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The Effect of Profitability, Leverage and Company Size on Company Value with Managerial Ownership as a Moderating Variable in the Transportation and Logistics Sector on the Indonesia Stock Exchange in the 2019-2024 Period

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Abstract: This research aims to investigate the influence of profitability, leverage, and firm size on firm value, as well as to assess the moderating role of managerial ownership in transportation and logistics companies listed on the Indonesia Stock Exchange (IDX). The inclusion of managerial ownership as a moderating variable is important to evaluate whether insider shareholding can mitigate agency conflicts and influence how these financial factors ultimately affect firm value. The study employs panel data regression using the Moderated Regression Analysis (MRA) approach, with E-Views software utilized for data processing. The population consists of transportation and logistics firms listed on the IDX that published financial statements from 2019 to 2024, and samples were selected using purposive sampling based on data completeness. The findings indicate that profitability and firm size have a positive and significant effect on firm value, while leverage has a negative and significant effect. Collectively, the three independent variables significantly influence firm value. Additionally, the study finds that managerial ownership moderates the relationship between leverage and firm value but does not moderate the effects of profitability or firm size on firm value.

Keywords: profitability, leverage, firm Size, firm value, managerial ownership.

INTRODUCTION

Indonesia's economy has demonstrated strong and resilient performance with consistent growth. According to the Central Statistics Agency (BPS), Indonesia's economy grew by 5.03 percent in 2024, a slight decrease from 5.05 percent in 2023 (BPS, 2025). Within this stable national structure, the transportation and logistics sector recorded one of the highest growth rates at 8.69 percent, underscoring its strategic role in supporting trade activities, goods distribution, and population mobility, thereby strengthening the foundation of Indonesia's economic growth. As the demand for business expansion financing increases, companies in the

transportation and logistics sector seek additional capital sources. One strategic option is through Initial Public Offerings (IPOs) the public issuance of shares in the capital market. Through IPOs, companies not only gain long-term financing access but are also encouraged to apply better corporate governance through transparency and accountability (Indonesia Stock Exchange, 2025). The capital market thus serves a dual function: a financing channel and a crucial mechanism that supports national economic growth.

According to Paningrum (2022), the capital market is an entity designed to connect investors with issuers through long-term securities transactions such as stocks, bonds, and mutual funds. The Indonesian Capital Market Law No. 8 of 1995 defines it as activities related to public offerings, trading of securities, public companies, and supporting institutions and professions (Republic of Indonesia, 1995). Recent studies show that the development of the capital market significantly correlates with economic growth and investor confidence in Indonesia (Lubis et al., 2024). The transportation and logistics sector plays a crucial role in maintaining connectivity, ensuring the smooth flow of goods and services, and enhancing the efficiency of national supply chains. According to the Ministry of Transportation (2020), transportation acts as the *lifeline of national development*, promoting regional equality and competitiveness.

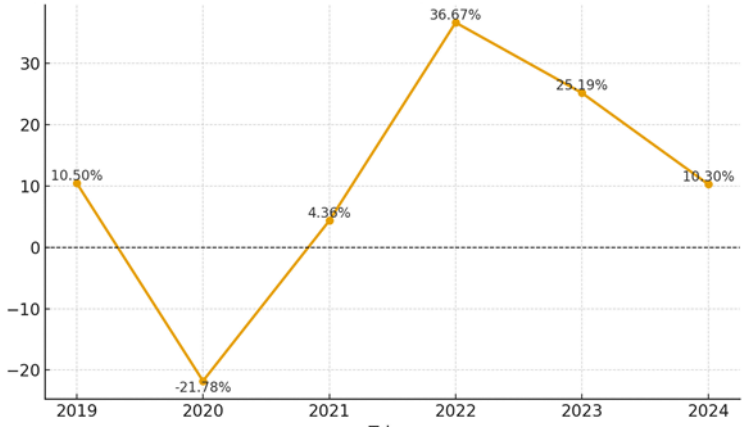


Figure 1.1 Growth Rate of the Transportation and Logistics Sector for the Period 2019-2024
Source: BPS, 2025

From 2019 to 2024, this sector experienced sharp fluctuations—contracting in 2020 (-15.04%) due to COVID-19, recovering in 2021 (3.24%), surging in 2022 (19.87%), and stabilizing at 8.69% in 2024 (BPS, 2025). This dynamic performance reflects the sector's resilience as a backbone of national distribution and mobility. From a corporate perspective, firm value reflects a company's success in managing resources and creating shareholder wealth (Wijaya & Iskak, 2024). It is a key indicator of market trust and long-term sustainability (Pricella et al., 2021; Mardji, 2022). According to Kasmir (2019), firm value is influenced by both external factors (macroeconomic conditions, interest rates, government policies) and internal factors (profitability, leverage, dividend policy, growth, and firm size).

