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The Effect Of Company Size And Leverage On Financial Distress Of The Altman Z-Score Model At PT Indofarma Tbk For The 2014-2024 Period

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Abstract

This research is motivated by the weakening financial condition of PT Indofarma Tbk during the 2014–2024 period and shows an increasing risk of financial distress. This study aims to analyze the effect of company size and leverage on financial distress using the Altman Z-Score Model. The study uses a quantitative method with an associative approach. The research population is the financial statements of PT Indofarma Tbk for the 2014–2024 period, with samples in the form of financial position statements, income statements, and stock information data for 11 years. The research instrument uses secondary data and analysis is carried out through descriptive statistics, classical assumption tests, multiple linear regression, t-tests, F-tests, and coefficients of determination. The results show that company size has a significant effect on financial distress with a significance of 0.014, while leverage has no significant effect with a significance of 0.292. Simultaneously, company size and leverage have a significant effect with a significance of 0.039 and are able to explain 44.4% of the variation in financial distress. In conclusion, company size is a partially significant factor, while the effect of leverage is not proven partially.

Keywords:Altman Z-Score, Financial Distress, Leverage, Pharmaceutical Company, Company Size

INTRODUCTION

The pharmaceutical industry is a business sector facing increasingly complex business dynamics, particularly due to competition, regulatory changes, and fluctuations in raw material prices, which can impact a company's financial resilience (Ministry of Health of the Republic of Indonesia, 2023). These conditions require companies to

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maintain financial stability to maintain operational continuity and sustainable business development. One pharmaceutical company facing such financial pressure is PT Indofarma (Persero) Tbk. From 2014 to 2024, PT Indofarma Tbk's financial condition showed significant changes. The company's total assets fluctuated and reached a peak value of Rp2,011,879,396,142 in 2021, then decreased to Rp1,534,000,446,508 in 2022, Rp759,828,977,658 in 2023, and again decreased to Rp618,159,340,037 in 2024. This decline indicates a weakening of the company's business scale and ability to maintain its assets.

The financial situation of PT Indofarma Tbk is also evident in the development of the company's debt and equity structure. Total debt increased from Rp656,380,082,912 in 2014 to Rp1,762,201,148,810 in 2024, while total equity decreased from Rp591,963,192,495 to -Rp1,144,041,808,773 during the same period. Negative equity indicates that the company's liabilities have exceeded its total assets due to accumulated losses. This condition is further strengthened by a decrease in working capital from Rp182,322,050,054 in 2014 to -Rp1,373,066,078,530 in 2024, a decrease in retained earnings from Rp3,586,556,135 to -Rp1,744,764,477,944, and an EBIT loss of -Rp479,544,148,232 since 2022. Net sales also experienced a sharp decline after 2021 from Rp2,901,986,532,879 to Rp210,379,673,780 in 2024. This series of conditions indicates the weakening of the company's financial stability and the increasing risk of financial distress.

Financial distress is a state of financial difficulty that can threaten a company's survival. Efendi et al. (2023) explain that financial distress occurs when a company is unable to meet its obligations, accompanied by low profits. This condition generally occurs gradually and can be identified through financial reports, with consequences including disrupted operational activities, decreased investor confidence, and an increased risk of bankruptcy. At PT Indofarma Tbk, this indication is evident in the increase in total debt that is not matched by the company's ability to maintain assets and equity. The decline in total assets that occurred simultaneously with the increase in debt indicates that the company is facing pressure in its financial structure. This condition became increasingly apparent when the company's equity turned negative starting in 2023 and continued into 2024.

These issues relate to company size and leverage, factors considered related to financial distress in the financial management literature. According to Hery (2017:11), company size generally refers to the ratio of the size of an object to its assets, while leverage reflects the proportion of debt in the capital structure. Fahmi (2018) explains that the leverage ratio measures the extent to which a company's assets are financed by debt. In the case of PT Indofarma Tbk, the decline in total assets from Rp2,011,879,396,142 in 2021 to Rp618,159,340,037 in 2024 coincided with an increase

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in total debt to Rp1,762,201,148,810 and a decrease in equity to -Rp1,144,041,808,773. These conditions indicate that the decline in company size and high leverage are issues that need to be studied in relation to financial distress. The company's financial pressure is also reflected in the delay in employee salary payments and the filing of a Debt Payment Suspension (PKPU) lawsuit in 2024, indicating problems in the company's ability to meet its financial obligations (CNBC Indonesia).

The relationship between company size and leverage and financial distress also shows inconsistent research results. Azyyati et al.'s (2025) study on the consumer cyclicals sector in Indonesia found that company size and leverage had a significant negative effect on financial distress. Meanwhile, Septiana & Sari (2021), in their study of manufacturing companies listed on the Indonesia Stock Exchange (IDX) for the 2015-2019 period, found that managerial ownership and leverage had a positive and significant effect on financial distress, while company size had no significant effect. These differences indicate that the relationship between company size, leverage, and financial distress requires further study. This issue becomes even more relevant when compared to the condition of PT Indofarma Tbk, which experienced a decline in assets, an increase in debt, a decrease in equity, a decrease in working capital, accumulated losses, and a decrease in net sales during the 2014-2024 period, all of which indicated pressure on the company's financial condition.

This study aims to determine the effect of company size on financial distress using the Altman Z-Score Model, to determine the effect of leverage proxied by the Debt to Equity Ratio (DER) on financial distress using the Altman Z-Score Model, and to determine the effect of company size and leverage proxied by the Debt to Equity Ratio (DER) together on financial distress at PT Indofarma Tbk for the period 2014-2024. This study is important because PT Indofarma Tbk is a state-owned enterprise (BUMN) that has responsibilities to the community and the state, so that prolonged financial distress can have an impact on public trust, state losses, and the company's business continuity. The novelty of this study lies in testing company size and leverage on financial distress using the Altman Z-Score Model at PT Indofarma Tbk specifically during the period 2014-2024, so that it can provide an overview of the relationship between changes in company size and debt structure with financial distress conditions based on the company's financial phenomena during the study period.

