

**THE EFFECT OF DEBT-TO-EQUITY RATIO AND RETURN ON EQUITY  
ON FIRM VALUE  
(Empirical Study of Manufacturing Companies Listed on the Indonesia Stock  
Exchange 2018–2022)**



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**Abstract**

The purpose of this study is to investigate the relationship between the market prices of publicly traded manufacturing businesses on the Indonesia Stock Exchange (IDX) between 2018 and 2022 and the Return on Equity (ROE) and Debt to Equity Ratio (DER). This study employs a quantitative technique to analyze secondary data from the annual financial statements of 111 companies chosen through intentional sampling. PBV acts as a stand-in for company value, and Der and ROE are used to assess capital structure and profitability, respectively. SPSS version 27 software was used to conduct a number of data analysis procedures, such as multiple linear regression, t-tests, F-tests, and traditional assumption tests. The findings demonstrate that, both separately and in combination, A company's value is positively and significantly impacted by ROE and DER. This suggests that by focusing on its capital structure and profitability, a company can raise its value to shareholders.

**Keywords:** Firm Value, Price to Book Value, Return On Equity, Debt To Equity Ratio

## INTRODUCTION

In the current competitive environment, creating and increasing corporate value is the primary goal of any commercial organization. Based on investors' views of a firm's performance and long-term outlook, corporate value is used to make investment choices. Corporate value reflects management's effectiveness in optimizing company resources to enhance shareholder well-being, according to Brigham and Houston (2014).

A common measure of a company's worth is the price to book value (PBV) ratio, which is calculated by dividing the market price of a stock by its book value per share. The market has a positive opinion of the firm's prospects when the PBV is high. However, a low PBV could indicate unfavorable perceptions of a company's fundamental performance and caliber (Yohana et al., 2021).

One important factor in determining a company's worth is its capital structure, namely the amount of debt it uses to fund its operations. A company's reliance on debt relative to equity is measured by the Debt to Equity Ratio (DER). Although it permits more leveraged returns, a high DER may indicate increased financial risk (Hanafi & Halim, 2018).

The capital structure is important, but so is profitability. The ability of a business to make money off of its equity capital is shown by its return on equity (ROE). Sound capital management may be indicated by a strong return on equity, which could increase the company's appeal to investors. But because a company could have excessive leverage, ROE must be understood in the context of its overall capital structure.

Prior studies have come to conflicting conclusions regarding the impact of ROE and DER on company value. There was no significant effect in certain studies, but there was a remarkable positive effect in others. Due to the inconsistent findings, further research is indicated.

With the largest concentration of publicly traded businesses on the Indonesia Stock Exchange and about 19% of GDP, the manufacturing sector in Indonesia is essential to the nation's economy. This industry had to cope with several global economic challenges between 2018 and 2022, including the COVID-19 pandemic, exchange rate fluctuations, and supply chain disruptions. For this reason, it's important to know how financial ratios in this sector affect a company's worth.

In light of this, the goal of this study is to empirically examine the relationship between the value of publicly traded Indonesian manufacturing companies between 2018 and 2022 and the debt-to-equity ratio (DER) and return on equity (ROE). It is anticipated that the research's conclusions will assist companies in making financial decisions and offer guidance to investors on how to assess the financial performance of manufacturing companies.

## REVIEW OF LITERATURE

### Theory of Capital Structure

According to the capital structure hypothesis, companies finance their activities using a combination of debt and equity. Modigliani and Miller (1963) assert that in a tax-adjusted market, a company may boost its value by using debt because of the tax shield benefit of interest payments. By striking a balance between risk and reward, the ideal capital structure increases the company's value (Weston & Brigham, 2013). In this situation, determining how

a company's capital structure impacts value can be done with the help of the debt to equity ratio (DER).

### **Theory of Signaling**

According to the signaling hypothesis, which was first put forth by Ross in 1977, financial decisions can be used to inform the market about the internal circumstances of a company. One crucial statistic is return on equity (ROE), which assesses how well equity capital is used to generate profits. A high return on equity (ROE) is sometimes seen by investors as a positive sign, which may improve market perception and possibly increase firm value (Brigham & Houston, 2014).

