



The Relationship Between Financial Ratios and Financial Distress

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Abstract. This study aims to evaluate the impact of profitability, liquidity, and cash flow on financial distress in companies within the food and beverage sector listed on the Indonesia Stock Exchange (IDX) during the period of 2019-2023. The sample consists of 29 companies selected using purposive sampling, and data analysis is conducted using multiple linear regression and SPSS version 27. The results indicate that profitability (ROA), liquidity (CR), and cash flow (OCF) have a significant positive effect on financial distress. These findings provide valuable information for investors and management in efforts to manage financial distress risk in this sector.

Abstrak. Penelitian ini bertujuan untuk mengevaluasi dampak profitabilitas, likuiditas, dan arus kas terhadap financial distress pada perusahaan-perusahaan di sektor makanan dan minuman yang terdaftar di Bursa Efek Indonesia (BEI) selama periode 2019-2023. Sampel yang digunakan terdiri dari 29 perusahaan yang dipilih dengan metode purposive sampling, dan analisis data dilakukan menggunakan regresi linear berganda serta SPSS versi 27. Hasil penelitian menunjukkan bahwa profitabilitas, likuiditas, dan arus kas memiliki pengaruh positif yang signifikan terhadap financial distress. Temuan ini memberikan informasi berharga bagi investor dan manajemen dalam upaya mengelola risiko financial distress di sektor tersebut.

Keywords:

*Green Profitability;
Liquidity; Cash Flow;
Financial Distress*

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Introduction

By the end of 2019, the world was struck by the Covid-19 pandemic originating in Wuhan, China. The pandemic compelled companies across various sectors, including the food and beverage industry, to rapidly adapt to changing market conditions (Suprayitno, 2019). Although the pandemic has subsided, its consequences are still felt today through shifts in consumer behavior, accelerated digitalization, and the growing need for more adaptive operational innovation.

In the food and beverage sector, consumers now increasingly prefer online services, healthy food options, and sustainable business practices. Additionally, companies face global economic challenges, such as raw material price fluctuations and supply uncertainties, which influence business strategies and financial management. These conditions underscore the importance of effective financial management, financial literacy, and self-control, particularly for early-career women, to navigate economic uncertainties while capitalizing on opportunities arising from digital transformation and evolving consumer trends.

In daily life, society cannot detach itself from the food and beverage sector, as it fulfills basic needs (food) alongside clothing and shelter (Putra, 2019). The food and beverage sector in Indonesia holds significant potential, contributing 39.10% to the non-oil and gas industrial GDP. The Director General of Agro-Industry at the Ministry of Industry, Putu Juli Ardika, emphasized that this sector is a strategic priority to support Indonesia's economic growth (Antara News, 2024). In 2023, investment in this sector reached IDR 85.10 trillion.

