

## Research Article

# The Effect of Profitability and Leverage on Firm Value (A Study of State-Owned Banks Listed on the Indonesia Stock Exchange for the 2021-2024 Period)

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DOI: <https://doi.org/10.61492/danesia.v1i2.34> | received: 06-02-2026; accepted: 06-15-2026; online: 06-19-2026

**Abstract:** *This study aims to examine the effect of profitability measured by Return on Assets (ROA) and leverage measured by Debt to Equity Ratio (DER) on firm value proxied by Price to Book Value (PBV) in State-Owned Banks listed on the Indonesia Stock Exchange during the 2021–2024 period. This study employed a quantitative approach with an associative method. Secondary data were obtained from the quarterly financial statements of PT Bank Rakyat Indonesia (Persero) Tbk, PT Bank Mandiri (Persero) Tbk, PT Bank Negara Indonesia (Persero) Tbk, and PT Bank Tabungan Negara (Persero) Tbk. The sampling technique used purposive sampling and resulted in 51 observations after outlier removal. The data were analyzed using multiple linear regression with SPSS version 26. The results indicate that profitability measured by Return on Assets (ROA) does not have a significant effect on firm value, while leverage measured by Debt to Equity Ratio (DER) has a significant effect on firm value. Simultaneously, profitability and leverage significantly affect firm value.*

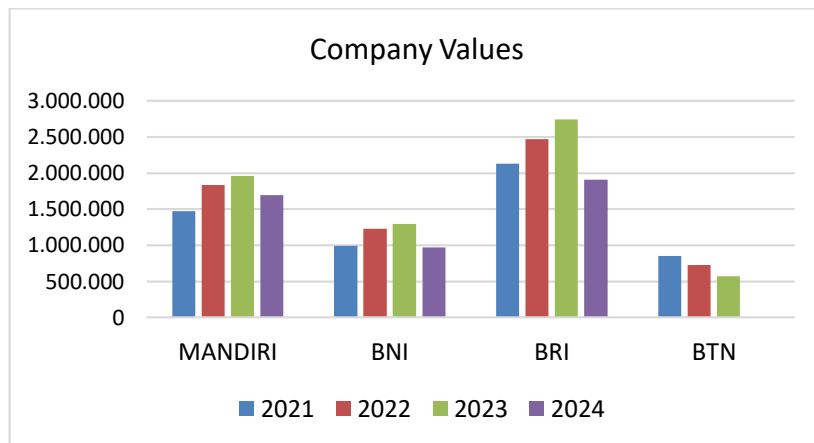
**Keywords:** *Return On Assets, Debt To Equity Ratio, Price To Book Value.*

## 1. Introduction

The development of the banking sector plays a crucial role in supporting national economic growth. As intermediary institutions, banks collect funds from the public and redistribute them in the form of credit to support economic activity. Therefore, banking companies are required to maintain strong financial performance to increase investor confidence and create high corporate value. Corporate value reflects investor perceptions of a company's performance and future prospects. The higher the corporate value, the greater the level of investor confidence in the company's ability to generate profits and maintain business continuity. (Maharani & Kurnia, 2024).

A company's value is influenced by various factors, including profitability and leverage. Profitability, as measured by Return on Assets (ROA), indicates a company's ability to generate profits through the utilization of its assets. (Anggelina et al., 2025) Meanwhile, leverage, as proxied by the Debt-to-Equity Ratio (DER), indicates the extent of debt use in a company's funding structure. A high level of profitability generally sends a positive signal to investors, potentially increasing the company's value. Conversely, excessive debt use can increase financial risk and impact investor assessments of the company. (Anggelina et al., 2025).

The phenomenon observed at state-owned banks listed on the Indonesia Stock Exchange during the 2021–2024 period indicates a shift in company value, as reflected in the Price to Book Value (PBV). Although the banking sector has shown relatively stable performance post-pandemic, the company value of each bank has fluctuated year-to-year. This indicates that certain factors influence the formation of company value.



Source: Data processed from state-owned bank financial reports for the 2021–2024 (2026) period.

