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THE EFFECT OF PROFITABILITY AND LEVERAGE ON TAX AVOIDANCE WITH FIRM SIZE AS A MODERATING VARIABLE

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Abstract:
This study was conducted to examine the effects of profitability and leverage on tax avoidance with firm size as moderating variable. The object of this study is the financial statements of energy sector companies listed on the Indonesia Stock Exchange (IDX) where the data collection method uses the purposive sampling method, where the number of samples obtained is 280 samples from 56 energy sector companies consistently listed on the Indonesia Stock Exchange (IDX) during 2021-2025 period. This study uses EViews Statistic Software version 14 SV to conduct several tests. The results of this study indicate that profitability has a positive and significant effect on tax avoidance. Meanwhile, leverage has no significant effect on tax avoidance. Furthermore, firm size is proven to moderate by strengthening the effect of profitability on tax avoidance. On the other hand, firm size is unable to moderate the effect of leverage on tax avoidance.

Keywords:
Tax Avoidance, Profitability, Leverage, Firm Size

BACKGROUND

Tax revenue stands as one of the primary pillars supporting public service funding and national economic advancement. In an effort to strengthen fiscal capacity and drive economic growth, governments across many developing countries, Indonesia included, continue to intensify their efforts toward improving tax compliance among corporate taxpayers. Nevertheless, corporations frequently resort to a range of tax planning mechanisms aimed at reducing their tax burden, a practice commonly referred to as tax avoidance. Although this practice is generally regarded as lawful given that it operates within gaps present in tax legislation, when pursued excessively it can erode state revenue and give rise to concerns surrounding transparency and corporate governance practices (Boateng et al., 2022; Mkadmi & Ben Ali, 2024; Yasmin et al., 2024).

From a financial standpoint, profitability and leverage are widely regarded as two of the most influential drivers of tax avoidance behavior. Profitability reflects a firm's capacity to generate income from the assets and operations it controls (Candra et al., 2024; Erwan et al., 2023; Mulyadi et al., 2024; Novia & Meythi, 2022). Firms that achieve higher profitability typically face a correspondingly larger tax liability, since greater taxable income is generated, which in turn may push managers toward designing tax strategies intended to lower the tax amount owed within a given period. Leverage, on the other hand, captures the extent to which a company relies on external debt financing (Ernawati & Purwaningsih, 2022; Natalina, 2023). Because interest expenses on debt are tax-deductible, firms are theoretically incentivized to use debt

financing as a mechanism for reducing taxable income, which consequently may lead to a higher degree of tax avoidance (Fadhila & Andayani, 2022; Purnomo & Widyawati, 2022).

Despite these theoretically grounded arguments, empirical findings regarding the influence of these two variables on tax avoidance remain far from uniform. A number of studies report a positive relationship between profitability and tax avoidance, arguing that firms with stronger profitability are more inclined to adopt aggressive tax strategies (Margaretha & Jenni, 2019; Yolanda & Zahran, 2024). Conversely, other studies find an inverse relationship, suggesting that firms with stronger financial performance tend to exhibit greater tax compliance rather than avoidance (Harahap et al., 2024; Wida Rahmayani et al., 2021). Adding further complexity, several other studies conclude that profitability no longer plays a decisive role in shaping tax avoidance behavior at all (Aini & Ikram, 2025; Gunawan & Joni, 2021). These conflicting findings underscore the need for further investigation into the true nature of the relationship between profitability and tax avoidance.

A similar pattern of inconsistency emerges from prior research examining the link between leverage and tax avoidance. Several studies argue that leverage exerts a positive influence on tax avoidance, reasoning that companies financing their operations through debt are able to reduce their taxable income through interest deductions (Putri et al., 2021). Other researchers, however, find that leverage does not exert any meaningful influence on tax avoidance behavior at all (Harahap et al., 2024; Sophian & Putra, 2022). Interestingly, some studies even report that leverage can suppress tax avoidance, attributing this to the heightened scrutiny that highly leveraged firms tend to receive from creditors and regulatory bodies (Karina et al., 2021). Taken together, these divergent findings point to considerable uncertainty regarding the actual role leverage plays in shaping corporate tax behavior.

Firm size (FS) represents another factor believed to influence corporate tax avoidance behavior. Larger companies generally possess more structured organizational systems, engage in a wider scope of business activities, and command greater financial resources. These advantages allow large firms to access professional tax expertise and implement more sophisticated tax planning strategies. At the same time, however, larger firms are typically subject to closer scrutiny from regulators and the broader public, which may push them toward greater tax compliance rather than avoidance. Firm size can therefore exert both a direct effect on tax avoidance and an indirect one, by altering the strength of the relationship between a firm's financial performance and its corporate tax behavior (Hendayana et al., 2024).

