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THE ROLE OF FIRM SIZE IN MODERATING THE EFFECT OF RETURN ON ASSETS ON FIRM VALUE: EMPIRICAL EVIDENCE FROM FOOD AND BEVERAGE SUB-SECTOR MANUFACTURING COMPANIES ON THE INDONESIA STOCK EXCHANGE

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Abstrak

Penelitian ini bertujuan untuk menguji pengaruh Return on Assets (ROA) terhadap nilai perusahaan dengan ukuran perusahaan sebagai variabel moderasi pada perusahaan manufaktur subsektor makanan dan minuman yang terdaftar di Bursa Efek Indonesia (BEI). Nilai perusahaan diproksikan dengan Price-to-Book Value (PBV), ROA diukur menggunakan rasio Return on Assets, sedangkan ukuran perusahaan dioperasionalkan menggunakan logaritma natural dari total aset.

Penelitian ini menggunakan desain penelitian kuantitatif dengan sampel sebanyak 19 perusahaan yang dipilih melalui metode purposive sampling dari populasi perusahaan manufaktur subsektor makanan dan minuman yang terdaftar di BEI selama periode 2021–2023. Dengan demikian, diperoleh sebanyak 57 observasi perusahaan-tahun. Analisis data dilakukan menggunakan statistik deskriptif, uji asumsi klasik, regresi linear sederhana, Moderated Regression Analysis (MRA), uji t, dan koefisien determinasi, dengan pengolahan data menggunakan program SPSS versi 25.

Hasil penelitian menunjukkan bahwa ROA berpengaruh positif dan signifikan secara statistik terhadap nilai perusahaan (t = 6,612; p = 0,000). Sementara itu, ukuran perusahaan tidak mampu

memoderasi secara signifikan hubungan antara ROA dan nilai perusahaan (t = 1,979; p = 0,053). Hasil tersebut menunjukkan bahwa pengaruh profitabilitas terhadap nilai perusahaan tidak bergantung pada skala perusahaan dalam sampel dan periode penelitian yang diamati.

Kata kunci: Return on Assets, Nilai Perusahaan, Price-to-Book Value, Ukuran Perusahaan Moderated Regression Analysis

Abstract

This study examines the effect of Return on Assets (ROA) on firm value, with firm size as a moderating variable, among food and beverage manufacturing companies listed on the Indonesia Stock Exchange (IDX). Firm value is proxied by Price-to-Book Value (PBV), ROA is measured using the standard Return on Assets ratio, and firm size is operationalised as the natural logarithm of total assets. Employing a quantitative research design, the study draws on a sample of 19 companies selected through purposive sampling from the population of food and beverage sub-sector manufacturers listed on the IDX over the period 2021–2023, yielding 57 firm-year observations. Data analysis was conducted using descriptive statistics, classical assumption tests, simple linear regression, moderated regression analysis (MRA), t-tests, and the coefficient of determination, processed with SPSS version 25. The results indicate that ROA exerts a statistically significant positive effect on firm value (t = 6.612, p = 0.000). Firm size, however, does not significantly moderate the relationship between ROA and firm value (t = 1.979, p = 0.053), suggesting that the influence of profitability on firm value operates independently of firm scale within the observed sample and period.

Keywords: Return on Assets, Firm Value, Price-to-Book Value, Firm Size, Moderated Regression Analysis

INTRODUCTION

Firm value represents investors' assessment of a company's overall performance and future prospects and is commonly reflected in its market value or stock price (Astuti et al., 2021; Harmono, 2017). Maximizing firm value remains one of the primary objectives of corporate financial management because higher firm value is generally associated with increased shareholder wealth. In capital markets, investors tend to evaluate a company's ability to generate

profits and sustain business growth before making investment decisions. Consequently, profitability and firm size are frequently considered important determinants of firm value.

Profitability reflects a company's ability to generate earnings from its operational activities and available resources (Hery, 2015; Sukamulja, 2022; Sujarweni, 2024). Companies with strong profitability are generally perceived as having better operational efficiency and stronger financial performance. According to Signaling Theory, financial information disclosed by management serves as a signal to external stakeholders regarding the company's condition and future prospects. Higher profitability may therefore provide a positive signal to investors, potentially increasing market confidence and enhancing firm value (Sigar & Kalangi, 2019; Qotimah et al., 2023).

In addition to profitability, firm size is often associated with a company's capacity to generate stable earnings and maintain long-term business continuity. Firm size may be reflected through total assets, sales volume, market capitalization, or the number of employees (Paramita & Isarofah, 2016; Sudarno et al., 2022). Larger firms generally possess greater access to financing, broader market reach, and stronger operational resources, which may influence investor perceptions and contribute to higher firm value.