To strengthen the theoretical foundation of the study, several relevant theories explain how financial characteristics influence firm value. Signaling Theory suggests that profitability serves as a positive signal to investors regarding managerial performance and future prospects, encouraging higher market valuation. Trade-Off Theory explains how firms balance the benefits and risks of debt, where high leverage may increase the likelihood of financial distress

and reduce firm value. Meanwhile, Agency Theory provides justification for the role of managerial ownership, arguing that when managers hold shares, their interests become aligned with those of shareholders, helping reduce agency conflicts and influencing how financial decisions affect firm value. These theories collectively provide a strong conceptual basis for understanding the direction of each hypothesis in this study.

Profitability, commonly measured using *Return on Assets (ROA)*, indicates a firm's ability to generate net income from its total assets. ROA represents managerial effectiveness in utilizing resources (Laily, 2024). Prior research has shown mixed findings some studies (Esther et al., 2025; Vidyana & Buchory, 2024) found a positive effect of ROA on firm value, while others (Sondakh, 2019; Hadisoewono & Ekadjaja, 2024) reported no significant impact. Leverage, measured by the *Debt to Equity Ratio (DER)*, reflects the extent to which a firm relies on debt to finance its assets (Hery, 2021). Several studies (Doorasamy, 2021; Hadisoewono & Ekadjaja, 2024; Alifian & Susilo, 2024) found a negative and significant effect of DER on firm value, implying that higher debt increases financial risk and lowers firm valuation. However, Wijaya & Iskak (2024) reported no significant relationship, suggesting effective debt management can mitigate perceived risk.

Firm size (Size), measured by the natural logarithm of total assets, represents the scale of resources controlled by a company (Setiawati et al., 2023; Anisa & Febyansyah, 2024). Larger firms generally have stronger financial capacity and market access, but empirical findings remain inconsistent (Sondakh, 2019; Mauren & Syarif, 2025; Nilamsari & Ismunawan, 2023). In addition, managerial ownership is an essential moderating factor influencing the relationship between financial variables and firm value. It represents the proportion of shares owned by company managers and directors. A higher level of managerial ownership aligns management and shareholder interests, reducing agency conflicts and motivating managers to maximize firm value (Alvaerizqy, 2022; Ermawati & Triyono, 2024). However, prior research remains inconclusive some studies (Henrita & Inggarwati, 2021; Indra et al., 2025) found significant moderating effects of managerial ownership on the relationship between ROA, DER, and Size with firm value, while others (Mandagie et al., 2022; Nugroho et al., 2019) did not. Therefore, this study aims to analyze the effect of profitability, leverage, and firm size on firm value with managerial ownership as a moderating variable, focusing on transportation and logistics sector companies listed on the Indonesia Stock Exchange during the 2019-2024 period.

METHODS

This study adopts a quantitative research approach utilizing panel data regression analysis with the Moderated Regression Analysis (MRA) technique to examine the moderating role of managerial ownership. The analysis was performed using E-Views software, as this method is suitable for testing multiple independent variables and their interactions simultaneously over a multi-year period. MRA was chosen because it allows the evaluation of both direct and moderating effects within one analytical framework, which is essential for understanding the dynamic relationship among profitability, leverage, firm size, and firm value.

The research model investigates the influence of Profitability (X_1), Leverage (X_2), and Firm Size (X_3) on Firm Value (Y), while incorporating Managerial Ownership (Z) as a moderating variable. The purpose of this model is to determine not only the direct impact of each independent variable on firm value but also how managerial ownership strengthens or weakens these relationships. Profitability (X_1) is measured using the Return on Assets (ROA) ratio, calculated as net income divided by total assets, which reflects how efficiently a company

utilizes its assets to generate profit. Leverage (X_2) is represented by the Debt to Equity Ratio (DER), an indicator of a company's financial structure that shows the proportion between debt and equity financing. Firm Size (X_3) is measured using the natural logarithm of total assets (Ln Total Assets), a transformation that provides proportional comparability among companies of different scales. Managerial Ownership (Z) is defined as the percentage of shares owned by management, including directors and commissioners who actively participate in company decision-making processes. The dependent variable, Firm Value (Y), is measured using the Price to Book Value (PBV) ratio, which captures how the market perceives the intrinsic value and performance of the company relative to its book value.

