

DEBT TO EQUITY RATIO (DER) AND FIRM SIZE TOWARD FIRM VALUE : THE MEDIATING ROLE OF RETURN ON ASSET

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ABSTRACT

Abstract: This research delves into the critical aspects of company sustainability Debt to Equity Ratio and Firm Size and their consequential impact on company value. The focus is on scrutinizing the interplay of these elements on Firm Value through the lens of Return On Assets within Manufacturing Companies listed on the Indonesian Stock Exchange. The research encompasses manufacturing companies with Corporate Governance reports up to 2018, with a meticulous exclusion of those lacking routine publication during the observation period from 2012 to 2018. The study adopts a saturated sample approach, including all 14 eligible companies, resulting in a robust set of 98 observations. The anticipated outcomes seek to elucidate the intricate dynamics influencing Firm Value, specifically examining the roles of Debt to Equity Ratio, Firm Size, and Return On Assets. Methodologically, path analysis is the chosen tool for data examination. The findings highlight the direct impact of Debt to Equity Ratio and Firm Size on Firm Value, with an additional revelation that Firm Value is not only directly influenced but also mediated by Return On Assets, particularly in the context of Firm Size within Manufacturing Companies on the Indonesian Stock Exchange. This research reveals a crucial discovery: Firm Value is influenced not only by the Debt to Equity Ratio and Firm Size, but also by the mediating effect of Return On Assets in Manufacturing Companies listed on the Indonesian Stock Exchange. Essentially, the complex interactions of these interconnected components provide a complete understanding of the complicated forces that determine the value of these organizations.

Keywords: *Return On Asset; Debt to Equity Ratio; Firm Size; Firm Value.*

INTRODUCTION

Company value, a crucial metric in the eyes of investors, serves as a gauge for a company's success, frequently intertwined with its share prices. A soaring company value not only propels share prices skyward but also instills market confidence, casting a positive light not just on current performance but on future prospects. This holds immense significance for investors, as an ascending company value signals a parallel increase in shareholder prosperity (Brigham & Houston, 2011; Carrai, 2021). The informational landscape, especially pertaining to financial factors, significantly shapes the estimation of company value (Tandelilin, 2010). Financial reports stand out as the primary wellspring of information guiding investment and credit decisions, wielding the power to sway markets and businesses (Delavallade & Godlonton, 2023; Eniola, 2021; Lev & Gu, 2016). However, investors exhibit nuanced responses to the company's book value as portrayed in financial statements. Diverging from the figures in financial statements, investors perceive company value distinctively. Share prices, debt levels, and total assets emerge as pivotal factors, orchestrating the ascent or descent of company value (Buckley & Tian, 2017; Chung & Pruitt, 1994). These variables form the intricate tapestry that investors carefully navigate in their pursuit of understanding and predicting a company's worth in the market.

The Debt to Equity Ratio is a pivotal metric employed to assess the balance between a company's debt and equity holdings. As outlined by (Kasmir, 2012), this ratio functions as a gauge of the company's own or owned capital deployed as collateral against debts owed to creditors. A higher ratio indicates a diminished level of confidence from banks in extending credit, as the associated risks are perceived as substantial. Interestingly, this scenario doesn't pose a drawback for company owners; in fact, a lower value in this ratio signifies that the company is earmarking a significant capital reserve, presumably for strategic investment purposes (Kasmir, 2012). This dynamic showcases the intricate relationship between

the Debt to Equity Ratio, credit accessibility, and the strategic financial decisions made by the company and its stakeholders.

The utilization of debt for investment purposes holds repercussions for the profits a company stands to gain. A notable impact arises from the obligation to allocate a portion of these earnings to service the interest on the debt procured from creditors. This phenomenon finds support in prior research, as evidenced by studies conducted by (Hartono, 2008) and (Purwitasari & Septiani, 2013), both asserting a significant negative correlation between the debt-to-equity ratio and return on assets (ROA). Essentially, heavy reliance on debt influences stock returns available to investors. Elevated levels of debt translate into reduced company profits, with a portion earmarked for servicing interest and principal on the debt (Nelson & Simshauser, 2013). This unfavorable financial scenario prompts a negative investor response, dissuading potential investments and contributing to a decline in share prices, rendering shares less marketable. The interconnected dynamics of debt, profitability, and investor sentiment underscore the delicate balance companies must navigate in their financial strategies (Zhang & Watson IV, 2020).

The magnitude of a company holds substantial sway over the returns yielded from investments or stock holdings, as highlighted in research by (Tudje, 2016) and (Munte, 2009), which acknowledge that there is a substantial and positive association between the size of the company and the returns on the stock. This suggests that the size of a firm plays an essential part in determining the profits that investors may anticipate to get in each period of time. However, it is important to note that different researchers have come to contradictory conclusions in studies by (Erik & Amanah, 2016) and (Nadiyah & Suryono, 2017), indicating that company size doesn't exert a significant positive influence on stock returns. These divergent outcomes emphasize the nuanced nature of factors impacting stock performance and underline the importance of considering multiple perspectives and methodologies in understanding the complex interplay between company size and investment outcomes (Parast, 2022).

