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The Effect of Financial Derivatives and Thin Capitalization on Tax Avoidance Practices

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ABSTRACT

Objective: *This study aims to examine the effect of financial derivatives and thin capitalization on tax avoidance in companies listed on the Indonesia Stock Exchange.* ***Method:*** *The study used a quantitative approach with secondary data from annual financial reports and generated 60 companies through purposive sampling. The analysis was conducted using multiple linear regression.* ***Results:*** *The results show that financial derivatives have no significant effect on tax avoidance, while thin capitalization has a significant positive effect on tax avoidance. Simultaneously, both variables influence tax avoidance.* ***Novelty:*** *These findings suggest that capital structure, particularly the use of debt, is an important factor in corporate tax avoidance practices.*

INTRODUCTION

Taxes play a strategic role as the main foundation for maintaining fiscal stability and financing national development in Indonesia. Optimizing tax revenue provides broader fiscal capacity for the government to fund development programs, improve public welfare, and maintain economic balance. However, despite relatively positive tax revenue performance in recent years, tax avoidance remains a major challenge in maximizing state revenue [1][2]. Tax avoidance refers to corporate efforts to minimize tax liabilities within legal boundaries by exploiting loopholes in tax regulations. This practice may reduce the effectiveness of tax collection and potentially decrease government revenue. The relatively high level of corporate non-compliance indicates a tendency for firms to engage in aggressive tax planning [3][4].

Financial derivatives are one of the factors suspected to be associated with tax avoidance. Companies use derivatives primarily for risk management against exchange rate, interest rate, and commodity price fluctuations. However, the complexity of accounting treatment and the flexibility in reporting derivative transactions may provide opportunities for tax planning strategies. In addition, thin capitalization reflects a financing structure dominated by debt, which generates interest expenses that are tax-deductible and reduce taxable income. This indicates that corporate financing decisions play an important role in tax avoidance practices [5].

Several phenomena in Indonesia highlight this issue. Cases such as PT Adaro Energy Tbk have been widely discussed due to profit shifting practices through affiliated entities abroad, which potentially reduce domestic tax obligations [6]. Meanwhile, PT Mayora Indah Tbk illustrates the use of financial derivatives for hedging activities, where the recognition of fair value gains or losses may affect accounting profit and effective tax rates. These conditions demonstrate how financial complexity and reporting flexibility can create opportunities for tax planning [7].

From a theoretical perspective, this phenomenon can be explained by agency theory, which emphasizes conflicts of interest between management and government. Management seeks to maximize after-tax profit, while the government aims to increase tax revenue. In line with positive accounting theory, particularly the political cost hypothesis, firms tend to reduce taxable income to minimize political costs in the form of tax obligations [8]. Previous studies provide inconsistent results regarding the effect of financial derivatives and thin capitalization on tax avoidance [9][10][11]. In addition, research on derivatives remains limited due to measurement constraints, often requiring proxy approaches such as dummy variables. Studies that simultaneously examine both variables using recent post-pandemic data are also still limited, particularly in capital-intensive manufacturing sectors [12]. Therefore, this study aims to analyze the effect of financial derivatives and thin capitalization on tax avoidance in manufacturing companies in the basic and chemical industry subsector listed on the Indonesia Stock Exchange during the 2020–2024 period.

RESEARCH METHOD

This study employs a quantitative approach using secondary data obtained from companies' annual financial statements. The data are collected from manufacturing companies in the basic and chemical industry subsector listed on the Indonesia Stock Exchange during the 2020–2024 period. The population consists of all manufacturing companies in the basic and chemical industry subsector listed on the Indonesia Stock Exchange. The sample is selected using purposive sampling based on specific criteria, resulting in 123 observations after data transformation and outlier removal. The dependent variable in this study is tax avoidance, measured using the Effective Tax Rate (ETR), which is transformed into natural logarithm form [13]. The independent variables are financial derivatives and thin capitalization, which is also transformed into natural logarithm form. Financial derivatives are measured using a dummy variable, where a value of 1 indicates the presence of derivative activities and 0 otherwise [14]. Thin capitalization is measured using the debt-to-equity ratio. The data analysis technique used is multiple linear regression with the assistance of statistical software. The analysis includes descriptive statistics, classical assumption tests (normality, multicollinearity, heteroscedasticity, and autocorrelation), and hypothesis testing, including t-test, F-test, and coefficient of determination (R^2) [15].

