

## THE IMPACT OF LEVERAGE ON FIRM VALUE BY MEDIATION OF PROFITABILITY (CASE STUDY OF CONSUMER NON-CHEMICAL COMPANIES LISTED ON THE INDONESIAN STOCK EXCHANGE 2014-2023)

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### Abstract:

This study aims to examine the effect of leverage on firm value using profitability as an intervening variable. In this study, firm value is measured by price-book value, leverage is measured by debt-equity ratio, and profitability is measured by return on assets. The population in this study is non-cyclical consumer sector companies listed on the Indonesia Stock Exchange (IDX) for the 2014-2023 period, with a purposive sampling technique. The analytical methods used are the classical assumption test, partial test (t-test), path analysis, Sobel test and data testing was carried out using SPSS 23 software. The results of the hypothesis test, path analysis, and Sobel test indicate that: 1) Leverage has a negative effect on firm value. 2) Leverage has a negative effect on profitability. 3) Profitability has a positive effect on firm value. 4) Profitability is unable to mediate the effect of leverage on firm value. This research shows that signaling theory does not fully explain the relationship between leverage, profitability, and firm value in the non-cyclical consumer sector.

**Keywords:** ESG, Firm Value, Stock Return, Tobin's Q, EPS

## INTRODUCTION

Companies continually strive to increase their profits. Therefore, companies must ensure that their value continues to grow. Increasingly intense and dynamic business competition is one of the main reasons why companies compete to project their best image and values. Good or bad company value will directly impact the company's market value and investor decisions regarding whether to invest or withdraw (Kristianto & Zuhri, 2018).

Company value reflects how investors assess management's performance in managing the company from its inception to the present (Surianingrat & Ichwanudin, 2019). High company value indicates investor confidence in the company's ability to create wealth for shareholders (Yanti and Darmayanti, 2019). According to signaling theory, company value can be reflected through signals in the form of information received by investors, namely through a company's stock price (Chabachib et al., 2020). The high or low value of a company is not only reflected by a company's stock price but can also be measured by its price-to-book value. According to Dewi & Rahyuda (2020), Price-to-Book Value (PBV) is calculated by comparing the stock price with the book value per share. This comparison allows us to determine whether the stock price is undervalued or overvalued. This study uses Price-to-Book Value (PBV) as a proxy for evaluating company value because the PBV ratio is considered more stable, given that book value tends to remain constant. Furthermore, PBV is considered to accurately reflect a company's condition, as its measurement is based on the company's equity (Sondang Salnika et al., 2021). The size of the PBV reflects investors' perceptions of whether the company is considered sound or not (Ukhriyawati & Dewi, 2019).

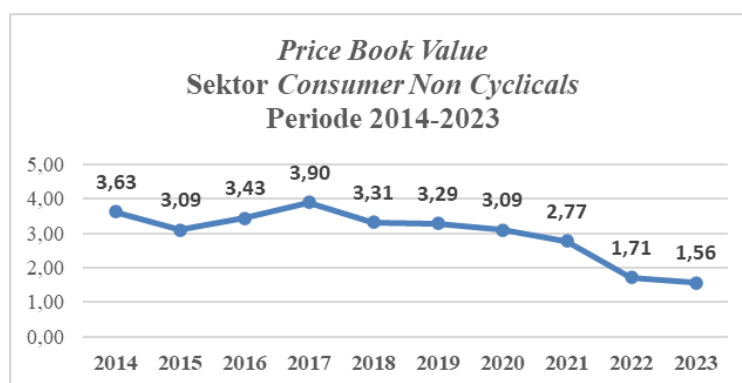
The non-cyclical consumer sector plays a crucial role in driving Indonesia's economic growth. This sector encompasses primary products and services such as food, beverages, and household



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necessities, whose demand remains stable even during difficult economic conditions (Perwitasari, 2022). This stable demand ensures that the sector remains in demand in all economic situations, whether during recessions or booms (Putu & Kartika, 2019). Population growth and rising incomes also drive the growth of this sector. Household consumption, which is largely allocated to non-cyclical products, is the largest contributor to Indonesia's GDP. In the second quarter of 2023, Indonesia's GDP grew 5.17% year-on-year, driven in part by this sector, with household consumption contributing 53.31% of total GDP (Kontan.co.id, 2023). With its significant contribution and relatively stable demand, the consumer non-cyclical sector is seen as having more stable growth potential than other sectors. However, Price Book Value data from 2014–2023 indicates that the performance of companies in this sector has tended to decline when viewed from their company value.

The following is empirical data on company value, as reflected in price book value (PBV), in the consumer non-cyclical sector listed on the Indonesia Stock Exchange for the period 2014–2023.