When considering an investment in a company, investors typically have very high expectations for the value of that firm (Polzin et al., 2019). In order to live up to these expectations, you need to have an in-depth knowledge of the elements that might affect the worth of your firm. "This study focuses on manufacturing businesses that are listed on the Indonesia Stock Exchange, and it pays particular attention to three factors that have an impact on the value of a company (Imamah et al., 2019). The Debt to Equity Ratio (DER) and the size of the firm are the factors under investigation, with the Return on Assets (ROA) serving as a moderator. Previous studies have shown that the Debt to Equity Ratio (DER) and the size of the firm are two of the most important aspects that determine the value of a company. This pick was made with that knowledge in mind. discrepancies were found in prior research, notably in the link between the debt-to-equity ratio, firm size, and company value (Prasad et al., 2022). These discrepancies inspired the introduction of ROA as an intervening variable in the analysis. The decision to use ROA as an intervening variable stems from the fact that it has an impact in both directions (Koufteros et al., 2014). This allows it to handle the complexity that are seen in the interplay between the debt-to-equity ratio, business size, and company value.

The research is appropriately titled "The Influence of Debt to Equity Ratio (DER) and Company Size as Mediated by Return on Assets (ROA) on Firm Value" in light of "these considerations," which are outlined in the previous sentence. This inquiry attempts to provide a comprehensive knowledge of the complex forces that shape firm value, providing investors useful insights that will assist them in navigating the complexity of the market.

Debt to Equity Ratio dan Return On Asset

The "Debt to Equity Ratio," often known as a solvency ratio, is an important indicator that determines the degree to which a company's assets are funded by debt.. Companies relying on debt financing stand to benefit from reduced debt interest in the calculation of taxable income. This, in turn, diminishes the proportion of the tax burden, allowing for a greater share of net profit or elevated profitability. Insights gleaned from research conducted by (Lindayani & Dewi, 2016), as well as a study by Marusya and Magantar (2016), a consensus has been reached that the Debt to Equity Ratio (DER) has a positive and significant effect on the Return on Assets (ROA).

H₁: Debt to equity ratio has a significant effect on the return on asset.

Firm Size dan Return On Asset

The size of a company wields a substantial influence on the perception it garners. A larger business tends to boast a more substantial asset portfolio, coupled with enhanced production capabilities compared to its competitors. This robust infrastructure positions the company to harness significant profit potential. (Pagano & Schivardi, 2001) aptly note that a company's expansive size contributes to heightened productivity, ultimately maximizing profit generation. Support for this perspective is found in the research conducted by (Singapurwoko & El-Wahid, 2011), underscoring the impact of company size on earnings. Their findings suggest that a larger company size serves as a catalyst for substantial increases in production, translating into amplified profits. This aligns with the observations of (Lawrence et al., 2004) and (Babalola & Abiodun, 2013), who assert that company size, as measured by total assets and sales volume, exerts a significant positive effect on profitability. These cumulative insights underscore the pivotal role that the scale and capacity of a company play in shaping its financial success and overall profitability.

H₂: Firm size has a significant effect on the return on assets

Debt to Equity Ratio and Firm Value

(Kasmir, 2014) provides valuable insights into the Debt to Equity Ratio (DER), presenting it as a number that is essential for determining how much debt a firm has in comparison to how much equity it has. This ratio, which is obtained by comparing all kinds of debt, including current liabilities, with the total equity, aims to clarify the amount to which funds are sourced from creditors and firm owners. Current liabilities are included in this comparison. In essence, it discloses the whole amount of the owner's capital that has been pledged as collateral for the loans. When viewed through the lens of a financial institution or creditor, a higher DER indicates a bigger risk, which results in a situation that is less beneficial. Conversely, for companies, a larger ratio is often perceived as favorable. A high DER indicates increased funding from creditors, while a low ratio signals a higher proportion of owner-provided funding, enhancing the safety net in the face of potential losses or asset depreciation. Beyond its role in financial structure, the DER offers broader insights into a company's financial feasibility and risks. In the realm of investor decisions, the DER holds sway over company value. Investors often lean towards companies with higher DER values, interpreting them as indicators of lower financial risk. This aligns with the findings of (Rompas, 2013), who asserts that the DER variable, in a limited sense, has a constructive effect that has a major impact on the value of the company. This highlights the complex nature of the link that exists between a firm's debt-to-equity structure and the value that the company is believed to possess in the eyes of investors.

H₃: Debt to equity ratio has a significant effect on firm value

Firm Size and Firm Value

Company size stands out as a pivotal variable influencing company value. The sheer size of a company, encompassing total assets, sales turnover, and the workforce, offers a tangible reflection of its scale and magnitude. A larger company size not only signifies substantial growth but also facilitates smoother entry into the capital market. The allure of a robust and expansive company tends to capture investors' interest, attracting capital and fostering positive prospects that, in turn, contribute to an increase in the company's value. While research on the correlation between company size and company value has produced mixed results in various countries, including Vietnam and Kenya, there's a prevailing trend that supports the positive relationship. Studies, such as the one cited by (Huang, 2010) and (Mule et al., 2015), demonstrate that company size is positively associated with company value, as measured by metrics like Enterprise Value (EV), Tobin's Q, or share price. This alignment reinforces the notion that a larger company size often translates into enhanced value, making it a crucial factor for investors and stakeholders to consider when evaluating a company's potential.

