




The Effect of Capital Structure and Profitability on Firm Value with Firm Size as a Moderator

Afrawati Agustiarini¹, Iwan Kusmayadi²

¹ Management, Faculty Economic and Business, University of Mataram, Mataram, 83123, Indonesia

² Faculty Economic and Business, University of Mataram, Mataram, 83123, Indonesia

afrawatiagustiarinii@gmail.com

Abstract

Firm value is the perception given by investors to the success and performance of the company, which is reflected through the stock price. The higher the value of a company, the more attractive it is to investors because it shows a competitive advantage and promising growth potential. This study aims to analyze the effect of Capital Structure and Profitability on Firm Value with Company Size as a Moderating Variable in Food and Beverage Sub-Sector Companies Listed on the IDX 2020-2023. This research was conducted on 18 food and beverage sub-sector companies listed on the IDX 2020-2023 which have met the sample selection criteria. Data analysis in this study used Eviews 10 with panel data regression analysis and Moderated Regression Analysis (MRA) methods. The results of this study indicate that capital structure has a negative and insignificant effect on firm value, and profitability has a positive and insignificant effect on firm value. Then in moderation, company size is unable to moderate the influence between capital structure and firm value, and company size is unable to moderate the influence between profitability and firm value.

Keywords: Capital Structure, Profitability, Firm Value, Firm Size, evIEWS, moderated regression analysis

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1. Introduction

Indonesia's economic conditions in recent years have faced challenges triggered by global inflation due to supply chain disruptions in the wake of the pandemic. Based on data from the Central Statistics Agency (BPS), Indonesia's economic growth, as reflected in the Gross Domestic Product (GDP), contracted from the second quarter of 2020 to the first quarter of 2021. However, signs of recovery began to emerge from the first quarter of 2021 to the second quarter of 2021, marked by economic growth returning to positive territory.

The food and beverage sector showed significant growth and played a strategic role in driving Indonesia's economy. This is reflected in data from the Central Statistics Agency (BPS), which shows that in the third quarter of 2020, the food and beverage industry grew by 0.66%, even though the overall economy contracted by -3.49%. Even in the second quarter of 2020, when the contraction reached -5.32%, this sector still recorded a growth of 0.22%.

To cope with economic dynamics, companies need to increase their competitiveness through optimal operations and responsive, efficient, and creative business strategies. The ability to adapt effectively will

determine the resilience and sustainability of a company, which is reflected in its ability to maintain and increase its value [1].

Company value is the perception that investors have of a company's success and performance, which is reflected in its share price [2], [3], and [4]. The higher a company's value, the more attractive it is to investors because it demonstrates competitive advantages and promising growth potential. In addition, companies with high values tend to have a good reputation in the market, which allows them to more easily access financial resources, attract new investors, and strengthen their position in the face of competition.

Success in maintaining and increasing company value also reflects the effectiveness of management in strategic decision-making. Therefore, it is important to understand the various factors that affect company value, such as managerial ownership, cash ownership, profitability, investment decisions, financing, and dividend policy [5]. Understanding these factors helps companies make the right decisions to increase competitiveness and maintain their position in the market.

Table 1. Development of Company Value, Capital Structure, and Profitability

Variable	Year			
	2020	2021	2022	2023
Tobin's Q (x)	1.455	1.337	1.340	1.440
DER (%)	101	108	96	82
ROE (%)	13	14	12	7

Table 1 shows that each variable experienced annual fluctuations without negative values. The highest DER growth occurred in 2021 at 108% and the lowest in 2023 at 82%. The highest ROE growth occurred in 2021 at 14% and the lowest in 2023 at 7%. Meanwhile, the value of companies in the food and beverage sub-sector, as measured by Tobin's Q, experienced the highest growth in 2020 at 1,455 and the lowest in 2021 at 1,337. These fluctuations indicate complex dynamics between capital structure, profitability, and company value in this sector.

Tobin's Q is a ratio that describes the value of a company compared to the value of its assets [6]. If the figure obtained is greater than before, this indicates that the company is likely managing its assets better, thereby increasing company profits. Tobin's Q provides clearer guidance in determining whether a company's share price reflects the true value of its assets [7].

