

## The Mediating Role of Profitability in Strengthening Firm Value: Empirical Study on Non-Cyclical Consumer Sector Companies Listed on the Indonesian Stock Exchange for the Period 2018-2022



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**ABSTRACT:** This study aims to analyze the effect of leverage on firm value by considering the mediating role of profitability in consumer non-cyclicals sector companies listed on the Indonesia Stock Exchange during the 2018-2022 period. The population of this study were all consumer non-cyclicals sector companies listed on the Indonesia Stock Exchange during that period. The number of samples was 10 companies determined through purposive sampling method. The analysis method used is descriptive statistics, Analysis method kausal steps, and hypothesis testing. The results showed that leverage has a positive and significant effect on firm value, leverage has a positive and significant effect on profitability, profitability has a positive and significant effect on firm value, and profitability can mediate the effect of leverage on firm value.

**KEYWORDS:** Leverage, Firm Value, Profitability, Consumer Non-Cyclical, IDX

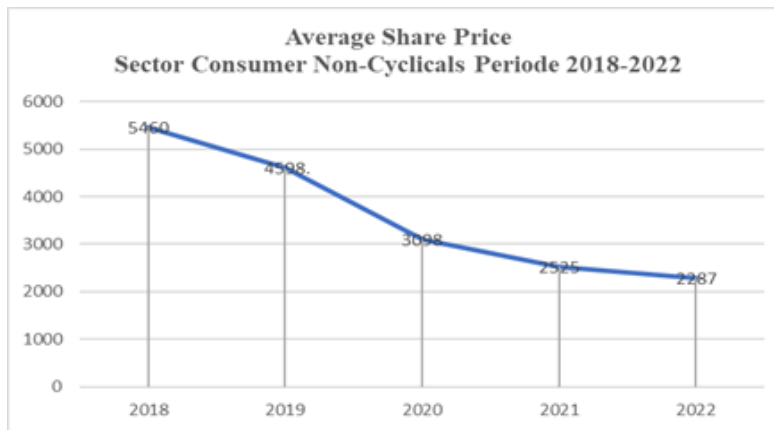
### I. INTRODUCTION

The Covid-19 pandemic has had a major impact on the IHSG, which is pounding in early 2020 due to global panic and economic uncertainty, especially in the tourism, transportation, and non-cyclical consumer sectors. The Indonesian government responded with economic stimulus and monetary policy such as interest rate cuts and economic recovery programmes. PPKM also affects the economic activity and performance of the company. During the pandemic, the IHSG was highly volatile due to pandemic uncertainty and government policy, with market sentiment influenced by news of Covid-19 cases, vaccine effectiveness, and management policies. Its long-term impact includes business restructuring and changes in consumer behaviour, such as increased online spending and healthcare needs, affecting specific sectors in the stock market.

According to Ubaidilah (2020), firm value measures the level of quality and importance of a company in the eyes of investors. The company's success can be measured through a gradual rise in the value of its shares, which reflects investor confidence in the future prospects of the company and promises a greater potential financial gain for shareholders. The factors that affect a firm's worth have been the subject of several studies.. Zhang and Wang (2022) found a non-linear relationship between the capital structure and the value of the company in the emerging market, where moderate leverage can raise the company's value, while too high or too low leverage may lower it. Research by Smith and Johnson (2023) indicates that financial performance, such as income growth, net profit, and return on asset (ROA), are key indicators that affect the value of a company. Companies with strong and consistent financial performance tend to have higher market value.

In Indonesia, industrial and manufacturing companies play an important role as key drivers of economic growth, including non-cyclical consumer sector companies that are the subject of this study. (Kayo, 2021 in Dhea Perwitasari, 2022). This sector is interesting to explore because its needs remain in any economic condition, whether recession or booming. According to (Kartika Dewi & Abundanti, 2019) The non-cyclical consumer sector will grow with population growth and increased incomes, which will increase demand for goods and services in this sector.

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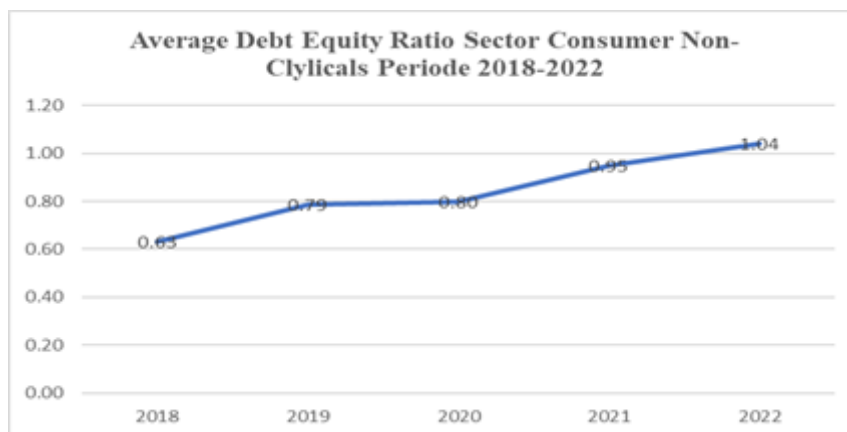