H₄: Firm size has a significant effect on firm value.

Return On Assets and Firm Value

Profitability serves as a litmus test for a company's adeptness at generating profits through its assets, capital, and sales. According to (Heri, 2016), this ratio provides a measure of the company's prowess in securing optimal profits, reflecting the effectiveness of management in minimizing costs without impeding operational efficiency. The obtained profits, a result of astute financial management, significantly impact the company's value. In this research, profitability is proxied by Return on Assets (ROA). As per (Heri, 2016) and (Harrison Jr et al., 2013), ROA gauges the contribution of assets to net profit generation, illustrating how efficiently a company utilizes its assets to benefit both creditors and shareholders. A high ROA implies substantial profit yield per unit of invested fund, whereas a lower ROA indicates a less favorable return.

The impact of ROA extends to company value. (Nurhayati, 2013) and (Frederik et al., 2015) affirm a positive correlation between profitability (ROA) and company value. A high ROA not only signifies efficient asset utilization but also paints a promising picture of future growth prospects. This, in turn, influences investors to augment their demand for shares, propelling an increase in company value. This intricate interplay underscores the pivotal role of profitability in shaping a company's financial landscape and market perception.

H₅: Return on assets has a significant effect on firm value.

Debt to Equity Ratio and Firm Value through Return On Assets

The "Debt to Equity ratio," often known as a solvency ratio, is an essential component in establishing the degree to which a company's assets are funded by debt. Companies relying more heavily on debt financing can benefit from reduced debt interest in taxable income calculations, thereby decreasing the proportion of the tax burden and potentially increasing net profit and overall profitability (Sartono, 2014). Research findings by (Lindayani & Dewi, 2016), as well as studies conducted by (Marusya & Magantar, 2016), affirm that the Debt to Equity Ratio (DER) exerts a positive and significant influence on Return on Assets (ROA). ROA, in turn, is a key component of profitability, which measures a company's ability to generate profits through effective use of assets, capital, and sales. As described by (Heri, 2016), profitability is crucial for financial performance and reflects successful management in achieving optimal profits without compromising operational efficiency. The magnitude of the profits that were acquired has a considerable influence on the value of the firm, as it provides an indication of how well the company is able to optimize the functioning of its assets.

In this study, Return on Assets (ROA) is used as a proxy for profitability. ROA, as explained by (Heri, 2016) and (Harrison Jr et al., 2013), measures the contribution of assets to the generation of net profit, which provides insight into the effectiveness with which a firm makes use of its assets to produce profits for both its creditors and its shareholders. The research provides evidence for the hypothesis that there is a positive association between ROA and firm value conducted by (Nurhayati, 2013) and (Frederik et al., 2015). A high ROA, reflecting substantial profit generation from each invested fund, influences investors to increase demand for shares, thereby contributing to an increase in company value. This interconnected relationship emphasizes the integral role of solvency and profitability ratios in shaping a company's financial landscape and market perception.

H₆: Increase in debt to equity ratio will be able to increase firm value through increasing return on assets.

Firm Size and Firm Value through Return On Assets

The size of a company plays a pivotal role in shaping its perception and potential for financial success. A larger business, often accompanied by a substantial asset portfolio and enhanced production capacity, holds the promise of significant profit generation. According to (Pagano & Schivardi, 2001), a company's size directly influences its growth productivity, paving the way for maximized profits. This perspective is reinforced by the findings of (Singapurwoko & El-Wahid, 2011), suggesting that a larger

company size correlates with increased production, thereby contributing to higher profits. Research conducted by (Lawrence et al., 2004) and (Babalola & Abiodun, 2013) affirms that company size positively influences profitability, with total assets and sales volume serving as significant indicators.

Profitability, “as highlighted by (Heri, 2016), is a key metric showcasing a company's ability to generate profits from its business activities. The maximization of earnings is dependent on both effective management and the reduction of costs, but they must not come at the expense of operational operations. The magnitude of the company's profit has a direct influence on its worth and provides insight into the company's capacity to make the most of its assets. In this line of investigation, the Return on Assets (ROA) ratio serves as a stand-in for profitability. As explained by (Heri, 2016) and (Harrison Jr et al., 2013), ROA reflects the contribution of assets to net profit, measuring how effectively a company uses its assets to generate profits for creditors and shareholders. A high ROA, indicating substantial profit generation from each invested fund, influences investors to increase demand for shares, contributing to an increase in company value. This positive correlation between profitability (ROA) and company value is supported by the research conducted by (Nurhayati, 2013) and (Frederik et al., 2015). It underscores the intricate relationship between company size, profitability, and overall financial success in the eyes of investors and stakeholders.

H₇: Increasing firm size will be able to increase firm value through increasing return on assets.