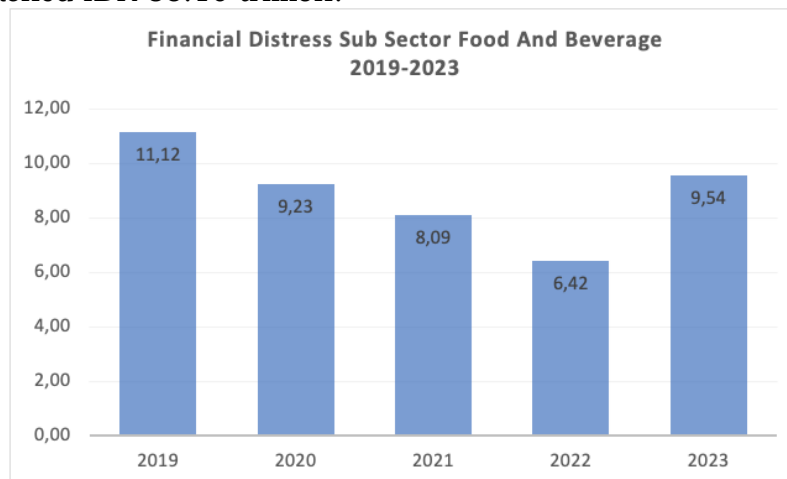


Chart 1. Financial Distress of FnB Companies 2019-2023

Financial distress, which refers to a situation that a company is unable to meet its financial obligations, can increase due to challenging economic conditions. According to Sutra & Mais (2019), "The likelihood of financial distress increases when a company's fixed costs are high, liquid assets are low, or revenues are highly sensitive to economic recessions." All companies can experience financial distress, including those in the food and beverage subsector in Indonesia (Hutauruk et al., 2021). Inability to manage these key aspects can have serious consequences for a company. Understanding financial distress is crucial as it serves as an indicator that a company may face bankruptcy, allowing for preventive measures to be taken (Ariani & Swandari, 2019).

This study utilizes financial data from food and beverage companies listed on the Indonesia Stock Exchange (IDX) from 2019 to 2023 to identify how these companies navigated the pandemic to avoid financial distress. The analysis revealed that 29 companies experienced financial distress. Therefore, analyzing profitability,

liquidity, and cash flow is essential in the context of food and beverage companies listed on the IDX. If financial distress conditions can be predicted early, company management can take steps to improve their financial situation (Okriansesia et al., 2021).

Profitability reflects a company's ability to generate profits from the sale of food and beverage products and is an important measure of the company's capacity to produce earnings. A higher ratio indicates that the company is more effective in managing its assets to generate greater net income (Riduan & Anggarani, 2021).

Liquidity refers to a company's ability to settle debts and short-term obligations, including accounts payable, taxes, and dividends (Saretta, 2020). Failure to maintain liquidity can worsen financial conditions, especially when cash flow is disrupted due to declining sales. Many companies in the food and beverage sector have been forced to cut costs and restructure in order to survive. According to Darsono (2005), the operating cash flow ratio measures the ability of operating cash flow to cover current liabilities.

The combination of profitability, liquidity, and cash flow provides a comprehensive picture of a company's financial health. Research by Ananda et al. (2022) indicates that many companies face significant pressure on cash flow, making it difficult for them to meet short-term obligations. Therefore, an in-depth analysis of these three factors is critical for identifying potential risks of financial distress. Financial distress can be defined as a condition that a company's operational results are insufficient to meet existing obligations (Maulida et al., 2018). This study aims to investigate how profitability, liquidity, and cash flow influence the risk of financial distress in food and beverage companies listed on the IDX.

Research Methods

The population studied consists of companies in the food and beverage sector listed on the Indonesia Stock Exchange during the period of 2019-2023. The sampling method used is purposive sampling.

Table 1. Purposive Sampling

No	Description	Sample Quantity
1	Food and Beverage sector companies that listed on the IDX in 2019-2023	215
2	Food and Beverage sector companies that published their annual financial reports consistently and completely from 2019-2023	(60)
3	Food and Beverage sector companies that recorded a decrease in profits for 2 consecutive financial reporting periods in 2019-2023	
4	Food and Beverage sector companies that have registered to Initial Public Offering no later than 2018	(10)
Research Sample		145

Source: Processed by author (2024)

Based on the table above, the sample size of food and beverage companies during the period of 2019-2023 is 29 companies, with a total of 145 samples obtained. The established hypotheses include profitability (X1), liquidity (X2), and cash flow (X3) as factors influencing financial distress (Y). The analysis method used in this study is quantitative analysis, measured on a numerical scale. Data collection was conducted through secondary data in the form of documentation and literature review. Data analysis was performed using multiple linear regression with SPSS.

To measure financial distress, the latest version of the Altman model (1993) from the Z-Score model is used as follows:

$$Z'' = 1,200X_1 + 1,400X_2 + 3,300X_3 + 0,600X_4 + 1,000X_5$$

Description: X1 = Working Capital / Total Assets; X2 = Retained Earnings / Total Assets; X3 = Earnings Before Interest and Taxes / Total Assets; X4 = Book Value of Equity / Capital; X5 = Sales / Total Assets.

