

Analysis of Profitability, Leverage, and Capital Intensity in Tax Avoidance Practice

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Abstract

This study aims to empirically examine the influence of profitability, leverage, and capital intensity on tax avoidance practices in energy sector companies listed on the Indonesia Stock Exchange (IDX) during the 2021–2024 period. The windfall profit phenomenon due to the global geopolitical crisis and post-pandemic recovery underlies the urgency of testing fiscal compliance behavior in this highly volatile sector. Through the purposive sampling method, a final sample of 99 observation units was obtained. Hypothesis testing was carried out by multiple linear regression analysis using IBM SPSS 27. The results of the partial analysis show that profitability has a negative and significant effect on tax avoidance. This indicates that when a company reaches an extreme level of profit, the push for political costs and public scrutiny forces the company to be more compliant in order to maintain the company's reputation. On the contrary, leverage has been shown to have a positive and significant effect on tax avoidance, confirming that the increase in the proportion of debt is used by management to optimize interest tax shields. Meanwhile, capital intensity has no significant effect on tax avoidance, indicating that fixed asset investment in the energy sector is oriented towards long-term operational needs and green infrastructure recapitalization, not fiscal manipulation instruments. Simultaneously, the three independent variables had a significant effect on tax avoidance with an Adjusted R Square value of 38.8%.

Keywords: Profitabilitas, Leverage, Capital Intensity, Tax Avoidance

Introduction

Taxation is the main instrument of state revenue that plays a vital role in marking national development and maintaining economic stability (Rosmawati & Ginting, 2022). However, there is a fundamental difference in interests between the government and corporations, the government seeks to optimize tax revenue, while corporations consider taxes as a burden that reduces net profit (Muhsin & Abidin, 2025). This conflict of interest prompted companies to adopt tax avoidance practices (tax avoidance), which is a strategy to legally tax burden efficiency by taking advantage of loopholes (loopholes) in the tax laws and regulations (Rahayu & Kurniawati, 2025). At the national economic level, the energy sector in Indonesia has a strategic position as a very capital-intensive sector (capital intensive) as well as being the largest contributor to state revenue and foreign exchange exports (Hayati, 2023). Tax compliance in the energy sector is crucial to be observed in the 2021–2024 period. Observations in this time span are characterized by extraordinary macroeconomic dynamics due to the Russia-Ukraine global geopolitical crisis and the post-pandemic recovery that triggered an extreme surge in world energy commodity prices (windfall profit) (Pandey et al., 2025). This price surge caused the financial performance of energy issuers to shoot up drastically; for example, PT Adaro Energy Indonesia Tbk (ADRO) recorded a net profit increase of up to 613%, and PT Bukit Asam Tbk (PTBA) jumped by 355%. Supernormal profit surprise (windfall profit) not only changes the structure of the company's profitability, but also draws close attention from government agencies and the public, and triggers a discourse on imposition Windfall Profit Tax (Wahyuni, 2025).

The price change has a direct impact on the financial performance of energy companies, especially in the aspect of profitability (Duhoon & Singh, 2025). This situation prompted management to adjust the Company's financial policies, including policies related to the management of tax obligations (Adelia et al., 2022). This phenomenon is no longer just a local compliance issue, but rather a form of opportunistic corporate response within the financial risk management corridor in emerging markets to secure net profits for shareholders (Dote-pardo & Severino-gonzález, 2025). Profitability An abundant increase in profits theoretically has the potential to significantly increase the nominal tax burden (Islamudin et al., 2025). However, the high political visibility of the windfall profit forcing management to take into account political cost not to aggressively evade taxes in order to maintain the Company's reputation (Setyaningsih et al., 2023). Leverage To respond to the needs of expansion, capital restructuring, and the transition to green energy (Green Economy), energy issuers make extensive use of long-term debt financing schemes (Adelia et al., 2022). The use of this debt incurs an interest expense which is fiscally recognized as a deduction of taxable income (interest tax shield), thus

potentially lowering the value of Effective Tax Rate (ETR) company (Alfandia & Muliasari, 2024). Capital Intensity The energy sector requires a huge allocation of fixed assets such as heavy equipment and mining infrastructure (Laughter) et al., 2025). Massive fixed asset ownership results in depreciation expense (depreciation expense) non-cash that has the potential to legally deduct taxable profits (S. N. Sari & Widyastuti, 2025).