Debt to Equity Ratio (DER) is a financial ratio used to assess the proportion of debt to equity in a company's capital structure. This ratio shows how much of a company is financed by debt compared to equity, providing an overview of the company's leverage and financial risk. Based on the Modigliani-Miller theory (1963), companies that utilize debt in their capital structure tend to have a higher value than companies that do not use debt, due to the advantage of tax savings. This view is in line with the Trade-off Theory, which states that the use of debt can increase the value of a company, but only up to a certain point where the benefits of tax savings begin to diminish due to increased bankruptcy costs. There are differences in the results of previous studies on the effect of capital structure on company value, such as studies that argue that capital structure has a positive and significant effect on company value [8] and [9]. Meanwhile, other studies show that capital structure does not have a significant effect on company value [10] and [11].

Return on Equity is a ratio that measures the return on equity, which is the ratio between net income and equity [12]. Therefore, Return on Equity provides a clear picture of how well a company manages the funds provided by shareholders to generate profits. The higher the Return on Equity (ROE), the better, because the company can provide a greater rate of return to shareholders. There are differences in previous studies on the effect of profitability on company value, such as

studies that argue that profitability has a positive and significant effect on company value [4] and [13]. Meanwhile, other studies show that profitability does not have a significant effect on company value [10] and [14].

Company size was chosen as a moderating variable because large companies in the food and beverage sector are considered to have stronger bargaining power, more stable income, and better capabilities and flexibility in facing economic pressures. These advantages make large companies more capable of managing resources, accessing external funding, and competing in the market, thereby being more effective in increasing company value compared to small companies.

Based on the above description, the main problem in this study can be identified, namely the inconsistency in previous research findings regarding the effect of capital structure and profitability on company value (research gap). Inconsistencies are also seen in the data on companies in the food and beverage sub-sector for 2020–2023, where an increase in capital structure and profitability is not always followed by an increase in company value, and vice versa. This indicates the need for further research to understand this relationship and explore the possible role of company size as a moderating variable.

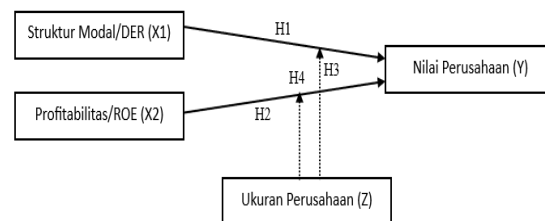


Figure 1 Rerangka Konseptual

H1: Capital Structure has a positive effect on Company Value

H2: Profitability has a positive effect on Company Value

H3: Firm Size can moderate the effect of Capital Structure on Firm Value

H4: Company size can moderate the effect of profitability on company value

2. Methods

The type of research used in this study is associative research. The research population consists of all food and beverage sub-sector companies listed on the Indonesia Stock Exchange for the period 2020-2023, totaling 99 companies. The sampling technique used in this study is purposive sampling. The data in this study was obtained from documents in the form of company financial reports and annual reports for the 2020-2023

period, annual closing stock price data (end of period), and market capitalization data of companies through Yahoo Finance (finance.yahoo.com) for the 2020-2023 period. The criteria for the company sample used in this study are as follows:

No	Sample Criteria	Number
1	Food and beverage sub-sector companies listed consecutively on the Indonesia Stock Exchange for the period 2020-2023.	29
2	Companies that did not publish complete financial reports for the 2020-2023 period.	(1)
3	Companies that did not use rupiah in their financial reports for the 2020-2023 period.	(1)
4	Companies that did not earn a positive net profit in their financial statements for the 2020-2023 period.	(9)
Number of samples obtained		18
n research sample (18x4 years)		72

2.1 Operational Variables

Independent Variables (free variables)

The independent variables in this study are as follows:

a. Capital structure proxied by the debt to equity ratio (X1)

Capital structure proxied by the debt-to-equity ratio is a financial ratio used to assess the proportion of debt to equity in a company's capital structure.

$$DER = \frac{\text{Total Liabilitas}}{\text{Total Ekuitas}} \times 100\%$$

b. Profitability proxied by the Return on Equity ratio (X2)

The Return on Equity ratio is a ratio that shows how much shareholders' equity contributes to generating net income.

