

The Impact of ESG Disclosure, Financial Performance, and Leverage on Corporate Tax Avoidance: Evidence with Firm Size as a Moderating Variable

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Abstract

This research investigates how Environmental, Social, and Governance (ESG) disclosure, financial performance, and leverage influence corporate tax avoidance, while considering firm size as a moderating factor. A quantitative research design is employed using panel data from coal mining subsector firms listed on the Indonesia Stock Exchange (IDX) over the 2021–2024 period. The study analyzes 86 firm-year observations selected through purposive sampling. Data processing is conducted using multiple linear regression and Moderated Regression Analysis (MRA) with the Statistical Package for the Social Sciences (SPSS). Tax avoidance is assessed using the effective tax rate (ETR), ESG disclosure is quantified through an index based on Global Reporting Initiative (GRI) standards, financial performance is represented by return on assets (ROA), leverage is measured by the debt-to-assets ratio (DAR), and firm size is calculated as the natural logarithm of total assets. The empirical results reveal that ESG disclosure significantly affects tax avoidance, whereas financial performance and leverage do not show significant effects in the baseline regression model. Moreover, firm size does not moderate the relationship between ESG disclosure and tax avoidance; however, it significantly moderates the relationships between financial performance and tax avoidance and between leverage and tax avoidance. These results suggest that firm size enhances the role of financial capacity and capital structure in shaping corporate tax behavior, while the influence of ESG disclosure remains relatively consistent across firms. This study contributes empirical evidence from the coal mining industry and provides practical implications for regulators and corporate management in strengthening tax governance.

Keywords: ESG Disclosure; Tax Avoidance; Financial Performance; Leverage; Firm Size.

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INTRODUCTION

Taxation is a vital instrument in maintaining fiscal stability and financing national development. In 2024, tax revenue accounted for 82.4% of the State Budget (Anggaran Pendapatan dan Belanja Negara/ APBN), making it the primary source of government revenue (Kementerian Keuangan, 2024). This underscores the importance of taxpayer compliance particularly that of corporate taxpayers in ensuring the sustainability of the national fiscal system. In Indonesia, corporations represent one of the main entities classified as corporate taxpayers (Rachdianti & Hery, 2016).

Nevertheless, tax avoidance practices remain a significant challenge. Although tax avoidance is legally permissible, it involves exploiting regulatory loopholes to reduce tax liabilities (Ayuningtyas & Sujana, 2018). Such practices, commonly referred to as tax

avoidance, do not constitute legal violations but are often perceived as conflicting with the principle of tax fairness, as only large corporations typically possess the resources required to implement such strategies (Cahyaningrum & Wulandari, 2024).

The mining sector particularly the coal subsector has become a major focus of concern regarding tax avoidance practices. Data from the Ministry of Energy and Mineral Resources (ESDM) indicate that the coal sector contributes significantly to Indonesia's Gross Domestic Product (GDP), amounting to IDR 2,198 trillion or 10.5% of the total GDP of IDR 20,892 trillion in 2023 (Ministry of ESDM, 2023). Mining companies, especially those listed on the Indonesia Stock Exchange (IDX), exhibit high operational complexity in production, export–import activities, and financial and tax management. This complexity makes the sector highly relevant for examining corporate tax strategies, including tax avoidance (Ginting, 2023).

In efforts to enhance transparency and accountability, Environmental, Social, and Governance (ESG) disclosure has gained increasing importance. ESG serves as an investment guideline and a key indicator of corporate reputation among market participants and regulators (Khusna & Subandi, 2025). Previous studies suggest that, with firm size acting as a moderating variable, the relationship between tax avoidance and leverage, financial performance, and ESG disclosure warrants further investigation (Alomair & Metwally, 2025).

Beyond ESG considerations, financial performance also influences corporate tax policies. Firms with strong financial performance and stable profitability are generally better positioned to bear tax burdens without compromising operational efficiency, thereby reducing incentives for tax avoidance (Hanlon & Heitzman, 2010). In contrast, less profitable firms are more likely to seek regulatory loopholes to sustain their operating margins (Anggraeni & Himawan, 2025).

Leverage, measured as the ratio of debt to assets, also plays a role in corporate tax management strategies. High leverage not only reflects greater reliance on external financing but may also reduce tax burdens through interest expense deductions (Meniago & Mongale, 2013). Oktamawati (2017) explains the interaction between managers and shareholders within this context through agency theory.

