

Investigation of Determinants of Financial Distress in Manufacturing Companies

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ABSTRACT

Financial distress refers to a continuous decline in a company's financial performance, necessitating prediction and mitigation. It typically begins with the company's inability to meet its short-term obligations, signaling a deterioration in financial condition. This study aims to examine the effects of Return on Assets (ROA), Current Ratio (CR), and Debt to Equity Ratio (DER) on financial distress, with company size serving as a moderating variable. The research employs regression analysis and quantitative methods, focusing on manufacturing firms listed on the Indonesia Stock Exchange that consistently published financial reports from 2020 to 2023. Using purposive sampling, the study selected 40 samples from 10 companies, with data analyzed through Partial Least Squares-Structural Equation Modeling (PLS-SEM). The findings reveal that ROA significantly impacts financial distress, while CR and DER have no such effect during the observed period. Furthermore, company size moderates the relationship between ROA and CR with financial distress but does not moderate the influence of DER on financial distress. These results provide managerial implications, serving as indicators for corrective actions to prevent financial distress or potential bankruptcy in manufacturing companies.

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1. Introduction

Along with the progress of the times and technological developments in the current global economy, it has shown rapid progress. The globalization and spread of economy are reflection that indicate that the world economy is getting better (Iskandar et al., 2023). The conveniences of this era must be utilized in business activities supported by effective and efficient management to gain profits. Competitive business maintaining financial stability for companies is the most important thing so that the company becomes more successful and can continue to run the company, especially in the manufacturing sector (Asad & Yousaf, 2014). Due to the intense level of competition, every business must continuously improve its basic management system to compete with other competitors and anticipate financial distress. In recent years the world, especially in Indonesia has faced significant economic problems due to the Covid-19 pandemic which has significant impact business in Indonesia. This has a great deal to do with a company's survival, even though almost all companies in various industries have same problems, namely financial difficulties commonly known as financial distress conditions (Wilamsari et al., 2022).

One way to ensure management accountability in overseeing company resources is through financial reporting. For financial reports to be reliable and useful to stakeholders, they must align with objectives, regulations, and accounting principles established by widely recognized standards (Han & Maharani, 2022). Finance plays a critical role in maintaining business stability and profitability. When financial challenges arise, businesses must take steps to recover their financial position. To mitigate potential risks, companies should adopt proactive measures such as financial analysis and forecasting to anticipate financial difficulties (Erayanti, 2019).

Financial performance can be assessed using predictive financial analysis, which identifies key factors influencing a company's likelihood of bankruptcy due to financial distress (Komala & Triyani, 2019). The issue of insolvency has been particularly evident in the wave of company delistings in 2018, highlighting unresolved financial difficulties. The manufacturing sector experienced a sharp downturn starting in August 2020, with significant contractions in productivity and utility of up to 40%. Before the pandemic, manufacturing firms achieved an average utilization rate of 76.29% (CNBC Indonesia, 2020). Data from the Purchasing Managers' Index (PMI) revealed a decline in manufacturing performance in April 2020, dropping from 45.3 to 27.5, with this downturn identified as a potential cause of financial distress. Companies often secure funding through capital market transactions, loans, or business operations, using the capital to meet financial obligations such as paying salaries, investing, and fulfilling stakeholder responsibilities, including dividend payments (Desai & Desai, 2021).

There are other factors that can influence financial distress, namely leverage. According to (Tanjung, 2023). Leverage is a ratio that shows how much debt is used to finance an organization's assets. This indicates that, in comparison to using its own capital, the company used a significant amount of debt to finance its operations. The Debt to Equity Ratio (DER), which is the ratio of the company's total debt to its total equity or capital owned, serves as a stand-in for leverage in this study (Santoso & Junaeni, 2022). The degree of company risk is indicated by DER; the higher the DER, the larger the company's long-term liability composition, which raises the default risk. In order to raise capital, the business will select a low-risk funding source and enhance operations management to generate significant returns. Furthermore, since interest is a deductible expense, debt has an advantage when it comes to corporate taxes. The businesses must be able to manage their capital structure in addition to producing goods (Diyanto, 2020).

