
Analyzing the Economic Impact of Capital Structure as a Mediator on Firm Value

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Abstract:

This study aims to analyze the effect of Return on Assets (ROA) and Return on Equity (ROE) on firm value, with the Debt to Asset Ratio (DAR) as a mediating variable. Firm value is measured using two indicators, namely Price to Book Value (PBV) and Tobin's Q. The study was conducted on companies in the industrial and mining sectors listed on the Indonesia Stock Exchange (IDX) over a four-year observation period. The approach used is quantitative explanatory research, employing the Partial Least Square (PLS) analysis technique to test both direct and indirect relationships among variables. The results indicate that ROA and ROE have no significant effect on firm value (both PBV and Tobin's Q). However, ROA has a significant negative effect on DAR, suggesting that companies with higher profitability levels tend to rely less on debt-based financing. Meanwhile, DAR shows no significant effect on firm value, whether measured by PBV or Tobin's Q, implying that capital structure does not serve as a mediating variable in the relationship between profitability and firm value. Thus, the increase in firm value cannot be explained through the mechanism of capital structure in industrial and mining sector companies in Indonesia. The implications of this study suggest that internal fundamental factors such as profitability and capital structure are not yet the main determinants shaping firm value. External factors such as commodity price fluctuations, macroeconomic conditions, and investor perceptions of financial risk are presumed to have a greater influence on firm value. Future research is recommended to include additional variables such as firm size, growth opportunity, and good corporate governance to enhance understanding of the dynamics determining firm value.

Keywords: Return on Assets (ROA), Return on Equity (ROE), Debt to Asset Ratio (DAR), Price to Book Value (PBV), Tobin's Q, Capital Structure, Firm Value

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1. Introduction

Firm value assessment is a crucial indicator in corporate finance literature, as it reflects the market's perception of a company's future prospects and managerial performance (Y. A. P. Sari et al., 2025). Two metrics frequently used to measure firm value are Price to Book Value (PBV) and Tobin's Q. PBV illustrates how the market values a company's book equity, while Tobin's Q measures the ratio between the total

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market value and the replacement cost of assets, reflecting investors' expectations of future growth and profitability (Ana & Wibowo, 2025). In the context of developing countries, including Indonesia, understanding the relationship between internal performance (profitability) and financial policy (capital structure) with firm value is highly relevant, as it provides insights for investors, managers, and policymakers.

Profitability is often measured by Return on Assets (ROA) and Return on Equity (ROE). ROA indicates a company's efficiency in generating profits from its total assets, while ROE reflects the company's ability to generate profits from its own equity. Several empirical studies show that high profitability (ROA, ROE) tends to attract positive investor perceptions and contribute to increased firm value (Abduh et al., 2025). However, the relationship between profitability and firm value is not always direct or straightforward. Other variables, such as capital structure — the proportion of debt to equity or total assets — may mediate or moderate this relationship through mechanisms such as cost of capital, managerial signaling, and financial risk.

Capital structure represents an important managerial decision because companies must balance the benefits of debt usage (such as tax shields and positive leverage effects) with the associated costs (such as interest expenses and bankruptcy risk). Sapna et al. (2025) found that capital structure has a significant influence on firm value, supporting the notion that financing decisions can affect investors' perceptions of firm value. Thus, capital structure not only serves as an independent variable but also has the potential to act as a mediating variable that transmits part of the effect of profitability (ROA, ROE) on firm value (PBV and Tobin's Q). Sari & Sedana (2020) also emphasized in their study that "capital structure can act as a mediator between profitability and firm value" when other control variables are considered.

Although numerous studies have examined the relationship between profitability, capital structure, and firm value, several research gaps remain. First, few studies have explicitly tested capital structure as a mediator between ROA/ROE and both PBV and Tobin's Q simultaneously in the context of emerging markets. Second, many studies employ only a single firm value proxy (e.g., Tobin's Q or PBV), limiting comparative insights between the two proxies within one comprehensive research model. Third, some studies have not considered that the mediation effect may be partial or full, or even inverse (positive/negative), depending on sample characteristics and research periods.

