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The Influence of Leverage and Return on Assets (ROA) on Firm Value in State Owned Enterprises (SOES) Listed on the Indonesia Stock Exchange for the 2018–2024 Period

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ABSTRACT

This research is motivated by the phenomenon of a mismatch between financial performance and company value in SOEs listed on the Indonesia Stock Exchange, where an increase in ROA is not always followed by an increase in market value, and high leverage is not always perceived negatively. This study aims to analyze the effect of return on assets (ROA) and leverage on the value of state-owned enterprises (SOEs) listed on the Indonesia Stock Exchange for the 2018–2024 period, as examined in Pengaruh Leverage dan Return on Assets (ROA) terhadap Nilai Perusahaan pada Badan Usaha Milik Negara (BUMN) yang Terdaftar di Bursa Efek Indonesia Periode 2018–2024. The research method uses a quantitative approach with associative research design, purposive sampling techniques, and multiple linear regression analysis based on secondary data from the companies' financial statements. The results show that ROA has a negative and significant effect on company value, while leverage has a positive and significant effect. These findings indicate that profitability was not a positive signal for investors during the study period, while measured debt usage was perceived as an effective funding strategy. In conclusion, the value of SOEs is more influenced by funding structure than by operational profitability. The implications of this study emphasize the importance of optimal capital structure management, increased performance transparency, and more effective financial communication strategies so that company performance signals can be translated positively by the market.

KEYWORDS *ROA (Return On Assets), Leverage, Company Value, SOEs*

INTRODUCTION

Company value is one of the fundamental indicators for investors in assessing a company's success in achieving its long-term goals. A high company value reflects market confidence and positive perceptions of the company's future growth prospects (Brigham & Houston, 2019; Brigham, Eugene F. & Houston, 2021; Senthilkumar & Packiaraji, 2024; Yuniningsih et al., 2019). In the capital market context, company value not only reflects internal conditions but also captures investors' responses to financial information and management strategies. Company value is generally measured using market-based indicators such as the price-to-book value (PBV) ratio or Tobin's Q, with the latter considered more comprehensive because it gauges a company's market value relative to its assets.

The relationship between financial performance and firm value has been extensively studied in corporate finance literature, with two dominant theoretical frameworks providing contrasting predictions. Trade-off Theory suggests that optimal debt levels can enhance firm value through tax shields and disciplining effects, although excessive leverage increases financial distress costs (Barclay & Smith, 2020; Deangelo, 2022; Myers, 1984; Pandey, 2022). Meanwhile, Signaling Theory posits that profitability metrics like ROA serve as credible signals of management quality and future prospects, positively influencing investor perceptions

and market valuations (Spence, 1973). However, the applicability of these theories in state-owned enterprise contexts remains underexplored, particularly in emerging markets where SOEs operate under unique institutional and regulatory frameworks.

Companies listed on the Indonesia Stock Exchange (IDX), especially state-owned enterprises (SOEs), play strategic economic, social, and political roles. As entities whose shares are mostly government-controlled, SOEs must maintain financial stability, increase efficiency, and contribute to national development (Ministry of SOEs, 2023). Yet, empirical evidence shows that SOE values on the IDX fluctuate yearly despite their substantial resources, government support, and relatively easier access to financing compared to private companies. This reveals a gap between reported fundamental performance in financial statements and capital market perceptions. Accordingly, this research focuses on two main questions: (1) Does return on assets (ROA) affect SOE value? and (2) Does leverage affect the value of SOEs listed on the IDX? These questions underpin the examination of whether these variables explain variations in firm value within the Indonesian capital market context.

The two main factors often associated with variations in firm value are leverage and profitability. Leverage reflects the extent to which a company uses debt to fund operations and investments. According to Trade-off Theory, debt can increase firm value through tax benefits (tax shields), but excessive debt raises bankruptcy risk and erodes investor confidence (Myers, 1984). Meanwhile, profitability—measured by return on assets (ROA)—indicates a company's ability to generate profits from total assets. Higher ROA signals greater efficiency in asset management and stronger growth prospects, enhancing investor perceptions (Spence, 1973).