Although prior studies have examined the relationship between ESG, financial performance, and tax avoidance, most have not adequately considered the moderating role of firm size, despite the fact that corporate scale can influence tax capacity and strategic behavior. Furthermore, empirical research focusing on the coal subsector using recent data from 2021–2024 remains limited, indicating a substantial gap in the existing literature.

To address this gap, this study examines the relationship between tax avoidance and leverage, financial performance, and ESG disclosure, with firm size serving as a moderating variable. The study is expected to contribute novel empirical evidence from the coal sector and provide practical insights for investors, corporations, and regulators in promoting more ethical and sustainable tax governance.

LITERATURE REVIEW

Agency Theory

The interaction between managers and shareholders, as well as lenders (bondholders), is explained by agency theory, which highlights the tensions arising from conflicts of interest between management and capital owners. These conflicts often encourage the use of tax avoidance as a managerial tactic to achieve short-term objectives. Armstrong and Larcker (2015) argue that managerial incentives without effective monitoring mechanisms can lead to greater tax aggressiveness. Furthermore, Rizqia and Lastiati (2021), through an empirical study of the manufacturing sector in Malaysia and Indonesia, find that audits conducted by Big

Four audit firms can mitigate tax avoidance practices, whereas less competent audit committees weaken the effectiveness of corporate oversight.

Stakeholder Theory

Stakeholder theory emphasizes that companies must consider the rights and expectations of various stakeholders including investors, employees, regulators, and the wider community rather than focusing solely on shareholders. Empirical research in Indonesia by Hidayat and Zuhroh (2023) demonstrates that higher levels of ESG disclosure are negatively associated with tax avoidance, indicating that ESG reporting responds to stakeholder pressure while simultaneously strengthening fiscal compliance. Vraza and Juliarto (2024) further argue that although ownership structure moderates the relationship between ESG and tax avoidance, ESG disclosure retains an independent role in curbing tax avoidance practices as a manifestation of corporate social responsibility. Additionally, Faisal Pradana (2024) finds that ESG disclosure influences the cost of capital, with higher ESG performance leading to lower capital costs, whereas tax avoidance tends to increase financing costs. These findings are particularly relevant as stakeholder value and fiscal compliance jointly affect investor trust and corporate financing costs, especially when firm size acts as a moderating factor.

Tax Avoidance

Corporate efforts to legally reduce tax liabilities are referred to as tax avoidance, which differs from tax evasion that involves illegal practices (Prameswari & Suaidah, 2025). In accounting research, tax avoidance is commonly measured using the effective tax rate (ETR) or the book–tax difference (BTD). This practice is prevalent among large firms, including those in the mining sector, as the complexity of transactions provides greater opportunities to design tax planning strategies (Rachmi & Kartiko, 2022).

Internal business factors such as profitability, leverage, and firm size influence the level of tax avoidance. High profitability encourages management to seek methods to reduce tax burdens in order to maximize net income (Asana, 2021). Leverage offers tax shield benefits through interest expenses, making highly leveraged firms more likely to reduce tax payments (Nugraha & Respati, 2024). Firm size also affects tax behavior; larger firms are subject to stricter public scrutiny, requiring tax avoidance practices to be implemented more cautiously to minimize reputational risk (Prameswari & Suaidah, 2025).

Disclosure of Environmental, Social, and Governance (ESG)

Corporate performance on environmental, social, and governance (ESG) issues is commonly reported in sustainability reports or annual reports. In Indonesia, many listed companies adopt the Global Reporting Initiative (GRI) standards to assess the extent of ESG transparency. ESG disclosure is essential as it reflects corporate accountability to stakeholders, reduces information asymmetry, and signals the quality of corporate governance (Vraza & Juliarto, 2024).

The relationship between ESG disclosure and tax avoidance can be explained through stakeholder theory. Companies that provide extensive ESG disclosure are subject to greater public scrutiny, thereby reducing incentives to engage in tax

avoidance. Empirical studies in Indonesia indicate that ESG disclosure has a negative effect on tax avoidance, although some studies report mixed results due to differences in measurement methods. These findings highlight that the quality of ESG reporting plays a critical role in determining the direction and magnitude of its impact on tax avoidance (Teja, 2024).

Financial Performance

Financial performance reflects a firm's ability to generate profits and its efficiency in managing resources. Commonly used indicators include return on assets (ROA), return on equity (ROE), and net profit margin, as these measures effectively assess corporate performance (Nursophia & Marundha, 2023). In the accounting context, financial performance also influences tax avoidance behavior; firms with higher profitability face greater tax obligations and therefore tend to seek strategies to reduce their tax burden (Wiriarmaja & Simamora, 2025). Evidence from studies conducted in Indonesia indicates that tax avoidance is significantly affected by profitability, as more profitable firms are more inclined to minimize tax payments in order to sustain performance (Nugraha & Respati, 2024). Accordingly, financial performance constitutes an important variable that warrants further investigation, particularly among coal companies in Indonesia.

