

The effect of profitability and capital intensity on tax avoidance in consumer non-cyclicals sector companies listed on the Indonesia Stock Exchange during 2021–2024

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ABSTRACT

Tax avoidance is a company's effort to legally minimize its tax burden by exploiting loopholes in the prevailing tax regulations. Tax avoidance practices can be influenced by various internal factors, including profitability and capital intensity. Profitability reflects a company's ability to generate profit, while capital intensity indicates the extent of investment in fixed assets that may generate depreciation expenses as a deduction from taxable income. This study aims to analyze the effect of profitability and capital intensity on tax avoidance in consumer non-cyclicals sector companies listed on the Indonesia Stock Exchange (IDX) during 2021–2024. Tax avoidance is proxied by the Effective Tax Rate (ETR), profitability by Return on Assets (ROA), and capital intensity by the Capital Intensity Ratio (CIR). The study employs a quantitative causal-associative approach with multiple linear regression. Using purposive sampling, 39 firms were selected, yielding 156 firm-year observations. The results show that profitability has a significant effect on tax avoidance ($t = -4.417$; Sig. < 0.001), whereas capital intensity has no significant effect ($t = 0.638$; Sig. $= 0.524$). The Adjusted R^2 of 0.114 indicates that both variables jointly explain 11.4% of the variation in tax avoidance. These findings indicate that a company's profit level can influence its tendency toward tax avoidance, while the magnitude of fixed-asset investment does not directly influence tax avoidance among consumer non-cyclicals companies in Indonesia.

Keywords: profitability; capital intensity; tax avoidance; return on assets; effective tax rate; capital intensity ratio

JEL Classification: H26; H25

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1. Introduction

Taxes are a compulsory contribution from citizens to the state and serve as the main source of national revenue, playing an important role in financing strategic development in education, health,

infrastructure, and public works (Apriliyani and Kartika, 2021). In Indonesia, taxes form the backbone of state revenue given their dominant contribution to the national income structure (Indriati et al., 2022). This

dominant role requires the government to continuously reform and adapt the tax system, as reflected in the enactment of Law No. 7 of 2021 on the Harmonization of Tax Regulations, which aims to strengthen the tax system, improve taxpayer compliance, and optimize state revenue.

National tax revenue exceeded the state-budget target in 2021–2023, peaking at 115.6% of target in 2022, but fell short of target in 2024 (reaching 97.2%), signaling challenges in optimizing state revenue. One contributing factor is tax avoidance by companies (Oktaviani et al., 2022). Efforts to reduce the tax burden can be grouped into two categories: legal practices, known as tax avoidance, which exploit loopholes or ambiguities in tax regulations to minimize taxes payable; and illegal practices, known as tax evasion, which involve unlawful acts such as concealing information or using falsified documents (Directorate General of Taxes, 2024).

One internal factor that may influence tax avoidance is profitability, which reflects a company's ability to generate profit from its operations and resources, and is often used to assess management's effectiveness in managing assets to earn returns (Prihatini and Amin, 2022). This study proxy's profitability by Return on Assets (ROA). Because corporate income tax is calculated on profit, higher profit increases the tax burden, which can encourage management to undertake tax planning to reduce the tax burden legally, including through tax avoidance (Bulawan et al., 2023).

Another internal factor is capital intensity, which reflects the extent to which a company invests its assets in fixed assets used to support operations (Marlinda et al., 2020). A higher proportion of tangible fixed assets generates depreciation expenses recognized as operating costs, which reduce pre-tax profit (Firdasari and

Indrawan, 2025). Thus, high capital intensity may provide an opportunity for legal tax avoidance through the reduction of taxable income.

This study focuses on consumer non-cyclicals firms listed on the IDX during 2021–2024. This sector was chosen because its products are basic necessities consumed continuously, giving it relatively stable economic activity and a substantial contribution to state tax revenue (Wati and Kristanto, 2023), and because its stable demand—relatively unaffected by economic fluctuations—allows the effects of the research variables to be observed more clearly. Prior research on the determinants of tax avoidance remains inconsistent: some studies find that profitability has a negative effect on tax avoidance (Fergytaningsih and Wasif, 2024), while others find that it does have an effect because highly profitable firms have greater incentives for tax planning (Akmal, 2024). Similarly, capital intensity has been found to have a negative effect (Mardiana and Purwaningsih, 2023) in some studies and a positive effect (Cahyamustika and Oktaviani, 2024) in others. This inconsistency constitutes a research gap that motivates re-examination of both variables.

