The Influence of Financial Distress, Capital Intensity, and Leverage on Tax Avoidance with Institutional Ownership as Moderating Variable in Food and Beverage Companies at IDX

Diah Juliawati*, Ali Sandy Mulya

Universitas Budi Luhur, Indonesia

Email: diah.juliawati@gmail.com*, alisandy@outlook.com

Abstract. The research is motivated by persistent tax revenue shortfalls and reported losses due to tax avoidance practices, particularly within Indonesia's strategic food and beverage sector. This research aims to analyze and empirically test the influence of financial distress, capital intensity, and leverage on tax avoidance in food and beverage sub-sector companies on the Indonesia Stock Exchange (BEI) from 2020–2024. This quantitative research uses the Moderated Regression Analysis (MRA) method, processed with Eviews 13. The population for this study comprises food and beverage sub-sector companies, with a sample size of 31 companies. Based on the research results, it was found that financial distress has a positive effect on tax avoidance, while capital intensity and leverage do not affect tax avoidance. The moderation test results indicate that the institutional ownership variable cannot moderate the influence of financial distress, capital intensity, and leverage on tax avoidance. The study concludes that these specific financial factors are not primary drivers of tax avoidance in the sampled context, suggesting that regulators and corporate governance mechanisms should look beyond these variables to more effectively address tax compliance.

Keywords: Capital Intensity, Financial Distress, Institutional Ownership, Leverage, Tax Avoidance

INTRODUCTION

Taxes are contributions from the people to the state whose collection can be enforced by law without getting direct counter-benefits that are used to finance state households. This can be reflected in the Law of the Republic of Indonesia on the State Budget and Revenue which states that the source of the State Revenue and Expenditure Budget (APBN) is obtained from tax revenues, non-tax state revenues, and grant receipts. The following is a summary of the Law of the Republic of Indonesia on the State Budget and Revenue for 2019-2023:(Putra, 2023)

Table 1. State Budget for 2020-2024 (in billions of rupiah)

Information	2020 State Budget	2021 State Budget	State Budget 2022	2023 State Budget	2024 State Budget
State Revenue					
I. Domestic Revenue	1.698.648,50	1.742.745,80	2.265.619,20	2.462.615,50	2.767.538,55
1 Tax Receipts	1.404.507,50	1.444.541,60	1.783.988,00	2.021.223,70	2.218.401,10
2 Non-Tax Revenue	294.141,00	298.204,20	481.631,20	441.391,80	549.137,45
II Grants	1.300,00	902,80	579,90	409,40	34.923,60
Sum	1.699.948,50	1.743.648,50	2.266.199,00	2.463.024,90	2.802.462,15

Source: Central Statistics Agency

Data above, we can see that tax revenues get a larger proportion of other types of revenue in the portion of the State Revenue and Expenditure Budget (APBN), which is IDR

1,404,507.50 billion or equivalent to 82.62% in 2020, IDR 1,444,541.60 billion or equivalent to 82.85% in 2021, IDR 1,783,988 billion or equivalent to 78.72% in 2022, IDR 2,021,223.70 or equivalent to 82.06% in 2023 and IDR 2,218,401.10 or equivalent to 79.16% in 2024. The government targets tax revenues to keep the state budget healthy and avoid deficits, with the achievement of the 2021–2023 target achieved (107.15%; 114.05%; 104.8%), but it will drop to 87.10% in 2024 (DGT Performance Report, 2024). One of the potential causes of declining revenue effectiveness is the practice of tax avoidance, which is a company's strategy to reduce the tax burden without violating the rules so that net profit increases (Hama, 2020). Tax Justice Network (2020) reported Indonesia's losses due to tax avoidance of USD 4.86 billion (USD 4.78 billion from entities and USD 78.83 million from individuals), with follow-up losses of around USD 2.2 billion (2021), USD 2.8 billion (2022), USD 2.7 billion (2023), and USD 2.9 billion (2024), which shows the existence of a compliance gap and policy gap (Subroto, 2020). Based on PER-12/PJ/2022 and KEP-321/PJ/2012, economic activities are grouped into KLU A–U and X, where BPS data 2020–2024 shows that KLU C (processing industry) always contributes the largest GDP, including the food and beverage subsector. Data from the Director General of Taxes 2020–2023 also confirms that the processing industry is one of the largest tax contributors along with mining and quarrying, wholesale and retail trade, financial services and insurance, as well as government administration and compulsory social security, although the growth of the processing industry's tax contribution tends to decline. This fact is in line with the existence of tax avoidance cases in the food and beverage sector such as PT Japfa Comfeed Indonesia Tbk (Supreme Court Decision No. 2666/B/PK/Pjk/2020 related to Income Tax Article 26 and the concept of beneficial owner according to P3B Indonesia-Netherlands and PER-25/2010), PT Charoen Pokphand Indonesia Tbk (Supreme Court Decision No. 1738/B/PK/Pjk/2020 related to VAT on animal feed imports and PMK No. 267/PMK.010/2015), and PT Indofood Sukses Makmur Tbk (Supreme Court Decision No. 1562/B/PK/Pjk/2021 related to income tax on the transfer of land/building rights referring to PER-30/PJ/2009, PP No. 71, and PMK No. 243/PMK.03/2008).

Theoretically, tax avoidance is influenced by several financial and governance factors. Financial distress describes the unavailability of cash to meet obligations (Hidar, 2025) and is a marker of potential bankruptcy (Abidin, 2022), so financial pressure often encourages management to prioritize profits by increasing tax avoidance, in line with the character of financial difficulties that make the fulfillment of tax obligations low (Ningrum et al., 2022). However, some studies have found that financial distress has no effect on tax avoidance (Akbar et al., 2025) because depressed companies usually have low margins or losses so they are not aggressively avoiding taxes (Wulandari et al., 2024). Capital intensity reflects the amount of fixed asset investment (Firmansyah & Estutik, 2020), where large assets increase depreciation and amortization expenses and have the potential to increase tax avoidance (Pattiasina, UMM, 2022; Ningsih & Stiawan, 2025; Lailiyah et al., 2024), because fixed asset investment is often used to reduce tax burden (Prawati & Hutagalung, 2020) and if managed well, it will be reflected in high profitability (Putri et al., 2022). This finding is different from Santo & Nastiti (2023) who stated that capital intensity has no effect on tax avoidance because some companies focus on operations (Wulandari et al., 2024). Leverage as the use of debt to increase profits (Mendrofa et al., 2024) was also found to have a positive effect on tax avoidance (Fadhila & Ancdayani, 2022; Sanjaya, 2021), because high leverage encourages management to be more

conservative in reporting income (Aljufri & Azzahara, 2025), increase interest expenses that reduce taxes (Santo & Nastiti, 2023) and lower ETR (Hapsari & Setiawati, 2025). However, there is still evidence that leverage has no effect on tax avoidance (Putri et al., 2022) because managers tend to avoid major risks from tax avoidance practices (Sari & Kinasih, 2021).

