Jurnal Akuntansi AKUNESA

Volume 15 Issue 1 September 2026
ISSN (Print): 2302-1195 | ISSN (Online): 2686-438X
https://journal.unesa.ac.id/index.php/akunesa/

Determinants of Tax Avoidance in Indonesian Banking: The Role of Leverage, Profitability, and Asset Efficiency

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DOI: 10.26740/akunesa.v15n1.p87-94

ARTICLE INFORMATION:
Submit: July 09, 2026
Accepted: August 30, 2026
Published: September 01, 2026

KEYWORDS:
Banking; Capital intensity; Leverage; Profitability; Panel data; Tax avoidance

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ABSTRACT
This study investigates how leverage, profitability, and asset efficiency relate to tax avoidance among banking sub-sector firms listed on the Indonesia Stock Exchange from 2021 through 2025, with tax avoidance captured through the Effective Tax Rate (ETR). A purposive sampling procedure applied to 48 Main Board financial-sector firms yielded a final set of 16 banks and 80 panel-year observations. As part of this study's contribution, an asset efficiency ratio—Total Assets scaled by Operating Income—is put forward as a banking-specific adaptation of the capital intensity construct. Panel regression estimation, guided by the Chow and Lagrange Multiplier tests, points to the Common Effect Model (CEM) as the appropriate specification; because heteroscedasticity was detected, robust standard errors were applied in the final estimation. Findings reveal a significant positive association between leverage and tax avoidance, whereas neither profitability nor asset efficiency reaches statistical significance. Collectively, the evidence suggests that banking-sector tax avoidance is not governed by the same determinants documented for manufacturing firms, reinforcing the case for sector-tailored inquiry into tax avoidance behavior.

INTRODUCTION

State revenue depends heavily on tax collection, yet corporate tax avoidance behavior continues to constrain how much of that revenue is actually realized. According to figures recorded by the Directorate General of Taxes, Indonesia's tax ratio stood near 10.38% in 2022 before slipping to about 9.31% by 2025 (MUC Consulting, 2025), a level still comparatively modest against several of its ASEAN counterparts. Such a trend points to persistent tax-burden optimization across business entities, and the banking industry is no exception: its inherently complex financial transactions and heavy reliance on financial instruments leave considerable room for aggressive tax planning.

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Within the national economy, banks occupy a distinctive position: they function as financial intermediaries while also ranking among the larger contributors to corporate income tax revenue. Their balance sheets, however, look nothing like a manufacturer's, loans and securities dominate the asset side, while third-party funds make up the bulk of liabilities, so ordinary financial ratios such as leverage take on a different meaning once applied to a bank. A bank posting a high Debt to Equity Ratio (DER) is not necessarily signaling elevated financial risk in the way a non-financial firm would; rather, that ratio simply reflects how the intermediation business is structured. Because of this distinction, examining tax avoidance behavior in banks warrants a separate inquiry from studies conducted on non-financial firms.

Jensen & Meckling (1976) agency theory offers one lens for understanding this behavior: when information asymmetry separates management (the agent) from shareholders (the principal), managers may gravitate toward decisions that serve short-term interests, tax minimization included. Paulus et al. (2025) build on this idea, demonstrating that a manager's dual position—as both decision-maker and, at times, shareholder—continues to shape how ownership structures translate into tax-related choices, keeping agency theory relevant to present-day tax avoidance research. For banks specifically, the pressure to hit profitability targets while satisfying capital adequacy ratios enforced by the Financial Services Authority (OJK) can amplify management's incentive to treat tax avoidance as one lever among several for optimizing net income.

Even given its strategic weight, the banking sector has attracted comparatively little attention in Indonesian tax avoidance research, especially when set against the sizeable body of work on manufacturing firms. What does exist points in a consistent direction: Andalenta and Ismawati (2022) linked both profitability (ROA) and leverage (DER) to tax avoidance among banks listed on the IDX over 2016-2018, Sari et al. (2022) traced similar effects for ROA, leverage, and firm size across the 2014-2018 window, and Mellisyah (2023) likewise reported that ROA and leverage shape tax avoidance behavior in Indonesian banking. Outside the banking sector, capital intensity is typically operationalized as the share of fixed assets in total assets (Karlinah et al., 2024; Wansu & Dura, 2024), a definition that sits awkwardly with banks, whose balance sheets lean toward financial rather than fixed assets. It is precisely this combination, a manufacturing literature that is mature and a banking literature that is both sparse and poorly matched to the sector's asset structure, that defines the research gap this study sets out to address.