Although the influence of profitability, leverage, and capital intensity on tax avoidance has been widely researched, previous empirical findings still show inconsistencies (research gaps). Research by Tarigan & Sari (2025) and Setyaningsih et al. (2023) found that profitability has an effect on tax avoidance, while Saputra & Kurniawati (2024) found insignificant results. Regarding leverage, the research of Lala Atul Laiyah & Widyasari (2020) confirmed the existence of a significant positive influence, but Indah et al. (2024) found no significant influence. In the capital intensity variable, Ramadhani (2022) recorded a significant positive influence, while Fatiha & Murtanto (2024) and Nursari & Nazir (2023) reported no significant influence. Most previous research has focused on the general manufacturing sector under stable economic conditions. This secondary quantitative research contributes novelty by re-examining the regression model in the specific context of energy sector issuers listed on the IDX in the 2021–2024 period. This research does not simply use windfall profits and geopolitical crises as a background, but integrates these contexts to bridge the conflict between managerial efficiency (Agency Theory) and public visibility supervision (Political Cost Theory). Based on the description above, this study aims to test and empirically analyze the influence of profitability, leverage, and capital intensity both partially and simultaneously on tax avoidance in energy sector issuers on the IDX for the 2021–2024 period.

Literature Review

Agency Theory

Agency theory or agency theory describes the theory that describes the contractual relationship between the owner of the company (principal) and the management of the company (agent) in carrying out the company's operational activities. This theory was initially developed by Jensen and Meckling (1976) who explained that agency relationships arise when the company holder gives the authority for management to manage the company's resources and identify related problems and the interests of the business entity. In this relationship, there is a possibility of a diversity of needs between the principal and the agent. Company owners generally have the goal of increasing the company's value and obtaining an optimal rate of return on investment, while management has an interest in maintaining the company's performance and achieving certain targets related to evaluation and managerial compensation (Alfandia & Muliasari, 2024). These differences in goals can cause a conflict of interest known as agency conflict.

Agency problems are increasingly complicated due to the existence of asymmetrical information between company owners and management. Management as a party that carries out operational activities has wider access to internal data than the company owner, including information about financial conditions, business strategies, and tax policies implemented by the company (Sigh) et al., 2025). This information imbalance makes it possible for management to decide on something that can provide opportunities if it is not accompanied by an adequate monitoring mechanism. In the context of taxation, agency theory is related to corporate tax management efforts in reducing the tax burden. Management can carry out strategies tax avoidance As an effort to improve the company's financial efficiency through reducing tax liabilities that are still within the range of applicable rules. Although such actions may provide economic benefits to the company, they still require oversight so as not to conflict with the long-term interests of the company and shareholders (Rahayu & Kurniawati, 2025). Thus, agency theory serves as a conceptual basis in explaining the relationship between the financial characteristics of a company such as profitability, leverage, and capital intensity on the way management makes decisions in managing these factors as well as practices tax avoidance. Management decisions in managing these factors can reflect efforts to achieve the company's economic efficiency through certain taxation strategies.

Political Cost Theory

Political Cost Theory was pioneered by Watts and Zimmerman (1986) as one of the main pillars of Positive Accounting Theory. This theory is rooted in the Positive Economic Theory initiated by Milton Friedman (1953), which is descriptive, objective, and value-free to explain and predict the choice of accounting methods by management in the real world. In the framework of Positive Accounting, a company is seen as a nexus of contracts in which each economic actor including managers, owners, and regulators acts rationally to maximize his or her personal satisfaction or well-being.

One of the main pillars formulated by Watts and Zimmerman (1986) is the Political Cost Hypothesis. This hypothesis predicts that large or high-profitability companies tend to choose accounting methods that lower reported profits in the current period. The reason behind this action is that large companies are much more vulnerable to political attention, such as tight scrutiny from regulators, higher tax demands, threats of new regulations, and anti-monopoly investigations. Therefore, by reporting less conspicuous profits, management tries to display the image of a company that is not very profitable in order to reduce or minimize the political costs that can potentially be imposed on them.

In the context of energy sector issuers for the 2021–2024 period, the surge in global commodity prices triggered the occurrence of excess profits (windfall profit) which is very significant (Wahyuni, 2025). Based on the Political Cost Hypothesis, when a company is in a highly politically visible position (politically sensitive or highly visible), management will not solely pursue tax saving efficiency aggressively through fiscal engineering (Setyaningsih et al., 2023). Instead, management will act more cautiously (risk-averse) by complying with the applicable tax provisions, namely maintaining Effective Tax Rate (ETR) remained stable in the normative range. This step was taken to dampen the public spotlight, avoid intensive tax auditing sanctions, and dampen the discourse on the implementation of regulations such as Windfall Profit Tax (Wahyuni, 2025)

Tax Avoidance

Tax avoidance refers to the tactic of managing tax obligations that are carried out legally by taking advantage of loopholes or ambiguities in existing tax regulations (Aini & Kartika, 2022). This action is carried out without directly violating the law, but takes advantage of the understanding of the regulations to reduce the amount of tax that must be paid by the Company (Apriani & Sunarto, 2022). Within the framework of agency theory, management is responsible for improving the efficiency of the company's performance, including in the management of tax liabilities (Susanto & Jusuf, 2025). Efforts to reduce tax liabilities are often considered as one of the strategies to improve a company's cash flow after taxes (Fatiha & Murtanto, 2024). Using this approach, funds that were initially used to pay taxes can be diverted to support the company's operational activities or investments, so that the potential to increase the company's value can be achieved (Putri, 2023). In empirical studies, the measurement of the rate of tax avoidance is generally carried out with an indicator of effective tax rates or effective tax rate (ETR), which is the ratio between the tax liability paid by the company and the profit before tax (Ramadhani, 2022). A lower ETR is often interpreted as a sign of tax avoidance efforts by companies (Saputra & Kurniawati, 2024).

