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The Impact of ROA and DER on Stock Prices in the Food and Beverage Industry for the Period 2018–2022

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Abstract:
The purpose of this study is to examine the relationship between Return on Assets (ROA) and stock prices, as well as the relationship between Debt to Equity Ratio (DER) and stock prices, including their simultaneous effect. The population consists of food and beverage companies listed on the Indonesia Stock Exchange during the 2018–2022 period. Using a purposive sampling method, 30 companies were selected as the research sample. The study applies multiple regression analysis to test the proposed hypotheses.
The results indicate that ROA has a positive effect on stock prices, while DER does not have a significant effect. However, when tested simultaneously, ROA and DER together have a positive influence on stock prices.

Keywords: *Debt to Equity Ratio, Stock Price, Return on Asset*

INTRODUCTION

The consumer goods industry is one of the manufacturing sectors that plays a vital role in national economic growth. This sector is known for its strong resilience to economic fluctuations because the products it produces are essential for people's daily needs. The potential of this industry in Indonesia is highly promising, given the large population and the steadily rising level of household consumption each year (Putri & Puspitasari, 2022). Investor confidence in the sector's stability means

that consumer goods company stocks are often viewed as a relatively safe investment option amid market uncertainty.

Within this industry, the food and beverage subsector is the primary contributor, demonstrating the most dynamic growth. Companies in this subsector are required to continuously innovate to meet consumer demands and face intense global competition in the Industry 4.0 era. The market's assessment of a company's capabilities and prospects in this industry is directly reflected in its stock price movements (Indriaty et al., 2023). Therefore, the development of stock prices for entities in this sector has shown positive performance following the COVID-19 pandemic, reflecting investor optimism regarding future business prospects. The dynamics of stock price movements in this subsector during the 2018–2022 period exhibit a fluctuating pattern, as illustrated in the following graph:

Figure 1. Average Stock Price Growth in the Food and Beverage Subsector for the 2018–2022 Period
Source: IDX, Data Diolah (2024)

As shown in Figure 1, the average stock price rose by 9.04% between 2018 and 2019. A unique phenomenon occurred in 2020, where stock prices managed to grow positively by 1.98% despite the pressures of the COVID-19 pandemic, before eventually correcting during the 2021 period and rebounding by 14.42% in 2022. This movement indicates that the market remained optimistic despite the macroeconomic conditions experiencing turbulence.

A high ROA indicates that the entity generates significant profits through its assets. This can attract investors' attention and increase demand for the company's shares, which may drive up the stock price itself (Suryasari & Artini, 2020). Meanwhile, a high DER suggests that the entity has substantial debt. This can lead to a reduction in demand for the company's shares, which ultimately causes the stock price to decline (Haryani, 2018). However, there is a phenomenon observed in the 2020 data: many food and beverage entities experienced a decline in ROA and an increase in DER due to the COVID-19 pandemic, yet the average stock price for these entities continued to rise, albeit not significantly.

According to Bayu & Nursito (2021), their study found a simultaneous (joint) effect of the Debt-to-Equity Ratio (DER) and Return on Assets (ROA) on stock prices for entities operating in the

automotive and components sectors listed on the Indonesia Stock Exchange (IDX) during the period 2014–2019. According to (Ulandari & Susila, 2023), their study also found that there is a simultaneous (joint) influence of ROA and DER on stock prices for entities operating in the plastics and packaging sector listed on the IDX during the period 2019–2021.

Previous studies have revealed the influence of ROA and DER on company stock prices across various sectors and specific industries; however, a limitation of these earlier studies is the absence of research specifically examining the impact of these variables on companies in the food and beverage subsector listed on the Indonesia Stock Exchange (IDX) during the 2018–2022 period. What is novel about this study is its focus on a very specific subject and time period, in which the food and beverage subsector exhibits defensive industry characteristics yet remains impacted by economic fluctuations throughout the pandemic transition period. To address this knowledge gap, this study aims to provide the latest empirical evidence regarding whether the fundamental ratios of ROA and DER maintain consistent relevance to stock prices within the scope of this subsector and observation period, thereby offering a deeper understanding of the unique market dynamics within Indonesia's food and beverage industry.