**Figure 1. Average Share Price Sector Consumer Non-Cyclicals Period 2018-2022**

Source: Data processed (2024)

Figure 1 shows that the average share price of the non-cyclical consumer sector fell significantly from 2018 to 2022. In 2018, the average stock price was 5460, then dropped to 4598 in 2019, and continued to decline to 3098 in 2020. In 2021, the average price fell again to 2525, and finally reached 2287 by 2022. The non-cyclical consumer sector is one of the most affected by the Covid-19 pandemic. The policies implemented by PPKM to prevent the spread of viruses have a negative impact on business and lower the value of these companies. The significant decline in the sector was due to the fall in the stock price of major companies such as Unilever, which fell 19.6% in 2021, as well as other companies that influenced the financial statements on the Indonesian Stock Exchange (Pradana, 2021).

The source of funds in a company can come from the proceeds of retained profits or from loans and the issuance of new shares. However, too much debt can cause investors to worry about the financial risks that companies face. Therefore, decisions about funding must be carefully considered so that the corporate finances remain sound. If debt management is done well, then the company's value can rise. The following is the average Debt to Equity Ratio (DER) of the non-cyclical consumer sector listed on the Indonesian Stock Exchange for the period 2018-2022.



**Figure 2. Average Debt Equity Ratio Sector Consumer Non-Cyclicals Period 2018-2022**

Source: Data processed (2024)

The average Debt to Equity Ratio in the non-cyclical consumer sector is displayed in Figure 2. has experienced a significant increase. In 2018, the average DER reached 0.63. Then, in 2019, this figure rose to 0.79. This increase continued in 2020, although not so great, with the average Der reached 0,80. This trend continued to rise in 2021, with an average DER reaching 0.95, and finally in 2022 the average der reached 1.04. The rise in the Debt to Equity Ratio in the non-clylical consumer sector during the period was due to several factors, such as, some companies in the sector were expanding in the company's new infrastructure and technology to compete with other companies. In addition, the COVID-19 pandemic, which began in late 2019 and continued until 2021, caused companies to borrow to maintain liquidity and operational funding during the crisis. Changes in corporate financial management strategies and debt restructuring could also contribute to an increase in the Debt to Equity Ratio in the non-clylical consumer sector.

According to Agnes (2004), Leverage is one of the components that can affect the value of a company. Corporate financing can come from internal sources such as retained profits, as well as from external sources like debt or the issuance of new stock. Leverage

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indicates the ability of the company to meet its obligations at the time of liquidation. Signaling theory of (Rose, 1997) stated that a company's decision to take debt can give a positive signal to the market about the company's prospects, because managers who are confident of the future of the company tend to take the debt more boldly. Investors may view a company as having more value as a result of these positive signals. Several studies show that leverage has a positive effect on the company's value. According to (Poletti-Hughes & Martínez Garcia, 2022) Companies that use a combination of debt and equity as a source of financing have an advantage over companies that rely solely on equity. The prudent use of leverage demonstrates the management's confidence in the company's ability to meet its debt obligations, thereby increasing investor confidence and stock value. Leverage also enables the optimization of capital structures by leveraging lower capital costs and reducing overall costs, which ultimately increase the value of the company (Endri et al., 2019) on the contrary, (Farizki et al., 2021) found that leverage does not have a significant effect on the value of the company. This is because investors consider various aspects of financial statements. Leverage may not have an impact because companies tend to use internal capital to finance their activities, i.e. own capital derived from the total debt and total assets. This finding is also supported by (Bagaskara et al., 2021), That high leverage rates indicate a company's dependence on external loans to finance its assets, while companies with low leverage tend to use more own capital. However, these conditions are not the primary consideration for investors in allocating their capital. Investors tend to focus more on the potential return they can get from investments, without paying too much attention to how much debt the company has. According to Khotimah & Sari (2020) and (Rivandi & Petra, 2022), High or low leverage rates do not directly affect the increase or decrease in the value of the company. The main determining factor is the manager's ability to manage the company's funds well. If management is inefficient in managing the company's finances, then it is likely that the company will not be able to repay its debt to third parties.

The inconsistency of the relationship between the leverage and the company's value is indicated by the presence of other variables that affect the relationship of the two variables. Based on searches of some relevant references it is possible to assume that profitability is one of the factors influencing it. It's shown by research (Trisnayati & Wiagustini, 2022), The high leverage indicates that the issuer has a large source of funds used to finance the assets, expected to increase issuer profits rather than using only limited own capital. Research (Putranto, 2019), A good debt to finance the company's operational activities increases profitability. Debt is considered necessary to finance most of the business activities of the company, as long as the company is able to control its debt. (Murthi et al., 2021), Leverage has a positive and significant impact on profitability, suggesting that the low or high debt used by the company can affect its ability to generate profits. (Octaviany et al., 2019), shows that the higher the profitability of a company indicates the higher efficiency and performance of the company thus increasing investor confidence drives a rise in the company's valuation. Research (C. A. Wibowo & Andayani, 2021), Companies with high profitability are considered capable of managing assets well for the long term, giving positive signals to investors about the efficiency of asset management, which increases the company's value. Research (Mudjijah et al., 2019), The higher the ROA, the higher the company's value. The higher profitability attracts the investor's interest in investing capital, so the value of the company increases.