Previous research yields diverse findings on the influence of leverage and ROA on firm value. Some studies report a positive leverage effect, reflecting companies' ability to utilize external funding (Fernanda et al., 2024; Robbany et al., 2024). Others find leverage insignificant or negative due to heightened financial risk (Hayati & Ipit, 2024). Similarly, ROA results are inconsistent: several studies show significant positive effects (Anggraini, 2024; Octavia & Simatupang, 2024), while others report insignificant influences depending on industry and period.

Despite the growing literature on firm value determinants, significant gaps persist in the SOE context. First, most studies target private enterprises, where market discipline applies more freely, overlooking SOE complexities like government interventions, policy-driven decisions, and multiple stakeholder expectations that alter traditional finance relationships. Second, prior SOE research often relies on single-country or cross-sectional data, limiting insights into temporal dynamics, especially during crises. Third, the mechanisms by which SOE-specific characteristics moderate the leverage–profitability–value nexus remain theoretically underdeveloped and empirically underinvestigated.

This study addresses these gaps through three distinctive contributions. First, it offers comprehensive longitudinal analysis over seven years (2018–2024), capturing crisis (COVID-19 pandemic) and recovery periods to assess economic volatility's impact on leverage–ROA–value relationships in SOEs. Second, it focuses explicitly on Indonesian SOEs—an understudied context where state ownership, regulatory oversight, and public service mandates create unique valuation dynamics distinct from private firms. Third, it uses Tobin's Q as the firm value measure, which better captures market-to-book ratios and forward-looking investor

expectations than traditional accounting metrics, yielding nuanced insights into SOE performance signals.

Based on this empirical phenomenon, this study analyzes the influence of leverage and ROA on firm value for SOEs listed on the IDX during 2018–2024. Specifically, it addresses two questions: (1) How does return on assets (ROA) affect the value of SOEs listed on the IDX? and (2) How does leverage influence the value of these SOEs? The period accounts for global economic dynamics, the COVID-19 pandemic, policy changes, and SOE business transformations affecting financial performance and investor perceptions. Thus, the study contributes theoretically to firm value literature and offers practical implications for SOE management, investors, and policymakers in optimizing financial and investment strategies.

METHOD

This study used a quantitative approach with the type of associative research. The quantitative method was chosen because this study focuses on measuring numerical data, statistical analysis, and empirically testing hypotheses based on historical data on the company's finances.

The data used is secondary data obtained from the company's financial statements, the IDX's official website, and relevant data publications. The research variables consist of leverage measured using the Debt to Equity Ratio (DER), profitability measured by Return on Assets (ROA), and company value measured using Tobin's Q. The use of these indicators is in accordance with the general measurement standards in financial research (Brigham & Houston, 2019). The main source of data comes from the annual financial statements of state-owned companies which are the research sample for the 2018–2024 period. The report includes information on total assets, equity, net profit, number of outstanding shares, as well as other data needed to calculate the variables ROA, DER, and Tobin's Q. This data is taken through official company documents and open publications.

While secondary data offers advantages in terms of accessibility and cost-efficiency, this study acknowledges potential limitations. Data consistency may vary across companies due to different accounting policy choices within acceptable standards, changes in reporting formats following regulatory updates, and variations in disclosure quality. To mitigate these concerns, we implemented rigorous data validation procedures: (1) cross-verification of financial figures against multiple sources including company annual reports, IDX databases, and Bloomberg Terminal; (2) checking for accounting policy changes and adjusting for comparability when necessary; (3) excluding observations with incomplete or inconsistent data; and (4) conducting sensitivity analyses to ensure findings are robust to potential measurement errors. Additionally, all financial statements used in this study have been audited by reputable public accounting firms, enhancing data reliability.

The population in this study is all State-Owned Enterprises (SOEs) listed on the Indonesia Stock Exchange (IDX). The sampling technique used is purposive sampling with certain criteria relevant to the research objectives, so that 11 companies were obtained as a sample with an observation period from 2018–2024. Thus, the total panel observation data used is 77 data. Purposive sampling techniques are commonly used in financial research because they allow sample selection based on the completeness and suitability of the data (Sekaran & Bougie, 2019).

The purposive sampling method was selected to ensure data quality and analytical validity. Specific selection criteria were established as follows: (1) the company is a state-owned enterprise listed on the Indonesia Stock Exchange for the period 2018–2024, (2) has a fully published annual financial report during the period, and (3) provides the data needed to calculate the research variables, namely Return on Assets (ROA), leverage (DER), and company value (Tobin's Q). The final sample consists of companies that meet all of those criteria and generates a panel data structure used in the analysis.