Source: PT Indonesia Stock Exchange

**Figure 1.** Average Price Book Value of the Consumer Non-Cyclicals Sector for the Period 2014-2023

Based on Figure 1.1, fluctuations in company value, as reflected in Price Book Value (PBV), indicate inconsistent performance in the consumer non-cyclical sector from 2014 to 2023. A decline in Price Book Value (PBV) in the consumer non-cyclical sector during 2014–2023 is undesirable for shareholders. This is because if the share price falls from the initial purchase price, the expected capital gain will decrease, potentially even resulting in a capital loss. Furthermore, a decline in PBV is often viewed as an investment opportunity, but in reality, profit-oriented investors tend to avoid companies with a declining PBV trend, as this is perceived as a negative signal (Dwicahyani et al., 2022). This phenomenon can undermine investor confidence in the company and contradicts the concept of signaling theory, which states that companies should send positive signals to the market through good performance. Therefore, in facing this situation, companies need to strive to increase their company value by improving financial performance and identifying the factors that cause fluctuations in company value. Financing decisions are crucial for financial managers, as they can impact the operational continuity and overall performance of a company. These decisions reflect how managers allocate capital resources by optimizing the capital structure, namely by determining the proportion of equity and debt capital to support company activities. When a company chooses to use external financing, particularly debt, this decision can impact market perception and the company's value.

Leverage is one factor that can influence company value (Anggraeni & Sulhan, 2022). Based on signaling theory, increasing debt allows a company to increase assets. If these assets are utilized



productively, they will generate greater revenue through operational activities. Therefore, efficiently managed debt use has the potential to increase profitability, and this increased profit will ultimately have a positive impact on company value (Yulimtinan & Atiningsih, 2021).

Empirically, several studies have explained the effect of leverage on company value. (Akhmadi et al., 2023) found that leverage has a positive and significant effect on company value. Any increase in leverage used to support operational activities and drive profit growth can be interpreted as a positive signal by investors, thus contributing to an increase in the company's value. The results of this study are in line with (Putra & Sunarto, 2021), Anggraeni & Sulhan, 2022), (Pangesti et al., 2020) and (Alifian & Susilo, 2024), which state that leverage has a positive and significant effect on company value. Meanwhile, some studies do not comply with signaling theory. However, several studies show different results, causing a research gap. According to Farizki & Masitoh (2021), leverage does not have a significant effect on company value. A high debt equity ratio does not always cause a decrease in company value, and a low DER does not always increase company value, because investors consider various aspects of financial statements. The results of this study are in line with (Lamba & Atahu, 2022), (Rivandi & Petra, 2022) and (Syahrani et al., 2023), which state that leverage does not affect company value.

This study aims to develop a model to explain the effect of leverage on firm value, using signaling theory. This theory states that increased debt can be a positive signal if used to acquire profit-generating assets, thereby increasing firm value (Zoraya et al., 2023). Profitability plays a crucial role in shaping investor perceptions of a firm's performance. Companies capable of generating high profits demonstrate the ability to manage debt effectively, which is a positive signal for investors. This encourages investment interest, increases stock prices, and ultimately increases firm value (Natalie & Lisiantara, 2022). Therefore, profitability was added as a mediating variable in this study to bridge the gap between previous research findings. Companies with high profitability are considered more promising, thus attracting investor interest. Increased stock demand will drive up stock prices and firm value (Kusumaningrum & Iswara, 2022). In this study, profitability is measured using Return on Assets (ROA) because ROA indicates how effectively assets are used to generate profits. Based on the phenomenon gap and research gap mentioned above, the researcher intends to re-examine the effect of leverage on firm value by adding a mediating variable, profitability, to bridge the effect of leverage on firm value. The empirical study was conducted on non-cyclical consumer sector companies from 2014 to 2023.

**Signaling Theory.** Signaling theory was introduced by Michael Spence in 1973 in a study entitled "Job Market Signaling." This theory involves two parties: internal parties, such as management, who act as signalers, and external parties, such as investors, who act as signal receivers. Spence stated that by providing signals, management attempts to convey relevant information for investors to use. Investors will then adjust their decisions based on their understanding of the signals received.

**Pecking Order Theory.** According to the Pecking Order Theory proposed by Myers (1984), companies have financing preferences based on a specific hierarchy. This theory states that companies prefer the use of internal financing over external financing. The primary source of funding is retained earnings, which are the net profit after tax that is not distributed to shareholders. These retained earnings are reinvested in projects or business activities deemed profitable. If internal funds are insufficient to cover investment needs, the company will seek external financing sources, starting with debt. Financing through stock issuance is a last resort because it is considered the most expensive and carries the highest risk to ownership.



**Company Value.** Company value is the degree to which a company has earned public trust through its operational activities since its inception. Company value is often linked to its stock price. A company is considered good if it has a high value, which also reflects its performance. When a company's stock value increases, this can indicate good company quality (Perwito et al., 2021).

**Leverage.** Leverage measures the extent to which a company can meet its obligations, both short-term and long-term, in the event of liquidation. Excessive use of debt risks placing a company in the extreme debt category, which can burden the company and make it difficult to repay the debt (Suryani & Sanusi, 2024).

**Profitability.** Profitability is a ratio used to measure a company's ability to generate profits, in relation to sales, assets, revenue, and equity (Sujawerni, 2017).