Several related studies support the relevance of examining capital structure mediation. Muliana & Ahmad (2021) found that while profitability had a positive direct effect on firm value, its indirect effect through capital structure (measured by DER) was significantly negative. This indicates that the use of debt in capital structure can reduce the positive benefits of profitability on firm value if debt carries substantial risk burdens. Meanwhile, Sari et al. (2020) found that DER as a capital structure variable moderated and influenced the relationship between performance (ROA) and firm value. Similarly, a study by Sangadji et al. (2021) using Indonesian company data

showed that capital structure (DER) partially mediated the effect of ROE on Tobin's Q.

Based on the theoretical arguments and empirical evidence above, this study focuses on a mediation model where ROA (X_1) and ROE (X_2) affect firm value, measured by PBV (Y_1) and Tobin's Q (Y_2), through the mediating variable capital structure, represented by the Debt to Asset Ratio (DAR) (Z). This model enables analysis of whether the influence of profitability on firm value is primarily direct or partially transmitted through DAR, and whether the differences in firm value proxies produce distinct patterns.

Therefore, the objectives of this study are to:

- (1) examine the effect of ROA on PBV and Tobin's Q;
- (2) examine the effect of ROE on PBV and Tobin's Q;
- (3) test the effect of ROA and ROE on DAR;
- (4) test the effect of DAR on PBV and Tobin's Q; and
- (5) assess the mediating role of DAR in the relationship between ROA and PBV/Tobin's Q, as well as ROE and PBV/Tobin's Q.

The novelty of this study lies in the use of a dual mediation model involving two profitability proxies and two firm value proxies through a single mediator, allowing for comparison of cross-proxy market value mechanisms that are rarely examined within a single study.

The theoretical contribution of this study is to expand mediation literature in corporate finance, particularly in emerging markets, by clarifying how internal performance is transformed into market value through financial mechanisms (capital structure). Its practical contribution provides insights for corporate financial management and capital market regulators on the importance of effective leverage policies, ensuring that companies not only optimize profitability but also maintain a capital structure that can maximize market value.

2. Theoretical Background

Return on Assets (ROA): ROA measures a company's operational efficiency by assessing the extent to which asset management can generate profits (Widyastuti & Aini, 2021). It is used to evaluate the success of investments in producing the expected returns (Parenrengi & Hendratni, 2018). ROA encompasses all skills and resources — including revenue-generating activities, cash, and financial resources — that are utilized to obtain profit (Ariesa et al., 2023). This ratio describes a company's capacity to generate earnings and provides external parties with information about how effectively its operations are conducted. ROA reflects the firm's competitiveness in achieving profitability based on the utilization of its owned resources. It is applied to measure the amount of profit after tax generated from the company's total assets.

Return on Equity (ROE): Return on Equity (ROE) is a ratio that indicates the extent to which equity contributes to generating net income. This ratio is obtained by dividing net profit by equity. The higher the return on equity, the greater the net profit generated from the equity base. Conversely, a lower return on equity implies that the net profit earned from the equity invested is smaller. It demonstrates how efficiently a company utilizes its shareholders' equity to produce profits (Rini et al., 2025). ROE can therefore be used to assess how much profit a company generates for every unit of shareholders' equity invested (Alifia & Rismanty, 2025).

Debt to Asset Ratio (DAR): The Debt to Asset Ratio (DAR) measures the extent to which debt is used to finance a company's assets (Mentari & Utomo, 2024). DAR indicates how dependent a firm is on debt to fund its assets (Pratama et al., 2023). An increasing ratio reflects greater utilization of debt in financing assets (Sari et al., 2021). DAR assesses the proportion between total liabilities and total assets (Nurmiati & Pratiwi, 2022). This ratio represents the share of assets financed by liabilities (Shabilah et al., 2023), showing the comparison between total debt and total assets (Sanjaya & Ariesa, 2020).

