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THE EFFECT OF PROFITABILITY, LEVERAGE, AND SALES VOLATILITY ON TAX AVOIDANCE WITH INSTITUTIONAL OWNERSHIP AS A MODERATING VARIABLE: AN EMPIRICAL STUDY ON PROPERTY AND REAL ESTATE COMPANIES LISTED ON THE INDONESIA STOCK EXCHANGE FOR THE 2021–2024 PERIOD

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Abstract. Tax avoidance practices in the property and real estate sector have drawn attention due to the sector's capital-intensive nature, long-term business cycles, and high flexibility in revenue recognition. These characteristics provide managerial discretion in fiscal decision-making, particularly when facing post-pandemic liquidity pressures. The gap between accounting profits and payable taxes observed in several companies within this sector further indicates potential tax avoidance. This study aims to examine the effect of profitability, leverage, and sales volatility on tax avoidance, with institutional ownership as a moderating variable. The research employs a quantitative approach using purposive sampling on 17 property and real estate companies listed on the Indonesia Stock Exchange during the 2021–2024 period, resulting in 68 observations. Data analysis was conducted using Moderated Regression Analysis (MRA) with the assistance of SPSS version 26. The results reveal that profitability has a significant negative effect on tax avoidance, while leverage has a significant positive effect. Sales volatility shows no significant effect on tax avoidance. Furthermore, institutional ownership weakens the positive effect of leverage on tax avoidance but does not moderate the relationship between profitability or sales volatility and tax avoidance. These findings contribute to the agency theory literature and provide practical insights for regulators in strengthening fiscal oversight in the property and real estate sector.
Keywords: tax avoidance, profitability, leverage, sales volatility, institutional ownership.

INTRODUCTION

Tax constitutes the primary pillar of state revenue, contributing more than three-quarters of national income; thus, optimizing tax collection remains a strategic priority. However, the complexity of tax regulations and the existence of legal loopholes are often exploited by business entities to engage in tax avoidance—a legal strategy to reduce tax liabilities that can nonetheless undermine fiscal effectiveness. The property and real estate sector has drawn particular attention due to its capital-intensive nature, flexibility in revenue recognition, and a historical record of low Effective Tax Rates (ETR). Cases such as the Panama Papers revelations involving PT Ciputra Development Tbk and property price manipulation by PT Karyadeka Alam Lestari further reinforce indications of systemic tax avoidance practices in this sector.

From an agency theory perspective, tax avoidance reflects potential conflicts of interest between managers and shareholders, wherein management may exploit accounting flexibility to maximize post-tax profits. Financial factors such as profitability, leverage, and sales volatility are believed to influence this tendency, while ownership structure—particularly institutional ownership—serves as a mechanism to curb opportunistic managerial behavior. Previous studies have produced mixed findings, necessitating further empirical investigation within the property and real estate sector to better understand the dynamics of these factors in moderating and influencing tax avoidance practices.

The relevance of this issue has intensified during the post–COVID-19 pandemic period (2021–2024), characterized by environmental uncertainty arising from interest rate fluctuations, exchange rate instability, and changes in fiscal policy. Such conditions heighten the urgency of using sales volatility as an indicator of revenue risk, particularly in the property and real estate sector, which is highly sensitive to market demand cycles. Unlike previous studies that have treated this indicator merely as a proxy for environmental uncertainty (Ghosh & Olsen, 2009; Huang et al., 2017), the present study employs it as an independent variable. Prior empirical evidence remains inconclusive, with some studies finding a positive association with tax avoidance (Huang et al., 2017; Ratu & Siregar, 2019) and others reporting no significant relationship (Carolina & Purwantini, 2020; Septriani et al., 2025).

In addressing such complexity, institutional ownership plays a strategic role as an oversight instrument over managerial behavior. Institutional ownership refers to the proportion of shares held by professional entities such as pension funds, insurance companies, or investment managers, which possess the capacity to monitor and influence management's strategic decisions (Lanis & Richardson, 2012). The accountability and transparency upheld by these institutions position them as effective external monitors in restraining managers' inclination toward aggressive tax avoidance.

