Analysis of Financial Ratios Against Financial Distress in Pharmaceutical Companies

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Abstract

This research is intended to identify the impact of liquidity, solvency, and profitability ratios on financial distress conditions as measured using the Altman Z-Score model in pharmaceutical sector companies listed on the Indonesia Stock Exchange in the 2019-2022 period, either partially or simultaneously. The analytical method applied involves descriptive analysis, classical assumption testing, multiple linear regression analysis, and hypothesis testing using SPSS version 20 software. The implications obtained from this research indicate that, when analyzed partially, the liquidity ratio with the Current Ratio proxy has no effect On financial distress conditions with a significance value of 0.051. The same thing applies to the profitability ratio with the Return On Assets (ROA) proxy with a significance value of 0.838, which is also concluded to not affect financial distress. However, there is a significant negative effect of the solvency ratio with the Debt to Asset Ratio (DAR) proxy on financial distress with a value of 0.015, which means that the higher the DAR will reduce the Altman Z-Score value which is closer to financial distress conditions. These three ratios, liquidity, solvency, and profitability, influence financial distress.

Keywords: Liquidity, Solvency, Profitability, Financial Distress

INTRODUCTION

The pharmaceutical industry has become one of the most vital sectors in the global economy. In Indonesia, the pharmaceutical sector also has a crucial role in supporting national economic growth. The Indonesian pharmaceutical industry has succeeded in showing extraordinary resilience in facing significant challenges, including the COVID-19 pandemic. The crisis during the pandemic has impacted various industrial sectors, with several companies experiencing problems and potential financial difficulties.

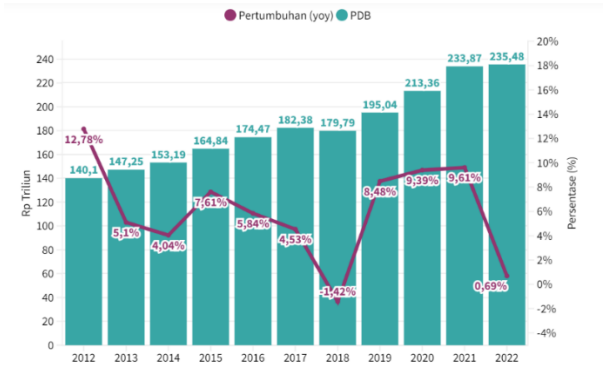

Figure 1.
Contribution of the pharmaceutical industry to Indonesia's GDP growth
Source: Dataindonesia.id, 2023

One illustration of the resilience of the pharmaceutical industry can be seen through its significant and consistent contribution to Gross Domestic Growth (GDP) during the pandemic. Until 2023, the pharmaceutical industry's contribution to GDP will grow significantly. In 2020, when the pandemic peaked, the pharmaceutical industry donated IDR 213.36 trillion, marking an increase of 9.39% from the previous year's contribution of IDR 195.04 trillion. Even in 2021, in the midst of the peak pandemic situation, the pharmaceutical industry will continue to contribute with growth in GDP contribution of IDR 233.87 trillion, with a percentage increase of 9.61%. Even though in 2022, the pharmaceutical industry will still record an increase in GDP contribution, the growth will be slower, namely 0.69%, or IDR 235.48 trillion. This shows that the pharmaceutical industry's performance is experiencing a slowdown compared to the previous two years.

However, this picture of the pharmaceutical industry's good contribution to GDP is not in line with the instability in the financial condition of pharmaceutical companies during the COVID-19 pandemic. If we look at the company's internal finances, several companies have experienced a decline in net profit and cash flow that should be used for company operations.

Table 1.
Pharmaceutical company financial report data 2019-2022

No.	Issuer Company	Year	Net Profit (Rp.000)	Operating Cash Flow (Rp.000)
1	DVLA	2019	221.783.249	272.538.844
		2020	56.481.425	23.993.617
		2021	80.924.101	97.837.348
		2022	137.015.218	-172.781.016
2	KAEF	2019	15.890.439	-1.853.834.642
		2020	14.828.432	-159.340.619
		2021	15.189.448	-510.378.105
		2022	2.587.618	-205.543.358
3	PEHA	2019	102.310.124	-2.481.803
		2020	-13.084.088	-34.126.415
		2021	7.183.102	-15.517.643
		2022	5.611.274	-20.317.952
4	INAF	2019	7.961.966	20.790.922
		2020	-21.430.290	-88.009.118
		2021	1.822.828	-155.822.134
		2022	-428.487.672	-112.573.636

Source: Data processed by researchers, 2023

Almost all of the four companies mentioned above experienced a significant decline in operating profits and cash flow when the pandemic escalated, except for PT Darya-Varia Laboratoria Tbk (DVLA), which did not experience a very severe decline. In 2020, DVLA's

net profit fell from IDR 56.4 billion to IDR 221.7 billion but then recovered with a significant increase. Meanwhile, PT Kimia Farma Tbk (KAEF), PT Phapros Tbk (PEHA), and PT Indonesia Farma Tbk (INAF) have experienced profit fluctuations over the last four years. KAEF experienced two declines, namely in 2020, with a profit of IDR 14.8 billion and IDR 2.5 billion in 2022. PEHA also experienced a loss 2020 of IDR 21.4 billion and a decrease in profit in 2022 amounting to IDR 5.6 billion. INAF suffered a loss of IDR 21.4 billion in 2020 and again in 2022 with a high amount, namely IDR 428.4 billion. In the financial reports, it can be seen that three issuers, namely KAEF, PEHA, and INAF, experienced negative cash flow values for three consecutive periods, which could increase the risk of the company experiencing financial distress or even bankruptcy. Data regarding cash flow provides insight into a company's operational activities. Positive cash flow reflects well-functioning operations and can support the company in continuing to generate profits (Aminah and Riduwan, 2015).