Price to Book Value (PBV): According to Siddik & Asri (2025), Price to Book Value (PBV) is a ratio used to compare a company's stock price with its book value. This ratio helps determine whether a stock is overvalued or undervalued. A lower PBV value indicates that the stock is undervalued, making it more attractive for long-term investment. Based on Siddik & Asri's (2025) definition, the PBV indicator is derived from two components: stock price and book value per share.

Tobin's Q: The Tobin's Q ratio is one of the methods used to evaluate a company's performance. This ratio provides valuable information as it explains various phenomena and decision-making behaviors, such as cross-sectional differences in managerial ownership, corporate value, investment decisions, and diversification strategies. The higher the stock price, the greater the firm's value. A high firm value is desirable for company owners, as it reflects greater shareholder wealth. The wealth of shareholders and the company is represented by the market price of its shares, which mirrors the outcomes of investment, financing, and asset management decisions (Sitorus, 2021).

3. Methodology

This study employs a quantitative research method using the Structural Equation Modeling–Partial Least Squares (SEM-PLS) approach. It adopts a causal-comparative quantitative design, with the main objective of examining the effect of Return on Assets (ROA) and Return on Equity (ROE) on Price to Book Value (PBV) and Tobin's Q, with Debt to Asset Ratio (DAR) serving as the mediating variable.

The population of this research consists of all industrial and mining sector companies listed on the Indonesia Stock Exchange (IDX) during the observation period of 2021–2024. This population was chosen because the sector represents companies with high

production activities and intensive working capital usage, making it relevant for analyzing the influence of financial performance variables on firm value.

The sample was determined using a purposive sampling technique based on the following criteria:

1. The company operates in the basic industry, chemical, or mining sectors and is listed on the IDX.
2. The company publishes complete annual financial statements for the period 2021–2024.
3. The data required to calculate all research variables are fully available for the observation period.

Based on these criteria, a total of 10 companies met the requirements, with a 4-year observation period (2021–2024), resulting in 40 observation units (10 companies $\times$ 4 years). The data used are secondary data, obtained from the companies' annual financial reports available on the official website of the Indonesia Stock Exchange.

The data analysis technique used in this study is Partial Least Squares–Structural Equation Modeling (PLS-SEM) with the assistance of SmartPLS 3 software.

The analysis procedures include:

1. Outer Model Test: To assess the validity and reliability of constructs through indicators such as *loading factors*, *Average Variance Extracted (AVE)*, *composite reliability*, and *Cronbach's alpha*.
2. Inner Model Test: To evaluate the relationships among latent variables using R^2 values, *t-statistics*, and *p-values*.
3. Mediation Test: To determine whether capital structure (DAR) acts as a mediating variable in the relationship between profitability (ROA, ROE) and firm value (PBV, Tobin's Q).

4. Empirical Findings/Result

Convergent Validity Test (Outer Loading)

Convergent validity is tested using Outer Loading, which indicates the contribution of each indicator in measuring the latent variable. An Outer Loading value greater than 0.7 is required for an indicator to be considered valid.

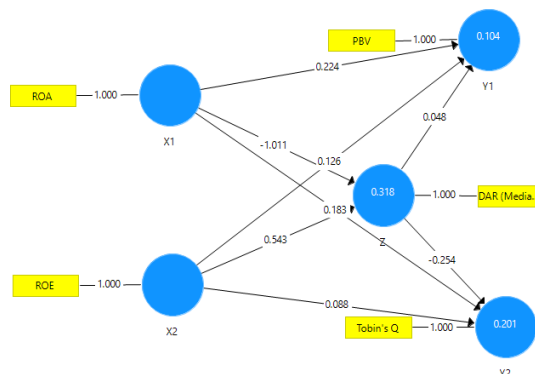


Figure 1. Result Outer Loading

Based on Figure 1 Outer Loading, the test results show that all indicators have values above the recommended threshold of ≥ 0.7 . The data indicating the expected factor loadings can be seen in the following table:

Table 1. Result Outer Loading

Variable	X1	X2	Y1	Y2	Z
DAR (Mediation)					1
PBV			1		
ROA	1				
ROE		1			
Tobin's Q				1	

Source: Processed data using SmartPLS 3

Based on Table 1, all outer loading values are greater than 0.7, indicating that all indicators in this study have met the criteria for convergent validity and indicator reliability.

Convergent Validity Test (Average Variance Extracted – AVE)

The AVE value must be greater than 0.5 for the research construct to be considered valid.

Table 2. Convergent Validity (Average Variance Extracted – AVE)

Variable	Average Variance Extracted
DAR (Mediation)	1.000
PBV	1.000
ROA	1.000
ROE	1.000
Tobin's Q	1.000

Source: Processed data using SmartPLS 3

Based on Table 2, which shows the AVE values of each variable, all figures are greater than 0.5. Thus, it can be concluded that the constructs are valid and meet the requirements for further analysis.

Reliability Test (Composite Reliability & Cronbach's Alpha)

Reliability was tested using Composite Reliability (CR) and Cronbach's Alpha (CA). Composite Reliability (CR) evaluates the internal consistency of the indicators forming a construct. A CR value greater than 0.7 indicates that the construct has good reliability.

Table 3. Composite Reliability (CR)

Variable	Composite Reliability
DAR (Mediation)	1.000
PBV	1.000
ROA	1.000
ROE	1.000
Tobin's Q	1.000

Source: Processed data using SmartPLS 3

Based on Table 3, all variables have Composite Reliability (CR) values greater than 0.7, indicating that the indicators within each variable possess good internal

consistency. Thus, the constructs in this study are declared reliable and can be used for further testing.

Cronbach's Alpha (CA)

Table 4. Nilai Cronbach's Alpha (CA)

Variable	Cronbach's Alpha
DAR (Mediation)	1.000
PBV	1.000
ROA	1.000
ROE	1.000
Tobin's Q	1.000

Source: Processed data using SmartPLS 3

Based on Table 4, all variables also have Cronbach's Alpha (CA) values greater than 0.7, which means that the indicators within each construct possess a high level of reliability. This indicates that the research instrument demonstrates good consistency and is therefore suitable for subsequent analysis.

Multicollinearity Test

The multicollinearity test is conducted to determine whether multicollinearity exists among the independent variables by examining the correlation values between them. If the Variance Inflation Factor (VIF) value is less than 5, the model is considered free from multicollinearity. The results of the multicollinearity test in this study are presented in the following table:

Table 5. Nilai Collinearity Statistics (VIF)

Variable	VIF
DAR (Mediation)	1.000
PBV	1.000
ROA	1.000
ROE	1.000
Tobin's Q	1.000

Source: Processed data using SmartPLS 3

The results presented in the table show that all indicators in this study have VIF values less than 5, indicating that there are no multicollinearity issues among the variables. The outer model measurement stage is therefore confirmed to have met the requirements for evaluating both validity and reliability.

Coefficient of Determination Test (R-Square / R²)

The assessment of the model using PLS begins by examining the R-square (R²) value for each dependent variable.

Table 6. Nilai R-Square

	R Square	R Square Adjusted
Y1	0.104	0.029
Y2	0.201	0.134
Z	0.318	0.281

Source: Processed data using SmartPLS 3

Based on Table 6, the R^2 value for variable Y1 is 0.104, indicating that 10.4% of the variability in PBV can be explained by ROA, ROE, and DAR as intervening variables, while the remaining 89.6% is influenced by other factors not included in this study. The R^2 value for variable Y2 is 0.201, meaning that 20.1% of the variability in Tobin's Q can be explained by ROA, ROE, and DAR as intervening variables, while the remaining 79.9% is affected by other unexamined factors. Meanwhile, the R^2 value for the intervening variable DAR (Z) is 0.318, indicating that 31.8% of the variability in DAR can be explained by ROA and ROE, while the remaining 68.2% is influenced by other factors not investigated in this research.