The population consists of all transportation and logistics companies listed on the Indonesia Stock Exchange (IDX) that published complete financial statements for the period 2019–2024. Sampling was conducted using a purposive sampling method based on the following criteria: (1) companies are classified in the transportation and logistics sector on the IDX, (2) they published audited and complete financial statements for the years 2019–2024, and (3) complete data for all research variables were available. Based on these criteria, eight companies were selected, resulting in 48 observations (8 firms × 6 years).

The study relies on secondary data, which were obtained from official publications of the Indonesia Stock Exchange (IDX), annual company financial reports, and supporting sources such as the Indonesian Capital Market Directory (ICMD). The data cover a six-year observation period, allowing for the analysis of firm performance trends and variations in ownership structure over time.

The data analysis procedure was conducted in several stages. First, descriptive statistics were used to summarize and describe the central tendencies and dispersion of each variable, including mean, maximum, minimum, and standard deviation. Second, a series of classical assumption tests were performed to ensure model reliability, including the normality test (Jarque-Bera), multicollinearity test (Variance Inflation Factor), heteroskedasticity test (Glejser), and autocorrelation test (Durbin-Watson). Third, to determine the most appropriate panel regression model, three diagnostic tests were conducted: the Chow test to compare the Common Effect Model and Fixed Effect Model, the Hausman test to choose between Fixed and Random Effect Models, and the Lagrange Multiplier test to evaluate the suitability of the Random Effect Model against the Common Effect Model. The results of these tests guided the selection of the best-fitting model for the regression analysis.

After identifying the appropriate estimation model, the panel data regression was conducted to assess the direct effects of profitability, leverage, and firm size on firm value. Subsequently, the Moderated Regression Analysis (MRA) was applied to test the moderating effect of managerial ownership by including interaction terms between managerial ownership and each independent variable in the regression equation. The general model specification is expressed as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 Z + \beta_5 (X_1 Z) + \beta_6 (X_2 Z) + \beta_7 (X_3 Z) + \varepsilon$$

Where: Y represents firm value X_1, X_2 and X_3 represent profitability, leverage, and firm size respectively, Z denotes managerial ownership, and ε\varepsilonε is the error term.

Finally, hypothesis testing was conducted using the t-test to assess the partial effect of each independent variable, the F-test to evaluate the simultaneous influence of all variables,

and the coefficient of determination (R^2) to measure the explanatory power of the model. Based on the research framework, the hypotheses tested include:
(1) profitability has a positive and significant effect on firm value;
(2) leverage has a negative and significant effect on firm value;
(3) firm size has a positive and significant effect on firm value;
(4) profitability, leverage, and firm size simultaneously influence firm value;
and (5-7) managerial ownership moderates the relationship between profitability, leverage, and firm size with firm value.

RESULTS AND DISCUSSION

The empirical results of the study were obtained through panel data regression analysis using the Fixed Effect Model, which was identified as the most appropriate estimation technique based on the Chow, Hausman, and Lagrange Multiplier tests. The analysis was conducted on data from transportation and logistics companies listed on the Indonesia Stock Exchange (IDX) during the 2019-2024 period. The variables analyzed include profitability (ROA), leverage (DER), firm size (Ln Total Assets), firm value (PBV), and managerial ownership as a moderating variable.

Descriptive Analysis

	ROA	DER	*SIZE*	PBV	KM
Mean	0.921965	0.972170	27.05402	1.181881	1.181881
Maximum	14.73619	3.659028	33.02462	2.968671	2.968671
Minimum	-11.79654	0.067980	18.11852	0.187567	0.187567
Std. Dev.	5.181715	0.972538	3.497159	0.762946	0.762946
Observations	48	48	48	48	48

Source: data processed, 2025

The descriptive statistics describe the characteristics of all variables used in the study, including Profitability (ROA), Leverage (DER), Firm Size (SIZE), Firm Value (PBV), and Managerial Ownership (KM), based on 48 observations during the 2019–2024 period. The mean value of ROA (0.921965) indicates that, on average, transportation and logistics companies generate a return of approximately 0.92% on their total assets. Although the mean value appears low, it reflects the relatively thin profit margins common in capital-intensive industries such as logistics, where high operational and financing costs reduce net income levels. The maximum ROA (14.73) shows that certain firms are highly efficient in utilizing their assets, while the minimum ROA (-11.79) suggests that some companies experienced significant losses during specific periods. The standard deviation of 5.18 shows that profitability varies considerably among firms, suggesting differences in operational efficiency and cost management strategies.