Based on phenomena and research gaps from previous studies that show inconsistent results. Based on searches of various relevant references, it is assumed that profitability serves as a mediation variable. Therefore, this study tries to make profitability a mediating variable on the relationship between leverage ratio and company value.

## II. LITERATURE RIVIEW

### A. *Grand Theory*

#### 1. *Pecking Order Theory*

Based on the pecking order theory, businesses would sooner use their own resources than outside funding to establish the best possible capital structure (Myers & Majiuf, 1981). Companies that use debt might benefit from tax deductions on interest paid, which raises the company's valuation. But using too much debt raises the possibility of bankruptcy and other financial difficulties, which lowers the company's worth. According to this theory, more profitable companies tend to use retained earnings to finance their investments, thus reducing the need for debt. Therefore, companies that can maximize the use of internal funds usually have a healthier capital structure and lower financial risk, which can increase firm value (Modligiani & Miller, 1958). In addition, companies with high profitability usually have greater financial flexibility and can avoid excessive debt increases. Conversely, companies with low profitability may be more dependent on debt, which may increase risk and decrease firm value. Thus, profitability is crucial in determining how debt affects firm value (Jensen & Meckling, 1976).

#### 2. *Signaling Theory*

According to signal theory, company management and related parties often experience information imbalances. In this situation, managers must prepare financial statements to inform these parties. Financial reports are prepared to understand the company's profile and future prospects and address information imbalances between the company and external parties. Investors want comprehensive, relevant, accurate and timely information to support their decision-making (Bergh et al., 2014). When information is published, investors will interpret and analyze it as a positive or negative signal. If it is considered positive,

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investor interest in the company's shares will increase, which may increase the value of the company. Conversely, if it is perceived as negative, investor interest will decrease, which may result in a decrease in the value of the company.

### **B. Firm Value**

Firm value is defined as the price that investors are willing to pay if the company is sold (Sartono, 2010:9). It reflects the value of the company's assets, including securities. Shares are one of the securities issued by the company, and the share price is influenced by the condition of the company. Company value can be measured through stock prices using a ratio called the valuation ratio. According to Sudana (2011: 23), valuation ratios are ratios used to assess the performance of company shares traded in the capital market. This ratio provides information on how much the public values the company, so they are interested in buying shares at a price higher than their book value.

### **C. Leverage**

Leverage is defined as a financial strategy that uses debt to finance a company's activities (J. Manajemen & Ekonomi, 2013). Businesses that use debt frequently are accountable for paying back principal and interest. The use of debt carries a great risk because the company may not be able to repay the debt. Therefore, the use of debt must be adjusted to the company's ability to generate profits. Here are some ratios used to measure the leverage ratio, namely; Debt-to-Equity Ratio, and Long Term Debt Ratio.

### **D. Profitability**

According to Hardiyanti (2012), profitability refers to the amount of net profit a company earns during its operations. A high level of profit indicates a bright future for a company. The greater a company's profitability, the more efficient its operations, indicating optimal company performance.

### **E. Hypothesis Development**

- The Effect of Leverage on Firm Value

According to the signaling theory of Hanafi (2014: 371), an increase in the debt ratio gives a positive message to investors about the company's financial prospects. This indicates the stability of future cash flows and management optimism in investing, which is expected to improve the company's prospects. Several studies show that companies that use a combination of debt and equity as a source of funding have an advantage over companies that rely solely on equity (Poletti-Hughes & Martínez Garcia, 2022); Jarallah et al., 2019). Leverage increases the efficiency of capital utilization and provides positive signals to the market, which can increase earnings and firm value (F. Wibowo et al., 2019). Judicious use of leverage demonstrates management's confidence in the company's ability to meet debt obligations, thereby increasing investor confidence and share value. Leverage also allows optimization of the capital structure by utilizing a lower cost of capital and reducing overall costs, which ultimately increases value (Endri et al., 2019). (Sari, Kartika Dian, 2021) revealed that the decision to use debt as a source of funding can affect the survival of the company in accordance with stakeholder theory. Creditors pay attention to the company's leverage value to understand how much funding is obtained from debt. The higher the leverage value, the greater the proportion of funding from external parties, which can increase company value due to tax savings. According to other research, leverage significantly raises firm worth; in other words, as leverage levels rise, so does firm value. (Novarianto et al., 2019; Wardani, 2019). From this explanation, the hypothesis formed is:

