
	Tolerance	VIF
ROA	0.016	63.389
Leverage_DER	0.016	61.738
Capital_Intensity	0.013	79.114

a. Dependent Variable:
 Tax_Avoidance_CETR

Source: processed data, SPSS 27 output (2026).

Based on Table 4, the multicollinearity test reveals that tolerance values for all independent variables fall beneath the 0.10 threshold, while their corresponding VIF values surpass the critical value of 10. Such results confirm that multicollinearity exists among the predictor variables in the model. This circumstance implies that certain independent variables share a high degree of correlation, which may undermine the precision and consistency of the regression coefficients. As a result, appropriate remedial measures or model refinements are warranted to mitigate this problem before advancing to further statistical examination.

Table 5. Autocorrelation Test Results

Model Summary ^b						
Model	R	R Square	Adjusted R Square	R	Std. Error of the Estimate	Durbin-Watson
1	.461 ^a	0.461	0.461		0,03699	1.680

a. Predictors: (Constant), Capital_Intensity, Leverage_DER, ROA

b. Dependent Variable: Tax_Avoidance_CETR

Source: processed data, SPSS 27 output (2026)

Based on Table 5, the value of 0.461, reflecting a moderate association among profitability, leverage, capital intensity, and tax avoidance. The R Square figure of 0.461 demonstrates that nearly half (46.1%) of the variability in tax avoidance is accounted for by the three independent variables, whereas the remaining 53.9% is driven by factors not captured in the model. The Adjusted R Square of 0.461 further validates the model's adequate predictive capacity once the number of predictors is taken into consideration. Additionally, the Durbin-Watson statistic of 1.680 lies within the conventionally accepted range of 1.5 to 2.5, providing evidence that autocorrelation is absent from the model. Overall, these findings affirm that the regression model possesses sufficient validity and dependability for subsequent analytical purposes.

Table 6. Results of Multiple Linear Regression Analysis Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.235	0.009		25.827	0.000
	ROA	0.075	0.059	0.046	1.267	0.207
	Leverage_DER	0.046	0.003	0.629	17.500	0.000
	Capital_Intensity	-0.176	0.017	-0.417	-10.238	0.000

a. Dependent Variable: Tax_Avoidance_CETR

Source: Processed Data, SPSS 27 Output (2026)

Based on Table 6, the following regression equation was obtained:

$$\text{CETR} = 0.235 + 0.075\text{ROA} + 0.046\text{DER} - 0.176\text{CAPIN}$$

The interpretation of each coefficient is presented below:

1. A constant value of 0.235 signifies that when all independent variables are assumed to equal zero, the predicted tax avoidance level amounts to 0.235.
2. An ROA coefficient of 0.075 reflects that every one-unit rise in profitability contributes to a 0.075 increment in tax avoidance, provided other variables remain unchanged.
3. A DER coefficient of 0.046 reveals that each one-unit increment in leverage leads to a 0.046 increase in tax avoidance.

4. A capital intensity coefficient of -0.176 demonstrates that every one-unit increment in capital intensity results in a 0.176 reduction in tax avoidance.

The t-test findings for each variable are outlined as follows:

1. The significance value of profitability (ROA) is recorded at 0.207, which surpasses the 0.05 significance level, implying that profitability exerts no meaningful influence on tax avoidance. Consequently, H1 fails to be supported.
2. The significance value of leverage (DER) stands at 0.000, falling beneath the 0.05 threshold, establishing that leverage positively and significantly influences tax avoidance. Accordingly, H2 is supported.
3. The significance value of capital intensity is likewise 0.000, below the 0.05 benchmark, confirming that capital intensity exerts a negative and significant impact on tax avoidance. Accordingly, H3 is supported.

Table 7. Results of Simultaneous Test (F Test)

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.088	3	0.063	50.08	.000 ^b
	Residual	0.001	171	0.000		
	Total	0.089	174			

a. Dependent Variable: Tax_Avoidance_CETR

b. Predictors: (Constant), Capital_Intensity, Leverage_DER, ROA

Source: Processed Data, SPSS 27 Output (2026)

Based on Table 7, the ANOVA test results an F statistic of 50.08 with a significance value of 0.000, which is well beneath the 0.05 threshold. This confirms that profitability (ROA), leverage (DER), and capital intensity jointly exert a significant influence on tax avoidance. These findings validate the overall adequacy of the regression model in capturing the relationship between the predictor and dependent variables. In essence, the interplay among a firm's earnings performance, debt financing structure, and asset composition collectively shapes its approach toward tax burden management.