The instability of the Indonesian economy has a significant impact on the operations and performance of a company. This situation impacts small companies and large companies feel the consequences. Many of them are experiencing financial difficulties, potentially leading to bankruptcy. In other words, a company's inability to survive in the face of a country's economic situation can be interpreted as failure, which is reflected in financial distress or even reaching the stage of bankruptcy (Sarina, Lubis & Linda, 2020).

According to Kristanti (2019:3), Financial distress is when a company cannot meet its obligations, and if left unaddressed, it may lead to bankruptcy. Financial distress necessitates monitoring and anticipation as it can disrupt a company's operational activities (Carolina, Marpaung, and Pratama, 2017). To identify these conditions, the Altman Z-Score is a multivariate discriminant equation model that can be used to analyze a company's financial distress. This model works by recognizing several financial ratios that significantly impact an event and then compiling them into a model that makes it easier to conclude an event (Thohari et al., 2015). The Altman equation model includes five categories of financial ratios, namely liquidity, profitability, leverage, solvency, and activity (Panigrahi, 2019). Specifically, this research uses financial ratios of liquidity, solvency, and profitability.

Financial distress is a situation that is undesirable for various parties. If financial distress occurs, investors and creditors tend to be careful when making investments or providing loans to the company. The significant concern surrounding financial distress stems from its potential to create substantial challenges for companies and investors. Management and investors must

be aware of early indications of a company's condition so that appropriate decisions or corrective actions can be taken (Kristanti, Herwany, et al., 2016).

Several indicators or sources of information can provide clues about the possibility of financial distress. This information can be found in the company's financial reports when analyzing financial ratios. Good economic reports should give helpful information for interested parties, such as investors and creditors, to make policies and decisions regarding investment, granting credit, and so on. If a company shows good performance, it gives a positive signal to investors regarding the condition of the company. By seeing positive company performance, company value tends to increase, which can attract many investors to invest their capital in the company (Murni, 2018).

Several studies have been carried out to explore the benefits of financial ratio analysis in evaluating the level of financial difficulty of a business. Sarina, Lubis, and Linda (2020) attempted to determine which of the four indicators, consisting of company size, debt-equity ratio, Return on Equity, and Current Ratio, had an impact on the company's financial distress condition. The results show that the four indicators used can identify conditions of financial distress. On the other hand, Tukan (2018), in his research regarding the influence of liquidity ratios (proxied by the Current Ratio) and leverage (proxied by the Debt to Equity Ratio - DER), stated that the magnitude of the Current Ratio and Debt to Equity Ratio (DER) does not affect the company's financial difficulties.

In addition, Yudhistira (2019) attempts to show the relationship between Leverage (proxied by Debt to Asset Ratio - DAR, Debt to Equity Ratio - DER, and Long Debt to Equity Ratio - LDER) and Profitability (proxied by Return On Assets - ROA and Return On Equity - ROE). This research concludes that debt to asset ratio (DAR) negatively and significantly impacts financial distress conditions. In contrast, Return On Assets (ROA) positively and substantially impacts financial distress. The conclusion regarding profitability (ROA) differs from the research results of Wulandari (2019), which tested three ratios, one of which was profitability with the Return On Assets proxy, and found that ROA had no significant effect on financial distress.

In an unstable economic situation, companies are expected to be able to identify factors that can worsen financial difficulties so that they can form strategic plans to prevent financial distress. Investors are also faced with the demand to understand the company's financial condition more quickly to make the right investment decisions, especially in times of crisis like the current one.

Financial distress is a significant issue that warrants careful consideration. Failure to recognize its indicators early on can significantly impede a company's ability to manage it effectively, potentially culminating in bankruptcy. It's crucial to understand the factors that can precipitate financial distress, take proactive measures to prevent it and identify areas for improvement or sustenance. Hence, researchers are keen to investigate the correlation between financial ratios and financial distress in pharmaceutical firms through a study titled "Analyzing Financial Ratios' Impact on Financial Distress in Pharmaceutical Companies."

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Financial Distress

Financial distress, often referred to as financial difficulty, occurs before a company experiences bankruptcy. Widhiari and Aryani Merkusiwati (2015) explain that financial distress is the initial stage before bankruptcy occurs or liquidity decreases due to declining financial conditions. Amir and Sudiyatno (2017) define financial distress as a company's inability to pay financial obligations that are due. Financial distress can arise in various companies and serves as an indicator or signal of potential bankruptcy. If a company has entered the financial distress phase, management must pay close attention because the risk of bankruptcy may increase. Management of companies experiencing financial distress needs to overcome these financial problems and prevent bankruptcy. A company's financial distress level can be measured using the Alman Z-Score method.

$$\text{Z-Score} = 1.2\ X1 + 1.4\ X2 + 3.3\ X3 + 0.6\ X4 + 0.999\ X5$$

X1: Working capital/ total assets
X2: Retained earnings/ total assets
X3: Earnings Before Interest and Taxes / Total Assets
X4: Market Value of Equity / Total Liabilities
X5: Sales/ Total Assets

The final results of the Z-Score calculation can be classified into three categories, namely:

a. If the Z value <1.8, the company is categorized as bankrupt.
b. If the value is 1.8 < Z < 2.99, the company falls into the gray area category (it cannot be ascertained whether it is healthy or experiencing bankruptcy).
c. If the Z value > 2.99, the company is classified as not bankrupt.

Liquidity Ratio

Kasmir (2017) explains that the liquidity ratio is a method that reflects a company's ability to meet short-term obligations, such as debt. A higher ratio indicates the company has

substantial collateral for its debt to creditors. This ratio is useful for assessing a company's ability to pay short-term obligations using its current assets. There are several measurements used to measure liquidity ratios, one of which is the current ratio.