Three contributions set this study apart from earlier work. First, rather than stopping at pre-pandemic data, the analysis extends through 2021-2025, a window that spans the post-COVID-19 recovery and carries the discussion into more current territory than most prior studies have covered. Second, in place of the conventional fixed-asset-based measure that ill-suits banks, this study puts forward a banking-specific asset efficiency ratio, Total Assets divided by Operating Income, built on the underlying logic of capital intensity. Third, the use of panel data regression, rather than a single cross-section, allows variation across both time and entities to be captured simultaneously, yielding estimates that should be more robust than those typical of earlier cross-sectional designs. Taken together, these choices are intended to close the gap identified above and add sector-specific evidence to the study of tax avoidance determinants within Indonesian banking.

LITERATURE REVIEW

Agency Theory

Under Jensen & Meckling (1976) formulation, an agency relationship arises whenever a principal engages an agent to act on their behalf, handing over a measure of decision-making authority in the process. Applied to banks, this framework suggests that when management and shareholders do not share the same information, management may lean toward financial and tax policies that favor its own short-term interests, or those of controlling shareholders, even where these diverge from the state's interest in tax revenue. Paulus et al. (2025) push this idea further, showing that a manager occupying both roles, decision-maker and, at times, shareholder, affects whether tax avoidance ends up being used opportunistically or more strategically, which keeps agency theory a useful frame for present-day tax avoidance research.

Tax Avoidance

Tax avoidance refers to a taxpayer's lawful pursuit of a lighter tax burden through gaps in existing tax rules, setting it apart from tax evasion, which crosses into illegality. Here, the construct is operationalized through the Effective Tax Rate (ETR), the ratio of income tax expense to pre-tax income, where a lower figure signals a greater degree of tax avoidance.

Leverage and Tax Avoidance

Leverage captures how much of a firm's financing comes from debt rather than equity. Among non-financial firms, higher leverage is often tied to a lower ETR, since interest expense can be deducted from taxable income through the familiar tax shield mechanism. Banks carry high leverage almost by design, given their intermediation function, yet the same tax shield logic can still operate through interest-bearing components of their liabilities, such as debt securities and interbank borrowings. Empirically, Andalenta & Ismawati (2022) and Fadhila & Andayani (2022) both report a significant link between leverage and tax avoidance, which supports the following hypothesis:

H1: Leverage affects tax avoidance in banking companies listed on the Indonesia Stock Exchange.

Profitability and Tax Avoidance

Profitability, proxied here by Return on Assets (ROA), reflects how effectively a firm turns its asset base into profit. Firms that are more profitable not only face a larger taxable income base but also tend to command more resources and managerial capacity for executing tax planning. Within banking, Andalenta & Ismawati (2022), Mellisyah (2023), and Sari et al. (2022) each report a significant ROA-tax avoidance link, and comparable patterns surface beyond banking as well, Mayndarto (2022) in the automotive manufacturing segment and Putri et al. (2025) in food and beverage manufacturing—suggesting the relationship holds reasonably well across sectors. This body of evidence supports the following hypothesis:

H2: Profitability affects tax avoidance in banking companies listed on the Indonesia Stock Exchange.

Asset Efficiency Ratio and Tax Avoidance

Within manufacturing research, capital intensity is conventionally captured as the share of fixed assets within total assets, a proxy for how much depreciation expense reduces taxable income

(Hendrianto & Hidayati, 2022; Karlinah et al., 2024; Wansu & Dura, 2024). That definition loses its relevance once applied to banks, whose assets consist largely of loans and securities rather than fixed assets. In its place, this study constructs an asset efficiency ratio, Total Assets divided by Operating Income, which captures how large a bank's asset base must be to produce one unit of operating income. Because this adaptation, unlike the fixed-asset-based measure it replaces, has no prior track record of validation in the tax avoidance literature, it is offered here as an exploratory proxy; any null or unexpected results for this variable should be read with that caveat in mind. Accordingly, the following hypothesis is proposed:

H3: Asset efficiency ratio affects tax avoidance in banking companies listed on the Indonesia Stock Exchange.