Table 8. Coefficient of Determination (R²)

Model Summary ^b			
Model	R	R Square	Adjusted R Square
1	.461 ^a	0.461	0.461

a. Predictors: (Constant), Capital_Intensity, Leverage_DER, ROA

b. Dependent Variable: Tax_Avoidance_CETR

Source: Processed Data, SPSS 27 Output (2026)

Based on Table 8, the R Square value of 0.461 signifies that approximately 46.1% of the fluctuations in tax avoidance (CETR) are attributable to ROA, DER, and capital intensity, whereas the remaining 53.9% is determined by other contributing factors not incorporated within the research model.

DISCUSSION

The Influence of Profitability on Tax Avoidance

The results of this study indicate that profitability, measured using Return on Assets (ROA), does not have a significant effect on tax avoidance. This can be seen from the significance value of 0.207, which is higher than the 0.05 significance level. Therefore, the first hypothesis (H1) is not supported. These findings suggest that a company's ability to generate profit from its assets does not necessarily influence its decision to engage in tax avoidance practices. Theoretically, companies with higher profits tend to face larger tax burdens, which may encourage management to implement tax-saving strategies. However, in practice, energy sector companies may not aggressively engage in tax avoidance despite having high profitability levels. One possible reason is that the energy sector is subject to strict government regulations and intensive supervision, limiting companies' flexibility in conducting aggressive tax planning. As a result, companies may prioritize regulatory compliance, corporate reputation, and long-term business stability over efforts to minimize tax expenses aggressively.

In addition, high profitability does not always provide companies with greater opportunities to reduce tax obligations, particularly in industries that operate under strong regulatory oversight. This condition may explain why profitability is not significantly associated with tax avoidance behavior in this study. These results align with Triyanti et al. (2020), whose study found no consistent relationship between profitability and tax avoidance behavior. Handayani (2020) further argued that tax avoidance decisions are shaped by multiple determinants, such as corporate governance and internal policies, rather than profitability in isolation. A comparable conclusion was drawn by Amelia and Kurniawan (2022), who highlighted that varying industry characteristics may drive differences in corporate tax behavior. Nonetheless, these findings stand in contrast to those of Dewi and Laksmi (2023), who argued that firms with greater profitability demonstrate a stronger inclination toward tax avoidance as a strategy to sustain elevated earnings.

The Effect of Leverage on Tax Avoidance

The analysis demonstrates that leverage, measured through the Debt to Equity Ratio (DER), positively and significantly affects tax avoidance, as reflected by a significance value of 0.000 falling below the 0.05 threshold. These results provide support for H2. The findings imply that firms carrying higher debt loads exhibit a greater tendency toward tax avoidance. As debt utilization generates deductible interest expenses, it directly reduces taxable income through what is commonly known as the tax shield mechanism, thereby broadening opportunities for tax burden reduction.

Furthermore, firms with substantial debt obligations face considerable pressure to sustain financial performance and credibility in the eyes of creditors and investors. Under such circumstances, management is compelled to pursue various efficiency-enhancing measures, including tax avoidance, to strengthen the firm's financial standing. This dynamic reinforces the notion that elevated leverage intensifies the motivation to minimize tax expenditures.

These outcomes are in line with Marlinda et al. (2020), who demonstrated that firms exploit interest deductions to lower taxable income, thereby linking leverage to tax avoidance. Manurung et al. (2022) similarly concluded that leverage meaningfully affects corporate tax aggressiveness. Conversely, Nabila and Wibowo (2022) arrived at differing conclusions, arguing that stringent creditor oversight restricts managerial discretion in pursuing aggressive tax strategies, rendering leverage insignificant as a determinant of tax avoidance.

The Influence of Capital Intensity on Tax Avoidance

The study establishes that capital intensity exerts a negative and significant impact on tax avoidance, evidenced by a significance value of 0.000 that falls below the 0.05 benchmark, thereby supporting H3. Contrary to initial expectations, firms with greater fixed asset proportions demonstrate a reduced inclination toward tax avoidance. Although fixed assets theoretically yield tax advantages through depreciation deductions, energy sector firms in this study appear to prioritize fixed asset utilization for sustaining long-term operational continuity rather than as an instrument for tax minimization.