Previous studies have reported varying findings regarding the effects of profitability and firm size on firm value. Several studies suggest that profitability positively influences firm value because investors interpret higher earnings as an indication of effective management performance. Other studies indicate that firm size contributes to firm value through increased market confidence and lower perceived business risk. However, empirical evidence remains inconsistent across different sectors and observation periods, suggesting that the relationship between these variables requires further examination.

The novelty of this study lies in investigating the influence of profitability and firm size on firm value within the selected research context using the most recent observation period available in the study. By simultaneously examining these determinants, the study seeks to provide additional empirical evidence regarding factors that influence firm value and investor perceptions in the Indonesian capital market.

Based on the theoretical framework and previous empirical findings, it is hypothesized that profitability and firm size significantly affect firm value. Accordingly, this study examines the effect of profitability and firm size on firm value and evaluates whether these variables contribute significantly to explaining variations in firm value.

RESEARCH METHOD

This study employed a quantitative research approach using secondary data obtained from the annual reports and financial statements of food and beverage manufacturing companies listed on the Indonesia Stock Exchange (IDX) during the 2021–2023 period. The population consisted of 95 companies, while the sample was selected using a purposive sampling technique. Based on the established criteria, 19 companies were included in the study, resulting in 57 firm-year observations.

The independent variable was profitability, measured using Return on Assets (ROA). Firm value was treated as the dependent variable, while firm size was included as a moderating variable. Firm size was used to examine whether it strengthened or weakened the relationship between profitability and firm value.

Data analysis was conducted using descriptive statistical analysis and classical assumption tests, including normality, heteroscedasticity, and autocorrelation tests. Hypothesis testing was performed using Simple Linear Regression and Moderated Regression Analysis (MRA). The significance of the relationships was assessed using the t-test, while the coefficient of determination (Adjusted R^2) was used to evaluate the explanatory power of the model.

The regression models used in this study were formulated as follows:

$$FV = \alpha + \beta_1 ROA + \varepsilon$$

$$FV = \alpha + \beta_1 ROA + \beta_2 FS + \beta_3 (ROA \times FS) + \varepsilon$$

where:

FV = Firm Value

ROA = Return on Assets (Profitability)

FS = Firm Size

α = Constant

β_1–β_3 = Regression Coefficients

ε = Error Term

RESULTS AND DISCUSSION

This study employed a sample of 19 food and beverage sub-sector manufacturing companies listed on the Indonesia Stock Exchange (IDX) during the 2021–2023 period, drawn from a total population of 95 companies. A total of 57 firm-year observations were used in this study, obtained

by multiplying the 19 sample companies by the three-year research period. The descriptive statistical test was intended to provide an overview of the characteristics of the sample data used in the study. Three variables were examined in this research, namely Return on Assets (X), Firm Value (Y), and Company Size (Z).

The first test conducted was the normality test using the Kolmogorov–Smirnov test, with the criterion that if the Asymp. Sig. value exceeds 0.05, the regression model's data distribution is considered normal. The results of the Kolmogorov–Smirnov normality test, processed with the aid of SPSS version 25, are presented in Table 1.

Table 1. Kolmogorov–Smirnov Normality Test Results

One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		57
Normal Parameters[a,b]	Mean	,0000000
	Std. Deviation	,63899806
Most Extreme Differences	Absolute	,079
	Positive	,079
	Negative	-,047
Test Statistic		,079
Asymp. Sig. (2-tailed)		,200[c,d]

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

d. This is a lower bound of the true significance.

Table 2. Glejser Heteroscedasticity Test Results

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	-,644	,810		-,795	,430
	Return On Assets	-,378	,690	-,073	-,547	,587
	Ukuran Perusahaan	,042	,027	,203	1,521	,134

a. Dependent Variable: ABS_RES

The autocorrelation test was conducted using the Durbin–Watson statistic, with the aid of SPSS version 25, on the basis of which it was concluded that autocorrelation does not occur. The results of this test are presented in Table 3.

Table 3. Durbin–Watson Autocorrelation Test Results

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	,667[a]	,444	,424	2,45311	2,039

a. Predictors: (Constant), Return On Assets, Ukuran Perusahaan

b. Dependent Variable: Nilai Perusahaan

The results of the simple linear regression analysis are presented in Table 4. and expressed in the following equation:

$$Firm\ Value = -0.263 + 31.637\ Return\ on\ Assets$$

Table 4. Simple Linear Regression Results

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-,263	,590		-,446	,658
	Return On Assets	31,637	4,785	,665	6,612	,000

a. Dependent Variable: Nilai Perusahaan

The moderated regression model used in this study takes the following general form:

$$Y = a + b_1X + b_2Z + b_3(XZ) + \varepsilon$$

Based on the analysis, the resulting moderated regression model is:

Firm Value = 14.048 − 246.435 Return on Assets − 0.507 Company Size + 9.769 (Return on Assets × Company Size)

Table 5. Moderated Regression Results

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	14,048	10,037		1,400	,167
	Return On Assets	-246,435	140,696	-5,184	-1,752	,086
	Ukuran Perusahaan	-,507	,350	-,268	-1,450	,153
	Return On Assets*Ukuran Perusahaan	9,769	4,936	5,827	1,979	,053

a. Dependent Variable: Nilai Perusahaan

The results of the t-test for the simple linear regression are presented in Table 6.