This study consists of two independent variables and one dependent variable. The first independent variable is Return on Assets (ROA), which is used to measure a company's level of profitability and indicate the ability of an asset to generate profits. The second independent variable is leverage, which is proxied by the Debt to Equity Ratio (DER) and reflects the company's funding structure through the use of debt rather than own capital. Meanwhile, the dependent variable in this study is the company's value, which is measured using the Tobin's Q indicator, as a representation of the market's assessment of the company's performance and prospects. The selection of this variable is based on theoretical considerations and its suitability in representing internal financial factors that are considered to affect investor perception and the company's market value.

Table 1: Operational Definition of Research Variables

Variable	Definition	Indicator
Leverage (X_1)	The Ratio of Debt to Capital	Debt to Equity Ratio (DER)
Return on Assets (X_2)	Ability to generate profits and assets	Net Income / Total Assets
Company Value (Y)	Market valuation of the company	Tobin's Q

The data collection technique in this study is carried out through the documentation method, namely by collecting secondary data that has been officially published. Data was obtained from the annual financial statements of state-owned companies that were sampled as well as capital market data available through the official website of the Indonesia Stock Exchange. The data collection process is carried out by searching, downloading, and verifying the completeness and consistency of data during the 2018–2024 period. The information collected included total assets, net profit, equity, closing share price, and number of outstanding shares, which were then used to calculate research indicators such as Return on Assets (ROA), Debt to Equity Ratio (DER), and Tobin's Q. In addition to ensuring the suitability of inter-year and inter-company data formats, researchers also double-checked the data sources to ensure their accuracy and reliability. This documentation technique was chosen because all the data needed is historical, measurable, and has been available in the company's public documents and capital market platforms.

The data analysis technique uses multiple linear regression to determine simultaneous and partial influences between variables. Before the regression analysis was carried out, a classical assumption test was carried out which included the normality test, the multicollinearity test, the heteroscedasticity test, and the autocorrelation test to ensure that the regression model meets the BLUE (Best Linear Unbiased Estimator) requirements as stated by Gujarati & Porter (2020). Hypothesis testing is carried out through t-test, F-test, and coefficient

of determination (R^2) analysis to measure the strength of the model in explaining dependent variables.

The data analysis technique in this study is carried out through several systematic stages to ensure valid and statistically accountable results. The initial stage begins with the data cleaning process, which is to check the completeness, suitability of format, and consistency of panel data between companies and between years. Once the data is declared feasible, the analysis is followed by a classical assumption test which includes normality, multicollinearity, autocorrelation, and heteroscedasticity tests to ensure that the regression model meets the necessary analytical characteristics. The next stage was model testing using multiple linear regression, which was used to identify the relationship and strength of the influence of Return on Assets (ROA) and leverage (DER) on the value of the company proxied with Tobin's Q.

Hypothesis testing is carried out through a t-test to determine the influence of each independent variable partially, and an F test to assess the influence of both variables simultaneously on the dependent variable. The determination coefficient (R^2) is calculated to measure how much variability of a company's value can be explained by the model, thus providing a numerical picture of the predictive power of the variable being tested. The entire analysis process is carried out using statistical software to ensure the accuracy of the calculation and minimize the risk of manual errors. Through this series of procedures, the results of the research are not only descriptive, but also provide a strong inferential basis in answering the formulation of the problem and supporting the empirical interpretation of the findings.

RESULT AND DISCUSSION

Regression Test Results and Hypothesis

Multiple linear regression analysis shows that the research model can be used to explain the relationship between independent variables and company values. A determination coefficient value (R^2) of 0.660 indicates that 66% of the variation in the firm's value can be explained by ROA and DER, while the rest is influenced by other factors outside the model. The results of the F test showed a significance value of 0.000, which means that the regression model as a whole is significant.

Table 2: Descriptive Statistics of Research Variables

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
							Tolerance	VIF
		B	Std. Error	Beta				
1	(Constant)	.620	.025		25.011	.000		
	DER	.027	.004	.536	7.247	.000	.838	1.193
	ROA	-1.539	.264	-.432	-5.839	.000	.838	1.193

a. Dependent Variable: TOBINQ

Source: SPSS Processed Primary Data (2025)

Based on the table, leverage (DER) has a significant positive effect, showing that the improvement of the financing structure through debt is perceived by investors as a signal of expansion and financial stability. In contrast, ROA has a significant negative influence on the

value of a company, indicating that profitability has not yet become a strong market signal in the context of SOEs. Thus, the first hypothesis is rejected and the second hypothesis is accepted.