For Leverage (DER), the mean value of 0.972 implies that, on average, firms have nearly equal proportions of debt and equity in their capital structure. This moderate leverage ratio indicates a balanced approach to financing between external debt and internal equity. However, the maximum DER (3.65) demonstrates that certain companies rely heavily on debt financing, increasing financial risk, while the minimum DER (0.067) reflects firms with very conservative financing structures. The standard deviation of 0.97 also reveals significant variation in financial leverage across firms, implying diverse risk-taking behaviors and capital structure strategies.

The Firm Size (SIZE) variable, with a mean of 27.05 (Ln Total Assets), shows that most transportation and logistics firms are large-scale entities with substantial asset bases. The range between the minimum value (18.12) and maximum value (33.02) indicates a notable gap between smaller operators and large, asset-heavy corporations, such as those involved in logistics networks or fleet management. The standard deviation of 3.49 confirms moderate variability in firm scale within the sector.

The mean value of Firm Value (PBV = 1.18) suggests that, on average, market investors value these companies slightly above their book value, reflecting modest confidence in the sector's long-term growth potential. However, the wide spread between the minimum PBV (0.18) and maximum PBV (2.97) indicates substantial disparity in how investors assess different firms. Some companies are viewed as undervalued, possibly due to weak profitability or high leverage, while others are overvalued, suggesting strong investor expectations or superior performance. The standard deviation (0.76) supports this variability in market perception.

Finally, Managerial Ownership (KM) has a mean of 0.15, meaning that on average, about 15% of total company shares are owned by management. This relatively low ownership level suggests that managerial shareholding in the transportation and logistics sector remains limited. Nonetheless, the maximum KM value (0.30) indicates that some firms have more substantial insider ownership, which can align management and shareholder interests, potentially enhancing firm value. The standard deviation (0.08) demonstrates a moderate level of variation in ownership structures among companies.

In summary, the descriptive results show that the transportation and logistics sector in Indonesia exhibits considerable heterogeneity in financial performance and structure. Profitability and leverage fluctuate widely, firm size varies between small and large operators, and managerial ownership remains relatively low overall. Meanwhile, firm value displays the highest degree of market sensitivity, influenced by investor confidence, macroeconomic conditions, and post-pandemic recovery dynamics.

Regression Analysis

Variable	Coefficient	Std. Error	*t-statistic*	Prob.
C	-2.863885	1.251630	-2.288125	0.0279
ROA	0.004643	0.001974	2.351619	0.0241
DER	-0.005997	0.002253	-2.662225	0.0114
SIZE	0.149647	0.045136	3.315504	0.0021

Source: data processed, 2025

The regression results show that profitability (ROA) and firm size (Ln Total Assets) have a positive and significant effect on firm value (PBV). This finding suggests that companies that are more efficient in generating profits and have larger asset bases tend to be valued higher by investors. Profitability provides a strong signal of managerial efficiency and operational success, which positively influences market perception. Larger firms, on the other hand, are generally perceived as more stable, diversified, and resilient, thereby attracting higher investor confidence. Conversely, leverage (DER) has a negative and significant effect on firm value. This indicates that excessive reliance on debt financing increases the firm's financial risk, leading to reduced investor confidence and lower market valuation. High debt levels can constrain financial flexibility and amplify bankruptcy risk, which the market tends to penalize through lower PBV ratios. The simultaneous testing results (F-test) reveal that profitability,

leverage, and firm size collectively have a significant influence on firm value. This demonstrates that firm value in the transportation and logistics sector is shaped not only by the company's profitability and scale but also by how effectively it manages its financial leverage to balance risk and return.