LITERATURE REVIEW

1) **Stock Price**

   Stock prices are a key indicator for assessing a company's performance and value in the capital market. Stock prices are determined by the mechanism of supply and demand, which is influenced by investors' perceptions of the company's internal conditions as well as external factors such as economic and market conditions. In this context, stock prices reflect investors' expectations regarding the company's ability to generate future profits (Indriaty et al., 2023). Consequently, the better a company's performance, the greater the interest among investors in buying its shares, which will ultimately drive up the stock price.

2) **Return On Assets (ROA)**

   Return on Assets (ROA) is a profitability ratio used to measure a company's ability to generate profits through the utilization of all its assets. ROA is calculated by dividing net income after taxes by the company's total assets (Suryasari & Artini, 2020)

3) **Debt to Equity Ratio (DER)**

   The Debt-to-Equity Ratio (DER) is a solvency ratio used to measure the ratio of a company's total debt to its total equity. This ratio indicates the extent to which a company finances its operations through debt rather than equity (Haryani, 2018). A high DER indicates a higher level of the company's reliance on external funding sources. In financial theory, this condition is often associated with higher financial risk due to the burden of liabilities that must be met. This can reduce investor interest in the company's stock. However, under certain conditions, optimal use of debt can actually improve company performance, so the effect of the DER on stock prices is not always negative (Winata et al., 2021)

4) **The Effect of ROA on Stock Prices**

Theoretically, ROA has a positive relationship with stock prices because it reflects a company's ability to generate profits from its assets. The higher the ROA, the greater the company's profit margin, which ultimately boosts investor confidence (Suryasari & Artini, 2020). Previous research has shown that ROA has a positive and significant effect on stock prices. This means that an increase in ROA is followed by an increase in stock prices, as investors tend to favor companies with high profitability (Ekawati & Yuniati, 2021)

5) The Effect of the Debt-to-Equity Ratio on Stock Prices

The effect of the debt-to-equity ratio on stock prices tends to be more variable than that of return on assets. Theoretically, a high debt-to-equity ratio can lower stock prices because it increases a company's financial risk, causing investors to tend to avoid companies with high debt levels. However, some studies indicate that the debt-to-equity ratio does not have a significant effect on stock prices. This suggests that investors do not always consider capital structure as the primary factor in investment decision-making, but rather take into account other factors such as profitability and the company's prospects (Ukhriyawati & Pratiwi, 2018).

6) The Simultaneous Effect of ROA and DER on Stock Prices

ROA and DER together reflect a company's financial condition in terms of profitability and capital structure. The combination of these two ratios provides a more comprehensive picture of a company's performance, making simultaneous analysis crucial for explaining stock price movements (Bayu & Nursito, 2021)

METHOD

Descriptive quantitative data will serve as the test data for this study. This data is derived from secondary sources, specifically the financial statements of each company, which are available at www.idx.co.id. The conceptual framework for this study is attached below.

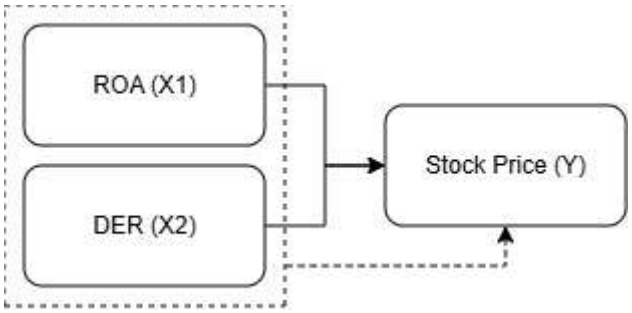

Figure 2 Conceptual Framework

The researcher used purposive sampling to determine the sample for this study, applying several criteria: companies listed on the Indonesia Stock Exchange (IDX) in the food and beverage subsector; companies that consistently published annual financial reports from 2018 to 2022, available on the IDX's official website or the companies' websites; and companies that were not delisted during the study period. Based on these criteria, this study obtained a sample of 6 companies, consisting of PT Akasha Wira International Tbk (ADES), PT Campina Ice Cream Industry Tbk (CAMP), PT Wilmar Cahaya Indonesia Tbk (CEKA), PT Sariguna Primatirta Tbk (CLEO), PT

Mayora Indah Tbk (MYOR), and PT Ultra Jaya Milk Industry & Trading Company Tbk (ULTJ). Thus, the total observations used in this study amounted to 30 data points over the five-year observation period.

