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Tax Avoidance, Risk, and Profitability Shaping Debt Costs in Emerging Market Manufacturing Companies Listed on IDX

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ABSTRACT

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Introduction/Main Objectives: This study examines whether tax avoidance, tax risk, and profitability affect the cost of debt of food and beverage manufacturing companies listed on the Indonesia Stock Exchange during 2020–2024. **Novelty:** The study integrates tax avoidance, tax risk, and profitability in one panel-data model and focuses on the food and beverage subsector during a period marked by post-pandemic financial adjustment. **Research Methods:** Secondary data were obtained from annual financial statements. Purposive sampling produced eight companies and 40 firm-year observations. Tax avoidance was proxied by Cash Effective Tax Rate (CETR), tax risk by the standard deviation of CETR, profitability by Return on Assets (ROA), and cost of debt by interest expense relative to total debt. The data were analyzed using panel regression with EViews 13 and a Fixed Effect Model. **Finding/Results:** Tax avoidance and tax risk do not have significant partial effects on the cost of debt, whereas profitability has a significant effect. The three variables jointly have a significant effect on the cost of debt. **Conclusion:** Creditors appear to assess financing risk more comprehensively, with profitability providing a stronger individual signal than the two tax-related variables.

1. Introduction

Financing decisions are a crucial aspect of corporate financial management, as the use of debt entails consequences such as interest expenses and obligations to repay the principal. For manufacturing firms, the cost of debt reflects not only the price of financing but also creditors' perceptions regarding the company's ability to meet its obligations. When perceived risk rises, creditors have grounds to demand a higher rate of return. Consequently, it is important to examine factors that can alter creditors' risk perceptions, including tax policies and the company's financial performance.

The food and beverage (F&B) subsector provides a theoretically relevant empirical setting for examining the relationship between tax avoidance, tax risk, profitability, and the cost of debt. Unlike a general reference to continuous consumer demand, the selection of this subsector can be justified by the financial and operational characteristics that may influence corporate borrowing costs. F&B companies typically manage inventories of raw materials and finished products, face exposure to fluctuations in input prices, and must finance production, distribution, and other operating activities. These characteristics can create varying working-capital requirements and financing needs, making the cost and availability of debt important considerations in corporate financial management. Furthermore, differences in tax planning strategies, uncertainty surrounding tax obligations, and the capacity to generate profits may affect how creditors assess a company's ability to meet its contractual obligations. The relevance of these factors is reflected in the preliminary descriptive evidence from the eight sample companies. Their average cost of debt declined from 4.68% in 2020 to 2.46% in 2024, whereas the average Cash Effective Tax Rate (CETR), used in this study as a proxy for tax avoidance, fluctuated considerably, falling from 29.44% in 2020 to 16.81% in 2022, increasing to 46.21% in 2023, and declining again to 17.70% in 2024. Meanwhile, tax risk also fluctuated, and profitability ranged from 10.25% to 14.56%. These

descriptive patterns suggest that financing costs and corporate tax and profitability indicators did not necessarily change in parallel during the observation period. Accordingly, the F&B subsector offers a specific context for investigating whether tax avoidance, tax risk, and profitability are associated with the cost of debt among Indonesian listed companies. Nevertheless, these aggregate trends are descriptive rather than causal evidence; the proposed relationships must be established through empirical testing.

Tax avoidance can provide benefits in the form of tax expense efficiency and increased after-tax cash flow. However, from a creditor's perspective, corporate tax strategies may also provide information about a company's financial risk and management quality. Previous studies have reported mixed findings regarding the relationship between tax avoidance, tax risk, and the cost of debt. Kovermann (2018) found that tax avoidance is associated with a lower cost of debt, whereas tax risk actually increases the cost of debt. These findings suggest that creditors distinguish between the benefits of tax savings and the uncertainty associated with tax-related risks. In contrast. In Indonesia, Zamifa et al. (2022) found that tax avoidance has no significant effect on the cost of debt, while tax risk has a significant positive effect. Similarly, Safitri et al. (2025) reported that tax avoidance and tax risk do not have significant individual effects on the cost of debt, although they jointly affect it. The differences in these findings indicate that the relationship between corporate tax strategies and the cost of debt remains inconclusive and may vary across institutional contexts and research settings. In particular, the insignificant individual effect of tax avoidance reported in Indonesian studies contrasts with the negative relationship identified by Kovermann (2018). Furthermore, the findings concerning tax risk suggest that creditors may be more sensitive to uncertainty in tax outcomes than to tax avoidance itself. Nevertheless, the differences in the reported results warrant further investigation into the distinct and joint effects of tax avoidance and tax risk on the

cost of debt, particularly in the Indonesian context. Therefore, this study seeks to address the existing research gap by examining both tax avoidance and tax risk, individually and simultaneously, to provide further evidence regarding their relationship with the cost of debt.

