



Audit Quality and Company Size on Tax Avoidance: The Role of Independent Commissioners

Kualitas Audit dan Ukuran Perusahaan atas Penghindaran Pajak: Peran Komisaris Independen

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Abstract

This study examines the effect of audit quality and firm size on tax avoidance, with independent commissioners as a moderating variable. Using 595 firm-year observations from 94 manufacturing companies listed on the Indonesia Stock Exchange during 2016–2023, this study applies pooled panel regression with year fixed effects and firm-level clustered robust standard errors. The results show that audit quality is negatively associated with the effective tax rate, indicating higher tax avoidance. Firm size has no significant direct effect. Independent commissioners significantly strengthen the monitoring role of audit quality, but do not convert firm size into stronger tax compliance. These findings suggest that governance mechanisms influence tax avoidance differently depending on whether they operate through external audit quality or firm complexity.

Penelitian ini menguji pengaruh kualitas audit dan ukuran perusahaan terhadap penghindaran pajak dengan komisaris independen sebagai variabel moderasi. Penelitian menggunakan 595 observasi firm-year dari 94 perusahaan manufaktur yang terdaftar di Bursa Efek Indonesia selama periode 2016–2023. Metode analisis yang digunakan adalah regresi panel pooled dengan year fixed effects dan firm-level clustered robust standard errors. Hasil penelitian menunjukkan bahwa kualitas audit berpengaruh negatif terhadap effective tax rate, yang mengindikasikan tingkat penghindaran pajak yang lebih tinggi. Ukuran perusahaan tidak berpengaruh signifikan secara langsung. Komisaris independen memperkuat peran monitoring kualitas audit, tetapi tidak mampu mengubah ukuran perusahaan menjadi mekanisme kepatuhan pajak yang lebih kuat. Temuan ini menunjukkan bahwa mekanisme tata kelola perusahaan memengaruhi penghindaran pajak secara berbeda, tergantung pada jalur pengawasan eksternal audit dan kompleksitas perusahaan.

INTRODUCTION

Tax avoidance remains a central issue in corporate taxation because it reflects managerial efforts to reduce tax payments within the boundaries of formal tax rules, yet at the same time raises concerns about transparency, fairness, and the erosion of public revenue. In accounting and taxation research, tax avoidance has become one of the core streams of inquiry, especially because it is closely linked to firms' reporting incentives, governance arrangements, and monitoring quality (Hanlon & Heitzman, 2010). In Indonesia, the issue has gained greater relevance in line with the continuing tax reform agenda. Law No. 7 of 2021 on Harmonization of Tax Regulations emphasizes stronger tax revenue performance, tax-base expansion, administrative reform, legal certainty, and voluntary taxpayer compliance. This policy direction implies that corporate tax behavior should not be viewed solely as a technical tax-planning matter, but also as a governance issue shaped by how effectively firms are monitored and disciplined.

Agency Theory provides an appropriate framework for explaining why tax avoidance emerges and why governance mechanisms matter. Jensen and Meckling (1976) argue that the separation of ownership and control gives rise to agency costs because managers may pursue actions that do not fully align with shareholders' interests. In the tax context, managers may prefer aggressive tax strategies to improve after-tax earnings and signal stronger performance, while shareholders and other stakeholders may also bear the accompanying legal, reputational, and enforcement risks. In other words, tax avoidance is not merely a tax-minimization decision, but also an outcome of managerial discretion under imperfect monitoring.

One important external monitoring mechanism in this context is audit quality. High quality auditors are expected to restrain aggressive tax behavior because they face stronger reputational concerns, possess greater expertise, and apply stricter professional standards when evaluating financial reporting choices. Prior studies directly related to this issue support such an argument. Rizqia and Lastiati (2021), examining manufacturing firms listed on the Indonesia Stock Exchange and the Malaysia Stock Exchange, find that Big Four audit firms reduce tax avoidance, although independent commissioners in their study do not significantly alter that relationship. Similarly, Shafiq et al. (2024) report that higher audit quality is associated with lower tax avoidance. However, these studies mainly emphasize the direct effect of audit quality, leaving open the question of whether the effectiveness of audit quality depends on the strength of internal governance within the firm. This unresolved point is important because external audit alone may not be equally effective across firms with different monitoring environments.