In terms of governance, institutional ownership, namely shareholding by institutions, is seen as able to reduce the risk of financial distress through stricter regulation and supervision of managers (Malik & Munir, 2024), especially in difficult conditions when banks are more selective in lending and the evaluation of managers' performance is highly dependent on profitability. Strict institutional shareholder supervision encourages companies in financial distress to avoid excessive tax avoidance in order to maintain cash flow (Abdurrosyid & Damayanti, 2023), reflected in the finding that institutional ownership is positively related to ETR so that tax avoidance is reduced (Yahaya, 2025), and effective as a monitoring tool to reduce conflicts of interest and tax avoidance practices (Africa, 2021). However, high institutional ownership does not always guarantee effective supervision because strategic decisions remain in the hands of management and have the potential to trigger agency problems. In the context of fixed assets, high capital intensity has the potential to increase tax avoidance through depreciation expense (NingsihV & Stiawan, 2025), so high institutional ownership is expected to make management more cautious (Prawati & Hutagalung, 2020), and can weaken the influence of capital intensity on tax avoidance (Ayuningtia & Pramiana, 2024), although there are different results that institutional ownership does not moderate the relationship (Arifah & Arieftiara, 2021). The same applies to leverage, where institutional shareholders will oversee large debt as interest expenses encourage tax avoidance; they can pressure management not to engage in aggressive practices (Aprianto & Dwimulyani, 2019), and even be able to weaken the influence of leverage on tax avoidance (Prasatya et al., 2020), although other studies have found that institutional ownership is not always effective as a moderation variable (Prasetya & Hariyono, 2023).

Based on the description above, the author plans to research more deeply on "The Effect of Financial Distress, Capital Intensity, and Leverage on Tax Avoidance with Institutional Ownership as a Moderation Variable (Empirical Study on Food and Beverage Sub-Sector Companies on the IDX in 2020-2024)." This research focuses on several issues, namely the phenomenon of declining tax revenue from 2022 to 2024, losses due to tax evasion reported by the Tax Justice Network, declining tax contributions and growth in the processing industry sector, and tax evasion practices that still occur despite large GDP contributions. The limitations of the research problem include dependent variables (tax avoidance), three independent variables (financial distress, capital intensity, and leverage), moderation variables (institutional ownership), and Food and Beverage subsector companies listed on the Indonesia Stock Exchange during 2020-2025. The formulation of the problem to be studied involves the influence of each variable on tax avoidance and the role of institutional ownership moderation. The purpose of this study is to analyze and empirically test the influence of financial distress, capital intensity, and leverage on tax avoidance, as well as the role of institutional ownership moderation in these relationships. The benefits of the research are expected to make theoretical and practical contributions, including information for corporate management and institutional shareholders in managing tax risks, as well as input for the government in formulating tax regulations.

RESEARCH METHOD

This research is quantitative, which uses numerical data and statistical methods to analyze phenomena, as well as test hypotheses proposed based on the sample studied. In this study, there is a dependent variable (Y), namely tax avoidance, an independent variable (X) including financial distress, capital intensity, and leverage, and one moderation variable (Z), namely institutional ownership. The research population is 61 Food and Beverage sub-sector companies listed on the Indonesia Stock Exchange during 2020-2024, selected for their large contribution to GDP and business complexity. Samples were taken using the non-probability purposive sampling technique, resulting in 31 companies that met the criteria, bringing the total sample to 155. Data collection is carried out through secondary data from financial statements available on the Indonesia Stock Exchange.
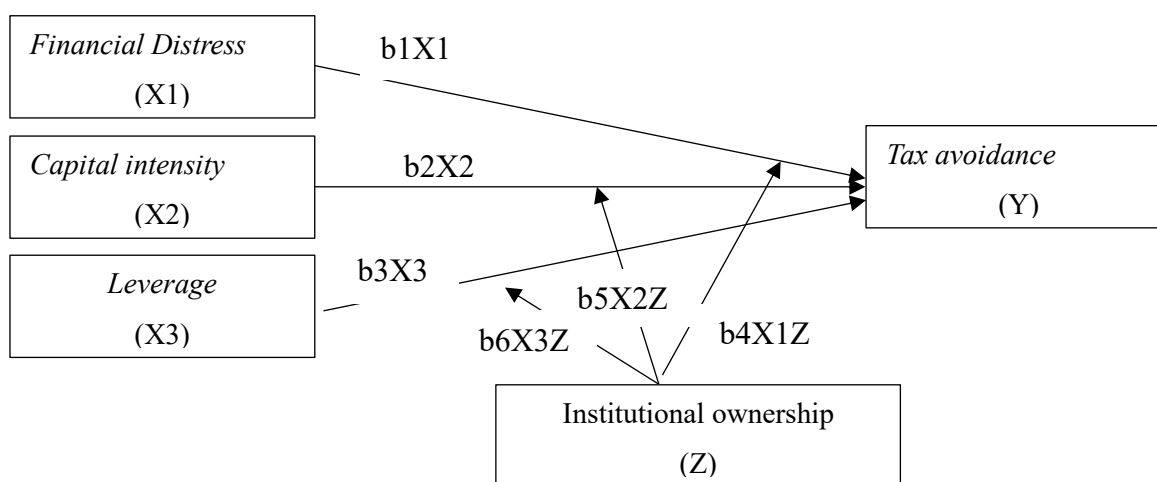

Figure 1. Research Path Diagram

The research model in this study can be presented in the following model:

$$Y = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4Z + b_5X_1Z + b_6X_2Z + b_7X_3Z + e$$

Information:

Y	= Tax avoidan
X1	= Financial distress
X2	= Capital intensity
X3	= Leverage
Y	= Institutional ownership
X1Z	= Interaction between financial distress with institutional ownership
X2Z	= Interaction between capital intensity with institutional ownership
X3Z	= Interaction between Leverage with institutional ownership
a	= Constant
e	= Error

The research model used multiple linear regression analysis to test the hypothesis, with operational variables that included tax avoidance measurement using GAAP ETR, financial distress through the Altman Z-Score model, capital intensity based on fixed asset ratios, and leverage using debt to asset ratios. Data analysis was carried out with Ms. Excel and Eviews

software, through several tests such as descriptive statistical tests, model selection, classical assumption tests, and moderation regression analysis, to ensure the validity and significance of the relationships between variables.