**The Effect of Leverage on Company Value.** According to signaling theory, increasing debt sends two kinds of signals: good news and bad news. Debt is considered a positive signal when it is used optimally. Well-managed debt can increase working capital and support business expansion, thus positively impacting profits and investor perceptions of company value (Octaviany et al. 2019). Investors typically view increased debt as a sign that a company is growing and requires additional funds for expansion or diversification, such as building a business portfolio. This increases market interest, drives stock demand, and causes share prices to rise, reflecting an increase in company value (Anggraeni & Sulhan, 2020). Research by Ichwanudin & Sari (2023) shows that leverage used to support operations and profit growth is viewed as a positive signal by investors, thereby increasing company value. Margono and Gantino (2021) also found that increased leverage can increase Price Book Value (PBV), because investors perceive companies with high leverage to be able to utilize assets optimally.

Bon & Hartoko (2022) added that the decision to use debt is a positive signal because it helps companies pursue profits and improve performance, which attracts investors and increases company value. This finding aligns with research by Nugraha et al. (2022), Amalia & Yudianta (2021), and Alifian & Susilo (2024), which states that leverage has a positive and significant effect on firm value. Based on the descriptions and results of previous research, the research hypothesis is formulated as follows: H1: Leverage has a Positive and Significant Effect on Firm Value.

**Effect of Leverage on Profitability.** Based on the Pecking Order Theory, companies tend to prefer internal financing over external financing. Debt is usually the second choice after internal funds. If debt is used in limited amounts, the interest expense will be small, so the returns from using debt can cover interest costs and increase profitability. However, if the debt proportion is too large, financial risk increases. Income from debt that is insufficient to cover interest expenses can actually reduce profitability. Research by Bere & Winarsa (2024) shows that leverage has a negative and significant effect on profitability. The higher the Debt-to-Equity Ratio (DER), the greater the company's reliance on debt, which increases financial risk, especially if the company has difficulty servicing its obligations. To repay debt, the company may be forced to sacrifice assets, which reduces the assets' ability to generate profits. These research findings are supported by Nasir (2020), who also stated that companies with high leverage face significant risks due to high interest expenses. Management focuses more on debt repayment than operational development. Conversely, companies with high profitability tend to use internal funding. These research findings align with research by Sukadana & Triaryati (2018), Nainggolan et al. (2022), and Pradnyaswari & Dana (2022), which found that leverage has a negative and significant effect on profitability. Based on the description and results of previous research, the research hypothesis is formulated as follows: H2: Leverage has a Negative and Significant Effect on Profitability.

**The Effect of Profitability on Company Value.** Based on signaling theory, when a company's profitability is stable and increasing over several periods, it indicates good performance. Therefore, information regarding this increase can provide a positive signal to investors or potential investors to invest in the company, thereby increasing company value. This finding is supported by Lamba & Atahau (2022), who stated that when a company successfully increases profits, its stock price rises, and ultimately, its value increases. This research finding aligns with Burhan & Bagana (2024), who stated that profitability has a positive and significant effect on company value. Companies that are able to maintain stability and generate increasing profits will achieve higher stock prices, which in turn will increase the company's value. Paramitha (2020) added that companies with good performance or profitability are perceived favorably by investors. Therefore, when profitability levels achieve satisfactory results, good company value can also be achieved. Akhmadi (2022) stated that good profitability performance will increase investor expectations regarding investment returns, which in turn will drive increased company value. This aligns with research by Taufan, Rizki, & Budianto (2019), Octaviany et al. (2019), and Amalia & Yudiana (2021), which states that profitability has a positive and significant effect on firm value. Based on the descriptions and results of previous research, the research hypothesis is formulated as follows: H3: Profitability has a Significant Effect on Firm Value.

**The Effect of Leverage on Firm Value Through Profitability.** Based on signaling theory, increasing debt will impact a company's assets. When a company's assets are utilized effectively, they will generate profits. This condition is perceived by the market as a positive signal, ultimately leading to increased stock prices of non-cyclical consumer sector companies, ultimately increasing the company's value (Kartika Dewi & Abundanti, 2019). 46 The use of debt can contribute to an increase in a company's net profit, which in turn impacts Return on Assets (ROA). ROA is a financial performance indicator that measures a company's ability to generate net profit from the total assets used in its operations. A high ROA sends a positive signal to both investors and potential investors, as it reflects the company's efficiency and effectiveness in managing assets to generate profits (Brigham & Houston, 2019). The results of this study align with those of Zoraya et al. (2023), Paramitha (2020), Kartika Dewi & Abundanti (2019), Ratna et al. (2018), and Akhmadi et al. (2023), which show that profitability mediates the effect of leverage on firm value. Based on the description and results of previous research, the research hypothesis is formulated as follows: H4: Profitability Can Mediate the Effect of Leverage on Firm Value.