Conceptual Framework

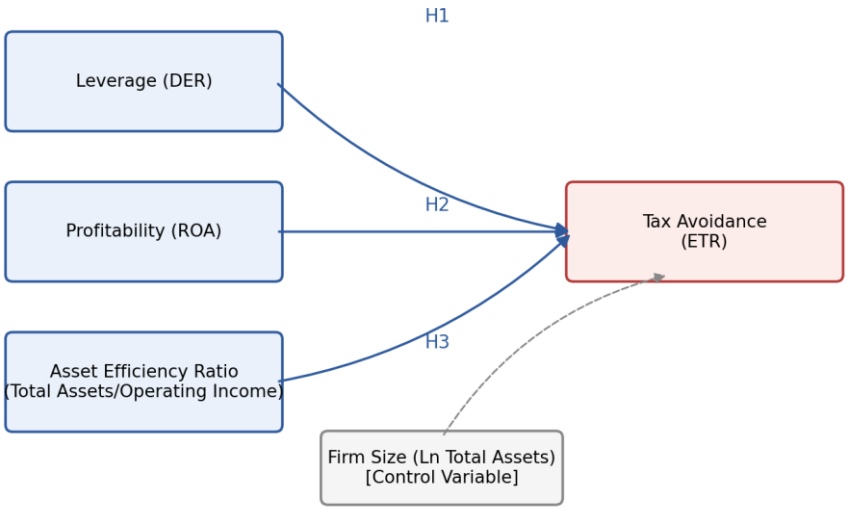


Figure 1. Conceptual Framework

RESEARCH METHODS

A quantitative, panel-data regression design underpins this study's examination of how leverage, profitability, and asset efficiency relate to tax avoidance among banks. The population comprises all 48 financial-sector firms listed on the Main Board of the Indonesia Stock Exchange. From this population, purposive sampling narrowed the field according to four criteria: the firm operates within the Banking sub-sector rather than multifinance, insurance, securities, or financial holding; it experienced no delisting or trading suspension across the 2021-2025 observation window; it produced complete, consistently audited annual financial statements for the entire period; and it reported positive pre-tax income throughout, since a loss-making year renders the Effective Tax Rate economically uninformative.

Narrowing the sample to banks alone, rather than retaining all 48 financial-sector firms, reflects the underlying heterogeneity of the financial sector: banks, multifinance firms, insurers, and securities companies operate under fundamentally different business models and balance sheet structures. Pooling them into a single regression risks blending populations that are not truly

comparable, which could distort the estimation results. Keeping the sample confined to one relatively homogeneous sub-sector helps safeguard the model's internal validity.

Applying these criteria left 16 Banking sub-sector firms in the final sample, listed in Table 1. Observed over five years (2021-2025), this yields a balanced panel of 80 observations.

Table 1. List of Sample Banking Companies

No	Code	Company Name
1	BBCA	Bank Central Asia Tbk.
2	BBNI	Bank Negara Indonesia (Persero) Tbk.
3	BBRI	Bank Rakyat Indonesia (Persero) Tbk.
4	BBTN	Bank Tabungan Negara (Persero) Tbk.
5	BDMN	Bank Danamon Indonesia Tbk.
6	BJBR	Bank Pembangunan Daerah Jawa Barat dan Banten Tbk.
7	BJTM	Bank Pembangunan Daerah Jawa Timur Tbk.
8	BMRI	Bank Mandiri (Persero) Tbk.
9	BNGA	Bank CIMB Niaga Tbk.
10	BNII	Bank Maybank Indonesia Tbk.
11	BNLI	Bank Permata Tbk.
12	BRIS	Bank Syariah Indonesia Tbk.
13	BSIM	Bank Sinarmas Tbk.
14	BTPS	Bank BTPN Syariah Tbk.
15	MEGA	Bank Mega Tbk.
16	PNBN	Bank Pan Indonesia Tbk.

All data are secondary, drawn from each bank's audited annual financial statements for 2021-2025 and obtained through the Indonesia Stock Exchange website (idx.co.id), Indopremier, and individual company websites. Variables are operationalized as follows: Tax Avoidance via the Effective Tax Rate (ETR), calculated as income tax expense over pre-tax income; Leverage via the Debt to Equity Ratio (DER), total liabilities over total equity; Profitability via Return on Assets (ROA), net income over total assets; Asset Efficiency Ratio (AER), a banking-context adaptation of the capital intensity concept, as total assets over operating income; and Firm Size, included as a control, measured by the natural logarithm of total assets.