RESULTS AND DISCUSSION

Results

Descriptive Statistics

Descriptive statistics are used to provide an overview of the characteristics of the research data.

Table 1. Descriptive Statistics.

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
DERIVATIF KEUANGAN	123	,00	1,00	,2927	,45686
LN_THINCAPITALIZATION	123	-2,66	,40	-,8592	,79410

LN_PENGHINDARANPAJAK	123	-1,66	-1,31	-1,4846	,08450
Valid N (listwise)	123				

Based on the table above, the mean value of financial derivatives is 0.2927, indicating that not all companies use derivative instruments. Thin capitalization has a mean of -0.8592, while tax avoidance has a mean of -1.4846.

Classical Assumption Tests

Table 2. Normality Test.

One-Sample Kolmogorov-Smirnov Test			
			Unstandardized Residual
N			123
Normal Parameters[a,b]	Mean		,0000000
	Std. Deviation		,07576170
Most Extreme Differences	Absolute		,077
	Positive		,077
	Negative		-,058
Test Statistic			,077
Asymp. Sig. (2-tailed)[c]			,072
Monte Carlo Sig. (2-tailed)[d]	Sig.		,077
	99% Confidence Interval	Lower Bound	,070
		Upper Bound	,084

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.
d. Lilliefors' method based on 10000 Monte Carlo samples with starting seed 299883525.

Table 3. Multicollinearity Test.

Coefficients[a]			
Model		Collinearity Statistics	
		Tolerance	VIF
1	DERIVATIF KEUANGAN	,988	1,012
	LN_THINCAPITALIZATION	,988	1,012

a. Dependent Variable: LN_PENGHINDARANPAJAK

Table 4. Heteroscedasticity Test.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	,070	,007		10,361	,000
	DERIVATIF KEUANGAN	-,010	,009	-,099	-1,090	,278
	LN_THINCAPITALIZATION	,007	,005	,129	1,417	,159

a. Dependent Variable: ABRESID

Table 5. Autocorrelation Test.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,443[a]	,196	,183	,07639	1,833

a. Predictors: (Constant), LN_THINCAPITALIZATION, DERIVATIF KEUANGAN

b. Dependent Variable: LN_PENGHINDARANPAJAK

The results of the classical assumption tests indicate that the regression model meets the required criteria. The normality test shows a significance value of 0.077, which is greater than 0.05, indicating that the data are normally distributed. Furthermore, the multicollinearity test results show that all variables have VIF values below 10 and tolerance values above 0.10, suggesting that multicollinearity is not present in the model. In addition, the heteroscedasticity test indicates significance values above 0.05, confirming the absence of heteroscedasticity. The autocorrelation test also shows a Durbin–Watson value of 1.833, which indicates that there is no autocorrelation in the regression model.

Multiple Linear Regression Analysis

Table 6. Linear Regression Analysis.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1,449	,011		-126,394	,000
	DERIVATIF KEUANGAN	,012	,015	,068	,820	,414
	LN_THINCAPITALIZATION	,046	,009	,430	5,226	,000

a. Dependent Variable: LN_PENGHINDARANPAJAK

The regression equation is as follows:

$$Y = -1.449 + 0.012X^1 + 0.046X^2 + e$$

$$LN\_PENGHINDARANPAJAK = -1.449 + 0.012(DERIVATIF) + 0.046(LN\_THINCAPITALIZATION) + e$$

The regression estimation results show that the constant value is -1.449. This indicates that when the financial derivatives and thin capitalization variables are equal to zero, the level of tax avoidance proxied by LN_PENGHINDARANPAJAK is -1.449. The regression coefficient of the financial derivatives variable is 0.012, which implies that a one-unit increase in financial derivatives will increase LN_PENGHINDARANPAJAK by 0.012, assuming other variables remain constant. Meanwhile, the regression coefficient of the thin capitalization variable (LN_THINCAPITALIZATION) is 0.046, indicating that an increase in thin capitalization will raise LN_PENGHINDARANPAJAK by 0.046, ceteris paribus.

Hypothesis Testing

Table 7. t-test.

Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1,449	,011		-126,394	,000
	DERIVATIF KEUANGAN	,012	,015	,068	,820	,414
	LN_THINCAPITALIZATION	,046	,009	,430	5,226	,000

a. Dependent Variable: LN_PENGHINDARANPAJAK

Table 8. F-test.

