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THE INFLUENCE OF INSTITUTIONAL OWNERSHIP, LEVERAGE, AND PROFITABILITY ON TAX AVOIDANCE: EMPIRICAL STUDY ON MINING SECTOR COMPANIES

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Abstract
This study aims to analyze and examine the influence of institutional ownership, leverage, and profitability on tax avoidance in mining sector companies listed on the Indonesia Stock Exchange (IDX) during the 2020-2023 period. Tax avoidance is a legal strategy used by companies to minimize tax burdens, yet it often raises concerns as it may reduce the company's tax contributions to the state. The research employs a quantitative approach with secondary data collected from annual financial reports. The sample was selected using a purposive sampling technique, resulting in 23 companies from a population of 63, with a total of 92 observations. Data were analyzed using mmultiple linear regression with the assistance of SPSS software. The result indicate that leverage has a positive and significant effect on tax avoidance, suggesting that companies with higher debt ratios tend to engage more in tax avoidance. In contrast, institutional ownership and profitability have a negative effect on tax avoidance, implying that companies with higher institutional ownership and profitability levels re less likely to avoid taxes. These findings provide insights for management, investors, and tax authorities regrading corporate behavior in managing tax obligations, and emphasize the importance of enhanced oversight of tax avoidance practices.
Keywords: Institutional Ownership, Leverage, Profitability, Tax Avoidance

INTRODUCTION

According to Article 11 Paragraph 3 of the Law of the Republic of Indonesia Number 17 of 2003 concerning State Finance, state revenue consists of tax revenue, non-tax revenue, and grants. Based on data from the Central Bureau of Statistics (BPS), the tax sector is the largest source of revenue for Indonesia. According to Article 1 Paragraph 1 of the Law of the Republic of Indonesia Number 28 of 2007 (Third Amendment to Law Number 6 of 1983 concerning General Provisions and Tax Procedures), tax is a mandatory contribution to the state owed by individuals or entities that is coercive under the law, without direct compensation, and is used for the greatest welfare of the people. Tax has two main functions: the budgetary function and the regulatory function. The budgetary function is to collect as much money as possible into the state treasury to fund state expenditures, while the regulatory function aims to achieve specific goals outside the financial sector (Basir, 2022).

Waluyo et al., 2015) stated that tax has a very important role in state revenue because it supports economic activities, hence taxpayers are expected to fulfill their tax obligations optimally. However, in practice, there is a conflict of interest between taxpayers and the government. For taxpayers, paying taxes reduces the company's economic capacity, which motivates them to minimize their tax payments (Noviyani & Muid, 2019).

There have been several tax avoidance cases committed by corporate taxpayers, including:

Table 1 Mining sub-sector companies that carry out tax avoidance

No	Year	Case	State Loss (in rupiah)
1.	2019	PT BAPI intentionally submitted incomplete SPT (Tax Return) for PPh 4 Paragraph (2) from August to December 2019 and failed to submit the SPT for January to December 2019. (Santia, Tira. Causing IDR 2.9 Billion State Loss, PT	2,907 Billion

		BAPI Officially Becomes Suspect of Tax Misappropriation. Retrieved on September 21, 2024 from www.liputan6.com)	
2.	2023	A former special attorney of PT Jhonlin Baratama bribed a former Director of Audit and Collection (P2) at the Directorate General of Taxes to manipulate audit results for fiscal years 2016 and 2017. (Wibowo, E.A. 2023. Tax Bribery Case, Consultant of PT Jhonlin Baratama Sentenced to 3 Years in Prison. Retrieved on June 27,2024 from www.tempo.co)	52,978 Billion
3.	2023	Dermawati failed to report the company's tax returns from 2011 to 2014. (Mij, 2023. Not Reporting Tax Returns, Medan Entrepreneur Jailed for 2 Years. Retrieved on December 12, 2024 from www.cnbcindonesia.com)	6,630 Billion

Source: data processed

These cases indicate that taxpayers do not fully comply with their rights and obligations under the self-assessment system(Apsari & Supadmi, 2018). Taxpayers attempt to reduce their tax obligations by using legal but often unethical means, which is the definition of tax avoidance (Slemrod & Yitzhaki, 2002). James & Alley (2002) describe tax avoidance as the use of legal tax rules to reduce the amount of tax payable. The methods and techniques used involve exploiting grey areas in tax laws and regulations. Although legal, this practice is undesirable for the state because it can reduce government tax revenue (Pohan, 2019).