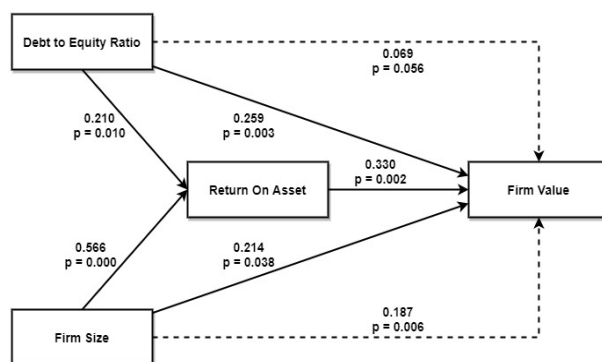


Figure 1 The Conceptual Research Framework

RESEARCH METHOD

The purpose of this "research" is to "explore and elucidate the intricate relationship between Debt to Equity Ratio (DER), company size, Return on Assets (ROA), and company value". The scope of this study encompasses manufacturing companies that have released Corporate Governance reports up to the year 2018. It's noteworthy that some companies deviate from routine publication during the observation period spanning from 2012 to 2018. In order to ensure a comprehensive understanding, the research adopts stringent population criteria, focusing on companies that haven't published Corporate Governance Reports for a maximum of one year. This selection process yields a population of 14 companies, forming a saturated sample with a robust dataset comprising 98 observations. The anticipated outcomes of this research aim to shed light on the intricate dynamics at play, elucidating how company value is influenced by the interplay of DER, company size, and ROA. By delving into these factors, the research seeks to offer valuable insights into the financial landscape of manufacturing companies, providing a nuanced understanding of the factors shaping their value on the Indonesia Stock Exchange.

In this study, the chosen method for data analysis is path analysis. This analytical approach serves to unravel the intricate web of relationships between variables. The primary objective of path analysis is to discern both the direct and indirect influences-unraveling the intricate interplay among a set of independent variables on the dependent variable. The path coefficients on each diagram illuminate the strength and direction of these causal relationships, providing a

comprehensive understanding of the dynamics at play (Marmaya et al., 2018). The assessment of the causal linkages between variables that have been specified by theoretical underpinnings is made easier by path analysis, which is simply an extension of multiple regression analysis. The method employs regression analysis to delineate these relationships within a model, enabling a deeper exploration of the patterns of connection among three or more variables. Through the utilization of path analysis, the purpose of this study is to not only identify but also quantify the causal links between the Debt to Equity Ratio (DER), company size, Return on Assets (ROA) (Susnita, 2022), and company value. This will contribute to a deeper comprehension of the impact that these factors have collectively on manufacturing companies that are listed on the Indonesia Stock Exchange.

RESULT AND DISCUSSION

Descriptive Test

Descriptive tests serve as a valuable tool in unraveling the overarching characteristics of the observed research data. In this specific study, descriptive tests are used in order to define the intricacies of company value, Return on Assets (ROA), Debt to Equity Ratio (DER), and business size. This entails investigating important metrics including the average value (mean), the standard deviation (SD), the lowest value (min), and the highest value" (max).

Table 1 Descriptive Test Result

| | | Minumum | Maximum | Mean |
|----------------------|----|---------|---------|---------|
| Debt to Equity Ratio | 98 | .1535 | 1.9638 | .886436 |
| Firm Size | 98 | 30.06 | 32.49 | .63674 |
| Return on Assets | 98 | .01 | .20 | .05039 |
| Firm Value | 98 | 2.00 | 3.93 | .52469 |
| Valid N (listwise) | 98 | | | |

The "results of the debt to equity ratio description acquired from 14 firms between the years of 2012 and 2018 obtained an average of 0.886 with a standard deviation of 0.511, and the lowest value was 0.154 and the highest value was" 1.964."

The findings of the study "results of the firm size description obtained from 14 companies from 2012 to 2018 obtained an average of 31.134 with a standard deviation of 0.637, and the lowest value was 30.06 and the highest value was" 32.49.

The "results of the description of return on assets obtained from 14 companies from 2012 to 2018 obtained an average of 0.094 with a standard deviation of 0.050, and the lowest value was 0.01 and the highest value was" 0.20. These findings were based on data collected over the course of six years, from 2012 to 2018.

The findings of the "results of the firm value description obtained from 14 companies from 2012 to 2018 obtained an average of 3.121 with a standard deviation of 0.525, and the lowest value was 2.00 and the highest value was" 3.93.

Classic Assumption Test

It is essential to run the data through several traditional assumption tests before "delving into the path analysis to test the research hypothesis." These tests have one overall purpose, and that is to guarantee that the independent variable, which acts as an estimator of the dependent variable, continues to maintain its objectivity. The normality test, the heteroscedasticity test, the multicollinearity test, and the autocorrelation test are the four tests that are included in the set of classical assumption tests.

1. Residual Normality Test

The purpose of the "normality test" is to determine whether or not the confounding factors or residual variables in the regression model have a normal distribution. The Kolmogorov-Smirnov test was utilized so that the normality assumption could be validated.