Theoretically, tax avoidance can be explained through the Theory of Planned Behavior (TPB) developed by Ajzen (1991), which holds that behavior arises from intention, which is influenced by attitude, subjective norms, and perceived behavioral control. In a corporate context, the decision to engage in tax avoidance is planned by management, considering the benefits, pressures from stakeholders, and the company's capacity for tax management. High profitability may shape a positive attitude toward tax avoidance, pressure from owners and investors reflects subjective norms, and high capital intensity enhances perceived behavioral control through the use of depreciation to reduce taxable income. Accordingly, this

study analyzes the effect of profitability and capital intensity on tax avoidance in consumer non-cyclicals firms listed on the IDX during 2021–2024.

2. Literature review

Theory of planned behavior and tax avoidance

The Theory of Planned Behavior (Ajzen, 1991) explains that behavioral intention and thus behavior is shaped by attitude toward the behavior, subjective norms, and perceived behavioral control. In the tax context, tax avoidance is a legal effort to minimize the tax burden by exploiting loopholes in tax regulations, and management's decision to pursue it reflects a deliberate, planned evaluation of benefits, external pressures, and the firm's ability to manage taxes. This study measures tax avoidance using the Effective Tax Rate (ETR), where a lower ETR conventionally indicates a higher level of tax avoidance (Hanlon and Heitzman, 2010).

Profitability and tax avoidance

Profitability reflects a company's ability to generate profit from its resources; higher profit implies a larger tax

burden (Damajanti and Ardiani, 2021). Within the TPB framework, profitability relates to management's attitude toward tax avoidance, since higher profits may encourage the use of tax-planning opportunities to preserve after-tax income (Firdasari and Indrawan, 2025). Based on this reasoning, the first hypothesis is proposed:

H₁: profitability (roa) has a significant effect on tax avoidance

Capital intensity and tax avoidance

Capital intensity reflects the proportion of fixed assets relative to total assets. Fixed assets such as machinery, buildings, and equipment generate depreciation expenses that reduce pre-tax profit and therefore the tax burden (Septianti and Haryanti, 2025). Within the TPB framework, capital intensity relates to perceived behavioral control, as firms with a high proportion of fixed assets have a greater ability to use depreciation to reduce taxable income (Sugandi and Raphael, 2025). Based on this reasoning, the second hypothesis is proposed:

H₂: Capital intensity (CIR) has a significant effect on tax avoidance

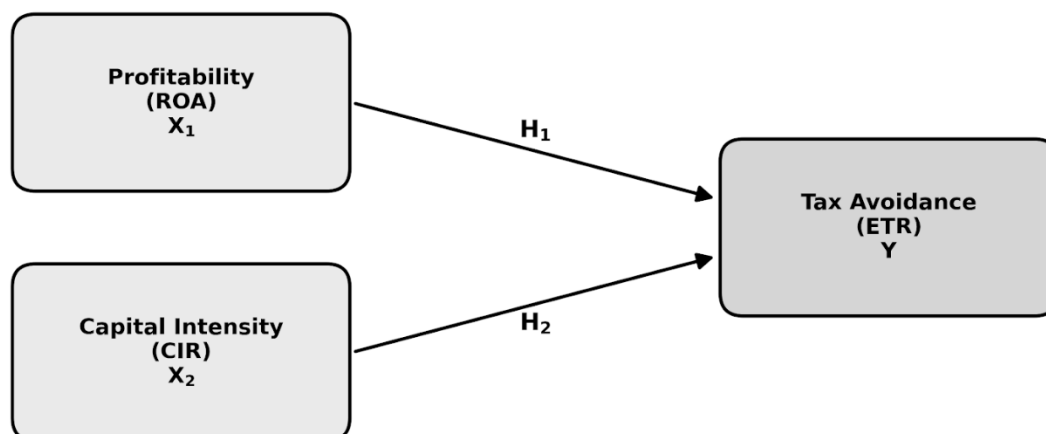


Figure 1. Conceptual framework

3. Research method

This study uses a quantitative method with a causal-associative approach, examining the effect of the independent variables, profitability (X_1) and capital intensity (X_2), on the dependent variable,

tax avoidance (Y). The population comprises all consumer non-cyclicals firms listed on the IDX during 2021–2024. The sample was selected using purposive sampling based on the criteria summarized in Table 1.