Numerous researchers have studied tax avoidance from various influencing factors such as profitability, company size, leverage (Syahrul Effendi & Trisnawati, 2023), capital intensity, independent commissioners, institutional ownership (Dewi & Oktaviani, 2021), asset intensity, fiscal loss compensation (Noviyani & Muid, 2019), sales growth (Aprianto et al., 2019), and managerial ownership (Krisna, 2019).

Among the causes of tax avoidance is institutional ownership. Jensen & Meckling (1976) define institutional ownership as share ownership by non-bank financial institutions such as investment firms and insurance companies. Institutional ownership enhances control over management through effective monitoring. The higher the share ownership by external institutions, the more stringent the supervision over the company, which can deter tax avoidance behavior (Suparlan, 2019). It may also signal control over managerial actions, helping reduce tax avoidance practices. Previous studies show inconsistent results: Amaliati Setiawan et al. (2021) found a positive influence of institutional ownership on tax avoidance, while Krisna (2019) found a negative one.

Another influencing variable is leverage. Titman et al. (2021) define leverage as a financial management strategy involving the use of debt to enhance returns to shareholders. (Cahya Dewanti & Sujana, 2019) state that leverage allows firms to use fixed financial costs to amplify shareholder returns. According to Article 6 Paragraph 1 of Law No. 36 of 2008 on Income Tax, taxable income is calculated as gross income minus expenses to earn, collect, and maintain income, including interest on loans. Thus, higher leverage may reduce pre-tax income and consequently tax payable. In this study, leverage is measured by the Debt-to-Equity Ratio (DER), which compares total liabilities to equity (Kasmir, 2018).

Another factor is profitability. Kasmir (2011) defines profitability as the ability of a firm to generate profits, measured using Return on Assets (ROA). Ross et al. (2010) explain that ROA reflects how effectively a company uses its assets to generate earnings. Higher profitability usually leads to higher taxes, as profit is the tax base. Hence, companies may engage in tax avoidance to reduce this burden. While Darsani & Sukartha (2021) found profitability positively affects tax avoidance, Aprianto et al. (2019) found no such influence.

The Indonesian Ministry of Energy and Mineral Resources (ESDM) states that Indonesia has many mining companies operating across various sectors. Key players include PT Freeport Indonesia (copper and gold), PT Aneka Tambang Tbk (gold, nickel, bauxite), and PT Vale Indonesia Tbk (nickel). In the coal sector, major firms include PT Adaro Energy Tbk, PT Kaltim Prima Coal, PT Berau Coal Energy Tbk, and PT Bumi Resources Tbk. PT Timah Tbk is a leading tin mining company. In total, 63 mining companies are listed on the Indonesia Stock Exchange (IDX), spanning subsectors such as coal production, oil & gas, gold, iron & steel, diversified metals & minerals, copper, and aluminum.

The mining sector plays a vital role in Indonesia's economy, society, and infrastructure development. From an economic standpoint, taxes are a key source of state revenue used to fund infrastructure, education, health care, and other public services. Socially, taxes enable the government to run poverty alleviation programs and provide free education and healthcare. In terms of development, taxes fund infrastructure projects (Kemenkeu.go.id).

The mining industry has unique tax characteristics, such as tax holidays, exploration incentives, and special contract regimes. For instance, companies under Contracts of Work (KK) or Coal Contract of Work (PKP2B) enjoy special tax treatment, which may influence their tax avoidance behavior. Mining firms are also subject to varying corporate income tax rates and mechanisms that consider production volume, global commodity prices, and exchange rate fluctuations. These conditions create broader opportunities for companies to engage in tax planning or avoidance strategies.

Based on the literature review and the cases presented above, tax avoidance remains a significant issue, with previous research showing inconsistent findings. This becomes the basis for the author's interest in further investigating tax avoidance.

LITERATURE REVIEW

Agency Theory

Anggraeni & Meita Oktaviani (2021) describe agency theory as a relationship between shareholders (principals) and management (agents), where management is appointed to act in the best interest of shareholders and is thus held accountable for all its decisions and actions.

Jensen & Meckling (1976) explain: "Agency relationship is a contract under which one or more persons (the principals) engage another person (the agent) to perform some service on their behalf, which involves delegating some decision-making authority to the agent."

In the context of tax avoidance, agency theory emphasizes the conflict of interest between shareholders and managers. Managers have incentives to maximize short-term profits and personal bonuses through tax avoidance strategies, even though such practices may be risky and harm shareholders in the long term.

In Indonesia's mining industry, agency theory can be further illustrated by highlighting how external institutional investor control and reputational pressure play key roles in limiting tax avoidance practices.

Moreover, it is important to understand the trade-off between the short-term benefits of tax avoidance—such as increased cash flow—and the long-term risks, including regulatory sanctions, reputational damage, and loss of shareholder trust. Managers must consider that tax savings may not always justify these potential long-term consequences.