RESULTS AND DISCUSSION
Research Sample Description

The sample in this study is a company listed on the Indonesia Stock Exchange (IDX) for the period 2020 to 2024 with sub-sectors food and beverage. This study uses the sampling technique used is non probability sampling by the purposive sampling. Non probability sampling is a way of sampling by not giving the same opportunity to be a member of the sample (Sahir, 2021) while the purposive sampling is a method of selecting sample members from a population determined by the researcher based on certain criteria (Bagus et al., 2024). The criteria and results of sample selection can be seen in table 2.

Table 2. Research Sample Description

No	Criterion	Sum
1	Food and beverage *companies* listed on the Indonesia Stock Exchange in 2020-2024	61
2	Companies that do not disclose *annual reports* consecutively during the 2020-2024 period	(2)
3	Companies that have suffered losses and have negative *retained earnings* during the 2020-2024 period	(28)
	Final number of companies	31
	Observation period 2020-2024	5
	Number of samples	155

Source: Data processed, 2025

Based on the criteria listed in Table 2, the number of companies that will be sampled in this study is 31 companies with an observation period of 5 years, so that the number of samples used in this study amounts to 155 research samples. The number of companies to be sampled can be seen in table 3.

Table 3. Company Sample List

1	**AALI**	**Astra Agro Lestari Tbk**	**09 From 1997**
2	ADES	Akasha Wira International Tbk	13 Jun 1994
3	ANJT	Austindo Nusantara Jaya Tbk	08 May 2013
4	BISI	BISI International Tbk	28 May 2007
5	MIND	Budi Starch & Sweetener Tbk	08 May 1995
6	CEKA	Wilmar Cahaya Indonesia Tbk	09 Jul 1996
7	CLEO	Sariguna Primatirta Tbk	05 May 2017
8	CPIN	Charoen Pokphand Indonesia Tbk	18 Mar 1991
9	CSRA	Cisadane Sawit Raya Tbk	09 Jan 2020
10	DLTA	Delta Djakarta Tbk	27 Feb 1984
11	DSNG	Dharma Satya Nusantara Tbk	14 Jun 2013
12	FISH	FKS Multi Agro Tbk	18 Jan 2002
13	GOOD	Garudafood Putra Putri Jaya Tbk	10 Oct 2018

14	ICBP	Indofood CBP Sukses Makmur Tbk	07 Oct 2010
15	INDF	Indofood Sukses Makmur Tbk	14 Jul 1994
16	JPFA	Japfa Comfeed Indonesia Tbk	23 Oct 1989
17	CHEESE	Mulia Boga Raya Tbk	25 Nov 2019
18	LSIP	PP London Sumatra Indonesia Tbk	05 Jul 1996
19	MLBI	Multi Bintang Indonesia Tbk	15 From 1981
20	MYOR	Mayora Indah Tbk	04 Jul 1990
21	BREAD	Nippon Indosari Corpindo Tbk	June 28th, 2010
22	SIMP	Salim Ivomas Pratama Tbk	09 Jun 2011
23	SKLT	Sekar Laut Tbk	08 Sep 1993
24	LUBRICANT	PT Sinar Mas Agro Resources And Technology Tbk	20 Nov 1992
25	SSMS	Sawit Sumbermas Sarana Tbk	12 From 2013
26	STTP	Siantar Top Tbk	16 From 1996
27	TBLA	Tunas Baru Lampung Tbk	14 Feb 2000
28	TGKA	Tigaraksa Satria Tbk	11 Jun 1990
29	ULTJ	Ultrajaya Milk Industry & Trad	02 Jul 1990
30	PNGO	Pinago Utama Tbk	31 Agt 2020
31	CAMP	Campina Ice Cream Industry Tbk	19 As of 2017

Source: Data processed, 2025

The companies listed in table 3 are part of the research sample that will be the object of the research that will be used to test the variables used in the research.

Statistics Descriptive

As an initial process in the analysis step, to summarize and simplify a large and complex set of data into simpler information so that it is easier to understand and digest, descriptive analysis is needed (Lower et al., 2024). The independent variables in this study include financial distress that are proxied with Z-Score, capital intemsity who are proxied with Capint, and leverage which is proxied with DAR. Meanwhile, the dependent variables used in this study are tax avoidance which is proxied with ETR and institutional ownership moderation variable is proxied with IO. The function of descriptive statistics is to provide an overview of the distribution of data through statistical measures such as the number of research samples, the average value (mean), Middle value (median), maximum value, minimum value, and standard deviation. The results of descriptive statistics in this study can be seen in table 4.

Table 4. Descriptive Statistics

Statistics	ETR	ZSCORE	CAPINT	DAR	I
Mean	-0.241426	3.122124	0.335145	0.397195	0.649709
Median	-0.221244	2.740530	0.337513	0.423193	0.681723
Maximum	0.051465	9.102834	0.803655	0.864023	0.979032
Minimum	-0.852843	1.100539	0.001370	0.067154	0.000000
Std. Dev.	0.090659	1.505065	0.165626	0.188484	0.242209
Observations	155	155	155	155	155

Source: Processed from *EViews* 13

Based on descriptive statistical analysis of companies in the food and beverage sub-sector companies for the 2021–2024 period, it is known that the number of samples in this study consists of 155 companies, it is known that there are still companies that have not paid taxes in accordance with applicable regulations. This can be seen from the maximum value of tax payment is 0.05 or 5% which is far from the value of tax that must be paid, which is 22%. The average tax payment in the food and beverage sub-sector is at an average of -0.24 or 24%, the middle value is -0.22 or 22% and the maximum value is -0.85 or 85%

In the independent variable financial distress proxied with ZScore, it has an average value of 3.147366, or in other words, the average company in this sub-sector is different in the "non-bankrupt" category because it has a z-score value greater than 2.90. The middle value is 2.740530, the maximum value is 9.102834, the minimum value is 1.100539, or in other words, there are still companies that have high risk bankruptcy because it has a score lower than 1.23.