H1: Leverage has a positive and significant effect on Firm Value

- The Effect of Leverage on Profitability

Companies that rely heavily on debt need to consider their ability to repay debt regularly. Therefore, companies must establish optimal working capital. The use of debt can affect the level of profitability of the company, where the greater the use of debt for business operations, the more likely the company is to generate high profits (Lamba & Atahau, 2022). According to signal theory, higher profitability indicates better prospects for the company, attracting investor interest and increasing demand for shares. This finding is supported by (Yulimtinan & Atiningsih, 2021), which states that an increase in company profits attracts investors' attention because it is considered to show good performance. The more investors are interested, the stock price will increase, and the company value will also increase. (Trisnayati & Wiagustini, 2022) supports this view, stating that high leverage indicates that the issuer has a large source of funds used to fund assets, which is expected to increase the issuer's profits compared to using only limited equity capital. If the issuer's assets are well managed, the profit earned will be maximized because the assets are used for operations that increase profitability (Putranto, 2019) also states that good debt utilization to fund the company's operational activities increases profitability. Debt is necessary to finance most of the company's business activities, provided that the company is able to control its debt. (Murthi et al., 2021) added that leverage has a positive and significant effect on profitability, indicating that the low or high debt used by the company can affect the ability to earn profits. The low level of debt used in operations can increase profitability (Ramadeni & Dewi, 2023) agrees, showing that leverage has a significant positive effect on profitability, which means that company management has succeeded in showing good performance by using debt to improve financial performance. If leverage is utilized optimally for company operations, the return on assets

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can increase. (Jayanti, 2018) states that an increase in debt leads to a commitment to bear fixed cash outflows over the next few periods, even though cash inflows are not guaranteed. This increases risk, but also increases the interest expense that is deducted before tax calculation on profits. From this explanation, the hypothesis formed is:

H2: Leverage has a Positive and Significant Effect on Profitability

- The Effect of Profitability on Company Value

High profitability reflects bright prospects for the company, encouraging the company to signal to investors about its capacity to run the business well. This positive signal is responded favorably by investors, increasing the value of the company. When the company succeeds in increasing profits, the stock price rises, reflecting the value of the company to investors and increasing the overall value of the company (Lamba & Atahau, 2022). (Iman et al., 2021) added that profitability is a ratio that reflects the company's financial performance. Increased profitability increases returns for investors, and the higher the company's profits, the greater the dividends distributed, triggering an increase in demand for shares and ultimately increasing the value of the company. The study (F. Wibowo et al., 2019) concluded that profitability has a positive impact on firm value; when profitability increases, firm value also increases. Signaling theory supports this finding, stating that the market interprets high profitability as a positive signal for investors to buy company shares, indicating good prospects in the future. (Octaviany et al., 2019) state that the higher the profitability of the company, the higher the efficiency and performance of the company, increasing investor confidence and bringing in more funds, so that the performance and value of the company increases. According to (Akhmadi, 2022), good profitability performance will increase investor expectations of investment returns in this sector, which in turn will encourage an increase in firm value (Carolin & Susilawati, 2024) state that companies with high profitability are considered capable of managing assets well for the long term, providing positive signals to investors about the efficiency of asset management, which increases firm value. (Mudjijah et al., 2019) also stated that profitability has a positive effect on firm value; the higher the ROA, the higher the firm value. High profitability attracts investors to invest, so that the company value increases. (C. A. Wibowo & Andayani, 2021) added that profitability describes the extent to which the company's financial performance is able to generate profits. If ROA increases, the company value proxied by PBV also increases. High ROA reflects large profits, which have an impact on increasing stock prices and company value. This finding is supported by (Taufan et al., 2019) which concludes that increasing profitability has a positive impact on firm value. From this explanation, the hypothesis formed is:

H3: Profitability has a positive and significant effect on Firm Value

- The Effect of Leverage on Firm Value Through Profitability

A company that relies on loans more than its capital tends to provide more profit to shareholders than a company that has fewer loans. This is because companies must prioritize debt repayment before distributing profits to investors. (Akhmadi et al., 2022), an increase in the debt ratio can encourage an increase in company profitability as long as the debt is still below the optimal level. This is because debt generates greater tax savings than the agency costs and other financial risks caused by the debt. Success in increasing profitability shows the company's ability to increase sales and control costs and expenses, which reflects operational efficiency. This efficiency is attractive information for investors, as it indicates the company's good prospects. Good prospects encourage investors to increase their stock investment, and if this trend continues, other potential investors will follow. As a result, the company's value will increase. Loans can be used to support company activities and increase company value (Lamba & Atahau, 2022). According to (Pratiwi & Muthohar, 2021), companies with large assets will maximize their operational performance, increase profitability, and when profitability increases, firm value also increases. This finding supports signal theory, which states that the use of debt to increase assets provides a positive signal to investors. Investors expect a large return when the company value is good. (Yulimtinan & Atiningsih, 2021) also supports these findings, stating that companies that increase the use of debt to increase assets will increase their profitability, and increased profitability will increase firm value (Zoraya et al., 2023) added that high levels of debt, if managed properly, can increase company sales and profitability, provide positive signals to investors and increase firm value. This research is also supported by (Kartika Dewi & Abundanti, 2019), Putri (2020), and Suzulia et al. (2020), showing that profitability is able to mediate the effect of leverage on firm value. Appropriate leverage can increase company profitability by increasing profits through increased return on capital and interest income. However, excessive or poorly managed leverage can pose a risk of bankruptcy that reduces firm value. From this explanation, the hypothesis formed is:

H4: Profitability can mediate the effect of leverage on firm value.