According to Henry (2015), the Current Ratio is used to assess a company's ability to meet short-term obligations due soon using available current assets. The formula that can be used to calculate the Current Ratio is:

$$\text{Current ratio} = \frac{Current\ Assets}{Current\ Liabitlities} \times 100\%$$

Solvency Ratio

According to Prihadi (2014), the solvency ratio or leverage ratio assesses a company's ability to pay off its debt. In the formula, it can be seen that this ratio describes the extent to which the company's funding is financed through debt compared to the total assets owned by the company. For example, a 0.5 or 50% ratio indicates that creditors claim 50% of the company's total assets. In this calculation, the debt included includes all company debt, both short-term and long-term. The types of measurements used in solvency ratios include Debt to Asset Ratio (DAR).

According to Fahmi (2011), this ratio evaluates the company's debt ratio, calculated by dividing total debt by total assets. Thus, this ratio measures the percentage of company funds from debt, including short-term and long-term debt. The formula that can be used to calculate the Debt to Asset Ratio is:

$$\text{Debt to Asset Ratio} = \frac{Total\ Liabilities}{Total\ Assets} \times 100\%$$

Profitability Ratio

Hermanto (2015) states that profitability ratios reflect the final results of various policies and decisions, providing the final answer regarding the effectiveness of company management. This ratio measures the effectiveness of a company's management, indicated by profits generated from sales and investment income. In other words, using this ratio can describe the company's efficiency. Types of measurements in profitability ratios include Return On Asset.

According to Sawyer (2005), Return on Assets is a ratio used to measure the ability of company management to obtain overall profits. The greater the ROA value of a company, the greater the profits the company obtains and the better the company's position in using assets. The formula that can be used to calculate the Return On Asset ratio is:

$$\text{Return on Asset} = \frac{Total\ Income}{Total\ Assets} \times 100\%$$

Signaling Theory

Signal Theory can provide information related to the company, both in the form of positive and negative signals, to users of financial reports. The company aims to achieve increased profits yearly, which benefits both internal and external parties. Therefore, companies can continue to develop and avoid the risk of bankruptcy (Saputri & Padnyawati, 2020). According to Harmadji et al. (2018), Signaling theory is a representation of signals that indicate the success or failure of a company. This theory is related to the phenomenon of asymmetric information, where one party has access to more complete information than the other party. Predicting the possibility of financial distress will guide company management in making decisions regarding their performance. On the other hand, for outside parties, these predictions help evaluate the continuity of cooperation with the company (Sudaryanti & Dinar, 2019). Signal theory explains to the market the financial conditions of a company.

Hypothesis

Hypotheses in research reflect specific relationships between two or more variables. Sugiyono (2015) states that a hypothesis is a temporary answer to the formulation of a research problem. In the context of this research, the hypotheses to be tested are as follows:

H_1: The Liquidity Ratio (Current Ratio) influences financial distress in pharmaceutical companies listed on the Indonesia Stock Exchange in the 2019-2022 period.

Liquidity ratios are a tool for evaluating a company's ability to meet its short-term obligations. In this study, the current ratio is used to measure a company's ability to fulfill its short-term obligations by dividing the total current assets owned by the company by its total short-term liabilities (Silvia, Yulistina, 2022). Signal theory explains the correlation between the current ratio and financial distress by describing how companies provide information to the market about their financial condition. Companies that have a high current ratio indicate that they have sufficient financial strength to meet their current obligations quickly. Conversely, if a company has a low current ratio, its ability to pay off short-term debt will decrease, indicating financial difficulties that the company may experience (Putri & Kristanti, 2020). Sarina, Lubis, and Linda (2020) state in their research that the current ratio has an impact on a company's financial distress condition.

H_2: There is an influence of the Solvency Ratio (Debt to Asset Ratio) on financial distress in pharmaceutical companies listed on the Indonesia Stock Exchange in the 2019-2022 period.

The debt-to-asset ratio (DAR) measures how large a share of a company's assets is funded by debt (Silvia, Yulistina, 2022). Signal theory explains the correlation between DAR (Debt Asset Ratio) and financial distress by describing how companies provide information to the market about their financial condition. Companies that have many creditors tend to experience financial distress more quickly than those that only have one creditor (Andre & Taqwa, 2014). Hidayat et al., (2020) shows that the debt to asset ratio has a positive impact on the likelihood of financial distress.

H_3: There is an influence of the Profitability Ratio (Return on Assets) on financial distress in pharmaceutical companies listed on the Indonesia Stock Exchange in the 2019-2022 period.

Companies that record a high level of Return on Assets (ROA) are considered successful in managing their assets. This shows the company's ability to carry out financial activities effectively and generate substantial profits, so that the company tends to avoid financial difficulties. On the other hand, a company with a low ROA level indicates poor financial performance, which can cause the company to be unable to obtain maximum profits and even experience losses. This can indicate that the company is experiencing financial difficulties (Sudaryanti & Dinar, 2019). Yudhistira (2019) attempts to show the relationship between Return on Assets and financial distress, and the result indicates that Return on Assets has a positive and significant impact on financial distress.

H_4: There is a joint influence of Liquidity Ratios, Solvency Ratios, and Profitability Ratios on financial distress in pharmaceutical companies listed on the Indonesia Stock Exchange in the 2019-2022 period.

In financial distress issues, especially when using the Altman Z-Score model to assess a company's financial distress level, three main ratios, liquidity, solvency, and profitability, are essential in determining the financial distress figure. In addition, several variables are used to predict financial distress, such as profitability, liquidity, leverage, and activity ratios, because these ratios are considered capable of reflecting the company's financial performance and efficiency to predict the possibility of financial distress (Hanifah & Purwanto, 2013). Brigham and Houston (2010) explain that financial ratios can help anticipate a company's future.

RESEARCH METHOD

Research Methodology

Quantitative research methods are research approaches based on the philosophy of positivism, which is used to investigate a particular population or sample. Data analysis is carried out quantitatively to test hypotheses that have been formulated (Sugiyono, 2013). This research uses quantitative research methods with a descriptive approach. The descriptive approach was chosen to provide a description of the research object and results. The dependent variable in this research is the company's Financial Distress condition, while the independent variables include the company's financial ratios based on research gaps from previous research, namely Liquidity Ratio (Current Ratio) (X1), Solvency Ratio (Debt to Asset Ratio) (X2), and Profitability Ratio (Return on Assets) (X3).