The Effect of Profitability on Tax Avoidance

Profitability is considered one of the important measures in evaluating a company's financial performance (Septiya et al., 2024). In agency theory, a high level of profitability is a major focus for company owners because it is directly related to the possible return on investment to be received (Tarigan & Sari, 2025). On the other hand, the increase in corporate profits is also accompanied by an increase in tax liabilities that must be paid to the government (Pucantika & Wulandari, 2022). This situation can have an impact on the reduction of net profit that can be channeled to shareholders in the form of dividends (Wi & Monicca, 2023). This condition encourages management to implement various tax efficiency measures to maintain a net profit level that is considered ideal by investors (S. N. Sari & Widyastuti, 2025). In this case, tax avoidance can be adopted as a way to reduce the amount of tax that needs to be paid by the company (Saputra & Kurniawati, 2024). In addition, a performance-oriented compensation system can also provide an incentive for management to maintain profitability through a more aggressive tax management strategy (Atul, 2024). The existence of inconsistency of information between management and company owners provides an opportunity for managers to implement certain tax policies without the full knowledge of the principal, as long as the policy is still in accordance with existing regulations (Nurhidayat & Sulastris, 2025). With these considerations, the higher the profitability of a company, the more likely it is to evade taxes (Putri, 2023). According to studies Aini & Kartika (2022), Wi & Monicca, (2023), N. E. Sari & Andrian (2024) prove profitability has a significant positive effect on tax avoidance.

H1: Profitability affects Tax Avoidance practices

The Effect of Leverage on Tax Avoidance

Leverage shows the extent to which the company uses funds derived from loans in its capital structure (Handley, 2023). In the context of agency theory, the utilization of debt not only serves as a source of funds, but also has the potential to be a tool to control the actions of managers (Alfandia & Muliasari, 2024). Management as an agent has an incentive to utilize debt funding to obtain tax savings benefits, so that it can improve the Company's performance according to the expectations of shareholders. The obligation to pay interest on a regular basis encourages management to manage the Company's cash in a more efficient way (Setyaningsih

et al., 2023). From a tax perspective, interest generated from the use of debt can be considered a deductible expense from taxable income (Apriani & Sunarto, 2022). As a result, an increasing proportion of debt in a company's capital structure is likely to reduce the amount of reported taxable profit (Susanto & Jusuf, 2025). The use of this mechanism is usually related to the concept of interest tax protection, which is the tax saving profit obtained by the company through tax deductions derived from interest costs (Fatiha & Murtanto, 2024). Therefore, the manager's decision to raise the leverage can be seen as a fiscal efficiency measure that is in line with the company's owner's goal of reducing tax-related cash expenditure (Putri, 2023). Some studies have also shown that a funding structure that relies on debt has an effect on the reduction of the effective tax rate of the Company (Rahayu & Kurniawati, 2025). Based on the discussion above, the leverage higher is expected to increase the likelihood of companies implementing tax avoidance practices through the use of tax deductions from debt interest costs (Septiya et al., 2024). Testing Putra & Hartati (2024), Adhima (2023) recorded a significant positive influence.

H2: Leverage Affects Tax Avoidance Practices

The Effect of Capital Intensity on Tax Avoidance

Capital intensity shows how much a company's investment in fixed assets supports its operational activities (Manurung et al., 2025). In the context of agency theory, investment decisions regarding assets remain under managerial control, as management has the right to choose the asset structure to be used by the Company (Saputra & Kurniawati, 2024). Generally, fixed assets owned by companies will decrease in value over time, so it is necessary to recognize the depreciation expense in the financial statements (Nursari & Nazir, 2023). From a tax point of view, this depreciation cost can be seen as a deduction of legally recognized taxable profits (Aini & Kartika, 2022). Therefore, companies with a larger proportion of fixed assets typically have a higher level of depreciation expense (Tarigan & Sari, 2025). This depreciation burden can be used as a way to indirectly reduce taxes, because it can reduce the amount of profit taxed without the need for additional cash expenditure (Pucantika & Wulandari, 2022). Therefore, high levels of capital intensity are often seen as a factor that may encourage legitimate tax avoidance practices through optimization of fixed asset depreciation expenses (N. E. Sari & Andrian, 2024). This approach allows companies to maintain operational capacity through productive asset ownership while reducing tax liabilities payable (Ramadhani, 2022). In other words, capital intensity can serve as a fiscal efficiency tool that supports the company's owner's goal of protecting the economic value of the entity (Oktari et al., 2024). Based on this explanation, the higher the level of capital intensity that the company has, the likelihood of the company to evade taxes is also expected to increase (S. N. Sari & Widyastuti, 2025). Empirical analysis Caroline & Fajriana (2023), Putra & Hartati (2024), Fatiha & Murtanto (2024), Ramadhani (2022) produces a significant positive influence.