Results and Discussion

Table 2. Descriptive Statistical Analysis (After Outlier)

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Y (Financial Distress)	124	-5.74	19.00	7.3523	4.82775
X1 (Profitability)	124	-.44	.61	.1093	.13931
X2 (Liquidity)	124	.41	8.05	2.3924	1.53338
X3 (Cash Flow)	124	-.53	2.58	.5909	.62369
Valid N (listwise)	124				

Source: Processed Data (2024)

From the results above, it can be concluded that after removing 21 outlier data points, the seventh outlier test shows a Mahal value. The Maximum Distance of 17.734 is smaller than the established outlier threshold of 18.466, indicating that the data is free from outliers. Therefore, this data is considered to have good quality and can proceed to further analysis, with a remaining sample size of 124 data units (cases) from the initial total of 145 data units (cases) before the removal of outliers.

Table 3. Normality Test

One-Sample Kolmogorov-Smirnov Test		
	Unstandardized Residual	
N		124
Normal Parameters^{a,b}	Mean	.0000000
	Std. Deviation	3.48475776
Most Extreme Differences	Absolute	.084
	Positive	.081
	Negative	-.084
Test Statistic		.084
Asymp. Sig. (2-tailed)		.310
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		

Source: Processed Data (2024)

The One-Sample Kolmogorov-Smirnov test shows an Asymptotic Significance (two-tailed) value of 0.310, which is greater than the significance level of 0.05 (with a 95% confidence level). This indicates that the data in this regression model passes the Kolmogorov-Smirnov normality test or is normally distributed.

Table 4. Multicollinearity Test

		Coefficients^a	
		Collinearity Statistics	
Model		Tolerance	VIF
1	Prfitability (ROA)	.813	1.230
	Liquidity (CR)	.532	1.879
	Cash Flow (OCF)	.467	2.143

a. Dependent Variable: Financial Distress (Z')

Source: Processed Data (2024)

This indicates that the values meet the criteria for the data to be declared free of correlation among the independent variables, namely Profitability (ROA), Liquidity (CR), and Cash Flow (OCF). This is evident because the tolerance value is ≥ 0.10 and the VIF value is ≤ 10 , thus confirming that all independent variables are free from multicollinearity symptoms.