Taxation

According to Article 1 Paragraph 1 of Law Number 28 of 2007 (Third Amendment to Law Number 6 of 1983), as amended most recently by Law Number 7 of 2021 on the Harmonization of Tax Regulations, tax is a mandatory contribution to the state owed by individuals or entities under coercive legal force, without direct compensation, and used for the benefit of the nation and the welfare of its people.

Law Number 36 of 2008 (Fourth Amendment to Law Number 7 of 1983 on Income Tax) stipulates that tax subjects include individuals, undivided inheritance as a single unit, entities, and permanent establishments, all of which are taxed on income—any increase in economic capability received or obtained by the taxpayer, both domestic and foreign, that can be used for consumption or added to wealth, in any name or form.

According to Article 11 Paragraph 3 of Law Number 17 of 2003 on State Finance, state revenue consists of tax revenues, non-tax revenues, and grants. Based on BPS data, the tax sector contributes the most to Indonesia's revenue. Article 17 Paragraph 1b of Law Number 36 of 2008 specifies the corporate income tax rate for domestic entities at 28% for the 2010 fiscal year. Under Law Number 7 of 2021, the rate is 22% for the 2022 fiscal year. During the COVID-19 pandemic, the Indonesian Ministry of Finance issued Regulation Number 110/PMK.03/2020, which reduced corporate income tax by 50% from July 2020 for eligible taxpayers using the reduction incentive under Article 25.

Tax Avoidance

Slemrod & Yitzhaki (2002) define tax avoidance as the effort made by taxpayers to reduce their tax obligations through legal but often unethical means. The methods and techniques used typically exploit the "grey areas" within tax laws and regulations (Pohan, 2019).

James & Alley (2002) describe tax avoidance as the use of legal tax rules to reduce the amount of tax owed.

According to Amalia Gusti (2022), tax avoidance is an attractive strategy for management to optimize tax payments by identifying loopholes in tax regulations. While legally acceptable, tax avoidance is generally undesirable from the government's perspective because it reduces national tax revenue.

One common method of tax avoidance is transfer pricing, which is especially prevalent in the mining sector, particularly in cross-border transactions between affiliated entities. Transfer pricing involves setting prices for transactions between related companies, which can affect taxable income. In Indonesia, transfer pricing is regulated under PMK No. 213/PMK.03/2016, which mandates transfer pricing documentation to demonstrate that the prices used in affiliated transactions are fair.

In the mining context, manipulating the sale price of commodities such as coal, gold, or nickel between affiliated companies can be a loophole for tax avoidance. Therefore, monitoring transfer pricing is critical in mitigating tax avoidance practices in this sector.

Hanlon & Heitzman (2010) suggest several methods to measure tax avoidance, such as: Effective Tax Rate (ETR), Book-Tax Differences (BTD), Tax Sheltering Activities, or Long-Run Cash ETR.

This study uses the Effective Tax Rate (ETR) method, which is calculated by dividing tax expense by pre-tax income. ETR is a commonly used metric for identifying tax avoidance because it captures variations in corporate tax strategies and allows for comparisons across industries.

However, ETR also has limitations. It does not distinguish between current and deferred taxes, meaning temporary differences between accounting and taxable income are not captured. Additionally, ETR only reflects tax effectiveness for a specific period and may overlook long-term tax avoidance strategies like deferral. Thus, while ETR is simple and widely used, it does not provide a complete picture of a firm's tax avoidance behavior. Future studies are advised to consider alternative measurements such as BTD, Cash ETR, or DTAX for a more comprehensive analysis.

Institutional Ownership

Tamrin & Maddatuang (2019:72) define institutional ownership as the percentage of shares owned by institutions such as investment companies, banks, insurance companies, or other corporations.

Jensen & Meckling (1976) state that institutional ownership refers to share ownership held by non-bank financial institutions such as insurance firms. The distribution of shares among external shareholders is one form of institutional ownership.

Institutional ownership enhances the company's supervision through effective monitoring. The greater the institutional ownership in a company, the stronger the external control, which in turn reduces the possibility of management engaging in tax avoidance practices (Suparlan, 2019).

Bebchuk et al. (2017) explain that the purpose of institutional ownership is to improve supervision and control over corporate management, which can increase firm value and protect shareholders' interests. Institutional ownership also helps reduce agency problems by ensuring that management acts in line with shareholder interests. It improves stock liquidity, market stability, and encourages better corporate governance practices.

According to Fitria (2018), institutional ownership can be measured by dividing the number of shares owned by institutions by the total number of shares outstanding.