## METHODS

This research is a quantitative study. The population is 54 non-cyclical consumer sector companies listed on the Indonesian Stock Exchange for the 2014-2023 period. The sampling method used was purposive sampling and resulted in a sample of 23 companies. The data source for this research is secondary data, information taken from financial statements and company annual reports accessed from the official website of the Indonesia Stock Exchange ([www.idx.co.id](http://www.idx.co.id)). The analytical methods used are classical assumption tests, partial tests (t-tests), path analysis, and Sobel tests, and data testing is carried out using SPSS 23 software.

## RESULT AND DISCUSSION

**Descriptive Statistical Test.** This study uses data from 230 companies in the non-cyclical consumer sector for the period 2014-2023. Descriptive statistical analysis was conducted on three main variables: leverage, profitability, and firm value.



**Table 1.** Descriptive Statistical Test

	Descriptive Statistics				
	N	Minimum	Maximum	Mean	Std. Deviation
DER	230	.10	4.94	1.1636	1.04949
ROA	230	.001	.53	.1076	.09927
PBV	230	.26	82.44	5.9052	11.62835
Valid N (listwise)	230				

**Leverage.** Leverage is measured by the Debt to Equity Ratio (DER) and has an average of 1.1637, meaning that every Rp1 of capital is used to secure Rp1.16 of debt. PT Sawit Sumbermas Sarana Tbk held the highest DER value of 4.94. (SMSS) In 2023, due to an increase in short-term and long-term liabilities, particularly accounts payable and lease liabilities. Conversely, the lowest DER value of 0.10 was held by PT PP London Sumatra Indonesia Tbk. (LSIP), indicating a low dependence on debt. The standard deviation of the DER is 1.049, indicating a relatively stable distribution of data.

**Profitability.** Profitability is measured using Return on Assets (ROA), with an average of 10.76%, indicating the company's ability to generate Rp0.1076 in profit for every Rp1 of assets. PT Multi Bintang Indonesia Tbk achieved the highest ROA of 0.53. (MLBI) In 2017, driven by increased revenue and operational efficiency. Meanwhile, the lowest ROA of 0.001 was recorded by PT Nippon Indosari Corpindo Tbk. (ROTI) In 2015. The standard deviation of ROA was 9.9227, indicating a stable distribution of data.

**Company Value.** Company value is measured using Price to Book Value (PBV), with an average value of 5.9052. The highest PBV of 82.44 was held by PT Unilever Indonesia Tbk (UNVR) in 2017, due to strong profit performance and consistent dividend distribution. Conversely, the lowest PBV of 0.26 was held by PT Budi Starch & Sweetener Tbk (BUDI) in 2015. The standard deviation of PBV was 1.3977, indicating significant variation in data between companies.

**Classical Assumption Test; Normality Test.** This normality test is used to test whether the regression model's residual variables have a normal distribution (Ghozali, 2018: 161). In this study, the Kolmogorov-Smirnov test was used to test for normality. The Kolmogorov-Smirnov test examines the Monte Carlo value. The sig must be higher than 0.05, indicating that the residual data are normally distributed. The following are the results of the normality test in this study:

**Table 2.** Normality test results  
**One-Sample Kolmogorov-Smirnov Test**

		Unstandardized Residual	
N		230	
Normal Parameters <sup>a,b</sup>	Mean	.0000000	
	Std. Deviation	6.16712415	
Most Extreme Differences	Absolute	.151	
	Positive	.151	
	Negative	-.076	
Test Statistic		.151	
Asymp. Sig. (2-tailed)		.000 <sup>c</sup>	
Monte Carlo Sig. (2-tailed)	Sig.	.000 <sup>d</sup>	
	99% Confidence Interval	Lower Bound	.000
		Upper Bound	.000

Based on the results of the normality test in Table 4.2 above, the Monte Carlo Sig value is  $0.000 < 0.05$ . Therefore, the data in this study are not normally distributed. Therefore, to address this issue, this study used the casewise diagnostics method to remove outliers. This resulted in a total of 162 data points, down from the initial 230.

**Table 3. Outlier Data for the Casewise Diagnostics Method**

One-Sample Kolmogorov-Smirnov Test		Unstandardized Residual	
N		162	
Normal Parameters <sup>a,b</sup>	Mean	.0000000	
	Std. Deviation	.89174561	
Most Extreme Differences	Absolute	.103	
	Positive	.103	
	Negative	-.063	
Test Statistic		.103	
Asymp. Sig. (2-tailed)		.000 <sup>c</sup>	
Monte Carlo Sig. (2-tailed)	Sig.	.065 <sup>d</sup>	
	99% Confidence Interval	Lower Bound	.059
		Upper Bound	.072

Based on the results of the normality test in Table 4.3 above, after removing outliers, the Monte Carlo SIG value is  $0.265 > 0.05$ . Therefore, the data in this study are normally distributed.