### III. DATA & RESEARCH METHODOLOGY

#### A. Populations and samples

The population in this study is 125 companies listed in the non-clylical consumer sector index in the Indonesian stock exchange period 2018-2022. Purposive sampling is a technique used to obtain samples on research. The established criteria are: (1) Non-clylical consumer sector companies listed on the main board; (2) Non-clylical sector consumer companies that publish financial

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reports and annual reports. Thus, the total sample obtained during the period 2018-2022 is 10 sample companies that meet the sampling criteria with observation data of 50 data.

Documentation is the method utilized to acquire data, which basically collects data from the financial reports of non-clylical sector companies listed on the Indonesian Stock Exchange (IDX) during the observation period 2018-2022. In the research data panel used is a combination of time series and cross-section data.

## B. Variable Measurement

In research as a dependent variable is the value of the company measured by the Price book value (PBV), that is, the ratio between the price of the stock per-liter to the book value per-Liter, Sitepu (2015), Pudjiastuti (2006:258), (Gitman, 2009:73). The independent variable in this study is the leverage measured by the Debt Equity Ratio (DER), which is the ratio between total debt and total equity, Rutin et al (2019), (Amalia & Yudianta, 2021), and Furniawan (2022), (2015:39). The mediated variable in this research is profitability measured by Return On Assets, that is, the ratio between earning after taxes and total assets, (Ramadhani et al, 2018), Komariyah (2015).

## C. Data Analysis Method

- Classical Assumption Test

Data analysis uses the Classical Assumption Test, including; (1) Normality Test, to test whether the data being tested is distributed normally or not for all indicators and variables. Normality tests can also be performed by performing the Kolmogorov-Smirnov non-parametric statistical test (K-S) on the SPSS program. A data can be said to be normally distributed if its significance value is  $> 0.05$  (Ghozali, 2018); (2) Multicollinearity test, to test whether there is a strong correlation. determined by looking at the TOL (tolerance) and inflation variance factor (VIF) for each variable without a bound variable. If the VIF value is less than 10, then there is no symptom of multicollinearity. If VIF is greater than 10 then it is considered to be a multicollinearity symptom; (3) Autocorrelation test, to test whether in a multiple linear regression model there is a correlation between an interference error (error) in the period  $t$  and an interference error in the time period  $t-1$  (before) (Ghozali, 2018); (4) Heterocedastisity test, to find out if in a regression model there is variance inequality of other observation residues. If Scaterplot forms a polatorrent then regression does not experience heterocedastisity disorder and vice versa. (Suliyanto, 2018); (5) Linearity test, performed through test of linearity. The criterion is that if the value of significance on linearity is  $\leq 0,05$ , then between the free variable and the bound variable there is a linear relationship.

- Regression Model

The regression model to be tested is presented on the following model of regression:

$$\text{Equation I} \quad : \text{PBV} = \beta_0 + \beta_1 \text{ DER} \quad (1)$$

$$\text{Equation II} \quad : \text{ROA} = \beta_0 + \beta_1 \text{ DER} \quad (2)$$

$$\text{Equation III} \quad : \text{PBV} = \beta_0 + \beta_1 \text{ DER} + \beta_2 \text{ ROA} \quad (3)$$

## D. Hypothesis Test

Test-t is used to test the regression coefficient individually. The test-t result with a significant rate is  $\alpha = 0.05$  (5%). The criteria for decision-making in this test are as follows:

- 1) If  $t\text{-count} > t\text{-table}$  and  $\text{sig value} < 0.05$ , then  $H_1$  is accepted and  $H_0$  is rejected which means partially independent variables affect dependent variables significantly.
- 2) If  $t\text{-count} < t\text{-table}$  and  $\text{sig value} > 0.05$ , then  $H_1$  is rejected and  $H_0$  is accepted which means partially independent variables do not affect dependent variables significantly.

## IV. RESULTS AND DISCUSSION

### Descriptive Statistics

**Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
DER	50	.11	3.58	.8566	.85430
ROA	50	-.20	.47	.0972	.10789
PBV	50	.34	60.67	6.4896	14.60728
Valid N (listwise)	50				

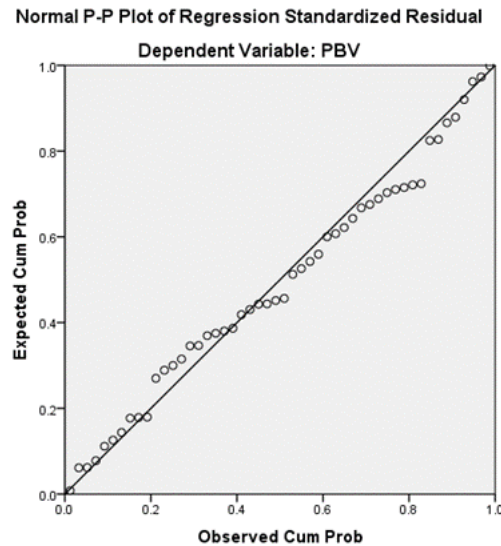
In the table above, it can be seen that the DER variable has the lowest value of 0.11 and the highest value of 3.58 with an average value of 0.8566 and a standard deviation or data distribution rate of 0.8543. The ROA variable has the lowest value of -0.20 and the highest value of 0.47 with an average value of 0.0972 and a standard deviation of 0.1078. The PBV variable has the lowest value of 0.34 and the highest value of 60.67 with an average value of 6.4896 and a standard deviation of 14.6072.