These divergent findings indicate that the relationship between tax policy and the cost of debt remains inconclusive. Such differences may arise from variations in industry characteristics, observation periods, sample sizes, variable proxies, and economic conditions. Beyond tax factors, a company's ability to generate profit also potentially influences creditor assessments. Strong profitability reflects a company's capacity to manage assets effectively to generate earnings and secure internal resources for meeting obligations. However, the results obtained by Janah & Purwanto (2024) indicate that profitability had no significant impact on the cost of debt within their sample of companies. These contrasting findings reinforce the rationale for re-examining this relationship specifically within the food and beverage sub-sector.

Although previous studies have examined tax avoidance and tax risk in relation to the cost of debt, further investigation is warranted regarding the role of profitability alongside these tax-related variables. Profitability may provide creditors with additional information about a company's ability to generate earnings and service its debt. Furthermore, prior research has already examined tax avoidance and tax risk in Indonesian food and beverage manufacturing companies, including studies covering the 2019–2023 period. Therefore, the contribution of the present study lies in examining tax avoidance, tax risk, and profitability within a single empirical framework for food and beverage manufacturing companies listed on the Indonesia Stock Exchange during 2020–2024. By evaluating the individual and simultaneous effects of these three variables, this study aims to provide additional evidence on how tax-related strategies, tax uncertainty, and earnings performance are

associated with corporate borrowing costs in the Indonesian context.

2. Literature Review

2.1 Agency theory

Agency theory is a dominant grand theory in accounting and finance literature due to its ability to explain the economic behavior of organizational actors within the framework of contractual relationships (Ghozali, 2020). Agency theory explains the potential for a divergence of interests between those managing the company and those providing capital. In a financing relationship, creditors have an interest in ensuring that the company possesses both the ability and the willingness to meet its obligations. Information asymmetry prevents creditors from observing all of the company's internal decisions; consequently, they rely on financial information as a basis for risk assessment. In this context, tax policy and profitability can serve as part of the information used to evaluate management quality and debt repayment capacity.

Agency problems arise when managers who control information and decision-making tend to act opportunistically in their own self-interest (such as maximizing compensation, securing their positions, or minimizing personal risk) in ways that do not necessarily align with the shareholders' interest of maximizing firm value. This situation is exacerbated by information asymmetry, wherein managers possess more comprehensive and timely information regarding the company's financial condition, prospects, and risks than do owners and external parties, including creditors (Scott, 2022).

2.2 Cost of Debt

The cost of debt represents the effective cost a company incurs for utilising debt-based funding sources, encompassing periodic interest, transaction costs, fees, and other cost components inherent to the loan instrument. This indicator reflects creditors' perceptions of the company's ability to meet interest and principal repayment obligations upon maturity. The higher the risk level assessed by lenders, whether stemming from business, tax, or agency

risks, the higher the cost of debt charged. This concept aligns with the view that the cost of debt is a function of a company's fundamental characteristics and the quality of information available to the market regarding its financial condition (Graham et al., 2014).

2.3 Tax avoidance

Tax avoidance is an effort by taxpayers to minimize their tax liability by exploiting loopholes or weaknesses in prevailing tax regulations without explicitly violating legal provisions. This practice is typically carried out through systematically designed tax planning strategies aimed at reducing a company's tax obligations to the lowest possible level, while remaining within the legal boundaries permitted by tax laws (Richardson, 2021).

In this study, tax avoidance is proxied by the Cash Effective Tax Rate (CETR), defined as the ratio of cash taxes paid to pre-tax income. A lower CETR value indicates a higher level of tax avoidance intensity. Conceptually, reducing tax payments can increase after-tax cash flows and potentially strengthen debt repayment capacity. Conversely, aggressive tax practices can heighten risk and uncertainty for creditors. Kovermann (2018) demonstrates that tax avoidance and tax risk have differing consequences for the cost of debt, whereas Zamifa et al. (2022) find that tax avoidance does not significantly affect the cost of debt. Given this inconsistency in the evidence, this study tests the following hypothesis:

H1: Tax avoidance has a significant effect on the cost of debt.

2.4 Tax risk and cost of debt

In the context of modern accounting, tax risk is viewed not merely as compliance risk but also as part of a broader financial risk that must be strategically managed by the company (Wilde & Wilson, 2021).

Tax risk refers to the uncertainty associated with a company's tax position. In this study, tax risk is measured using the standard deviation of the Cash Effective Tax Rate (CETR). Greater CETR fluctuation indicates higher uncertainty regarding the

company's tax position. Theoretically, this uncertainty can heighten creditors' risk perceptions, as potential tax adjustments or unexpected fiscal liabilities could impact cash flows. Kovermann (2018) found a positive effect of tax risk on the cost of debt, whereas Safitri et al. (2025) found an insignificant partial effect. These differing findings provide the basis for re-examination.

H2: Tax risk has a significant effect on the cost of debt.

