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Research

An Analysis of the Factors Influencing Tax Avoidance With Corporate Governance as A Moderating Variable

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Abstract: This research explores the key factors influencing tax avoidance, with a particular focus on the influence of corporate governance as a moderating factor among manufacturing firms registered on the Indonesia Stock Exchange between 2020 and 2024. Data for the analysis were sourced directly from the official publications of the exchange, and the strategy for drawing the research sample applied was purposive sampling. Out of a total population of 228 listed manufacturing firms during the study period, 65 companies were selected as the final sample. The study utilized secondary data and employed panel data regression analysis combined with Moderated Regression Analysis (MRA), processed using EViews 12 software.The results demonstrate that profitability, leverage, inventory intensity, and sales growth each have a positive and statistically significant relationship with tax avoidance. On the contrary, firm size does not exhibit a significant effect. Additionally, corporate governance—represented by the proportion of independent commissioners—significantly moderates the effect of profitability, leverage, inventory intensity, and sales growth on tax avoidance by amplifying these relationships. In contrast, its moderating influence on firm size tends to weaken the relationship with tax avoidance.

Keywords: Tax avoidance, cetr, profitability, leverage, firm size, inventory intensity, sales growth, corporate governance

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1. Introduction

Taxation constitutes a primary source of government revenue and plays a vital role in financing national development and public service delivery. In Indonesia, the manufacturing industry represents a substantial contributor to tax income, accounting for 26.9% of total tax revenues in 2023 (Ministry of Finance, 2024). Despite this contribution, the full potential of tax collection in this sector is often undermined by tax avoidance practices legal strategies employed by firms to reduce tax liabilities by taking advantage of gaps or ambiguities in tax regulations. Although permitted under the law, such practices raise ethical issues and diminish the state's revenue capacity, underscoring the need for enhanced oversight and academic inquiry.

Prior research has predominantly focused on the impact of financial variables such as profitability, leverage, firm size, sales growth, and inventory intensity on corporate tax avoidance behavior. However, the moderating influence of corporate governance has often been overlooked, despite its potential to play a crucial role in shaping managerial conduct. Strong governance structures are thought to foster greater transparency and accountability, thereby limiting the extent of aggressive tax planning. This oversight in the literature highlights a key research gap, especially given that the manufacturing sector is characterized by complex operations and heightened susceptibility to tax avoidance.

Accordingly, the present study is focused on analyzing the effects of selected financial indicators on tax avoidance and to assess the moderating role of corporate governance within this relationship. The study is directed toward manufacturing companies listed on the Indonesia Stock Exchange during the 2020–2024 period. It aims to contribute both theoretically by enriching the understanding of tax avoidance determinants and practically by offering insights to strengthen tax oversight and promote the application of sound corporate governance as a mechanism to curb tax avoidance.

The boundaries of this study focuses exclusively on the manufacturing sector, given its critical role in national tax contributions and its distinctive operational features that may facilitate tax avoidance behavior. The data analyzed are drawn from the audited financial statements of these firms, with particular attention paid to corporate governance's intermediary role in the correlation amongst financial performance and corporate tax avoidance.

2. Literature Review

This section presents a comprehensive review of the latest developments in research related to tax avoidance. There are multiple approaches to constructing a state of the art discussion. One approach involves reviewing prior studies by examining their research focus, methodologies, and findings, which helps identify areas where the current study differs or seeks to contribute. Another approach is to integrate theoretical frameworks with existing literature, organizing each theory into specific subsections for deeper exploration.

Agency theory offers valuable insights into the issue of tax avoidance by highlighting the inherent conflicts between corporate management and external entities such as the government. These conflicts often stem from differing goals and information asymmetries. Tax avoidance itself is a lawful approach adopted by firms to minimize tax obligations by utilizing loopholes within tax laws. This behavior is shaped by various internal financial factors and is significantly influenced by how well a company implements corporate governance. Effective governance structures, particularly those involving independent oversight bodies, are seen as a deterrent to aggressive tax practices (Ghozali, 2021; Asih & Darmawati, 2022).