Prior literature has also proposed that firm size may enhance the relationship between financial variables and tax avoidance, given that larger firms tend to possess greater resource capacity and organizational complexity, which could strengthen their ability to engage in tax planning. Empirical evidence on this moderating role, however, remains limited and inconclusive. While some studies identify a positive association involving firm size, financial performance, and tax avoidance, others find that firm size fails to produce any statistically significant moderating effect on this relationship (Aritonang et al., 2024; Monica et al., 2023). These inconsistent findings highlight the continued need for further research into the moderating role of firm size in shaping corporate tax avoidance behavior.

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THEORETICAL FRAMEWORK

Agency Theory

Agency theory was first introduced by Jensen and Meckling in 1976. According to Putri and Tumirin (2025), agency theory explains the contractual relationship between one or more individuals acting as principals (shareholders) and agents (parties responsible for managing the company). The principal delegates authority and provides direction to the agent. In turn, the agent is responsible for managing the company's operations in accordance with the principal's directives and is accountable for carrying out those responsibilities.

Political Cost Theory

Political cost theory is one of the hypotheses within the framework of Positive Accounting Theory developed by Watts and Zimmerman. This theory explains that politicians have the power to influence the redistribution of corporate wealth through corporate taxes, regulations, subsidies, and various other public policies. Companies that show high profits and large size tend to become the target of public and political attention because they are considered to possess significant economic power, making them vulnerable to pressure in the form of higher taxes and stricter regulations. In response to this threat of political costs, management has an incentive to choose accounting policies or financial policies that can reduce reported earnings or shift earnings from the current period to future periods, thereby reducing scrutiny and pressure from external parties, including tax authorities.

Tax Avoidance

Tax avoidance is an effort that can be used to increase the effectiveness of the public's tax burden, carried out by avoiding the imposition of tax and shifting income to other objects that are not subject to tax. Tax avoidance is often utilized as a strategy by certain parties to shelter their income so as to legally avoid substantial tax deductions. Tax avoidance is carried out by exploiting a loophole that arises in laws and regulations, commonly referred to as a grey area, so that the state cannot collect any portion of the income they possess.

Profitability

Profitability reflects a firm’s ability to generate earnings from its assets and operations (Martusa et al., 2025; Nurhalizah et al., 2025). ROA is one of the most commonly used measures of profitability in financial studies. ROA helps in the determination of the efficiency with which the company leverages its total assets to make net income.

Past research has given contradictory results on the connection between profitability and tax avoidance. According to some studies, the greater is the profitability, the more probable the tax avoidance since a firm with higher profitability is better motivated to reduce its tax burden (Margaretha & Jenni, 2019). However, according to other research, companies that are profitable are more willing to comply with tax policy because they are more openly

checked and have a reputation to consider (Wida Rahmayani et al., 2021). This study proposes the following hypothesis:

H1: Profitability has a positive and significant effect on tax avoidance.

Leverage

Leverage is a financial ratio used to measure the extent to which a company utilizes debt to finance its assets and operational activities. Leverage is an important component of a company's financial structure because it has a dual effect, creating both opportunities and risks. When managed efficiently, leverage can enhance a company's ability to generate profits. However, if leverage is not managed optimally and reaches a high level, it may increase the company's difficulty in meeting its financial obligations.

H2: Leverage has a positive and significant effect on tax avoidance.

Firm Size

Firm size refers to a company's ability stability and expertise required to carry out economic activities. Large companies offers many advantages, including easier access to capital markets, the option to obtain funding from various forms of debt due to creditors' higher level of confidence in large companies, and the ability to plan a more mature financial structure due to the presence of specialized staff and sound financial management. Therefore, large-scale companies generally find it easier to obtain additional capital compared to small companies. Other alternatives, companies with a larger size tend to face a higher level of scrutiny from shareholders, creditors, regulators, and tax authorities. This condition can influence management's behavior in making tax policy decisions.

With such properties, the firm size can be a moderating variable, which can be used to determine the associationbetween profitability, leverage, and tax avoidance. A number of empirical studies also suggest that the size of a firm may either enhance or diminish the effects that the variables of financial performance have on tax avoidance behavior (Aritonang et al., 2024; Monica et al., 2023). Based on these arguments, firm size may moderate the association between profitability and tax avoidance plus leverage and tax avoidance. This study proposes the following hypothesis:

H3: Firm size moderates by weakens the effect of profitability on tax avoidance.