In the independent variable capital intensity proxied with Capint has an average value of 0.337886, which means that the average company has around 33.79% of the total assets it owns, the middle value is 0.335294 or 33.52%, with a maximum value of 0.803655 or 80.36%, and a minimum value of 0.001370 or in other words, there are still companies that only have 0.14% of the total assets used for operational activities company.

In the independent variable of leverage proxied with DAR, it shows that the ratio of the comparison between total debt and total assets is still in a healthy condition which can be reflected in the average value of 0.401920 or 40.19%, the middle value of 0.429650 or 42.97%, and the minimum value of 0.067154 or 6.72%, but there are still companies that have a comparative ratio between total debt and total assets that are unhealthy. This can be seen from the maximum value of DAR of 0.864023 or 86.40%.

In the moderation variable, institutional ownership proxied with IO has a very significant institutional ownership ratio. This can be seen from the average value of institutional ownership of 0.688329 or 68.83%, the middle value of 0.703530 or 70.35% and the maximum value of 0.979032 or 97.90% although in the food and beverage subsector there are still companies that do not have 0.000000 or 0%.

Model Selection Test

To determine the panel regression model used in this study, it is necessary to conduct a model selection test, namely between Common Effect Model (CEM) with chow test, Fixed Effect Model (FEM) with thirst test, and Random Effect Model (REM) with lagrange multiplier. The purpose of this model selection test is to determine the best regression model that matches the data used so as to increase the accuracy of the analysis results.

Model Selection Test Summary
Chow Test

The Chow test is used to determine if the right model is a Common Effect Model (CEM) or a Fixed Effect Model (FEM). If the prob value > 0.05, use CEM; if < 0.05, use FEM. The test results showed a Cross-section value of F with a prob of 0.0000 (< 0.05), so the selected model was CEM.

Hausman Test

The Hausman test determines whether a Fixed Effect Model (FEM) or Random Effect Model (REM) is used. If the prob > 0.05, use REM; if < 0.05, use FEM. The results showed a prob value of 0.2560 (> 0.05), so the selected model was REM.

Lagrange Multiplier Test

This test also determines between CEM and REM. If the prob > 0.05, use CEM; if < 0.05, use REM. The results showed a Breusch-Pagan value of 0.0000 (< 0.05), so the selected model was REM.

Table 5. Model Selection Test

Test Model	Prob	Information
Chow Test	0,0000	CEM
Hausman Test	0,2560	REM
Lagrange Multiplier	0,0000	REM

Based on the test results, the model used in this study is the Random Effect Model (REM).

Classic Assumption Test

The next step to take after determining the regression of the panel data is to perform a classical assumption test. The classical assumption tests carried out in this study are normality tests, multicollinearity tests, heteroscedasticity tests, and autocorrelation tests.

Normality Test

The normality test was performed to test the distribution of variables in the regression. The normality test in this study uses Jarque-Bera which can be seen in figure 2.
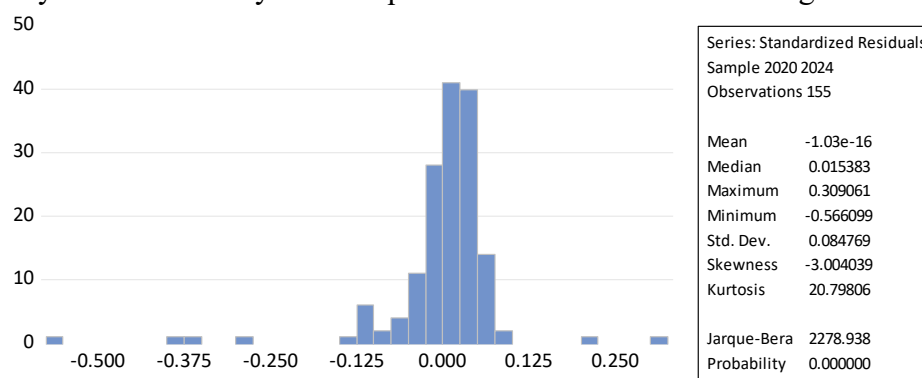

Series: Standardized Residuals	
Sample 2020 2024	
Observations 155	
Mean	-1.03e-16
Median	0.015383
Maximum	0.309061
Minimum	-0.566099
Std. Dev.	0.084769
Skewness	-3.004039
Kurtosis	20.79806
Jarque-Bera	2278.938
Probability	0.000000

Figure 2. *Jarque-Bera Normality Test* Before Outlier
Source: Processed from EViews 13

Based on test *Jarque-Bera* It can be seen that the probability value is less than 0.05. which means that the data is not distributed normally. To overcome this inconsistency, the process of identifying and handling outliers is carried out using the absolute residuals approach, which aims to increase the residual distribution to be closer to normal and maintain the validity of the regression model used. Outliers are observational data that appear with extreme values.

The data must be handled specifically because it can cause bias in the results of the research (Misna et al., 2024)
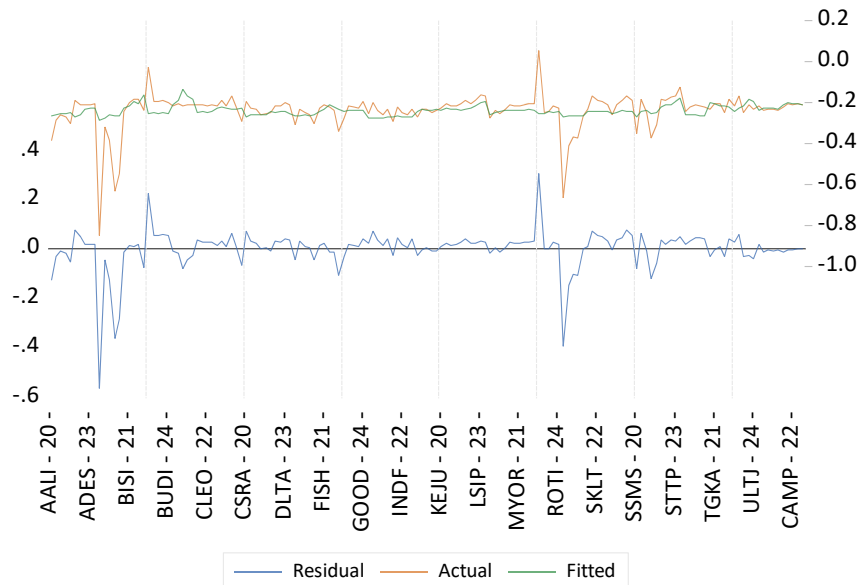

Figure 3. Resid Graph Before Outlier
Source: Processed from EViews 13

Observational data identified as outliers, are presented in detail in table 6. This identification is carried out so that the resulting regression model is valid.