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	,171	2	,085	14,642	,000[b]
	Residual	,700	120	,006		
	Total	,871	122			

a. Dependent Variable: LN_PENGHINDARANPAJAK

b. Predictors: (Constant), LN_THINCAPITALIZATION, DERIVATIF KEUANGAN

Table 9. Coefficient of Determination (R^2).

Model Summary[b]					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,443[a]	,196	,183	,07639	1,833

a. Predictors: (Constant), LN_THINCAPITALIZATION, DERIVATIF KEUANGAN

b. Dependent Variable: LN_PENGHINDARANPAJAK

The results of hypothesis testing indicate that financial derivatives do not have a significant effect on tax avoidance,

as reflected by a significance value of 0.414, which is greater than 0.05. In contrast, thin capitalization shows a significant effect on tax avoidance, with a significance value of 0.000, indicating a strong statistical relationship. Furthermore, the F-test results demonstrate that the independent variables simultaneously affect tax avoidance, as indicated by a significance value of 0.000. This suggests that the model is statistically valid in explaining the relationship between financial derivatives, thin capitalization, and tax avoidance. The coefficient of determination (R^2) is 0.196, meaning that 19.6% of the variation in tax avoidance can be explained by the independent variables included in this study, while the remaining 80.4% is influenced by other factors not examined in this research.

DISCUSSION

The results indicate that financial derivatives do not have a significant effect on tax avoidance. This finding suggests that companies tend to use derivative instruments primarily for risk management purposes, such as hedging against fluctuations in exchange rates, interest rates, or commodity prices, rather than as tools for tax avoidance. In addition, the limited disclosure and complexity of derivative transactions in financial statements may reduce their ability to explain variations in tax avoidance.

In contrast, thin capitalization has a significant positive effect on tax avoidance. A higher proportion of debt in a company's capital structure increases interest expenses, which are tax-deductible and ultimately reduce taxable income. This finding emphasizes that corporate financing decisions play a crucial role in shaping tax avoidance behavior. Companies may strategically utilize debt financing as part of their tax planning mechanisms.

Simultaneously, financial derivatives and thin capitalization influence tax avoidance. Although financial derivatives do not show a significant individual effect, their presence alongside thin capitalization contributes to explaining corporate tax avoidance behavior. This indicates that tax avoidance practices are not driven by a single factor but rather by a combination of financial and strategic decisions.

These findings are consistent with agency theory, which posits that management seeks to maximize after-tax profits, potentially leading to tax avoidance behavior. Furthermore, the results support positive accounting theory, particularly the political cost hypothesis, which explains that firms tend to reduce taxable income in order to minimize tax burdens.

CONCLUSION

Fundamental Finding: The results of this study indicate that the research objectives have been achieved, namely to examine the effect of financial derivatives and thin capitalization on tax avoidance. The findings show that financial derivatives do not have a significant effect on tax avoidance, implying that derivative instruments are not primarily used for tax avoidance purposes but rather for risk management. Meanwhile, thin capitalization has a significant effect on tax avoidance, suggesting that companies tend to utilize debt financing to reduce taxable income through interest expenses. Simultaneously, financial derivatives and thin capitalization contribute to explaining tax avoidance behavior, although thin capitalization is the more dominant factor. **Implication:** These findings imply that corporate financing decisions, particularly related to debt policy, play an important role in influencing tax avoidance practices. Companies may take advantage of interest expense deductions as part of tax planning strategies. For

regulators, this highlights the importance of monitoring thin capitalization practices to prevent excessive tax avoidance. In addition, the results provide insight for stakeholders that not all financial instruments, such as derivatives, are directly associated with tax avoidance behavior. **Limitation:** This study has several limitations, including the limited number of variables used, which only focus on financial derivatives and thin capitalization, as well as the relatively low coefficient of determination, indicating that there are other factors influencing tax avoidance that are not included in this study. In addition, the measurement of derivatives using a dummy variable may not fully capture the complexity of derivative transactions. **Future Research:** Future research is expected to include additional variables such as corporate governance, profitability, or firm size to provide a more comprehensive understanding of tax avoidance. Furthermore, the use of more detailed measurements for derivative transactions and broader research samples is recommended to enhance the robustness of the findings.

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