Estimation proceeds through panel data regression, with the Chow Test and the Hausman/Lagrange Multiplier Test guiding the choice among the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM). All computations were performed in R using the plm package.

RESULTS AND DISCUSSION

This section presents the empirical findings of the study, beginning with the descriptive profile of the sample before turning to model selection, diagnostic testing, and hypothesis testing. Table 2 reports descriptive statistics for the study's variables.

Table 2. Descriptive Statistics (N = 80)

Variable	N	Minimum	Maximum	Mean	Std. Dev
ETR (Tax Avoidance)	80	0.0301	0.3796	0.2105	0.0362
Leverage (DER)	80	0.2871	15.3080	5.5039	2.9593
Profitability (ROA)	80	0.0014	0.0841	0.0188	0.0146
Asset Efficiency Ratio (AER)	80	9.2797	193.0985	62.3749	42.6905
Firm Size (Ln Total Assets)	80	30.5512	35.5790	33.3018	1.2321

At 0.2105 (21.05%), the sample's mean ETR sits just under the 22% statutory corporate tax rate, pointing to a moderate degree of tax avoidance relative to other sectors, where ETR figures often fall well short of the statutory benchmark. The mean Asset Efficiency Ratio, at 62.37, likewise looks unusually high next to the classical capital intensity measure used in manufacturing research (typically bounded between 0 and 1), a gap explained by the sheer scale difference between a bank's total assets and its annual operating income.

Table 3 presents the results of the Chow Test and the Lagrange Multiplier (Breusch-Pagan) Test used to select the appropriate model.

Table 3. Model Selection Test Results

Test	Statistic	p-value	Decision
Chow Test (CEM vs FEM)	F = 1.2091	0.2905	CEM
Lagrange Multiplier/Breusch-Pagan (CEM vs REM)	chi-sq = 0.0576	0.8103	CEM
Breusch-Godfrey/Wooldridge (serial correlation)	chi-sq = 7.9870	0.1570	No serial correlation
Panel Durbin-Watson (serial correlation)	DW = 1.6425	0.0239	Serial correlation indicated

With an F-value of 1.2091 and a p-value of 0.2905 (exceeding 0.05), the Chow Test fails to reject H0, favoring the Common Effect Model (CEM) over the Fixed Effect Model. The Lagrange Multiplier (Breusch-Pagan) Test then returns a p-value of 0.8103, again above 0.05, which similarly favors CEM over the Random Effect Model. Taken together, these results point to CEM as the model of choice for this study's panel data regression, an outcome consistent with the absence of any pronounced cross-bank heterogeneity that would otherwise call for a fixed- or random-effects specification, allowing the data to be treated as a single pooled cross-section.

Applying the Breusch-Pagan test to the model turned up evidence of heteroscedasticity (p-value = 0.0247, below 0.05); the final estimation therefore relies on robust standard errors (HC1) to correct for the resulting bias. Two complementary diagnostics were run to check for serial correlation, and they did not fully agree: the Breusch-Godfrey/Wooldridge test found no evidence of it (p-value = 0.1570, above 0.05), while the panel Durbin-Watson test pointed the other way (p-value = 0.0239, below 0.05). To probe this further, the model was re-estimated with entity-clustered standard errors, which absorb within-bank serial correlation alongside heteroscedasticity; the substantive results held, leverage stayed significant (p = 0.0030), and profitability and asset efficiency remained non-

significant, indicating that unresolved serial correlation is unlikely to be driving the core findings. Multicollinearity, checked via the Variance Inflation Factor (VIF), likewise poses no concern, with every value falling below 2 (DER = 1.74; ROA = 1.48; Asset Efficiency Ratio = 1.74; SIZE = 1.22). Table 4 reports the resulting Common Effect Model estimates with robust standard errors.

Table 4. Panel Data Regression Results (Common Effect Model, Robust Standard Error)

Variable	Coefficient	Robust Std. Error	t-value	p-value	Remark
Constant	0.35144	0.11952	2.9405	0.0044	**
DER (Leverage)	-0.00308	0.00101	-3.0626	0.0030	** (H1 supported)
ROA (Profitability)	-0.25783	0.30636	-0.8416	0.4027	H2 not supported
Asset Efficiency Ratio (AER)	0.00011	0.00008	1.4426	0.1533	H3 not supported
SIZE (Control)	-0.00379	0.00339	-1.1167	0.2677	not significant

R-squared = 0.0796; Adjusted R-squared = 0.0305; significance at α = 0.05 (**)

The standard errors reported in Table 4 are heteroscedasticity-robust standard errors (White/HC1), not clustered/sandwich standard errors. As an additional, untabulated robustness check, the model was also re-estimated using entity-clustered standard errors to further account for possible within-bank serial correlation; the results were materially unchanged (leverage remained significant; profitability and asset efficiency remained non-significant).