Institutional ownership is employed as a moderating variable in this study because prior research has reported varying effects, leading to the presumption that its role may strengthen or weaken the relationship between financial variables and tax avoidance. Prasatya et al. (2020) found that institutional ownership moderates the effect of profitability and leverage on tax avoidance, whereas Leksono et al. (2023) reported no moderating role. Conversely, Aprisma & Sudaryati (2020) confirmed that institutional ownership, as part of corporate governance mechanisms, can mitigate the effect of uncertainty on tax avoidance.

While tax avoidance has been extensively examined in prior studies, empirical findings regarding the effects of profitability, leverage, sales volatility, and institutional ownership remain inconclusive. This study explicitly incorporates sales volatility as an independent variable rather than merely as an indicator of environmental uncertainty, enabling a more concrete measurement. The research model integrates financial factors and internal environmental uncertainty simultaneously, positioning institutional ownership as a moderating variable given its capacity to restrain opportunistic managerial actions in tax policy. The property and real estate sector is chosen as the research setting based on empirical phenomena, documented tax avoidance cases, and its high sensitivity to economic dynamics.

RESEARCH METHOD

This study employs a quantitative associative design to analyze the effects of profitability, leverage, and sales volatility on tax avoidance, with institutional ownership as a moderating variable and firm size as a control variable. The research objects are property and real estate companies listed on the Indonesia Stock Exchange (IDX) for the 2021–2024 period, selected using purposive sampling based on the completeness of financial statements, availability of institutional ownership data, and positive net income, resulting in 17 companies or 68 observations. The data consist of secondary quantitative and qualitative data sourced from annual financial statements and annual reports published on the official IDX website or the respective companies' official websites (Sugiyono, 2017; Awaliah et al., 2022).

The dependent variable, tax avoidance, is measured using the Effective Tax Rate (ETR). Independent variables include profitability (Return on Assets), leverage (Debt to Equity Ratio), and sales volatility (coefficient of variation in revenue). The moderating variable, institutional ownership, is measured as the percentage of shares owned by institutional investors, while firm size, the control variable, is measured as the natural logarithm of total assets. Each variable is measured using theoretically and empirically relevant indicators to avoid result distortion—for instance, ROA is neutral to capital structure, while DER is sensitive to fiscal risk exposure. The property and real estate sector is selected based on its vulnerability to tax avoidance due to its flexibility in revenue recognition, low ETR values, and documented real-world cases (Pohan, 2016; Hanlon & Heitzman, 2010; Lanis & Richardson, 2012).

Data analysis involves descriptive statistics, classical assumption tests (Kolmogorov–Smirnov normality test, multicollinearity test, Glejser heteroscedasticity test, and Runs Test for autocorrelation), and hypothesis testing through multiple linear regression using Moderated Regression Analysis (MRA). MRA is applied to examine whether institutional ownership strengthens or weakens the relationship between independent variables and tax avoidance. Model feasibility is assessed using the F-test, predictive power is measured by Adjusted R^2, and partial effects are evaluated using the t-test at a 5% significance level. All data processing is conducted using IBM SPSS Statistics version 26 to ensure systematic, efficient, and valid analysis (Ghozali, 2018; Frank & Goyal, 2020).

RESULTS AND DISCUSSION

Results of Analysis of Research Data

Classical Assumption Test Results

1. **Normality Test**

Table 1. Results of the Kolmogorov Smirnov Normality Test

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		68
Normal Parametersa,b	Mean	0.0000000
	Std, Deviation	0.06494873
	Absolute	0.079

Most Extreme Differences	Positive	0.079
	Negative	-0.049
Test Statistics		0.079
Asymp. Sig. (2-tailed)		0.200

Source: SPSS Data Processing Results Version 26, 2025

Based on Table 1, the Kolmogorov Smirnov Sig. significance value is 0.2 (≥0.05), so it can be concluded that the data is normally distributed, which means the normality assumption is met.

2. Multicollinearity Test

Table 2. Multicollinearity Test Results

Variables	**Collinearity Statistics**	
	Tolerance	**VIF**
Profitability (PROF)	0.836	1,196
Leverage (LEV)	0.816	1,225
Sales Volatility (VOL)	0.864	1,157
Institutional Ownership (INST)	0.872	1,147
Company Size (SIZE)	0.898	1,113

Source: SPSS Data Processing Results Version 26, 2025

Based on Table 2 above, all independent variables each have a tolerance value > 0.1 and a VIF value < 10. These values indicate that there are no symptoms of multicollinearity in the regression model, so the model is declared suitable for use in further testing.