Hypothesis Testing

Direct Effect

The structural model in this study was tested using PLS (Partial Least Squares). One of the main objectives of this analysis is to test the hypotheses. To determine whether a hypothesis is accepted or rejected, the significance values between variables are examined by referring to the t-statistic and p-value. The rule of thumb applied in this study is a p-value of 0.05 (5%) with a positive beta coefficient. The results of the hypothesis testing are presented in Table 7 below.

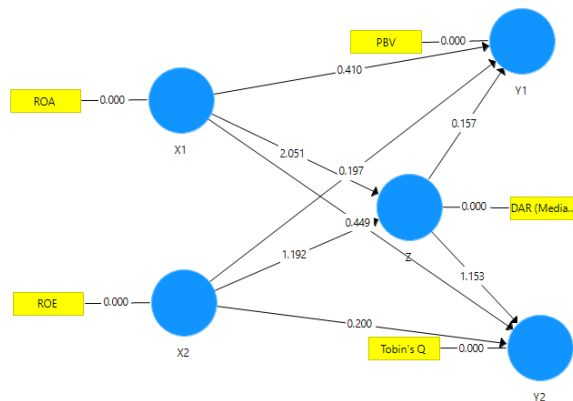


Figure 2. Inner Loading

Source: 2024 processed original data

Table. 7 Path Coefficients

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
ROA -> PBV	0.224	0.252	0.546	0.41	0.682
ROA -> TOBINS'Q	0.183	0.183	0.408	0.449	0.654
ROA -> DAR	-1.011	-1.052	0.493	2.051	0.041
ROE -> PBV	0.126	0.014	0.64	0.197	0.844
ROE -> TOBINS'Q	0.088	0.069	0.442	0.2	0.842
ROE -> DAR	0.543	0.597	0.455	1.192	0.234
DAR -> PBV	0.048	-0.083	0.305	0.157	0.876
DAR -> TOBINS'Q	-0.254	-0.323	0.22	1.153	0.25

Source: Processed data using SmartPLS 3

Results of Direct Effect Analysis (Path Coefficients)

Based on Table 7, the results of the *path coefficients* test show the following findings:

1. Effect of Return on Assets (ROA) on Price to Book Value (PBV)
The *original sample* (*O*) value of 0.224 indicates that ROA has a positive effect on PBV, meaning that increased efficiency in asset utilization tends to enhance the company's market value. However, the *t-statistic* of 0.410 with a *p-value* of $0.682 > 0.05$ shows that this effect is not statistically significant. Thus, asset utilization efficiency does not directly influence an increase in market value.
2. Effect of Return on Assets (ROA) on Tobin's Q
The *original sample* coefficient of 0.183 indicates a positive relationship between ROA and Tobin's Q. However, with a *t-statistic* of 0.449 and a *p-value* of $0.654 > 0.05$, this relationship is not significant. This means that the company's ability to generate profits from its assets does not have a significant effect on its market value.
3. Effect of Return on Assets (ROA) on Debt to Asset Ratio (DAR)
The *original sample* value of -1.011 shows a significant negative effect between ROA and DAR. This is supported by a *t-statistic* of $2.051 > 1.96$ and a *p-value* of $0.041 < 0.05$. Thus, the higher the company's ability to generate profit from its assets, the lower its dependence on debt.
4. Effect of Return on Equity (ROE) on Price to Book Value (PBV)
The *original sample* coefficient of 0.126 shows a positive relationship between ROE and PBV. However, with a *t-statistic* of 0.197 and a *p-value* of $0.844 > 0.05$, the effect is not significant. This implies that an increase in return on equity does not necessarily increase the company's market value.
5. Effect of Return on Equity (ROE) on Tobin's Q
The *original sample* value of 0.088 also shows a positive relationship, but the *t-statistic* of 0.200 and *p-value* of $0.842 > 0.05$ indicate that the effect is not significant. This suggests that equity-based profitability does not have a significant influence on firm value.
6. Effect of Return on Equity (ROE) on Debt to Asset Ratio (DAR)
The *original sample* coefficient of 0.543 indicates a positive relationship between ROE and DAR, but with a *t-statistic* of 1.192 and a *p-value* of $0.234 > 0.05$, the relationship is not significant. This means that an increase in equity-based profitability does not necessarily correspond with changes in the debt-to-asset ratio.
7. Effect of Debt to Asset Ratio (DAR) on Price to Book Value (PBV)
The *original sample* value of 0.048 indicates a very weak positive relationship between DAR and PBV. However, with a *t-statistic* of 0.157 and a *p-value* of $0.876 > 0.05$, the effect is not significant. Therefore, the company's leverage level does not influence its market value.
8. Effect of Debt to Asset Ratio (DAR) on Tobin's Q
The *original sample* coefficient of -0.254 indicates a negative relationship between DAR and Tobin's Q. However, the *t-statistic* of 1.153 and *p-value* of $0.250 > 0.05$ show that the effect is not significant. This means that an increase in the proportion of debt to assets does not significantly decrease the company's market value.

Specific Indirect Effect Results**Table. 8 *Specific Indirect Effect***

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
ROA -> DAR -> PBV	-0.048	0.072	0.395	0.122	0.903
ROE -> DAR -> PBV	0.026	-0.022	0.241	0.108	0.914
ROA -> DAR -> TOBINS'Q	0.257	0.324	0.315	0.816	0.415
ROE -> DAR -> TOBINS'Q	-0.138	-0.169	0.219	0.63	0.529

Source: Processed data using SmartPLS 3

Based on Table 8, the results of the *specific indirect effects* are as follows:

1. Indirect Effect of Return on Assets (ROA) on Price to Book Value (PBV) through Debt to Asset Ratio (DAR) The original sample value (O) of -0.048 indicates that when DAR acts as a mediator, an increase in ROA tends to decrease PBV, although the effect is very small. The t-statistic value of 0.122 and p-value of 0.903 (> 0.05) indicate that this mediating effect is statistically insignificant. Thus, the capital structure measured by DAR is unable to mediate the influence of Return on Assets on Price to Book Value.
2. Indirect Effect of Return on Equity (ROE) on Price to Book Value (PBV) through Debt to Asset Ratio (DAR) The original sample coefficient of 0.026 shows that the mediating effect of DAR is positive but very weak. The test results show a t-statistic of 0.108 and a p-value of 0.914 (> 0.05), indicating no significant evidence that DAR mediates the relationship between ROE and PBV. In other words, the capital structure does not play a mediating role in transmitting the effect of Return on Equity on Price to Book Value.
3. Indirect Effect of Return on Assets (ROA) on Tobin's Q through Debt to Asset Ratio (DAR) The original sample value of 0.257 indicates that the mediation of DAR has a positive effect on the relationship between ROA and Tobin's Q. This suggests that increased asset efficiency has the potential to enhance firm value when accompanied by proper capital structure management. However, with a t-statistic of 0.816 and p-value of 0.415 (> 0.05), the mediating effect is statistically insignificant. This means that although the direction of influence is positive, DAR does not function as an effective mediating variable in this relationship.
4. Indirect Effect of Return on Equity (ROE) on Tobin's Q through Debt to Asset Ratio (DAR) The original sample coefficient of -0.138 indicates a negative relationship between ROE and Tobin's Q when mediated by DAR. The test results (t-statistic 0.630; p-value 0.529 > 0.05) show that the effect is not significant. Thus, the capital structure cannot mediate the influence of return on equity on firm value.