### **Firm Value Theory**

A company's value reflects investors' views on its prospects for growth and future earnings. A company's worth is affected by its capital efficiency, risk management, and financial stability (Sartono, 2016). According to Fama and French (1998), a company's profitability, investments, and leverage all have a major role in determining its market value. The price-to-book value (PBV) ratio is used in this study to calculate a company's value by comparing its market value to its book value.

### **Ratio of Debt to Equity (DER)**

The DER ratio is used to assess the relationship between a company's total debt and total equity. This ratio reflects the degree to which a firm depends on outside funding in comparison to its equity. Although a high DER might raise financial risk, it can also generate larger returns if used correctly (Kasmir, 2021). Consequently, DER is a crucial instrument for determining how capital composition affects a company's value.

### **ROE, or return on equity**

The efficiency with which a business converts its total equity into net income is shown by its return on equity (ROE). According to Hery (2016), a high return on equity (ROE) indicates that management is skilled at maximizing capital utilization and delivering strong returns to stockholders. From the perspective of the capital markets, ROE is regarded as a positive signal that may attract investors and raise the company's worth.

### **Firm Value and Book Value to Price (PBV)**

One indicator of a company's success is its firm value, which is sometimes linked to the price of its market shares. The market value of a company's shares is compared to its book value using the PBV ratio. Given that the market values the company higher than its book value, a PBV of greater than one suggests that investors believe the company has a bright future (Gitman & Zutter, 2015). As a result, PBV is commonly used as a measure of corporate value in observational studies.

### **Previous Research**

Previous studies have come to contradictory conclusions about the effects of DER and ROE on the value of businesses. Situmorang (2023) reports that DER had a significant impact on business worth. Kamiliya et al. (2023) proceeded to show that ROE significantly affected business value, supporting the signaling theory perspective. Der had a significant negative impact, but ROE had a positive impact, according to Putri and Simamora (2022). On the other hand, Septriana and Maheswari (2019) discovered that ROE had a relatively small impact on firm value. These varied results underscore the need for further research, particularly in the Indonesian manufacturing sector. On the other hand, Septriana and Maheswari (2019) discovered that ROE had a relatively small impact on firm value. These

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## **RESEARCH METHOD**

### **Nature of the Research**

The annual financial statements of the aforementioned firms The secondary data used in this quantitative study comes from manufacturing firms that were listed on the Indonesia Stock Exchange (IDX) between 2018 and 2022. The official IDX website served as the main source of information, which was gathered via documentation.

### **Research Variables and Operational Definitions**

The Return on Equity (ROE), which measures profitability, and the Debt to Equity Ratio (DER), which illustrates capital structure, are the two independent variables in this study. The dependent variable, firm value, is determined using the Price to Book Value (PBV) ratio.

- The following are the DER and ROE formulas: Total Debt / Total Equity (DER)
- ROE is calculated as (Net Income / Total Equity) multiplied by 100%.
- PBV is calculated using the formula below: The share price is equivalent to the book value per share, or PBV.

### **Sample and Population**

The study's population consisted of all manufacturing firms listed on the Indonesia Stock Exchange (IDX) between 2018 and 2022. The technique employed was intentional sampling, grounded on particular criteria such as the utilization of the Rupiah currency, the completeness of the data, and the reporting of profits. By choosing 111 firms according to this criterion, a total of 555 data observations (111 companies × 5 years) were generated.

### **Data Collection Technique**

The study's secondary quantitative data came from the IDX website's publicly available annual financial statements. Official corporate papers and literature reviews were utilized as data collection techniques.

### **Method of Data Analysis**

To analyze the data, SPSS version 27 was utilized. The following traditional assumption tests were used to assess the data before the regression test:

- Normality Test: Using the Kolmogorov-Smirnov test to ensure normal distribution.
- Multicollinearity Test: Using tolerance values and VIF.
- Heteroscedasticity Test: Using the Glejser test or scatterplot to check for equality of residual variances.

The following is done afterward:

- We perform a Multiple Linear Regression Test using the equation:  
The equation for Y is:  $\alpha + \beta_1 X_1 + \beta_2 X_2 + e$ .