Leverage

Leverage refers to the use of debt financing to support corporate activities with the objective of increasing returns to shareholders. According to Wiedhyani (2024), leverage performance commonly measured by the debt to equity ratio (DER) has a substantial impact on food and beverage companies listed on the Indonesia Stock Exchange. Optimal leverage can enhance profitability without generating excessive risk. In the context of ESG disclosure and financial performance, leverage also plays an important role as a factor influencing tax avoidance behavior, as debt provides tax shield benefits that may affect managerial incentives in tax planning decisions.

Firm Size

Firm size is commonly determined by the scale of operations and total assets, which are often expressed as the natural logarithm of total assets. Larger firms have greater access to resources, tax expertise, and are subject to higher levels of public scrutiny compared to smaller firms (Sinaga, Sudarmaji, & Astuti, 2023). Several studies in Indonesia indicate that firm size has a positive effect on tax avoidance, as larger firms are better equipped to employ legal strategies to reduce tax liabilities without significantly increasing reputational risk (Prang, Warongan, & Mintalangi, 2024).

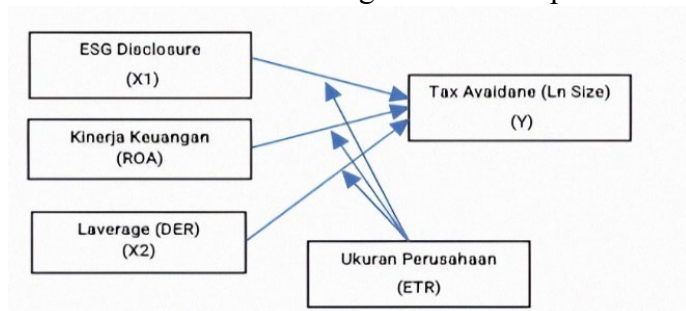
Conceptual Framework

This study positions tax avoidance as the dependent variable, as tax avoidance remains a critical issue in corporate governance in Indonesia. The independent variables include ESG disclosure, financial performance, and leverage. Firms that are more transparent in their governance, social, and environmental practices are generally more cautious in their tax behavior; therefore, ESG disclosure is expected to have a negative effect on tax avoidance. Financial performance, measured by return on assets (ROA), is also expected to negatively influence tax avoidance. More

profitable firms are better able to comply with tax regulations and maintain financial success without engaging in aggressive tax practices, whereas less profitable firms are more likely to seek regulatory loopholes to reduce tax burdens.

Leverage, measured by the debt-to-assets ratio (DAR), is predicted to have a positive effect on tax avoidance, as higher debt levels provide tax-saving benefits through interest expense deductions. This study also incorporates firm size as a moderating variable, which is expected to influence the strength and direction of the relationships between ESG disclosure, financial performance, leverage, and tax avoidance. Larger firms are subject to greater public scrutiny while simultaneously having broader access to tax planning resources and strategies. Figure 1 presents a summary of the conceptual framework of this study.

Figure 1. Conceptual Framework



H1: The Effect of ESG Disclosure on Tax Avoidance

Firms that provide broader ESG disclosures tend to exhibit greater transparency and accountability toward stakeholders. Increased disclosure exposes firms to higher levels of public and regulatory scrutiny, which may discourage aggressive tax practices. Empirical evidence covering the 2015–2021 period shows that higher ESG disclosure scores are associated with relatively higher deferred tax assets than deferred tax liabilities, suggesting lower levels of tax avoidance (Teja, 2024). Consistent results are also reported in international studies, which find that firms with more extensive ESG disclosure generally engage in fewer tax avoidance strategies (Khairin & Firmansyah, 2025). Thus, ESG disclosure is expected to have a negative relationship with tax avoidance.

H2: The Relationship between Financial Performance and Tax Avoidance

Financial performance reflects a firm's profitability and its capacity to fulfill tax obligations. Firms with stronger profitability are typically more capable of complying with tax regulations and therefore have less incentive to pursue aggressive tax avoidance. In contrast, firms with weaker financial performance may be more motivated to reduce tax burdens. Prior studies demonstrate that profitability significantly influences tax avoidance behavior in Indonesian manufacturing firms (Rahayu et al., 2022) as well as infrastructure companies (Dalimah & Wulandari, 2024). Accordingly, higher financial performance is hypothesized to reduce tax avoidance.