Based on the figure above, the company value of state-owned banks fluctuated during the research period. Bank BRI had the highest company value compared to other banks, while Bank BTN showed a relatively lower company value. Furthermore, most banks experienced an increase in company value until 2023 and a decrease in 2024. This phenomenon indicates that company value does not always move in line with the company's financial condition, so further analysis is needed regarding the factors that influence it, especially profitability and leverage. Previous research on the effect of profitability and leverage on company value has shown inconsistent results. Several studies have found that profitability has a positive and significant effect on company value.(Anggelina et al., 2025), while other studies show that profitability does not have a significant effect(Jeri Kurnia & Muhammad Rivandi, 2023). Different results were also found for the leverage variable, which showed a positive, negative, or no effect on company value.(Safitri & Setiatin, 2021);(Jeri Kurnia & Muhammad Rivandi, 2023)The differences in research results indicate a research gap that still needs to be studied further.

Based on these phenomena and research gaps, this study aims to analyze the effect of profitability, as measured by Return on Assets (ROA), and leverage, as measured by Debt to Equity Ratio (DER), on firm value, as measured by Price to Book Value (PBV), in state-owned banks listed on the Indonesia Stock Exchange for the 2021–2024 period. The research findings are expected to contribute to the development of financial science and inform decision-making for investors, company management, and other stakeholders.

## 2. Literature Review And Hypothesis Development

### a. Literature Review

#### Signaling Theory

Signaling theory explains that companies provide information to investors through financial reports to reduce information asymmetry. Information regarding profitability and leverage can serve as signals for investors in assessing a company's condition and prospects, thus influencing its value.(Imam Ghozali, 2020).

#### Agency Theory

Agency theory explains the relationship between company owners (principals) and management (agents). Differences in interests between the two parties can lead to conflict, necessitating financial reports as a means of information to assess company performance and increase investor confidence.(Imam Ghozali, 2020).

### Profitability

Profitability is a company's ability to generate profit from its assets. In this study, profitability is measured using Return on Assets (ROA), a ratio that indicates a company's effectiveness in generating profit from its total assets. The higher the ROA, the better the company's performance. (Maharani & Kurnia, 2024).

$$\text{Return on Assets} = \frac{\text{Net profit}}{\text{Total Assets}}$$

### Leverage

Leverage is a company's ability to meet its long-term obligations. This study uses the Debt to Equity Ratio (DER) as an indicator of leverage, which is the ratio between total debt and total equity. A high DER indicates a greater level of debt use in the company's financing. (Damayanti & Sucipto, 2022).

$$\text{Debt to Equity Ratio} = \frac{\text{Total Debt}}{\text{Total Equity}}$$

### Company Values

Company value is investors' perception of a company's performance and prospects, as reflected in its stock price. In this study, company value is measured using Price to Book Value (PBV), which is the ratio between the stock's market price and the book value per share. The higher the PBV, the higher the investor's assessment of the company. (Wulandari et al., 2024).

$$\text{Price to Book Value} = \frac{\text{Price Per Share}}{\text{Book Value Per Share}}$$

## b. Hypothesis Development

A hypothesis is a temporary answer to the formulation of a research problem which is based on relevant theory and is not yet supported by empirical facts through data collection. (Sugiyono, 2023).

### The Influence of Profitability on Company Value

Profitability indicates a company's ability to generate profits from its assets. A high level of profitability provides a positive signal to investors regarding the company's performance and prospects, thereby increasing its value. (Baihaqi & Murtanto, 2023).

H1: Profitability has a positive effect on company value.

### The Effect of Leverage on Company Value

Leverage reflects the extent of debt used in a company's financing structure. Effective leverage management can support operational activities and increase investor confidence in the company, potentially increasing its value.

H2: Leverage has a positive effect on firm value.

### The Effect of Profitability (ROA) and Leverage (DER) on Company Value (PBV)

Profitability, as measured by Return on Assets (ROA), and leverage, as measured by the Debt to Equity Ratio (DER), are indicators of a company's financial performance and structure. These two variables are thought to jointly influence investor perceptions of a company's value, as measured by Price to Book Value (PBV).