Firm size is another variable frequently associated with tax avoidance, but the empirical evidence remains mixed. On one side, larger firms may have more complex organizational structures, more resources for sophisticated tax planning, and greater capacity to exploit regulatory gaps. Evidence from an emerging-market setting shows that firm size can increase tax avoidance (Hossain et al., 2024). On the other side, large firms also face higher political visibility, stronger scrutiny from regulators and investors, and greater reputational costs if aggressive tax behavior is exposed. Indonesian evidence illustrates this inconsistency. Widiasmara (2017) reports that firm size negatively affects aggressive tax avoidance, whereas Tobing et al. (2022) find that firm size has no significant effect on tax avoidance in manufacturing firms. These mixed findings indicate that the relationship between firm size and tax avoidance is not universal and may depend on the governance conditions under which managerial decisions are made.

In this regard, independent commissioners deserve more explicit theoretical attention because they represent a key internal monitoring mechanism in Indonesia's governance structure. Their role is to oversee management, protect broader stakeholder interests, and reduce managerial opportunism. The corporate tax literature also increasingly recognizes that board-level governance matters for tax behavior. Kovermann and Velte (2019), in their review of 79 empirical studies, conclude that board composition, audit, ownership structure, and other governance mechanisms are important determinants of tax avoidance, and they specifically note that external monitoring should be complemented by internal monitoring such as more independent boards. Likewise, Kerr et al. (2024) show that stronger corporate governance reduces tax avoidance and identify board independence and audit committees as mechanisms associated with the decline. Nevertheless, the Indonesian evidence remains limited in explaining whether independent commissioners merely have a direct governance role or whether they

strengthen the effect of other monitoring mechanisms, particularly audit quality and firm size, on tax avoidance.

Therefore, this study addresses a more specific research gap than prior work. First, previous studies on tax avoidance in Indonesia and other emerging markets have largely examined the direct effects of audit quality, firm size, or governance variables separately, while giving limited attention to how external and internal monitoring mechanisms interact. Second, prior findings on firm size and tax avoidance remain inconsistent, suggesting that a simple direct-effect model may be inadequate. Third, although Rizqia and Lastiati (2021) already connect audit quality, tax avoidance, and independent commissioners, their evidence is limited to a shorter setting and does not resolve whether board independence consistently strengthens external monitoring in the Indonesian context. Against this background, the contribution of the present study is not merely the combination of variables, but the development of a governance-complementarity perspective: tax avoidance is expected to be more constrained when a high-quality external audit is supported by stronger internal oversight through independent commissioners. At the same time, the study re-examines whether firm size encourages or discourages tax avoidance once board independence is taken into account.

This study focuses on manufacturing companies listed on the Indonesia Stock Exchange during 2016–2023. The manufacturing sector provides an appropriate setting because it is characterized by relatively complex operations, substantial inventories, and significant fixed-asset use, all of which make tax reporting and tax-planning decisions economically important. In addition, this period spans the years before and after the enactment of Law No. 7 of 2021, allowing the analysis to be situated within a broader period of tax reform and strengthened compliance expectations in Indonesia. Accordingly, this study aims to examine the effect of audit quality and firm size on tax avoidance, as well as the moderating role of independent commissioners in both relationships, while controlling for profitability to reduce omitted-variable bias.

Agency Theory explains that managers may engage in actions that do not always align with the long-term interests of shareholders when monitoring is weak. In the context of taxation, tax avoidance can be interpreted as one manifestation of managerial discretion because managers may seek to reduce tax payments in order to improve after-tax earnings, while the associated legal, reputational, and regulatory risks are partly borne by shareholders and other stakeholders. Armstrong et al. (2015) show that unresolved agency problems may lead managers to engage in more or less tax avoidance than shareholders would otherwise prefer. Similarly, Kovermann and Velte (2019) conclude that corporate governance mechanisms, including audit and board composition, are important in shaping firms' tax avoidance behavior. Thus, the relationship between tax avoidance and governance should be understood not merely as a direct statistical association, but as a monitoring problem rooted in agency conflict.