H3: The Effect of Leverage on Tax Avoidance

High leverage provides tax-saving benefits through interest expense deductions, commonly referred to as a tax shield. Consequently, firms with higher

debt levels are more likely to engage in tax avoidance compared to firms with lower leverage. Studies on mining companies listed on the Indonesia Stock Exchange indicate that leverage has a positive and significant effect on tax avoidance (Sari et al., 2021). As interest expenses are deductible for tax purposes, higher leverage increases firms' incentives to participate in tax avoidance activities. Therefore, leverage is hypothesized to have a positive effect on tax avoidance. Therefore, leverage is expected to have a positive effect on tax avoidance.

H4: Firm Size Moderates the Effect of ESG Disclosure on Tax Avoidance

Larger firms are subject to more intense monitoring by regulators, investors, and the public, which may enhance the effectiveness of ESG disclosure in constraining tax avoidance. As a result, ESG disclosure is expected to exert a stronger influence on tax behavior in large firms compared to smaller firms. Previous studies suggest that reputational concerns and transparency pressures amplify the impact of ESG disclosure in large corporations (Pradana, 2024), while smaller firms often face weaker external oversight and resource constraints (Hidayat & Novita, 2023). Thus, firm size is hypothesized to strengthen the negative relationship between ESG disclosure and tax avoidance.

H5: Firm Size Moderates the Effect of Financial Performance on Tax Avoidance

Profitability in large firms tends to receive greater attention from investors and regulators, potentially reducing incentives for tax avoidance. In smaller firms, however, the link between profitability and tax avoidance may be less consistent. Wirianata et al. (2024) find that although firm size alone has a limited direct effect, it consistently moderates the influence of profitability across different models. This indicates that firm size shapes how financial performance affects tax behavior. Accordingly, firm size is expected to strengthen the negative effect of financial performance on tax avoidance.

H6: Firm Size Moderates the Effect of Leverage on Tax Avoidance

Large firms generally possess superior financial control systems and easier access to capital markets, allowing them to manage debt more effectively. This capability may limit excessive tax avoidance associated with leverage compared to smaller firms with restricted financing options. Oktrivina (2022) shows that firm size moderates the relationship between leverage and tax avoidance, such that the positive impact of leverage weakens as firm size increases due to stronger monitoring and reputational considerations. Therefore, firm size is hypothesized to weaken the positive relationship between leverage and tax avoidance.

Overall, the six hypotheses are empirically tested using panel data from coal mining subsector companies listed on the Indonesia Stock Exchange for the 2021–2024 period.

METHODS

Research Type and Approach

This research adopts a quantitative methodology that emphasizes numerical information, which is processed and evaluated through statistical techniques. The investigation applies a causal explanatory framework to explore and analyze the cause-and-effect relationships between leverage, financial performance, and ESG

disclosure as independent variables, and tax avoidance as the dependent variable, with firm size positioned as a moderating variable. To strengthen the reliability of the findings, the study utilizes panel data by integrating time-series data from 2021 to 2024 with cross-sectional data derived from companies in the coal mining subsector. The use of panel data enables the researcher to capture both temporal variations and inter-company differences, thereby improving the accuracy of estimations and offering a more comprehensive depiction of real-world conditions.

Population and Sample

The population of this research consists of all coal mining subsector companies listed on the Indonesia Stock Exchange during the 2021–2024 period. The sample is determined through a purposive sampling method, whereby firms are selected based on specific criteria aligned with the objectives of the study. This approach ensures that only companies providing complete and consistent data are included in the analysis, thereby enhancing the credibility and reliability of the research findings. The criteria used in selecting the sample are as follows:

Table 1. Research Criteria

No	Description
T	1. Coal mining companies listed on the Indonesia Stock Exchange (IDX) during the period 2021–2024.
	2. Companies that publish comprehensive annual reports and sustainability reports.
	3. Companies that provide complete data required for the study, including ESG (CSR) disclosure, net income, total assets, and tax paid.

Source: Secondary data, processed by the authors (2025).

Companies that consistently publish comprehensive annual and sustainability reports. Given a four-year observation period, the total number of observations amounts to 86.

Type and Source of Data

This study uses secondary data, which are readily accessible data obtained from external sources. The data consist of corporate financial statements, sustainability reports, and annual reports. The information is collected from the official websites of the respective companies as well as from the official website of the Indonesia Stock Exchange (IDX) at www.idx.co.id

Data Collection Technique

Data collection in this study is conducted using a documentary research method, which involves collecting and compiling secondary data obtained from publicly accessible sources. The required data are sourced from the official website of the Indonesia Stock Exchange (www.idx.co.id) as well as from the official websites of the sampled companies. The data collection process includes reviewing, identifying, and documenting relevant information published online. Corporate annual reports and sustainability reports are systematically downloaded for each observation year, and essential data corresponding to the research variables are carefully extracted.