Table 2 Normality Test Results

| | | | |
|----------------------------------|----------------|---------------------|-------------------|
| N | | 98 | 98 |
| Normal Parameters ^{a,b} | Mean | .0000000 | .0000000 |
| | Std. Deviation | .75689520 | .77454631 |
| Most Extreme Differences | Absolute | .059 | .078 |
| | Positive | .059 | .049 |
| | Negative | -.059 | -.078 |
| Test Statistic | | .059 | .078 |
| Asymp. Sig. (2-tailed) | | .200 ^{c,d} | .150 ^e |

- a. Test distribution is Normal.
- b. Calculated from data.
- c. Lilliefors Significance Correction.
- d. This is a lower bound of the true significance.

Source: Research Data Processed (2023)

The residual normality test was conducted using the Kolmogorov-Smirnov test. The obtained significance values (p) for the first and second equations were 0.200 and 0.150, respectively. Since these values were greater than 0.05 ($p > 0.05$), it can be concluded that the residuals were normally distributed and the normality assumption was satisfied.

2. Heteroscedasticity Test

The heteroscedasticity test is conducted to see whether there is a difference in variance among the residuals of different observations in the regression model. The Glejser test is used to assess the heteroscedasticity assumption.

Table 3 Heteroscedasticity Test Results

| | Model | t | Sig. |
|--|----------------------|--------|------|
| 1 | (Constant) | 12,218 | .000 |
| | Debt to Equity Ratio | -.505 | .615 |
| | Firm Size | -.476 | .635 |
| a. Dependent Variable: Absolute Residual 1 | | | |
| 2 | (Constant) | 15.958 | .000 |
| | Debt to Equity Ratio | -.015 | .988 |
| | Firm Size | -1.307 | .194 |
| | Return On Asset | -.490 | .625 |

- a. Dependent Variable: Absolute Residual 2

The Glejser test was conducted to assess heteroscedasticity in the model. The findings indicated that the significance value for each independent variable was more than 0.05 ($p > 0.05$), suggesting that no heteroscedasticity issues were detected. Therefore, the assumption of heteroscedasticity was satisfied.

3. Multicollinearity Test

The purpose of the multicollinearity test is to determine whether the path model has identified any association among the independent variables. The Variance Inflation Factor (VIF) test was used to assess the multicollinearity assumption.

Table 4 Multicollinearity Test

| | | VIF Test^a | |
|--|----------------------|-----------------------------|-------|
| | | Collinearity Statistics | |
| Model | | Tolerance | VIF |
| 1 | Debt to Equity Ratio | .930 | 1.075 |
| | Firm Size | .930 | 1.075 |
| a. Dependent Variable: Return On Asset | | | |
| 2 | Debt to Equity Ratio | .868 | 1.152 |
| | Firm Size | .612 | 1.634 |
| | Return On Asset | .573 | 1.746 |

a. Dependent Variable: Firm Value

Source: Processed Research Data (2023)

The results of the multicollinearity test, conducted using the VIF test, indicated that the VIF of each independent variable in each equation was below 10 ($VIF < 10$). This implies that there were no issues of multicollinearity in the model, thus confirming that the multicollinearity assumption was satisfied.

4. Autocorrelation Test

The autocorrelation test is conducted to see if there is a connection between the mistakes in period t and the errors in the prior period $t-1$ in the linear regression model. The *Durbin-Watson* (DW) test is used to assess the autocorrelation assumption.

Table 5 Autocorrelation Test

| | | DW Test^b |
|---|--|----------------------------|
| Model | | Durbin-Watson |
| 1 | | 1.911 ^a |
| a. Predictors: (Constant), Firm Size, Debt to Equity Ratio | | |
| b. Dependent Variable: Return On Asset | | |
| 2 | | 2.390 ^a |
| a. Predictors: (Constant), Return On Asset, Debt to Equity Ratio, Firm Size | | |
| b. Dependent Variable: Firm Value | | |

The autocorrelation assumption test, specifically the Durbin-Watson test, yielded a Durbin-Watson (DW) value of 1.911 for equation 1 and 2.390 for equation 2. The dU value was 1.713, whereas the $4-dU$ value was 2.287. The findings indicate that the DW value falls between the range of dU values and $4-dU$ values ($dU < DW < 4-dU$), suggesting the absence of any autocorrelation issues and confirming that the autocorrelation assumption was satisfied.

Path Analysis

The path analysis in this research is separated into three essential components, each contributing to a detailed comprehension of the connections between Debt to Equity Ratio (DER), company size, Return on Assets (ROA), and firm value, with a specific focus on ROA as the mediating element. The study examines three main components: firstly, it investigates the direct impact of the debt to equity ratio and firm size on return on assets; secondly, it explores the direct influence of the debt to equity ratio, firm size, and return on assets on firm value; and finally, it examines the indirect effect of the debt to equity ratio and firm size on firm value through return on assets acting as a mediating variable.