The number of company resources, as shown by the company's estimate, could be a key figure within the monetary ratios' capacity to analyze money related trouble. A company is categorized as having an expansive firm measure in the event that it incorporates a part of resources. Agreeing to (Suharti et al., 2020), Expansive organizations are seen as low-risk due to their considerable capital structures. The investigate was conducted by (Natalia & Rudiawarni, 2022) illustrated how the estimate of the company may make strides the prescient control of budgetary proportions (such as working cash stream, use and liquidity). On the opposite, (Santoso et al., 2023). The affiliation between money related proportions and budgetary trouble is debilitated by depict firm measure. It is since businesses with constrained assets are incapable to meet their commitments and cannot work at greatest effectiveness, which increments the probability that they will run into budgetary troubles. When the estimate of a company is expansive, it can be said that this company can avoid financial trouble. Typically since company's certainly have the believe of partners and have adequate assets to outlive within the middle of a emergency.

This inquire about is novel since it employments a inquire about demonstrate to see at how estimate influences monetary ratios' impact on money related trouble in fabricating companies recorded on the Indonesia Stock Trade between 20218 and 2022. The choice of fabricating firms for the inquire about tests stems from the sector's noteworthiness to the Indonesian economy amid the COVID-19 widespread. Moreover, in differentiate to other corporate segments, fabricating companies' net wage is steady. Furthermore, Indonesia has the biggest fabricating segment in all of ASEAN. It is additionally one of five nations—China (28.8%), South Korea (27%), Japan (21%), Germany (20.6%), and Indonesia (20.5%)—where the fabricating segment contributes more than the normal (17%) to the national economy.

Deciding the fractional affect of productivity (ROA), liquidity (CR) and use (DER) on money related trouble direct by Estimate Company in manufacturing companies recorded within the

Indonesia Stock Trade for the 2020-2023 period is one of the investigate goals to be met by this consider.

Literature Review

Return on Asset (ROA)

The difference between a company's expenses and revenue serves as the basis for calculating profitability. For manufacturing companies, measuring profitability is essential as it reflects their success and provides a foundation for assessing the sector's overall health, ensuring competitiveness and organizational sustainability (Setyaningsih & Gunarsih, 2018). Profitability reveals how effectively a company utilizes its assets to reduce costs, achieve savings, and maintain sufficient cash flow for operations, thus indicating the level of financial distress. Generating strong profitability not only minimizes financial risks but also enhances investor confidence, contributing to economic growth (Sasongko et al., 2021). One key measure of profitability is Return on Assets (ROA), which assesses how efficiently a company leverages its assets to generate earnings. ROA provides insights into superior performance by comparing profits to sales, asset volume, and owner investments. In the manufacturing sector, ROA is widely used as a financial performance indicator, as higher profitability reduces the likelihood of financial difficulties.

Current Ratio (CR)

A company's liquidity ratio reflects its ability to meet short-term obligations. In this study, liquidity is measured using the Current Ratio (CR), which evaluates a company's capacity to fulfill short-term liabilities when current assets are fully utilized. Essentially, it shows the extent of current assets available to cover imminent short-term debts (Dwiyanti, 2016). The current ratio also serves as a gauge of a company's safety margin. Subramanyam (2017) states that a high current ratio indicates a company can comfortably cover its short-term debts, whereas a low ratio suggests potential difficulties. While a low current ratio may pose higher risks, it could also signify efficient management of current assets. Conversely, an excessively high current ratio may indicate issues such as cash hoarding, uncollectible accounts, or excessive inventory, which are unfavorable. Furthermore, the greater the reliance on creditors to finance business operations, the higher the likelihood of financial distress.

Debt to Equity Ratio

The leverage ratio reflects the extent to which a company's assets are financed through debt. This implies that companies are capable of fulfilling their short-term and long-term obligations. In this study, the Debt-to-Equity Ratio (DER) serves as a proxy for the leverage ratio. DER compares a company's own capital with its long-term debt to evaluate the tendency to rely more on equity financing (Fatmawati & Rihardjo, 2017). A high debt-to-asset ratio indicates that a majority of the assets are financed by debt, which can lead to financial distress as the business faces increased pressure to repay debt and interest. The DER calculation illustrates the proportion of debt relative to equity. Companies with a higher DER rely more heavily on debt to fund their operations rather than equity. However, as the DER increases, the likelihood of financial distress may diminish (Santoso et al., 2023).