METHOD

This study uses a quantitative method with an associative approach. Quantitative research is a scientific study conducted systematically on parts, phenomena, and matters related to the phenomenon being studied, while the associative approach is used to determine the relationship or influence between two or more variables (Abuhamda et al.,

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2021; Sugiyono, 2017). This approach is used to analyze the effect of Company Size as the first independent variable (X1) and Leverage proxied by the Debt to Equity Ratio (DER) as the second independent variable (X2) on Financial Distress as the dependent variable (Y) at PT Indofarma Tbk for the period 2014-2024. The data used are secondary data in the form of annual financial reports of PT Indofarma Tbk for the period 2014-2024 obtained from official company sources.

The research instruments are financial report documents and stock information data of PT Indofarma Tbk for the 2014-2024 period which are used to calculate each research variable. Company Size is measured using the natural logarithm of total assets, while Leverage is measured using the Debt to Equity Ratio (DER). Financial Distress is measured using the Altman Z-Score Model based on the ratio of working capital to total assets, retained earnings to total assets, EBIT to total assets, stock market value to total debt, and sales to total assets. Data collection is carried out through documentation and literature techniques. Documentation techniques are used to obtain annual financial reports, financial overviews, stock price data, company profiles, organizational structures, and information related to PT Indofarma Tbk. Meanwhile, literature techniques are used to obtain theoretical foundations through books, research journals, and previous studies related to Company Size, Leverage, and Financial Distress. Data analysis is carried out using the SPSS version 27 application. The analysis stages include descriptive statistics, classical assumption tests, multiple linear regression, hypothesis testing, and coefficient of determination tests. Descriptive statistics are used to provide an overview of data characteristics through minimum, maximum, mean, and standard deviation values (Ghozali, 2018). Classical assumption tests consist of normality, multicollinearity, heteroscedasticity, and autocorrelation tests. Normality tests are performed using histograms, Normal PP Plots, and One Sample Kolmogorov-Smirnov tests with reference to a significance criterion of 0.05 (Firdaus, 2019; Ghozali, 2020). Multicollinearity tests are performed by examining the Tolerance and Variance Inflation Factor (VIF) values, while heteroscedasticity is analyzed using a Scatterplot graph (Ghozali, 2021; Ghozali, 2017; Rochmat, 2017). Autocorrelation tests are performed using Durbin-Watson to determine the correlation of interperiod confounding errors (Ghozali, 2018). Furthermore, multiple linear regression is used to determine the effect of Company Size and Leverage on Financial Distress. Hypothesis testing is carried out through partial tests (t-test) and simultaneous tests (F-test), while the coefficient of determination is used to determine the ability of the independent variable to explain the variation of the dependent variable (Ghozali, 2018; Sugiyono, 2018; Sugiyono, 2019).

The population in this study is all financial reports of PT Indofarma Tbk for the period 2014-2024 obtained from the company's official website. This population includes all company financial reports during the observation period as a source of research data.

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According to Nawawi (2019), a population is the entire research object with certain characteristics, while Sujarweni (2020:121) defines a population as the entire object or subject with certain characteristics and qualities that are determined to be studied and conclusions drawn.

The research sample was determined using a purposive sampling technique, which selects samples based on specific criteria established to meet the research needs. These criteria include state-owned pharmaceutical companies listed and traded on the Indonesia Stock Exchange, companies that publish comprehensive and continuous financial reports for the 2014-2024 period, companies that show indications of financial distress during the observation period, and the availability of official financial report data accessible through the company's website or the IDX. Based on these criteria, the research sample consists of the financial position report, comprehensive income statement, and stock information data of PT Indofarma Tbk for the 2014-2024 period. Thus, the number of observations used in the analysis is 11 annual data.

The research procedure begins with determining the object and research problem based on the financial condition of PT Indofarma Tbk for the 2014-2024 period, then determining the variables of Company Size, Leverage proxied by DER, and Financial Distress Model Altman Z-Score. Next, secondary data was collected through annual financial report documentation, stock price data, and company information, and supplemented by literature studies related to the research variables. The data obtained were then processed to calculate Company Size, DER, and Z-Score for each observation year. After all variables were calculated, the data were analyzed using SPSS version 27 through descriptive statistics, classical assumption tests, multiple linear regression, t-tests, F-tests, and coefficients of determination. The test results were then used to determine the effect of each independent variable partially or simultaneously on the Financial Distress Model Altman Z-Score at PT Indofarma Tbk for the 2014-2024 period. The research process was carried out for 11 months, from September 2025 to July 2026.

RESULTS AND DISCUSSION

Calculation of Research Variables

1. Company Size Calculation

Table 1. Results of Company Size Calculation(Stated in full Rupiah)

Year	Total Assets	Company Size (Ln)
2014	1,248,343,275,406	27.85283841
2015	1,533,708,564,241	28.05870982
2016	1,381,633,321,120	27.95428748
2017	1,529,874,782,290	28.05620701
2018	1,442,350,608,575	27.99729527

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2019	1,383,935,194,386	27.95595215
2020	1,713,334,658,849	28.16946268
2021	2,011,879,396,142	28.33009042
2022	1,534,000,446,508	28.05890011
2023	759,828,977,658	27.35635922
2024	618.159.340.037	27,15001209

Source: Data processed by researchers (2025)

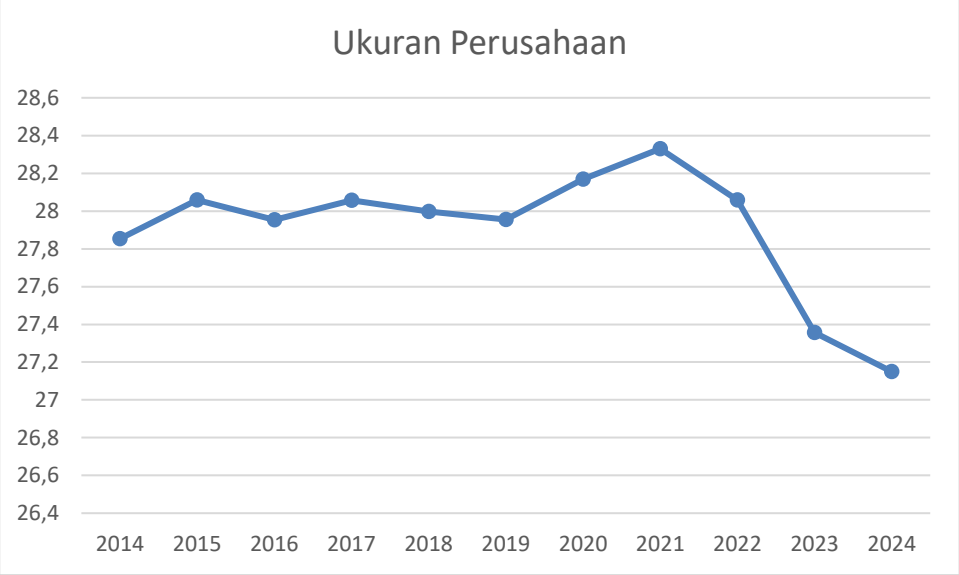


Figure 2. Graph of Company Size of PT Indofarma Tbk Period2014-2024
Source: Data processed by researchers (2025)