Subsequently, the collected data are compiled and structured in Microsoft Excel to ensure consistency and to support further statistical processing and analysis.

Operational Definitions and Measurement of Variables

To ensure accuracy and consistency in measurement, each research variable is defined operationally based on predetermined indicators. This study incorporates five variables, consisting of tax avoidance as the dependent variable, ESG disclosure, financial performance, and leverage as independent variables, and firm size as a moderating variable. Clear operational definitions are established to enable objective measurement and empirical testing. A detailed description of the operational definitions and measurement formulas for each variable is provided in the following table.

Table 2. Rsearch Variables and Measurement

Variable	Operational Definition	Measurement
Tax Avoidance (TA) (Dependent)	Corporate efforts to legally reduce tax liabilities by exploiting loopholes in tax regulations.	$ETR = \frac{\text{Tax Expense}}{\text{Earnings Before Tax}}$
ESG Disclosure (Independent)	The extent to which environmental, social, and governance information is disclosed in annual reports or sustainability reports.	$ESG \text{ Index} = \left(\frac{\text{Number of ESG items disclosed}}{\text{Total required ESG items}} \right) \times 100\%$
Financial Performance (FP) (Independent)	The firm's ability to generate profits from its assets.	$ROA = \frac{\text{Net Income}}{\text{Total Assets}}$
Leverage (LEV) (Independent)	The extent to which a firm uses debt to finance its assets.	$DAR = \frac{\text{Total Debt}}{\text{Total Assets}}$
Firm Size (SIZE) (Moderating)	The scale of the firm as reflected by its total assets.	$SIZE = \ln (\text{Total Assets})$

Source: Secondary data, processed by the authors (2025).

Data Analysis Technique

To maintain measurement reliability and comparability, each variable in this study is specified through clear operational definitions derived from established indicators. The research examines five variables, namely tax avoidance as the dependent variable, ESG disclosure, financial performance, and leverage as independent variables, and firm size as a moderating variable. Defining these variables operationally allows for systematic, objective, and replicable empirical analysis. The operational definitions and corresponding measurement formulas for all variables are summarized in the table below.

RESULTS AND DISCUSSION

The results of the descriptive statistical analysis for the research variables Effective Tax Rate (ETR), ESG Disclosure, Return on Assets (ROA), Debt-to-Equity Ratio (DER), and Firm Size (SIZE) are presented in Table 3. The tax avoidance variable, proxied by ETR, has a mean value of 0.22027, with values ranging from 0.000 to 0.591. This indicates variation in tax compliance across firms. ESG disclosure ranges from 65.700 to 100.000, with an average value of 95.64535, suggesting that most companies have implemented ESG disclosure practices relatively well, although the level of implementation is not entirely uniform. The ROA variable ranges from 0.001 to 0.616, with a mean of 0.19036, reflecting differences in firms' profitability. Leverage, measured by the debt to equity ratio (DER), exhibits substantial variation, ranging from 0.140 to 10.424. Meanwhile, firm size (SIZE) ranges from 13.014 to 28.494, with an average value of 19.91325. Overall, the dispersion of values across all variables reflects heterogeneous firm characteristics and provides a solid basis for conducting regression analysis in the subsequent stage.

Table 3. Descriptive Statistics

	Minimum	Maximum	Mean	Std. Deviation
ETR	.000	.591	.22027	.082876
ESG	65.700	100.000	95.64535	8.889394
ROA	.001	.616	.19036	.156014
DER	.140	10.424	1.20857	1.746154
SIZE	13.014	28.494	19.91325	3.700790

Source: Processed data by the authors (2025), SPSS.

Classical Assumption Test

The results of the normality test for the regression model residuals, conducted using the Kolmogorov–Smirnov (K–S) approach, are presented in Table 4. The test shows a significance value (Asymp. Sig., 2-tailed) of 0.200, which exceeds the 0.05 significance threshold. Therefore, the residual data in this study are normally distributed.

Table 4. Normality Test

Model	Kolmogorov-Smirnov	Remark
Unstandarized Residual	Sig : 0,200	Normally Distributed

Source: Processed data by the authors (2025), SPSS.