Size Company

Scale refers to the dimensions of a company, which can be categorized in various ways, such as total assets, stock market value, and other indicators (Natalia & Rudiawarni, 2022). As noted by Hunafah et al. (2022), the classification of companies as large or small depends on their size. Companies with high total asset values are often categorized as large and are less likely to face bankruptcy. Moreover, total net sales also serve as a key determinant of company size, with higher sales correlating to greater stability and a reduced risk of financial distress. In competitive environments, the dynamics of each company align with its conditions; larger companies generally have greater access to resources, while smaller companies face more limited access. To achieve maximum profitability, businesses of all sizes must effectively analyze market conditions and adapt accordingly.

Financial Distress

A company that faces a continuous decline in financial performance over several years is considered to be in financial distress, which may eventually lead to bankruptcy. According to Akbar and Lanjarsih (2024), financial distress occurs when a business struggles or fails to meet its debt obligations. Companies with high fixed costs or earnings vulnerable to economic downturns are more prone to experiencing financial distress. This situation often forces businesses to take on significant expenses, which can lead management to borrow from external sources (Aslamiah et al., 2023). Financial distress refers to the risk of a business being unable to pay its bills on time, resulting in both operational and net losses for the year. Such losses reduce retained earnings, which are typically used for dividends, leading to a shortage of capital. If this trend continues, the company's total liabilities may exceed its total assets. This financial strain could push the business towards bankruptcy if it fails to resolve the situation (Rudianto, 2013).

2. Method

Quantitative descriptive is the approach that researches used in this study. The data is produced in numerical form, generated from secondary data in financial report, obtained from the Indonesia Stock Exchange (IDX) on its official website. The process of collecting data was obtained by documenting and observing manufacturing companies in Indonesia. Researches also apply literature studies through citing relevant articles journal and books as theoretical basis. The population for this study is manufacturing companies listed on the IDX for 2020-2023 period and sample size is determined by purposive sampling technique. The manufacturing companies were obtained that met the criteria, these are CEKA, CLEO, DLTA, ICBP, INDF, KLBF, MLBI, MYOR, SIDO and ULTI and which had consistent and complete financial records through the publication of annual report in 2020-2023.

The data analysis techniques use Partial Least Squares-Structural Equation Modeling (PLS-SEM) with the help of SmartPLS version 3.29. SEM-PLS is used in this study because it has several advantage including being able to test direct moderating variable. Testing the outer, inner, and hypothesis models is what the analysis stage of PLS-SEM involves. Outer test model with average variance extracted (AVE), composite reliability, discriminant validity, and convergent validity included. Hypothesis testing is the last step of this test, and the test inner model is composed of R². In order to determine whether exogenous variables have a significant impact on endogenous variables, the test criteria are applied when the t-statistic value $\geq$ t-table (1.96) and the probability value $\leq$ alpha (0.05) (Solimun, 2017)

3. Results and Discussion

Each dependent variable's results from data processing are explained by statistics. The following are the outcomes of multiple analyses.

3.1. Analysis Outer Model (Measurement Model)

1) Convergent validity, AVE and Composite Reliability

The correlation between the variables is used to evaluate convergent validity. If the outer loading value is greater than 0.70 with correlation between item scores and construct scores, the construct's size is deemed high. However, obtaining a value of 0.50 to 0.60 is thought to be sufficient for early stage research applications. An indicator's AVE value should be greater than 0.5 in order to determine whether it has a higher correlation value than other indicators. In the meantime, a composite reliability analysis was done to find out how reliable and accurate the instrument was at measuring a particular construct. If the composite reliability value is greater than 0.70, it is rated reliable.

Table 1. Outer Loading, Cronbach's Alpha, Composite Reliability and Average Variance Extracted

Variable	Item Measurement	Outer Loading	Cronbach's Alpha	Composite Reliability	AVE	Conclusion
Return on Assets (X ₁)	X1.1	0,939	0,906	0,927	0,840	Reliable
	X1.2	0,958				Reliable
	X1.3	0,873				Reliable

	X1.4	0,894				Reliable
Current Ratio (X₂)	X2.1	0,838				Reliable
	X2.2	0,825	0,864	0,872	0,708	Reliable
	X2.3	0,805				Reliable
	X2.4	0,896				Reliable
Debt to Equity Ratio (X₃)	X3.1	0,803				Reliable
	X3.2	0,912	0,830	0,847	0,745	Reliable
	X3.3	0,900				Reliable
Size Company (M)	X3.4	0,833				Reliable
Financial Distress (Y)	M1	0,911				Reliable
	M2	0,974	0,966	0,980	0,928	Reliable
	M3	0,982				Reliable
	M4	0,984				Reliable
	Y1	0,930				Reliable
	Y2	0,962	0,954	0,965	0,843	Reliable
	Y3	0,848				Reliable
	Y4	0,928				Reliable