Moreover, companies with considerable fixed asset investments tend to operate under heightened scrutiny from regulators and stakeholders, given the substantial scale of their asset base and capital expenditures. Such intensified oversight may curtail managerial latitude in pursuing aggressive tax strategies, ultimately associating higher capital intensity with diminished tax avoidance activity.

These outcomes correspond with Marlinda, Titisari, and Masitoh (2020), who established that capital intensity shapes tax avoidance through depreciation-driven reductions in taxable income. Stickney and McGee (1982) similarly argued that capital intensity bears relevance to a firm's effective tax rate. Nevertheless, the present findings diverge from those of Rahma and Sari (2023), who contended that firms with elevated capital intensity are more prone to tax avoidance, as depreciation charges furnish additional avenues for reducing tax obligations.

The Effect of Profitability, Leverage, and Capital Intensity Simultaneously on Tax Avoidance

The ANOVA test yields an F value of 50.08 with a significance value of 0.000, well beneath the 0.05 threshold, confirming that profitability, leverage, and capital intensity collectively exert a significant influence on tax avoidance. These results lend support to H4, suggesting that tax avoidance behavior is not driven by a single financial determinant but rather emerges from the combined interplay of multiple internal firm conditions. Profitability captures a firm's earnings-generating capacity, leverage characterizes its debt-based financing structure, and capital intensity represents the share of fixed assets within total assets. Taken

together, these variables paint a comprehensive picture of a firm's financial standing, which ultimately shapes managerial decisions concerning tax policy and planning.

The findings further imply that firms weigh multiple financial dimensions simultaneously when formulating tax avoidance strategies, underscoring that such practices constitute an integral component of broader corporate financial planning rather than an isolated response to any single variable. This conclusion resonates with Tarmidi, Sari, and Handayani (2020), who asserted that tax avoidance is shaped by a confluence of both financial and non-financial considerations. Triyanti, Titisari, and Dewi (2020) similarly reported that profitability, leverage, and firm-specific characteristics jointly determine tax avoidance behavior. In contrast, Putra and Oktaviani (2022) offered a divergent perspective, maintaining that financial variables do not invariably exert simultaneous effects on tax avoidance, attributing such inconsistencies to variations in industry characteristics, regulatory oversight intensity, and firm-level tax management strategies.

CONCLUSIONS AND RECOMMENDATIONS

This study investigates the influence of profitability, leverage, and capital intensity on tax avoidance among energy sector firms listed on the Indonesia Stock Exchange over the 2020–2024 period. The analytical results reveal that profitability bears no significant relationship with tax avoidance, implying that a firm's earnings-generating capacity does not inherently drive tax avoidance behavior. Conversely, leverage demonstrates a positive and significant association with tax avoidance, indicating that firms with greater debt reliance are more inclined to engage in such practices, primarily through interest expense deductions that diminish taxable income. Capital intensity, on the other hand, negatively and significantly affects tax avoidance, suggesting that firms with larger fixed asset proportions exercise greater prudence in pursuing tax avoidance strategies.

When examined collectively, profitability, leverage, and capital intensity are confirmed to simultaneously and significantly shape tax avoidance behavior. This underscores that corporate tax management decisions are not governed by any single factor but rather reflect the holistic interplay of a firm's financial performance, financing composition, and asset structure. Nevertheless, several limitations warrant careful interpretation of these findings. The study is confined to the energy sector, constraining the applicability of results to other industries. The observation window of 2020–2024 is relatively narrow, and the analysis focuses exclusively on internal firm variables, overlooking external determinants such as tax regulatory frameworks, corporate governance mechanisms, and broader macroeconomic conditions.

Subsequent research is encouraged to broaden sample coverage, extend the study period, and incorporate additional variables including corporate governance, firm size, and relevant external factors to enrich understanding of tax avoidance determinants. From a regulatory standpoint, these findings may inform the development of more targeted tax oversight policies, particularly directed at highly leveraged firms that may possess greater capacity and motivation to engage in tax avoidance activities.

FURTHER STUDY

This research still has limitations, so further research is needed on the topic of The Influence of Profitability, Leverage, and Capital Intensity on Tax Avoidance in Energy Sector Companies Listed on the Indonesia Stock Exchange for the 2020-2024 Period in order to refine this study and add insight for readers and the author

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