H3: Capital Intensity affects Tax Avoidance practices

Method

This study uses an organized quantitative approach to see the relationship between variables by arranging data in the form of numbers and analyzing it using statistical methods. Using a quantitative approach, this study aims to test the theory objectively, so that the results can be used in various situations. This study uses data from companies in the energy sector listed on the Indonesia Stock Exchange, with an observation period from 2021 to 2024. Data processing is carried out using IBM SPSS software version 27 in order to obtain more accurate and precise statistical results. The selection of this sector is based on the nature of the industry which has a complicated transaction process and has large fixed assets, so it can have an impact on the company's tax policy. To take samples, the method used is purposive sampling, which is to select samples based on certain criteria in order to obtain relevant and accurate data. The sample selection criteria in this study can be explained as follows:

Table 1. Research Sample Results

Populasi	Quantity
Energy sector companies listed on the Indonesia Stock Exchange (IDX) for the 2021-2024 period;	364
Energy sector companies that do not publish full financial statements;	(36)
The company incurred losses during the research period;	(39)

Energy companies that do not provide complete information on the variable indicators used do not comply;	(159)
Data affected by outliers	(31)
Total	99

Tax avoidance is the main dependent variable in this study. Its independent variables include profitability, leverage, and capital intensity. Tax avoidance or tax avoidance is defined as a tax planning scheme that is carried out legally through the use of loopholes (loopholes) in the applicable tax rules without violating the law (Caroline & Fajriana, 2023). This strategy is implemented by the management so that company taxes can be minimized, so that the company's money can be used for other operational needs (Saputra & Kurniawati, 2024).

In this study, the rate of tax evasion was measured using an indicator Effective Tax Rate (ETR) (Putri, 2023). This ratio shows the percentage of income tax actually paid out of the total profit recorded in the accounting before tax (Nursari & Nazir, 2023). The interpretation of this ratio is that on the contrary, the smaller the value of the ETR obtained, the greater the difference between the profit recorded in accounting and the profit taxable, which indicates that the company is increasingly active in carrying out tax avoidance practices.(Enggelina, 2024).

Profitability shows how well a company's management is able to generate profits by utilizing all the resources or assets it has.(Saputra & Kurniawati, 2024). According to the agency's theory, large profits make managers tend to avoid paying taxes in order to maintain good financial results in the eyes of shareholders (Fadhilah et al., 2025). This variable is measured using the Return on Assets (ROA) ratio.

Leverage is a ratio that shows how much a company's funding structure relies on borrowed funds from outside parties (creditors) compared to its own capital(Caroline & Fajriana, 2023). Using debt will generate interest that can be deducted from taxable income, so it can logically help reduce the taxes that must be paid by the company(N. E. Sari & Andrian, 2024). The leverage measurement in this study uses the Debt to Equity Ratio (DER).

Capital Intensity or capital intensity describes how a company uses its wealth to purchase fixed assets such as machinery, buildings, and work equipment (Ramadhani, 2022). Having large fixed assets provides benefits in the form of tax reductions through depreciation expenses that are given periodically and regularly, so that it is systematically able to reduce tax profits (Adelia et al., 2022)This variable is proxied by the Capital Intensity Ratio.

Data analysis is carried out slowly with the help of a statistical program so that the research results remain accurate and legitimate. Descriptive statistical tests are used to show an overview of how the distribution of research data takes place by listing the smallest mean values, largest values and standard deviations. The classical assumption test includes testing normality, multicollinearity, heteroscedasticity, and autocorrelation to ensure the resulting regression model meets the criteria of the Best Linear Unbiased Estimator (BLUE). Multiple Linear Regression Analysis Using regression equations to determine the impact between variables with the model:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$$

Remarks :

Y = Tax Avoidance

α = Constant

β = Regression Coefficient

X1 = Profitability

X2 = Leverage

X3 = Capital Intensity

The hypothesis test was carried out using the t-test to determine the influence of each variable separately, the Anova test to compare the averages between variables, and the analysis of the determination coefficient (R^2) to determine the extent to which the independent variable is able to explain the variable depend.

Results and Discussion

Results

This research focuses on energy sector issuers listed on the Indonesia Stock Exchange (IDX) with an observation period from 2021 to 2024. Based on the sample selection procedure that has been determined through the purposive sampling method, as many as 99 observation units were obtained that met the criteria for further analysis in the research model.