An R-squared of 0.0796 means that leverage, profitability, and asset efficiency together account for roughly 7.96% of the variation in tax avoidance observed in the sample, leaving the bulk of that variation to factors the model does not capture, ownership structure, corporate governance, or sector-specific tax incentives among them. A modest R-squared of this kind is not unusual in tax avoidance studies built on basic financial ratios, given how much of corporate tax decision-making rests on qualitative and institutional considerations that resist straightforward quantification.

For leverage (DER), the regression yields a coefficient of -0.00308 with a p-value of 0.0030, comfortably below the 0.01 threshold, evidence of a significant negative relationship with ETR, which translates into a significant positive relationship with tax avoidance. H1 stands supported, and the result holds up under entity-clustered standard errors. It also echoes Andalenta & Ismawati (2022), who report a comparable leverage effect within the banking sector. A tax shield explanation offers one way to read this: interest expense tied to interest-bearing components of a bank's liabilities, debt securities, interbank borrowings, subordinated bonds, can be deducted from taxable income. That explanation should be taken with some caution, though: DER as constructed here reflects total liabilities against equity, and a large share of bank liabilities is customer deposits rather than debt structured for tax purposes, so the tax shield story cannot be cleanly separated from alternative mechanisms, risk-taking behavior or regulatory capital management, for instance, without breaking liabilities down into finer categories. There is also the question of reverse causality: banks pursuing more aggressive tax positions might, in turn, gravitate toward more leveraged funding strategies, and the cross-sectional pooling design used here cannot rule that direction out. Instrumental variable or dynamic panel techniques in future work could help settle the matter.

Profitability (ROA) produces a coefficient of -0.25783 with a p-value of 0.4027, well above conventional significance thresholds, so no significant relationship with tax avoidance emerges in

this sample and H2 goes unsupported. This departs from Andalenta & Ismawati (2022) and Sari et al. (2022), both of whom detected a significant ROA effect. A few factors could account for the gap. The observation window itself mixes two quite different periods, the post-pandemic recovery years (2021-2023), marked by credit restructuring and heavier loss provisioning, and the more settled years that followed (2024-2025), and pooling them into one cross-sectional model may wash out a relationship that only holds within a given sub-period. It is also possible that profitability's link to tax avoidance is non-linear, or moderated by variables such as ownership structure or governance quality that this model leaves unexamined. Sample composition and observation period differences relative to earlier studies further limit how directly the results can be compared. Sorting out which explanation matters most would call for sub-period analysis or moderated modeling, both left to future work.

The asset efficiency ratio comes in at 0.00011 with a p-value of 0.1533, again short of significance, leaving H3 unsupported. This outcome is broadly in line with what might be expected going in: translating the classical, fixed-asset-based notion of capital intensity into a banking-specific asset efficiency ratio (Total Assets over Operating Income) may not yet capture whatever mechanism actually drives bank tax decisions, since the ratio speaks more to a bank's general scale and operational efficiency than to sector-specific tax incentives like the depreciation deductions available to manufacturers. The result points toward further work aimed at identifying a more suitable asset efficiency proxy for the banking context.

CONCLUSION

Drawing on 80 panel observations from 16 Banking sub-sector firms listed on the Indonesia Stock Exchange between 2021 and 2025, this study set out to trace how leverage, profitability, and asset efficiency relate to tax avoidance. The Common Effect Model estimates, computed with robust standard errors, point to a significant negative leverage-tax avoidance relationship (supporting H1), while profitability and asset efficiency show no such significance (leaving H2 and H3 unsupported). Read together, these results suggest that whatever drives tax avoidance in banking does not map neatly onto the patterns established for manufacturing firms, which strengthens the case for tax avoidance research that takes sector-specific characteristics seriously.