Audit Quality and Tax Avoidance

Audit quality represents an important external monitoring mechanism that can reduce managerial opportunism in financial reporting and tax reporting. High-quality auditors, particularly those with stronger reputational incentives and greater technical capacity, are expected to be more effective in detecting aggressive tax positions and discouraging reporting choices that expose the firm to compliance risk. From an agency perspective, high audit quality reduces information asymmetry between managers and principals and narrows managerial room to adopt opportunistic tax strategies. Prior empirical evidence supports this prediction. Rizqia and Lastiati (2021) report that firms audited by Big Four auditors exhibit lower tax avoidance, and Shafiq et al. (2024) likewise find that higher audit quality is associated with lower tax avoidance. Accordingly, this study expects audit quality to restrain tax avoidance.

H1: Audit quality negatively affects tax avoidance.

Firm Size and Tax Avoidance

The relationship between firm size and tax avoidance is theoretically less straightforward, but Agency Theory provides a useful basis for prediction. Larger firms have more formalized governance systems, more established compliance structures, and greater exposure to regulatory oversight, investor scrutiny, and reputational pressure. These conditions can reduce managerial incentives to pursue overly aggressive tax strategies because the expected costs of detection and reputational loss become higher. Although some studies argue that large firms possess more resources for sophisticated tax planning, other evidence suggests that political visibility and stronger monitoring dominate this

effect. In Indonesia, Widiasmara (2018) finds that firm size is associated with lower aggressive tax avoidance, while more recent evidence also reports a negative association between firm size and tax avoidance. In line with the monitoring and visibility argument, this study predicts that larger firms are less likely to engage in aggressive tax avoidance.

H2: Firm size negatively affects tax avoidance

Independent Commissioners, Audit Quality, and Tax Avoidance

Independent commissioners are a central internal governance mechanism in the Indonesian two-tier board system because they are expected to oversee management more objectively and reduce agency problems. Their monitoring role becomes particularly important in tax-related decisions, where aggressive strategies may be difficult for outside investors to observe directly. From an agency perspective, external monitoring through high quality auditors and internal monitoring through independent commissioners should be complementary rather than substitutive. When independent commissioners function effectively, they can reinforce the disciplining role of external auditors by demanding greater transparency, supporting prudent tax decisions, and increasing the consequences of managerial opportunism. Kovermann and Velte (2019) emphasize that corporate tax avoidance is shaped by multiple governance channels, including audit and board composition, while Kerr et al. (2024) show that stronger governance is associated with lower tax avoidance and identify board independence and audit committees as possible mechanisms. Therefore, firms with both strong external audit and stronger board independence should face tighter constraints on aggressive tax behavior.

H3: Independent commissioners strengthen the negative effect of audit quality on tax avoidance.

Independent Commissioners, Firm Size, and Tax Avoidance

Independent commissioners may also shape how firm size influences tax avoidance. Large firms face greater visibility and compliance pressure, but the extent to which these pressures translate into more prudent tax behavior depends on the effectiveness of internal oversight. In firms with stronger board independence, the governance benefits associated with larger organizational scale, such as more formal controls, more transparent reporting, and greater accountability, are more likely to be directed toward compliance rather than toward aggressive tax planning. In contrast, if board independence is weak, the complexity of larger firms may instead provide managers with more discretion. Prior literature suggests that board independence plays an important role in constraining tax avoidance, although its effectiveness varies across institutional settings. Building on the governance-complementarity argument, this study expects independent commissioners to reinforce the restraining effect of firm size on tax avoidance.

H4: Independent commissioners strengthen the negative effect of firm size on tax avoidance.

Control Variable

Profitability is included in this study as a control variable. Prior literature frequently treats profitability as a firm characteristic that may affect tax avoidance because more profitable firms have stronger incentives and greater capacity to manage their tax burden, while at the same time facing greater scrutiny from tax authorities and capital markets. Consistent with Kovermann and Velte (2019), firm-level variables such as profitability are better positioned as controls in a governance-focused model.

RESEARCH METHOD

Research Design and Data

This study employs a quantitative explanatory design using firm-year panel data. The empirical setting consists of manufacturing companies listed on the Indonesia Stock Exchange during the 2016-2023 fiscal years. The manufacturing sector is appropriate because its operating cycle, inventory intensity, fixed-asset base, and supply-chain complexity make tax reporting decisions economically material and governance-sensitive. The final analytical dataset contains 595 firm-year observations representing 94 unique firms. The panel is unbalanced because not every firm has complete observations for all fiscal years.