The following is presented a tabulation of descriptive statistical data on the data:

Tabel 2. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
PROFITABILITY	99	0.06635	34.33704	8.6548643	8.75186604
LEVERAGE	99	4.13537	362.35382	101.1849852	75.46210879
CAPITAL INTENSITY	99	0.04612	84.92967	29.1196646	22.57610263
TAX AVOIDANCE	99	3.11790	89.13478	35.8310322	17.87249098
Valid N (listwise)	99				

Source: SPSS Output, 2026

Descriptive statistical analysis is used to elucidate the characteristics of the research data. In this case, there were 99 observations, and included the lowest value, highest value, average, and standard deviation for each variable studied. Based on the results of data analysis in Table 3, this study uses 99 observations of energy sector companies listed on the Indonesia Stock Exchange (IDX) for the period from 2021 to 2024.

Based on the data from the results of the descriptive statistical test, the profitability variable has a fairly wide range of values in the energy sector issuers studied. The minimum value was recorded at 0.00, which indicates that there are companies in the sample that are in a condition of not generating net profit or experiencing break-even points. On the other hand, the maximum value reached 45.43, indicating that there are issuers who are able to generate a very high rate of return or profit. The average value (mean) of profitability in this sector is at 9.3768, which means that in general the ability of energy issuers to make profits is quite good. The standard deviation value of 9.95902 (greater than the average value) reflects a high level of variability or gap between companies in generating net profit during the observation period.

In the leverage variable, the analysis results showed the lowest value of 4.14, which indicates that there are energy issuers that have a very safe capital structure with minimal dependence on external parties (debt). On the other hand, the highest value that touched 275.94 proves that there are companies that are very aggressive in utilizing loan funds, where the amount of debt far exceeds the total capital owned. The average leverage value of 95.5582 indicates that most energy sector issuers use debt almost equal to their own capital proportion to fund their operations. The level of data dissemination indicated by the standard deviation value of 67.84304 confirms the difference in capital structure policies that are very contrasting among the issuers that are the object of the study.

Descriptive analysis of the capital intensity variable yielded the smallest value of 0.05, which means that there are companies that allocate only a small part of their total assets in the form of fixed assets. Meanwhile, the maximum value reached 80.27, which confirms the characteristics of the energy industry as a capital-intensive sector, where the majority of the company's wealth is manifested in the form of fixed assets such as land, factories, machinery, or mining infrastructure. The average value of this variable was recorded at 27.5016, indicating that in general about one-third of the total assets of energy issuers are fixed assets. The standard deviation value of 21.45357 indicates that the variation in investment in fixed assets among the observation sample is moderate.

Tabel 3. Classic Assumption Test

Num	Assumption	Criteria	Result	Information
1	Normality	Nilai Asymp. Sig. (2-tailed) >0.05	Nilai Asymp. Sig. (2-tailed) 0.094 > 0.05	Residual Normal distribution

2	Autocorrelation	dU<DW<4-dU	1.7355 < 2.094 < 2.2645	Autocorrelation Free
3	Multicollinearity	Tolerance >0.10; VIF <10	PROFITABILITY: Tolerance 0.854; LIVELY 1.171 LEVERAGE: Tolerance 0.903; VIF 1.107 CAPITAL INTENSITY: Tolerance 0.933; VIF 1.072	Multicollinearity Free
4	Heteroskedasticity	Uji Glejser Sig >0.05	PROFITABILITY Sig 0.127 LEVERAGE Sig 0.361 CAPITAL INTENSITY Sig 0.242	X1: Heteroscedasticity free X2: Heteroscedasticity free X3: Heteroscedasticity free

Source: SPSS Output, 2026

Classical assumption testing is carried out in order to ensure that the regression model used meets the basic assumptions in multiple linear regression. Based on the results of the normality test using the Kolmogorov-Smirnov One-Sample method, a significance value of 0.094 was found. The value was greater than 0.05 ($0.094 > 0.05$), so it can be concluded that the rest of the study followed the normal distribution. The results of the autocorrelation test showed a Durbin-Watson value of 1.648. The value is in the range of $dU < DW < 4 - dU$ ($dU < 2.094 < 2.2645$), so it can be concluded that the regression model does not experience autocorrelation problems. In multicollinearity testing, all independent variables had a tolerance value greater than 0.10 and a VIF value of less than 10. Profitability has a tolerance value of 0.854 and VIF of 1.171. Leverage has a tolerance value of 0.903 and a VIF of 1.107. Capital Intensity has a tolerance level of 0.933 and a VIF value of 1.072. These results show that in the study model no symptoms of multicollinearity were found. Based on the heteroscedasticity test with the Glejser method, of the three variables Profitability, Leverage, Capital Intensity both have significant results of more than 0.05, meaning that the results of the test show heteroscedasticity-free results.