H3: Profitability (ROA) and Leverage (DER) simultaneously influence Company Value (PBV).

## 3. Method

The type of research used in this study is quantitative research which is associative in nature. According to (Sugiyono, 2023). Associative research is research that aims to determine the relationship

or influence between two or more variables. In this study, the author uses independent variables, namely Profitability proxied by Return on Assets (ROA) as variable (X1) and Leverage proxied by Debt to Equity Ratio (DER) as variable (X2), and Company Value proxied by Price to Book Value (PBV) as dependent variable (Y).

In this study, the researchers selected State-Owned Enterprises (BUMN) banks listed on the Indonesia Stock Exchange (IDX) for the 2021–2024 period. The research scope includes PT Bank Rakyat Indonesia (Persero) Tbk, PT Bank Mandiri (Persero) Tbk, PT Bank Negara Indonesia (Persero) Tbk, and PT Bank Tabungan Negara (Persero) Tbk, which have complete financial reports that can be accessed through the official Indonesia Stock Exchange website ([www.idx.co.id](http://www.idx.co.id)) and the official website of each company.

The data collection technique used in this study was the documentation method, which involved collecting secondary data in the form of quarterly financial reports from the banking companies that served as the research samples. Furthermore, supporting data was obtained through literature review, including books, scientific journals, previous research articles, and various literature related to profitability, leverage, and company value.

#### 4. Results and Discussion

##### Research result

##### Descriptive Statistics

Data analysis was carried out using the SPSS program version 26 (2026) as follows:

Table 1. Results of Descriptive Statistical Tests

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Standard Deviation
Return on Assets(X1)	51	,14	2.02	,9335	,52357
Debt to Equity Ratio(X2)	51	3.87	7.03	5,4780	,74079
Price to Book Value(Y)	51	-,09	945.76	193,1706	305.87681
Valid N (listwise)	51				

Source: SPSS Ver.26 output (processed data, 2026)

Based on the results of descriptive statistical tests, the study used 51 observational data sets. The ROA variable had an average value of 0.9335, DER of 5.4780, and PBV of 193.1706. This indicates variation in the values of each research variable.

##### Classical Assumption Test

##### Normality Test

The Kolmogorov-Smirnov test is a non-parametric statistical method used to determine whether a group of data is normally distributed or not. Normal values are if Asymp. Sig. (2-tailed) >0.05.

Table 2. Normality Test Results Before sqrt

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		64
Normal Parametersa,b	Mean	,0000000

	Standard Deviation	346.76379509
Most Extreme Differences	Absolute	,310
	Positive	,310
	Negative	-,201
Test Statistics		,310
Asymp. Sig. (2-tailed)		,000c

Source: SPSS Ver.26 output (processed data, 2026)

The results of the Kolmogorov-Smirnov test before removing outliers showed a significance value of  $0.000 < 0.05$  so that the data was not normally distributed.

Table 3. Results of Normality Test After Outliers

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		51
Normal Parameters <sup>a,b</sup>	Mean	,0000000
	Standard Deviation	270.32608274
Most Extreme Differences	Absolute	,123
	Positive	,123
	Negative	-,100
Test Statistics		,123
Asymp. Sig. (2-tailed)		,051c

Source: SPSS Ver.26 output (processed data, 2026)

After removing outliers, a significance value of  $0.051 > 0.05$  was obtained so that the research data was normally distributed.

### Multicollinearity Test

Table 4. Multicollinearity Test Results

Coefficients <sup>a</sup>			
Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Return on Assets (X1)	,998	1,002
	Debt to Equity Ratio (X2)	,998	1,002

a. Dependent Variable: Price to Book Value (Y)

Source: SPSS Ver.26 output (processed data, 2026)

The test results show a tolerance value  $> 0.10$  and a VIF value  $< 10$ . Thus, the regression model does not experience multicollinearity.

### Autocorrelation Test

The Run Test Autocorrelation Test is a nonparametric statistical method to detect whether the residual data (nuisance errors) in a regression model are correlated or occur randomly. JfishAsymp. Sig. (2-tailed)  $> 0.05$  means there is no autocorrelation in the research data.