Table 6 Direct Influence of Debt to Equity ratio and Firm Size on Return On Assets

| Model Summary | | | | |
|----------------------|-------------------|----------|-----------------|-----------------------------|
| Model | R | R Square | Adjusted Square | RStd. Error of the Estimate |
| 1 | .654 ^a | .427 | .415 | .76482102 |

a. Predictors: (Constant), Firm Size, Debt to Equity Ratio

| Coefficients^a | | | | | | |
|---------------------------------|----------------------|-----------------------------|------------|---------------------------|-------|-------|
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 2.343E-15 | .077 | | .000 | 1.000 |
| | Debt to Equity Ratio | .210 | .081 | .210 | 2.611 | .010 |
| | Firm Size | .566 | .081 | .566 | 7.029 | .000 |

a. Dependent Variable: Return On Asset

The results of path analysis to test the influence of debt to equity ratio and firm size on return on assets obtained the following path equation.

$$\text{Return on assets} = 0.210 \text{ Debt to Equity Ratio} + 0.566 \text{ Firm Size} + e_1$$

In part 1 of the analysis, it was found that the debt to equity ratio has a direct impact on the return on assets. The path coefficient for this relationship is 0.210, and the significance value (p) is 0.010 ($p < 0.05$). This indicates that the debt to equity ratio has a significant and positive effect on the return on assets. In other words, as the debt to equity ratio increases, the return on assets also increases.

The size of a business has a substantial positive impact on its return on assets, as shown by a path coefficient of 0.566 and a significance value (p) of 0.000 ($p < 0.05$). This implies that an increase in firm size leads to better return on assets. The greater the value of return on assets, the more pronounced its impact becomes.

The R Square score of 0.427 indicates that 42.7 percent of the variation in return on assets can be explained by the direct effect of the debt to equity ratio and business size.

Table 7 Direct Influence of Debt to Equity Ratio, Firm Size and Return on Assets towards Firm Value

| Model Summary | | | | |
|----------------------|-------------------|----------|-----------------|-----------------------------|
| Model | R | R Square | Adjusted Square | RStd. Error of the Estimate |
| 1 | .633 ^a | .400 | .381 | .78680902 |

a. Predictors: (Constant), Return On Asset, Debt to Equity Ratio, Firm Size

| Coefficients^a | | | | | | |
|---------------------------------|----------------------|-----------------------------|------------|---------------------------|-------|-------|
| Model | | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
| | | B | Std. Error | Beta | | |
| 1 | (Constant) | 1.129E-15 | .079 | | .000 | 1.000 |
| | Debt to Equity Ratio | .259 | .086 | .259 | 3.017 | .003 |
| | Firm Size | .214 | .102 | .214 | 2.100 | .038 |
| | Return On Asset | .330 | .106 | .330 | 3.124 | .002 |

a. Dependent Variable: Firm Value

The equation generated using the path analysis to examine the impact of debt to equity ratio, company size, and return on assets on firm value is as follows:

$$\text{Firm value} = 0.259 \text{ Debt to Equity Ratio} + 0.214 \text{ Firm Size} + 0.330 \text{ Return on assets} + e_2$$

The analysis in section 2 demonstrates that the debt to equity ratio has a direct impact on firm value, with a path coefficient of 0.259 and a significance value (p) of 0.003 ($p < 0.05$). Therefore, it can be concluded that the debt to equity ratio has a significant positive effect on firm value. This implies that as the debt to equity ratio increases, the firm value will also increase significantly.

The study found that firm size has a direct and significant positive influence on firm value. The path coefficient for this relationship is 0.214, with a significance value (p) of 0.038 ($p < 0.05$). This means that as the firm size increases, the influence on firm value becomes more significant.

The study found that there is a direct relationship between return on assets and firm value. The path coefficient for this relationship was 0.330, with a significance value (p) of 0.002 ($p < 0.05$). This means that return on assets has a significant positive impact on firm value, indicating that higher return on assets leads to higher firm value.

The coefficient of determination for the direct effect of firm size and return on assets on firm value yielded a R Square value of 0.400. This indicates that 40.0 percent of the variation in firm value can be accounted for by firm size and return on assets.

Table 8 Indirect Influence of Debt to Equity Ratio, Firm Size on Firm Value through Return On Assets
Coefficients^a

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. | |
|-------|-----------------------------|------------|---------------------------|------|-------|------|
| | B | Std. Error | Beta | | | |
| 1 | (Constant) | | | | | |
| | Debt to Equity Ratio | .069 | .036 | .069 | 1.934 | .056 |
| | Firm Size | .187 | .066 | .187 | 2.820 | .006 |

a. Intervening Variable: Return On Asset

b. Dependent Variable: Firm Value

The analysis in section 3 reveals that the debt to equity ratio has an indirect impact on firm value through return on assets. The path coefficient is 0.069 with a significance value (p) of 0.056 ($p > 0.05$). This indicates that the debt to equity ratio has a positive but not significant influence on firm value through return on assets. In other words, an increase in the debt to equity ratio will lead to a higher return on assets value, but it will not have a significant effect on increasing the firm value. To clarify, the return on assets does not act as a mediator for the impact of the debt to equity ratio on the value of a corporation.