**Multicollinearity Test.** The multicollinearity test was conducted to test the regression model to determine whether there is a correlation between the independent variables (Ghozali, 2018). This regression model should not contain any correlation between the independent variables. Multicollinearity can be identified through the VIF (Variance Inflation Factor) value and the tolerance value. If the VIF value is  $\leq 10$  and the tolerance value is  $\geq 0.10$ , it indicates that there is no multicollinearity among the independent variables in the regression model. The following are the results of the multicollinearity test in this study:

**Table 4. Multicollinearity Test Results**

Model	Coefficients <sup>a</sup>				t	Sig.	Collinearity Statistics	
	Unstandardized Coefficients		Standardized Coefficients				Tolerance	VIF
	B	Std. Error	Beta					
1(Constant)	.331	.203			1.630	.105		
DER	.112	.086	.089		1.313	.191	.671	1.490
ROA	18.938	1.687	.761		11.225	.000	.671	1.490

a. Dependent Variable: PBV

Based on Table 4.6 of the multicollinearity test above, the tolerance value for the leverage variable (DER) is 0.671. The tolerance value for the leverage variable is greater than 0.10 ( $0.671 > 0.10$ ) and has a VIF value of less than 10 ( $1.490 < 10$ ). Similarly, the tolerance value for the profitability variable (ROA) is 0.671 ( $0.671 > 0.10$ ) and has a VIF value of less than 10 ( $1.490 < 10$ ). Since the tolerance value for each variable is above 0.10 and each variable has a VIF value of less than 10, it can be concluded that there is no multicollinearity among the independent variables in the regression model.

**Heteroscedasticity Test.** This test aims to determine whether there is unequal variance in the residuals of one observation compared to another in the regression model. This study uses the Park test. The Park test is used to detect heteroscedasticity by regressing the natural logarithm of the squared residuals against the independent variables. If the significance value is  $>0.05$ , there is no heteroscedasticity, while a value  $\leq 0.05$  indicates the presence of heteroscedasticity (Ghozali, 2018).

**Table 5.** Heteroscedasticity Test Results

Model	Coefficients <sup>a</sup>					
	Unstandardized Coefficients		Standardized Coefficients		t	Sig.
	B	Std. Error	Beta			
1 (Constant)	-1.401	.458			-3.059	.003
DER	-.232	.193	-.115		-1.205	.230
ROA	3.502	3.798	.088		.922	.358

a. Dependent Variable: LN\_RES2

Based on the table above, it can be seen that in substructural 2, the significance value of the leverage (DER) variable is 0.230, and that of profitability (ROA) is 0.358. Because both independent variables have significance values  $> 0.05$ , or  $0.230 > 0.05$  and  $0.358 > 0.05$ , it can be concluded that there are no symptoms of heteroscedasticity. This means that the regression model used in this study is suitable for use.

**Linearity Test.** The linearity test aims to evaluate whether the model used meets the correct specifications and to determine whether the function applied in empirical research should be linear, quadratic, or cubic (Ghozali, 2018). The decision regarding linearity can be determined by comparing the linearity significance value obtained from the linearity test with the criterion: if the linearity significance value is  $< 0.05$ , the model is considered linear.

**Table 6.** Linearity Test

			ANOVA Table				
			Sum of Squares	df	Mean Square	F	Sig.
PBV *	Between	(Combined)	178.140	112	1.591	.940	.613
DER	Groups	Linearity	31.540	1	31.540	18.644	.000
		Deviation from Linearity	146.599	111	1.321	.781	.856
	Within Groups		82.892	49	1.692		
	Total		261.032	161			

**Table 7.** Linearity Test

			ANOVA Table				
			Sum of Squares	df	Mean Square	F	Sig.
PBV *	Between	(Combined)	232.630	105	2.216	4.368	.000
DER	Groups	Linearity	131.615	1	131.615	259.505	.000
		Deviation from Linearity	101.015	104	.971	1.915	.004
	Within Groups		82.892	56	.507		
	Total		261.032	161			

Based on the table above, the linearity value for the Leverage (DER) variable shows a significance level of  $0.00 < 0.05$ , and the Profitability (ROA) variable shows a significance level of



$0.00 < 0.05$ . Therefore, it can be concluded that there is a linear and significant relationship between the Leverage (DER) and Profitability (ROA) variables on Firm Value (PBV).

**Hypothesis Testing (T-Test).** The t-test is conducted to determine the effect of each independent variable on the dependent variable. The t-test shows the extent of influence of one independent variable on the dependent variable, holding the other variables constant. The basis for the t-test decision can be seen from the significance value. Suppose the sig value of a variable is  $< 0.05$  and the calculated t-value is  $> t$ -table (at the 0.05 significance level). In that case, there is a significant influence of the independent variables on the dependent variable.