Key financial indicators—such as profitability, leverage, firm size, inventory intensity, and sales growth—are frequently associated with tax avoidance behaviors. Companies with high profitability levels often seek to preserve earnings by minimizing tax expenses (Fitrianingrum & Setiawati, 2022). Similarly, firms with greater leverage may exploit the tax deductibility of interest expenses to lower their tax burden (Putra & Putri, 2024). Larger firms tend to have the capacity and expertise to navigate tax systems effectively (Putri et al., 2025). On the other hand, a high proportion of inventory to total assets may reduce profit margins, prompting tax avoidance strategies (Komalasaria & Suharna, 2024). Companies experiencing rapid sales growth may also resort to tax planning to ensure consistent profit levels (Amaliah & Triono, 2024). Within this context, corporate governance serves as a moderating factor that shapes the extent to which these financial variables impact tax avoidance. Strong governance practices are expected to restrain unethical tax strategies (Ghozali, 2021).

3. Proposed Method

This analysis utilizes a quantitative methodology with panel data analysis, combining both longitudinal and cross-sectional datasets. This method allows for the examination of temporal dynamics alongside variations among different manufacturing companies concurrently. The study centers on a sample of 65 manufacturing firms listed on the Indonesia Stock Exchange (IDX) during the years 2020 to 2024. Samples were chosen using conducted through purposive sampling, prioritizing firms with consistently available audited annual financial statements and comprehensive data required to assess all relevant variables in the analysis.

This study investigates a set of primary variables, including profitability, leverage, sales growth, and inventory intensity as independent factors; tax avoidance as the dependent outcome; and corporate governance serving as a moderating variable. Corporate governance is measured by the ratio of independent commissioners within the company's governance framework. These variables were chosen based on their established significance in previous research highlighting their impact on tax avoidance and the critical moderating function of governance in promoting ethical financial behavior.

The data in this research were obtained using a documentary method, through the use of audited annual financial records sourced from the Indonesia Stock Exchange (IDX) official platform. The analysis began with descriptive statistics to present an overview of the dataset's key characteristics. This was followed by several classical assumption tests—such as normality, multicollinearity, autocorrelation, and heteroscedasticity—to ensure the reliability of the regression model. To assess the stationarity of the panel data over time, the Augmented Dickey-Fuller (ADF) test was applied. Furthermore, the Johansen cointegration test was utilized to examine whether long-term equilibrium relationships exist among the variables analyzed.

To identify the most suitable panel data model for this study, several statistical tests were employed, including the Chow test, Hausman test, and Lagrange Multiplier (LM) test. These procedures were used to determine whether the Common Effect Model, Fixed Effect Model, or Random Effect Model provided the best fit for the dataset. Following the model selection process, the analysis was carried out using multiple linear regression along with Moderated Regression Analysis (MRA) to evaluate both the direct impact of the independent variables on tax avoidance and the moderating role of corporate governance in these relationships.

The evaluation of the model was conducted using the coefficient of determination (R^2) to assess the model's explanatory strength, complemented by the F-test for overall model significance and the t-test for examining the significance of individual variables. This comprehensive analytical approach was designed to offer a deeper insight into the combined effects of financial indicators and corporate governance structures on tax avoidance behavior among manufacturing firms operating in Indonesia.

4. Results and Discussion

Table 1. Descriptive Statistics.

	Y	X1	X2	X3	X4	X5	Z
Mean	0.237142	0.093297	0.630276	28.86717	0.187289	0.098619	0.380773
Median	0.231300	0.070173	0.428952	28.76171	0.155455	0.064691	0.333333
Maximum	0.537039	0.363621	3.928398	32.93787	0.647464	1.110759	0.666667
Minimum	0.004566	0.004472	0.018241	25.07900	0.002151	-0.517080	0.166667
Std. Dev.	0.112333	0.074232	0.682145	1.455970	0.133510	0.227391	0.091328
Skewness	0.111182	1.267180	2.420716	0.490965	1.245630	1.129296	0.305035
Kurtosis	2.781323	4.343881	9.892284	3.488461	4.312550	5.958150	2.807683
Jarque-Bera	1.317144	111.4344	960.6872	16.28765	107.3741	187.5776	5.540853
Probability	0.517590	0.000000	0.000000	0.000291	0.000000	0.000000	0.062635
Sum	77.07107	30.32161	204.8398	9381.831	60.86894	32.05121	123.7512
Sum Sq. Dev.	4.088435	1.785386	150.7641	686.8314	5.775262	16.75293	2.702392
Observations	325	325	325	325	325	325	325