The size of a firm indirectly affects its value through the return on assets, with a path coefficient of 0.187 and a significance value (p) of 0.006 ($p < 0.05$). This indicates that firm size has a significant positive impact on firm value through return on assets. In other words, as the firm size increases, the return on assets and consequently the firm value also increase. Put simply, the impact of company size on firm value is moderated by return on assets, and this moderation is characterized as partial mediation.

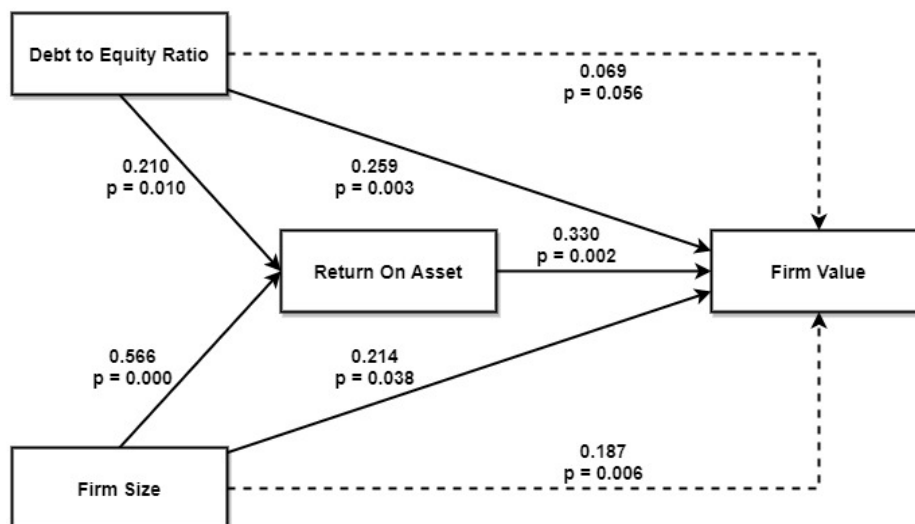


Figure 2
Path Diagram

The correlation between the debt-to-equity ratio, business size, and return on assets is crucial in establishing the value of a corporation. An important finding is that both the debt-to-equity ratio and business size have a direct influence on return on assets. This suggests that as the firm size grows, the return on assets also rises. Moreover, the combination of debt-to-equity ratio, firm size, and return on assets has a significant impact on the value of a company. More precisely, a rise in the size of a company and its return on assets are directly related to an increase in the total worth of the company. Furthermore, the relationship between the size of a company and its value is influenced by the return on assets. A larger company not only directly leads to a better return on assets, but also indirectly adds to a bigger overall worth of the company.

Table 9 Summary of Hypothesis Test Results

| No | Influence | Coef. Track | T | p | Informationx |
|----|---|-------------|-------|-------|-----------------|
| 1 | The ratio of debt to equity to return on assets | 0.210 | 2.611 | 0.010 | Significant |
| 2 | Firm size on return on assets | 0.566 | 2.611 | 0.000 | Significant |
| 3 | Debt to equity ratio to firm value | 0.259 | 3.017 | 0.003 | Significant |
| 4 | Firm size to firm value | 0.214 | 2.100 | 0.038 | Significant |
| 5 | Return on assets to firm value | 0.330 | 3.124 | 0.002 | Significant |
| 6 | Debt to equity ratio to firm value through return on assets | 0.069 | 1.934 | 0.056 | Not significant |
| 7 | Firm size on firm value through return on assets | 0.187 | 2.820 | 0.006 | Significant |

Hypothesis 1: Effect of Debt to Equity Ratio on Return on Assets.

The test findings yielded a path coefficient of 0.210 and a significance value (p) of 0.010 ($p < 0.05$). This indicates that the H_a hypothesis, which states that the debt to equity ratio has an impact on return on assets, is accepted. The results of this research are supported by the results of the study by (Lindayani & Dewi, 2016) and the study conducted by (Marusya & Magantar, 2016) which stated that The Debt to Equity Ratio (DER) positively and significantly impacted Return on Assets (ROA).

Hypothesis 2: Influence of Firm Size on Return On Assets.

The test findings yielded a path coefficient of 0.566 and a significance value (p) of 0.000 ($p < 0.05$), indicating that the H_a hypothesis, which posits an impact of business size on return on assets, is accepted. The results of this research are supported by research conducted by (Singapurwoko & El-Wahid, 2011) concluding that company size influences the profits earned by the company. A company's big size promotes a substantial boost in output, leading to increased profitability. These results are also supported by research conducted by (Lawrence et al., 2004) and (Babalola & Abiodun, 2013) regarding the effect of company size on profitability. The study findings indicate that the size of a firm, as determined by its total assets and sales volume, has a significant and beneficial impact on its profitability. However, in research conducted by (Fiala & Hedija, 2015), the study findings indicated that the size of a firm has a detrimental and substantial impact on its growth, namely in terms of corporate income.

Hypothesis 3: Effect of Debt to Equity Ratio on Firm Value.

The test findings yielded a path coefficient of 0.259 and a significance value (p) of 0.003 ($p < 0.05$). This indicates that the H_a hypothesis, which posits an impact of the debt to equity ratio on company value, is accepted. This is in accordance with research conducted by (Rompas, 2013), which states that The Debt to Equity Ratio (DER) variable has a partly positive and considerable impact on the value of the company.