**Table 8.** Results of the T-Test for Leverage on Firm Value

Model	Coefficients <sup>a</sup>			t	Sig.
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta		
1 (Constant)	2.314	.135		17.171	.000
DER	-.439	.094	-.348	-4.689	.000

a. Dependent Variable: PBV

Source: SPSS 23 output (processed data)

**The Effect of Leverage on Firm Value.** Based on the table above, the calculated t-value for the leverage (DER) variable is -4.689 and a significance value of 0.000. With a 5% significance level and  $(df) = 162 - 1 = 161$ , the resulting t-value is 1.975. Therefore, the calculated t-value  $(-4.689) < -t$ -value  $(-1.975)$ , and the significance value is  $0.000 < 0.05$ . The coefficient (DER) indicates a negative relationship, at -0.439. Therefore, it can be concluded that leverage (DER) has a negative effect on firm value (PBV). Therefore, Hypothesis 1 is rejected.

**Table 9.** Results of the Leverage T-Test on Profitability

Model	Coefficients <sup>a</sup>			t	Sig.
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta		
1 (Constant)	.105	.005		22.124	.000
DER	-.029	.003	-.574	-8.858	.000

a. Dependent Variable: ROA

Source: SPSS 23 output (processed data)

**Effect of Leverage on Profitability.** Based on the table above, the calculated t-value for the leverage (DER) variable is -8.858 and a significance value of 0.000. With a 5% significance level and  $(df) = 162 - 1 = 161$ , the resulting t-value is 1.975. Therefore, the calculated t-value  $(-8.858) < -t$ -value  $(-1.975)$ , and the significance value is  $0.000 < 0.05$ . The coefficient (DER) indicates a negative relationship, at -0.029. Therefore, it can be concluded that leverage (DER) has a significant negative effect on profitability (ROA). Therefore, Hypothesis 2 is accepted.

**Table 10.** Results of the Profitability T-Test on Firm Value

Model	Coefficients <sup>a</sup>			t	Sig.
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta		
1 (Constant)	.542	.125		4.329	.000
DER	17.668	1.385	.710	12.756	.000



a. Dependent Variable: PBV

Source: SPSS 23 output (processed data)

**The Effect of Profitability on Firm Value.** Based on the table above, the calculated t-value for the profitability (ROA) variable is 12.756 and a significance level of 0.000. With a significance level of 0.05% and (df) = 162 - 1 = 161, the resulting t-table is 1.975. Therefore, the calculated t-value (12.756) is greater than the t-table value (1.975), and the significance value is 0.000 < 0.05. The ROA coefficient value indicates a positive relationship, at 17.668. Therefore, it can be concluded that profitability (ROA) has a significant positive effect on firm value (PBV). Hypothesis 3 is therefore accepted.

**Path Analysis Test.** Path analysis is used to test the influence of intervening variables and to analyze the relationship patterns between variables. This analysis aims to determine the direct and indirect influence of a set of independent (exogenous) variables on the dependent variable (Ghozali, 2005:160). The results of the path analysis are as follows:

### Substructural Regression Equation 1

**Table 11.** Results of Substructural Path Analysis: Regression Equation 1

Model	Coefficients <sup>a</sup>				t	Sig.
	Unstandardized Coefficients		Standardized Coefficients			
	B	Std. Error	Beta			
1 (Constant)	.105	.005			22.124	.000
DER	-.029	.003	-.574		-8.858	.000

a. Dependent Variable: ROA

Source: SPSS 23 output (processed data)

Based on the table above, the constant value of 0.105 means that when DER is assumed to be zero, ROA will be 0.105. The path coefficient (p<sub>2X</sub>) is -0.029. This means that every 1% increase in DER will decrease ROA by 2.9%. Conversely, a 1% decrease in DER will increase ROA by 2.9%.

**Table 12.** ε1 Value

Model	Model Summary			
	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.574 <sup>a</sup>	.329	.325	.04205

a. Predictors: (Constant), DER

Based on the table above, the R-squared value is 0.329. This means that 32.9% of the variation in profitability (ROA) is contributed by the leverage variable (DER), with the remaining 68.1% coming from other variables not examined in the model. Furthermore, arrows are pointing to each dependent variable, which explains the amount of variance not explained by the independent variable. The ε<sub>1</sub> value can be calculated as follows:

- $\epsilon_1 = \sqrt{1-R^2}$
- $\epsilon_1 = \sqrt{1-0.329} = \sqrt{0.671} = 0.819$

Based on this calculation, the ε<sub>1</sub> value is 0.819. Therefore, the equation for substructural path 1 is: ROA = 0.105 - 0.029 DER + 0.819



**Substructural regression equation 2**

**Table 13. Results of Substructural Path Analysis: Regression Equation 2**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.331	.203		1.630	.105
DER	.112	.086	.089	1.313	.191
ROA	18.938	1.687	.761	11.225	.000

a. Dependent Variable: PBV

Source: SPSS 23 Output

Based on the table above, the constant value is -0.331, meaning that when DER and ROA are assumed to be zero, the PBV will be -0.331. The DER value is 0.112. This means that every 1% increase in DER will increase PBV by 0.112. The ROA value is 18.938. This means that every 1% increase in ROA will increase the company's value by 18.938.