3. Heteroscedasticity Test

Table 3. Results of Heteroscedasticity Test Using Glejser Test

ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	0.018	8	0.002	1,631	0.135b
	Residual	0.081	59	0.001		
	Total	0.098	67			
a. Dependent Variable: abscess						
b. Predictors: (Constant), SIZE, VOLxINST, PROF, LEVxINST, VOL, LEV, PROVxINST, INST						

Source: SPSS Data Processing Results Version 26, 2025

Based on the heteroscedasticity test using the Glejser test in Table 3, a significance value of 0.135 (≥ 0.05) was obtained, so it can be concluded that there is no heteroscedasticity in the regression model of this study, so it is appropriate to carry out further testing.

4. Autocorrelation Test

In this study, autocorrelation detection was performed using the Run Test, a non-parametric method that tests whether the residual sequence is random or shows a specific pattern. Decision making is based on the Asymp. Sig (2-tailed) significance value, with the following conditions:

a) If the valueAsymp. Sig(2-tailed) ≥ 0.05, then the residuals are random, so there is no autocorrelation.

b) If the valueAsymp. Sig(2-tailed) < 0.05, then the residuals are not random and autocorrelation occurs.

The results of the autocorrelation test in this study are presented in Table 4 below:

Table 4. Autocorrelation Test Results

Run-Test	
	Unstandardized Residual
Test Valuea	-0.01060
Cases < Test Value	34
Cases ≥ Test Value	34
Total Cases	68
Number of Runs	29
Z	-1,466
Asymp. Sig. (2-tailed)	0.143
a. Median	

Source: SPSS Data Processing Results Version 26, 2025

Based on Table 4, the Asymp. Sig. (2-tailed) run-test value is 0.143 (≥0.05). This result indicates that the model does not contain autocorrelation. This condition fulfills one of the required classical assumptions, so the regression model is declared suitable for use in further testing.

Results of the Determination Coefficient Test (Adjusted R-Square)

Table 5. Value of Determination Coefficient

Model Summary			
Model	R	R Square	Adjusted R Square
1	0.658a	0.432	0.355

Source: SPSS Data Processing Results Version 26, 2025

Based on Table 5, the Coefficient of Determination value shows that the Adjusted R Square value is 0.355, meaning that 35.5% of the variation in tax avoidance can be explained by the variables in the model. The remaining 64.5% is influenced by factors outside the model. This value reflects the model's relatively good explanatory power, although there is still room for external variables not yet accounted for in this study.

Model Feasibility Test Results (F Test)

Table 6. Simultaneous Significance Test (F Test)

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	0.215	8	0.027	5,616	0.000b
	Residual	0.283	59	0.005		
	Total	0.498	67			
a. Dependent Variable: TA						
b. Predictors: (Constant), SIZE, VOLxINST, PROF, LEVxINST, VOL, LEV, PROVxINST, INST						

Source: SPSS Data Processing Results Version 26, 2025

Based on the F-test results in Table 6, the calculated F-value is 5.616 with a significance level of 0.000, which is greater than the F-table (2.11) at α = 5%. This indicates that the simultaneous regression model is significant and suitable for explaining variations in tax avoidance. This means that all independent variables in the model simultaneously have a significant effect on the dependent variable, namely tax avoidance, and meet the model's statistical feasibility.

Hypothesis Testing

Results of Moderated Regression Analysis (MRA) and Hypothesis Testing

Table 7. Results of MRA Regression Analysis

Coefficientsa						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig. one tailed
		B	Std. Error	Beta		
1	(Constant)	-0.192	0.103		-1,856	0.034
	PROF	-0.991	0.339	-0.563	-2,921	0.003*
	LEV	0.136	0.042	0.586	3,267	0.001*
	VOL	-0.098	0.231	-0.107	-0.424	0.337
	INST	-0.022	0.058	-0.151	-0.379	0.353
	PROV×INST	0.470	0.492	0.208	0.956	0.172
	LEV×INST	-0.151	0.056	-0.542	-2,688	0.005*
	VOL×INST	0.243	0.321	0.305	0.755	0.227
	SIZE	0.012	0.003	0.386	3,676	0.001*
a. Dependent Variable: TA						

*Significant at α=5% (p<0.05)