Multiple Linear Regression Test

The results of multiple linear regression analysis are shown in the data:

Table 4. Multiple Linear Regression Test

Model	Unstandardized Coefficients		Standardized Coefficients
	B	Std. Error	
1 (Constant)	2.986	0.230	
LN_X1	-0.160	0.030	-0.464
LN_X2	0.158	0.042	0.311
LN_X3	0.016	0.029	0.045

a. Dependent Variable: LN_Y

$$Y = a + b_1 X_1 + b_2 X_2 + b_3 X_3 + e$$

$$Y = 2.986 - 0.160 X_1 + 0.158 X_2 + 0.016 X_3 + e$$

1. The constant is 2.986 which means that if the independent variables, namely Profitability, Capital Intensity, and Leverage are valued at 0, then the tax avoidance value is 2.986.
2. The regression coefficient X1, namely profitability is -0.160, which means that every increase of one unit of profitability will decrease tax avoidance -0.160 assuming that the other variable is constant or equal to zero.
3. The regression coefficient of X2, which is leverage is 0.158, which means that each increase in leverage will increase tax avoidance by 0.158 assuming that the other variable is constant or equal to zero.
4. The coefficient of X3, namely capital intensity, is 0.016, meaning that every increase of one unit of capital intensity will decrease the tax avoidance of 0.016 assuming that the other variables are constant or equal to zero.

Model and Hypothesis Test

Table 5. Model and Test Hypothesis

Test Model	Results	Conclusion
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Anova	Sig. <0.001	The Sig. value < 0.001 < 0.05, then the next test can be continued
Adjusted R. Square	0.388	38.8% of profitability, leverage, and capital intensity can affect tax avoidance and 61.2% can be influenced by other factors
Uji Hypothesis	Say.	Conclusion
Profitabilitas – Tax Avoidance	<0.001	H ₁ : Negative effect
Leverage – Tax Avoidance	<0.001	H ₂ : Significant positive effect
Capital Intensity – Tax Avoidance	0.581	H ₃ : No significant effect

Source: SPSS Output, 2026

Based on the results of the simultaneous test (F test), a significance value of <0.001 was obtained. The value is less than 0.05 so it can be concluded that the regression model is feasible to use and the variables Profitability, Leverage, and Capital Intensity together affect Tax Avoidance. The Adjusted R Square value of 0.388 indicates that 38.8% of the variation in Tax Avoidance can be explained by the variables Profitability, Leverage, and Capital Intensity. While the remaining 61.2% was explained by other variables outside the research model.

The results of the partial test (t-test) showed that Profitability had a significance value of <0.001 with a negative regression coefficient, so that H₁ was accepted and Profitability had a significant negative effect on Tax Avoidance. Leverage has a significance value of <0.001 with a positive regression coefficient, so H₂ is accepted and Leverage has a significant positive effect on Tax Avoidance. Meanwhile, Capital Intensity has a significance value of 0.581 which is greater than 0.05, so H₃ is rejected and Capital Intensity has no significant effect on Tax Avoidance.

Discussion

The Effect of Profitability on Tax Avoidance

Based on the results of the partial test (t-test), the variable Profitability was proven to have a significance value of <0.001 with a negative regression coefficient value of -0.160. This finding empirically shows that the first hypothesis is accepted, namely profitability has a negative and significant effect on X_1H_1 tax avoidance actions in energy sector issuers listed on the Indonesia Stock Exchange (IDX) for the 2021–2024 period. This negative direction indicates that every increase in one unit of profitability will significantly reduce the rate of tax avoidance measures

This condition is supported by descriptive data that shows a fairly dynamic range of profitability variability in the energy industry during the observation period. Based on observation data, the average value (mean) of the issuer's profitability is at 9.3768% with a maximum value of 45.43%. This abundance of profitability indicates optimal operational performance of energy issuers, driven by the momentum of the post-pandemic surge in global commodity prices. The standard deviation figure of 9.95902% reflects a fairly wide profit gap between companies, but for the group of issuers with high profits, they tend to display stable ETR values and comply with normative regulatory rates.

In real terms, this phenomenon is closely related to the occurrence of windfall profits in 2021 and 2022 due to the Russia-Ukraine geopolitical conflict which catapulted the profits of energy sector issuers by hundreds of percent. For example, PT Adaro Energy Indonesia Tbk (ADRO) recorded a 613% jump in net profit and PT Bukit Asam Tbk (PTBA) shot up to 355%. Although this surge in profits increases the nominal amount of their tax liability, the government's strict public scrutiny and discourse on the implementation of the Windfall Profit Tax force these large issuers to maintain their reputations by maintaining high ETRs (such as PT Bukit Asam Tbk at 19.2% and PT Adaro Energy Indonesia Tbk at 18.5%) instead of aggressively avoiding them.

Viewed from the perspective of agency theory, this negative relationship shows a shift in the motivation of managers (agents) when the company has abundant internal funds available. When the company's profitability is very high, management is in a safe position regarding performance appraisal in the eyes of shareholders (principals). As a result, managers no longer have the urgent incentive or opportunistic pressure to carry out tax engineering that risks damaging the corporate image. The availability of high liquidity makes the company able to pay its tax obligations in full without worrying about disrupting operational cash flow and dividend distribution for investors.