Population and Sampling

The research population includes pharmaceutical companies listed on the Indonesia Stock Exchange for 2019-2022. In this study, a purposive sampling method was used to select the sample based on specific criteria considered to represent the research objectives. The requirements were that pharmaceutical companies be listed on the Indonesia Stock Exchange and published financial reports from 2019-2022. Based on the criteria, the research sample was obtained as follows:

Table 2.
Sample of Company publishes financial reports during the 2019-2022 period.

No.	Issuer Code	Company
1	DVLA	PT Darya-Varia Laboratoria Tbk
2	KAEF	PT Kimia Farma Tbk
3	KLBF	PT Kalbe Farma Tbk
4	MERCK	PT Merck Tbk
5	PEHA	PT Phapros Tbk
6	PYFA	PT Pyridam Farma Tbk
7	SIDO	PT Industri Jamu dan Farmasi Sido Muncul Tbk
8	TSPC	PT Tempo Scan Pacific Tbk
9	INAF	PT Indonesia Farma Tbk

Data Source

The data used is secondary, namely, information collected from existing sources, such as financial reports of pharmaceutical companies listed on the Indonesia Stock Exchange for the 2019-2022 period, obtained from the Indonesian Stock Exchange (IDX) website.

Variable Operationalization

Operationalization of research variables is needed to explain the types of variables, the concept of independent and dependent variables, and the indicators used to measure the value of research variables. Below is the operationalization of variables from this research:

Table 3.
Variable Operationalization

No.	Variable	Proxy	Variable Concept	Indicator	Size Scale
1	Liquidity	Current Ratio (CR)	The current Ratio is used to assess a company's ability to meet short-term obligations due soon using available current assets.	$\frac{Current\ Assets}{Current\ Liabilities} \times 100\%$ Hery (2015)	Ratio
2	Solvency	DAR	Debt to Asset Ratio is a ratio that evaluates the company's debt ratio, calculated by dividing total debt by total assets.	$\frac{Total\ Liabilities}{Total\ Assets} \times 100\%$ Fahmi (2011)	Ratio
3	Profitability	ROA	Return on Assets is a ratio used to measure the ability of company management to obtain overall profits.	$\frac{Total\ Income}{Total\ Assets} \times 100\%$ Sawir (2005)	Ratio
4	Financial Distress	Altman Z-Score	Financial distress is a company's inability to pay financial obligations that are due.	Z-Score = 1.2 X1 + 1.4 X2 + 3.3 X3 + 0.6X4 + 0.999X5 Cut-off : 1. Z value <1.8 = Financial Distress 2. Z value 1.8 < Z < 2.99 = gray area 3. Z value > 2.99 = Non Financial Distress Altman (1986)	Nominal

Data Analysis Technique

Data analysis was carried out using several techniques, including Descriptive Statistical Analysis, Classical Assumption Test Analysis (Data Normality Test, Data Multicollinearity, Data Autocorrelation, Data Heteroscedasticity), and Hypothesis Testing (Multiple Linear Regression Equation Analysis, Coefficient of Determination (R2), Partial Testing (T-test), and Simultaneous Significance Test (F Test). Data processing was carried out using SPSS version 20 software.

RESULT AND ANALYSIS

Classic assumption test results

In this research, classical assumptions were tested on secondary data. Testing involves normality, multicollinearity, heteroscedasticity, and autocorrelation tests, with the following test results:

Table 3.
Normality Test Results

		Unstandardized Residual
N		45
Normal Parameters[a,b]	Mean	0E-7
	Std. Deviation	.78963382
Most Extreme Differences	Absolute	.117
	Positive	.117
	Negative	-.094
Kolmogorov-Smirnov Z		.783
Asymp. Sig. (2-tailed)		.572

a. Test distribution is Normal.
b. Calculated from data.

Source: Data processed by researchers, SPSS 20

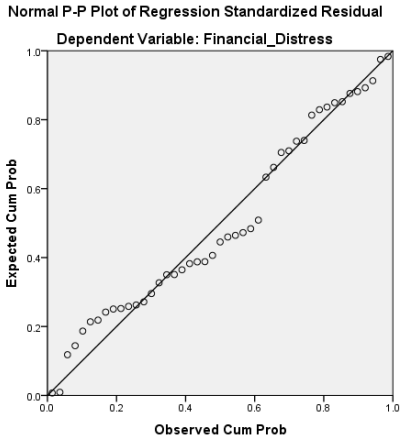

Figure 2.
P-P Plot Normality Test Results
Source: Data processed by researchers, SPSS 20

The normality test is carried out to determine whether continuous data follows a normal distribution. If the constant data is normally distributed, then the next steps, such as validity testing, t-test, correlation, and regression, can be carried out. Researchers used Kolmogorov-Smirnov and P-P Plot analysis to test whether the data is normal. From the One Sample Kolmogorov-Smirnov Test results, the probability value or Asymp is obtained. Sig. (2-tailed) of 0.572. This value is compared with 0.05 (with a significance level of $\alpha = 5\%$). In the context

of this research, the value of 0.572 is more significant than 0.05, so the independent and dependent variables are considered normal. This statement is supported by the opinion of Sulistyowati (2017), who states that if the Kolmogorov-Smirnov results show a significant d value above 0.05, then the residual data is considered normally distributed.

The second normality test was carried out using the P-P Plot. In data normality with the P-P Plot, a variable is considered normal if the distribution image has data points spread around the diagonal line and the distribution of the data points is parallel to the diagonal line. Based on the data processing results in this study, it can be concluded that both the Kolmogorov-Smirnov and P-P Plots show a normal distribution pattern. In this study, it was also seen that the dots formed were scattered around the diagonal line.