Table 5 shows that the relationships among all research variables, including the main variables (ESG, ROA, DER, and SIZE) and the interaction variables (ESG×SIZE, ROA×SIZE, and DER×SIZE), have Variance Inflation Factor (VIF) values below the threshold of 10 and tolerance values above 0.10. These findings indicate that the predictor variables are not highly linearly correlated; therefore, the regression model is free from multicollinearity, and all variables are deemed suitable for further analysis.

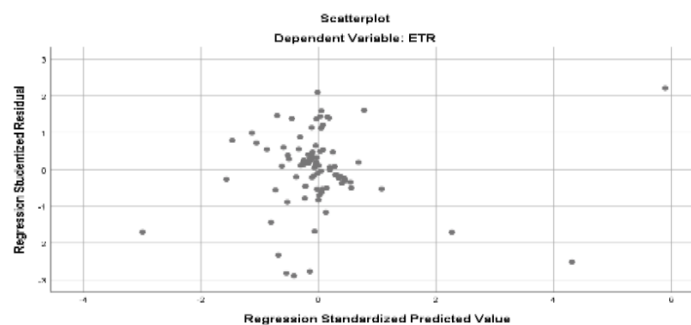
Table 5. Multicollinearity Test

Model	Collinearity Statistics	
	Tolerance	VIF
1. ESG	.947	1.056
ROA	.573	1.746
DER	.738	1.356
SIZE_LN	.709	1.411
ESG_X_SIZE	.661	1.513
ROA_X_SIZE	.537	1.864
DER_X_SIZE	.874	1.144

Source: Processed data by the authors (2025), SPSS.

Table 6 presents the results of the heteroscedasticity test using a scatterplot of the Regression Studentized Residuals against the Regression Standardized Predicted Values. The scatterplot shows that the data points are randomly dispersed and do not form any specific pattern. This dispersion indicates that the variance of the residuals remains relatively constant across different levels of the predicted values. Therefore, it can be concluded that the regression model satisfies the assumption of homoscedasticity, does not exhibit heteroscedasticity, and is considered suitable for use in subsequent inferential analysis.

Table 6. Heteroscedasticity Test



Source: Processed data by the authors (2025), SPSS.

Table 7 shows that the Durbin Watson value of the regression model is 1.673. This value falls within the acceptable range indicating the absence of serial correlation among the residuals, as it is close to the theoretical central value that suggests no autocorrelation. This condition implies that the residuals across observations are relatively independent and that the model does not exhibit systematic patterns in prediction errors. Therefore, the assumption of no autocorrelation is satisfied, and the regression model is deemed appropriate for subsequent hypothesis testing and inference, as all required prerequisites have been met.

Table 7. Autocorrelation Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	0,670	0,448	0,406	0,063851	1,673

Source: Processed data by the authors (2025), SPSS.

Multiple Linear Regression

The findings of the multiple linear regression analysis are presented in Table 8. The correlation coefficient (R) of 0.670 reflects a moderately strong relationship between tax avoidance and the variables examined in this study. Meanwhile, the coefficient of determination (R²) of 0.448 suggests that 44.8% of the variability in tax avoidance is accounted for by the regression model. After adjusting for the number of independent variables included, the adjusted R² remains at 0.406, indicating that the model retains adequate explanatory capability.

Furthermore, the regression model is considered appropriate for analysis, as demonstrated by the relatively small standard error of the estimate (0.063851). This low value signifies a satisfactory level of predictive precision in estimating tax avoidance.

Table 8. Coefficient of Determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0,670	0,448	0,406	0,063851

Source: Processed data by the authors (2025), SPSS.

The regression results presented in Table 9 indicate that ESG disclosure has a statistically significant effect on the dependent variable, with a coefficient of 0.002 and a significance level of 0.024. In contrast, ROA (coefficient = -0.037; significance = 0.515) and DER (coefficient = 0.002; significance = 0.641) do not exhibit statistically significant effects, as their significance values exceed the 0.05 threshold. Accordingly, ESG disclosure is the only variable that demonstrates a meaningful contribution in the baseline model.

Table 9. Baseline Model Coefficients

Model	Unstandardized Coefficients			
	B	Std. Error	t	Sig.
1 (Constant)	0,005	0,096	0,057	0,955
ESG	0,002	0,001	2,300	0,024
ROA	-0,037	0,057	-0,653	0,515
DER	0,002	0,005	0,468	0,641

Source: Processed data by the authors (2025), SPSS.