Based on the calculation of PT Indofarma Tbk's company size for the 2014–2024 period, the natural logarithm of total assets fluctuated. The highest value occurred in 2021 at 28,330 with total assets of Rp2,011,879,396,142, while the lowest value was in 2024 at 27,150 with total assets of Rp618,159,340,037. Overall, total assets tended to increase until 2021, then decreased sharply in 2022–2024. This condition indicates a weakening of the company's operational capacity and stability and has the potential to increase the risk of financial distress.

2. Leverage Calculation

Table 2. Leverage Calculation Results (DER) (Expressed in Full Rupiah)

Year	Total Debt	Total Equity	*Leverage*
2014	656,380,082,912	591,963,192,495	1,10881908
2015	940,999,674,778	592,708,889,463	1,58762538
2016	805.876.240.489	575,757,080,631	1,39968099

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Year	Total Debt	Total Equity	*Leverage*
2017	1,003,464,884,586	526,409,897,704	1,90624243
2018	945,703,748,717	496,646,859,858	1.90417745
2019	878,999,867,350	504,935,327,036	1.74081673
2020	1,283,008,182,330	430326476519	2.98147628
2021	1,503,569,486,636	508,309,909,506	2.95797792
2022	1,447,651,934,795	86,348,511,713	16.76522161
2023	1,563,981,235,924	-804.152.258.266	-1.94488198
2024	1,762,201,148,810	-1,144,041,808,773	-1.54032933

Source: Data processed by researchers (2025)

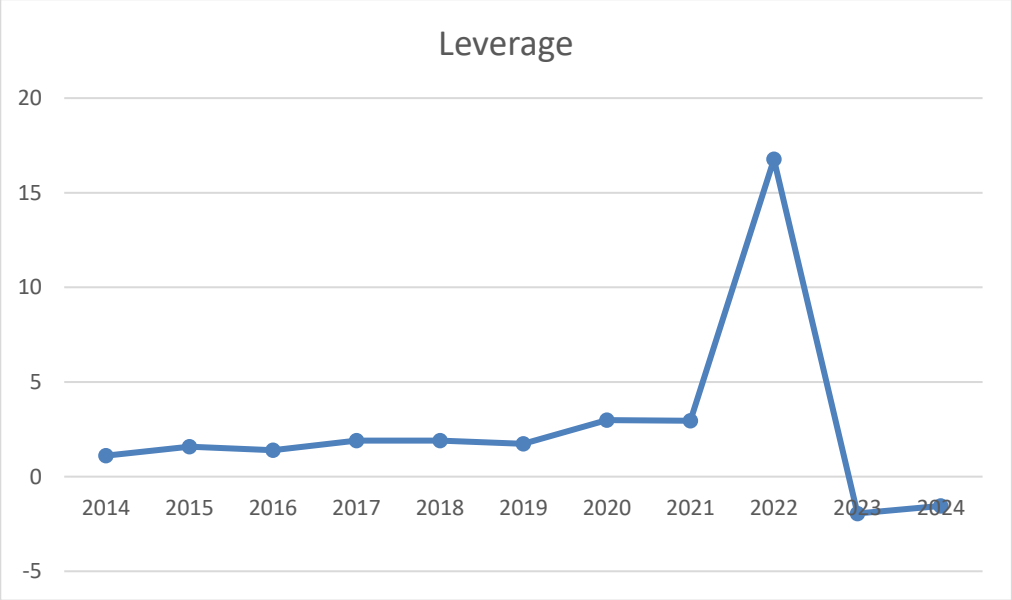


Figure 3. Leverage Graph (DER) of PT Indofarma Tbk for the 2014-2024 Period
Source: Data processed by researchers (2025)

Based on the leverage calculation results for PT Indofarma Tbk for the 2014–2024 period, the Debt to Equity Ratio (DER) shows unstable movement and tends to increase. The lowest value occurred in 2014 at 1.109, while the highest in 2022 at 16.765, indicating the company's increasing dependence on debt. Total debt increased from IDR 656,380,082,912 in 2014 to IDR 1,762,201,148,810 in 2024, while equity decreased to negative since 2023. This condition reflects a high burden of liabilities and a weakening of the company's ability to meet financial obligations, potentially increasing the risk of financial distress.

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3. Financial Distress Calculation

A. Working Capital to Total Assets Ratio (X1)

Table 3. Results of the X1 Ratio Calculation at PT Indofarma Tbk for the 2014-2024 Period
(Stated in full Rupiah)

Year	Working capital	Total Assets	X1
2014	182,322,050,054	1,248,343,275,406	0.14605121
2015	221,426,260,625	1,533,708,564,241	0.14437310
2016	148,576,747,889	1,381,633,321,120	0.10753703
2017	37,693,194,693	1,529,874,782,290	0.02463809
2018	40,255,274,568	1,442,350,608,575	0.02790949
2019	388,276,594,921	1,383,935,194,386	0.28055981
2020	297,980,881,757	1,713,334,658,849	0.17391867
2021	366,201,661,634	2,011,879,396,142	0.18201969
2022	-121,668,888,721	1,534,000,446,508	-0.07931477
2023	-1,032,096,054,758	759,828,977,658	-1.35832679
2024	-1,373,066,078,530	618.159.340.037	-2,22121707

Source: Data processed by researchers (2025)

During the 2014-2024 period, fluctuations with a negative tendency were seen in the X1 value (Working Capital to Total Assets) of PT Indofarma Tbk. In the 2014-2024 period, the X1 value remained positive, although it fluctuated. The highest X1 value was achieved in 2019, which was 0.28055981, indicating that the company's working capital condition in that year was relatively better compared to other years. Entering 2022, the X1 value changed to negative by -0.07931477 before finally continuing to decline to -1.35832679 in 2023 and -2.22121707 in 2024. This decrease was caused by negative working capital due to current liabilities being greater than current assets. This situation indicates that PT Indofarma Tbk's liquidity capacity is decreasing, which complicates the company's ability to meet its financial responsibilities directly and indicates a potential risk of financial distress.