Table 6. Outlier Data Adjustment

Information	Sum
Total Research Sample	155
Outlier	(15)
Total Research Data	140

Source: Processed from EViews 13

The number of initial observation data in this study amounted to 155 data, after an outlier process was carried out the number of data that will be a research sample became 140, meaning that there were 15 observation data that were eliminated because there was outlier data. The results of the normality test after the outlier process can be seen in Figure 4.
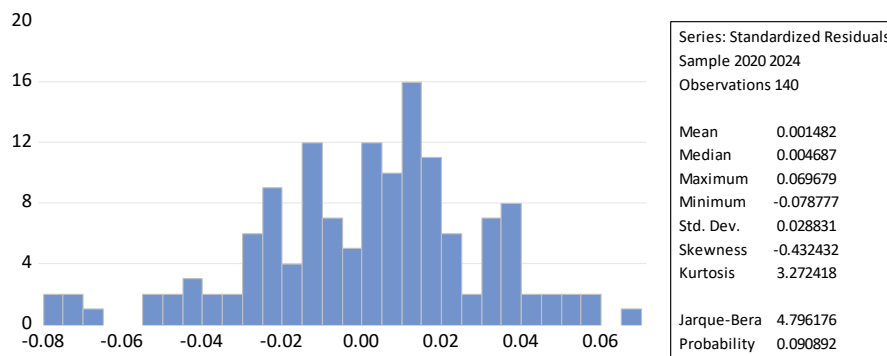

Series: Standardized Residuals	
Sample 2020 2024	
Observations 140	
Mean	0.001482
Median	0.004687
Maximum	0.069679
Minimum	-0.078777
Std. Dev.	0.028831
Skewness	-0.432432
Kurtosis	3.272418
Jarque-Bera	4.796176
Probability	0.090892

Figure 4. Jarque-Bera Normality Test After Outlier
Source: Processed from EViews 13

Based on the normality test after the outlier, the probability value of 0.090892 (≥ 0.05) identifies that the classical assumption test in the form of a normality test has been fulfilled or in other words, the data used in this study is normally distributed.
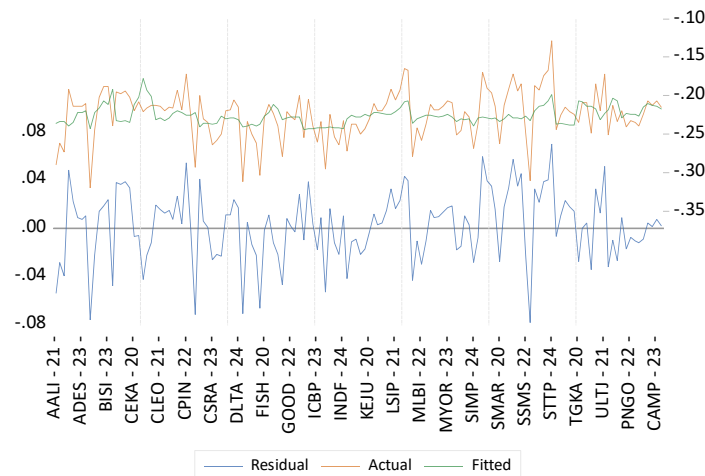

Figure 5. Resid Graph After Outlier
Source: Processed from EViews 13

Multicollinearity Test

The multicollinearity test was carried out to test whether the regression model used found a correlation between independent variables. According to Ghozali A good regression model does not have a correlation between its independent variables. A meodel can be said to be free from the problem of multicollinearity when the value of the correlation matrix between two independent variables is less than 0.90. The correlation matrix between variables can be seen in Table 4.9 as the basis for the initial evaluation of the existence of collinearity in the model.

Table 7. Multicollinearity Test Results

	ZSCORE	CAPINT	DAR	IO
ZSCORE	1.000000	-0.336823	-0.731575	-0.001338
CAPINT	-0.336823	1.000000	0.130380	-0.134122
DAR	-0.731575	0.130380	1.000000	0.102242
I	-0.001338	-0.134122	0.102242	1.000000

Source: Processed from EViews 13

The results of the correlation test showed that there was a varied relationship between variables, this can be seen from *ZScore* which had a stateal correlation (-0.336823) with Capint, (-0.731575) with DAR and negatively correlated (-0.001338) with IO, Capint had a positive correlation of 0.130380 with DAR and had a negative correlation with IO of -0.219401, while DAR had a negative correlation with IO of -0.134122. From the data presented in table 4.9, there was no correlation between variables exceeding 0.9 so there was no indication of multicollinearity in the tested sample. So that the regression model is considered stable and worthy of further analysis.

Heteroscedasticity Test

Because the model chosen in this study is random effect model. According to Prawoto (Tambunan et al., 2022) Random Advantage effect model is not necessary for a heteroscedasticity test. According to Montgomery, Peck, & Vining (Fitriana et al., 2023) This is because REM uses estimation Generalized Least Square (GLS). The GLS estimation technique still produces an estimator that is BLUE even though the data contains autocorrelations.

Autocorrelation Test

The autocorrelation test was used to find out whether there was a correlation between the interference error in period t and the error in period t-1 (earlier). The following results of the autocorrelation test research can be seen in table 8.

Table 8. Autocorrelation Test Results

Weighted Statistics			
R-squared	0.087599	Mean dependent var	-0.118868
Adjusted R-squared	0.060565	S.D. dependent var	0.029099
S.E. of regression	0.024201	Sum squared resid	0.079069
F-statistic	3.240302	Durbin-Watson stat	1.420784
Prob(F-statistic)	0.014197		
Unweighted Statistics			
R-squared	0.170393	Mean dependent var	-0.224444
Sum squared resid	0.115846	Durbin-Watson stat	0.969738

Source: Processed from EViews 13

Based on table 8, it can be seen that the Durbin-Watson is 1.420784 while the dU value is 1.7830 and the dL value is 1.6656 and the 4 - dL value is 2.3344 and 4- dU is 2.217 thus based on the results of this test there is a positive autocorrelation problem due to $0 < d < dL$. However, because the data tested is random effect model, Autocorrelation issues can be ruled out. According to Montgomery, Peck, & Vining (Fitriana et al., 2023) This is because REM uses estimation Generalized Least Square (GLS). The GLS estimation technique still produces an estimator that is BLUE (Best Linear Unbiased Estimation) even though the data contains autocorrelations.