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## Classical Assumption Test

- Normality Test

The normality test is used to ascertain whether variable data is regularly distributed, according to Sugiyono (2017:239). This is significant because parametric statistics cannot be used to test aberrant data. In the Probability Plots chart, which is used for the normality test, data distributed around the diagonal line denotes the fulfillment of the normalcy assumption, whereas data distributed away from the diagonals denotes the violation of the normalcy assumptions.



**Figure 3 Normality test results**

Source: Data processed (2024)

The mentioned image's normal probability plot demonstrates how the data is dispersed and moves in the diagonal line's direction. As a result, it may be said that the regression model satisfies the normality condition and the data is distributed normally. This result validates Sugiyono's theory. 2017:239.

- Multicollinearity Test

A quality regression model ensures that there is no correlation between the independent variables. After conducting the test, the results were as follows:

**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	-9.362	.937		-9.991	.000		
DER	9.362	.793	.548	11.813	.000	.839	1.191
ROA	80.576	6.276	.595	12.840	.000	.839	1.191

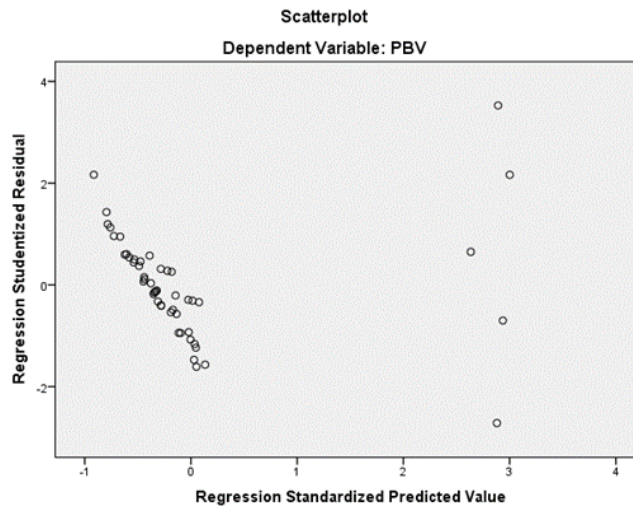
a. Dependent Variable: PBV

Source: Data processed (2024)

The results of the multicollinearity test showed that the VIF values were both less than 10 (each being 1.191) and the tolerance values for the DER and ROA variables were both larger than 0.1 (each being 0.839). These findings show that the regression model does not contain multicollinearity, Imam Ghozali (2011:107–108) asserts that if the tolerance value is greater than 0.1 and the VIF value is less than 10, there are no signs of multicollinearity.

- Heteroskedasticity Test

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Source: Data processed (2024)

The plot is dispersed randomly around zero on the Studentized Regression Residual axis, according to the graphical analysis. This demonstrates that there are no indications of heteroskedasticity in the regression model in this investigation. This finding aligns with Priest Ghozali (2011:139), who mentioned that the absence of a distinct pattern in the scatterplot and the even distribution of points around zero on the y-axis suggest a lack of heteroskedasticity.

- Autocorrelation Test

According to Imam Ghozali (2011:111), if the Durbin-Watson values fall between  $dU$  and  $4-dU$ , the regression model is deemed to be free from autocorrelation issues.

**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate	Durbin-Watson
1	.957 <sup>a</sup>	.915	.912		4.34226	1.829

a. Predictors: (Constant), ROA, DER

b. Dependent Variable: PBV

Source: Data processed (2024)

The score for Durbin-Watson was 1.829, followed by 1.628 for  $DU$ , 2.372 for  $4-DU$ , and  $1.628 < 1.829 < 2.372$ . Since the results show that there is no auto-correlation symptom in the data from this study where  $DU < DW < 4-DU$ , no auto-correlation symptom exists.

- Linearities Test

Sugiyono and Susanto (2015:323) state that the linearity test is employed to assess whether there is a significant linear relationship between an independent variable and a dependent variable. The linearity test is used to conduct this test. It can be inferred that there is a linear relationship between the two variables if the linearities significance value is  $\leq 0,05$ .

**Linearities Test Variable DER and PBV**

**ANOVA Table**

	Sum of Squares	df	Mean Square	F	Sig.
PBV * DER Between Groups (Combined)	10436.694	40	260.917	126.524	.000
Linearity	6460.610	1	6460.610	3132.889	.000
Deviation from Linearity	3976.084	39	101.951	49.438	.000
Within Groups	18.560	9	2.062		
Total	10455.254	49			

Source: Data processed (2024)

Based on the table, the significance value for linearity is  $0.000 > 0.05$ . Therefore, it can be concluded that there is a linear relationship between DER and PBV.