Multicollinearity Test

The multicollinearity test is used to assess whether, in the regression model, there is a correlation between the independent variables. A good regression model should not show a significant correlation between the independent variables. Identification of multicollinearity can be done by analyzing the correlation matrix between independent variables and looking at the tolerance values and Variance Inflation Factor (VIF) as follows:

1. If the tolerance value is more significant than 0.10 and the VIF value is less than 10, it can be interpreted that there is no multicollinearity problem.
2. Conversely, if the tolerance value is less than 0.10 and the VIF value is more than 10, it can be interpreted that there is a multicollinearity problem (Sulistyowati, 2017).

Table 4.
Multicollinearity Test Results

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Current_Ratio	.128	7.829
	DAR	.125	7.976
	ROA	.875	1.142

Source: Data processed by researchers, SPSS 20

Based on the data analysis that has been carried out, it can be concluded that the results of the multicollinearity test of the variables are as follows:

1. The Tolerance variable Current Ratio (CR) has a value of 0.128 and a VIF of 7.829, indicating that there is no indication of multicollinearity in this variable.

2. The Tolerance variable Debt to Asset Ratio (DAR) has a value of 0.125 and a VIF of 7.976, indicating no multicollinearity symptoms in this variable.
3. The Tolerance variable Return On Assets (ROA) has a value of 0.875 and a VIF of 1.142. Thus, it can be concluded that there are no signs of multicollinearity in these variables.

Thus, the results of the multicollinearity test show no indications of multicollinearity in this data because the tolerance value was more significant than 0.10, and the VIF value was smaller than 10. Therefore, this research can be continued because the data is accessible from multicollinearity problems.

Heterocedasticity Test

This test is intended to assess whether, in the regression model, there is inconsistent variation in the residuals between observations. The existence of heteroscedasticity occurs when the variance of the residuals is not constant from one observation to the next. A regression model that is considered reasonable is one that does not experience heteroscedasticity. The heteroscedasticity can be identified by examining certain patterns on the heteroscedasticity test graph using a scatterplot in the SPSS program. The decision making procedure can be explained as follows:

1. If there is a certain pattern, such as a wavy, widening, or narrowing pattern in the scatterplot, it can be concluded that heteroscedasticity has occurred.
2. On the other hand, if there is no clear pattern and the points are distributed randomly above and below the Y axis at a value of 0, then it can be concluded that there is no heteroscedasticity.

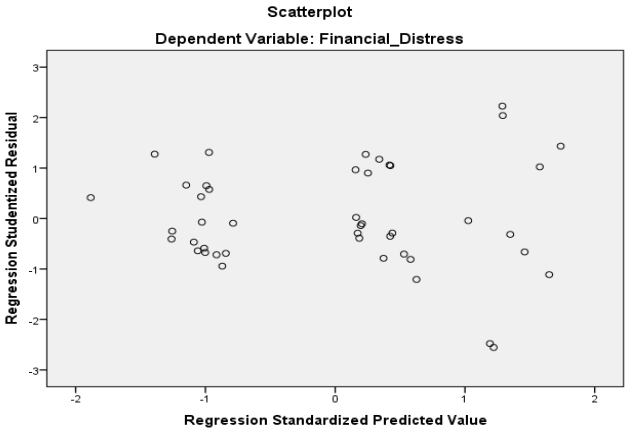

Figure 3.
Scatterplot Heteroscedasticity Test Results
Source: Data processed by researchers, SPSS 20

From the data analysis in this study, it can be seen that the points are distributed randomly and evenly around the number 0 on the Y axis. There is no particular regular pattern. Based on these findings, it can be concluded that there are no signs of heteroscedasticity in this regression model.

Autocorrelation Test

Table 5.
Durbin-Watson Autocorrelation Test Results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.890[a]	.792	.776	.818013	1.615

a. Predictors: (Constant), ROA, Current_Ratio, DAR
b. Dependent Variable: Financial_Distress

Source: Data processed by researchers, SPSS 20

Testing for the presence of autocorrelation was carried out using the Durbin-Watson method. With table values at a significance level of 5%, the number of samples is 45 (n), and the number of independent variables 3 (k=3) is 1.42980 (dl) and 1.61482 (du). The results of the regression analysis show a Durbin-Watson value of 1.615. Therefore, the Durbin-Watson value does not indicate positive or negative autocorrelation because (du < d < 4 – du), which means H0 is not rejected. Specifically, with a value range of 1.61482 < 1.615 < 4 – 1.61482 = 1.61482 < 1.615 < 2.38518, it can be concluded that the multiple linear regression model does not experience autocorrelation symptoms.

Multiple Linear Analysis

Table 6.
Multiple Linear Regression Test Results

Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
	B	Std. Error			
(Constant)	2.910	1.298		2.242	.030
Current Ratio	.580	.289	.400	2.007	.051
DAR	-3.736	1.477	-.509	-2.530	.015
ROA	-.172	.837	-.016	-.205	.838

Source: Data processed by researchers, SPSS 20

In this research, hypothesis testing uses multiple regression, which is tested empirically to find functional relationships between two or more independent variables and the dependent

variable, or to predict two or more independent variables on the dependent variable. The results of the multiple linear test in this research can be described as follows:

$$Financial\ Distress\ =\ \alpha\ +\ \beta 1\ CR\ +\ \beta 2\ DAR +\ \beta 3\ ROA\ +\ e$$

Based on the resulting coefficients, the multiple linear regression equation model can be formulated as follows:

$$\underline{Financial\ Distress =\ 2{,}910 + (0{,}580 \times \text{CR}) - (3{,}736 \times \text{DAR}) - (0{,}172 \times \text{ROA}) + e}$$

By entering the data values into the regression model, it is obtained that the constant has a value of 2,910 (Positive). This means that the company value will increase when the Current Ratio (CR), Debt to Asset Ratio (DAR), and Return on Assets (ROA) variables remain constant.