$$ROE = \frac{\text{Laba bersih setelah pajak}}{\text{Total Ekuitas}} \times 100\%$$

Dependent Variable

The dependent variable in this study is Company Value, which is proxied by Tobin's Q. Tobin's Q is a ratio that describes the value of a company compared to the value of its assets.

$$Tobin's\ Q = \frac{(\text{Nilai pasar ekuitas} + \text{Hutang})}{\text{Total Aset}}$$

Moderator Variable

The moderator variable in this study is Company Size. Company size refers to the scale used to classify the size of a company based on various methods, such as total assets, log size, stock market value, and so on.

$$Firm_Size = \ln(\text{Total Aset})$$

3. Results and Discussions

3.1 Descriptive Statistics

Table 1 Descriptive Statistic

Variabel	Mean	Max	Min	Std. Dev
Tobin's Q (Y)	2.1110	7.4036	0.7124	1.3525
DER (X1)	0.6678	2.1441	0.1085	0.4523
ROE (X2)	0.1677	0.8616	0.0146	0.1311
Firm Size	15.335	19.044	13.422	1.5549

Sumber: Data processed with Eviews 10, 2025

Based on Table 3 above, Tobin's Q has a highest value of 7.4036, a lowest value of 0.7124, an average value of 2.1110, and a standard deviation of 1.3525. The DER variable has a highest value of 2.1441, a lowest value of 0.1085, an average value of 0.6678, and a standard deviation of 0.4523. The ROE variable has a maximum value of 0.8616, a minimum value of 0.0146, an average value of 0.1677, and a standard deviation of 0.1311. The Firm Size variable has a maximum value of 19.044, a minimum value of 13.422, an average value of 15.335, and a standard deviation of 1.5549.

3.2 Normality Test

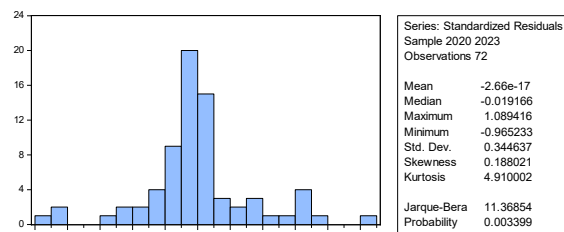


Figure 2 Normality Test

Figure 2 above shows a Jarque-Bera Probability value of 0.003399. With this result, it can be concluded that the Jarque-Bera Probability value is smaller than α 0.05, causing H1 to be accepted, which means that the residuals are not normally distributed.

To overcome this, data transformation using logarithms was performed. This transformation aims to make the residual distribution closer to normal, so that the assumptions in regression can be fulfilled more optimally. The following are the results of the normality test after data transformation:

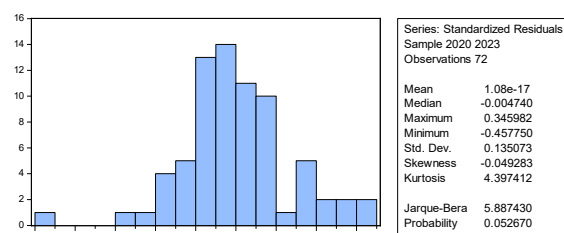


Figure 3 Normality Test After Data Transformation

Based on Figure 3 above, the Jarque-Bera Probability value is 0.052670. With this result, it can be concluded that the Jarque-Bera Probability value is greater than α 0.05, causing H0 to be accepted, which means that the residuals are normally distributed.

3.3 Selection of Panel Data Regression Model

a. Chow Test

Table 2 Chow Test

Effects Test	Statistic	d.f.	Prob.
Cross-section F	18.255193	(17,51)	0.0000
Cross-section Chi-square	140.975206	17	0.0000

Sumber: Data processed with Eviews 10, 2025

Based on the table above, it can be seen that the Chow test results in a probability value of 0.0000, which means that in the Chow test, if the profitability (Prob) in Cross Section F is less than 0.05, then H0 is rejected and H1 is accepted. Thus, based on the Chow test, the appropriate estimation model is Fixed Effect.

b. Hausman Test

Table 3 Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	45.312988	3	0.0000

Sumber: Data processed with Eviews 10, 2025

Based on Table 5 above, it can be seen that the Hausman test results in a probability value of 0.0000, where in the Hausman test, if profitability (Prob) is less than 0.05, then H1 is rejected and H0 is accepted. Thus, the best estimation model based on the Hausman test is the Fixed Effect Model.