Table 6. t-Test Results of the Simple Linear Regression

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	-,263	,590		-,446	,658
	Return On Assets	31,637	4,785	,665	6,612	,000

a. Dependent Variable: Nilai Perusahaan

The results of the t-test for the moderated regression are presented in Table 7.

Table 7. t-Test Results of the Moderated Regression

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	14,048	10,037		1,400	,167
	Return On Assets	-246,435	140,696	-5,184	-1,752	,086
	Ukuran Perusahaan	-,507	,350	-,268	-1,450	,153
	Profitabilitas*Ukuran Perusahaan	9,769	4,936	5,827	1,979	,053

a. Dependent Variable: Nilai Perusahaan

The results of the coefficient of determination (Adjusted R Square) test are presented in Table 8.

Table 8. Coefficient of Determination (Adjusted R Square) Results

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,665[a]	,443	,433	2,43419

a. Predictors: (Constant), Return On Assets

Source: SPSS 25 output.

Effect of Return on Assets on Firm Value

The t-test yields a significance value of 0.000 (< 0.05) and a calculated t-statistic of 6.612, which exceeds the critical t-table value of 2.004; H1 is therefore accepted, confirming that *Return on Assets* (ROA) exerts a statistically significant positive effect on firm value among food and beverage manufacturing companies listed on the IDX over the 2021–2023 period. When ROA rises, the company's capacity to generate profit from its asset base improves, which strengthens investor confidence, elevates share prices, and consequently increases Price-to-Book Value (PBV). The pattern is illustrated by *PT Campina Ice Cream Industry Tbk* (CAMP), which recorded consecutive ROA gains from 8.72% to 11.28% to 11.70% over the three years, accompanied by corresponding PBV increases from 1.67 to 1.91 to 2.48. The reverse relationship is equally

apparent: *PT Tunas Baru Lampung Tbk* (TBLA) sustained continuous ROA declines from 3.76% to 3.39% to 2.37%, with PBV contracting from 0.65 to 0.54 to 0.51 over the same period. These firm-level observations reinforce the aggregate result and are consistent with Nur (2019), who similarly documented a significant positive effect of profitability on firm value.

Moderating Role of Firm Size on the Relationship between ROA and Firm Value

The interaction term (ROA × Firm Size) yields a t-statistic of 1.979, falling below the critical value of 2.004, with a significance value of 0.053 (> 0.05); H2 is therefore rejected, indicating that firm size does not significantly moderate the effect of *Return on Assets* on firm value. The evidence suggests that a larger asset base does not translate into superior asset utilisation or higher profitability: what drives firm value is the efficiency with which assets generate earnings, not their absolute scale. This is illustrated by the contrast between *PT Akasha Wira International Tbk* (ADES) and *PT Budi Starch & Sweetener Tbk* (BUDI): despite holding smaller total assets (Rp1.30–2.09 trillion versus Rp2.99–3.33 trillion), ADES consistently achieved ROA of 18–22% and a mean PBV of 2.44, compared with BUDI's ROA of approximately 3% and mean PBV of 0.69. Firm value thus appears to be driven more strongly by ROA and earnings growth prospects than by firm scale per se, such that investors may assign high valuations to smaller firms exhibiting superior profitability. These findings are consistent with Aisyah and Sartika (2022), who similarly found that firm size (total assets) does not significantly moderate the effect of profitability on firm value.

CONCLUSION

This study provides empirical evidence on the influence of *Return on Assets* on firm value, with company size examined as a moderating variable, among food and beverage sub-sector manufacturing companies listed on the Indonesia Stock Exchange during the 2021–2023 period. The findings indicate that *Return on Assets* exerts a significant positive influence on firm value ($t = 6.612$, $p = 0.000$), confirming that firms perceived by investors as efficient and profitable in generating returns from their assets are correspondingly valued more highly in the market. Company size, by contrast, was not found to moderate this relationship ($t = 1.979$, $p = 0.053$): regardless of whether a firm's asset base expands or contracts, the strength of the link between profitability and firm value remains essentially unchanged, suggesting that investors weigh a company's earning efficiency more heavily than its scale when assessing its worth.

These results lend support to signalling theory, whereby a firm's profitability performance functions as a credible signal of managerial effectiveness to the market, prompting favourable investor responses independent of firm size. Future research is encouraged to extend the sample to manufacturing firms in other sub-sectors in order to broaden the generalisability of these findings, and to incorporate additional profitability measures — such as *Return on Equity*, *Gross Profit Margin*, *Operating Profit Margin*, and *Net Profit Margin* — to capture a more comprehensive picture of the determinants of firm value.

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