Where:

Y = Firm value,  $X_1$  = DER,  $X_2$  = ROE, e = error

- ttest (partial): Assesses how each independent variable affects the company's value.
- F-test (simultaneous): Assesses the joint impact of ROE and DER on a company's worth.

- Adjusted R<sup>2</sup>: Assesses the proportion of firm value variation that DER and ROE can explain.

**RESULTS AND DISCUSSION**

**Descriptive Statistics Analysis**

By collecting, summarizing, and presenting the data being studied, descriptive statistical analysis seeks to provide a comprehensive picture of it. A summary or overview of the data may be found in the average, standard deviation, minimum, and maximum values. A table provides the study's descriptive data.

**Table 1.**  
**Descriptive Statistical Analysis**  
**Statistical Description**

	N	Minimum	Maximum	Mean	Std. Deviation
DER X1	555	,055	3,761	1,04212	,696773
ROE X2	555	,059	6,475	2,92331	1,476147
PBV Y	555	,210	8,110	2,75429	2,017318
Valid N (listwise)	555				

Source: SPSS 27.0, secondary data processed, 2025

The findings of the descriptive statistical test in Table 4. 1 indicate that the standard deviation of leverage (DER) is 0.696773. This is a good outcome because the average is higher than the standard deviation. As a result, consistent data can be produced because the variable's data distribution is regularly distributed.

Because the ROE profitability measure has a standard deviation of 1. 476147, the data distribution is normal and can yield standardized results. This indicates that the average is higher than the standard deviation.

The firm value variable (PBV) has a standard deviation of 2.017318; this means that the mean is higher than the standard deviation. This suggests that the distribution of the data is normal and that standard data can be produced from it.

**Classical Assumption Examination**

**a. Normality Test**

The nonparametric Kolmogorov-Smirnov (KS) test and the Normal Probability Plot were used in this investigation to assess normality.

**Table 2.**  
**Data Normality Test Results**

<b>One-Sample Kolmogorov-Smirnov Test</b>		
		Unstandardized Residual
N		555
Monte Carlo Sig. (2-tailed) <sup>e</sup>	Sig.	.264
a. The distribution of the test results is normal.		
b. Based on data.		
c. Correction for Lilliefors Significance.		
d. This is the lowest possible value for the true importance.		

e. Lilliefors' method, which employs 10,000 Monte Carlo samples with a starting seed of 2,000,000.

Source: SPSS 27.0, processed secondary data, 2025

In Table 2, the Monte Carlo Sig. value (2tailed) is 0.264, which is higher than 0.05. The data are often distributed normally, as shown by this.

**b. Check for Multicollinearity**

To test for multicollinearity, this study looks at the variance inflation factor (VIF) and tolerance value of the regression model. The model can be considered free of multicollinearity if the tolerance value is significantly higher than 0.10 and the variance inflation factor (VIF) is less than 10.

**Table 3.  
 Multicollinearity Test**

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

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	.222	3,336		.067	.947		
Leverage	-.687	.372	-.800	-1.845	.073	.988	1.013
Profitability	-.700	.581	-.539	-1.206	.235	.973	1.028

a. The value of the company is the dependent variable.

Data source: SPSS 27.0, secondary data processing

The tolerance value of the profitability variable is 0.973, and its VIF value is 1.028, according to Table 3, whereas the tolerance value of the leverage variable is 0.988, and its VIF value is 1.013. There is no correlation between the independent variables, as indicated by the VIF numbers, which are less than 10, and the tolerance values of these variables, which are more than 0. Multicollinearity does not occur as a result.

**Analysis of Several Linear Regressions**

**Table 5.  
 Examination of Multiple Linear Regression  
 Coefficients<sup>a</sup>**

Model	Standardized Coefficients	
		Beta
1 (Constant)		7.485
Leverage		.218
Profitability		.225

a. Variable Dependent: Business Value  
 Secondary data handled by SPSS 27.0 in 2025

The regression equation results:

$$Y = 7.485 + 0.218X_1 + 0.225X_2 + e$$

1. Consequently, based on this constant, leverage (DER) becomes 7.485.
2. Consequently, the equation indicates that firm value will increase by 0.218 with each increase in leverage (DER), assuming that other variables remain constant.
3. As a result, the equation shows that, all other things being equal, a company's value will rise by 0.225 for every increase in profitability.