^a Source: Processed data, 2024

It is evident from the table that every indicator's outer loading value is greater than 0.70. It is possible to conclude that the indicator is reliable for measuring financial distress. The composite reliability value, which is greater than 0.70, and Cronbach's alpha value both indicate the degree of reliability. It concluded that all variable is reliable and each indicator has different construct reliability. Furthermore, since all of the AVE values show > 0.5, the degree of convergence is evident, indicating that each of these indicators satisfies the criteria for strong convergence.

2) Discriminant Validity

In order to apply discriminant validity, one must compare the loading value of the intended construct which must have a higher value with another construct.

Table 2. Discriminant Validity

	FD	ROA	CR	DER	SC	Conclusion
FD						Valid
ROA	0,876					Valid
CR	0,752	0,829				Valid
DER	0,701	0,735	0,814			Valid
SC	0,803	0,815	0,824	0,835		Valid

^b Source: Data Processing on SmartPLS, 2024

It is evident from the above table that the Return on Assets (ROA) indicator's results outperform those of other indicators. Based on next column, the Current Ratio (CR) indicators < ROA and SC, on the Debt to Equity Ratio (DER) indicators < other indicators, while the Size Company (SC) indicators > from CR and DER indicators. It can be concluded that the four indicators have a affect on Financial Distress.

3.2. Analysis Model Structural (Inner Model)

1) R-Square

It is an analysis meant to demonstrate the degree to which the independent variable affects the dependent variable. R-square, a measure of the degree to which an independent variable can influence dependent variables, has three categories: weak, moderate, and strong. Relative to other R-square values, 0.25 is considered weak, 0.50 is considered moderate, and 0.75 is considered strong.

Table 3. R-Square

	R-Square (R²)	R-Square Adjusted	Conclusion
Return on Assets	0,554	0,542	Valid

^c Source: Data Processing on SmartPLS, 2024

The R-square results in the table 3, the impact of ROA, CR, DER and Size Company as a moderate variable on Financial Distress has a value of 0,554 or 55,4%, where this value is included

in the strong category. The remaining 44,6%, however, was explained by non-research-related factors.

2) Path Coefficients

The process of bootstrapping was employed in order to ascertain the correlation between the variables. When both the probability value and the t-statistic value are less than or equal to alpha (0.05) and t-table (1.96), the test criteria are met. Exogenous variables are said to have a major impact on endogenous variables.