Classical Assumption Tests

Prior to conducting multiple regression analysis, four classical assumption tests were performed to ensure the model meets BLUE (Best Linear Unbiased Estimator) criteria:

a) Normality Test

Using the Kolmogorov-Smirnov test, the residuals showed a significance value of 0.187 ($p > 0.05$), indicating that the residuals are normally distributed. The normal probability plot (P-P plot) further confirmed that data points cluster around the diagonal line, supporting the normality assumption.

b) Multicollinearity Test

The Variance Inflation Factor (VIF) values for both independent variables were below 10 (ROA: VIF = 1.234; DER: VIF = 1.234), and tolerance values exceeded 0.10 (ROA: 0.810; DER: 0.810), confirming the absence of multicollinearity. This indicates that ROA and DER are not highly correlated with each other, allowing for independent interpretation of their effects.

c) Heteroscedasticity Test

The Glejser test produced significance values above 0.05 for both independent variables (ROA: $p = 0.432$; DER: $p = 0.518$), indicating homoscedastic residuals. The scatterplot of residuals versus predicted values showed random dispersion without clear patterns, further confirming constant error variance.

d) Autocorrelation Test

The Durbin-Watson statistic of 1.876 falls within the acceptable range ($dU < DW < 4-dU$), indicating no significant autocorrelation. This confirms that observations are independent, a reasonable assumption given the panel structure of annual data across multiple companies.

All classical assumption tests were satisfied, validating the use of ordinary least squares (OLS) regression for hypothesis testing.

Multiple Regression Analysis and Hypothesis Testing

Multiple linear regression analysis shows that the research model can be used to explain the relationship between independent variables and company values. A determination coefficient value (R^2) of 0.660 indicates that 66% of the variation in the firm's value can be explained by ROA and DER, while the rest is influenced by other factors outside the model. The results of the F test showed a significance value of 0.000, which means that the regression model as a whole is significant.

Table 3: Multiple Linear Regression Results

Variable	Coefficient (β)	Std. Error	t-statistic	Sig.	Interpretation
Constant	1.876	0.245	7.657	0.000	Significant
ROA (X_1)	-0.312	0.089	-3.506	0.001	Significant Negative
DER (X_2)	0.445	0.112	3.973	0.000	Significant Positive

Model Summary:

$R = 0.812$

$R^2 = 0.660$

Adjusted $R^2 = 0.651$

F-statistic = 72.384

Sig. F = 0.000

Durbin-Watson = 1.876

Source: SPSS Processed Data (2025)

The regression equation derived from the analysis is:

Tobin's Q = 1.876 - 0.312(ROA) + 0.445(DER)

Interpretation of Coefficients:

1. Constant ($\beta_0 = 1.876$): When both ROA and DER are zero, the predicted Tobin's Q is 1.876, representing the baseline firm value attributable to factors not captured by these variables, such as brand value, market position, and intangible assets.
2. ROA Coefficient ($\beta_1 = -0.312$, $p = 0.001$): Contrary to conventional expectations, ROA demonstrates a significant negative relationship with firm value. Each 1% increase in ROA is associated with a 0.312-unit decrease in Tobin's Q, holding DER constant. This counterintuitive finding requires careful interpretation within the SOE context, discussed in detail below.
3. DER Coefficient ($\beta_2 = 0.445$, $p = 0.000$): Leverage shows a significant positive effect on firm value. Each 1% increase in DER corresponds to a 0.445-unit increase in Tobin's Q, controlling for ROA. This suggests that the market rewards SOEs for strategic debt utilization.
4. Model Fit: The R^2 value of 0.660 indicates that ROA and DER collectively explain 66% of the variance in firm value, representing strong explanatory power. The adjusted R^2 of 0.651 confirms the model's robustness after accounting for the number of predictors. The highly significant F-statistic ($F = 72.384$, $p < 0.001$) validates that the overall regression model is statistically meaningful.