Moderated Regression Analysis (MRA)

According to the Moderated Regression Analysis (MRA) results displayed in Table 10, the interaction model reveals that ESG disclosure exerts a statistically significant effect on the dependent variable, as indicated by a coefficient of 0.003 and a significance level of 0.005. In contrast, ROA (coefficient = -0.009; Sig. = 0.873) and

DER (coefficient = 0.002; Sig. = 0.761) do not demonstrate significant influences, since their probability values exceed the 0.05 threshold.

Moreover, the moderating variable, firm size (SIZE), shows a positive and statistically significant impact, with a coefficient of 0.006 and a significance value of 0.007. This finding implies that company size plays an important role in strengthening the interaction effects within the model. Therefore, only ESG disclosure and firm size are found to have significant effects in this analysis.

Table 10. Interaction Model Coefficients

Model	Unstandardized Coefficients		t	Sig.
	B	Std. Error		
1 (Constant)	0,085	0,096	0,880	0,382
ESG	0,003	0,001	2,890	0,005
ROA	-0,009	0,056	-0,160	0,873
DER	0,002	0,005	0,306	0,761
SIZE	-0,007	0,002	-2,815	0,006

Source: Processed data by the authors (2025), SPSS.

The results presented in Table 11 indicate that DER has a significant effect on the dependent variable, with a coefficient of 2.047 (Sig. = 0.011), while ROA also shows a significant effect with a coefficient of 0.195 (Sig. = 0.000). In contrast, ESG and firm size (SIZE) do not exhibit statistically significant effects, as their significance values exceed the 0.05 threshold. Furthermore, the interaction terms ROA×SIZE and DER×SIZE are statistically significant, with coefficients of 0.110 (Sig. = 0.005) and -0.009 (Sig. = 0.001), respectively. These findings indicate that firm size moderates the relationships between ROA and the dependent variable as well as between DER and the dependent variable. Conversely, the ESG×SIZE interaction term is not statistically significant, with a significance value of 0.725.

Overall, these results confirm that firm size effectively moderates the relationships involving ROA and DER, but does not moderate the relationship between ESG disclosure and the dependent variable.

Table 11. Moderated Regression Analysis (MRA) Coefficients

Model	Unstandardized Coefficients		t	Sig.
	B	Std. Error		
1 (Constant)	-0,074	1,289	-0,057	0,954
ESG	-0,001	0,013	-0,104	0,918
ROA	2,047	0,792	2,585	0,011
DER	0,195	0,052	3,718	0,000
SIZE	-0,001	0,072	-0,007	0,994
ESG_X_SIZE	0,000	0,001	0,353	0,725
ROA_X_SIZE	-0,110	0,038	-2,868	0,005
DER_X_SIZE	-0,009	0,003	-3,465	0,001

Source: Processed data by the authors (2025), SPSS.

The Effect of ESG Disclosure on Tax Avoidance

The findings indicate that ESG disclosure has a positive effect on tax avoidance. This suggests that the greater the extent of ESG disclosure, the higher the likelihood that firms engage in tax efficiency practices. These results imply that ESG reporting may be utilized as a legitimacy tool to build a positive corporate image while simultaneously concealing aggressive tax planning practices. This finding contradicts prior studies by Teja (2024), who argues that ESG disclosure reduces tax avoidance due to increased reputational pressure and public scrutiny. Similarly, Lestari (2025) finds that higher ESG disclosure lowers tax avoidance among Indonesian manufacturing firms. In addition, Alomair and Metwally (2025) conclude that firms with higher ESG scores tend to exhibit lower levels of tax avoidance as a result of reputational concerns and stronger monitoring.

The inconsistency across studies suggests that the relationship between ESG disclosure and tax behavior is highly contextual and may be influenced by industry characteristics, stakeholder demands, and differences in corporate governance practices. In the coal mining subsector, ESG disclosure may function more as symbolic compliance rather than a substantive mechanism for constraining aggressive tax behavior.

The Effect of Financial Performance on Tax Avoidance

The results show that tax avoidance is only weakly influenced by financial performance as measured by Return on Assets (ROA). Although the ROA coefficient is negative, its statistical significance is insufficient to explain the relationship between profitability and firms' tax avoidance behavior. This finding contradicts Rahayu et al. (2022), who report that profitability negatively affects tax avoidance, arguing that firms prioritizing long-term earnings sustainability tend to adopt more conservative tax strategies. The divergence in findings suggests that the impact of profitability on tax behavior may vary across industries and is strongly shaped by operational conditions and firms' financial structures. In capital-intensive industries such as coal mining, profitability may be more closely associated with operational efficiency and market conditions rather than tax planning strategies.