B. Retained Earnings to Total Assets Ratio (X2)

Table 4. Results of the X2 Ratio Calculation at PT Indofarma Tbk for the 2014-2024 Period
(Stated in full rupiah)

Year	Retained earning	Total Assets	X2
2014	3,586,556,135	1,248,343,275,406	0.00287305

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Year	Retained earning	Total Assets	X2
2015	207,627,333,618	1,533,708,564,241	0.13537600
2016	184,656,595,420	1,381,633,321,120	0.13365094
2017	135.311.235.313	1,529,874,782,290	0.08844595
2018	105,548,770,937	1,442,350,608,575	0.07317830
2019	-78,028,599,195	1,383,935,194,386	-0.05638169
2020	-148,980,463,895	1,713,334,658,849	-0.08695351
2021	-186.561.103.510	2,011,879,396,142	-0.09272976
2022	-615,024,057,748	1,534,000,446,508	-0.40092821
2023	-1,410,275,903,109	759,828,977,658	-1.85604385
2024	-1,744,764,477,944	618.159.340.037	-2.82251576

Source: Data processed by researchers (2025)

The X2 value of PT Indofarma Tbk, which shows the ratio of retained earnings to total assets, experienced a downward trend during the 2014–2024 period. The X2 value was still positive in 2014–2018 with the highest value of 0.13537600 in 2015, but since 2019 it has changed to negative to -0.05638169 and continues to decline to -2.82251576 in 2024. This condition indicates an increase in accumulated losses which causes retained earnings to become a deficit, thus weakening the capital structure and increasing the risk of financial distress.

C. Earnings Before Interest and Tax to Total Assets Ratio (X3)

Table 5. Results of the X3 Ratio Calculation at PT Indofarma Tbk for the 2014-2024 Period
(Stated in full rupiah)

Year	EBIT	Total Assets	X3
2014	46,344,316,460	1,248,343,275,406	0.03712466
2015	54,928,873,266	1,533,708,564,241	0.03581441
2016	33,436,121,196	1,381,633,321,120	0.02420043
2017	-4,282,682,490	1,529,874,782,290	-0.00279937
2018	25,910,150,677	1,442,350,608,575	0.01796384
2019	50,055,221,968	1,383,935,194,386	0.03616876
2020	58,168,824,711	1,713,334,658,849	0.03395065
2021	51,979,235,025	2,011,879,396,142	0.02583616
2022	-479.544.148.232	1,534,000,446,508	-0.31261018
2023	-603.460.670.279	759,828,977,658	-0.79420592
2024	-253,728,291,298	618.159.340.037	-0.41045775

Source: Data collected by researchers (2025)

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The X3 (Earnings Before Interest and Taxes to Total Assets) value of PT Indofarma Tbk during the 2014–2024 period shows fluctuating conditions with a downward trend. The X3 value was negative in 2017 at -0.00279937, returned to positive in 2018–2021, then decreased significantly since 2022 to -0.31261018 and reached -0.79420592 in 2023 before improving to -0.41045775 in 2024. This condition indicates a weakening of the company's ability to generate operating profit from its assets. A negative X3 value reflects operational losses and is an indicator of increasing financial distress risk based on the Altman Z-Score Original model.

D. Stock Market Value to Total Debt Ratio (X4)

Table 6. Results of the X4 Ratio Calculation at PT Indofarma Tbk for the 2014-2024 Period
(Stated in full rupiah)

Year	Stock Market Value	Total Debt	X4
2014	1,100,239,962,500	656,380,082,912	1.67622387
2015	520,676,940,000	940,999,674,778	0.55332319
2016	14,504,571,900,000	805.876.240.489	17.99851041
2017	18,285,678,250,000	1,003,464,884,586	18.22253925
2018	20,145,238,750,000	945,703,748,717	21.30184931
2019	2,696,362,725,000	878,999,867,350	3.06753485
2020	16,426,117,750,000	1,283,008,182,330	12.80281605
2021	7,376,256,650,000	1,503,569,486,636	4.90583024
2022	3,564,157,625,000	1,447,651,934,795	2.46202664
2023	1,875,056,837,500	1,563,981,235,924	1.19889983
2024	390,507,705,000	1,762,201,148,810	0.22160223

Source: Data processed by researchers (2025)

The X4 (Market Value of Equity to Total Liabilities) value of PT Indofarma Tbk during the 2014–2024 period shows a very fluctuating condition. The X4 value increased sharply in 2016–2018 to reach 21.30184931 in 2018, then decreased again and reached 0.22160223 in 2024. This decrease indicates a smaller market value of equity compared to total debt, which reflects the company's weakening ability to cover its obligations. This condition is in line with the decline in stock prices and the increase in company debt, thus increasing the risk of financial distress based on the Altman Z-Score Original model.

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E. Sales to Total Assets Ratio (X5)

Table 7. Results of the X5 Ratio Calculation at PT Indofarma Tbk for the 2014-2024 Period
(Stated in full rupiah)

Year	Sale	Total Assets	X5
2014	1,381,436,578,115	1,248,343,275,406	1,10661595
2015	1,621,898,667,657	1,533,708,564,241	1.05750121
2016	1,674,702,722,328	1,381,633,321,120	1,21211808
2017	1,631,317,499,096	1,529,874,782,290	1.06630786
2018	1,592,979,941,258	1,442,350,608,575	1,10443323
2019	1,359,175,249,655	1,383,935,194,386	0.98210903
2020	1,715,587,654,399	1,713,334,658,849	1.00131498
2021	2,901,986,532,879	2,011,879,396,142	1.44242569
2022	1,144,108,230,742	1,534,000,446,508	0.74583305
2023	523,599,087,434	759,828,977,658	0.68910124
2024	210,379,673,780	618.159.340.037	0.34033244

Source: Data processed by researchers (2025)

The X5 (Sales to Total Assets) value of PT Indofarma Tbk for the 2014–2024 period shows fluctuations with a downward trend at the end of the period. The X5 value is above 1 until 2021 and reaches 1.44242569, then decreases to 0.74583305 in 2022 and continues to decrease to 0.34033244 in 2024. This decrease indicates the decreasing effectiveness of assets in generating sales, in line with the decrease in sales from IDR 2,901,986,532,879 in 2021 to IDR 210,379,673,780 in 2024. This condition reflects weakening operational performance and increasing risk of financial distress.