1. Current Ratio (X1)

   The positive regression coefficient (0.580) shows that every one unit increase in the Current Ratio (CR) will increase the financial distress Z-Score value by 0.580. Conversely, every one unit decrease in the Current Ratio (CR) will reduce the Z-Score Financial Distress value by 0.580, assuming the other X variables remain constant.

2. Debt to Asset Ratio (X2)

   The negative regression coefficient (-3.736) indicates that every one unit increase in the Debt to Asset Ratio (DAR) will reduce the Z-Score Financial Distress value by 3.736. Conversely, every one-unit decrease in the Asset Ratio (DAR) will increase the Z-Score Financial Distress value by 3.736, assuming the other X variables remain constant.

3. Return On Asset (X4)

   The negative regression coefficient (-0.172) indicates that every one unit increase in Return On Assets (ROA) will reduce the Z-Score Financial Distress value by 0.172. Conversely, every one unit decrease in Return On Assets (ROA) will increase the Z-Score Financial Distress value by 0.172, assuming the other X variables remain constant.

Coefficient of Determination (R2)

Table 7.
Coefficient of Determination Test Results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.890[a]	.792	.776	.818013	1.615

a. Predictors: (Constant), ROA, Current_Ratio, DAR
b. Dependent Variable: Financial_Distress

Source: Data processed by researchers, SPSS 20

The coefficient of determination aims to express the extent to which the variability of the dependent variable can be explained by the variation of the independent variable. The percentage of variations in the dependent variable that can be explained by variations in the independent variable is called Adjusted R Square. In the SPSS version 20 output, this model's Adjusted R Square value is 0.776, equivalent to 77.6%. This figure shows that the variable's Current Ratio (X1), debt-to-asset ratio (X2), and Return On Assets (X4) together contribute 77.6% to the variation in Financial Distress. The remaining 22.4% (100% - 77.6%) is influenced by other factors not included in the variables of this study.

Partial Test (T-Test)

The t-test was carried out to partially assess the influence of the independent variable on the dependent variable. This test compares the probability value or p-value (sig-t) with a significance level of 0.05. If the p-value is less than 0.05, then Ha is accepted; conversely, if the p-value is more significant than 0.05, Ha is rejected. In addition, comparisons with the following criteria are also taken into account:

1. If the calculated t value is greater than the t table, then the independent variable significantly influences the dependent variable, and Ha is accepted.
2. If the calculated t value is smaller than the t table, then the independent variable does not significantly influence the dependent variable, and Ha is rejected.

Partial test results using the t-test can be explained as follows:

Table 7.
Partial T-Test Results

Model	Unstandardized Coefficients		Standardized Coefficients Beta	t	Sig.
	B	Std. Error			
(Constant)	2.910	1.298		2.242	.030
Current_Ratio	.580	.289	.400	2.007	.051
DAR	-3.736	1.477	-.509	-2.530	.015
ROA	-.172	.837	-.016	-.205	.838

Source: Data processed by researchers, SPSS 20

1. Liquidity Ratio (Current Ratio) (X1)

The variable X1 (Current Ratio) partially does not significantly influence the Z-Score Financial Distress (Y) and shows a positive relationship. This finding is supported by a significance level of 0.051, greater than 0.050, and a t value of 2.007 with a t table of 2.019 (t count < t table), so H1 is rejected.

2. Solvency Ratio (Debt to Asset Ratio) (X2)

   The variable X2 (Debt to Asset Ratio) partially has a significant influence with an antagonistic relationship on the Z-Score Financial Distress (Y). This finding is strengthened by a significance level of 0.015, which is smaller than 0.050, and a calculated t value of -2.530 with a t table of -2.019 (t calculated > t table), so that H2 is accepted.

3. Profitability Ratio (Return On Asset) (X3)

   The variable X4 (Return On Assets) partially does not have a significant influence with a negative relationship on the Z-Score Financial Distress (Y). This finding is supported by a significance level of 0.838, greater than 0.050, and a calculated t value of -0.205 with a t table of -2.019 (t calculated < t table), so that H3 is rejected.

Simultaneous Test (F Test)

Table 8.
Simultaneous F Test Results

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	104.165	3	34.722	51.889	.000[b]
	Residual	27.435	41	.669		
	Total	131.599	44			

a. Dependent Variable: Financial_Distress
b. Predictors: (Constant), ROA, Current_Ratio, DAR

Source: Data processed by researchers, SPSS 20

4. Liquidity Ratio, Solvency Ratio and Profitability Ratio against Financial Distress

   The F test is used to assess whether all independent variables together influence the dependent variable. The results of data analysis in this study show that together, the Current Ratio (CR), Debt to Asset Ratio (DAR), and Return on Assets (ROA) have a significant effect on company value. From the results of the simultaneous test, the calculated F value was 51.889, and the F table value calculated using the formula F table = F (k; n-k) = F (3; 45-3) = 2.83 was 2.83. Thus, 51.889 > 2.83 (F calculated > F table), and the significance level is 0.000 < 0.05, so Ho is rejected and H4 is accepted.

Discussion

The Influence of Liquidity Ratios (Current Ratios) on Financial Distress

The results from the table show that the Current Ratio (X1) has a calculated t value of 2.007, which means t calculated < t table (2.007 < 2.019), and a significance level of 0.051 > 0.05, so H1 is rejected. Therefore, it can be concluded that the Current Ratio does not have a significant influence on Financial Distress. The regression coefficient for the Current Ratio (CR) is 0.580, with a positive direction, indicating that every increase in the Current Ratio (CR) will be followed by an increase in the Z-Score Financial Distress value of 0.580, assuming the other independent variables are considered constant.

This finding is in line with research by Tukan (2018), which states that the Current Ratio has no influence on the company's financial difficulties. These results also contradict the results of previous research by Mitha Christina G. (2018), which showed that the Current Ratio had a positive and significant influence on Financial Distress. Even though Current Assets should be greater than Current Liabilities to pay off the company's short-term debt, in the context of this research, the size of the Current Asset value does not have an impact on Financial Distress conditions.