The estimation is designed to examine whether audit quality and firm size explain variation in corporate tax avoidance, and whether independent commissioners condition those relationships. The dependent variable is the effective tax rate. Because a lower effective tax rate reflects a lower tax burden relative to accounting income, it is interpreted as a higher level of tax avoidance. This inverse

interpretation follows recent tax-avoidance studies that continue to use effective-tax-rate measures as observable archival proxies for corporate tax behavior (Hossain et al., 2024a; Qawqzeh, 2023).

The final sample consists of 595 firm-year observations, representing 94 unique firms over the period 2016–2023. The number of observations varies across fiscal years, ranging from 38 observations in 2023 to 85 observations in 2021. Overall, the sample shows relatively stable coverage from 2016 to 2021, with annual observations ranging between 75 and 85. However, the number of observations declines in 2022 and more sharply in 2023, indicating that fewer firms met the sample selection criteria or had complete data available in the later years of the study period.

Variable Measurement

The variable measurement is limited to variables used in the main empirical specification. Debt-to-equity ratio is not included in the main measurement table because it is used only as a robustness specification that replaces the debt-to-asset ratio. Audit quality is not treated as a simple dummy in the main model. Instead, this study constructs a continuous audit quality measure by weighting Big Four audit engagement by the client firm’s asset share within the same fiscal year. This construction retains the reputation-based logic of Big Four audit quality while reducing the loss of information created by a purely binary measurement.

Table 1. Measurement of Variables Used in the Main Model

Variable name	Variable	Measurement
Tax Avoidance	Dependent	$TA = \frac{\text{Total Tax Expense}}{\text{Profit Before Tax}}$
Audit Quality	Independent	AQ = 1, if firm is audited by a Big Four auditor in year t; 0, otherwise
Firm Size	Independent	FS = Ln (Total Asset)
Independent Commissioners	Independent	$IC = \frac{\text{Independent Commissioner}}{\text{Total Commissioners}}$
Leverage	Control	$Lev (DAR) = \frac{\text{Total Liabilities}}{\text{Total Asset}}$
Profitability	Control	$Prof (NPM) = \frac{\text{Net Income}}{\text{Revenue}}$
Earnings-Performance	Control	$EPS = \frac{\text{Net Income}}{\text{Outstanding shares}}$

Data Treatment and Empirical Specification

All continuous variables are winsorized at the first and ninety-ninth percentiles to reduce the influence of extreme observations without deleting firm-year records. Independent commissioners are treated as a governance ratio bounded between zero and one; observations above the logical upper bound are capped at one and retained transparently. Firm size and independent commissioners are mean-centered before forming interaction terms. This centering is used to reduce non-essential multicollinearity in the interaction model and to make lower-order coefficients more interpretable.

The main model estimates the effective tax rate as a function of audit quality, firm size, independent commissioners, the interaction between audit quality and independent commissioners, the interaction between firm size and independent commissioners, debt-to-asset ratio, net profit margin, earnings per share scaled by one thousand, and fiscal-year effects. The estimation uses pooled panel regression with year fixed effects and firm-level clustered robust standard errors. The use of clustered robust standard errors is appropriate because the diagnostic tests indicate heteroskedasticity, while repeated observations within the same firm may produce within-firm dependence.

RESEARCH RESULTS AND DISCUSSION

Descriptive Statistics

Table 2 reports the descriptive statistics after winsorization. The effective tax rate has a mean of 0.261, indicating that the average tax expense is approximately 26.1 percent of profit before tax. The distribution remains heterogeneous, with a minimum of zero and a maximum of 0.916, which confirms that tax positions differ substantially across firm-year observations. Audit quality is right-skewed because only firms audited by Big Four auditors receive positive values, and the weighting procedure further differentiates Big Four clients by their relative asset scale. The mean proportion of

independent commissioners is 0.415, suggesting that, on average, the sample firms meet a level of board independence that is institutionally meaningful but still heterogeneous across firms.

Table 2. Descriptive Statistics

Variable	N	Mean	Std. dev.	Min	Median	Max
TA	595	0.261	0.190	0.000	0.237	0.916
AQ	595	1.066	3.708	0.000	0.000	47.789
FS	595	28.185	2.272	19.996	28.330	33.475
IC	595	0.415	0.118	0.143	0.400	1.000
Lev	595	0.421	0.210	0.010	0.401	0.917
Prof	595	0.090	0.098	-0.013	0.060	0.547
EPS	595	0.229	0.606	-0.005	0.048	4.073

Source: Data processed using Python 3.13.5, pandas 2.2.3, statsmodels 0.14.6, NumPy 2.3.5, and SciPy 1.17.0.