Source: Processed Data from Eviews 12, 2025

The descriptive statistics reveal that the Tax Avoidance variable (Y), measured by the CETR ratio, shows a mean of 0.237 and a standard deviation of 0.112, reflecting moderate variation in tax avoidance practices among the companies analyzed. Profitability (X1) shows an average of 0.093 with a relatively small standard deviation of 0.074, and a positive skewness of 1.26, indicating that profitability data are right-skewed. The leverage variable (X2) records a mean of 0.630, accompanied by a high standard deviation of 0.682, as well as a significant skewness of 2.42 and kurtosis of 9.89, suggesting a markedly non-normal distribution and substantial variability in the firms' capital structures.

The Firm Size variable (X3) has an average value of 28.867 with a standard deviation of 1.456, indicating that company sizes within the sample are fairly consistent, though some variability is still present. Inventory Intensity (X4) shows a mean of 0.187 and a standard deviation of 0.134, highlighting significant differences in how firms manage their inventory. Sales Growth (X5) exhibits notable volatility, with an average of 0.099 and a relatively large standard deviation of 0.227, spanning from a low of -0.517 to a high of 1.111, demonstrating the presence of both declining and expanding sales patterns. Finally, the Corporate Governance variable (Z), represented by the proportion of independent commissioners, has a mean of 0.381 (38.08%) and a standard deviation of 0.091, indicating moderate variation in the quality of governance among the companies while maintaining a generally stable distribution.

The findings derived from the panel data regression utilizing the random effects model are presented as follows

Table 2. Results of Multiple Regression Test Using Panel Data – Random Effect Model.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.098928	0.164321	0.602042	0.5476
X1	-0.370924	0.108555	-3.416925	0.0007
X2	-0.036727	0.011727	-3.131782	0.0019
X3	0.008048	0.005626	1.430496	0.1536
X4	-0.159308	0.055377	-2.876783	0.0043
X5	-0.066244	0.024027	-2.757025	0.0062

Source: Processed Data from Eviews 12, 2025

Based on the panel data regression results, the following equation was obtained:

$$CETR = 0.098928 - 0.370924X1 - 0.036727X2 + 0.008048X3 - 0.159308X4 - 0.066244X5$$

The findings reveal that the majority of the determinants in the model exhibit a negative association with the Corporate Effective Tax Rate (CETR), a rise reflecting heightened tax avoidance activities among firms. Specifically, profitability (X1) has a negative coefficient of -0.370924, suggesting that a one-unit rise in profitability corresponds to a decrease of 0.370924 points in CETR, assuming other factors remain unchanged. This result implies that companies achieving superior profit margins frequently involve themselves more intensively in tax avoidance.

Similarly, leverage (X2) demonstrates a negative coefficient of -0.036727, reflecting that firms with greater debt levels tend to report lower CETR values. This aligns with the theoretical notion that interest expenses on debt act as tax shields, encouraging tax avoidance practices. Conversely, firm size (X3) has a positive coefficient of 0.008048; however, this effect is statistically insignificant. Although larger firms are generally expected to be more compliant with tax regulations, this study finds no meaningful impact of firm size on tax avoidance.

The inventory intensity variable (X4) shows a negative coefficient of -0.159308, indicating that firms with a higher ratio of inventory to total assets tend to have lower CETR, implying greater engagement in tax avoidance. Likewise, sales growth (X5) also exhibits a negative coefficient of -0.066244, suggesting that firms experiencing higher sales growth are more prone to aggressive tax planning, as evidenced by reduced CETR.

In summary, four out of the five predictor variables profitability, leverage, inventory intensity, and sales growth demonstrate a significant negative relationship with CETR, reinforcing their role as drivers of tax avoidance. Firm size, however, does not show a statistically a meaningful contribution to tax avoidance behavior within the context of this study.