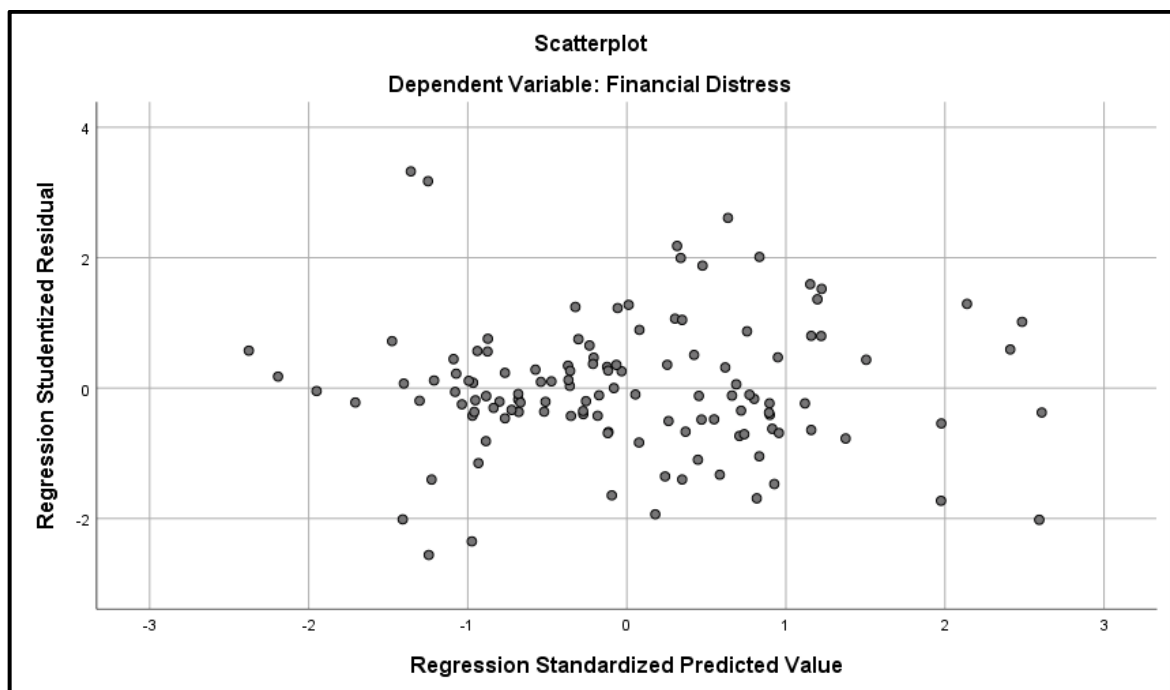


Figure 1. Heteroscedasticity Test

From the scatter plot graph above, it appears that no clear pattern has formed, and the data points seem randomly dispersed. Based on this result, the variability in the data of this research model is not indicated to exhibit heteroscedasticity.

Table 5. Autocorrelation Test

Model Summary^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.692 ^a	.479	.466	3.52805	2.132

a. Predictors: (Constant), Profitability (ROA), Liquidity (CR) dan Cash Flow (OCF)

b. Dependent Variable: Financial Distress (Z')

Source: Processed Data (2024)

The autocorrelation test using Durbin-Watson was conducted, and the results indicate that the Durbin-Watson value is 2.132. This value was then compared with the table values for a sample size (N) of 124 and a number of independent variables (K) of 3, which the $dL = 1.6577$, $dU = 1.7567$, $4-dL = 2.3423$, and $4-dU = 2.2433$. Thus, the DW value falls between dU and $4-dU$, indicating that there is no autocorrelation, either positive or negative.

Table 6. Multiple Linear Regression Analysis Test

		Coefficients^a				
		Unstandardized		Standardized		
		Coefficients		Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.081	.610		5.054	.000
	Profitability (ROA)	8.973	2.533	.259	3.543	.001
	Liquidity (CR)	.635	.284	.202	2.233	.027
	Cash Flow (OCF)	2.999	.747	.387	4.017	.000

a. Dependent Variable: Financial Distress (Z')

Source: Processed Data (2024)

The constant value of 3.081 indicates that if Profitability (ROA), Liquidity (CR), and Cash Flow (OCF) are all zero, Financial Distress will be at that level. The Profitability coefficient (X1) of 8.973 suggests that each one-unit increase in Profitability will raise Financial Distress by 8.973 units, assuming all other variables remain constant. Meanwhile, the Liquidity coefficient (X2) of 0.635 means that each one-unit increase in Liquidity will lead to an increase in Financial Distress of 0.635 units. Finally, the Cash Flow coefficient (X3) of 2.999 indicates that each one-unit increase in Cash Flow will raise Financial Distress by 2.999 units. Thus, all independent variables have a positive effect on Financial Distress.

Table 7. Simultaneous F test

		ANOVA^a				
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1373.131	3	457.710	36.772	.000b
	Residual	1493.655	120	12.447		
	Total	2866.786	123			

a. Dependent Variable: Financial Distress (Z')

b. Predictors: (Constant), Profitability (ROA), Liquidity (CR) dan Cash Flow (OCF)

Source: Processed Data (2024)

The significance value Sig. = 0.000, which is less than 0.05, allows us to conclude that the variables X1 Profitability (ROA), X2 Liquidity (CR), and X3 Cash Flow (OCF) collectively or simultaneously have a significant impact on Y Financial Distress in food and beverage companies listed on the Indonesia Stock Exchange during the period of 2019-2023.