Hypothesis 4: Influence of Firm Size on Firm Value.

The test findings yielded a path coefficient of 0.214 and a significance value (p) of 0.038 ($p < 0.05$). This indicates that the H_a hypothesis, which states that company size has an impact on firm value, is accepted. Studies investigating the correlation between the size of a firm and its worth have been conducted in several nations, with inconclusive findings, including Vietnam and Kenya. The study findings indicate a positive correlation between the size of a firm and its worth, as assessed by metrics like as Enterprise worth (EV), Tobin's Q, or share price (Huang, 2010; Mule et al., 2015).

Hypothesis 5: Effect of Return on Assets on Firm Value.

The test findings yielded a path coefficient of 0.330 and a significance value (p) of 0.002 ($p < 0.05$). This indicates that the H_a hypothesis, which states that there is a relationship between return on assets and company value, is supported. This research is supported by previous research conducted by (Nurhayati, 2013) and (Frederik et al., 2015), profitability (ROA) has a positive effect on company value (firm value).

Hypothesis 6: Influence of Debt to Equity Ratio on Firm Value through Return on Assets

The test findings yielded a path coefficient of 0.069 and a significance value (p) of 0.056 ($p > 0.05$). This indicates that the null hypothesis (H_0) is accepted, suggesting that there is no discernible impact of the debt to equity ratio on company value via return on assets. This study finds support in the findings of (Lindayani & Dewi, 2016) and the research conducted by (Marusya & Magantar, 2016). It is confirmed that the Debt to Equity Ratio (DER) has a substantial and favorable impact on Return on Assets (ROA). Profitability is a crucial measure of a company's capacity to create profits from its assets, capital, and sales. As described by (Heri, 2016), Profitability ratios provide a method to evaluate a company's financial performance, indicating the effectiveness of its management in achieving maximum profits. Efficient management not only reduces expenses without impeding operational operations, but also guarantees that the profits generated enhance the total worth of the organization.

The study proxies profitability through Return on Assets (ROA), in line with (Heri, 2016) ROA is a statistic that measures the effectiveness of assets in generating net profit. According to (Harrison Jr et al., 2013), Return on assets (ROA) quantifies the effectiveness of a firm in using its assets to create profits for both creditors and shareholders. A high Return on Assets (ROA) signifies a significant amount of net profit generated per unit of total assets,

which has a direct impact on the overall worth of the organization. Significantly, a strong return on assets (ROA) is an influential criterion for investors, as it indicates attractive opportunities for development. This aligns with previous research by (Nurhayati, 2013) and (Frederik et al., 2015), There is evidence supporting a direct relationship between profitability, as measured by return on assets (ROA), and the worth of a business, often known as firm value. The conclusion is evident: a company's capacity to generate substantial profits from its assets enhances investor trust and leads to a rise in the value of the business.

Hypothesis 7: Influence of firm size on firm value through return on assets.

The test findings show a path coefficient of 0.187, which is statistically significant with a p-value of 0.006 ($p < 0.05$), therefore providing evidence in favor of the alternative hypothesis (H_a). This research confirms the influence of business size on company value via an analysis of the return on assets. These findings align with (Singapurwoko & El-Wahid, 2011) research, The size of a corporation is believed to have a direct impact on its profitability, since larger organizations have a tendency to create higher profits by promoting increased production. Similar conclusions are drawn from studies by (Lawrence et al., 2004) and (Babalola & Abiodun, 2013), Emphasizing the positive influence of company size, as measured by total assets and sales volume, on profitability.

Profitability, defined as the ability of a corporation to create profits from its assets, capital, and sales, is of great importance. As (Heri, 2016) notes, The profitability ratio is a quantitative measure used to assess a company's capacity to generate maximum earnings while effectively controlling expenses. The enhanced efficiency, while maintaining operating operations, leads to increased profitability, therefore impacting the company's overall worth. The company's strong profitability is a clear indication of excellent management performance, which is a positive sign for its future possibilities.

The return on assets (ROA) is used as a proxy for profitability in this research. (Heri, 2016) defines ROA as a ratio illustrating the asset's contribution to net profit. According to (Harrison Jr et al., 2013), Return on assets (ROA) quantifies the efficiency of a firm in using its assets to create profits for both creditors and shareholders. A high return on assets (ROA) indicates a higher level of profitability for each unit of invested capital, which has a significant influence on the total worth of the organization. This aligns with previous research by (Nurhayati, 2013) and (Frederik et al., 2015), affirming the positive correlation between profitability (ROA) and company value (Firm Value). The implication is clear: a company's ability to earn significant profits from its assets enhances investor confidence, leading to an increased demand for shares and, consequently, an augmented firm value.

CONCLUSION

This research reveals a crucial discovery: Firm Value is influenced not only by the Debt to Equity Ratio and Firm Size, but also by the mediating effect of Return On Assets in Manufacturing Companies listed on the Indonesian Stock Exchange. Essentially, the complex interactions of these interconnected components provide a complete understanding of the complicated forces that determine the value of these organizations.

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