Data Analysis
Test F

According to Ghozali, the F-test is used to test the feasibility of regression models in explaining the influence of independent variables on dependent variables. Based on the results of the analysis (Table 9), an F-statistical value of 2.168115 was obtained with a probability value of $0.040988 \leq 0.05$, so that the model is declared significant and can be used to explain the relationship between independent and dependent variables.

Table 9. F Test Results

Weighted Statistics			
R-squared	0.103120	Mean dependent var	-0.124328

Adjusted R-squared	0.055558	S.D. dependent var	0.029342
S.E. of regression	0.024564	Sum squared resid	0.079647
F-statistic	2.168115	Durbin-Watson stat	1.401479
Prob(F-statistic)	0.040988		

Source: Processed from EViews 13

T test

The t-test is used to test the influence of each independent variable on the dependent variable, namely tax avoidance (ETR). Based on the estimated results (Table 10), all variables have a p-value of > 0.05, so they do not have a significant effect on tax avoidance. The financial distress variable (ZSCORE) has a coefficient of 0.022159 (negative after z-score adjustment) with a p-value of 0.0791, so H1 is rejected. The variable capital intensity (CAPINT) has a coefficient of 0.089600 and a p-value of 0.3233, so H2 is rejected. The variable leverage (DAR) has a coefficient of 0.075960 and a p-value of 0.4103, so H3 is minus. The institutional ownership moderation (IO) variable was also unable to strengthen the relationship between variables: financial distress (coefficient -0.016838; p-value 0.3032), capital intensity (-0.103316; p-value 0.3777), and leverage (-0.068861; p-value 0.5563), so H4, H5, and H6 were all rejected.

Table 10. Results of the t test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.355737	0.079645	-4.466502	0.0000
ZSCORE	0.022159	0.012524	1.769370	0.0791
CAPINT	0.089600	0.090378	0.991399	0.3233
DAR	0.075960	0.091959	0.826021	0.4103
I	0.113235	0.104231	1.086392	0.2793
ZSCOREIO	-0.016838	0.016290	-1.033651	0.3032
CAPINTIO	-0.103316	0.116726	-0.885110	0.3777
DARIO	-0.068861	0.116731	-0.589910	0.5563

Source: Processed from EViews 13

Coefficient of Determination

Cohesive determination is the amount of contribution of independent variables with dependent variables. The higher the coefficient of determination, the higher the ability of the dependent variable to explain the independent variable. If the coefficient of determination is closer to one, the influence of the independent variable on the dependent variable is stronger. This means that independent variables provide almost all the information needed to predict the variation of dependent variables. Based on table 4.12, the R-squared value is 0.103120 with an adjusted R-squared of 0.055558, identifying that 5.56% indicates that independent variables consisting of financial distress, capital intensity, and leverage are able to explain the tax avoidance variable or in other words 94.44% explained by other variables outside the model.

Moderated Regretion Analisys Test

A moderation regression analysis was used to see whether institutional ownership could strengthen or weaken the relationship of independent variables to tax avoidance. Based on the results of the analysis (Table 11), the moderation variable had no significant effect because all

interactions had a p-value of > 0.05. The regression equation formed is: $Y = -0.3557 - 0.0222X_1 + 0.0896X_2 + 0.0760X_3 + 0.1132Z + 0.0168X_1Z - 0.1033X_2Z - 0.0689X_3Z$.

Table 11. Results *of Moderated Regretion Analysis*

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.355737	0.079645	-4.466502	0.0000
ZSCORE	0.022159	0.012524	1.769370	0.0791
CAPINT	0.089600	0.090378	0.991399	0.3233
DAR	0.075960	0.091959	0.826021	0.4103
I	0.113235	0.104231	1.086392	0.2793
ZSCOREIO	-0.016838	0.016290	-1.033651	0.3032
CAPINTIO	-0.103316	0.116726	-0.885110	0.3777
DARIO	-0.068861	0.116731	-0.589910	0.5563

Source: Processed from *Eviews* 13

Interpretation of Research Results

Financial Distress has no effect on Tax Avoidance.

The results of this study show that financial distress has no effect on tax avoidance. This is in accordance with research conducted by Puspita Rani, (2017) and Akbar et al., (2025) which states that financial distress has no effect on tax avoidance. This is because companies that experience financial distress usually have low margins, or even suffer losses so as to reduce management's efforts in making efforts tax avoidance (Wulandari et al., 2024). Of the 75 samples tested, 51 companies still pay taxes according to the provisions even though they are in good condition grey area. These results do not support agency theories that highlight agents' behavior in maximizing profits by avoiding taxes (Putra & Kurniaty, 2024) or the theory of legitimacy that states that companies under financial pressure will maintain public legitimacy by minimizing the tax burden (Yuliana et al., 2021). Instead, research and (Abidin, 2022) The results of this study also contradict the research conducted by Instead, it found that high financial pressures can encourage companies to increase tax avoidance practices as a strategy to maintain profitability.

Capital Intensity Has No Effect on Tax Avoidance

This study shows that capital intensity has no effect on tax avoidance because not all companies with a high level of fixed asset investment do tax avoidance, but focus on operational activities (Wulandari et al., 2024). The size of fixed assets reflects large production capacity (Hendayana et al., 2024), while tax supervision is increasingly stringent with PMK No. 72 of 2023 concerning depreciation and amortization of assets, which regulates the useful life, depreciation rates, and asset reporting obligations in the Corporate Tax Return. This rule minimizes the chance of tax manipulation because authorities can easily verify the value of depreciation (Santo & Nastiti, 2023). However, these results differ from the agency and trade-off theory as well as research by Ningsih & Stiawan (2025), Lailiyah et al. (2024), and Prawati & Hutagalung (2020) which states that high capital intensity increases depreciation burden and encourages tax avoidance practices. Putri et al. (2022) emphasized that efficient asset management in high-profit companies shows asset optimization, not tax avoidance efforts.

Leverage has no effect on tax avoidance

The findings of this study show that leverage has no effect on tax avoidance, in line with the research of Putri et al. (2022) and Sari & Kinasih (2021) which stated that managers are more careful not to take large risks in tax avoidance practices. PMK No. 69/PMK.010/2015, which regulates the maximum debt-to-capital ratio of 4:1, is an effective control in limiting the influence of leverage on tax avoidance (Rahmana, 2022). Of the 140 samples tested, only one company had a debt-to-capital ratio higher than the stipulated limit. However, these findings contradict the trade-off theory that explains that companies utilize debt to balance bankruptcy risk and tax gains (Yeni et al., 2024). Research by Fadhila & Ancdayani (2022), Sanjaya (2021), and Aljufri & Azzahara (2025) shows that high leverage increases tax avoidance because large loan interest decreases a company's taxable profit and effective tax rate (Hapsari & Setiawati, 2025).