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**Linearities Test Variable ROA and PBV**

**ANOVA Table**

	Sum of Squares	df	Mean Square	F	Sig.
PBV * ROA Between Groups (Combined)	10418.778	23	452.990	322.894	.000
Linearity	6938.056	1	6938.056	4945.491	.000
Deviation from Linearity	3480.722	22	158.215	112.776	.000
Within Groups	36.476	26	1.403		
Total	10455.254	49			

Source: Data processed (2024)

Based on the table, the significance value for linearity is  $0.000 > 0.05$ . Therefore, it can be concluded that there is a linear relationship between ROA and PBV

**Regression Model**

- Regression Model 1

**Table 1. Output Regression 1**

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	-5.024	1.836		-2.736	.009
DER	13.441	1.525	.786	8.811	.000

a. Dependent Variable: PBV

The results of the regression equation test can be described as follows:

$$PBV = -5,024 + 13,441 DER + e \quad (1)$$

This is a constant of -5.024, meaning that the firm value (PBV) will be -5.024 if the debt-to-equity ratio (DER) is 0. This implies that the estimated PBV will rise by 13,441 for every unit increase in the DER.

- Regression Model 2

**Table 2. Output Regression 2**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.054	.020		2.678	.010
DER	.051	.017	.401	3.031	.004

a. Dependent Variable: ROA

The results of the regression equation test can be described as follows:

$$ROA = 0,054 + 0,051 DER + e \quad (2)$$

This indicates a constant of 0.054, indicating that the profitability (ROA) will be 0.054 in the event that the Debt Equity Ratio (DER) is 0. In other words, the expected ROA will increase by 0.051% for every unit increase in the DER.

- Regression Model 3

**Table 3. Output Regression 3**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	-9.362	.937		-9.991	.000
DER	9.362	.793	.548	11.813	.000
ROA	80.576	6.276	.595	12.840	.000

a. Dependent Variable: PBV

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The results of the regression equation test can be described as follows:

$$PBV = -9.362 + 9.362 \text{ DER} + 80.576 \text{ ROA} + e \quad (3)$$

This indicates a constant of -9.362, meaning that if both the Debt Equity Ratio (DER) and Return on Asset are 0, the firm value (PBV) would be -9.362. Additionally, it implies that for every one-unit increase in DER, PBV is expected to increase by 9.362 units. It is evident from the regression analysis that the coefficient value of the Debt Equity Ratio on the Price Book Value,  $\beta_1 = 0.548$  ( $\beta \neq 0$ ), and the Return on Assets on the Price Book Value,  $\beta_2 = 0.595$ . This indicates that the independent variable (Debt Equity Ratio) influences the dependent variable (Price Book Value) through the mediator (Return on Assets). However, the regression coefficient of the Debt Equity Ratio decreased after including the mediator variable.

### Hypothesis Test

- Hypothesis Testing of Leverage on Firm Value

The results of the SPSS analysis indicate that the leverage variable projected with DER has a regression coefficient of 13.441, and the t-count value is  $8.811 > t\text{-table} = 1.677$ , with a significance value of  $0.000 < 0.05$ . This demonstrates that the DER significantly and favorably affects the firm value worth, proving the initial hypothesis (H01) incorrect (Table 1).

- Hypothesis Testing of Leverage on Profitability

The profitability variable projected with ROA has a regression coefficient of 0.051 based on the SPSS output, and the t-count value of  $8.811 > t\text{-table} = 1.677$  indicates a significant value of  $0.004 < 0.05$ . This demonstrates that the DER significantly and favorably affects the firm value worth, proving the rejection of the second hypothesis (H02) (Table 2).

- Hypothesis Testing of Leverage on Firm Value with Profitability Mediation

According to the output results, the regression coefficients for DER and ROA have magnitudes of 0,548 and 0,595, respectively, which indicate spss. According to the test results, t count values ( $11,813 > t\text{ tables} (1,677)$ ) and significance ( $0,000 < 0,05$ ) for DER. T value count ( $12,840 > t\text{ table} (1,677)$ ) for ROA, with  $0.000 < 0.05$  denoting significance. Therefore, H3 is acknowledged, indicating that leverage has a positive and considerable impact on the firm value through profitability (ROA) serving as the mediation variable. According to Suliyanto (2011) cited in Munawaroh (2015), variable M can be regarded as a partial mediator if the effect of variable X on variable Y remains significant both before and after including variable M in the regression equation. In this study, before and after Profitability (ROA) was added as a mediation variable, Leverage (DER) continued to have an impact on Firm Value (PBV). Nevertheless, with entering ROA, the leverage regression coefficient dropped from  $\beta_1 = 0.786$  to  $\beta_1' = 0.548$ . Therefore, a portion of the link between the Debt Equity Ratio and the Price Book Value is mediated by Return on Asset.