The Effect of Leverage on Tax Avoidance

The empirical results indicate that leverage does not have a significant effect on tax avoidance, suggesting that a firm's debt level cannot be used as a determinant of management's inclination to engage in tax avoidance. This result contrasts with the findings of Gumelar (2024) and Nugraha et al. (2024), who document that leverage increases tax avoidance opportunities through the exploitation of financing structures. This inconsistency implies that, within the coal mining subsector, leverage primarily reflects strategic financing needs for operational activities and asset expansion rather than serving as a tool for aggressive tax planning. As a result, debt usage in this sector appears to be driven more by investment considerations than by tax-saving motives.

Firm Size as a Moderator of the ESG Disclosure–Tax Avoidance Relationship

The findings indicate that firm size does not moderate the relationship between ESG disclosure and tax avoidance. This suggests that the influence of ESG reporting on tax behavior remains relatively consistent across both large and small firms. This

outcome differs from prior studies, such as Chandrasena (2025) and Vraza et al. (2024), which argue that larger corporations tend to face greater public scrutiny and reputational pressure, thereby making ESG disclosure more effective in curbing aggressive tax practices. The inconsistency may stem from the unique characteristics of the coal mining industry, as well as variations in sustainability reporting practices and regulatory frameworks in Indonesia. Therefore, this study does not provide empirical evidence that firm size strengthens or amplifies the effect of ESG disclosure on tax avoidance.

Firm Size as a Moderator of the Financial Performance–Tax Avoidance Relationship

The results demonstrate that firm size significantly moderates the relationship between financial performance and tax avoidance, indicating that profitability has a stronger effect on tax behavior in larger firms. Large firms typically possess greater resources, stronger monitoring systems, and more advanced fiscal planning capabilities, enabling them to manage tax burdens more effectively than smaller firms. This finding supports Rahayu et al. (2022), who argue that firm size strengthens the relationship between profitability and tax avoidance due to greater financial flexibility in larger organizations. It is also consistent with Faisal Pradana (2024), who finds that firm size amplifies the relationship between corporate tax policies and financial factors. Accordingly, this study confirms that firm size enhances the influence of financial performance on tax avoidance.

Firm Size as a Moderator of the Leverage–Tax Avoidance Relationship

The findings further reveal that the relationship between leverage and tax avoidance is stronger in larger firms. In large-scale companies, leverage tends to be utilized more effectively as part of tax management strategies due to more sophisticated financial control systems and well-established financing structures. This result is consistent with Gumelar (2024), who argues that leverage can serve as a tax-saving mechanism and that its effect becomes more pronounced in larger firms. Thus, firm size is confirmed as a moderating variable that strengthens the influence of leverage on tax avoidance.

CONCLUSION

Based on the study's findings, tax avoidance is significantly influenced by ESG (Environmental, Social, and Governance) disclosure. The level of corporate transparency reflected in sustainability reporting indicates how firms manage their fiscal responsibilities. In contrast, leverage and financial performance do not exhibit significant effects on tax avoidance in the baseline model, suggesting that these factors are not primary determinants of tax avoidance behavior in this study.

The moderation test also reveals that, although firm size does not strengthen the relationship between ESG disclosure and tax avoidance, it significantly affects the links between leverage and tax avoidance as well as financial performance and tax avoidance. This implies that company size plays an essential role in shaping how financial strength and capital structure are utilized in tax planning strategies. Meanwhile, ESG disclosure tends to show a more stable and consistent influence, largely determined by reporting quality and the specific nature of the coal mining industry.

From a theoretical perspective, this study contributes to the literature by positioning ESG disclosure as a more dependable fiscal governance instrument compared to traditional financial indicators such as profitability and leverage. In practical terms, the findings provide valuable implications for regulators and corporate decision-makers, highlighting the importance of ESG transparency in mitigating tax avoidance practices, particularly among coal mining firms listed on the Indonesia Stock Exchange.

Nevertheless, several limitations should be acknowledged. First, the sample focuses exclusively on coal mining subsector companies listed on the Indonesia Stock Exchange, which may limit the generalizability of the results to other industries. Second, the study only examines ESG disclosure, financial performance, leverage, and firm size, without incorporating other potential determinants of tax avoidance, such as institutional ownership or tax policy variables. Third, the relatively short observation period of four years (2021–2024) may not sufficiently capture long-term patterns in corporate tax behavior.

In light of these constraints, future research is encouraged to expand the scope to include a broader range of industry sectors to obtain more comprehensive and generalizable findings. Incorporating additional external variables, such as regulatory frameworks, institutional ownership structures, and stakeholder pressures, would also provide deeper insights into the determinants of corporate tax avoidance.

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