Institutional Ownership Does Not Moderate the Effect of Financial Distress on Tax Avoidance

The results of the study show that institutional ownership does not moderate the influence of financial distress on tax avoidance, in line with the research of Abbas et al. (2025). This is because institutional shareholders tend to carry out indirect supervision and are more oriented towards short-term profits (Setiawan & Syarif, 2019). In fact, agency theory states that institutional ownership should serve as a supervisory mechanism to reduce management's opportunistic behavior, including in tax avoidance practices when companies face financial pressure (Abdurrosyid & Damayanti, 2023). Based on the theory of legitimacy, companies that experience financial distress can try to maintain a positive image by minimizing the tax burden (Yuliana et al., 2021). This result is different from the findings of Abdurrosyid & Damayanti (2023) who stated that institutional ownership actually weakens the relationship between financial distress and tax avoidance because it increases supervision of management performance.

Institutional ownership does not moderate the effect of capital intensity on tax avoidance

This study found that institutional ownership does not moderate the influence of capital intensity on tax avoidance, in line with the results of research by Ratnandari & Achyani (2023) which stated that the interaction between the two has no effect on corporate tax behavior. Institutional shareholders usually only conduct indirect supervision and focus on short-term profits (Setiawan & Syarif, 2019). These results contradict agency theory that assumes that institutional ownership is able to strengthen oversight of management to limit opportunistic behavior, including tax avoidance practices. Cahyadi & Tjahjono (2025) argue that active institutional ownership can moderate the influence of capital intensity on tax avoidance because it is long-term-oriented, emphasizes transparency, and ensures the use of assets remains in accordance with tax regulations.

Institutional ownership does not moderate the influence of leverage on tax avoidance

The results of the study show that institutional ownership does not moderate the influence of leverage on tax avoidance, supporting the results of Sampurno & Anwar (2023) and Prasetya & Hariyono (2023) who explain that decisions related to corporate debt are

generally taken by internal management without the direct involvement of institutional shareholders. This is contrary to agency theory that emphasizes the role of institutional ownership in overseeing management behavior so as not to overdo it in tax avoidance practices, as well as trade-off theory that highlights the benefits of loan interest as a tax deductible (Yeni et al., 2024). Research by Purba et al. (2025) shows that institutional ownership can moderate the relationship between leverage and tax avoidance because institutional shareholders tend to reject excessive debt policies that can lower profits and dividends, thus encouraging more conservative and tax-compliant management of capital structures.

CONCLUSION

The empirical analysis indicates that financial distress exerts a negative but statistically insignificant effect on tax avoidance, suggesting that highly distressed firms do not necessarily curb managerial tax avoidance, likely because they often operate with slim margins or losses where avoidance is less necessary; capital intensity has a positive but insignificant effect, implying that fixed-asset investment does not automatically drive tax avoidance and may instead reflect operational priorities; leverage similarly shows a positive yet insignificant influence, as managers may refrain from taking additional risks amid regulatory constraints and tax rules; institutional ownership does not moderate these relationships, likely due to limited information. Implications point to regulators needing to consider other, more impactful factors and for institutional investors to increase active supervision. Limitations include a small sample and reliance on single indicators per variable, so future research should expand the sample, employ multiple measures for each construct, and possibly explore additional moderators or contextual factors to improve robustness and generalizability.

REFERENCES

Abbas, D. S., Rahmawati, A., & Nurfitriani, C. (2025). Determinant of financial distress with institutional ownership as moderation in Indonesian manufacturing companies. *Journal of Business Accounting Lamp Bangsa (AKUBIS)*, 10(1), 28–39.

Abdurrosyid, M., & Damayanti, M. A. (2023). Institutional ownership as moderation: Profit management, financial distress, sales growth on tax avoidance practices. *ACCRUAL: Journal of Accounting and Finance*, 5(1), 36–46. https://doi.org/10.34005/akrual.v5i1.3064

Abidin, Z. (2022). *Advanced Financial Management Textbook*. PT Nasya Ekspanding Management.

Africa, R. (2021). Institutional ownership of tax avoidance. *Balance: Journal of Accounting and Business*, 6(2), 132. https://doi.org/10.32502/jab.v6i2.3968

Akbar, M. F., Listya, A., & Patmawati. (2025). Financial distress, transfer pricing, and inventory intensity: Their effects on tax avoidance in mining companies. *Journal of Applied Accounting and Taxation*, 10(1), 88–97.

Aljufri, & Azzahara, S. (2025). The effects of managerial ownership, leverage, and sales growth on tax avoidance in the Indonesian Stock Exchange. *Fourth International Conference on Government and Tourism Education Management (ICoGEMT-4)*, 1–8.

Aprianto, M., & Dwimulyani, S. (2019). The effect of sales growth and leverage on tax avoidance with institutional ownership as a moderation variable. *Proceedings of the*

PAKAR National Seminar, 1–10. https://doi.org/10.25105/pakar.v0i0.4246

Bagus, S., Budyandra, & Kurniawan, R. (2024). *Methods and applications of sampling techniques*. PT Bumi Aksara.

Cahyadi, R. R., & Tjahjono, A. (2025). The effect of thin capitalization, capital intensity, and profitability on tax avoidance with institutional ownership as a moderation variable. *Journal of Accounting and Business*, 5(1), 416–427. https://doi.org/10.51903/jiab.v5i1.872

Fadhila, N., & Andayani, S. (2022). The effect of financial distress, profitability, and leverage on tax avoidance. *Owner: Research & Journal of Accounting*, 6(4), 3489–3500. https://doi.org/10.33395/owner.v6i4.1211

Firmansyah, A., & Estutik, R. S. (2020). Environmental responsibility performance, corporate social responsibility disclosure, tax aggressiveness: Does corporate governance have a role. *Journal of Governance and Regulation*, *9*(4).