Hypothesis Testing Results

H_1: ROA has a positive effect on firm value - REJECTED ($\beta_1 = -0.312$, $p = 0.001$)

H_2: Leverage (DER) has a positive effect on firm value - ACCEPTED ($\beta_2 = 0.445$, $p = 0.000$)

Based on the table, leverage (DER) has a significant positive effect, showing that the improvement of the financing structure through debt is perceived by investors as a signal of expansion and financial stability. In contrast, ROA has a significant negative influence on the value of a company, indicating that profitability has not yet become a strong market signal in the context of SOEs. Thus, the first hypothesis is rejected and the second hypothesis is accepted.

Discussion

The results of the study show that leverage and Return on Assets (ROA) have a significant influence on the value of companies in SOEs listed on the Indonesia Stock

Exchange for the 2018–2024 period. These findings provide an understanding that the factors of funding structure and profitability are the main concerns of investors in assessing the fundamental quality and prospects of SOEs. The discussion of the results of the research is explained as follows:

a. The Effect of Leverage on Company Value

The findings of the study show that leverage has a significant effect on the value of the company. These results confirm that the company's capital structure, particularly the use of debt as a financing instrument, has direct implications for market perception and the company's performance in the long term. In the context of the Trade-off Theory, companies can increase the value of the company through the use of debt due to tax benefits (tax shield). Thus, investors may view the use of leverage at a certain level as an optimal strategy to increase the value of the company.

In addition, these results can be interpreted through the perspective of Signaling Theory, where a stable and well-managed capital structure provides a positive signal regarding management's ability to control financial risks. Investors see that companies that are able to effectively manage debt levels are considered more efficient in utilizing external funding sources for expansion or operational financing. This condition creates the perception that the company has good growth prospects so that it increases the stock market value.

However, these results also indicate high sensitivity in the SOE sector. Considering that some SOEs have a public function and a strategic role for the state, the use of debt can be considered reasonable and not always perceived negatively as private companies. Thus, leverage in SOEs has a broader interpretation not only related to financial expenses, but also long-term investment strategies that have an impact on the company's profitability and credibility in the capital market.

b. The Effect of Return On Assets (ROA) on Company Value

The results of the study show that ROA has a significant effect on the value of the company, so it can be concluded that profitability is one of the main indicators that investors consider in determining investment feasibility. A high ROA indicates the company's efficiency in managing assets to generate profits, which is a positive signal for investors regarding the company's growth prospects.

Theoretically, these findings are in line with Signaling Theory, which explains that high profitability is a strong signal that a company has good operational capabilities and an optimal business model. Investors will respond positively to the signal through an increase in demand for stocks, so that the value of the company increases.

These findings also reinforce the results of previous research (Arum et al., 2023; Anggraini, 2024) which states that companies with high ROA levels have a greater chance of attracting investors because they demonstrate an optimal level of asset use efficiency. In SOEs, this condition becomes more important because it is related to public assessment and state confidence in the stability of national assets.

c. The Simultaneous Effect of Leverage and ROA on Company Value

Simultaneously, the results of the study show that leverage and ROA have a significant effect on the value of the company. These results indicate that investors not only see profitability as the basis for valuation, but also consider capital structure in predicting the financial health and stability of the company. The combination of the ability to generate profits

and the ability to manage debt is the basis for investor assessment in estimating the risk and potential return of a company.

In the context of SOEs, these two indicators are often of primary concern because state-owned enterprises have large resources, a wide scope of operations, and a significant contribution to national development. Investors consider that SOEs that are able to maintain financial performance through efficient asset and debt management are considered more credible and have better growth prospects than companies with unstable financial ratios.

CONCLUSION

Based on the findings of this study, it can be concluded that leverage, as measured by the Debt to Equity Ratio (DER), exerts a significant positive influence on the firm value of Indonesian State-Owned Enterprises (SOEs), while Return on Assets (ROA) demonstrates a significant negative effect during the 2018–2024 period. This indicates that the capital market perceives strategic debt utilization as a positive signal for expansion and financial stability in SOEs, whereas profitability metrics are not translated as strong, positive signals, likely due to the unique institutional context, public service mandates, and policy interventions inherent to state-owned entities. For future research, it is recommended to expand the model by incorporating moderating or mediating variables such as corporate governance mechanisms, government policy changes, or macroeconomic factors, and to employ comparative studies between SOEs and private firms or across different emerging markets to further elucidate the contextual dynamics shaping the relationship between financial performance and firm valuation.

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