Table 1. Sample selection procedure

Criteria	Total
Consumer non-cyclicals firms listed on the IDX during 2021–2024.	97
Firms that did not publish audited financial statements during the study period.	(12)
Firms that did not present financial statements in Rupiah throughout 2021–2024.	(10)
Firms that did not report pre-tax profit during the study period.	(36)
Firms meeting the criteria	39
Years of observation	4
Total observations	156

Source: *www.idx.co.id (processed data, 2026)*

The study uses secondary data in the form of audited annual financial statements obtained from the IDX website (*www.idx.co.id*), collected through

documentation. The operationalization and measurement of each variable are summarized in Table 2.

Table 2. Variable operationalization and measurement

Variable	Definition	Measurement
Profitability (X_1)	A company's ability to generate profit from its total assets.	ROA = (Profit after tax / Total assets) $\times$ 100% (Kasmir, 2017)
Capital Intensity (X_2)	The proportion of fixed assets relative to total assets.	CIR = (Total fixed assets / Total assets) $\times$ 100% (Rodriguez and Arias, 2012)
Tax Avoidance (Y)	A company's legal effort to reduce its income-tax burden.	ETR = (Income tax expense / Pre-tax profit) $\times$ 100% (Hanlon and Heitzman, 2010)

Source: *Processed data, 2026*

Data were analyzed using descriptive statistics, classical assumption tests (normality via Kolmogorov-Smirnov, multicollinearity via tolerance and VIF, heteroscedasticity via the Glejser test, and autocorrelation via Durbin-Watson), and multiple linear regression, processed with

IBM SPSS version 30. The regression model is specified as:

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

where Y = tax avoidance (ETR), X_1 = profitability (ROA), X_2 = capital intensity (CIR), α = constant, β_1 and β_2 = regression coefficients, and e = error term.

Hypotheses were tested using the individual parameter significance test (t-test) at the 5% level, and the coefficient of determination (R^2) was used to assess explanatory power.

4. Result and discussion

Descriptive statistics

Descriptive statistics for the three variables across 156 firm-year observations are presented in Table 3.

Table 3. Descriptive statistics

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Tax Avoidance (ETR)	156	0.0323	0.3529	0.221503	0.0371088
Profitability (ROA)	156	0.0031	0.3428	0.096987	0.0630449
Capital Intensity (CIR)	156	0.0230	0.9613	0.313800	0.1565147

On average, tax avoidance (ETR) is 0.2215, indicating an effective tax rate of about 22% with relatively little variation across firms. Profitability (ROA) averages 0.0970 (about 9%), while capital intensity (CIR) averages 0.3138 (about 31%) with the widest dispersion among the variables, reflecting substantial differences in fixed-asset proportions across firms.

Classical assumption tests

The results of the classical assumption tests are summarized in Table 4. The Kolmogorov-Smirnov test yields an Asymp. Sig. (2-tailed) of 0.099 (> 0.05),

confirming normally distributed residuals. Both independent variables have a tolerance of 0.996 (> 0.10) and a VIF of 1.004 (< 10), indicating no multicollinearity. The Glejser test produces significance values of 0.446 for profitability and 0.393 for capital intensity (both > 0.05), indicating no heteroscedasticity. The Durbin-Watson statistic is 1.350; following Basuki and Prawoto (2021) and Napitupulu et al. (2021), the autocorrelation test is not meaningful for panel data, so the analysis proceeds.

Table 4. Summary of classical assumption tests

Test	Criterion	Result	Conclusion
Normality (Kolmogorov-Smirnov)	Asymp. Sig. > 0.05	0.099	Normal
Multicollinearity	Tolerance > 0.10 ; VIF < 10	0.996; 1.004	None
Heteroscedasticity (Glejser)	Sig. > 0.05	0.446; 0.393	None
Autocorrelation (Durbin-Watson)	Panel data — not applicable	1.350	Not relevant

Multiple linear regression and hypothesis testing

Table 5. ANOVA / overall model significance (F-test)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	0.02620	2	0.01310	10.729	< 0.001
Residual	0.18690	153	0.00122	—	—
Total	0.21310	155	—	—	—

The overall model is statistically significant, $F(2, 153) = 10.729$, $p < .001$, indicating that profitability and capital intensity jointly explain a statistically significant share of the variation in tax avoidance and that it is appropriate to

proceed to interpreting the individual coefficients.