**Table 14. ε2 Value**

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.714 <sup>a</sup>	.510	.503	.89734

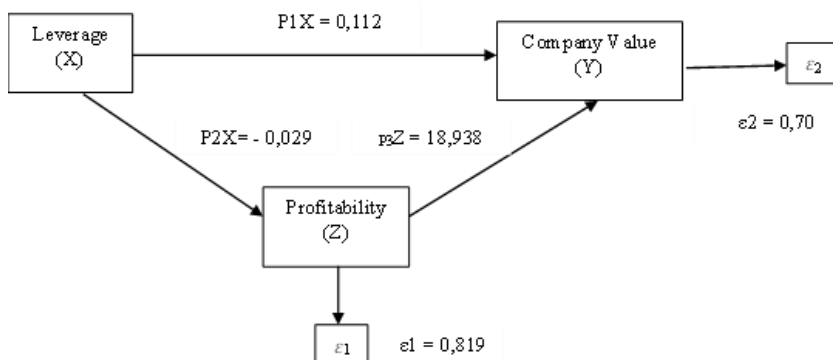
a. Predictors: (Constant), ROA, DER

Source: SPSS 23 Output

Based on the table above, the R Square value is 0.510. This means that 51% of the variation in firm value (PBV) is contributed by the leverage (DER) and profitability (ROA) variables, with the remaining 49% coming from other variables not examined in the model. Furthermore, arrows are pointing to each dependent variable, explaining the amount of variance not explained by the independent variables. The ε2 value can be calculated as follows:

- $\epsilon_2 = \sqrt{1-R^2}$
- $\epsilon_2 = \sqrt{1-0.510} = \sqrt{0.490} = 0.70$

Based on this calculation, the ε2 value is 0.70. Therefore, the equation for substructural path 2 is:  $PBV = 0.331 + 0.112 DER + 18.938 ROA + 0.70$ . Based on the causal relationship between substructural paths 1 and 2, the following path diagram is produced:



**Figure 1. Path Diagram of Causal Relationships Between Substructural 1 and Substructural 2**

The path diagram coefficient results above, indicated by the arrows, illustrate the causal relationship between the variables. The Effect of Leverage on Firm Value Through Profitability:

- Direct Effect = 0.112
- Indirect Effect =  $-0.029 \times 18.938 = -0.549$
- Total Effect =  $0.112 + (-0.549) = -0.437$

Based on the calculation above, it can be concluded that the direct effect path coefficient is greater than the indirect effect ( $0.112 < -0.549$ ), with a total effect value of  $-0.437$ .

**Sobel Test.** The Sobel test is used to determine the effect of the intervening variable, namely profitability. A variable is considered an intervening variable if it is able to influence the relationship between the independent and dependent variables (Ghozali, 2018). The following are the results of the mediation effect test: Profitability mediates the relationship between leverage and firm value. Calculating the standard error of the indirect effect:

Given:

$$\begin{aligned} a^2 &= -0,029 \\ sa^2 &= 0,003 \\ b^2 &= 18,938 \\ sb^2 &= 1,687 \end{aligned}$$

Asked:  $S_{ab}$  ..... ?

Answer:

$$\begin{aligned} S_{ab} &= \sqrt{b^2sa^2 + a^2sb^2 + sa^2sb^2} \\ S_{ab} &= \sqrt{18,938^2 \cdot 0,003^2 + -0,029^2 \cdot 1,687^2 + 0,003^2 \cdot 1,687^2} \\ S_{ab} &= \sqrt{(3227,822 + 0,002392 + 0,00002561)} \\ S_{ab} &= \sqrt{3227.8249} \\ S_{ab} &= 56,813 \end{aligned}$$

To test the significance of the indirect impact partially, it is calculated using the following formula:

$$Z = \frac{ab}{sab} = \frac{-0,029 \cdot 18,938}{56,813} = -0,0096.$$

Based on the calculation results using the Sobel test, the calculated t-value is negative at  $-0.0096$ , which is greater than the t-table ( $df = 162 - 2 = 160$ , resulting in a t-table of  $-1.975$  ( $-0.0096 > -1.975$ ). Therefore, it can be concluded that profitability is unable to mediate the relationship between leverage and firm value. Therefore, H4 is rejected.

**The Effect of Leverage on Company Value.** The results of the hypothesis test indicate that leverage, as measured by the Debt to Equity Ratio (DER), has a significant negative effect on company value (measured by Price to Book Value/PBV). This means that the higher the DER, the lower the company's value. This finding is inconsistent with signaling theory, which states that debt can be a positive signal when used to improve financial performance. However, in the non-cyclical consumer sector, an increase in DER actually creates a negative perception. This is because reliance on debt increases fixed interest expenses, which can depress profits and increase the risk of default, especially when the company is known for regularly distributing dividends. Investors worry that companies will reduce or delay dividends to meet debt obligations, thereby reducing market

confidence and PBV. Thus, although debt has potential benefits such as tax efficiency, at a certain level, it can actually increase risk, especially if not managed properly. This risk is perceived negatively by the market, resulting in a decline in company value. These results support previous research by Susesti & Wahyuningtyas (2020), Kolamban et al. (2020), Hermuningsih et al. (2022), and Natalie & Lisiantara (2022), which also found a negative effect of leverage on firm value.