The following are the results of the financial distress calculations at PT Indofarma Tbk for the 2014-2024 period above, the attached table data for the calculation results is as follows:

Table 8. Results of Financial Distress Calculation at PT Indofarma Tbk 2014-2024 period

Year	X1	X2	X3	X4	X5	Z	Condition
2014	0.14605121	0.00287305	0.03712466	1.67622387	1,10661595	2.41414537	*Grey area*
2015	0.14437310	0.13537600	0.03581441	0.55332319	1.05750121	1.87045682	*Grey area*
2016	0.10753703	0.13365094	0.02420043	17.99851041	1,21211808	12.40724150	*Safe zone*
2017	0.02463809	0.08844595	-0.00279937	18.22253925	1.06630786	12.14398354	*Safe zone*
2018	0.02790949	0.07317830	0.01796384	21.30184931	1,10443323	14.08076450	*Safe zone*
2019	0.28055981	-0.05638169	0.03616876	3.06753485	0.98210903	3,19972426	*Safe zone*
2020	0.17391867	-0.08695351	0.03395065	12.80281605	1.00131498	8.88200924	*Safe zone*

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Year	X1	X2	X3	X4	X5	Z	Condition
2021	0.18201969	-0.09272976	0.02583616	4.90583024	1.44242569	4.55978511	*Safe zone*
2022	-0.07931477	-0.40092821	-0.31261018	2.46202664	0.74583305	0.53495823	*Distress Zone*
2023	-1.35832679	-1.85604385	-0.79420592	1.19889983	0.68910124	-5.44089193	*Distress Zone*
2024	-2,22121707	-2.82251576	-0.41045775	0.22160223	0.34033244	-7.49819934	*Distress Zone*

Source: Data processed by researchers (2025)

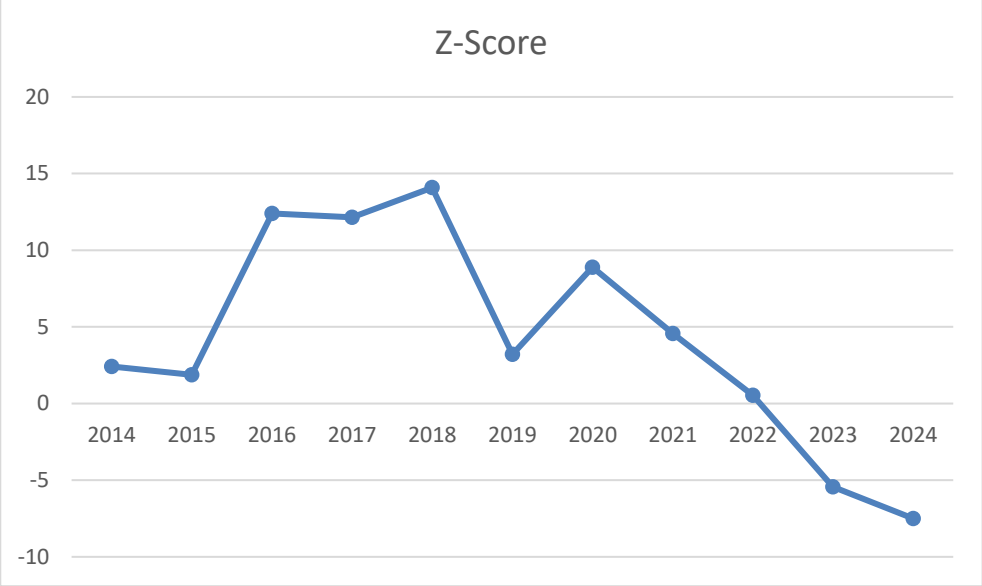


Figure 4. Z-score graph of PT Indofarma Tbk for the period 2014-2024

Source: Data processed by researchers (2025)

The results of the financial distress analysis using the Altman Z-Score model show that the financial condition of PT Indofarma Tbk experienced significant changes during the 2014–2024 period. In 2014 and 2015, the Z-Score values of 2.414 and 1.870 placed the company in the gray area. Conditions improved in 2016–2018 with Z-Score values of 12.407, 12.144, and 14.081, respectively, placing it in the safe category, primarily due to the high stock market value and Sales to Total Assets.

Since 2019, the Z-Score has begun to decline and worsened in 2022, reaching 0.535, placing the company in financial distress. This situation worsened in 2023 and 2024, with Z-Scores of -5.441 and -7.498, respectively. This decline was influenced by negative working capital, an increasing retained earnings deficit, operational losses, and a decline in equity market value. Overall, PT Indofarma Tbk experienced a significant weakening in its financial condition and was in financial distress at the end of the study period.

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Descriptive Statistical Test

Table 9. Descriptive Statistics Results

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Standard Deviation
Company Size	11	27.15001209	28.33009042	27.9036467873	.34757385101
Leverage (DER)	11	-1.94488198	16.76522161	2.6242569600	4.95087805836
Financial Distress	11	-7.49819934	14.08076450	4.2867252091	7.09159299818
Valid N (listwise)	11				

Source: SPSS 27 Output (2025)

Based on Table 9 it can be explained as follows:

1. Company Size

The company size variable had a minimum value of 27.150 in 2024 and a maximum value of 28.330 in 2021, with an average value of 27.904 and a standard deviation of 0.348. The average value, which is close to the maximum, indicates that PT Indofarma Tbk's company size tended to be large during the study period. Meanwhile, the standard deviation value, which is smaller than the average, indicates that the company size data is relatively stable and does not experience excessive fluctuations.