Correlation Analysis

Table 4 presents the pairwise correlations among the variables used in the main model. The correlations do not indicate extreme linear association among the explanatory variables. The highest correlation among the main regressors remains far below the level that would normally indicate serious multicollinearity. This result is consistent with the variance inflation factor test reported later. The correlation between the effective tax rate and net profit margin is negative, suggesting that more profitable firms in this sample tend to report lower effective tax rates, although multivariate estimation is required before drawing inference.

Table 3. Correlation Matrix

Variable	TA	AQ	FS	IC	Lev	Prof	EPS
TA	1.000	-0.058	-0.012	-0.069	0.022	-0.131	-0.040
AQ	-0.058	1.000	0.463	0.090	0.027	0.029	0.263
FS	-0.012	0.463	1.000	0.056	-0.003	-0.018	0.285
IC	-0.069	0.090	0.056	1.000	0.027	0.109	0.034
Lev	0.022	0.027	-0.003	0.027	1.000	-0.106	-0.072
Prof	-0.131	0.029	-0.018	0.109	-0.106	1.000	0.104
EPS	-0.040	0.263	0.285	0.034	-0.072	0.104	1.000

Source: Data processed using Python 3.13.5, pandas 2.2.3, statsmodels 0.14.6, NumPy 2.3.5, and SciPy 1.17.0.

Diagnostic Tests

Table 4 reports the diagnostic tests. The poolability test does not require firm fixed effects at the five percent level, making pooled panel estimation with year effects defensible. The residual normality test is significant, indicating non-normal residuals. This is not unusual in firm-level accounting and tax data because effective tax rates and financial ratios often contain thick tails. The Breusch-Pagan test indicates heteroskedasticity, and therefore the reported inference relies on firm-level clustered robust standard errors. The Durbin-Watson statistic does not suggest severe first-order autocorrelation, while clustering remains retained as a conservative treatment of repeated firm observations.

Table 4. Diagnostic Tests

Test	Statistic	P-value	Decision
Panel data structure	595 observations; 94 firms; 2016–2023; unbalanced panel		Panel estimation is appropriate because the data combine firms and fiscal years.
Poolability test	1.199	0.117	Firm fixed effects are not required at the five percent level; pooled panel estimation with year effects is defensible.
Residual normality test	358.835	0.000 ***	Residuals are not normally distributed; inference is based on winsorized data and clustered robust standard errors.
Heteroskedasticity test	68.469	0.000 ***	Heteroskedasticity is present; clustered robust standard errors are used.
Durbin-Watson statistic	1.748		No severe first-order autocorrelation is indicated, while firm-level clustering is retained.

Test	Statistic	P-value	Decision
Maximum variance inflation factor	1.899		Multicollinearity is not a concern because the maximum value is below conventional thresholds.

Source: Data processed using Python 3.13.5, pandas 2.2.3, statsmodels 0.14.6, NumPy 2.3.5, and SciPy 1.17.0.

Multicollinearity Test

Table 5 shows that all variance inflation factor values are below conventional thresholds. The maximum value is 1.899, indicating that the centered interaction terms do not create problematic multicollinearity. The regression coefficients can therefore be interpreted without concern that they are primarily driven by inflated standard errors from collinear regressors.

Table 5. Variance Inflation Factor Test

Variable	Variance inflation factor
AQ	1.899
FS	1.352
IC	1.026
AQ x IC	1.889
FS x IC	1.356
Lev	1.024
Prof	1.038
EPC	1.143

Source: Data processed using Python 3.13.5, pandas 2.2.3, statsmodels 0.14.6, NumPy 2.3.5, and SciPy 1.17.0.

Main Regression Results

Table 6 reports the main regression results. The model is estimated using 595 firm-year observations from 94 firms. The adjusted explanatory power is 0.043. Although this explanatory power is modest, it is plausible for tax-avoidance models because firm-level tax behavior is affected by many unobservable tax planning arrangements, loss carryforward positions, intra-group transactions, tax incentives, and enforcement exposures that are not fully observable in public financial statements.