2.5 Profitability and cost of debt

Profitability reflects a company's ability to generate earnings from the resources it manages. Ross et al. (2019) emphasise that a firm's financial performance is relevant to creditors' assessment of its capacity to fulfil contractual obligations. Companies with stronger profitability may be perceived as having a greater ability to generate sufficient cash flows to meet interest and principal payments, potentially reducing creditors' perceived credit risk and affecting the cost of debt. In this study, profitability is included as a control variable and measured using Return on Assets (ROA), calculated as net income divided by total assets. Its inclusion is intended to account for differences in firms' earnings performance when examining the relationships between tax avoidance, tax risk, and the cost of debt. This approach is important because profitability may be associated with both corporate tax outcomes and creditors' assessments of repayment capacity. By controlling for profitability, the analysis can more clearly assess the relationships between the primary tax-related variables and the cost of debt, conditional on differences in firms' financial performance. Previous studies have reported mixed findings regarding the relationship between profitability and the cost of debt. Widiarti & Winedar (2021) found that profitability influences the cost of debt, whereas Janah & Purwanto (2024) reported an insignificant effect. These inconsistent findings further support the inclusion of profitability as a control variable rather than treating it as the primary focus of the present study. Accordingly, profitability is incorporated into the empirical model

to account for differences in financial performance, while the main analysis focuses on tax avoidance and tax risk in explaining the cost of debt.

H3: Profitability has a significant effect on the cost of debt.

2.6 Simultaneous effect

The cost of debt is the outcome of an assessment of a company's overall risk profile and financial condition. Tax avoidance, tax risk, and profitability do not operate in isolation, as together they reflect tax policy, fiscal uncertainty, and the capacity to generate profit. Therefore, even if certain variables do not show an individual effect, the combination of the three can still explain variations in the cost of debt.

H4: Tax avoidance, tax risk, and profitability simultaneously have a significant effect on the cost of debt.

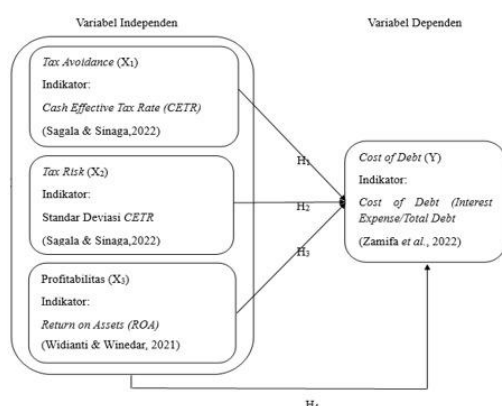


Figure 1. Research Model

3. Method, Data, and Analysis

Table 1. Operational Variables

Variable	Indicator	Reference
Tax Avoidance	Tax Paid in Cash Profit Before Tax	(Sagala & Sinaga, 2022)
Tax Risk	Standard Deviation Tax Avoidance in Year t	(Sagala & Sinaga, 2022)
Profitability	Net Income Total Assets	(Widianti & Winedar, 2021)
Cost of Debt	Interest Expense Total Debt	(Zamifa et al., 2022)

Source: Processed data (2026)

This study employs a quantitative approach with an associative design. The unit of analysis consists of manufacturing companies in the food and beverage sub-sector listed on the Indonesia Stock Exchange during the 2020–2024 period.

The population comprises 27 companies. A purposive sampling method was used, based on the availability of financial statements and the data required to calculate all research variables. The selection process yielded eight companies with a five-year observation period, resulting in 40 firm-year observations. The sample companies are ADES, AISA, MLBI, MYOR, SKBM, SKLT, TBLA, and ULTJ.

Table 2. Sampling Criteria

No	Sampling Criteria	Accepted	Rejected
1	Food and beverage manufacturing companies listed on the Indonesia Stock Exchange for the 2020–2024 period.	27	0
2	Companies included based on the general entry criteria.	15	12
3	Manufacturing companies that did not provide data for the research variables—namely tax avoidance, tax risk, profitability, and cost of debt—continuously throughout the 2020–2024 period.	8	7
Number of Samples 8 x 4 = 40 observations			

According to Creswell (2021), in quantitative research, an adequate sample size is not necessarily determined by a large absolute number, but rather by its alignment with the research design, analysis techniques, and the availability of relevant data. Creswell emphasizes that studies utilizing secondary data or involving limited populations can still employ relatively small samples, provided they meet the criteria of being representative and relevant to the research objectives.

The analysis involved descriptive statistics, tests for multicollinearity and heteroscedasticity, and the selection of a panel data model using the Chow, Hausman, and Lagrange Multiplier tests. Based on

the study's final results, the Fixed Effect Model (FEM) was used for regression interpretation. The resulting regression equation is:

$$Y = 0.013143 + 0.014157X_1 - 0.007321X_2 + 0.202302X_3 + \varepsilon \quad (1)$$

Hypothesis testing was conducted using the t-test for partial effects, the F-test for simultaneous effects, and the adjusted R-squared to assess the model's ability to explain variations in the cost of debt. A significance level of 5% was used.