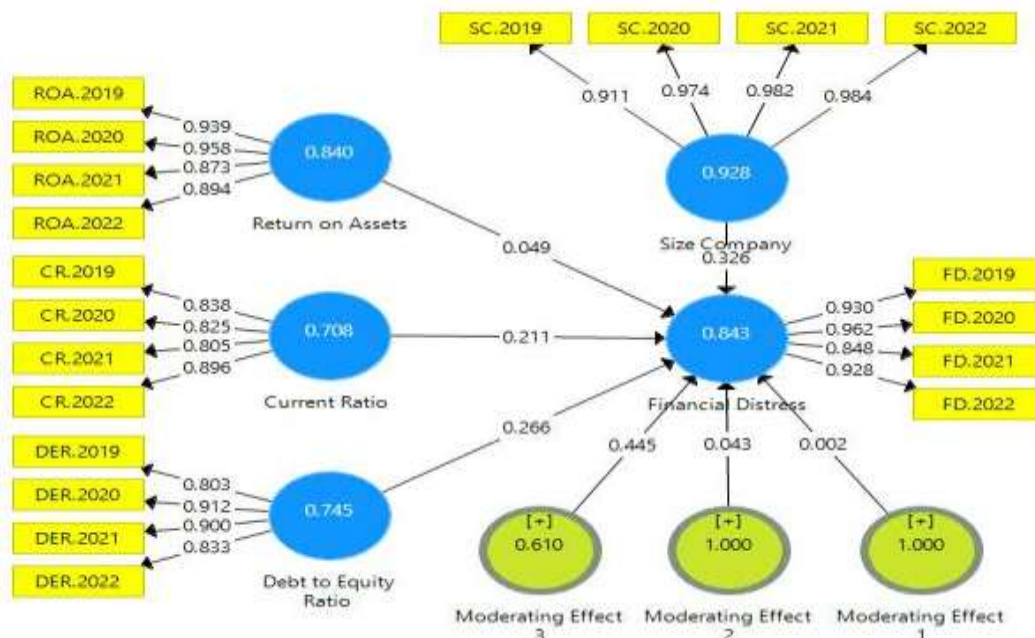


Fig. 1. Path Coefficient with Bootstrapping

^d. Source: Data Processing on SmartPLS, 2024

Table 4. Path Coefficients

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
ROA (X ₁) → Financial Distress (Y)	0,442	0,209	0,118	3,540	0,049
CR (X ₂) → Financial Distress (Y)	0,145	0,136	0,154	0,683	0,211
DER (X ₃) → Financial Distress (Y)	0,305	0,307	0,391	0,815	0,266
Size Company (M) → Financial Distress (Y)	0,145	0,148	0,204	1,335	0,326
Size Company (M) * ROA (X ₁) → Financial Distress (Y)	0,175	0,156	0,104	2,803	0,002
Size Company (M) * CR (X ₂) → Financial Distress (Y)	0,279	0,263	0,245	2,985	0,043
Size Company (M) * DER (X ₃) → Financial Distress (Y)	0,207	0,185	0,257	0,595	0,445

^e. Source: Data Processing on SmartPLS, 2024

The test results can be seen in the table above, the first hypothesis indicate that ROA have significant effect on financial distress with t-statistics (3.540) and p-value (0,049 < 0.05). The second hypothesis indicate that CR did not have significant effect on financial distress with t-statistics (0,683) and p-value (0,211 > 0.05). The third hypothesis indicate that DER did not have significant effect on financial distress with t-statistics (0,815) and p-value (0,266 > 0.05). The fourth hypothesis indicate that size company did not have a significant influence on financial distress with t-

statistics (1,335) and p-value ($0.326 > 0.05$). The fifth hypothesis indicate that size company is proven to be able to moderate the effect of ROA on financial distress with t-statistics (2,803) and p-value ($0.002 < 0.05$). The results of the sixth hypothesis test show that the size company is proven moderate relationship between CR and financial distress with t-statistics (2,985) and p-value ($0.043 < 0.05$). Meanwhile, the seventh hypothesis test show that size company is unable to moderate the effect DER on financial distress with t-statistics (0,595) and p-value ($0.445 > 0.05$).

Discussion

Effect of Return on Assets (ROA) on Financial Distress

Data analysis indicates that ROA significantly influences financial distress with p-value ($0.049 < 0.05$) in the manufacturing companies listed in IDX for 2020-2023 period. This indicates that there is no risk of financial distress for the company and that it is in sound financial standing. Profits from operations or obligations can be utilized by companies with a high return on assets (ROA). The business can stay out of financial trouble because it can afford to pay for its requirements and commitments. The findings of this investigation are consistent with earlier studies by (Dirman, 2020; Kurniasih et al., 2020), indicating that ROA plays a key role in forecasting financial distress. A high return on assets (ROA) is a sign that the business can use its assets to make money from sales and investments. This means that the management of the company's assets is more effective and efficient, which can ultimately lower the costs the business incurs and provide savings and enough cash flow to operate the business.

Effect of Current Ratio (CR) on Financial Distress

Based on the results of data analysis, financial distress was not significantly affected by CR with p-value ($0.211 > 0.05$) in the manufacturing companies listed in Indonesia Stock Exchange for 2020-2023 period. This is because the manufacturing companies The financing of daily operations, repayment of loans, and interest expenses will all be covered by current assets. There will be less chance of financial trouble for the business if it can appropriately finance and pay off its short-term obligations. In actuality, though, this current ratio does not indicate that financial distress is more likely to occur. The amount of current assets used to pay off short-term loans is not indicated by the current ratio's size. It's possible that other forms of funding, like funding operational expenses, are provided by the current assets. This study results are in line with previous research conducted by (Aslamiah et al., 2023; Hastiarto et al., 2021) which show that the current ratio does not significantly influence financial distress.