H4: Firm size moderates by strengthening the effect of leverage on tax avoidance.

METHOD

This study is a quantitative study with a cross-sectional design and correlational relationships between variables. The cross-sectional design allows researchers to collect data at a certain time span, while the correlation design allows researchers to test the relationship between one

variable and another. This study uses a population of financial reports of 56 companies from the energy sector (IDNXENERGY) listed on the Indonesia Stock Exchange from 2021-2025. This sector is one of the sectors that contributes greatly to state revenue. Sampling uses a purposive sampling technique where sampling is based on criteria determined by researchers according to research needs. The criteria are as follows:

No.	Description	Amount
1	Energy sector companies (IDXENERGY) listed on the Indonesia Stock Exchange (IDX) for the 2021-2025 period	**66**
2	Energy sector companies listed on the Indonesia Stock Exchange (IDX) that did not provide annual or financial reports for the 2021 – 2025 period	(5)
3	Energy sector companies listed on the Indonesia Stock Exchange (IDX) that did not disclose the data required for this study in their annual or financial reports for the 2021 – 2025 period	(5)
	Number of samples used	**55**
	Number of observations (number of samples x 5 years)	**280**

Based on the established criteria, the number of company samples was 56 companies and multiplied by 5 years (2021-2025) so that the sample used in this study was 280. Secondary data is the data used in this study. According to Sugiyono (2019) secondary data is data obtained from existing sources and in this study the data was obtained from audited annual reports for the period 2021-2025 and published by the Indonesia Stock Exchange (IDX).

The analysis of data in this research is the panel data regression analysis, which is performed with the support of EViews software. Panel data analysis combines cross-sectional data from various firms and time-series data over a specific observation period,leading to more trustworthy estimation outcomes. Initially, a descriptive statistical analysisis performed to outline the characteristics of the data. Several classical assumption evaluations are also carried out to confirm the regression model's integrity, including normality tests, multicollinearity, and heteroskedasticity. In the context of panel data regression analysis, three estimation models areassessed: the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random

Effect Model (REM). The decision to choose the appropriate model is executed using the Chow test, Hausman test, and the Lagrange Multiplier (LM) test to identify the most suitable approach. The empirical regression model established in the study is outlined as follows (Herawati & Jaeni, 2024; Winarno, 2017). The regression model employed in this study is designed as follows:

$$ETR = \alpha + \beta 1ROA + \beta 2DER + \beta 3(ROA \times LnTA) + \beta 4(DER \times LnTA) + \varepsilon$$

Where:

ETR = Effective Tax Rate (tax avoidance).

ROA = ROA(profitability).

DER = Debt to Equity Ratio(leverage).

LnTA = Log natural total assets(firm size).

ROA×LnTA, DER×LnTA = interaction terms (moderation).

RESULT

Descriptive Statistical Analysis

Descriptive statistics is a method for explaining, summarizing, and analyzing data collected in a study. Concerning all the factors being examined in the suggested research,which include profitability (ROA), leverage (DER), Firm Size (FS), tax avoidance (ETR), along with the interaction of profitability and size (ROAxFS), and the interaction of leverage and size (DERxFS) as the moderating factors, a statistical descriptive analysis is carried out to provide an initial look at the features of the data. Descriptive statistics are displayed through the use of mean, median, minimum, maximum, and standard deviation measure. The following are the results of descriptive statistics in this study:

	ETR_Y	ROA_X1	DER_X2	FIRMSIZE_Z
Mean	-0.267929	0.028107	3.923500	21.87018
Median	-0.010000	0.040000	0.850000	20.86500
Maximum	9.720000	0.620000	731.4300	31.13000
Minimum	-35.63000	-4.590000	-29.14000	12.82000
Std. Dev.	2.746235	0.413146	43.81853	4.303757
Skewness	-10.65063	-9.973037	16.43282	0.272996
Kurtosis	130.2030	112.3941	273.3192	2.215513
Jarque-Bera	194067.5	144257.3	865113.8	10.65782
Probability	0.000000	0.000000	0.000000	0.004849
Sum	-75.02000	7.870000	1098.580	6123.650
Sum Sq.	2124.263	47.84370	540008.1	139093.0
Sum Sq. Dev.	2104.163	47.62250	535697.8	5167.729

Observations	280	280	280	280

The mean profitability, which is characterizedby the ROA, is at 0.0435. This is an indication that on average, the returns on the total assets of SOEs are about 4.35 percent. The median ROA at 0.0188 is less than the mean which indicates that more firms are below profitability than the mean resulting in a slightly skewed distribution to the right. The values of ROA are (-0.0350 to 0.2817) depicting a varied performance terrain at the company level with some companies making negative returns and other companies recording relatively high profitability. This dispersion brings out the variation in the efficiency of operations of SOE in the period of observation.