The selection of the 2018–2022 period was based on the researcher's desire to capture the dynamics of financial performance and stock price movements before, during, and after the acute phase of the COVID-19 pandemic, which had a significant impact on the consumer sector. Additionally, the five-year period was deemed sufficiently representative to identify medium-term trends and provide access to the most recent data relevant to the current economic conditions at the time of the study. The quantitative data in this study is derived entirely from annual financial reports and company performance summaries published officially.

The research hypotheses proposed in this study are:

H1 : That there is a partial positive relationship between ROA and stock price.

H2 : That there is a partial positive relationship between DER and stock price.

H3 : That there is a combined positive relationship between ROA and DER and stock price.

RESULTS AND DISCUSSION

Descriptive Data Analysis

Table 1. Research Data Description

		Unstandardized Residual
N		30
Normal Parameters[a,b]	Mean	,0000000
	Std. Deviation	926,98852770
Most Extreme Differences	Absolute	,104
	Positive	,104
	Negative	-,074
Test Statistic		,104
Asymp. Sig. (2-tailed)		,200[c,d]

ROA is calculated by dividing profit after interest and taxes by the entity's total assets. Regarding the ROA variable in this study, the minimum value was recorded by CAMP in 2020, at 4.05, and the maximum value was recorded by ADES in 2022, at 22.17. The mean value was 11.9897, and the standard deviation was 4.12605.

The DER variable is obtained by dividing total debt by total equity. In this study's DER, the minimum value was recorded by CEKA in 2022, at 10.85. Meanwhile, the maximum value was recorded by MYOR in 2018, at 105.49. The mean value of the DER variable was 40.4757, and its standard deviation was 27.77554.

For the stock price variable, the minimum value was recorded by CLEO in 2018, at 227.00. Meanwhile, the maximum value was recorded by ADES in 2022, at 7,250.00. The mean value of the stock price variable is 1,534.5000, and its standard deviation is 1,367.45048.

Test of Classical Assumptions

Test of Normality

Table 2 Normality Test Results

		Unstandardized Residual
N		30
Normal Parameters[a,b]	Mean	,0000000
	Std. Deviation	926,98852770
Most Extreme Differences	Absolute	,104
	Positive	,104
	Negative	-,074
Test Statistic		,104
Asymp. Sig. (2-tailed)		,200[c,d]

The Asymp. Sig. value listed in the normality test table above is 0.200. This indicates that the probability value, 0.200, is greater than 0.05. Therefore, the test data is deemed to be normally distributed.

Autocorrelation Test

Table 3. Autocorrelation Test Results

Model	K	dL	dU	Durbin-Watson	Kriteria	Keretangan
1	2	1,3908	1,600	1,664	dL < dW < 4-dU	Bebas Autokorelasi

a. Predictors: (Constant), DER, ROA

b. Dependent Variable: Stock Price

The autocorrelation test table shows values of dL < dW < 4-dU, specifically 1.3908 < 1.664 < (4-1.600). The results indicate values of 1.3908 < 1.664 < 2.400, which means that there is no autocorrelation in the regression equation model.

Multicollinearity Test

Table 4. Results of the Multicollinearity Test

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	ROA	,983	1,017
	DER	,983	1,017

a. Dependent Variable: Stock Price

The multicollinearity test included in the table shows that: the VIF value for ROA is 1.017 < 0.10, with a tolerance value of 0.983 > 0.100. Therefore, ROA is deemed not to exhibit multicollinearity. Additionally, the VIF value for DER is 1.017 < 10, with a tolerance value of 0.983 > 0.100. Therefore, DER is deemed not to exhibit multicollinearity.

In the results of the multicollinearity test, the VIF values for both variables (ROA and DER) are 1.017 < 10; therefore, it can be concluded that there is no multicollinearity between ROA and DER.