5. Discussion

Profitability, as measured by Return on Assets (ROA), generally represents the company's efficiency in utilizing its assets to generate profit. The finding that ROA has a positive but insignificant effect on firm value, both when measured using Price to Book Value (PBV) and Tobin's Q, suggests that while asset profitability may

enhance investor perception, it is not yet the dominant determinant of market valuation. This condition implies that investors may consider broader performance dimensions such as operational efficiency, market expansion, and long-term growth sustainability rather than focusing solely on asset-based returns (Abduh et al., 2025; Ana & Wibowo, 2025). According to Sari and Sedana (2020), profitability alone cannot fully explain variations in firm value because market confidence also depends on liquidity and capital structure decisions that influence financial flexibility.

The insignificant relationship between ROA and Tobin's Q aligns with the argument of Muliana and Ahmad (2021), who state that firm value in the market often reflects external dynamics such as stock market performance, industry prospects, and investor sentiment rather than only internal profitability ratios. Moreover, Sari, Wati, and Rahardjo (2020) highlight that profitability may serve as a moderating factor, meaning that while it improves perception, the magnitude of its impact depends on how capital and dividend policies are managed.

In contrast, the significant negative effect of ROA on the Debt to Asset Ratio (DAR) indicates that companies with higher profitability tend to rely less on debt financing. This finding supports the trade-off theory, which argues that profitable firms prefer internal financing due to lower cost and risk (Sangadji et al., 2021; Pratama et al., 2023). This pattern reflects a sound financial structure, as profitable firms are capable of sustaining their operations using retained earnings rather than external funds (Nurmiati & Pratiwi, 2022; Shabilah et al., 2023). Furthermore, Parenrengi and Hendratni (2018) note that firms with strong profitability maintain high internal capital adequacy, allowing them to manage liabilities more effectively and minimize financial distress.

Similarly, the Return on Equity (ROE) shows a positive yet insignificant effect on firm value, both on PBV and Tobin's Q. This suggests that equity profitability, although crucial, is not the sole factor influencing investor valuation. According to Siddik and Asri (2025) and Rini et al. (2025), investors might interpret increased ROE cautiously, especially when the rise in equity profitability is not accompanied by consistent earnings stability or sustainable dividend policies. Sari, Titisari, and Pawenang (2025) argue that firm value tends to increase only when profitability improvements are perceived as sustainable and supported by effective management and dividend distribution strategies. Additionally, Sanjaya and Ariesa (2020) highlight that investors often evaluate ROE in conjunction with leverage and liquidity ratios, meaning that isolated increases in ROE may not translate into higher firm valuation if financial risk also rises.

The insignificant impact of ROE on DAR indicates that changes in equity profitability do not necessarily influence the company's decision to adjust its leverage. This supports Alifia and Rismanty (2025) who found that companies may maintain an optimal capital structure regardless of profit fluctuations, reflecting consistent financial policy and risk tolerance. According to Sari, Suryani, and Sabrina (2021),

leverage decisions are often guided by strategic financial planning and external conditions, rather than short-term profitability levels.

Furthermore, the effect of DAR on PBV and Tobin's Q is found to be insignificant, implying that leverage does not play a major role in determining firm value. This finding is consistent with Mentari and Utomo (2024) and Sapna et al. (2025), who argue that modern investors place more emphasis on profitability and growth potential than on debt ratios. Excessive leverage could even be perceived as a risk factor, but when maintained within a manageable range, it does not necessarily diminish firm value (Widyastuti & Aini, 2021). Ariesa et al. (2023) also emphasize that corporate disclosure practices and governance mechanisms can mitigate negative market perceptions related to debt usage.