The results of this study are in line with and support the conclusions of studies conducted by Tarigan & Sari (2025), Setyaningsih et al. (2023), and Susanto & Jusuf (2025) which also prove the influence of profitability significance in influencing corporate tax avoidance policies. However, these findings are not in line with research from Aini & Kartika (2022) and Wi & Monicca (2023) which states that profitability has a positive effect on tax avoidance, as well as the results of a study by Muhammad Rizki Saputra & Lintang Kurniawati (2024) which confirm the existence of an insignificant effect.

The Effect of Leverage on Tax Avoidance

Based on the results of the partial test (t-test), the Leverage variable () has a significance value of <0.001 with a positive regression coefficient value of 0.158. This result empirically indicates that the second hypothesis () is accepted, in which leverage has a significant and positive effect on action X_2H_2 tax avoidance energy issuers on the IDX for the 2021–2024 period. A positive regression coefficient value implies that any increase in the proportion of debt in the company's capital structure will significantly increase the intensity of the company's tax avoidance practices.

Descriptive data support these findings by showing that the average (red) leverage of energy sector issuers proxied through ratios Debt to Equity Ratio (DER) reached 95.5582% with a maximum value of 275.94%. The standard deviation recorded at 67.84304% indicates a sharply variable pattern of external funding among observation units. The high average leverage figure of close to 100% shows that funding through third-party debt is an important pillar for the operation and expansion of the energy industry.

Operationally, the high leverage on energy issuers is due to the capital-intensive nature of the industry, where the management of exploration and development of mining infrastructure requires massive long-term financing. During the 2021–2024 period, many energy companies took out new loans to fund the energy transition or expansion into the new renewable energy (NRE) sector to meet demands Green Economy. This large debt scheme triggers significant annual interest expense expenses, which are recorded to significantly reduce commercial profits before taxes.

Theoretically, this logical linkage can be explained through the theory of tax agency, where debt is used as a legal instrument of fiscal efficiency. Based on applicable tax regulations, interest costs on loans are categorized as deducting the taxable income burden (tax deductible expense). Management acts as a shrewd tax agent by maximizing the use of debt to obtain interest tax shield (interest tax protection). With the soaring interest expense, the reported fiscal profit shrinks, which automatically lowers the value of the corporation's effective tax rate (ETR) without violating the applicable legal provisions.

These findings reinforce empirical evidence from research conducted by Lala Atul Laiyah & Widyasari (2020), Putra & Hartati (2024), and Adhima (2023) which noted a significant positive effect of leverage on tax aggressiveness. On the contrary, these results are contrary to the findings of Indah et al. (2024) and Sonia Nanda Sari (2025) who found that leverage does not have a significant influence on corporate tax avoidance actions.

The Effect of Capital Intensity on Tax Avoidance

Based on the results of the t-test analysis, the Capital Intensity variable () showed a significance value of 0.581. This significance value is much greater than the baseline significance threshold of 0.05(), so it can be concluded that the third hypothesis () is rejected. This partial finding proves that $X_30,581 > 0,05H_3$ capital intensity has no significant effect on the action tax avoidance in energy sector issuers on the Indonesia Stock Exchange during the 2021–2024 observation period.

Based on descriptive statistical tabulation, the portion of energy issuers' investment in fixed assets is quite large with an average value (red) of 27.5016% and the highest value reached 80.27%. The standard deviation value of 21.45357% confirms the diversity of the proportion of fixed asset ownership between energy companies in the sample. Although the majority of energy issuers allocate almost a third of their total assets in the form of productive fixed assets, the variation in the amount of fixed assets has proven to be not linearly correlated with the ups and downs of corporate tax avoidance activities.

In real terms in the field, energy issuers on the IDX throughout the 2021-2022 period have indeed made massive investments in the purchase of heavy equipment, rejuvenation of mining infrastructure, and the

construction of environmentally friendly power plants (green energy transformation). However, the amount of depreciation (depreciation) of fixed assets is not automatically used as a tool to manipulate taxes deliberately. This is because the method of depreciation of assets remains strictly and rigidly regulated in the tax law (through fiscal useful life groups), so management does not have the flexibility to change the value of depreciation for short-term tax planning purposes.

Within the framework of agency theory, these insignificant results indicate that the policy of fixed asset ownership is purely taken by management (agent) is based on the real operational needs of the corporation, not on the basis of opportunistic impulses to reduce fiscal burdens. Investing in capital-intensive assets aims for the long term to secure commodity production capacity amid global price volatility. Because depreciation expenses are non-cash and the mechanism is standard under tax law, managers do not view the management of fixed asset components as a flexible instrument in concealing or minimizing commercial profit information from the principal or the state fiscal authorities.

The conclusion that capital intensity does not have a significant effect is fully supported by the results of previous research from Fatiha & Murtanto (2024) and Nursari & Nazir (2023). However, the results of this test contradict empirical research published by Amelia Ramadhani (2022), Caroline & Fajriana (2023), and Putra & Hartati (2024) which states that the asset intensity aspect still has a positive and significant effect on the increase in actions tax avoidance.