Several limitations temper these conclusions. The sample remains fairly small, 16 banks and 80 observations, which caps statistical power and constrains how far the findings can be generalized. The observation period also spans the economic disruption of the COVID-19 pandemic, which may have unsettled the stability of the relationships under study. Beyond that, the asset efficiency ratio proxy introduced here (Total Assets over Operating Income) lacks any prior validation in the tax avoidance literature, so its non-significant result should be read cautiously, it may reflect a limitation of the proxy itself rather than a genuine absence of effect. Evidence on serial correlation was also mixed across the diagnostic tests used, and while a clustered-standard-error check left the headline conclusions intact, the pooled cross-sectional design cannot fully exclude reverse causality running from tax avoidance back to leverage. Given the notably low explanatory power of the model (Adjusted R^2 = 3.05%), future research is strongly encouraged to incorporate additional banking-specific variables, such as Non-Performing Loan (NPL) or Loan to Deposit Ratio (LDR), which may influence bank tax management more directly than general financial ratios. Extending the model to incorporate corporate governance, ownership structure (institutional or foreign), or banking-specific tax incentives would be a natural next step for future research, alongside dynamic panel or instrumental variable techniques to address potential endogeneity and further work to refine and

validate the asset efficiency ratio proxy for banking, all of which would deepen and strengthen the understanding of what actually drives tax avoidance in this sector.

REFERENCES

Andalenta, I., & Ismawati, K. (2022). Tax avoidance perusahaan perbankan. *Owner: Riset Dan Jurnal Akuntansi*, *6*(1), 225–233. https://doi.org/10.33395/owner.v6i1.627

Fadhila, N., & Andayani, S. (2022). Pengaruh financial distress, profitabilitas, dan leverage terhadap tax avoidance. *Owner: Riset Dan Jurnal Akuntansi*, *6*(4), 3489–3500. https://doi.org/10.33395/owner.v6i4.1211

Hendrianto, & Hidayati, W. N. (2022). Pengaruh sales growth dan capital intensity terhadap tax avoidance. *Owner: Riset Dan Jurnal Akuntansi*, *6*(3), 3188–3199. https://doi.org/10.33395/owner.v6i3.1054

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*(4), 305–360. https://doi.org/10.1016/0304-405X(76)90026-X

Karlinah, L., Tallane, & Putri, V. R. (2024). Hubungan capital intensity ratio, firm size, digital transformation terhadap tax avoidance dengan CSR sebagai moderasi. *Owner: Riset Dan Jurnal Akuntansi*, *8*(4), 4490–4506. https://doi.org/10.33395/owner.v8i4.2481

Mayndarto, E. C. (2022). Pengaruh profitabilitas dan ukuran perusahaan terhadap tax avoidance. *Owner: Riset Dan Jurnal Akuntansi*, *6*(1), 426–442. https://doi.org/10.33395/owner.v6i1.590

Mellisyah, M. (2023). Pengaruh ROA dan leverage terhadap praktik penghindaran pajak di industri perbankan Indonesia. *Jurnal Ekonomi Bisnis, Manajemen Dan Akuntansi (JEBMA)*, *3*(2), 527–536. https://doi.org/10.47709/jebma.v3i2.2817

MUC Consulting. (2025). *Will the tax ratio drop again in 2025? Here's what the DGT says*. https://muc.co.id/en/article/will-the-tax-ratio-drop-again-in-2025-heres-what-the-dgt-says

Paulus, H., Tarmidi, D., & Daito, A. (2025). The effect of transfer pricing, earnings management, and company size on tax avoidance: Managerial ownership analysis. *Journal of Contemporary Accounting*, *7*(2), 75–88. https://doi.org/10.20885/jca.vol7.iss2.art1

Putri, V. R., Falatifah, M., & Karlinah, L. (2025). Pengaruh profitabilitas, firm size dan sales growth terhadap tax avoidance. *Owner: Riset Dan Jurnal Akuntansi*, *9*(2), 1334–1356. https://doi.org/10.33395/owner.v9i2.2679

Sari, O. K., Nurlaela, S., & Titisari, K. H. (2022). Return on assets (ROA), leverage, and firm size on tax avoidance (registered banking companies on IDX 2014-2018). *Jurnal AKSI (Akuntansi Dan Sistem Informasi)*, *7*(1), 98–103. https://doi.org/10.32486/aksi.v7i1.252

Wansu, E. E., & Dura, J. (2024). Pengaruh ukuran perusahaan dan capital intensity terhadap tax avoidance (perusahaan pertambangan di Bursa Efek Indonesia). *Owner: Riset Dan Jurnal Akuntansi*, *8*(1), 749–759. https://doi.org/10.33395/owner.v8i1.1871