4. Results and Discussion

4.1 Descriptive statistic

A total of 40 observations were used in the analysis. The cost of debt had a mean of 0.034935 and a standard deviation of 0.028396. Tax avoidance had a mean of 0.257750 and a standard deviation of 0.345415, indicating relatively large variation across companies. Tax risk had a mean of 0.676800 and a standard deviation of 0.994031.

Table 3. Descriptive statistics of research variables

Variable	Mean	Median	Maximum	Minimum	Std. Dev
Y	0.034935	0.034500	0.120000	0.000100	0.028396
X ₁	0.257750	0.202000	2.138000	-0.132000	0.345415
X ₂	0.676800	0.522000	5.416000	-1.884000	0.994031
X ₃	0.114175	0.114175	0.599000	-0.045000	0.120320

Source: Processed data (2026)

Regarding the tax risk variable (X₂), its measurement requires further clarification because the calculation is related to the tax avoidance measure used in this study. Tax avoidance and tax risk represent different concepts and should be distinguished in their operational definitions. Tax avoidance reflects the extent to which a company reduces its tax burden relative to the applicable tax benchmark, whereas tax risk generally captures uncertainty or variability in a company's tax outcomes. Therefore, a zero value for tax risk should not automatically be interpreted as the absence of tax avoidance or tax-related risk without considering the specific measurement formula. Based on the descriptive statistics, tax risk has a mean of 0.676800, a median of 0.522000, a maximum of 5.416000, a minimum of -1.884000, and a standard

deviation of 0.994031. These results indicate considerable variation in the observed tax risk values. Since the reported minimum is negative rather than zero, the descriptive statistics do not establish that the minimum value of tax risk is zero. Accordingly, the calculation of tax risk and any observations with a value of zero should be verified against the underlying data and the operational definition employed in this study.

Profitability had a mean of 0.114175 and a standard deviation of 0.120320. The negative minimum value for profitability indicates the presence of observations where companies incurred losses.

4.2 Panel Data Model Selection Test

According to Baltagi (2021), the Chow test aims to test for the presence of individual effects in a panel data model. It is used to determine whether the Common Effect Model or the Fixed Effect Model is the more appropriate choice. The decision-making process is based on the probability value. The Chow test results indicate a probability value of 0.0000. Since 0.0000 is less than 0.05, the Fixed Effect Model (FEM) is the selected estimation model.

According to Gujarati & Porter (2021), the Hausman test is conducted to determine whether individual effects are correlated with the independent variables in a regression model. The test is used to select the best model between the Fixed Effect Model and the Random Effect Model. The Hausman test results indicate a probability value of 0.0023. Since 0.0023 is less than 0.05, the Fixed Effect Model (FEM) is the selected estimation method.

According to Wooldridge (2021), the LM test is used to determine whether a random effects model performs better than a standard pooled model in a panel data context. The Lagrange Multiplier test is employed to select the best model between the Common Effect Model and the Random Effect Model. The LM test results indicate a probability value of 0.0023. Since this value is less than 0.05, the Random Effect Model (REM) is the selected model.

Table 4. Model Selection Matrix

Testing	CEM	FEM	REM	Remarks
Chow Test		V		FEM
Hausman Test		V		FEM
LM Test			v	REM

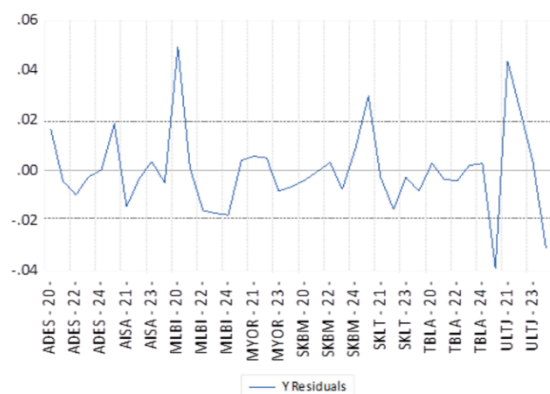
Based on the Chow, Hausman, and LM tests conducted, the Fixed Effect Model (FEM) emerges as the best and most suitable estimation model for this study.

4.3 Classical Assumption Test

Based on the results of the Chow and Hausman tests, the best model for this study is the Fixed Effects Model (FEM). Since the selected model is the FEM (estimated via Ordinary Least Squares), the classical assumption tests required for panel data regression using the OLS approach are those for heteroscedasticity and multicollinearity (Napitupulu et al., 2021).

4.3.1 Heteroskedasticity Test

The heteroskedasticity test results shown in Figure indicate that the residual plot (blue) does not exceed the limits of 500 and -500; instead, the values fall within the range of 490 and -390. This demonstrates that the residual dispersion remains within reasonable limits and does not exhibit a pattern of extreme variance deviation. Consequently, it can be concluded that the regression model in this study does not suffer from heteroskedasticity.