**The Effect of Leverage on Profitability.** The test results show that leverage, as proxied by the Debt to Equity Ratio (DER), has a negative and significant effect on profitability, as measured by Return on Assets (ROA). Increasing debt can actually reduce a company's profitability. Although debt can be used for business expansion, a portion of profits must be allocated to pay interest and creditor obligations, thereby depressing net income. The high interest expense resulting from high leverage is a major factor in the decline in profitability. This finding aligns with the pecking order theory, which states that companies prefer internal financing over debt because debt increases financial risk. When debt exceeds a company's capacity, risk and interest expense increase, resulting in lower profits. This research aligns with previous findings by Lamba & Atahu (2022), Pratiwi & Ardini (2019), Nuraini & Suwaidi (2022), and Nainggolan et al. (2022), who also stated that leverage has a significant negative effect on profitability.

**The Effect of Profitability on Firm Value.** The test results show that profitability, as measured by Return on Assets (ROA), has a positive and significant effect on firm value, as measured by Price to Book Value (PBV). This means that the higher a company's profits, the greater investor confidence in its performance and prospects. This finding aligns with signaling theory, which states that high profitability is a positive signal for investors because it reflects healthy financial conditions and promising potential returns. Investors tend to respond by increasing investment interest, which results in increased firm value. Companies with high profitability are considered capable of managing assets efficiently and generating optimal profits. This positive financial performance strengthens market perceptions of the company's long-term prospects. These results support the findings of (Burhan & Bagana, 2024), Lamba & Atahu (2022), Paramitha (2020), Octaviany et al. (2019), Akhmadi (2022), and (Amalia & Yudianta, 2021), which also stated that profitability has a positive and significant effect on firm value.

**The Effect of Leverage on Firm Value Through Profitability.** The results of the path analysis and the Sobel test indicate that profitability (ROA) does not mediate the relationship between leverage (DER) and firm value (PBV). The indirect effect of DER on PBV through ROA, at -0.549, is smaller than the direct effect of 0.112, and the Sobel test's t-value of -0.0096 is greater than the t-table of -1.975, indicating insignificant mediation. This finding contradicts the hypothesis and signaling theory, which state that well-managed debt can increase assets, generate profits, and send positive signals to the market. However, in practice, companies in the non-cyclical consumer sector have not optimally utilized debt to improve asset performance or profits. This is reflected in low ROA, indicating low asset utilization efficiency. This condition causes the market to respond less positively to increased leverage because improvements in profitability do not accompany it. In fact, the market tends to directly respond to high DER as an indicator of high risk, without considering operational performance, thus negatively impacting firm value. Thus, the relationship between DER and PBV is direct, and ROA is not an effective intermediary in this process. This finding aligns with research by Sukmayanti & Sembiring (2022), Paradila, Wijaya, & Widiastara (2019), Suryani, Sanusi, & Sunenti (2024), and Suardi & Sunaryo (2023), which states that profitability does not mediate the effect of leverage on firm value.

## CONCLUSION



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Based on the data analysis, the following conclusions were obtained: 1) Leverage (DER) negatively impacts firm value (PBV). This means that the higher a company's debt level, the lower its value. This suggests that a funding structure that relies too heavily on debt can undermine investor confidence in the company. 2) Leverage (DER) negatively impacts profitability (ROA). Increasing debt leads to higher interest expenses, thereby depressing net income and reducing company profitability. 3) Profitability (ROA) positively impacts firm value (PBV). Companies with a high ability to generate profits from their assets tend to be more attractive to investors because they are perceived as capable of providing optimal returns, thereby increasing company value. 4) Profitability does not mediate the relationship between leverage (DER) and firm value (PBV). This is due to the market's tendency to respond directly to information about increasing debt as a risk signal, without waiting for its impact on profitability. Consequently, high leverage directly lowers market perceptions of firm value, regardless of the performance of the assets generated.

**Theoretical Implications:** This research shows that signaling theory does not fully explain the relationship between leverage, profitability, and firm value in the non-cyclical consumer sector. Leverage was shown to have a negative effect on firm value and profitability, which is inconsistent with the signaling theory's view that debt is a positive signal. Instead, this finding supports the pecking order theory, which suggests that companies prioritize internal funding to avoid financial risk. Meanwhile, profitability was shown to have a positive effect on firm value, but it failed to act as a mediating variable between leverage and firm value because companies were unable to manage debt to increase profits optimally.

**Managerial Implications:** For management, these results demonstrate the importance of caution in using debt. A high DER negatively impacts profitability and firm value, so debt should only be used for productive activities that can truly improve financial performance. Companies are advised to prioritize operational efficiency and maximize the use of internal funds. Furthermore, because the market perceives a high DER as a risk signal, transparency in debt management strategies is crucial to maintain investor confidence and firm value.

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