**t-Test (Partial)**

**Table 6.**  
**The Partial T-Test Results**  
**Coefficients<sup>a</sup>**

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
1 (Constant)	7.485	2.270		3.298	.001
Leverage	.200	.058	.218	3.035	.004
Profitability	.207	.068	.225	.3.045	.003

1. We accept Hypothesis 1 because the leverage variable (DER) significantly and favorably affects firm value, as evidenced by the tvalue of 3.036, which is larger than the limit of 1.652, and the significance level of 0.004, which is lower than 0.05.
2. A measure of profitability called return on equity (ROE) greatly increases a company's value. The tvalue of 3.045 is more than 1.652, and the significance value of 0.003 is also greater than 0.05, indicating that the profitability metric (ROE) has a positive and substantial impact on company value. Thus, we endorse Hypothesis 2.

**F Test (Simultaneous)**

The purpose of this test is to simultaneously determine the relationship between each independent variable and the dependent variable. Calculations can be carried out at a significance level of 0.05 thanks to the F-table value. The 5% significance level, the Fcalculation, and the Ftable are the criteria that determine whether to conduct this simultaneous test, as was previously explained.

**Table 7.**  
**Results of the F-Test (Simultaneous)**  
**ANOVA<sup>a</sup>**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	247.041	2	123.520	21.922	.000 <sup>b</sup>
	Residual	219.745	553	5.634		
	Total	466.786	555			

*a. Dependent Variable: Company Value*

*b. Predictors: Leverage, Profitability, (Constant)*

The computed F value, with a significance level of 0.05 or below, is 21.922, as shown in Table 7. Leverage (DER) and profitability (ROE) work together to determine a company's worth.

**Test of Determination Coefficient (R2) Model Summary**

The goodness of fit, also referred to as the coefficient of determination, assesses the possible impact of the independent variable on the dependent variable.

**Table 8.**

**Determination Coefficient Test (R2) Results  
 Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.727 <sup>a</sup>	.529	.505	2.37371

*a. Predictors: (Constant), Leverage, Profitability*

*b. Dependent Variable: Company Value*

The two independent variables in this model, profitability (ROE) and leverage (DER), explain 50.5% of the variation in firm value, according to the updated R Square value of 0.505. The remaining 49.5% are affected by additional factors that are not part of this research model. The regression model has enough explanatory power and is appropriate for further investigation, according to these findings.

**CONCLUSION**

The following conclusions were drawn from a study conducted on publicly traded Indonesian manufacturing firms between 2018 and 2022:

1. Leverage is measured by the Debt to Equity Ratio (DER), which significantly and favorably affects a company's worth. This indicates that investors believe a firm is more valuable the better it manages its debt structure.  
 The Debt to Equity Ratio (DER), which measures leverage, has a positive and substantial impact on a company's value. This means that investors perceive a company to be more valuable the more effectively it manages its debt structure.  
 Leverage significantly and favorably affects a company's value, as demonstrated by the Debt to Equity Ratio (DER). This means that investors will see a company as more valuable if it manages its debt structure more effectively.
2. A significant and positive impact on business value is also had by return on equity (ROE), a metric used to quantify profitability. This suggests that the market places a higher value on businesses that can effectively produce earnings from their equity.
3. At the same time, a company's worth is greatly impacted by leverage and profitability. Investors evaluate a company's performance and potential using these two important factors.

## Recommendations

The following suggestions may be made based on the aforementioned research results:

1. Potentially affecting their size, this study is anticipated to offer companies guidance in their assessment and choice, as company value has been demonstrated to be positively and significantly influenced by leverage and profitability opportunities. To widen their business scope, firms must improve sales growth and growth prospects.
2. Future researchers are encouraged to use larger sample sizes in a variety of sectors, prolong the study's duration, and evaluate other proxies for measuring research variables to show the significant influence of the independent variables on the dependent variables used in this study.

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