Leverage

Titman et al. (2021) define leverage as a financial management strategy that uses debt to enhance the company's ability to return profits to shareholders. Ross et al. (2010) also explain leverage as a company's ability to use fixed financial costs to increase returns to shareholders. A well-structured leverage considers a balanced debt-to-equity ratio and applies debt for productive investments.

According to Article 6 Paragraph 1 of Law Number 36 of 2008 on Income Tax, taxable income for domestic taxpayers and permanent establishments is calculated as gross income minus expenses incurred to earn, collect, and maintain income. One of these deductible expenses is interest on loans. Leverage reflects the extent to which a company uses debt to finance its operations. The higher the debt used, the higher the interest expense incurred, which reduces pre-tax profit and ultimately lowers the amount of tax payable (Cahya Dewanti & Sujana, 2019).

Mulyadi et al. (2022) outline several purposes and benefits of using leverage: (a) To evaluate the company's position in fulfilling obligations to creditors; (b) To assess the company's ability to meet fixed obligations such as loan installments and interest; (c) To measure the balance between assets and capital; and (d) To evaluate the influence of debt on asset management.

According to Mahyuddin et al. (2023), leverage can be measured using five ratios: Debt to Asset Ratio (DAR), Debt to Equity Ratio (DER), Long-term Debt to Equity Ratio, Times Interest Earned Ratio, and Fixed Charge Coverage (FCC). This study uses Debt to Equity Ratio (DER) as a proxy for leverage, due to its close connection with tax calculations.

Debt Equity Ratio (DER)

Kasmir (2018) defines DER as a ratio comparing total debt to equity, used to assess how much of a company's capital structure is financed by debt. It also shows the extent to which a company uses borrowed funds as a guarantee for total liabilities.

Mulyadi et al. (2022) state that the higher the DER, the higher the interest expenses, which leads to reduced taxable income. DER is calculated by dividing total liabilities by total equity.

Profitability

Gitman & Zutter (2020) define profitability as a company's ability to generate profits over a specific period. Kasmir (2011) identifies several profitability ratios, including Profit Margin on Sales, Return on Assets (ROA), Return on Equity (ROE), and Earnings per Share (EPS). This study uses Return on Assets (ROA) as a proxy for profitability.

Ross et al. (2010) describe ROA as a measure of profitability that reflects how efficiently a company uses its assets to generate earnings. Brigham & Ehrhardt (2019) define ROA as a critical financial ratio to assess how effectively a company uses its assets to generate profit.

Brigham & Ehrhardt (2019) state that the main purpose of ROA is to measure asset efficiency and evaluate how well management uses assets to generate income. This helps in analyzing industry performance and benchmarking. ROA also aids stakeholders in making investment and financing decisions.

According to Brigham & Ehrhardt (2019), ROA is calculated by dividing net income by total assets.

The Influence of Institutional Ownership on Tax Avoidance

Tamrin & Maddatuang (2019:72) define institutional ownership as the percentage of shares owned by institutions such as investment companies, banks, insurance companies, and others. Bebchuk et al. (2017) explain that institutional ownership is intended to enhance supervision and control over company management, increasing firm value and protecting shareholder interests. It also reduces agency problems by ensuring that management acts according to shareholder interests, improves stock liquidity, market stability, and supports better corporate governance practices.

Institutional ownership can control management through effective monitoring. The higher the proportion of shares held by institutions, the greater the level of oversight on management, which reduces the likelihood of tax avoidance (Suparlan, 2019).

Institutional ownership is measured by dividing the number of shares owned by institutions by the total number of outstanding shares (Fitria, 2018). This is consistent with the research by Amaliati Setiawan et al. (2021), which found that institutional ownership positively influences tax avoidance. In contrast, research by Krisna (2019) found a negative influence.

H1 : Institutional ownership has a positive effect on tax avoidance

The Influence of Leverage on Tax Avoidance

Titman et al. (2021) define leverage as a financial management strategy using debt to improve a company's ability to generate returns for shareholders. Mulyadi et al. (2022) mention that leverage can help a company assess its financial obligations to creditors. It reflects how much debt is used to finance operations. The higher the leverage, the greater the interest expense, reducing pre-tax income and lowering tax liabilities (Cahya Dewanti & Sujana, 2019).

This study uses Debt to Equity Ratio (DER) to measure leverage. DER compares total liabilities to total equity and indicates how much a company relies on debt to finance its operations (Kasmir, 2018).

Mulyadi et al. (2022) explain that a higher DER increases interest expenses, which reduces tax obligations. DER is calculated by dividing total debt by total equity.