Regarding the indirect effects, the results indicate that capital structure (DAR) does not mediate the relationship between profitability (ROA, ROE) and firm value (PBV, Tobin's Q). This implies that changes in profitability influence firm value more directly, not through leverage adjustments. This finding aligns with the perspective of Sari et al. (2020) and Sitorus (2021), who note that managerial decisions regarding capital structure are often independent of profitability levels and are more influenced by long-term strategic objectives. Moreover, Sari and Sedana (2020) explain that while capital structure theoretically can serve as an intermediary between profitability and firm value, empirical outcomes often show that the strength of this mediation varies by sector and market condition.

Overall, the discussion reflects that although ROA and ROE are positively related to firm value, their effects are not statistically dominant because market participants consider various external and internal dimensions in their valuation. Meanwhile, the negative relationship between ROA and DAR indicates financial prudence among profitable firms, consistent with sound financial management principles. The absence of significant mediating effects through DAR suggests that profitability directly contributes to firm value creation rather than indirectly through leverage adjustments, supporting the argument of Sari et al. (2020) and Sapna et al. (2025) that profitability remains the core driver of firm value, albeit influenced by strategic financial decisions and macroeconomic contexts.

6. Conclusions

Based on the results of the Partial Least Squares (PLS) analysis, it can be concluded that the relationship between profitability and firm value does not demonstrate a strong effect, either directly or through the mediating role of capital structure. Both Return on Assets (ROA) and Return on Equity (ROE) show no significant impact on firm value, as measured by Price to Book Value (PBV) and Tobin's Q. This indicates that increased profitability has not yet been fully reflected in market valuation. The only significant relationship identified is between ROA and the Debt to Asset Ratio (DAR), which is negative, suggesting that firms with higher profitability tend to depend less on debt financing. This finding reinforces the notion that profitability

strengthens financial independence and minimizes the need for external funding sources, consistent with the trade-off theory of capital structure.

In contrast, capital structure, represented by DAR, does not significantly affect firm value, whether measured by PBV or Tobin's Q. This suggests that leverage level is not yet a primary factor considered by investors when assessing the performance and growth potential of industrial and mining sector companies. The analysis of indirect effects further reveals that capital structure does not mediate the relationship between profitability and firm value. These results imply that firm value in this context is more likely influenced by external factors—such as capital market dynamics, global commodity price fluctuations, government fiscal and industrial policies, and investor perceptions regarding risk and financial stability—rather than by internal financing composition.

Overall, this study indicates that within industrial and mining firms, profitability and capital structure have not emerged as the dominant determinants of firm value. The mechanism underlying firm value creation appears to be more complex, involving both internal managerial decisions and external environmental conditions. Strategic factors such as innovation capability, corporate governance quality, and long-term investment orientation likely play essential roles in shaping investor perception and firm value. Therefore, efforts to enhance firm value should not only focus on improving financial performance and efficiency but also on fostering innovation, strengthening governance practices, and ensuring long-term business sustainability.

Based on these findings, several recommendations can be proposed. First, company management should enhance operational efficiency and optimize asset utilization to improve profitability without excessively increasing debt levels. Although the direct effect of profitability on firm value is not yet significant, consistent improvements in financial performance will strengthen investor confidence over time. Second, firms should carefully reassess their capital structure policies to maintain an optimal balance between equity and debt, ensuring that financial risk remains manageable while preserving growth opportunities. For investors, these findings suggest that firm value is not solely determined by profitability or leverage but also by broader factors such as market sentiment, technological advancement, managerial effectiveness, and environmental sustainability. Hence, investment decisions should incorporate both financial and non-financial dimensions.

Finally, for future research, it is recommended to expand the analytical framework by including additional variables such as firm size, growth opportunities, dividend policy, or good corporate governance to obtain a more comprehensive understanding of the determinants of firm value. Extending the observation period or employing panel data analysis could also provide more robust empirical evidence and capture dynamic changes in market conditions more effectively.

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