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

Through simultaneous testing (F/Anova test), a statistically significant value of <0.001 was obtained, which was much smaller than the value of . This result empirically proves that the regression model used is feasible (fit) and together the variables Profitability, Leverage, and Capital Intensity have a significant influence on practices tax avoidance in energy sector issuers listed on the IDX for the period 2021–2024.

Support for the feasibility of this testing model is demonstrated by the achievement of the Adjusted R Square by 0.388 or 38.8%. This number explains mathematically that the variation of the ups and downs of action tax avoidance In the energy industry, it can be explained simultaneously by 38.8% by a combination of the movement of profitability, leverage, and capital intensity ratios. Meanwhile, the remaining larger portion, 61.2%, is explained by financial and other non-financial factors outside the framework of this research model.

When correlated with the macroeconomic conditions of the energy industry throughout the observation period (2021–2024), the combined three financial factors reflect a complete portrait of the issuer's survival strategy amid high volatility in the global commodity market. The dynamics of fluctuating profits, adjustments to the portion of debt financing for new energy projects, and commitments to invest in green mining infrastructure collectively require management to make comprehensive adjustments to the company's liquidity management, including its tax liability management policy.

Theoretically, the logical relationship of these three independent variables to tax avoidance is rooted in the minimization of conflicts of interest within the framework of agency theory (agency theory). Company owners (principal) expects an optimization of company value, one of which is realized through the efficiency of cost allocation, including tax costs. Management (agent) translates this desire by combining internal orchestration: maintaining the stability of operating profits, taking advantage of tax protection on loan interest costs, and optimizing the depreciation of operational assets to reduce the value of Effective Tax Rate (ETR) to stay within the boundaries of the most efficient legal compliance corridor.

The results of this significant simultaneous testing are in line with the foundations of quantitative thinking from Susanto (2023) and Susanto & Jusuf (2025) who confirm that the financial characteristics of companies captured through profitability, capital intensity, and debt together intervene in management decisions in formulating tax management policies (tax planning). However, the partial variation in influence contribution shows the existence of a unique sectoral characteristic in the energy industry when compared to simultaneous testing in the manufacturing industry in general.

Conclusion

Based on the results of data analysis and discussions that have been carried out, research on tax avoidance practices (tax avoidance) in energy sector issuers listed on the Indonesia Stock Exchange (IDX) for the 2021–2024 period managed to draw several crucial conclusions. Through partial testing, it was found that the profitability variable was shown to have a significant negative influence on tax avoidance actions, indicating

that when energy sector issuers generate high profits, they tend to comply and reduce tax manipulation actions in order to preserve the company's reputation). On the other hand, testing of the leverage variable showed the opposite result, where leverage was proven to have a positive and significant effect on tax avoidance practices. These findings confirm that the larger the proportion of debt used by energy companies, the higher the intensity of tax avoidance actions through optimizing tax protection for loan interest expenses (interest tax shield) (Susanto, 2023). Meanwhile, the capital intensity variable was found to have no significant influence on tax avoidance measures because the fixed asset ownership policy is purely based on long-term operational needs. (Tarigan & Sari, 2025). Simultaneously, profitability, leverage, and capital intensity have been proven to have a significant effect on tax avoidance with a model determination value of 38.8%.

This study has several limitations that can affect the degree of generalization of the results. The first limitation lies in the scope of the independent variables used, where financial analysis is limited only to the aspects of profitability, leverage, and capital intensity. Considering that the determination value of this model is at 38.8%, this is evidence that there are still many other financial and non-financial factors that have not been included in the framework of this study. In addition, the object of this research only focuses specifically on issuers in the energy sector listed on the IDX, so the conclusions found cannot necessarily be generalized in the same way to other industrial sectors. The last limitation is related to the relatively short observation time span, which only covers a four-year period from 2021 to 2024 which coincides with an economic anomaly in the form of a surge in global commodity prices (windfall profit) (Susanto & Jusuf, 2025).

Departing from these limitations, there are several practical suggestions that can be submitted for related parties. For company management, especially energy sector issuers, it is expected to continue to maintain a commitment to transparency and tax compliance, especially when the company is in a condition of high profitability. For tax authorities such as the Directorate General of Taxes (DGT), the results of research that show a strong correlation between increased debt and aggressive tax avoidance need to be anticipated by tightening fiscal supervision and auditing compliance more intensively on issuers that have leverage ratios. Finally, for future researchers, it is recommended to expand the scope of research by adding other potential independent variables such as company size, corporate governance (corporate governance), as well as practice transfer pricing (Susanto, 2023). Future researchers are also advised to extend the range of years of observation and expand the research object to other industrial sectors on the IDX in order to produce more comprehensive and generalized conclusions (Tarigan & Sari, 2025).

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