**Figure 2.** Heteroskedasticity Test Results

The absence of heteroskedasticity implies that the variance of the residuals (or errors) is constant across all observations (homoskedasticity), allowing the regression model to yield superior, efficient, and accurate estimates. This condition indicates that prediction errors within the model do not systematically increase or decrease at specific values. According to Napitupulu et al. (2021), a robust regression model is one free from heteroskedasticity meaning the residual variance remains constant across observations thereby enhancing the reliability of the regression estimates (Napitupulu et al., 2021).

4.3.2 Multicollinearity Test

Based on Table 5 below, it can be observed that the correlation between the tax avoidance variable (X1) and tax risk (X2) is -0.154621; the correlation between tax avoidance (X1) and profitability (X3) is -0.159213; and the correlation between tax risk (X2) and profitability (X3) is 0.626365.

Table 5. Multicollinearity Test Results

	X ₁	X ₂	X ₃
X ₁	1.000000	-0.154621	-0.159213
X ₂	-0.154621	1.000000	0.626365
X ₃	-0.159213	0.626365	1.000000

Source: Processed data (2026)

All correlation values between the independent variables fall below the tolerance threshold of < 10; therefore, it can be concluded that there is no multicollinearity among the independent variables X1, X2, and X3. Consequently, this regression model is suitable for use in hypothesis testing (Napitupulu et al., 2021)

4.4 Panel Data Regression Analysis Results

The results of the panel data regression test using the Fixed Effect Model (FEM) are as follows:

Table 6. Fixed Effect Model regression results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.013143	0.005905	2.225876	0.0340
X ₁	0.014157	0.010224	1.384644	0.1767
X ₂	-0.007321	0.005539	-1.321686	0.1966
X ₃	0.202302	0.055126	3.669802	0.0010

Source: Processed data (2026)

Based on the panel data regression test results shown in Table 6, it can be concluded that the panel data regression equation model for this study is:

$$Y = 0.013143 + 0.014157X_1 - 0.007321X_2 + 0.202302X_3 + e$$

The explanation is as follows:

- The constant value (a) obtained is 0.013143, meaning that if the independent variables increase by one unit uniformly, the dependent variable will increase by 0.013143.
- For variable X_1 (Tax Avoidance), the regression coefficient obtained is 0.014157, meaning that if variable X_1 (Tax Avoidance) increases, variable Y (Cost of Debt) will also increase by 0.014157.
- For variable X_2 (Tax Risk), the regression coefficient obtained is -0.007321 (indicating a negative effect), meaning that if variable X_2 (Tax Risk) decreases, variable Y (Cost of Debt) increases by -0.007321.
- For variable X_3 (Profitability), the regression coefficient obtained is 0.202302, meaning that if variable X_3 (Profitability) increases, variable Y (Cost of Debt) will also increase by 0.202302.

4.5 Hypothesis Test Results

4.5.1 t-test Results

The partial effect of the independent variables on the dependent variable is as follows (Ghozali, 2021):

- The calculated t-test probability value for variable X_1 is $0.1767 > 0.05$; therefore, H_1 is rejected, meaning Tax Avoidance does not have a significant effect on the Cost of Debt.

Table 7. t-test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.013143	0.005905	2.225876	0.0340
X_1	0.014157	0.010224	1.384644	0.1767
X_2	-0.007321	0.005539	-1.321686	0.1966
X_3	0.202302	0.055126	3.669802	0.0010

Source: Processed data (2026)

- The calculated t-test probability value for variable X_2 is $0.1966 > 0.05$; therefore, H_2 is rejected, meaning Tax Risk does not have a significant effect on the Cost of Debt.
- The calculated t-test probability value for variable X_3 is $0.0010 < 0.05$; therefore, H_3 is

accepted, meaning Profitability has a significant effect on the Cost of Debt.

4.5.2. F-Test Results

Table 8. F-Test Results

Cross-section fixed (dummy variables)			
R-squared	0.655781	Mean dependent var	0.034935
Adjusted R-squared	0.537085	S.D. Dependent var	0.028396
S.E. of regression	0.019320	Akaike info criterion	-4.826935
Sum squared resid	0.010825	Schwarz criterion	-4.362493
Log likelihood	107.5387	Hannan-Quinn criter.	-4.659007
F-statistic	5.524881	Durbin-Watson stat	1.726017
Prob (F-statistic)	0.000141		

Source: Processed data (2026)

Based on Table 8 above, it can be seen that the probability value is 0.000141 (< 0.05); therefore, H_4 is accepted, meaning that Tax Avoidance, Tax Risk, and Profitability have a significant effect on the Cost of Debt (Ghozali, 2021).

4.5.3. Coefficient of Determination (R^2) Test Results

Based on Table 8 above, it can be seen that the adjusted R-squared value is 0.537085, or 53.7085%. This coefficient of determination value indicates that the independent variables comprising Tax Avoidance, Tax Risk, and Profitability explain 53.7085% of the variation in the COD variable, while the remaining 46.2915% (100% adjusted R-squared value) is explained by other variables not included in this research model (Ghozali, 2021).