## DISCUSSION

### The impact of leverage on the firm value value

The initial hypothesis asserts that leverage positively and significantly influences the firm value. The results of the partial test (t-test) indicate that leverage indeed has a significant and positive effect on the firm value, leading to the rejection of the null hypothesis (H0). This result is in line with the findings of (F. Wibowo et al., 2019) ; Radja & Artini, 2020). Leverage increases capital use efficiency and sends a good signal to the market, both of which can increase a firm value worth and revenue. This discovery is consistent with Hanafi's (2014:371) signaling theory, which suggests that an increase in the debt ratio sends a positive signal to investors regarding the firm value financial outlook. It signifies anticipated stability in future cash flows and management's confidence in investment, which is anticipated to enhance the firm value prospects. The prudent use of leverage raises investor confidence and stock value by indicating management's faith in the firm value capacity to pay down its debt. Leverage also facilitates the optimization of the capital structure by utilizing lower-cost capital and reducing overall costs, thereby enhancing the firm value. (Ferdiansah et al., 2024; Jarallah et al., 2019 (Endri et al., 2019).

### The Impact of Leverage on Profitability

The second hypothesis posits that leverage positively and significantly affects profitability. The results of the partial tests (t-tests) indicate that leverage does indeed have a significant positive impact on the firm value profitability, leading to the rejection of the null hypothesis (H0). This result is in line with the findings of (Putranto, 2019) It claims that leverage has a beneficial effect since food and beverage companies effectively use their debt to finance their ongoing operations, hence raising their profitability. (Murthi et al., 2021) It also bolsters this conclusion, indicating that organizations' profitability tends to rise as their leverage values (DER) decrease annually. (Helfiardi & Suhartini, 2021) says that, when used responsibly, debt financing may lower costs and increase product quality, allowing businesses to grow and generate the anticipated profits. (Ramadeni & Dewi, 2023) It further asserts that leverage exerts a notable positive influence on profitability, implying that effective management utilizes debt to enhance financial performance effectively.

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### **The impact of profitability on the value of the firm value**

The third hypothesis suggests that profitability positively and significantly affects the firm value. The partial test results (t-test) indicate that profitability (ROA) indeed has a significant and positive impact on the firm value, leading to the rejection of the null hypothesis (H<sub>0</sub>). This finding is supported by (Octaviani et al., 2019), It asserts that a firm value efficiency and performance rise with its profitability, boosting investor confidence and bringing in additional capital to boost the firm performance and value. The results are consistent with the signal theory, which holds that information regarding high profitability will be interpreted by the market as a signal for investors to purchase firm shares, implying promising future prospects. (Lamba & Atahau, 2022) These findings are further supported by the notion that high profitability indicates favorable prospects for the firm value and heightened investor demand for its stocks. High profitability signifies the firm value capacity to generate substantial profits for shareholders, which garners favorable investor sentiment and enhances the firm value. (Iman et al., 2021) Higher profitability translates into increased returns for investors, and as the firm value profits grow, larger dividends are typically distributed to shareholders, which in turn stimulates greater demand for its stocks. (Carolin & Susilawati, 2024) bolster this conclusion by pointing out that profitable businesses are thought to be better equipped to manage their assets over the long run. This helps to convey to investors how effective asset management is, which raises the firm value worth. (Mudjijah et al., 2019) It also confirms this conclusion, indicating that profitability raises a firm value. The value of the firm value increases with the ROA.

### **The Impact of Leverage on the Value of the Firm value Through Profitability Mediation**

The fourth hypothesis proposes that profitability may act as a mediator in the relationship between leverage and the firm value value. Profitability serves as a partial mediator in the relationship between leverage and the firm value value, evidenced by the decrease in the regression coefficient of leverage upon the inclusion of the profitability variable. Therefore, the null hypothesis (H<sub>0</sub>) is rejected. This finding is supported by (Lamba & Atahau, 2022), It claims that businesses that depend more on loans than capital typically generate higher profits for shareholders since they have to put paying off debt before paying shareholders. Loans can be used to fund business operations and raise the overall value of the enterprise. According (Pratiwi & Muthohar, 2021), Businesses with lots of assets will maximize their profitability and operational performance, and as profits rise, so does the firm value worth. The signal theory, which contends that using debt to increase assets sends encouraging signals to investors, is supported by this study. A strong firm value worth means that investors anticipate large returns. This research is also supported by Paramitha (2020), (Kartika Dewi & Abundanti, 2019), Putri (2020), dan Suzulia et al. (2020), A firm value profitability can be raised by appropriate leverage by raising profits through higher interest income and capital returns. On the other hand, excessive or poorly managed leverage may increase the firm value risk of insolvency and lower its value.

## **CONCLUSIONS**

The research findings indicate that DER significantly improves PBV. The firm value worth will rise in response to DER growth. ROA is significantly improved with DER. This indicates that the business can manage its operations by taking on debt, which will boost profitability. This link may be mediated by profitability, The results of the research cannot be generalized to all sectors or sub-sector in the Indonesian Stock Exchange. Use only one proxy for each variable observed or studied. Further research should increase the number of proxies for every variable examined. In addition to expanding the research objects to various sectors or sub-sector in the Indonesian Stock Exchange.

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