Table 6. Main Regression Results

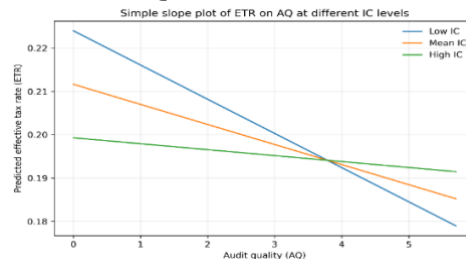
Variable	Coefficient	Clustered robust standard error	t-statistic	p-value	Substantive reading
Constant	0.2938	0.0250	11.756	0.000***	Baseline effective tax rate after year effects and controls.
TA	-0.0046	0.0019	-2.407	0.018**	Significant negative association with the effective tax rate.
FS	0.0047	0.0041	1.152	0.252	Not statistically distinguishable from zero.
IC	-0.0753	0.0690	-1.091	0.278	No direct statistically significant effect.
AQ x IC	0.0277	0.0131	2.111	0.037**	Positive and significant moderation through the audit-quality channel.
FS x IC	-0.0842	0.0376	-2.238	0.028**	Negative and significant moderation through the firm-size channel.
Lev	0.0153	0.0364	0.421	0.675	No statistically significant association.
Prof	-0.2070	0.0862	-2.403	0.018**	Significant negative association with the effective tax rate.
EPC	-0.0065	0.0099	-0.659	0.511	No statistically significant association.

Source: Data processed using Python 3.13.5, pandas 2.2.3, statsmodels 0.14.6, NumPy 2.3.5, and SciPy 1.17.0.

Because this study uses the effective tax rate as an inverse proxy for tax avoidance, the moderation coefficients require a conditional interpretation. A positive coefficient on the effective tax rate implies lower tax avoidance, whereas a negative coefficient implies higher tax avoidance. For this

reason, the interaction terms are further examined through simple slope analysis and simple slope graphs. The conditional effects are evaluated at low, mean, and high levels of independent commissioners, where low and high levels are defined as one standard deviation below and above the sample mean, respectively.

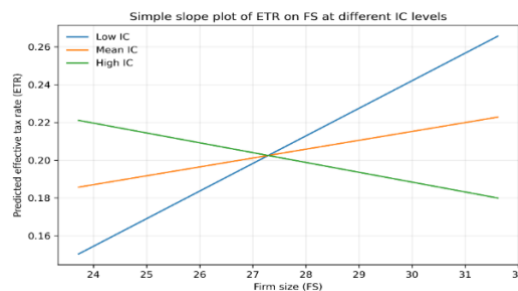
Figure 1. Simple Slope Plot of ETR on AQ at Different Levels of IC



Source: Data processed using Python 3.13.5, pandas 2.2.3, statsmodels 0.14.6, NumPy 2.3.5, and SciPy 1.17.0.

Figure 1 shows that the relationship between audit quality (AQ) and the predicted effective tax rate (ETR) varies across different levels of independent commissioners (IC). Since ETR is an inverse proxy for tax avoidance, a higher ETR reflects lower tax avoidance. The graph indicates that when IC is low, higher audit quality is associated with a stronger decline in ETR, while this negative slope becomes weaker at the mean IC level and almost flat when IC is high. This means that higher independent commissioner oversight helps maintain a higher ETR and reduces the tendency for audit quality to be associated with lower tax payments. Therefore, the plot supports the argument that independent commissioners strengthen the tax-compliance role of audit quality and make external audit monitoring more effective in reducing tax avoidance.

Figure 2. Simple Slope Plot of ETR on FS at Different Levels of IC



Source: Data processed using Python 3.13.5, pandas 2.2.3, statsmodels 0.14.6, NumPy 2.3.5, and SciPy 1.17.0.

Figure 2 shows that the relationship between firm size (FS) and the predicted effective tax rate (ETR) changes across different levels of independent commissioners (IC). Since ETR is an inverse proxy for tax avoidance, a higher ETR indicates lower tax avoidance. The graph shows that when IC is low, larger firm size is associated with a higher ETR, meaning lower tax avoidance. At the mean IC level, the positive slope becomes weaker. However, when IC is high, the slope turns negative, indicating that larger firms tend to have lower ETR when the proportion of independent commissioners is higher. This pattern suggests that the moderating role of independent commissioners changes the effect of firm size on tax avoidance, and that strong internal governance may alter how firm size relates to corporate tax behavior.