Based on the results of the Chow Test and the Hausman Test, where the selected models are the Fixed Effect Model, it can be concluded that the Fixed Effect Model is the most appropriate model to use in this analysis.

3.4 Classical Assumption Test

A. Multicollinearity test

Table 4 Multicollinearity test

	LOG DER	LOG ROE	FIRM SIZE
LOG DER	1.00000	-0.035166	0.501330
LOG ROE	-0.035166	1.00000	-0.042330
FIRM SIZE	0.501330	-0.042330	1.00000

Sumber: Data processed with Eviews 10, 2025

Based on Table 6, it can be seen that the correlation coefficient between the two independent variables

and the moderating variable does not exceed 0.85. Thus, it can be concluded that this study does not experience multicollinearity problems.

B. Heteroscedasticity Test

Table 5 Heteroscedasticity Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.310845	1.238037	1.058809	0.2947
LOG_DER	0.026497	0.041116	0.644443	0.5222
LOG_ROE	-0.020593	0.032629	-0.631122	0.5308
FIRM_SIZE	-0.080568	0.080484	-1.001041	0.3215

Sumber: Data processed with Eviews 10, 2025

Table 7 shows that the profitability values of both independent variables and moderating variables are greater than 0.05. Thus, it can be concluded that this study does not experience heteroscedasticity problems.

3.5 Panel Data Regression Analysis

Table 8 Panel Data Regression Analysis Without Moderating Variables

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.781372	0.128441	6.083489	0.0000
LOG_DER	-0.013369	0.080825	-0.165411	0.8693
LOG ROE	0.106966	0.067786	1.577998	0.1206

Based on the results of panel data processing using the Fixed Effect Model in Table 8 above, the following equation is obtained:

$$Y = 0.781372 - 0.013369X1 + 0.106966X2$$

3.6 Moderated Regression Analysis (MRA)

Table 9 Moderated Regression Analysis Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-2.086277	3.203715	-0.651205	0.5180
LOG_DER	-0.367899	1.343963	-0.273742	0.7854
LOG_ROE	0.039344	0.961969	0.040899	0.9675
FIRM_SIZE	0.186262	0.210782	0.883674	0.3812
X1Z	0.025207	0.087063	0.289525	0.7734
X2Z	0.003828	0.064177	0.059652	0.9527

Based on the table above, the results of the Moderated Regression Analysis (MRA) test obtained the following equation:

$$Y = -2.086277 - 0.367899X1 + 0.039344X2 + 0.186262Z + 0.025207X1Z - 0.003828X2Z$$

3.7 Test of the Coefficient of Determination (R²)

Table 6 Test of the Coefficient of Determination

Cross-section fixed (dummy variables)			
	R-squared	Mean dependent var	var
	0.9444		0.5781

Adjusted R-squared	0.9241	S.D. dependent var	0.5791
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Table 10 above shows that the Adjusted R-squared value is 0.9241 or 92%. This indicates that the independent variables, namely Debt to Equity Ratio (DER) and Return On Equity (ROE), explain 92% of the variation in the dependent variable, namely Company Value. The remaining 8% (100% - 92%) is explained by other variables or factors not included in the study.

3.8 t-test

Based on Table 8, the t-test results are as follows:

- a. The capital structure variable on company value shows a significance value of 0.8693, which is greater than 0.05, with a negative regression coefficient of -0.013369.
- b. The variable of profitability on company value shows a significance value of 0.1206, which is greater than 0.05, with a positive regression coefficient of 0.106966.

Based on Table 9, the t-test results are as follows:

- a. Testing the capital structure variable on company value after adding the moderating variable based on the t-test yielded a significance value of $0.7734 > 0.05$ with a regression coefficient value of 0.025207.
- b. Testing the profitability variable against company value after adding the moderation variable based on the t-test yielded a significance value of $0.9527 > 0.05$ with a regression coefficient value of 0.003828.