Descriptive statistics show that the average ETR of SOEsin the 2020-2024 period is equal to 0.2059, which implies that enterprises are subjected to the effective corporate tax rate of about 20.59 percent of their pre-tax income. The value of the median (0.2000) shows a fairly equal distribution of tax payments between firms. The ETR values range from -0.2500 to 0.4800, indicating variations in tax planning practices, fiscal incentives, and corporate tax accounting adjustments across firms and observation periods. Furthermore, the interaction variables ROA×Size and DER×Size exhibit considerable variation, indicating differences in how FS moderates the relationship between financial performance and tax avoidance behavior across SOEs. In general, the descriptive statistics indicate that the research data have enough variability and can be further analyzed by the panel data regression analysis.

The presence of negative ETR values suggests that several SOEs obtained tax benefits during the observation period. This condition may result from fiscal loss compensation, deferred tax benefits, tax restitution, or adjustments related to corporate income tax accounting policies. Therefore, negative ETR values do not necessarily reflect abnormal tax behavior but may represent specific fiscal and accounting conditions faced by firms during the 2020–2024 period.

Panel Data Model Selection

Three major methods of estimation are used in the analysis of panel data: CEM, FEM, and REM. As both these approaches deal with cross-sectional and time-series variations in a different way, the choice of a specific model is a critical step towards the objective and correct estimation outcomes. The models that have been used in this study include the Chow test, the Hausman test, and the LM test, among others, which were used to determine the best estimating model.

Chow Test Results

Effects Test	Statistic	d.f	Prob.
Cross-section F	2.580047	(55,222)	0.0000
Cross-section Chi-square	138.378458	55	0.0000

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The Chow test is used to choose between the CEM or FEM model. In this study, the Chow test results show an F probability value of 0.0000, meaning the selected model is the Fixed Effect Model (Prob < 0.05), meaning H0 is rejected and Hi is accepted. Therefore, based on the Chow test, the regression technique used is the Fixed Effect Model (FEM).

Hausman Test Results

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f	Prob.
Cross-section random	1.126348	2	0.5694

The Hausman test is used to choose between the FEM or REM model. In this study, the Hausman test results show an F probability value of 0.5694, meaning the selected model is the Random Effect Model (Prob > 0.05), meaning H0 is accepted and Hi is rejected. Therefore, based on the Hausman test, the regression technique used is the Random Effect Model

Lagrange Multiplier (LM) Test Results

Effects Test	Test Hypothesis Cross-section	Time	Both
Breusch-Pagan	30.84591 (0.0000)	0.361840 (0.5475)	31.20775 (0.0000

The LM test is used to choose between the CEM or REM model. In this study, the LM test results show a Breusch Pagan probability value of 0.0000, which is less than 0.05, meaning the selected model is the Random Effect Model (Prob < 0.05), meaning H0 is rejected. Because Hi is accepted, the regression technique used is the Random Effect Model rather than the Common Effect Model, as it has been found to be correlated with one or more independent variables.

Panel Data Regression Analysis Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.557550	0.019167	29.08852	0.0000
SQRT ROA_X1	0.312399	0.116855	2.673393	0.0080
SQRT DER_X2	-0.022192	0.056331	-0.393962	0.6939
SQRT ROA_FIRM SIZE	-0.047454	0.023738	-1.999065	0.0466
SQRT DER_FIRM SIZE	0.007407	0.010785	0.686795	0.4928

The panel data regression analysis was conducted using the Random Effect Model (REM). The estimated regression equation is as follows:

$$\mathbf{Y} = \alpha + \beta 1ROA + \beta 2DER + \beta 3ROA*Size + \beta 4DER*Size + e$$

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Based on the regression equation, the interpretations are as follows:

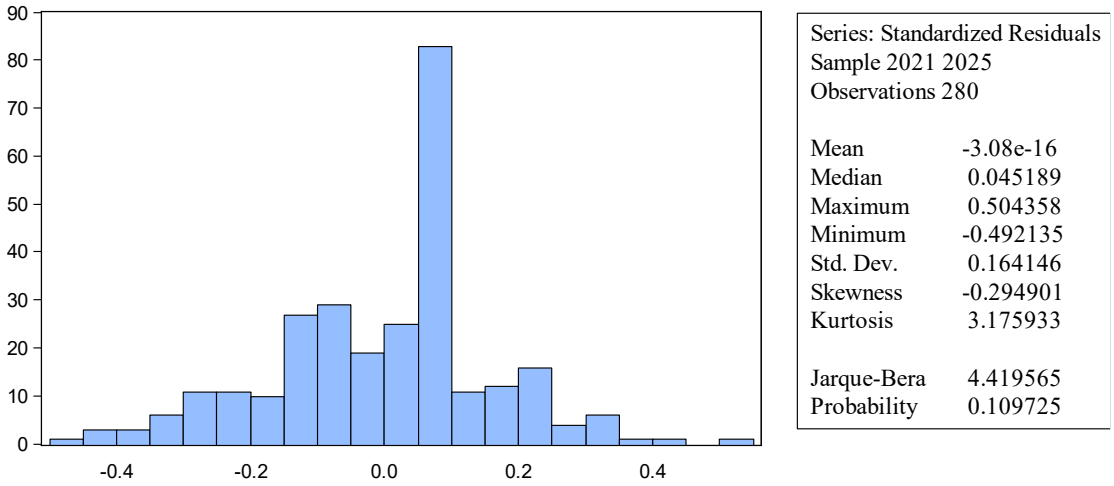
ETR = 0.557550 + 0.312399ROA - 0.022192DER - 0.047454ROA*FIRMSIZE + 0.007407DER*FIRMSIZE + e

The constant obtained is 0.557550, meaning that in the absence of the variables ROA (X1), DER (X2), ROA*SIZE, and DER*SIZE, the ETR variable would increase by 0.557550. The coefficient value of the profitability variable, as measured by ROA, is 0.312399, meaning that if the ROA variable increases, the Effective Tax Rate (ETR) variable will also increase by 0.312399, and vice versa. The coefficient value of the DER variable is 0.022192, meaning that if the DER variable increases, it will decrease the ETR variable by -0.022192, and vice versa. The regression coefficient value of the variable sqrt(Firm Size) moderating the variable sqrt(ROA) is negative, at -0.047454. This can be interpreted as meaning that if the variable sqrt(ROA*FirmSize) increases, it will decrease the variable sqrt(ETR) by -0.047454, and vice versa. The regression coefficient value of sqrt(Firm Size) moderating the variable sqrt(DER) is positive, at 0.007407. This indicates that if the variable sqrt(DER*FirmSize) increases, the variable sqrt(ETR) will also increase by 0.007407, and vice versa.

Classical Assumption Tests

To verify the validity of the regression model, a number of classical assumption tests were performed, which include normality test, multicollinearity test and heteroskedasticity test.

Normality Test



The normality test results indicate that the Jarque–Bera probability value is 4.419565 > 0.05. Therefore, it can be concluded that the data used in this study are normally distributed.

Multicollinearity Test Results

	ETR_Y	ROA_X1	DER_X2	SIZE_Z
Sqrt ETR_Y	1.000000	0.297885	0.176464	0.65742
Sqrt ROA_X1	0.297885	1.000000	0.097703	0.099076

Sqrt DER_X2	0.176464	0.097703	1.000000	0.017840
Sqrt FIRMSIZE_Z	0.065742	0.099076	0.017840	1.000000

It can be observed that the correlation coefficients among all variables < 0,80, indicating that there is no multicollinearity among the independent variables.

Heteroskedasticity Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.155767	0.039837	3.910097	0.0001
Sqrt ROA_X1	-0.013484	0.009648	-1.397542	0.1634
Sqrt DER_X2	0.000337	0.003148	0.106946	0.9149
Sqrt FIRMSIZE_Z	-0.003029	0.008441	-0.358832	0.7200

Based on the table above, the probability values of all four variables are > 0,05. Therefore, it can be concluded that the regression model is free from heteroskedasticity, indicating that the assumption of homoskedasticity is satisfied.

Autocorelation Test Results

Root MSE	0.142262	R-squared	0.134050
Mean dependent var	0.389869	Adjusted R-squared	0.124637
S.D. dependent var	0.153151	S.E. of regression	0.143289
Sum squared resid	5.666757	F-statistic	14.24165
Durbin-Watson stat	1.809643	Prob(F-statistic)	0.000000

Based on the autocorrelation test results presented in the table, the Durbin Watson (DW) statistic is 1.809643. This value falls within the acceptance region, where dU < d < 4 − dU (1.7990 < 2,167617 < 2,2010). Therefore, it can be concluded that the regression model is free from autocorrelation, indicating that the autocorrelation assumption is satisfied.