Table 3. Results of Moderated Regression Analysis (MRA) – Panel Data with Random Effect Model.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.230847	0.025190	9.164336	0.0000
X1_Z	-0.910106	0.265886	-3.422914	0.0007
X2_Z	-0.069317	0.026807	-2.585743	0.0102
X3_Z	0.007743	0.002431	3.184740	0.0016
X4_Z	-0.311225	0.143274	-2.172238	0.0306
X5_Z	-0.173124	0.062382	-2.775228	0.0058

Root MSE	0.079660	R-squared	0.173505
Mean dependent var	0.128562	Adjusted R-squared	0.160550
S.D. dependent var	0.087758	S.E. of regression	0.080405
Sum squared resid	2.062347	F-statistic	13.39343
Durbin-Watson stat	1.834006	Prob(F-statistic)	0.000000

Source: Processed Data from Eviews 12, 2025

From the evidence gathered from the panel data regression conducted with the random effects model, as presented in the table, it was observed that corporate governance (cg), evaluated using the ratio of independent commissioners demonstrates a notable moderating role in the relationship between financial variables and tax avoidance practices, as measured by the Corporate Effective Tax Rate (CETR). The constant value of 0.230847 indicates that when all interaction terms between CG and financial variables are zero, the baseline level of tax avoidance is at that value.

The interaction coefficients between CG and the variables of profitability, leverage, inventory intensity, and sales growth show positive and significant effects on CETR. This indicates that in companies with good corporate governance (i.e., a high proportion of independent commissioners), increases in profitability, leverage, inventory intensity, and sales growth further reduce CETR, thereby strengthening the company's tendency to engage in tax avoidance. In other words, Corporate Governance—through the presence of independent commissioners—not only serves a supervisory role, but also appears to enhance the firm's ability to conduct aggressive tax planning with respect to these financial aspects.

Conversely, the interaction between firm size and CG yields a positive and significant coefficient, indicating that in large companies with a more substantial presence of independent commissioners, CETR actually increases. The escalation in CETR reflects a decline in tax avoidance practices, suggesting that CG plays an effective role in restraining tax avoidance in larger firms. These findings highlight that the role of Corporate Governance is not uniform or one-dimensional, but rather depends on the financial characteristics and size of the firm.

Overall, the regression model explains approximately 17.35% of the variation in tax avoidance practices, with statistically significant results. The Durbin-Watson value being close to 2 indicates no serious issue of residual autocorrelation, thereby supporting the reliability of the estimation.

As indicated by the outcomes presented above, The analysis supports the following conclusions regarding the research hypotheses:

Table 4. Hypothesis Testing Results.

No	Hypothesis	Result	Explanation
H1	Profitability has a positive effect on tax avoidance	Accepted	Positive effect
H2	Leverage has a positive effect on tax avoidance	Accepted	Positive effect
H3	Firm size has a positive effect on tax avoidance	Rejected	No significant effect
H4	Inventory intensity affects tax avoidance	Accepted	Positive effect
H5	Sales growth has a positive effect on tax avoidance	Accepted	Positive effect
H6	Corporate governance moderates the effect of profitability on tax avoidance	Accepted	Strengthens the effect
H7	Corporate governance moderates the effect of leverage on tax avoidance	Accepted	Strengthens the effect
H8	Corporate governance moderates the effect of firm size on tax avoidance	Accepted	Weakens the effect
H9	Corporate governance moderates the effect of inventory intensity on tax avoidance	Accepted	Strengthens the effect
H10	Corporate governance moderates the effect of sales growth on tax avoidance	Accepted	Strengthens the effect

6. Conclusions

The findings reveal that profitability, leverage, inventory intensity, and sales growth significantly decrease the Corporate Effective Tax Rate (CETR), indicating that firms exhibiting these traits are more likely to practice tax avoidance. Meanwhile, firm size does not show a meaningful impact. Corporate Governance (CG), represented by the share of independent commissioners, serves as a moderating factor that enhances the effect of financial variables on tax avoidance, while simultaneously diminishing this behavior among larger companies. Thus, CG functions not only as an oversight mechanism but also shapes tax planning approaches in relation to the specific characteristics of the firm.

The implication is that companies need to strengthen corporate governance to manage tax avoidance risks, while policymakers are advised to formulate regulations considering internal company factors and promote the enhancement of CG. Future research should expand variables and data scope to gain a more comprehensive understanding of tax avoidance practices.

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