Moderation Analysis (Managerial Ownership)

Variable	Coefficient	Std. Error	*t-statistic*	Prob.
C	-3.853465	3.347746	-1.151063	0.2580
ROA	0.004146	0.004588	0.903587	0.3728
DER	-0.020643	0.005491	-3.759258	0.0007
SIZE	0.220358	0.128949	1.708874	0.0969
KM	5.373976	23.86001	0.225229	0.8232
ROA*KM	0.014222	0.026505	0.536576	0.5952
DER*KM	0.093894	0.034426	2.727373	0.0101
*SIZE*KM	-0.430331	0.895612	-0.480488	0.6341

The results in Table X show that only one interaction term, DER × KM, is statistically significant with a probability value of 0.0101. This finding indicates that managerial ownership moderates the effect of leverage on firm value. The positive coefficient of the interaction term suggests that managerial ownership weakens the negative influence of leverage on firm value. When managers also hold shares, they have incentives that are more aligned with shareholders, making them less likely to take excessive debt-related risks. This alignment reduces agency conflicts and improves investor confidence, thereby mitigating the adverse impact of leverage on firm value. However, the interaction terms ROA × KM and SIZE × KM are not statistically significant, with p-values of 0.5952 and 0.6841, respectively. This means that managerial ownership does not moderate the effect of profitability or firm size on firm value. Profitability and firm size are already strong performance indicators that provide clear signals to investors consistent with Signaling Theory and Pecking Order Theory so additional managerial ownership does not add meaningful explanatory strength to these relationships. In other words, the market already interprets profitability and firm size as transparent signals of firm performance, and managerial ownership does not amplify or weaken these effects. Overall, these results confirm that managerial ownership plays a moderating role specifically in financial policies related to leverage, supporting core ideas of Agency Theory, which state that ownership by managers can reduce conflicts of interest in decisions involving risk. However, this moderating influence does not extend to profitability or firm size because these variables influence firm value independently and are already efficiently evaluated by the market.

Discussion

The positive and significant impact of profitability on firm value is consistent with Signaling Theory, which posits that higher profitability serves as a positive signal to investors regarding a firm's financial health and growth potential. The finding aligns with previous studies by Esther et al. (2025) and Vidyana & Buchory (2024), who found that firms with higher ROA tend to be valued higher by the market. The negative impact of leverage supports the Trade-Off Theory, emphasizing that while debt can provide tax benefits, excessive leverage increases the probability of financial distress and reduces firm value. This finding is in line with the results of Doorasamy (2021) and Alifian & Susilo (2024), which reported that high DER ratios are negatively perceived by investors.

The positive influence of firm size supports Pecking Order Theory, as larger firms often rely more on internal financing due to better retained earnings and stronger reputations in the market. Larger firms tend to have easier access to capital markets, diversified business operations, and lower bankruptcy risks, leading to higher valuations.

Finally, the significant moderating role of managerial ownership in the relationship between leverage and firm value provides empirical support for the Agency Theory. Managerial ownership aligns the interests of managers and shareholders, reducing opportunistic behavior and encouraging decisions that increase long-term firm value. When managers are also shareholders, they are more likely to avoid excessive debt levels that could threaten firm sustainability. Overall, the findings highlight that improving profitability, maintaining optimal leverage levels, and enhancing firm size are key drivers of firm value in the transportation and logistics sector. Moreover, increasing managerial ownership can serve as an effective governance mechanism to control financial risk associated with high leverage.

CONCLUSION

Based on the results of the analysis, several important conclusions can be drawn. First, profitability and firm size have a positive and significant influence on firm value, indicating that companies that are more profitable and have larger asset bases are more highly valued by the market. Second, leverage has a negative and significant influence on firm value, showing that higher levels of debt tend to decrease firm value due to increased financial risk. Third, when examined simultaneously, profitability, leverage, and firm size together have a significant impact on firm value, underscoring the importance of integrated financial management. Fourth, managerial ownership moderates the effect of leverage on firm value, strengthening the relationship by aligning managerial and shareholder interests. However, managerial ownership does not moderate the relationships between profitability or firm size and firm value, suggesting that these variables already have strong direct effects that are not substantially altered by ownership structure.

The findings of this research contribute both theoretically and practically. Theoretically, they reinforce the relevance of Agency Theory, Signaling Theory, and Trade-Off Theory in explaining firm valuation behavior in Indonesia's transportation and logistics sector. Practically, the study highlights that firms should focus on improving profitability, maintaining optimal capital structures, and implementing ownership-based governance mechanisms to enhance firm value. For investors, the results provide valuable insights into evaluating companies based on profitability, leverage management, and managerial ownership patterns. For regulators and policymakers, the findings emphasize the importance of fostering transparent ownership structures and prudent debt policies to strengthen corporate governance and market confidence in the Indonesian transportation and logistics industry.

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