Source: SPSS Data Processing Results Version 26, 2025

Based on the MRA regression results in Table 7 above, the regression model in this study is:

TA = -0.192 - 0.991 PROF + 0.136 LEV - 0.098 VOL - 0.022 INST + 0.470 PROV×INST - 0.151 LEV×INST + 0.243 VOL×INST + 0.012 SIZE

Based on the equation obtained from the MRA regression results above, it can be explained that:

1) A constant value of -0.192 indicates that when all independent variables are zero, the predicted tax avoidance (TA) value is -0.192. This value has no practical significance, but it is still necessary as a component in developing a linear regression model.
2) Profitability (PROF) has a regression coefficient of -0.991. Each one-unit increase in ROA leads to a 0.991-unit decrease in tax avoidance, assuming other variables remain constant. This finding indicates that more profitable companies are more likely to avoid tax avoidance practices.
3) Leverage (LEV) shows a coefficient of 0.136. A one-unit increase in the DER ratio is associated with a 0.136-unit increase in tax avoidance. Companies with higher debt levels tend to have a greater incentive to engage in tax planning to reduce their fiscal burden.
4) Sales Volatility (VOL) has a coefficient of -0.098. This value indicates that increased sales fluctuations are associated with decreased tax avoidance rates. The recorded effect is relatively small and not statistically significant, but still reflects a negative relationship.
5) Institutional Ownership (INST) shows a regression coefficient of -0.022. An increase in the proportion of shares owned by institutions is correlated with a decrease in tax avoidance of 0.022 units. The presence of institutional shareholders tends to encourage more accountable corporate governance practices.
6) The interaction between profitability and institutional ownership (PROF×INST) yields a coefficient of 0.470. This value indicates that institutional ownership weakens the negative effect of profitability on tax avoidance. In companies with high levels of institutional ownership, the relationship between profitability and tax avoidance becomes less negative.
7) The interaction term between leverage and institutional ownership (LEV×INST) has a coefficient of -0.151. This result indicates that institutional ownership weakens the positive relationship between leverage and tax avoidance. The effect of leverage on increasing tax avoidance is lower in companies with stronger institutional oversight.
8) The interaction term between sales volatility and institutional ownership (VOL×INST) shows a coefficient of 0.243. This figure reflects that the effect of sales volatility on tax avoidance tends to be stronger in companies with high institutional ownership.
9) Firm size (SIZE) has a positive coefficient of 0.012. Each increase in firm size is correlated with a 0.012-unit increase in tax avoidance. This finding reflects the tendency of large firms to leverage the scale and complexity of their operations to devise tax avoidance strategies.

The interpretation of the regression coefficients in Table 7 shows the direction and strength of each variable's influence on tax avoidance. A summary of the coefficient values, direction of influence, significance level, and decision regarding the hypothesis are presented systematically in Table 8.

Table 8. Results of Hypothesis Testing Using Moderating Regression Analysis (MRA)

Hypothesis	Variables	Coefficient (B)	t-statistic	Sig. (one-tailed)	Information	Decision
H1	PROF	-0.991	-2,921	0.003*	Negative, Significant	Not Supported
H2	LEV	0.136	3,267	0.001*	Positive, Significant	Supported
H3	VOL	-0.098	-0.424	0.337	Negative, Not Significant	Not Supported
H4	PROF×INST	0.470	0.956	0.172	Positive, Not Significant	Not Supported
H5	LEV×INST	-0.151	-2,688	0.005*	Negative, Significant	Supported
H6	VOL×INST	0.243	0.755	0.227	Positive, Not Significant	Not Supported

*Significant at α = 5% ($p < 0.05$)
Source: SPSS Data Processing Results Version 26, 2025

DISCUSSION OF RESEARCH FINDINGS

Effect of Profitability on Tax Avoidance

The first hypothesis (H_1) posited that profitability has a positive effect on tax avoidance. The results do not support this hypothesis. The relationship identified between profitability and tax avoidance is instead significantly negative. This finding indicates that companies with higher profitability tend to avoid engaging in tax avoidance practices.

Effect of Leverage on Tax Avoidance

The second hypothesis (H_2) posited that leverage has a positive effect on tax avoidance. The results support this hypothesis. The positive and significant relationship between leverage and tax avoidance indicates that companies with higher debt levels are more likely to reduce their tax burdens through tax avoidance as a strategy to maintain liquidity and ensure business continuity.