Model Feasibility Test

F-Test

Root MSE	0.142262	R-squared	0.134050
Mean dependent var	0.389869	Adjusted R-squared	0.124637
S.D. dependent var	0.153151	S.E. of regression	0.143289
Sum squared resid	5.666757	F-statistic	14.24165
Durbin-Watson stat	1.809643	Prob(F-statistic)	0.000000

Based on the model feasibility test results presented in table, the probability value of the F-statistic is < 0.,05. Therefore, it can be concluded that the regression model is statistically significant and appropriate for use in this study.

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t-Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.557550	0.019167	29.08852	0.0000
Sqrt ROA_X1	0.312399	0.116855	2.673393	0.0080
Sqrt DER_X2	-0.022192	0.056331	-0.393962	0.6939
ROA_FIRMSIZE	-0.047454	0.023738	-1.999065	0.0466
DER_FIRMSIZE	0.007407	0.010785	0.686795	0.4928

The profitability variable, ROA, has a positive coefficient of 0.312399 with a significance value of 0.0080 < 0.05. Therefore, profitability has a positive and significant effect on tax avoidance. Thus, Hypothesis 1 is accepted. The leverage variable, DER, has a negative coefficient of 0.022192 with a significance value of 0.6939 > 0.05. Therefore, it can be concluded that DER has no effect on the Effective Tax Rate (ETR). Thus, Hypothesis 2 is rejected.

The significance value of the ROA variable moderated by Firm Size is 0.0466, which is < 0.05. Therefore, it can be concluded that Firm Size is able to moderate by weakens the effect of ROA on the Effective Tax Rate (ETR). Thus, Hypothesis 3 is accepted. The significance value of the DER variable moderated by Firm Size is 0.4928, which is > 0.05. Therefore, it can be concluded that Firm Size is not able to moderate the effect of DER on the Effective Tax Rate (ETR). Thus, Hypothesis 4 is rejected.

Test Statistic	Value	df	Probability
Chi-square (High)	7.762721	1	0.0053
Chi-square (Low)	6.701195	1	0.0096

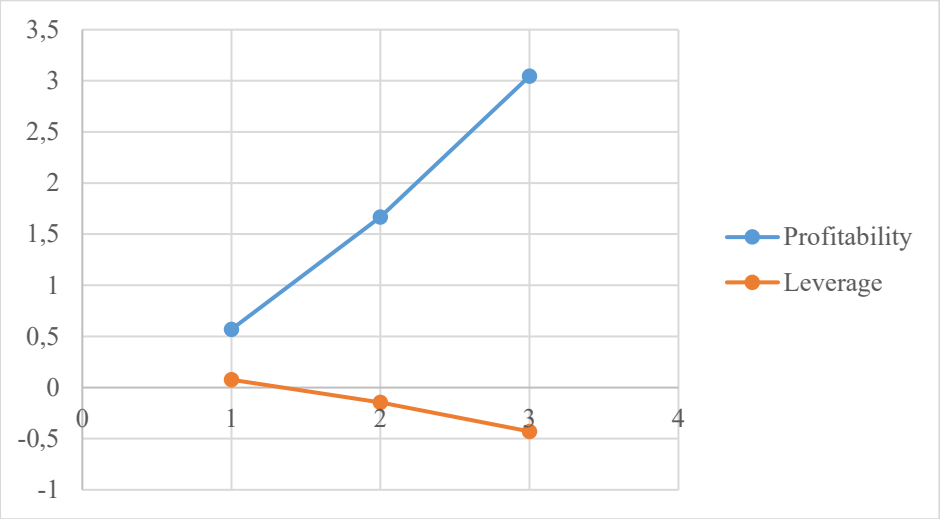
Based on the results of the Wald test used to examine the effect of the moderating variable, the interaction between ROA and Firm Size on ETR has a regression coefficient of -0.047454 (prob. = 0.0053 and 0.0096). Since the probability value in the Wald test is less than α = 0.05, this can be interpreted as meaning that the effect of the firm size variable significantly moderates the effect of profitability on tax avoidance. This coefficient indicates that the moderating variable, firm size, strengthens the effect of profitability on tax avoidance. Thus, Hypothesis 3 is accepted.