The Influence of Solvency Ratio (Debt to Asset Ratio) on Financial Distress

From the table results, it can be seen that the Debt to Asset Ratio (X2) has a calculated t of -2.530, which means t calculated > t table (-2.530 > -2.019), and a significance level of 0.015 < 0.05, so H2 is accepted. Therefore, it can be concluded that the Debt to Asset Ratio has a significant negative influence on the Z-Score Financial Distress value. The regression coefficient for the Debt to Asset Ratio is -3.736, in a negative direction, indicating that every increase in the Debt to Asset Ratio will be followed by a decrease in the Z-Score Financial Distress value of 3.736, assuming the other independent variables are considered constant.

These findings support research conducted by Yudhistira (2019), which shows that the Debt to Asset Ratio has a negative effect on financial distress. This means that the higher the Debt to Asset Ratio, the lower the Altman Z-score value, so that the company is closer to financial distress. When this ratio is high, this indicates that the company relies on funding through debt in larger amounts. As a result, the company may face difficulties in obtaining additional loans, as there are concerns that the company cannot meet its debt obligations using the assets it owns. Conversely, if the ratio is low, this indicates that the company relies on less funding through debt (Kasmir, 2016). This conclusion is in line with the concept that total assets must be greater than total liabilities, and companies with a low debt ratio have a better ability

to pay off debt. On the other hand, companies with a high Debt Ratio can experience difficulties in paying debts, triggering potential financial distress (Haq, Arfan, & Siswar, 2013).

The Influence of Profitability Ratios (Return On Assets) on Financial Distress

From the table results, it can be seen that Return On Assets (X4) produces a t count of -0.205, which means t count < t table (-0.205 < -2.019), and a significance level of 0.838 > 0.05, so H3 is rejected. Therefore, it can be concluded that Return On Assets does not have a significant effect on the Z-Score Financial Distress value. The regression coefficient for Return On Assets is -0.172, in a negative direction, indicating that every increase in Return On Assets will be followed by a decrease in the Z-Score Financial Distress value of 0.172, assuming the other independent variables are considered constant.

This finding is in line with previous research conducted by Wulandari (2019), which stated that Return on Assets does not have a significant influence on a company's financial distress. Return on Assets is a profitability ratio that measures a company's ability to generate profits in a certain period and regulates accumulated profits during the company's operations. Even though a low ROA ratio indicates that the company's assets are less productive in generating profits, the results of this research confirm that high or low company profitability cannot be used as a definite indicator of financial distress. Therefore, a company's financial distress situation depends not only on profitability alone but also on other factors in the financial and operational context.

CONCLUSION

The results of hypothesis testing using the T-test and F-test produced the following findings: The first hypothesis shows that the Liquidity Ratio (Current Asset) does not have a significant influence on Financial Distress conditions. The second hypothesis shows that Solvency (Debt to Asset Ratio) has a significant negative effect on Financial Distress conditions. The third hypothesis shows that the Profitability Ratio (Return on Assets) does not have a significant influence on Financial Distress conditions. The fourth hypothesis shows that Liquidity Ratios, Solvency Ratios, and Profitability Ratios jointly have a significant effect on Financial Distress conditions in pharmaceutical companies listed on the Indonesia Stock Exchange for the 2019-2022 period.

Some suggestions that the author can make regarding the results of this research include: For companies, it is recommended to pay attention to their financial performance, especially in maintaining the Debt to Asset Ratio so that long-term debt levels do not reach high levels. This aims to avoid investors' doubts about investing in the company so that the company can avoid

potential financial distress in the future. The limitation of this study is that the independent variables used are only limited to financial indicators, including return on assets, current ratio, and debt to assets ratio. Future research can add variables that reflect potential financial distress, such as sales growth, activity ratio, company size, or other profitability, liquidity, or solvency ratios that can represent values that influence financial distress, or consider sampling companies from different industrial sectors, such as banking or trading companies. This can provide deeper insight into the factors that influence Financial Distress in various contexts.

REFERENCE

Aminah, S., and Riduwan, A. (2015). Manfaat laba dan arus kas dalam menentukan prediksi kondisi financial distress. *Jurnal Ilmu dan Riset Akuntansi (JIRA), 4(5).*

Amir, S., and Sudiyatno, B. (2017). Pengaruh Rasio Keuangan untuk Memprediksi Probabilitas Kebangkrutan pada Perusahaan Manufaktur Yang Terdaftar di Bursa Efek Indonesia. *Dinamika Akuntansi, Keuangan Dan Perbankan*.

Andre, O. & Taqwa, S. (2014) Pengaruh Profitabilitas, Likuiditas, dan Leverage Dalam Memprediksi Financial Distress (Studi Empiris Pada Perusahaan Aneka Industri yang Terdaftar di BEI Tahun 2006-2010), *Wahana Riset Akuntansi*, 2(1), 93–312

Brigham, E. F., & Houston. (2010). *Dasar-Dasar Manajemen Keuangan(II ed.).* Jakarta: Salemba Empat.

Carolina, V., Marpaung, E. L., & Pratama, D. (2017). Analisis Rasio Keuangan Untuk Memprediksi Kondisi Financial Distress (Studi Empiris Pada Perusahaan Manufaktur Yang Terdaftar Di Bursa Efek Indonesia Periode 2014-2015). *Jurnal Akuntansi Maranatha*, 9(2), 137–145.

Fahmi, Irham. (2011). *Analisis Laporan Keuangan*. Bandung: Alfabeta.