The Effect of Tax Avoidance on the Cost of Debt

Based on the partial test results (t-test), the tax avoidance variable has a probability value of 0.1767, which is greater than the significance level of 0.05. These results indicate that tax avoidance does not have a significant effect on the cost of debt; therefore, the first hypothesis (H_1) is rejected. The findings suggest that the level of tax avoidance practiced by the companies is not yet a primary factor considered by creditors when determining the cost of debt. Although tax avoidance is often associated with aggressive tax practices and

potential financial risks, in the context of manufacturing companies within the food and beverage sub-sector, creditors appear to place greater emphasis on fundamental company conditions such as profitability, cash flow stability, liquidity levels, and the ability to meet debt repayment obligations.

The regression results indicate that tax avoidance does not have a statistically significant effect on the cost of debt. This finding can be examined further through the observed data from the sampled companies. For example, ADES recorded an increase in the tax avoidance measure from 0.114 in 2020 to 0.223 in 2023, while its cost of debt decreased from 0.003 to 0.001 over the same period. Similarly, MYOR's tax avoidance measure decreased from 0.229 in 2020 to 0.144 in 2023, while its cost of debt declined from 0.044 to 0.036. These observations show that changes in tax avoidance did not consistently correspond to changes in the cost of debt across the selected companies. In ADES, the increase in tax avoidance coincided with a decrease in borrowing costs, whereas MYOR experienced decreases in both measures during 2020–2023. Such differences illustrate the varying patterns in the sample and are consistent with the possibility that tax avoidance alone does not adequately explain differences in the cost of debt. However, these company-level observations are descriptive and do not independently establish the statistical relationship between the variables. The insignificant regression result is consistent with the findings of Zamifa *et al.* (2022), who reported that tax avoidance did not significantly affect the cost of debt.

From an agency theory perspective, the relationship between company management (agent) and creditors and shareholders (principal) often gives rise to conflicts of interest due to differences in goals and information held by each party. According to Scott (2022), agency theory explains that management has a tendency to make decisions that can maximize its own interests, while external parties want the company to be managed

optimally and transparently. Tax avoidance is a form of management policy in implementing tax efficiency in order to increase company profits. From a management perspective, tax avoidance practices can provide benefits in the form of tax savings, which can increase after-tax profits and increase the company's cash flow. However, for creditors, this practice can also be seen as an action that has the potential to increase agency risk, especially if it is carried out aggressively and lacks transparency. However, the results of this research show that tax avoidance does not have a significant effect on the cost of debt. This indicates that creditors in food and beverage subsector manufacturing companies do not use the level of tax avoidance as the main factor in determining the company's debt costs. Creditors are more likely to consider the company's ability to fulfill debt payment obligations rather than the company's tax strategy.

Although the findings diverge from earlier studies by Widiati & Winedar (2021) and Al-Refiay *et al.* (2025) which indicated that tax avoidance significantly affects the cost of debt they align with research by Zamifa *et al.* (2022), Lestari & Kusuma (2024), Safitri *et al.* (2025), and Hardianti & Darsita (2025). These studies found no significant impact of tax avoidance on the cost of debt, as creditors prioritize a company's fundamental conditions over its level of tax avoidance. Consequently, these results suggest that tax avoidance does not serve as a sufficiently strong signal to influence creditor perceptions of corporate risk or the determination of the cost of debt.

5. Discussions

5.1. The Effect of Tax Risk on the Cost of Debt

Based on the partial test results (t-test), the tax risk variable has a probability value of 0.1966, which is greater than 0.05. These results indicate that tax risk does not have a significant effect on the cost of debt; therefore, the second hypothesis (H2) is rejected. The findings suggest that corporate tax risk is not yet a dominant factor in creditors' assessments of a company's cost of debt. Tax risk essentially reflects uncertainty regarding corporate taxation such as

potential tax audits, regulatory changes, fiscal adjustments, or future tax disputes. However, in this study, such risk does not appear significant enough to influence creditors' decisions when determining loan interest rates.

The regression results indicate that tax risk does not have a statistically significant effect on the cost of debt. The company-level observations provide additional context for interpreting this result. For example, MLBI's tax risk measure increased from 0.240 in 2020 to 0.903 in 2024, while its cost of debt decreased from 0.043 to 0.013. In contrast, TBLA's tax risk measure decreased from 1.297 in 2020 to 0.325 in 2022, while its cost of debt increased slightly from 0.061 to 0.062. These contrasting patterns indicate that changes in the tax risk measure were not consistently accompanied by corresponding changes in the cost of debt across the selected companies. Nevertheless, these observations should be interpreted as descriptive evidence rather than proof that tax risk has no economic relevance to creditors. The regression result provides the formal statistical evidence regarding the relationship after accounting for the other variables included in the model. The finding differs from Zamifa *et al.* (2022), who reported a significant positive effect of tax risk on the cost of debt. This difference highlights the importance of examining the measurement of tax risk, the characteristics of the sampled companies, and the research model when interpreting the relationship between tax uncertainty and borrowing costs.