Research by Riskatari & Jati (2020) found a negative relationship between leverage and tax avoidance, while Cahya Dewanti & Sujana (2019) found no significant effect.

H2: Leverage has a positive effect on tax avoidance

The Influence of Profitability on Tax Avoidance

Gitman & Zutter (2020) define profitability as a company's ability to generate income over a certain period. Profitability can be measured through ratios such as Profit Margin, ROA, ROE, and EPS. In this study, Return on Assets (ROA) is used as a proxy for profitability. Ross

et al. (2010) state that ROA reflects how efficiently a company uses its assets to generate profit. Brigham & Ehrhardt (2019) further explain that ROA helps stakeholders assess financial performance and make investment or financing decisions. A higher ROA indicates better financial performance (Darsani & Sukartha, 2021). ROA is measured by dividing net profit by total assets.

Research by Darsani & Sukartha (2021) found that profitability positively influences tax avoidance, while Aprianto et al. (2019) found no such relationship.
H3: Profitability has a positive effect on tax avoidance

METHODS

This study employs a quantitative descriptive analysis method. According to Leech et al. (2013), quantitative descriptive analysis is the process of using descriptive statistics to summarize and present quantitative data in a manner that is easy to understand. The quantitative analysis involves collecting necessary data, then processing and presenting it in the form of tables, graphs, and other outputs to draw conclusions and support decision-making. In this research, the collected data is tested using Multiple Linear Regression and processed using the Statistical Package for the Social Sciences (SPSS) version 29 software.

RESULTS AND DISCUSSION

Descriptive Statistics Test

Ghozali (2018:19) explains that descriptive statistical analysis is a technique used to summarize and clearly describe data. It includes calculations of statistical measures such as mean, standard deviation, variance, maximum, minimum, sum, median, mode, range, and frequency distribution. This analysis aims to provide an overview of the data being tested. The table below presents the results of descriptive statistics for the variables: institutional ownership, leverage, profitability, and tax avoidance:

Table 2

Descriptive Statistics					
	N	Minimum	Maksimum	Mean	Standard Deviation
Institutional Ownership	92	.10	1.00	.6760	.2163
Leverage	92	.10	2.98	.9064	.5783
Profitability	92	.00	.62	.1385	.1538
Tax Avoidance	92	.02	.78	.2547	.1440
Valid N (listwise)	92				

Source: Output SPSS 29

Classical Assumpiton Test

Ghozali (2018) explains that the classical assumption test is a hypothesis testing method used in research to determine whether a regression model is feasible to proceed to the next testing phase. The classical assumption tests conducted include the normality test, multicollinearity test, heteroscedasticity test, and autocorrelation test.

Normality Test

The purpose of the normality test is to determine whether the variable data is normally distributed or not. The researcher used the One-Sample Kolmogorov-Smirnov Test with the

following criteria (Ghozali, 2018): (a) If Asymp. Sig (2-tailed) > 0.05, the data is normally distributed. (b) If Asymp. Sig (2-tailed) < 0.05, the data is not normally distributed.
The results of the normality tes in this sudy can be seen in the following table:

Table 3 Normality Test Results

			Unstandardized Residu
N			92
Normal Parameter[a,b]	Mean		.0000000
	Standard. Deviation		.12834898
Most Extreme Differences	Absolute		.103
	Positive		.103
	Negative		-.079
Test Statistic			.103
Asymptot Significance. (2tailed)[c]			.017
Monte Carlo Significance (2tailed)[d]	Significance		.016
	99% Confidence Interval	Lower Bound	.013
		Upper Bound	.019

Source: Output SPSS 29

Based on Table 3, the number of samples used is 92, with an Asymp. Sig. value of 0.170, which is greater than 0.05. Therefore, it can be concluded that the data is normally distributed.

Multicollinearity Test

This test aims to determine whether there is correlation among the independent variables. It is conducted by examining the tolerance and Variance Inflation Factor (VIF) values. The criteria (Ghozali, 2018): (1) If tolerance > 0.100 and VIF < 10.00 concluded that there were no symptoms of multicollinearity. (2) If tolerance < 0.100 and VIF > 10.00 concluded that there were symptoms of multicollinearity

The results of the multicollinearity test in this study can be seen in table 4 as follows:

Table 4 Multicollinearity Test Result

Coeficients[a]			
Model		Collinearity Tolerance	Statistics VIF
1	Institutional Ownership	.986	1.014
	Leverage	.919	1.088
	Profitability	.931	1.074

Source: Output SPSS 29

It can be concluded that multicollinearity is not present, as all tolerance values are > 0.100 and VIF values are < 10.00.