Table 5. Autocorrelation

<b>Runs Test</b>
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	Unstandardized Residual
Test Value <sup>a</sup>	-66.26448
Cases < Test Value	25
Cases >= Test Value	26
Total Cases	51
Number of Runs	22
Z	-1,271
Asymp. Sig. (2-tailed)	,204
a. Median	

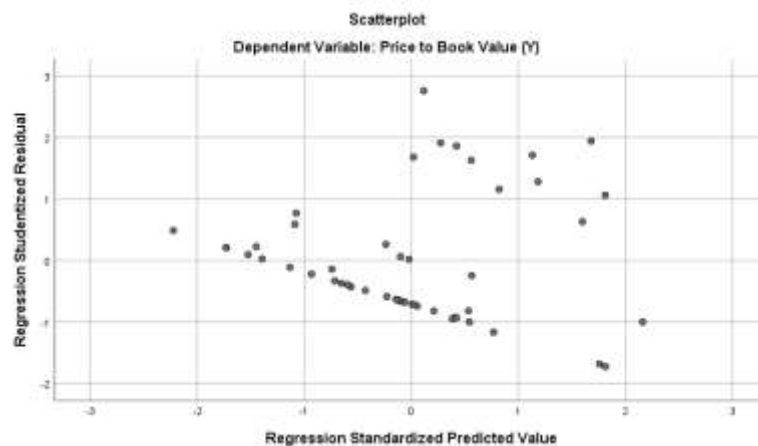
Source: SPSS Ver.26 output (processed data, 2026)

Output The autocorrelation test shows that the regression model does not experience autocorrelation, as the Asymp. Sig. value is 0.204 > 0.05.

### Heteroscedasticity Test

The heteroscedasticity test using a scatterplot is a prerequisite test in linear regression analysis to ensure constant residual variance (homoscedasticity). A good regression model is one that does not exhibit heteroscedasticity.

Figure 1. Heteroscedastics



Source: SPSS Ver.26 output (processed data, 2026)

The test results show that there is no particular pattern in the distribution of residuals so that the regression model is free from symptoms of heteroscedasticity.

### Multiple Linear Regression Analysis

The Multiple Linear Regression Analysis test aims to measure the influence of two or more independent variables (X) on the dependent variable (Y) to ensure the resulting model is valid and accurate.

Table 6. Results of Multiple Linear Regression Analysis Testing

Coefficients <sup>a</sup>				
Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.

		B	Std. Error	Beta		
1	(Constant)	-852,082	296,812		-2,871	,006
	Return on Assets (X1)	-14,887	74,585	-,025	-,200	,843
	Debt to Equity Ratio (X2)	193,345	52,714	,468	3,668	,001

a. Dependent Variable: Price to Book Value (Y)

Source: SPSS Ver.26 output (processed data, 2026)

The results of the regression analysis show that ROA has a coefficient of -14.887 and DER of 193.345 against PBV.

**Hypothesis Testing**

**T-Test (Partial)**

The following table shows the results of the statistical t-test:

Table 7. T-Test (Partial)

Coefficients <sup>a</sup>						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-852,082	296,812		-2,871	,006
	Return on Assets (X1)	-14,887	74,585	-,025	-,200	,843
	Debt to Equity Ratio (X2)	193,345	52,714	,468	3,668	,001

a. Dependent Variable: Price to Book Value (Y)

Source: SPSS Ver.26 output (processed data, 2026)

The t-test results show that ROA has a significance value of 0.843 > 0.05, thus having no significant effect on PBV. Meanwhile, DER has a significance value of 0.001 < 0.05, thus having a significant effect on PBV.

**F Test (Simultaneous)**

Output The F-test statistic of the regression model is as follows:

Table 8. F Test (Simultaneous)

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1024221,559	2	512110,779	6,728	,003b
	Residual	3653809,551	48	76121,032		
	Total	4678031,109	50			

a. Dependent Variable: Price to Book Value (Y)  
 b. Predictors: (Constant), Debt to Equity Ratio (X2), Return on Assets (X1)

Source: SPSS Ver.26 output (processed data, 2026)

The results of the F test show a significance value of 0.003 < 0.05, so that ROA and DER simultaneously influence PBV.