From an agency theory perspective, tax risk reflects a potential conflict of interest between management and external parties arising from the tax-related uncertainties a company faces. Tax risk can stem from tax audits, changes in tax regulations, fiscal adjustments, or tax disputes that could potentially impose additional financial burdens on the company in the future. Theoretically, creditors tend to avoid high-risk companies because such risk increases the likelihood of default. However, the results of this study indicate that tax risk does not significantly affect the cost of debt. This suggests

that corporate tax risk is not yet viewed as a primary risk factor influencing a company's ability to meet its debt obligations. This situation can be explained by the monitoring and control mechanisms creditors employ regarding the company. Creditors generally conduct a comprehensive analysis of a company's financial condition before granting a loan; thus, tax risk is not the sole factor in their assessment. Creditors likely prioritize profitability, liquidity, and operational stability over tax risk, which is inherently uncertain (Scott, 2022).

These findings contradict earlier research by Zamifa *et al.* (2022), which stated that tax risk has a significant positive effect on the cost of debt. Nevertheless, the results of this study support earlier research by Safitri *et al.* (2025) and Hardianti & Darsita (2025), who state that tax risk does not significantly affect the cost of debt because tax risk is not yet considered a dominant factor in creditors' decisions. The lack of a significant impact of tax risk on the cost of debt may also indicate that companies are able to manage tax risks effectively, thereby avoiding material impacts on their financial condition. Consequently, tax risk has not served as a sufficiently strong negative signal to heighten creditors' risk perception regarding the company. These findings support signaling theory, which posits that information quality and performance stability are crucial factors in shaping external perceptions. Creditors tend to prioritize signals regarding a company's ability to generate profit and maintain financial stability over tax-related uncertainties that do not necessarily have a direct impact on debt repayment capacity.

5.2. The Effect of Profitability on the Cost of Debt

Based on the partial test results (t-test), the profitability variable has a probability value of 0.0010, which is lower than the significance level of 0.05. These results indicate that profitability has a significant effect on the cost of debt; thus, the third hypothesis (H3) is accepted. The findings demonstrate that profitability is a crucial factor considered by creditors when determining a company's cost of debt. Companies with high

profitability demonstrate a strong ability to generate profits and cash flows, thereby being perceived as more capable of meeting interest and principal repayment obligations. Such conditions boost creditor confidence and lower the perceived risk of default.

The regression results indicate that profitability has a statistically significant effect on the cost of debt. The descriptive data show differences in profitability and borrowing costs across the sampled companies. For example, MLBI's profitability, measured by ROA, increased from 0.098 in 2020 to 0.332 in 2024, while its cost of debt decreased from 0.043 to 0.013. Conversely, TBLA's ROA decreased from 0.035 in 2020 to 0.025 in 2024, while its cost of debt remained relatively stable, increasing slightly from 0.061 to 0.062. These observations illustrate that profitability and the cost of debt do not exhibit an identical pattern across all companies. The statistically significant regression result indicates that profitability is associated with the cost of debt within the estimated model, although the direction of this association must be determined from the estimated coefficient. Therefore, the company-level observations provide context for the regression findings but should not be interpreted as establishing a causal relationship.

From an agency theory perspective, high profitability indicates that management is effectively managing the company's assets and operations to generate profit. High corporate earnings enhance the company's capacity to meet interest and principal repayment obligations, thereby reducing the risk faced by creditors. Profitability can also mitigate agency conflicts between management and creditors, as highly profitable companies are viewed as better able to maintain financial stability and avoid default. Conversely, companies with low profitability are often perceived as having higher financial risk; consequently, creditors charge a higher cost of debt to compensate for this risk (Scott, 2022).

These findings align with previous research by Widiyanti & Winedar (2021), which found that

profitability significantly affects the cost of debt because corporate earnings serve as a primary indicator in creditors' credit risk assessments. The results also support earlier research by Lestari & Kusuma (2024), stating that highly profitable companies tend to rely more on internal financing than on debt. High profitability indicates a company's ability to finance operations independently, thereby lowering the risks associated with debt usage. Companies with high profitability face lower default risk, making it easier for them to secure financing at a lower cost of debt.

Thus, the results of this study indicate that profitability serves as the strongest positive signal influencing creditors' perceptions of a company's risk level, compared to tax avoidance and tax risk.

5.3. The Influence of Tax Avoidance, Tax Risk, and Profitability on the Cost of Debt

Based on the F-test results, the probability value (Prob. F-statistic) is 0.000141, which is lower than the 0.05 significance level. Therefore, H4 is supported, indicating that tax avoidance, tax risk, and profitability are jointly statistically significant in explaining the cost of debt among food and beverage manufacturing companies listed on the Indonesia Stock Exchange during the 2020–2024 period. This result does not contradict the partial test findings, which indicate that tax avoidance and tax risk are individually insignificant, whereas profitability has a significant effect. The F-test evaluates the joint statistical significance of the explanatory variables, while the t-test evaluates the individual contribution of each variable conditional on the other variables in the model. Consequently, the significant F-test result does not imply that every explanatory variable has a statistically significant individual effect.