The results of the multiple linear regression and the individual parameter significance test (t-test) are presented in Table 6.

Table 6. Multiple linear regression and t-test results

Variable	Coefficient (B)	t	Sig.	Conclusion
(Constant)	0.237	—	—	—
Profitability (ROA)	-0.198	-4.417	< 0.001	H ₁ supported
Capital Intensity (CIR)	0.012	0.638	0.524	H ₂ not supported

Dependent variable: Tax Avoidance (ETR)

Based on Table 6, the regression equation is $Y = 0.237 - 0.198 \text{ ROA} + 0.012 \text{ CIR} + e$. Profitability has a coefficient of -0.198 with a t-value of -4.417 and significance < 0.001 (< 0.05); therefore, H₁ is supported, profitability has a significant effect on tax avoidance.

Capital intensity has a coefficient of 0.012 with a t-value of 0.638 and significance of 0.524 (> 0.05); therefore, H₂ is not supported, capital intensity has no significant effect on tax avoidance. The coefficient of determination is presented in Table 7.

Table 7. Coefficient of determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.351	0.123	0.114	0.0349448

The Adjusted R² of 0.114 indicates that profitability and capital intensity jointly explain 11.4% of the variation in tax avoidance, while the remaining 88.6% is explained by other factors outside the model. This level of explanatory power is broadly consistent with prior two-predictor ETR studies in similar sectors, which typically report Adjusted R² in the range of roughly 0.10–0.20 when only firm-level financial ratios are included

Discussion

The effect of profitability on tax avoidance

Profitability has a significant effect on tax avoidance, with a negative coefficient relative to ETR, so H₁ is supported. The

finding indicates that firms with higher profitability tend to be more cautious in tax-related decisions and more attentive to compliance and reputational considerations. From a tax-concept perspective, this relates to the book-tax difference: although high profitability provides a larger fiscal base that could open room for exploiting permanent differences, the results show this room is not exploited aggressively. Within the TPB framework, management's attitude weighs the risks of tax avoidance against its benefits, and highly profitable firms, typically under closer scrutiny from investors, government, and the public (a subjective-norm influence), tend to favor compliance. This result is consistent with

Firdasari and Indrawan (2025) and Pucantika and Wulandari (2022).

The effect of capital intensity on tax avoidance

Capital intensity has no significant effect on tax avoidance, so H₂ is not supported. The proportion of fixed assets a firm hold is not a primary determinant of tax avoidance; although fixed assets generate depreciation that can reduce taxable income, firms do not necessarily use this as a tax-planning strategy, focusing instead on supporting operations. From a tax-concept perspective, this relates to temporary differences: depreciation-based timing differences merely shift the recognition of tax expense across periods rather than eliminating the tax obligation permanently, so the benefit is temporary and insufficient to suppress the tax burden on a sustained basis. This result is consistent with studies finding that capital intensity does not significantly affect tax avoidance in comparable Indonesian samples, including Wirianata et al. (2024), who study firms across several consumer- and industrial-sector groupings for 2019–2021, and Susanto (2025), who studies the same consumer non-cyclicals sector on the IDX for a 2019–2023 window.

5. Conclusion

Based on the analysis of the effect of profitability and capital intensity on tax avoidance in consumer non-cyclicals firms listed on the IDX during 2021–2024, two conclusions can be drawn. First, profitability (ROA) has a significant effect on tax avoidance (ETR) with a negative direction, indicating that firms with higher profitability tend to be more cautious in managing their tax obligations and more attentive to compliance and reputation; good financial performance does not necessarily drive tax avoidance. Second, capital intensity (CIR) has no significant effect on tax avoidance, indicating that the

proportion of fixed assets is not a determinant of tax-avoidance practices, as fixed assets are directed primarily toward supporting operations rather than minimizing the tax burden through depreciation.

This study recommends that future research add variables theoretically and empirically linked to tax avoidance, such as leverage, firm size, good corporate governance, and sales growth, and extend the sector coverage and observation period for more generalizable results. Companies are advised to integrate tax-efficiency principles with sound corporate governance, so that tax policies consider not only tax savings but also investor trust, financial-reporting integrity, and long-term sustainability, while strengthening transparency in tax reporting. The main limitation of this study is its focus on a single sector over four years with only two independent variables, which explain a relatively small share of the variation in tax avoidance.

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