Robustness Checks

Table 7 presents robustness checks. To maintain conceptual consistency, the robustness tests retain the same audit quality measure used in the main model. The first robustness model replaces the debt-to-asset ratio with the debt-to-equity ratio. The second removes year effects to assess whether the main relationships are driven by common fiscal-year shocks. The third uses lagged independent variables to reduce simultaneity concerns. The direct association of audit quality with the effective tax rate remains negative in the debt-to-equity and no-year-effect specifications. The moderating effect of independent commissioners on the audit-quality channel remains positive in the debt-to-equity and no-year-effect specifications, but weakens in the lagged model. This pattern suggests that the audit-

quality moderation result is meaningful but should be interpreted as association rather than causal proof

Table 7. Robustness Checks

Model	AQ coefficient	p-value	AQ x IC coefficient	p-value	FS x IC coefficient	p-value	PC coefficient	p-value	N	Adj R-squared
Main model: debt-to-asset control and year effects	-0.0046	0.018**	0.0277	0.037**	-0.0842	0.028**	-0.2070	0.018**	595	0.043
Robustness: debt-to-equity ratio replaces debt-to-asset ratio	-0.0046	0.020**	0.0274	0.038**	-0.0834	0.029**	-0.2107	0.015**	595	0.043
Robustness: without year effects	-0.0044	0.048**	0.0299	0.018**	-0.0897	0.014**	-0.2353	0.007***	595	0.022
Robustness: lagged independent variables	-0.0057	0.004***	0.0015	0.898	0.0084	0.770	-0.0628	0.577	501	0.027

Source: Data processed using Python 3.13.5, pandas 2.2.3, statsmodels 0.14.6, NumPy 2.3.5, and SciPy 1.17.0.

Discussion

Audit Quality and Tax Avoidance

The direct coefficient of audit quality is negative and statistically significant. Because the dependent variable is the effective tax rate, this result indicates that greater audit quality is associated with a lower effective tax rate. This finding does not support the simple monitoring hypothesis that higher audit quality necessarily constrains tax avoidance. A more refined interpretation is required. The audit quality variable is weighted by client economic scale; therefore, it may capture not only audit reputation, but also the fact that large and economically important Big Four clients possess more sophisticated tax departments, stronger access to advisory knowledge, and more capacity to implement tax-efficient reporting structures. Recent studies have increasingly shown that audit quality and tax avoidance are not mechanically related; their association depends on ownership, governance strength, audit tenure, and the strategic tax environment (Qawqzeh, 2023; Sanoran, 2025).

This evidence should not be interpreted as a failure of the audit-quality concept. Rather, it suggests that reputable audit environments may coexist with legally structured tax planning. External auditors are primarily responsible for assuring whether financial statements are fairly presented and whether tax positions are adequately recognized and disclosed; they do not necessarily prevent all forms of legitimate tax minimization. The result therefore shifts the contribution of the study from a conventional compliance claim to a more nuanced view: high audit quality does not automatically eliminate tax avoidance when tax planning remains within defensible reporting boundaries.

Firm Size and Tax Avoidance

Firm size has a positive but statistically insignificant coefficient. The direction is consistent with the political-cost and public-scrutiny argument, under which larger firms face greater visibility from regulators, investors, media, and tax authorities. However, the absence of statistical significance indicates that size alone is not sufficient to explain tax avoidance in the sample. This is theoretically reasonable because firm size contains two opposing forces. On one side, larger firms face greater reputational and regulatory pressure. On the other side, they have more resources to design complex but legally defensible tax strategies. The insignificant result is consistent with the idea that size is a structural condition rather than a governance mechanism by itself (Hossain et al., 2024a).

Independent Commissioners as Moderators of Audit Quality

The interaction between audit quality and independent commissioners is positive and statistically significant. Since the dependent variable is the effective tax rate (ETR), the coefficient must be interpreted carefully. A higher ETR reflects a higher tax burden and, therefore, lower tax avoidance. Thus, the positive interaction coefficient indicates that independent commissioners strengthen the tax-compliance effect of audit quality rather than increase tax avoidance. The result shows that the effect

of audit quality on ETR becomes stronger when the proportion of independent commissioners is higher. This means that audit quality is more effective in reducing tax avoidance when internal governance is stronger.