Test Statistic	Value	df	Probability
Chi-square (High)	0.119710	1	0.7293
Chi-square (Low)	0.185014	1	0.6671

Based on the results of the Wald test used to examine the effect of the moderating variable, the interaction between DER and Firm Size on ETR has a regression coefficient of 0.007407 (prob. = 0.7293 and 0.6671). Since the probability value in the Wald test is greater than α = 0.05, this

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can be interpreted as meaning that the effect of the firm size variable does not significantly moderate the effect of leverage on tax avoidance. This coefficient indicates that the moderating variable, firm size, does not moderate the effect of leverage on tax avoidance. Thus, Hypothesis 4 is rejected.



Based on the figure above, the profitability line moves from the bottom-left toward the upper-right, meaning it has a positive effect on tax avoidance (low, normal, high). Therefore, the direction of the moderating effect is positive. Meanwhile, the leverage line moves from the upper-left toward the bottom-right, which can be interpreted as not moderating its effect on tax avoidance (low, normal, high).

Coefficient Determination (R^2 Test)

R-squared	0.147664	Mean dependent var	0.385165
Adjusted R-squared	0.135266	S.D. dependent var	0.152832
S.E. of regression	0.142120	Sum squared resid	5.554502
F-statistic	11.91067	Durbin-Watson stat	1.804311
Prob(F-statistic)	0.000000		

Based on the coefficient of determination results presented in the table above, the Adjusted R-squared value is 0.135266. This indicates that approximately 13.52% of the variation in financial distress is explained by Return on Assets (ROA), Debt to Equity Ratio (DER), and Firm Size (FS). The remaining 86.48% of the variation is explained by other factors not included in the regression model.

DISCUSSION

The Effect of Profitability on Tax Avoidance

Based on the results of the hypothesis testing that has been conducted, the results show that profitability (ROA) has a positive and significant effect on tax avoidance (ETR). Profitability reflects a company's ability to generate profit through the utilization of its assets. The higher a company's level of profitability, the greater the profit obtained, and consequently the greater the tax obligations that must be paid. This condition drives companies to carry out more optimal tax planning, one form of which is tax avoidance practices that still fall within the boundaries of tax regulations. Thus, the hypothesis stating that profitability has a positive and significant effect on tax avoidance (H1) in this study is **accepted**.

This finding is in line with research by Widyastuti et al. (2022), which states that profitability has a significant positive effect on tax avoidance. These findings indicate that companies with high levels of profitability tend to have greater motivation to manage their tax burden so that the profit obtained can be utilized more efficiently, whether to support operational activities, investment, or to increase the company's value in the eyes of investors. This finding is also consistent with agency theory, in which managers, as agents, strive to meet the expectations of principals (shareholders) by increasing the company's net profit, one way being to minimize the tax burden through tax avoidance practices that are legally valid. Nevertheless, there are also studies that show different results. Suyanto and Kurniawati (2022), in their research on profitability, sales growth, and leverage on tax avoidance with firm size as a moderating variable, found that profitability has a negative effect on tax avoidance.

The Effect of Leverage on Tax Avoidance

Based on the results of the hypothesis testing that has been conducted, the results show that leverage (DER) does not have a significant effect on tax avoidance (ETR). Leverage is a ratio that indicates the extent to which a company uses debt as a source of funding. However, the results of this study show that a high or low level of company leverage does not affect the company's tendency to engage in tax avoidance practices. This indicates that a company's decision to engage in tax avoidance is not solely determined by the extent of debt usage, but is also influenced by other factors, such as the company's tax policy, corporate governance, and industry characteristics. Thus, the hypothesis stating that leverage has a positive and significant effect on tax avoidance (H2) is **rejected**.

This finding is in line with prior research (Prasatya et al., 2020; Rani and Darminto, 2021; Rianda, 2021; Widodo and Wulandari, 2021) who also found that leverage has no effect on tax avoidance. These findings indicate that companies with high levels of debt do not necessarily engage in tax avoidance practices. One reason for this is that the tax benefit obtained from interest expense (tax shield) has already sufficiently reduced taxable income, so that the company does not need to pursue additional tax avoidance strategies.

This finding can also be explained based on agency theory. In an agency relationship, managers, as agents, are not only accountable to shareholders but also to creditors who provide funding to the company. A high level of debt leads to greater oversight from creditors, causing management to tend to be more cautious in making decisions related to tax management. Nevertheless, this finding differs from other research (Nathania et al. 2021; Hermawan et al., 2021; Aulia and Mahpudin, 2020), who stated that leverage has a positive effect on tax avoidance, as well as Dewi and Noviari (2017), who found a significant negative effect. These

differences in results may be attributed to differences in sample characteristics, industry sectors, research periods, or the proxies used to measure leverage and tax avoidance.