2. *Leverage*(DER)

The leverage variable had a minimum value of -1.945 in 2023 and a maximum value of 16.765 in 2022, with an average value of 2.624 and a standard deviation of 4.951. A negative minimum value indicates a negative equity condition experienced by the company during a given period, while a relatively high maximum value indicates the company's use of debt compared to its capital. A standard deviation value greater than the average indicates that the company's leverage experienced significant fluctuations during the study period.

3. *Financial Distress*

The financial distress variable measured using the Altman Z-Score method had a minimum value of -7.498 in 2024 and a maximum value of 14.081 in 2018 with an average value of 4.287 and a standard deviation of 7.092. A negative minimum value indicates a very serious financial distress condition, while a maximum value indicates a fairly good financial condition of the company in a certain period. A high standard deviation value indicates that the financial distress condition of PT Indofarma Tbk experienced quite extreme changes during the study period. Overall, the results of descriptive statistics show that the company's financial condition tends to fluctuate, especially in the leverage and financial distress variables.

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Classical Assumption Test

1. Normality Test

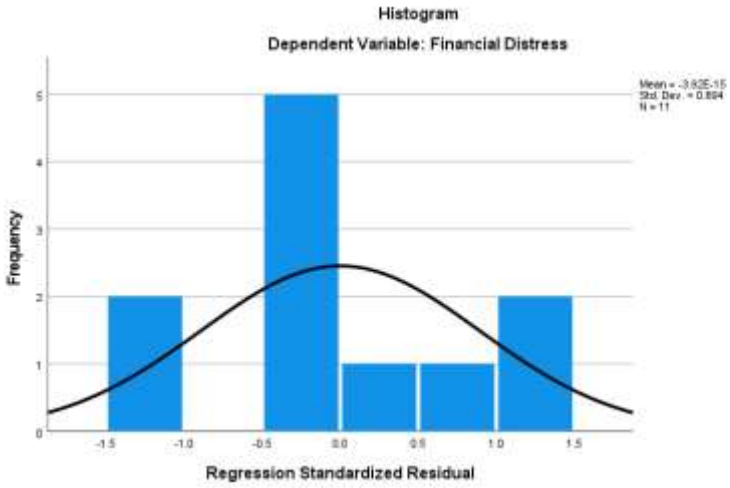


Figure 5. Histogram Diagram

Data source: SPSS 27 Output (2025)

Based on the results of the normality test conducted using a histogram curve on the regression residuals with the dependent variable financial distress, it appears that the data distribution exhibits a pattern that closely resembles a normal curve. This is evidenced by the bell-shaped histogram, where the residual distribution does not exhibit significant deviations to the right or left. Furthermore, the residuals are distributed fairly symmetrically around zero, with a mean close to zero and a standard deviation of 0.894. Therefore, we can conclude that the residuals in this study are normally distributed, thus meeting the assumption of normality, and the data are suitable for use as the basis for multiple linear regression analysis.

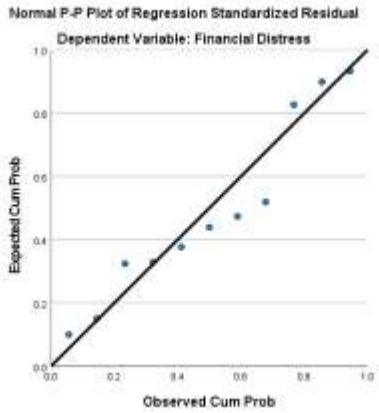


Figure 6. Results of the Normality Test of the P-Plot Graph

Data source: SPSS 27 Output (2025)

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Based on the Normal PP Plot of Regression Standardized Residuals graph, it can be seen that the residual points are spread around the diagonal line and mostly follow the direction of the diagonal line. Although there are some points that are slightly away from the line, the distribution is still relatively normal and does not show extreme deviations. This indicates that the residual data in the regression model is normally distributed, so the assumption of normality in the regression model can be declared fulfilled and the model is suitable for further analysis.

Table 10. Results of the Kolmogorov Normality Test

One-Sample Kolmogorov-Smirnov Test			
			Unstandardized Residual
N			11
Normal Parametersa,b	Mean		.0000000
	Standard Deviation		4.73109398
Most Extreme Differences	Absolute		.206
	Positive		.206
	Negative		-.126
Test Statistics			.206
Asymp. Sig. (2-tailed)c			.200d
Monte Carlo Sig. (2-tailed)e	Sig.		.214
	99% Confidence Interval	Lower Bound	.203
		Upper Bound	.224
a. Test distribution is Normal.			
b. Calculated from data.			
c. Lilliefors Significance Correction.			
d. This is a lower bound of the true significance.			
e. Lilliefors' method based on 10000 Monte Carlo samples with starting seed 2000000.			

Data source: SPSS 27 output

Based on the results of the normality test using Kolmogorov-Smirnov above, it can be seen that the Asymp. Sig. (2-tailed) value is 0.200 and the Monte Carlo Sig. (2-tailed) value is 0.214. Both values are greater than 0.05 (0.200 > 0.05 and 0.214 > 0.05), so it can be concluded that the residual data is normally distributed. In addition, the residual mean value of 0.0000000 indicates that the residual has an average close to zero with a standard deviation of 4.73109398. This indicates that the normality assumption in the regression model has been met.

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2. Multicollinearity Test

Table 11. Multicollinearity Test Results

Coefficientsa								
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-466,547	149,739		-3.116	.014		
	Company Size	16,914	5,382	.829	3,143	.014	.800	1,251
	Leverage (DER)	-.426	.378	-.297	-1.127	.292	.800	1,251
a. Dependent Variable: Financial Distress								

Data source: SPSS 27 Output (2025)

Based on the table above, the results of the multicollinearity test show that:

a. The company size variable has a tolerance value of 0.800 (> 0.10) and a VIF value of 1.251 (< 10). This indicates that the company size variable does not experience multicollinearity with other independent variables.
b. The leverage variable (DER) has a tolerance value of 0.800 (> 0.10) and a VIF value of 1.251 (< 10). This indicates that the leverage variable does not experience multicollinearity with other independent variables.