Theoretically, this result supports the governance-complementarity argument. External auditors and independent commissioners are not substitutes. External audit provides assurance, technical scrutiny, and reputational discipline, while independent commissioners provide internal monitoring and governance pressure on management. When both mechanisms operate together, tax planning is more likely to be constrained by transparency and accountability. Therefore, the contribution of this study is to show that the effect of audit quality on tax avoidance depends on whether internal governance is strong enough to support the monitoring role of external audit.

Independent Commissioners as Moderators of Firm Size

The interaction between firm size and independent commissioners is negative and statistically significant. Since the dependent variable is the effective tax rate (ETR), the coefficient must be interpreted carefully because ETR is an inverse proxy for tax avoidance. A lower ETR reflects a lower tax burden and, therefore, higher tax avoidance. To clarify this interpretation, this study adds a marginal effect graph/simple slope analysis. The graph shows that the relationship between firm size and ETR changes across different levels of independent commissioners. When independent commissioners are low, larger firm size is associated with a higher ETR, indicating lower tax avoidance. However, when independent commissioners are high, the slope becomes negative, suggesting that larger firms tend to report lower ETR, or higher tax avoidance.

This result does not support the expectation that independent commissioners transform firm scale into lower tax avoidance. The finding suggests that formal board independence may be insufficient to overcome the organizational complexity of larger firms. Larger firms may have more complex transactions, stronger tax planning infrastructure, and more opportunities to use differences between accounting and tax rules. Independent commissioners may improve formal oversight, but they may still face information asymmetry when tax planning is embedded in operational, financing, and intra-group arrangements. Therefore, the effectiveness of independent commissioners depends not only on proportional representation, but also on substantive capability, tax expertise, and access to detailed tax-planning information. This interpretation is aligned with recent evidence that the tax effect of corporate governance is context-dependent and may vary with institutional enforcement, ownership structure, and the quality of board-level monitoring (Hidayat & Zuhroh, 2023; Kerr et al., 2024).

Control Variables

The debt-to-asset ratio and earnings per share scaled by one thousand are not statistically significant. These findings indicate that leverage and earnings performance do not independently explain effective tax rate variation after governance variables, year effects, and profitability are considered. Net profit margin is negative and statistically significant, suggesting that more profitable firms tend to report lower effective tax rates. This is consistent with the view that profitable firms possess both incentives and capacity to engage in tax planning. The result also reinforces the importance of including profitability controls in tax-avoidance models, as emphasized in recent emerging-market evidence (Hossain et al., 2024a).

CONCLUSION

This study re-estimates the relationship between audit quality, firm size, independent commissioners, and tax avoidance using firm-year panel data from Indonesian manufacturing companies. The findings show that audit quality is negatively associated with the effective tax rate, firm size is not significant, independent commissioners positively moderate the audit-quality channel, and independent commissioners negatively moderate the firm-size channel. The strongest theoretical contribution is that governance mechanisms do not operate uniformly. Independent commissioners appear to enhance the monitoring relevance of audit quality, but they do not necessarily convert firm scale into higher tax compliance. The practical implication is that formal governance attributes should not be treated as sufficient indicators of tax discipline. Firms, regulators, and investors should evaluate whether independent commissioners have adequate expertise, access to tax information, and authority to challenge complex tax planning. The methodological implication is that studies of tax avoidance should be careful when using the effective tax rate as an inverse proxy: the sign of the coefficient must always be interpreted through the tax-avoidance meaning of the effective tax rate.

The study has several limitations. First, audit quality is constructed from Big Four audit engagements and client asset share because audit fee, audit tenure, audit partner, and audit-hour data are not consistently available in the dataset. Future studies should incorporate audit fee, audit tenure, audit report lag, auditor industry specialization, or partner-level information when such data are available. Second, the model controls for leverage, profitability, earnings performance, and year effects, but does not include capital intensity, inventory intensity, sales growth, tax-loss carryforward, or related-party transaction measures. Third, the analysis supports associational inference, not definitive causal inference. Future research can improve identification by using regulatory shocks, matched samples, or dynamic panel estimators.

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