Heteroscedasticity Test

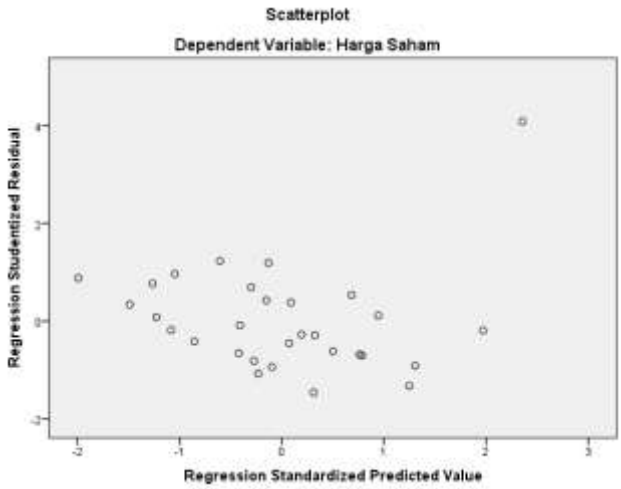

Figure 3. Results of the Heteroscedasticity Test

Based on the graph in the figure above, the data points are evenly distributed around the zero point; they are not concentrated at a single point, and their distribution does not form a specific pattern or model. Therefore, it can be concluded that the regression model used in this test does not exhibit heteroscedasticity.

Multiple Linear Regression Analysis
Partial Significance Test (T-Test)

Table 5. Results of the Partial Significance Test (T-Test)

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-1484,698	580,845		-2,556	,017
	ROA	239,040	43,603	,721	5,482	,000
	DER	3,785	6,477	,077	,584	,564

a. Dependent Variable: Harga Saham

Based on the results of the partial significance test (t-statistic) above, the following linear regression equation can be derived:

$$Y = \alpha + \beta 1X1 + \beta 2X2 + \varepsilon$$
$$Y = -1484,698 + 239,040X1 + 3,785X2 + \varepsilon$$

The value of the regression coefficient can be interpreted as follows: The constant term of -1484.698 indicates that if the sum of ROA and DER equals 0, the stock price will be -1484.698.

The regression coefficient for X1 (ROA) is 239.040, indicating that for every 1% increase in ROA, assuming the DER remains constant, the stock price will increase by 239.404.

The regression coefficient for X2 (DER) is 3.785, indicating that for every 1% increase in the DER value, assuming the ROA value remains constant, the stock price will decrease by 3.785.

The significance value for ROA = 0.00 < 0.05 indicates that ROA has an effect on the stock price, while the significance value for DER = 0.788 > 0.05 indicates that there is no significant effect of DER on the stock price.

Simultaneous Significance Test (F-Test)

Table 6. Results of the Simultaneous Significance Test (F-Test)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	29307779,320	2	14653889,660	15,877	,000[b]
	Residual	24919924,180	27	922960,155		
	Total	54227703,500	29			

a. Dependent Variable: Harga Saham

b. Predictors: (Constant), DER, ROA

Table 6 shows that ROA and DER together have an impact on stock prices. This conclusion is supported by the calculated F-value of 15.877, which is greater than the critical F-value of 3.32, and the significance level of 0.000, which is less than 0.050. Therefore, the alternative hypothesis (Ha) is accepted, and the null hypothesis (Ho) is rejected. It can be concluded that ROA and DER simultaneously influence the stock prices of food and beverage companies.

Analysis of the Coefficient of Determination (R^2)

Table 7. Results of the Coefficient of Determination (R^2) Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,735[a]	,540	,506	960,70815

a. Predictors: (Constant), DER, ROA

b. Dependent Variable: Harga Saham

The adjusted R^2 value is 0.506 (50.6%). This value indicates that ROA and DER account for 50.6% of the variation in stock price; the remaining 49.4% is attributed to other factors not examined in this study and requires further research to identify.

DISCUSSION

The Effect of ROA on Stock Prices

The results of the first hypothesis test indicate that there is a positive and significant relationship between ROA and stock price. The t-test results show that the calculated t-value for the ROA variable is 5.482, which is greater than the critical t-value of 2.048, with a significance level of 0.000 < 0.050. Therefore, the alternative hypothesis (Ha) is accepted and the null hypothesis (Ho) is rejected. Theoretically, this finding reinforces signaling theory, wherein high profitability serves as a positive signal to investors regarding the company's bright prospects. A company's ability to generate profits from its assets reflects operational efficiency, which drives increased demand for shares and fuels price appreciation. In practical terms, management in the food and beverage subsector must maintain ROA stability as the key to sustaining capital market confidence. These results align with the study by Ekawati & Yuniati (2021), which revealed a positive and significant relationship between ROA and stock prices for transportation companies listed on the Indonesia Stock Exchange (IDX) from 2015 to 2018.