**Coefficient of Determination Test (R2)**

The Coefficient of Determination ( $R^2$ ) test measures the percentage of variation in the dependent variable that can be explained by the independent variable.

Table 9. Results of the Determination Coefficient Test

Model Summary			
Model	R	R Square	Adjusted R Square
1	,468a	,219	,186
a. Predictors: (Constant), Debt to Equity Ratio (X2), Return on Assets (X1)			
b. Dependent Variable: Price to Book Value (Y)			

Source: SPSS Ver.26 output (processed data, 2026)

The R Square value of 0.219 shows that ROA and DER are able to explain 21.9% of the variation in PBV, while the remaining 78.1% is explained by other variables outside the study.

## Discussion Results

### The Effect of Profitability (ROA) on Company Value (PBV)

Based on the partial test results, the profitability variable, proxied by Return on Assets (ROA), has a significance value of  $0.843 > 0.05$ . This indicates that ROA does not significantly influence firm value (PBV). Therefore, the first hypothesis (H1) is rejected. These results indicate that a company's ability to generate profits is not yet a primary factor considered by investors when assessing banking companies.

The results of this study are in line with research (Jeri Kurnia & Muhammad Rivandi, 2023) which states that profitability does not significantly influence the value of banking companies. This condition indicates that investors in the banking sector not only consider a company's ability to generate profits but also consider other factors such as growth prospects, financial stability, economic conditions, and market sentiment. From a Signaling Theory perspective, profitability information reflected through ROA is not yet able to provide a strong enough signal to influence investor investment decisions, thus not having a significant impact on increasing company value.

### The Effect of Leverage (DER) on Company Value (PBV)

Based on the partial test results, the leverage variable, proxied by the Debt to Equity Ratio (DER), has a significance value of  $0.001 < 0.05$ . This indicates that DER has a significant effect on firm value (PBV). Therefore, the second hypothesis (H2) is accepted. These results indicate that a company's funding structure can influence investors' perceptions of firm value.

The results of this study are in line with research (Anggelina et al., 2025) which states that leverage has a significant impact on company value. In the banking sector, the use of debt is a common part of operational activities to support business activities. Therefore, effectively managed leverage levels can send a positive signal to investors regarding a company's ability to manage funding sources and meet its obligations. This condition can increase investor confidence, thereby increasing company value.

### The Effect of Profitability (ROA) and Leverage (DER) on Company Value (PBV)

Based on the results of the simultaneous test (F-test), a significance value of  $0.003 < 0.05$  was obtained. These results indicate that profitability and leverage simultaneously have a significant effect on firm value. Therefore, the third hypothesis (H3) is accepted. This indicates that the combination of a company's profit-generating ability and capital structure management can collectively influence firm value at state-owned banks listed on the Indonesia Stock Exchange for the 2021–2024 period.

These findings suggest that company value in the banking sector cannot be explained by a single financial factor. Investors tend to consider a combination of a company's ability to generate profits and its ability to manage its funding structure effectively. These findings support research (Anggelina et al.,

2025) which states that profitability and leverage simultaneously have a significant effect on firm value. Therefore, increasing firm value requires balanced financial performance management between profitability and capital structure.

## 5. Conclusion

Based on the results of research on the effect of profitability, as measured by Return on Assets (ROA), and leverage, as measured by Debt to Equity Ratio (DER), on firm value, as measured by Price to Book Value (PBV), in state-owned banks listed on the Indonesia Stock Exchange for the 2021–2024 period, it can be concluded that profitability, as measured by ROA, does not significantly affect firm value. Meanwhile, leverage, as measured by DER, has a positive and significant effect on firm value. Furthermore, ROA and DER simultaneously significantly affect firm value. The results of this study indicate that firm value in the banking sector is influenced not only by the company's ability to generate profits but also by the company's ability to effectively manage its funding structure, thereby increasing investor confidence in the company.

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