Ginting, M. C. (2017). Pengaruh Current Ratio dan Debt to Equity Ratio Terhadap Financial Distress Pada Perusahaan Property & Real Estate Di Bursa Efek Indonesia. *Jurnal Manajemen Vol. 3. No. 2 , 37-44*

Hanifah, O. E., & Purwanto, A. (2013).Pengaruh Struktur Corporate Governance Dan Financial Indicators Terhadap Kondisi Financial Distress.*Diponegoro Journal Of Accounting*, 2(2), 1–5

Haq, S., Arfan, M., and Siswar, D. (2013). Analisis Rasio Keuangan dalam Memprediksi Financial distress (Studi empiris pada Perusahaan yang Terdaftar di Bursa Efek Indonesia). *Jurnal Akuntansi Pascasarjana Universitas Syiah Kuala.*

Harmadji, D. E., Subroto, B., Saraswati, E., & Prihatiningtias, Y. W. (2018). From Theory to Practice of Signaling Theory: Sustainability Reporting Strategy Impact on Stock Price Crash Risk with Sustainability Reporting Quality as Mediating Variable. *KnE Social Sciences*, 3(10), 647–658.

Hermanto, Bambang. (2010). *Analisa Laporan Keuangan*. Jakarta: Lentera Ilmu Cendekia.

Hery. (2015). *Analisis Kinerja Manajemen.* Jakarta: PT Grasindo.

Hidayat, T., Permatasari, M., & Suhamdeni, T. (2020). Analisis Pengaruh Rasio Keuangan Terhadap Kondisi Financial Distress Perusahaan Manufaktur Yang Terdaftar Di Bursa Efek Indonesia. *Jurnal Akuntansi Bisnis Pelita Bangsa*, 5(02), 93-108.

Kasmir. (2014). *Analisis Laporan Keuangan*. Jakarta: Rajawali Pers. Edisi Tujuh

Kasmir. (2016). *Analisis Laporan Keuangan*. Jakarta: Raja Grafindo Persada

Kasmir. (2017). *Analisis Laporan Keuangan.* Jakarta: PT Rajagrafindo Persada.

Kristanti, F. T. (2019). *Financial Distress (1st Ed.).* Intelligentsia Media.

Kristanti, F. T., Herwany, A., & Febrian, E. (2016). Does Corporate Governance Affect The Financial Distress Of Indonesian Company? A Survival Analysis Using Cox Hazard Model With Time-Dependent Covariates. *Advanced Science Letters*, 22, 4326–4329.

Murni, M. (2018). Analisis faktor-faktor yang mempengaruhi tingkat financial distress pada perusahaan manufaktur yang terdaftar di bei tahun 2010-2014. *Jurnal Akuntansi Dan Bisnis: Jurnal Program Studi Akuntansi*, *4*(1).

Panigrahi, A. (2019). Validity of Altman's "Z" Score Model in Predicting Financial Distress of Pharmaceutical Companies. 1, 10.

Prihadi, Toto. (2014). Memahami Laporan Keuangan Sesuai IFRS dan PSAK. Jakarta: PPM.

Putri, A. K. &Kristanti, F. T. (2020). Faktor-faktor yang MemengaruhiFinancial Distress Menggunakan Survival Analysis, *JIMFE (Jurnal Ilmiah Manajemen Fakultas Ekonomi)*, 6(1), 31–42.

Saputri, N. M. N., and Padnyawati, K. D. (2020). Pengaruh Profitabilitas, Likuiditas, Dan Leverage Terhadap Financial Distress (FD) (Studi Kasus Pada Perusahaan Sektor Property dan Real Estate yang Terdaftar Di Bursa Efek Indonesia Periode 2017 – 2019). *Hita Akuntansi Dan Keuangan Universitas Hindu Indonesia*, April, 699–730.

Sarina, S., Lubis, A., and Linda, L. (2020). Pengaruh Ukuran Perusahaan, Debt To Equity Ratio, Return On Equity Dan Current Ratio Untuk Mengidentifikasi Financial Distress Pada Perusahaan Properti Yang Terdaftar Di Bursa Efek Indonesia Periode 2014-2017. *Owner: Riset dan Jurnal Akuntansi*, *4*(2), 527-539.

Sawir, Agnes. (2005). *Analisis Kinerja Keuangan dan Perusahaan*. Jakarta: Gramedia Pustaka.

Silvia, D., & Yulistina, Y. (2022). Pengaruh Current Ratio, Return On Asset, Debt To Asset terhadap Financial Distress Selama Masa Pandemi. *Global Financial Accounting Journal*, 6(1), 89-99.

Sudaryanti, D. & Dinar, A. (2019). Analisis Prediksi Kondisi Financial Distress Menggunakan Rasio Likuiditas, Profitabilitas, Financial Leverage Dan Arus Kas. *Jurnal Ilmiah Bisnis dan Ekonomi Asia*, 13(2), 101–110

Thohari, M. Z., Sudjana, N., & Z. A., Z. (2015). Prediksi Kebangkrutan Menggunakan Analisis Model Z-Score. 28, 9.

Tukan, T. N. S. S. (2018). Analisis Faktor Penjelas Financial Distress Pada Perusahaan Manufaktur di Bursa Efek Indonesia. *Jurnal Manajemen Bisnis Indonesia (JMBI)*, *7*(5), 501-511.

Widhiari, N., and Aryani Merkusiwati, N. (2015). Pengaruh Rasio Likuiditas, Leverage, Operating Capacity, Dan Sales Growth Terhadap Financial Distress. *E-Jurnal Akuntansi.*

Wulandari, S. (2020). Pengaruh Rasio Keuangan Dalam Memprediksi Financial Distress Pada Sektor Pertanian Yang Terdaftar Di Bursa Efek Indonesia. In *Prosiding Seminar Hasil Penelitian Dan Pengabdian Kepada Masyarakat Unjani Expo (Unex)* (Vol. 1, No. 1, pp. 87-90).

Yudhistira, H. (2019). Pengaruh Leverage dan Profitabilitas Terhadap Financial Distress. *J. Ilm. Mhs. Fak. Ekon. Dan Bisnis Univ. Brawijaya*, *7*(2), 11.