Heteroscedasticity Test

The heteroscedasticity test checks whether variance differences exist in the residuals between observations. If the variance is constant, it's called homoscedasticity; otherwise, it's heteroscedasticity. The researcher used the Glejser test with the following criteria (Ghozali, 2018): (1) If significance (>0.05) then it can be concluded that there are no symptoms of heteroscedasticity. (2) If significance (<0.05) then it can be concluded that there are symptoms of heteroscedasticity.

The results of the heteroscedasticity test in this study can be seen in table 5 as follows:

Table 5 Heteroscedasticity Test Result

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Standardized Eror	Beta	t	Significance.
1	(Constant)	.048	.035		1.368	.175
	Institutional Ownership	.063	.040	.161	1.562	.122
	Leverage	.020	.016	.140	1.310	.193
	Profitability	-.096	.058	-.175	-1.653	.102

Source: Output SPSS 29

All variables have significance values > 0.05. Therefore, it can be concluded that there is no heteroscedasticity.

Autocorrelation Test

The purpose of this test is to determine whether there is correlation between residuals in different time periods. The researcher used the Durbin-Watson test. According to Ghozali (2018), if DU < DW < 4–DU, there is no autocorrelation (Ghozali, 2018).

It is known that N (number of samples) = 92, and K (independent variable) = 3. Then the DU value = 1.7285. The results of the autocorrelation test in this study can be seen in table 6 as follows:

Table 6 Autocorrelation Test Result (Before Correction)

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Standard Error of the Estimate	Durbin Watson
1	.454[a]	.206	.179	.13052	.978

Source: Output SPSS 29

Based on table 6, the results of the autocorrelation test show that the Durbin-Watson value is 0.978. When this value is compared with the Durbin-Watson table with a total of n of 92 and a total of 3 independent variables (k = 3), the dl (lower) table value is 1.5941 and du (upper) is 1.7285. So the Durbin-Watson value in the table of 0.978 is below dl, so it can be concluded that there is positive autocorrelation.

Due to the presence of autocorrelation, the data cannot be trusted so that it requires treatment. Ghozali (2018:124-126) explains that autocorrelation can be treated with 4 methods, namely the First Difference method, the ρ value is estimated based on Durbin-Watson d Statistics, The Cochrane-Orcutt two-step procedure, and Durbin's two-step method. Researchers will treat autocorrelation with the Durbin's two-step method.

Durbin's Two-Step Method transforms the data by estimating the autocorrelation parameter rho (ρ) and adjusting the dependent and independent variables accordingly:

- $Y't = Y_t - \rho Y_{t-1}$
- $X'i,t = X_{i,t} - \rho X_{i,t-1}$

Table 7 Autocorrelation Test Result (After Durbin's Two-Step)

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Standard Eror of the Estimate	Durbin Watson
1	.492[a]	.242	.216	.51168	2.192

Source: Output SPSS 29

After transformation, the DW value improved to 2.192, indicating that autocorrelation has been resolved. The interpretation of the regression model must now be based on the adjusted data.

Model Fit Test (Coefficient of Determination R^2)

According to Ghozali (2018:97), the coefficient of determination (R^2) test is conducted to determine how well the model explains the variation in the dependent variable. The R^2 value ranges between 0 and 1. A small R^2 indicates that the model has limited explanatory power, while a value close to 1 means that the independent variables explain nearly all the variation in the dependent variable.

This study uses the adjusted R^2 value, which can increase or decrease depending on the addition of independent variables. Unlike R^2, adjusted R^2 only increases if the added variable significantly contributes to the model.

Table 8 Coefficient of Determination (R^2) Test Result

Model Summary				
Model	R	R2	Adjust R2	Standard Error of the Estimate
1	.492[a]	.242	.216	.51168

Source: Output SPSS 29

The adjusted R^2 value of 21.6% indicates that the model explains only a small part of the variation in tax avoidance. This implies that other factors outside institutional ownership, leverage, and profitability affect tax avoidance in Indonesia's mining industry. The standard error of the estimate is 0.51168, which suggests the regression model's precision improves as this value decreases.

Other potential influencing factors not included in this model, but relevant in the mining sector, may include: corporate governance practices, company size, dividend policy, asset structure, political connections, and sector-specific tax incentives or differential rates based on mining contracts.