Effect of Debt to Equity Ratio (DER) on Financial Distress

Considering the outcomes of the data analysis, financial distress was not significantly affected by DER with p-value ($0.266 > 0.05$) in the manufacturing companies listed in Indonesia Stock Exchange for 2020-2023 period. This is because the assets that manufacturing companies acquire through company debt do not significantly impact the degree of financial distress that a company faces. This obviously has no impact because using long-term debt as financing tools is a common practice in manufacturing business sectors, where companies typically use it to finance operations or acquire assets. It will have a severe negative influence on the company's financial situation when expenses exceed income and when long-term debt is used to purchase assets that do not ultimately bring in money for the business. The findings of this investigation are consistent with earlier studies carried out by (Edi & Eilyn, 2023; Hananiyah & Jaya, 2023), financial distress was not significantly affected by debt to equity ratio.

Effect of Size Company on Financial Distress

The data analysis revealed that Size Company had no discernible impact on financial distress with p-value ($0.326 > 0.05$) in the manufacturing companies listed in IDX for 2020-2023 period. This is because a mature company, even though the company size is small, the company has many working partners, the level of trust from financial institutions in the company is high, as well as recommendations from clients and external parties. The company in financial distress will not be impacted by any size increase or decrease. An organization's capacity to make money increases with size, which can lessen financial distress by lowering the organization's reliance on borrowing money

to fund its operations. The study's findings support earlier research by (Christella & Osesoga, 2019; Nurdiansari, 2023), which found that financial distress is not significantly influenced by a company's size.

The Effect of Size Company Moderated Return on Assets (ROA) on Financial Distress

The outcomes of this study found that Size Company were able to moderate ROA's impact on manufacturing companies' financial distress with p-value ($0,002 < 0.05$). Generally speaking, a company's size has a bigger influence on things like operational scale, access to financial markets, and also resource management efficiency rather than directly affecting profitability's impact on financial distress. Whether a company is large or small, its level of profitability varies, but this does not impact the issue of financial distress that each company may face. The size of a company and its level of profitability do not impact financial distress. The results of this study are related to (Suharti et al., 2020), in manufacturing sector companies, the relationship between ROA and financial distress is significantly moderated by the size of the company.

The Effect of Size Company Moderated Current Ratio (CR) on Financial Distress

The outcomes of this study found that Size Company were able to moderate the CR's impact on financial distress in manufacturing companies with p-value ($0,043 < 0.05$). According to this, the relationship between size and financial distress is weakened by size, indicating that the two have the opposite relationship. Large assets and large liabilities are also present in more than 50% of the manufacturing companies included in the sample. It is evident from this that the company's assets do not ensure that it will be able to cover its debts and interest costs to maturity. Interest costs must be paid in proportion to the amount of borrowed liability. With equal assets and liabilities, the company will typically use all of its assets to settle its debts, but not for interest payments. Due to (Isayas, 2021; Zelig, 2019), size company moderate the effect of CR on financial distress.

The Effect of Size Company Moderated Debt to Equity Ratio (DER) on Financial Distress

Based on the results of data analysis, Size Company is unable to moderate the effect of DER on financial distress in manufacturing companies with p-value ($0,445 > 0.05$). Larger companies with a strong foundation are more likely to withstand external challenges, such as uncertain economic conditions. Corporate debt funding can be supported by the size of the company. Big corporations have easier access to the capital market and greater flexibility in obtaining funds. The likelihood of facing financial distress increases as the size of the company decreases. Small companies have greater potential for growth and often encounter conflicts of interest between the principal and agent. This is why, as a result of this situation, small businesses rely heavily on external loans to finance their everyday operations. The results of this study align with research (Muigai & Muriithi, 2017), size company does not moderate the DER relationship to financial distress.

4. Conclusion

It is clear from the research findings and points brought up in the discussion that the ROA significantly affects financial distress. Financial distress was unaffected by the CR and DER in the interim manufacturing companies 2020-2023 period. While the size of the company can mitigate the impact of DER on financial distress, it cannot mitigate the impact of ROA and CR on financial distress. This study helps manufacturing companies create efficient CR and DER to increase performance and financial performance. Based on the conclusions, management implications for manufacturing firms may help them take corrective action before they face financial difficulties or even bankruptcy. Furthermore, for the government to be taken into account when determining the financial policies that manufacturing companies should follow. Moreover, investors may be taken into account when making decisions about investments.

As a result, by offering details on the financial standing of businesses in the safe, gray, or distressed zone, this research helps manufacturing companies. This study has a number of limitations, one of which is that it only looks at Indonesia's manufacturing industry. To increase the range of industries included in the research sample, more studies are advised. Additional investigation is advised to examine additional elements influencing businesses' ability to anticipate financial distress.

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