A tolerance value for both variables approaching 1 and a very low VIF value (approaching 1) indicates a very low correlation between the independent variables. The higher the tolerance value (approaching 1) and the lower the VIF value (approaching 1), the less likely multicollinearity is.

Based on the test results, it can be concluded that the regression model in this assessment does not exhibit multicollinearity between the independent variables. Therefore, the regression model is suitable for further analysis because it meets the assumption of no multicollinearity.

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3. Heteroscedasticity Test

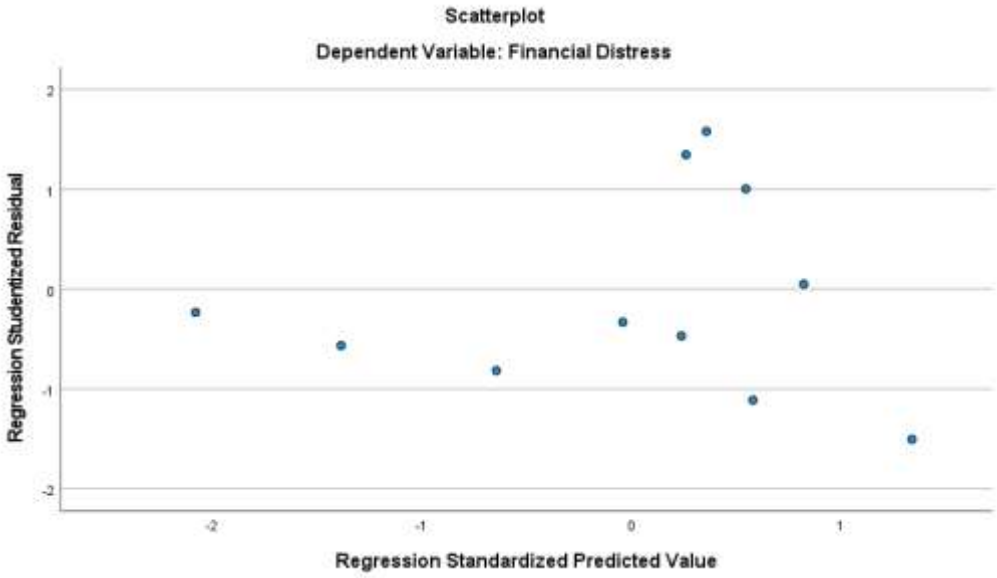


Figure 7. Scatterplot

Data source: SPSS 27 Output (2025)

Based on the resulting scatterplot, it can be observed that the data points are randomly distributed and do not form a clear pattern. The points are spread both above and below the number 0 on the Y-axis, with a relatively even distribution. This random distribution indicates that there is no heteroscedasticity in the regression model.

Thus, it can be concluded that the heteroscedasticity assumption is met, where the variance of the residuals remains constant from one observation to the next. The regression model is suitable for further analysis.

4. Autocorrelation Test Results

Table 12. Autocorrelation Test Results

Model Summary					
Model	R	R Square	Adjusted R Square	Standard Error of the Estimate	Durbin-Watson
1	.745a	.555	.444	5.28952387920	1,723
a. Predictors: (Constant), Leverage (DER), Company Size					
b. Dependent Variable: Financial Distress					

Data source: SPSS 27 Output (2025)

Based on the table above, the Durbin-Watson value obtained is 1.723. Using the DW table at a significance level of 5%, the number of data is (n) = 11, and the number of independent variables (k) = 2, the lower limit value (dL) is 0.7580 and the upper limit

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value (dU) is 1.6044. Referring to the testing criteria dU < d < 4- dU, namely 1.6044 < 1.723 < 2.3956, it can be concluded that the data is free from autocorrelation problems.

Multiple Linear Regression Test

Table 13. Multiple Linear Regression Test Results

Coefficientsa						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	-466,547	149,739		-3.116	.014
	Company Size	16,914	5,382	.829	3,143	.014
	Leverage (DER)	-.426	.378	-.297	-1.127	.292
a. Dependent Variable: Financial Distress						

Source from: SPSS 27 Output (2025)

Based on the Coefficients table, the following regression equation is obtained:

$$Y = -466{,}547 + 16{,}914 \text{ Company Size} - 0.426 \text{ DER}$$

Information:

Y = Financial Distress

a = Constant

X_1= Company Size (X1)

X_2= Leverage proxied by DER (X2)

The multiple linear regression equation above has the following interpretation:

1. The constant value of -466.547 indicates that if the company size and leverage (DER) variables are zero, then the financial distress value is -466.547.
2. The firm size variable, 16.914, has a positive value, meaning that every one-unit increase in firm size will increase the financial distress value by 16.914, assuming other variables remain constant. The t-test results show a significance value of 0.014, which is less than 0.05, indicating that firm size has a significant effect on financial distress.
3. The leverage variable (DER) has a negative regression coefficient of -0.426. This indicates that each one-unit increase in leverage will reduce financial distress by -0.426, assuming other variables remain constant. However, the leverage significance value of 0.292 is greater than 0.05, indicating that leverage has no significant effect on financial distress.

Thus, it can be concluded that in this study, company size has a significant effect on financial distress, while leverage does not have a significant effect on financial distress at PT Indofarma Tbk during the study period.

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Hypothesis Testing

1. Partial Test (t-Test)

Table 14. Partial Test Results

Coefficientsa						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-466,547	149,739		-3.116	.014
	Company Size	16,914	5,382	.829	3,143	.014
	Leverage (DER)	-.426	.378	-.297	-1.127	.292
a. Dependent Variable: Financial Distress						

Source from: SPSS 27 Output (2025)

Conclusion ofresultspartial test is as follows:

a. Based on the partial test results in the table above, the company size variable obtained a t-value of 3.143 with a significance level of 0.014. Considering that the t-value of 3.143 > t-table of 2.30600 and the significance value of 0.014 < 0.05, it is rejected and$\mathrm{H}_0$$H_1$accepted. These results indicate that company size has a positive and significant effect on financial distress.

b. Based on the partial test results in the table above, the Leverage (DER) variable obtained a calculated t value of |-1.127| with a significance level of 0.292. Because the calculated t value of |-1.127| < t table of 2.30600 and a significance value of 0,292> 0.05, then accepted and rejected. These results indicate that leverage has no significant effect on financial distress.$H_o$$H_2$