Simultaneous Significance Test (F-Test)

The F-test determines whether all independent variables in the regression model jointly affect the dependent variable (Ghozali, 2018). Criteria: (1) If significance < 0.05 and F-count > F-table, the hypothesis is accepted. (2) If not, the hypothesis is rejected

Table 9 F-Test Results

Anova[a]					
Model	Sum off Squares	df	Mean Square	F	Significance

1	Regression	7.282	3	2.427	9.271	<,001[b]
	Residual	22.778	87	.262		
	Total	30.060	90			

Source: Output SPSS 29

With an F-count of 9.271, $df_1 = 3$, and total sample = 91, the F-table value is 2.71. Since 9.271 > 2.71 and sig. = 0.001 < 0.05, it can be concluded that institutional ownership, leverage, and profitability jointly have a significant effect on tax avoidance.

Partial Significance Test (t-Test)

The t-test assesses the effect of each independent variable individually on the dependent variable (Ghozali, 2018:99). With n = 91 and 3 independent variables, the t-table value at α = 0.05 is 1.666. Partial Significance Test (t-Test) are as follows:

Table 10 t-Test Results

Coefficients[a]						
		Unstandardized Coeficients		Standardized Coeficients		
Model		B	Standardized Eror	Beta	t	Significance
1	(Constant)	-.997	.106		-9.445	<,001
	Institutional Ownership	-.367	.177	-.196	-2.076	.041
	Leverage	.285	.101	.277	2.838	.006
	Profitability	-.207	.064	-.319	-3.253	.002

Source: Output SPSS 29

All three independent variables have sig. < 0.05, meaning institutional ownership, leverage, and profitability significantly influence tax avoidance.

Hypothesis 1 (H1): Institutional Ownership has a negative effect on tax avoidance

Based on Table 10, the significance value for institutional ownership is 0.041 < 0.05 (significant), with a t-count of -2.076, which is greater than the t-table value of 1.666 (|−2.076| > 1.666). This indicates that institutional ownership has a negative and significant effect on tax avoidance.

Therefore, Hypothesis H1 is rejected.

This means that an increase in institutional ownership leads to a decrease in tax avoidance, and conversely, a decrease in institutional ownership leads to an increase in tax avoidance.

Hypothesis 2 (H2): Leverage has a positive effect on tax avoidance

Based on Table 10, the significance value for leverage is 0.006 < 0.05 (significant), with a t-count of 2.838, which is greater than the t-table value of 1.666 (2.838 > 1.666). This indicates that leverage has a positive and significant effect on tax avoidance.

Therefore, Hypothesis H2 is accepted.

Hypothesis 3 (H3): Profitability has a negative effect on tax avoidance

Based on Table 10, the significance value for profitability is 0.002 < 0.05 (significant), with a t-count of -3.253, which is greater than the t-table value of 1.666 (|−3.253| > 1.666). This shows that profitability has a negative and significant effect on tax avoidance.

Therefore, Hypothesis H3 is rejected

Multiple Linear Regression Equation

According to Ghozali (2018), multiple linear regression analysis is used to test the influence of two or more independent variables on one dependent variable. In this study, the researcher used multiple linear regression analysis to examine the effect of institutional ownership (X_1), leverage (X_2), and profitability (X_3) on tax avoidance (Y). The multiple linear regression equation based on the table is as follows:

Tax Avoidance = -0.997 – 0.367 Institutional Ownership + 0.285 leverage – 0.207 profitability

The interpretation of this equation is as follows: (1) The constant value of -0.997 means that if all independent variables (X_1, X_2, X_3) are equal to zero, then the tax avoidance value will be -0.997. (2) The coefficient for institutional ownership (X_1) is -0.367, meaning that for every 1 unit increase in institutional ownership, the value of tax avoidance (Y) decreases by 0.367. (3) 3. The coefficient for leverage (X_2) is 0.285, meaning that for every 1 unit increase in leverage, the value of tax avoidance (Y) increases by 0.285. (4) The coefficient for profitability (X_3) is -0.207, meaning that for every 1 unit increase in profitability, the value of tax avoidance (Y) decreases by 0.207.

The Effect of Institutional Ownership on Tax Avoidance

The results of hypothesis testing for the institutional ownership variable show a significance value of 0.041 ($\rho < 0.05$) and a t-value of -2.076, which means that institutional ownership has a negative and significant effect on tax avoidance. This contradicts the initial hypothesis which assumed a positive relationship.

This can be explained through agency theory, where a high level of institutional ownership strengthens external monitoring of management, thereby encouraging companies to be more compliant with their tax obligations. Companies with strong institutional ownership tend to reduce tax avoidance practices in order to protect the reputation and integrity of their institutional investors. Accordingly, Hypothesis H1 is rejected.