The Effect of DER on Stock Prices

The results of the second hypothesis test indicate that there is no relationship between the DER and stock prices. The t-test results show that the calculated t-value for the DER variable is 0.584 < the critical t-value of 2.048, and the significance level of 0.564 > 0.050. From the perspective of signaling theory, this finding implies that the DER in the food and beverage subsector is not perceived

as a negative signal by investors. This occurs because investors tend to view debt not as a threatening financial risk burden, but rather as a tool for companies to undertake productive expansion to increase future value. As long as profitability signals remain strong, the market does not overreact to debt signals. The theoretical implication suggests that the effectiveness of signals from capital structure depends heavily on the industry type; in defensive consumer sectors, information regarding debt is viewed as a neutral signal by market participants. These test results align with a previous study by Ukhriyawati & Pratiwi (2018), which found no significant relationship between the debt-to-equity ratio (DER) and stock prices for property companies listed on the Indonesia Stock Exchange (IDX) from 2013 to 2016.

The Effect of ROA and DER on Stock Prices

The results of the third hypothesis test indicate that, taken together, ROA and DER have a significant effect on stock prices. The F-test results show a calculated F-value of 15.87, which is greater than the critical F-value of 3.32, with a significance level of 0.000 < 0.050. Therefore, the alternative hypothesis (Ha) is accepted, and the null hypothesis (Ho) is rejected. Within the framework of signaling theory, these results demonstrate that investors analyze financial information packages simultaneously. The signals sent by ROA and DER together provide a more complete picture of a company's risk profile and returns. The contribution of this study reinforces that investment decisions in the capital market are driven by a combination of various financial signals; the strength of positive signals from profitability can balance or offset information regarding a company's debt burden. Practically, this means companies must be able to manage their combination of financial ratios to continue projecting convincing signals of financial health to the public. These test results are consistent with a previous study conducted by (Bayu & Nursito, 2021), which found a simultaneous effect of ROA and DER on stock prices for automotive companies and suppliers listed on the IDX from 2014 to 2019.

CONCLUSION

ROA has a positive and significant partial effect on stock prices for food and beverage companies listed on the IDX from 2018 to 2022. The regression test for the first hypothesis shows that the significance value of 0.000 < 0.050 and the calculated t-value of 5.482 are above the critical t-value of 2.048. This finding implies that the level of profitability measured by ROA is a positive signal for investors in assessing a company's effectiveness in managing assets to generate profits.

DER had no significant effect on the stock prices of food and beverage companies listed on the IDX from 2018 to 2022. The regression test for the second hypothesis showed that the significance value of 0.564 was greater than 0.050, and the calculated t-value of 0.584 was less than the critical t-value of 2.048. This implies that a company's capital structure or debt level is not a primary consideration for investors in this subsector when making investment decisions, as the market tends to focus more on actual profit performance rather than the company's debt burden.

Simultaneously, ROA and DER have a positive and significant effect on stock prices for food and beverage companies listed on the IDX from 2018 to 2022. The regression test for the third

hypothesis shows that the significance value of 0.000 < 0.050 and the calculated F-value of 15.87 > the critical F-value of 3.32. This study makes a theoretical contribution to strengthening the financial accounting literature, particularly signaling theory, which demonstrates that financial information such as profitability remains a crucial instrument in reducing information asymmetry in the capital market. Practically, the results of this study contribute to corporate management by encouraging them to prioritize improving asset performance to attract investor interest, and to prospective investors by urging them to be more careful in analyzing profit ratios as the primary predictor of future stock price movements.

RECOMMENDATIONS

Based on the results of the study and the limitations inherent in this research, the researchers offer the following recommendations for improvement in several categories: For companies, focus on strategies that can increase ROA, as it has been proven to have a positive impact on stock prices. Strive for operational efficiency and sound asset management to enhance the company's profitability.

Since ROA has been proven to influence stock prices, investors should use it as a primary indicator when selecting stocks in the food and beverage subsector. Stocks of companies with higher ROA values may be a better choice for investment.

It is recommended that further research be conducted in the future to determine the reasons for the lack of impact of the debt-to-equity ratio (DER) on stock prices. Other factors, such as consumer trends, market conditions, or other external factors, may provide a more comprehensive perspective.

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CONFLICT OF INTEREST

This section is a statement from the author that this article has not conflict interest.

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