2. Simultaneous Test (F Test)

Table 15. Simultaneous Test Results

ANOVA						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	279,074	2	139,537	4,987	.039b
	Residual	223,833	8	27,979		
	Total	502,907	10			
a. Dependent Variable: Financial Distress						
b. Predictors: (Constant), Leverage (DER), Company Size						

Source from: SPSS 27 Output (2025)

Based on the results of simultaneous testing in the ANOVA table above, the calculated F value was 4.987 > Ftableof 4.46 with a significance level of 0.039 < 0.05,

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then$H_o$rejected and accepted, meaning that company size and leverage simultaneously have a significant effect on financial distress. These results indicate that the two independent variables, when tested together, are able to provide a meaningful influence in explaining variations in financial distress, thus making the regression model used appropriate for predicting the financial distress conditions of companies in this study.H_3

Coefficient of Determination Test

Table 16. Determination Test Results

Model Summary				
Model	R	R Square	Adjusted R Square	Standard Error of the Estimate
1	.745a	.555	.444	5.28952387920
a. Predictors: (Constant), Leverage (DER), Company Size				
b. Dependent Variable: Financial Distress				

Source from: SPSS 27 Output (2025)

Based on the data processing results, the Adjusted R Square value was 0.444. This value indicates that the independent variable contributed 44.4% to the variation in the dependent variable, while the remaining 55.6% was influenced by other factors not included in the research model. This indicates that the regression model has sufficient capability to describe the relationship between variables, making it suitable for further analysis.

RESEARCH DISCUSSION

The Effect of Company Size on Financial Distress

Based on the results of the partial test (t-test), the company size variable obtained a calculated t-value of 3.143 > t-table of 2.30600 with a significance level of 0.014. This significance value is smaller than 0.05 (0.014 < 0.05), soH_0rejected and accepted. This indicates that company size has a significant effect on financial distress at PT Indofarma Tbk for the 2014-2024 period.H_1

The positive regression coefficient of 16.914 indicates that the larger the company, the greater the likelihood of financial distress. This indicates that the size of a company's total assets is insufficient to guarantee its financial stability. During the study period, PT Indofarma Tbk's total assets peaked at Rp2,011,879,396,142 in 2021, but declined sharply to Rp618,159,340,037 in 2024, followed by a negative Z-score indicating severe financial distress.

This condition aligns with agency theory, where the separation between company owners (principals) and management (agents) can give rise to conflicts of interest. If

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management does not optimally manage assets in accordance with shareholder interests, the risk of financial distress can still increase even if the company is large. The results of this study align with researchNababan & Hartikayanti (2025)which states that company size has a significant positive effect on financial distress. The larger the company, the more complex the operational activities and financial risks it faces.

The Effect of Leverage on Financial Distress

Based on the results of the partial test (t-test), the leverage variable obtained a calculated t-value of |-1.127| <t-table of 2.30600 with a significance level of 0.292. This significance value is greater than 0.05 (0.292 > 0.05), so thatH_0accepted and rejected. This indicates that leverage does not have a significant effect on financial distress at PT Indofarma Tbk for the 2014-2024 period.H_2

Although the company's leverage continued to increase, reaching 16,765 in 2022, and its equity has been negative since 2023, its impact on financial distress was not significant. This suggests that the company's financial distress was more influenced by other factors such as declining total assets, accumulated operating losses, and declining sales.

From a signaling theory perspective, high leverage should be a negative signal to stakeholders regarding the company's increasing financial risk. However, at PT Indofarma Tbk, this signal has not significantly influenced the occurrence of financial distress, as this condition is more influenced by operational issues and a decline in the company's asset value. The results of this study align with researchPrihatna et al. (2025)which states that leverage has no significant effect on financial distress. This suggests that the extent of debt use is not necessarily the primary factor causing financial distress if the company still has certain operational capabilities.

The Effect of Company Size and Leverage on Financial Distress

Based on the results of the simultaneous test (F test), the calculated F value was 4.987 > F table of 4.46 with a significance level of 0.039 < 0.05, thenH_0rejected and accepted. This shows thatH_3Company size and leverage together have a significant effect on financial distress at PT Indofarma Tbk for the 2014-2024 period, with an Adjusted R Square value of 0.444, which means that both variables are able to explain 44.4% of the variation in financial distress.

Simultaneously, company size and leverage can explain a company's financial distress because large company assets require effective management, which is predicted by a healthy capital structure. If a company is unable to manage its assets optimally and has a high debt burden, its financial condition can worsen and increase the risk of financial distress. These results align with research.Septiana G. & Sari (2021)which

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states that company size and leverage simultaneously have a significant effect on financial distress.

Furthermore, PT Indofarma Tbk's condition during the study period showed a decrease in total assets, an increase in total debt, and negative equity at the end of the study period. These conditions caused the company's Z-Score to continue to decline until it was in the severe financial distress category in 2023 and 2024. Therefore, the company needs to evaluate its asset management, operational efficiency, and debt control to improve its financial condition and minimize the risk of financial distress.

CONCLUSION

Based on the research results, company size partially has a significant effect on financial distress of the Altman Z-Score Model at PT Indofarma Tbk for the period 2014–2024, with a calculated t value of 3.143 and a significance of 0.014. On the other hand, leverage proxied by the Debt to Equity Ratio (DER) partially has no significant effect on financial distress, with a calculated t value of -1.127 and a significance of 0.292. Simultaneously, company size and leverage have a significant effect on financial distress, with a calculated F value of 4.987 and a significance of 0.039. The Adjusted R Square value of 0.444 indicates that both variables are able to explain 44.4% of the variation in financial distress, while the remaining 55.6% is explained by factors outside the research model.

The limitations of this study lie in the use of a single company, an observation period of only 11 years, and the limited number of variables used, making the results unable to be generalized to all pharmaceutical companies or state-owned enterprises. Future research is recommended to use a broader sample of companies, a longer observation period, and the addition of other variables such as liquidity, profitability, sales growth, operational cash flow, and macroeconomic factors. Practically, the results of this study demonstrate the importance for the management of PT Indofarma Tbk to improve the effectiveness of asset management, improve operational efficiency, and control financial conditions to minimize the risk of financial distress.

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