Tamrin & Maddatuang (2019:72) define institutional ownership as the percentage of shares owned by institutions such as investment companies, banks, insurance companies, or other corporate entities. Institutional ownership is measured by dividing the number of shares held by institutions by the total number of outstanding shares. The larger the institutional ownership, the more likely it is to suppress tax avoidance, because institutional owners often promote strong corporate governance, financial transparency, and compliance with tax regulations to maintain both reputation and investment sustainability.

This finding is supported by previous studies conducted by Amaliati Setiawan et al. (2021) and Krisna (2019), which found that institutional ownership affects tax avoidance. However, it contradicts the findings of Nurhidayah et al. (2021), who found that institutional ownership had no effect on tax avoidance.

The Effect of Leverage on Tax Avoidance

The results of hypothesis testing for the leverage variable show a significance value of 0.006 ($\rho < 0.05$) and a t-value of 2.838, which indicates that leverage has a positive and significant effect on tax avoidance. This means that companies with higher leverage tend to engage more in tax avoidance strategies.

Therefore, Hypothesis H2 is accepted.

Titman et al. (2021) define leverage as a financial management strategy that uses debt to enhance a company's ability to generate returns to shareholders. In this study, leverage is proxied by the Debt-to-Equity Ratio (DER), which indicates that the higher the leverage, the higher the tax avoidance. This is because more debt leads to higher interest expenses, which reduce taxable income and thus lower the amount of tax owed by the company.

This result aligns with studies by Riskatari & Jati (2020) and Aprianto et al. (2019), who found that leverage influences tax avoidance. However, it differs from studies by Cahya Dewanti & Sujana (2019) and Darsani & Sukartha (2021), which found no significant effect.

The Effect of Profitability on Tax Avoidance

The hypothesis test results for the profitability variable show a significance value of 0.002 ($\rho < 0.05$) and a t-value of -3.253, which indicates a negative and significant relationship between profitability and tax avoidance. This finding is opposite to the initial hypothesis, which predicted a positive relationship. This may occur because more profitable companies are more likely to comply with tax obligations in order to maintain social legitimacy and avoid reputational damage. As a result, companies with high profitability are less inclined to engage in tax avoidance.

Therefore, Hypothesis H3 is rejected

According to Gitman & Zutter (2020), profitability is a company's ability to generate profit over a specific period. In this study, profitability is proxied by Return on Assets (ROA). The finding indicates that higher profitability is associated with lower tax avoidance because highly profitable firms often have the resources to pay taxes fully and thus face less pressure to avoid taxes compared to low-profit firms.

This finding is supported by Riskatari & Jati (2020) and Darsani & Sukartha (2021), who also concluded that profitability affects tax avoidance. However, it contradicts the findings of Ernawati et al. (2019), who reported that profitability had no significant effect.

CONCLUSION

Conclusion

This study aims to test the influence of institutional ownership, leverage, and profitability on tax avoidance in mining sector companies listed on the Indonesia Stock Exchange for the 2020–2023 period. Based on statistical analysis, the following conclusions can be drawn: (1) Institutional ownership has a negative and significant effect on tax avoidance, indicating that higher institutional ownership tends to reduce the company's tendency to engage in tax avoidance. (2) Leverage, as measured by Debt to Equity Ratio (DER), has a positive and significant effect on tax avoidance, meaning that higher leverage increases the likelihood of companies avoiding tax. (3) Profitability, proxied by Return on Assets (ROA), has a negative and significant effect on tax avoidance, indicating that more profitable companies tend to engage less in tax avoidance practices. (4) The research period of 2020–2023 includes the COVID-19 pandemic and various tax incentives from the government. This study did not specifically analyze the impact of the pandemic or incentives, which may have influenced the Effective Tax Rate (ETR) and introduced bias. It is suggested that future research separate the analysis between pandemic and post-pandemic years for more accurate results. (5) The sample only includes 23 out of 63 mining companies (about 36.5% of the population). This limited sample size suggests the findings may not fully represent the entire industry. Selection bias may also be present, as companies not included might exhibit different tax avoidance characteristics—possibly due to incomplete data or lack of transparency. Therefore, generalization of the findings should be done with caution.

Suggestions

Academic Suggestions

Future researchers are advised to add other independent variables beyond those studied, as 78.4% of the variation in tax avoidance remains unexplained. Further studies should expand the population and sample size by including different industries and more recent periods, using alternative proxies for the variables.

Practical Suggestions

For companies, management should prepare robust transfer pricing documentation, increase transparency in financial reporting, and maintain good corporate governance to reduce tax risks. For tax regulators, it's recommended to tighten oversight of mining companies, particularly focusing on leverage structure, institutional control, and profitability as indicators of tax avoidance risk. The government should also re-evaluate the issuance of tax incentives and conduct regular compliance checks to prevent misuse.

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