Table 8. Partial t test

		Coefficients^a				
		Unstandardized		Standardized		
		Coefficients		Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.081	.610		5.054	.000
	Prfitability (ROA)	8.973	2.533	.259	3.543	.001
	Liquidity (CR)	.635	.284	.202	2.233	.027
	Cash Flow (OCF)	2.999	.747	.387	4.017	.000

a. Dependent Variable: Financial Distress (Z')

Source: Processed Data (2024)

The research hypothesis indicates that Profitability, Liquidity, and Cash Flow have a significant impact on Financial Distress in food and beverage companies listed on the Indonesia Stock Exchange during the period of 2019-2023. Profitability has a coefficient of 3.543 with a significance level of 0.001, indicating a significant positive effect. Liquidity also shows a significant positive effect with a coefficient of 2.233 and a significance level of 0.027. Meanwhile, Cash Flow has the highest coefficient of 4.017 and a significance level of 0.000, reaffirming its significant positive impact on Financial Distress.

Table 9. Coefficient of Determination test

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.692 ^a	.479	.466	3.52805

a. Predictors: (Constant), Profitability (ROA), Liquidity (CR) dan Cash Flow (OCF)

Source: Processed Data (2024)

It is known that the R Square value is 0.479, indicating that 47.9% of the Financial Distress variable can be explained by the variations in the three independent variables: X1 Profitability (ROA), X2 Liquidity (CR), and X3 Cash Flow (OCF). Meanwhile, the remaining 52.1% is explained by other independent variables not included in the research model.

The Impact of Profitability on Financial Distress

Hypothesis testing results indicate that the profitability variable, measured using Return on Assets (ROA), has a significant effect on financial distress, with a positive regression coefficient of 8.973 ($p = 0.001$). This implies that higher ROA is associated with a higher tendency of financial distress. This phenomenon can be explained by the overconfidence effect, where highly profitable firms tend to undertake aggressive investment or expansion risks, thereby increasing short-term financial pressure and the potential for financial distress. These findings are consistent with recent research by Chen et al. (2021), which shows that highly profitable firms remain vulnerable to financial pressure if growth and expansion are not properly managed. However, this result contrasts with other studies that find high profitability consistently reduces the risk of financial distress (see Sari & Putra, 2020). This discrepancy suggests that industry context, management strategies, and corporate governance quality influence the relationship between profitability and

financial distress.

The Impact of Liquidity on Financial Distress

Liquidity, measured using the Current Ratio (CR), also exhibits a significant positive effect on financial distress, with a regression coefficient of 0.635 ($p = 0.027$). This indicates that firms with high liquidity tend to experience increased financial distress. This may occur due to inefficient fund allocation, where firms hold excessive cash for short-term liquidity but neglect long-term obligations or productive investments. This finding aligns with recent studies by Wijaya & Nugroho (2022), which highlight that excessive liquidity can create opportunity costs and reduce capital efficiency, thereby increasing financial pressure risk. It underscores the importance of strategic cash management, rather than merely maintaining high liquidity.

The Impact of Cash Flow on Financial Distress

Operating cash flow (OCF) has a significant positive effect on financial distress, with a regression coefficient of 2.999 ($p = 0.000$). This suggests that even firms with high operating cash flow may experience elevated financial distress risk. This occurs because reliance on short-term cash flow to finance long-term obligations or high-risk investments can create liquidity pressure not captured by simple cash flow ratios. These results are supported by research by Rahman et al. (2023), which emphasizes that cash flow management quality—not merely its magnitude—is a key factor in mitigating financial distress.

Conclusions and Suggestions

The conclusion of this study indicates that the profitability ratio, measured by Return on Assets (ROA), the liquidity ratio, measured by the Current Ratio (CR), and the cash flow ratio, measured by Operating Cash Flow (OCF), all have a significant positive effect on financial distress in food and beverage companies listed on the Indonesia Stock Exchange during the period of 2019-2023.

Future research is expected to incorporate control variables such as company size, institutional ownership, managerial ownership, audit committees, and others to provide a more comprehensive perspective on the factors influencing financial distress. Additionally, it would be beneficial for research to include companies from other sectors and utilize a longer observation period to broaden the sectoral coverage and extend the duration of observation. This approach will yield more representative and extensive data, aiding in the understanding of the dynamics of financial distress across various industry contexts and time frames, as well as providing deeper insights.

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