3.9 F Test (Model Validity)

Table 7 F Test (Model Validity)

Cross-section fixed (dummy variables)			
		Mean dependent var	
R-squared	0.9444	var	0.5781
Adjusted R-squared	0.9241	S.D. dependent var	0.5791
Prob(F-statistic)	0.000000		

Table 11 shows that the F-statistic probability value is 0.000000, which is smaller than the significance level of 0.05 ($0.000000 < 0.05$). Thus, the regression model is suitable for interpreting the effect of independent variables (Capital Structure and Profitability) on Firm Value and the effect of Firm Size in moderating the relationship between independent and dependent variables.

3.10 Discussion

A. The Effect of Capital Structure on Firm Value

The hypothesis testing results show that capital structure has a negative but insignificant effect on company value. Therefore, H1 can be rejected.

The negative effect of capital structure on company value indicates that most companies in the research sample rely more on internal financing and have debt below the optimal level, in accordance with *the pecking order theory*. Although this strategy reflects prudence in risk management, the minimal use of debt can cause investors to doubt the company's growth plans. This uncertainty has the potential to reduce investor interest and have a negative impact on stock prices and company value [15].

Furthermore, the insignificance of capital structure on company value indicates that changes in DER do not always directly affect company value. Therefore, companies need to maintain a balance between debt and equity and remain focused on financial performance and growth strategies. Although a low DER reflects stability, companies must remain proactive in taking advantage of opportunities to increase their value in the eyes of investors. This is in line with research conducted by [8] and [11].

B. The Impact of Profitability on Company Value

The results of the hypothesis testing show that profitability has a positive but insignificant effect on company value. Therefore, it can be concluded that H2 is rejected.

The insignificance of profitability on company value indicates that changes in ROE do not always correspond with changes in company value. This may be due to net income that is not yet optimal compared to capital growth, as well as the ineffective use of capital to generate profits. In addition, macroeconomic instability due to the pandemic and the recovery process also affected purchasing power and inflation, thereby impacting the company's financial performance. However, theoretically, high ROE still has the potential to be a positive signal for investors and encourage an increase in the company's value through increased market confidence. This is in line with research conducted by [14].

C. Company Size in Moderating the Influence of Capital Structure on Company Value

The results of the hypothesis testing show that company size is unable to moderate the influence

of capital structure on company value. Therefore, it can be concluded that H3 is rejected.

Based on these results, company size cannot moderate the effect of capital structure on company value, which means that the size of a company does not always guarantee that a low or high capital structure will be utilized effectively for growth, resulting in negative perceptions among investors and a decline in competitiveness. This is in line with research conducted by [16].

D. Company Size in Moderating the Effect of Profitability on Company Value

The results of the hypothesis testing show that company size cannot moderate the influence of profitability on company value. Therefore, it can be concluded that H4 is rejected.

Based on these results, company size cannot moderate the effect of profitability on company value, which means that the size of a company does not always guarantee that it will utilize its assets and capital optimally to generate profits for shareholders. In other words, larger companies are not automatically better at converting profits into higher value for shareholders than smaller companies. This is in line with research conducted by [10].

4. Conclusions

The results of this study indicate that the Capital Structure variable, measured by the Debt Equity Ratio, has a negative and insignificant effect on company value in the food and beverage sub-sector companies listed on the IDX for the period 2020-2023. Then, the profitability variable measured by Return on Equity has a positive and insignificant effect on company value. Meanwhile, the moderating variable, namely firm size measured by total assets, can be concluded that firm size is unable to moderate the effect between capital structure and profitability on company value in food and beverage sub-sector companies listed on the IDX for the 2020-2023 period.

Further research is expected to expand the sample size and extend the research period, as well as include additional variables that may affect company value, such as managerial ownership, cash ownership, investment decisions, and dividend policies.

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Biographies of Authors

	<p>Afrawati Agustiarini is an alumni from University Of Mataram. She was born on August, 13 2003, in Mataram. She was majoring in manajemen at Universitas of Mataram. She can be reached by email at afrawatiagustiarinii@gmail.com.</p>
	<p>Iwan Kusmayadi, SE., MM works at University of Mataram as a lecturer and researcher. He was born on April 30, 1981. He was majoring in Manajemen at University of Mataram. His Google Scholar profile is available at: https://scholar.google.com/citations?user=pQXEGhQAAAAJ&hl=id</p>