The company-level data provide further context for interpreting these findings. For example, MLBI recorded an increase in profitability, measured by return on assets (ROA), from 0.098 in 2020 to 0.332 in 2024. Over the same period, its cost of debt decreased from 0.043 to 0.013, while its tax risk measure increased from 0.240 to 0.903. This pattern

illustrates that changes in profitability and tax-related measures occurred alongside changes in borrowing costs, although the descriptive data alone cannot establish a causal relationship.

A different pattern can be observed in TBLA. Its profitability decreased from 0.035 in 2020 to 0.025 in 2024, while its cost of debt remained relatively stable, changing from 0.061 to 0.062. Meanwhile, its tax avoidance measure increased from 0.115 to 0.200, and its tax risk measure changed from 1.297 to 1.033. These observations demonstrate that the relationships among profitability, tax avoidance, tax risk, and the cost of debt are not uniform across companies. Such differences support the importance of examining these variables within a common empirical model rather than relying exclusively on individual company trends.

The data from AISA also illustrate substantial variation in the sample. In 2020, AISA recorded a profitability measure of 0.599 and a cost of debt of 0.120. In 2021, its profitability measure declined to 0.005, while its cost of debt decreased to 0.001. These figures indicate considerable changes in the company's financial ratios across the two years. However, because the observed changes do not follow a simple uniform pattern, they should be interpreted as evidence of heterogeneous financial conditions rather than proof that profitability or tax-related factors independently caused changes in borrowing costs.

Taken together, these company-level observations provide a factual context for the statistically significant F-test result. Differences in profitability and tax-related measures across the sampled firms may help explain why a model incorporating all three variables is statistically significant, even though tax avoidance and tax risk do not individually achieve statistical significance. Nevertheless, the F-test establishes the joint significance of the model's explanatory variables; it does not demonstrate that tax avoidance and tax risk each provide an independently significant contribution. Additional tests, such as a joint test of the coefficients of tax avoidance and tax risk, would

be required to determine whether these two variables are jointly significant after accounting for profitability.

From the perspective of agency theory, creditors evaluate borrowers by considering their overall financial condition and ability to meet contractual obligations. Profitability may provide information about a company's earnings-generating capacity, while tax avoidance and tax risk capture additional aspects of its tax-related decisions and potential uncertainty. The observed differences among MBLI, TBLA, and AISA illustrate why companies with different financial and tax profiles should be evaluated within a common analytical framework. In this context, the present findings provide evidence that tax avoidance, tax risk, and profitability are jointly significant in explaining the cost of debt in the estimated model, while the partial results indicate that profitability is the only individually significant variable among the three. This distinction is important when interpreting the findings and assessing their implications for corporate financing decisions.

According to Gujarati & Porter (2021), in multiple regression, it is quite possible for the F-test to be significant while some independent variables are not individually significant in the t-test. This occurs because the F-test measures the significance of the model as a whole, whereas the t-test measures only the individual contribution of each independent variable. Furthermore, Ghazali (2021) states that simultaneous significance indicates that the independent variables collectively possess the ability to explain variations in the dependent variable, even if not all independent variables are significant on a partial basis.

The results of this study align with prior research by Safitri et al. (2025), which found that tax avoidance and tax risk significantly affect the cost of debt, and by Widiyanti & Winedar (2021), which found that tax avoidance and profitability significantly affect the cost of debt. Therefore, the findings demonstrate that tax avoidance, tax risk, and profitability, in the aggregate, are capable of

explaining changes in the cost of debt for manufacturing companies in the food and beverage sub-sector during the study period.

6. Conclusion

This study finds that tax avoidance and tax risk do not have a significant partial effect on the cost of debt for food and beverage sub-sector manufacturing companies listed on the Indonesia Stock Exchange during the 2020–2024 period. Conversely, profitability has a significant effect on the cost of debt. When considered simultaneously, the three variables have a significant effect, and the model explains approximately 53.71% of the variation in the cost of debt after accounting for the model's degrees of freedom.

In practical terms, the research findings indicate that companies need to consider profitability as part of managing the cost of funding, as the ability to generate profit proved to be a significant variable in the model. Tax policy still requires careful management, even though tax avoidance and tax risk were not individually significant. For future research, expanding the number of companies, the observation period, and the variable proxies, along with incorporating factors such as leverage, liquidity, firm size, audit quality, and governance, could provide a more comprehensive picture of the determinants of the cost of debt.

The primary limitation of this study is the relatively small sample size comprising eight companies and 40 observations, and its focus on a single sub-sector. Furthermore, the measurement of tax risk based on CETR volatility does not capture the full spectrum of tax risks that companies may face. These limitations should be taken into account when generalizing the findings to other sectors and time periods.

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