Fitriana, A., Salwa, N., & Wiyayanti, S. (2023). Analysis of factors affecting poverty levels in Aceh Province using panel data regression. *Journal of Opportunity*, 11(1), 2685–1539. https://doi.org/10.24815/jp.v11i1.32947

Hendayana, Y., Arief Ramdhany, M., Pranowo, A. S., Abdul Halim Rachmat, R., & Herdiana, E. (2024). Exploring impact of profitability, leverage and capital intensity on avoidance of tax, moderated by size of firm in LQ45 companies. *Cogent Business and Management*, 11(1). https://doi.org/10.1080/23311975.2024.2371062

Hidar, R. S. (2025). *Financial performance based on value added & financial distress*. Deepublish Digital.

Lailiyah, C. Z., Massela, A., Yulianto, A., & Khalid, A. A. (2024). Impact of corporate social responsibility, profitability, leverage, and capital intensity on tax aggressiveness: The moderating role of firm size in Indonesian manufacturing sector. *Journal of Accounting, Finance and Auditing Studies*, 10(2), 51–64. https://doi.org/10.56578/jafas100201

Malik, M. S., & Munir, S. (2024). The nexus of corporate tax avoidance and firm performance with the moderating effect of ownership concentration and board independence: Evidence from developing economies. *Journal of Excellence in Management Sciences*, 3(1), 26–44.

Mendrofa, S. A., Arfianty, Santoso, A., & Hasanuddin, R. (2024). *Financial management in the digital era*. Mega Press Nusantara.

Misna, A., Hadiyatno, D., & Anam, H. (2024). *Research methodology: Easy steps to write a thesis and thesis*. PT Fajagrafindo Persada.

Ningrum, N. A., Herawati, R., Isthika, W., & Setyowati, L. (2022). Determinants of financial distress, thin capitalization, executive and multinationality characteristics of tax avoidance practices. *MEA Scientific Journal (Management, Economics, and Accounting),* 6(3), 38–51.

Ningsih, F. E., & Stiawan, H. (2025). The effect of capital intensity, company size, independent commissioners, financial distress on tax avoidance. *EAJ (Economic and Accounting Journal)*, 8(1), 26–42. https://doi.org/10.32493/eaj.v8i1.y2025.p26-42

Prasatya, R. E., Mulyadi, J., & Suyanto, S. (2020). The character of executives, profitability, leverage, and independent commissioners towards tax avoidance with institutional ownership as a moderation variable. *Journal of Accounting & Taxation Research (JRAP),* 7(2), 153–162. https://doi.org/10.35838/jrap.v7i02.1535

Prasetya, G. M. W., & Hariyono, A. (2023). The effect of profitability and leverage on tax aggressiveness with institutional ownership as a moderation variable. *Journal of Culture Accounting and Auditing*, 2(2), 159–174.

Prawati, L. D., & Hutagalung, J. P. U. (2020). The effect of capital intensity, executive characteristics, and sales growth on tax avoidance. *Journal of Applied Finance & Accounting*, 7(2), 1–8. https://doi.org/10.21512/jafa.v7i2.6378

Purba, E. T. B., Taufik, T., & A, A. AL. (2025). The effect of sales growth, leverage and fixed asset intensity on tax avoidance with institutional ownership as a moderation variable. *Media Accounting of Taxation*, 10(1), 181–195.

Putra, W. E., & Kurniaty, Y. (2024). *The relationship model of corporate and corporate social responsibility characteristics and their implications for corporate tax avoidance*. CV Adanu Abimata.

Putri, S. N., Hariyanto, E., Kusbandiyah, A., & Pandansari, T. (2022). The effect of capital intensity, leverage, and institutional ownership on tax avoidance with profitability as a moderation variable. *Soedirman Accounting Review (SAR)*, 7(2), 86–97. https://doi.org/10.32424/1.sar.2022.7.2.7339

Rahmana, D. A. (2022). Does financial distress affect tax avoidance? Case study on public companies in Indonesia. *Scientax*, 4(1), 24–42. https://doi.org/10.52869/st.v4i1.257

Ratnandari, N. I., & Achyani, F. (2023). Implications of institutional ownership in the influence of capital intensity, fiscal loss compensation, and tunneling incentive on tax avoidance. *Journal of Artificial Intelligence*, 12(4), 888–898. https://doi.org/10.31959/jm.v12i4.2005

Sahir, S. H. (2021). *Research methods*. KBM Indonesia.

Sampurno, F. P. L., & Anwar, S. (2023). The role of institutional ownership as a moderation variable in the influence of ROA, CR, and DER on tax avoidance. *Journal of Economics, Business and Accounting (COSTING)*, 7(1), 1166–1177. https://doi.org/10.31539/costing.v7i1.6140

Sanjaya, S. (2021). The effect of leverage, profitability and institutional ownership on tax avoidance in food & beverages companies on the IDX. *SiNTESa CERED National Seminar on Educational Technology and Humanities*, 1(1), 899–905.

Santo, V. A., & Nastiti, C. D. (2023). The effect of financial distress, leverage and capital intensity on tax avoidance. *ACCURACY: Journal of Accounting and Finance Research*, 5(1), 1–10. https://doi.org/10.36407/akurasi.v5i1.848

Sari, A. Y., & Kinasih, H. W. (2021). The influence of profitability, leverage and institutional ownership on tax avoidance. *Dynamics of Accounting, Finance and Banking*, 4(1), 1609–1617.

Setiawan, R., & Syarif, M. M. (2019). Institutional ownership, corporate performance, and the moderation effects of active institutional ownership. *Business and Finance Journal*, 4(1), 41–48. https://doi.org/10.33086/bfj.v4i1.1095

Tambunan, T. T., Prayitno, D., Amran, E., & Anis, I. (2022). *Development of MSMEs and community entrepreneurship*. Knowledge Insights.

Wulandari, A., Budiwitjaksono, G. S., & Kirana, N. W. I. (2024). The effect of financial distress and capital intensity on tax avoidance in food and beverage subsector companies listed on the Indonesia Stock Exchange in 2020–2022. *Journal of Economics, Business and Accounting (COSTING),* 7(4), 8845–8852. https://doi.org/10.31539/costing.v7i4.10663

Yeni, F., Hady, H., & Elfiswandi. (2024). *Company value based on financial performance determinants*. Intellectual Media Manifest.

Yahaya, O. A. (2025). Ownership structure and tax avoidance. *Journal of Emerging Markets*, 23(4), 1–19.

Yuliana, D., Susanti, S., & Zulaihati, S. (2021). The effect of financial distress and corporate governance on tax avoidance in companies in various industrial sectors. *Journal of Accounting, Taxation and Auditing*, 2(2), 435–451.