Effect of Sales Volatility on Tax Avoidance

The third hypothesis (H_3) posited that sales volatility has a positive effect on tax avoidance. The results do not support this hypothesis. No significant relationship was found between sales volatility and tax avoidance, and the coefficient was negative. This suggests that fluctuations in sales do not necessarily encourage managers to adopt tax avoidance strategies, implying that other, more dominant factors influence fiscal decision-making during periods of unstable revenue.

Effect of Profitability on Tax Avoidance with Institutional Ownership as a Moderating Variable

The fourth hypothesis (H_4) posited that institutional ownership weakens the effect of profitability on tax avoidance. The results do not support this hypothesis. The interaction term between profitability and institutional ownership is not significant and shows a relationship direction inconsistent with expectations. This suggests that the presence of institutional shareholders is not sufficiently strong to reduce the tendency toward tax avoidance among highly profitable companies.

Effect of Leverage on Tax Avoidance with Institutional Ownership as a Moderating Variable

The fifth hypothesis (H_5) posited that institutional ownership weakens the effect of leverage on tax avoidance. The results support this hypothesis. The significant negative interaction indicates that institutional ownership serves as an effective monitoring mechanism, reducing the tendency of highly leveraged companies to engage in aggressive tax avoidance practices.

Examining the direct effect of the moderating variable institutional ownership (INST), apart from its interaction terms, reveals no significant direct impact on tax avoidance, as the statistical significance criteria were not met. This means institutional ownership does not function as a direct predictor of tax avoidance, but rather as a moderating variable influencing the strength of the relationships between independent and dependent variables most notably in the leverage–tax avoidance relationship.

Effect of Sales Volatility on Tax Avoidance with Institutional Ownership as a Moderating Variable

The sixth hypothesis (H_6) posited that institutional ownership weakens the effect of sales volatility on tax avoidance. The results do not support this hypothesis. No significant interaction was found between sales volatility and institutional ownership, indicating no evidence that the presence of institutional investors moderates the influence of unstable revenue on tax avoidance practices.

CONCLUSION

Based on the empirical analysis and theoretical review presented in the previous chapters, the conclusions are as follows:

1. Profitability has a significant negative effect on tax avoidance. This finding suggests that companies with higher profitability tend to refrain from engaging in tax avoidance strategies, possibly to maintain legitimacy and reputation under greater public scrutiny. This implies that external pressure and the need to preserve corporate image can outweigh opportunistic managerial incentives.
2. Leverage has a significant positive effect on tax avoidance. Companies with higher debt levels have stronger incentives to reduce their tax burdens, particularly by utilizing interest expenses as tax-deductible items. In this context, leverage serves both as a strategic fiscal efficiency tool and as a managerial response to cash flow pressures and obligations to creditors.

3. Sales volatility does not have a significant effect on tax avoidance. Revenue fluctuations are insufficient to drive aggressive tax strategies in the property and real estate sector. The long-term nature of projects and irregular revenue recognition likely limit managers' flexibility to respond to unstable income through tax burden manipulation. These structural factors appear more influential than efficiency pressures in shaping corporate fiscal policy.
4. Institutional ownership does not moderate the relationship between profitability and tax avoidance. Although theoretically institutional investors are considered external monitors capable of curbing opportunistic behavior, in the context of high profitability their presence is not effective in restraining tax avoidance strategies. This may reflect differences in monitoring intensity, short-term orientation of certain investors, or stronger performance pressures during the post-pandemic economic recovery.
5. Institutional ownership significantly moderates the relationship between leverage and tax avoidance. The significant negative interaction demonstrates that institutional investors play an effective monitoring role, reducing the tendency of highly leveraged companies to adopt aggressive fiscal strategies. This reinforces corporate governance and financial reporting transparency, and indicates that institutional ownership functions as a pure moderator—affecting tax avoidance indirectly by weakening the leverage–tax avoidance relationship.
6. Institutional ownership does not moderate the relationship between sales volatility and tax avoidance. The absence of a significant interaction suggests that under conditions of revenue uncertainty, institutional monitoring is not yet optimal in constraining managerial opportunism. This may be due to the structure of revenue in the property sector, which is not easily manipulated in the short term, as well as differences in the characteristics and monitoring capacity of various institutional investors.

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