The Moderating Effect of Firm Size on the Relationship between Profitability and Tax Avoidance

Based on the results of the hypothesis testing, the results show that firm size is able to moderate the effect of profitability on tax avoidance in a negative direction. Accordingly, the hypothesis stating that firm size moderates the effect of profitability on tax avoidance is accepted. This result indicates that firm size moderates the effect of profitability on tax avoidance, in a strengthening direction. Statistically, this appears as a negative interaction coefficient on the effective tax rate, which means that firm size weakens profitability's ability to increase the effective tax burden. Therefore, it can be concluded that firm size strengthens the effect of profitability on tax avoidance. Thus, the hypothesis stating that firm size moderates the effect of profitability on tax avoidance (H3) is **accepted**.

This finding is in line with Amiah (2022), who states that firm size strengthens the effect of profitability on tax avoidance. This finding indicates that large companies tend to be more conservative in formulating their tax strategies because they face a higher level of scrutiny compared to smaller companies. As a result, an increase in profitability is not directly followed by an increase in tax avoidance practices among large-sized companies. On the other hand, this finding differs from Andini et al. (2022), Yandra et al. (2023), and Sulistiono (2018), who state that firm size weakens the effect of profitability on tax avoidance. In addition, Az'zahra and Halimatusadiah (2023) found that firm size does not moderate this relationship. These differing results indicate that the role of firm size as a moderating variable remains inconsistent.

The Moderating Effect of Firm Size on the Relationship between Leverage and Tax Avoidance

Based on the results of the hypothesis testing, the results show that firm size is not able to moderate the effect of leverage on tax avoidance. This result indicates that the size of a company, whether large or small, neither strengthens nor weakens the relationship between leverage and tax avoidance. In other words, the effect of leverage on a company's decision to engage in tax avoidance does not depend on firm size. Thus, the hypothesis stating that firm size moderates the effect of leverage on tax avoidance (H4) is **rejected**.

This finding is in line with Fitri and Munandar (2018), who state that firm size does not moderate the effect of leverage on tax avoidance. This finding indicates that firm size is not a factor that determines the strength or weakness of the relationship between leverage and tax avoidance. There may be other factors that play a more significant role, such as the company's tax policy, the effectiveness of corporate governance, or industry characteristics, such that firm size is unable to alter the effect of leverage on tax avoidance practices. On the other hand, this finding differs several prior studies (Suyanto and Kurniawati, 2022; Ramdhania and Kinasih, 2021; Tarigan and Sari, 2025), who state that firm size strengthens the effect of leverage on tax avoidance. In addition, Widyastuti et al. (2022) found that firm size actually weakens this relationship. These differing results indicate that the role of firm size as a moderating variable remains inconsistent.

CONCLUSION

The results indicate that profitability has a positive and significant effect on tax avoidance. This study shows that companies with higher profitability tend to be more tax-compliant and less engaged in tax avoidance practices. Meanwhile, leverage has no significant effect on tax avoidance, suggesting that the use of debt is not a primary factor influencing companies' decisions to engage in tax avoidance, as companies have already obtained tax benefits from interest expenses and are subject to stricter oversight from creditors. Furthermore, firm size is proven to moderate by strengthening the effect of profitability on tax avoidance. This implies that the larger the firm size, the stronger the influence of profitability on tax avoidance, as larger companies tend to be under greater scrutiny from tax authorities, investors, and the public, making them more cautious in their tax policies in order to maintain their reputation and minimize the risk of sanctions. On the other hand, firm size is unable to moderate the effect of leverage on tax avoidance. This study has the first contribution to the literature to explain the role of profitability and leverage in explaining tax avoidance which is moderated by firm size in energy sector companies that have been listed on the Indonesia Stock Exchange (IDX). The second contribution is that the results of this study can be used by regulators in this case the Directorate General of Taxes (DJP) as evaluation material in tax avoidance practices that occur in energy sector companies. The third contribution, the results of this study are expected to provide benefits to external stakeholders such as shareholders or investors in evaluating as an effort to create honest company practices.

This study also has several limitations, the first data used in this study only covers energy sector companies so that it is hoped that further researchers can expand the research area so that the level of generalization can be wider. The second limitiation is the research period used is limited to 2021-2025. This period coincides with the Covid-19 pandemic, which could certainly have affected companies' financial statement results. And the third limitiation is This study is limited to only two independent variables, namely profitability and leverage, and one moderating variable, namely firm size. Based on the coefficient of determination results, the dependent variable, tax avoidance, can only be explained by the independent variables in this study to a small percentage. The remainder is explained by other variables outside those tested in this study.

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