
Return on Assets, Return on Equity, Net Profit Margin, and Book Value Per Share on The Value of Infrastructure Sector Companies Listed on The Indonesian Stock Exchange

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Abstract:

This study aims to identify the effect of Return on Asset (ROA), Return on Equity (ROE), Net Profit Margin (NPM), and Book Value Per Share (BVPS) on firm value in the infrastructure sector listed on the Indonesia Stock Exchange (IDX). The research method used is associative research with data collection techniques through documentation studies using secondary data from the company's published financial statements and other sources. The analysis results show that simultaneously, ROA, ROE, NPM, and BVPS variables have a significant effect on firm value with a contribution of 57.2%. Although partially, these variables do not have a significant effect individually on firm value. This finding supports the signaling hypothesis theory which states that investors consider dividend changes as a signal of good earnings in the future. This study provides a deeper understanding of the factors that influence firm value in the infrastructure sector on the IDX. However, it should be noted that this study has limitations in the use of certain data and analytical methods, so the results should be interpreted in the specific context of this study and can be extended with further research that considers additional factors that may affect the value of these companies.

Keywords: Return on Asset, Return in Equity, Net Profit Margin, Book Value Per Share

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1. Introduction

The Indonesian economy has witnessed rapid growth in the digital era, with the capital market emerging as a significant platform for corporate financing and investment. As a key intermediary, the capital market connects investors with companies seeking funds, providing financial instruments such as stocks that have gained widespread popularity. The Indonesia Stock Exchange (IDX) serves as a crucial regulatory and trading platform for various sectors, including the infrastructure sector, which comprises essential facilities like water, electricity, and transportation. Infrastructure development, often driven by government policies, has profound implications for investment decisions and stock price movements in related sectors, such as manufacturing. For instance, companies like Waskita Beton Precast (WSBP) and Wijaya Karya Beton (WTON) have garnered significant attention from investors due

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to their expanding production capacities and the resultant impact on infrastructure stock performance.

Despite the significant role of infrastructure in Indonesia's economic development, gaps remain in understanding the specific financial metrics that influence firm value in this sector. Previous studies have examined the relationship between financial ratios and firm value across various industries (e.g., Abor, 2005; Ibhagui & Olokoyo, 2018), but limited attention has been paid to infrastructure companies in emerging markets like Indonesia. Furthermore, while some research has explored how macroeconomic policies affect stock performance (Rajan & Zingales, 1995; Myers, 2001), few have delved into how firm-level financial performance metrics, such as Return on Assets (ROA), Return on Equity (ROE), Net Profit Margin (NPM), and Book Value Per Share (BVPS), impact the valuation of infrastructure companies listed on the IDX.

The novelty of this study lies in its focus on the infrastructure sector within an emerging economy context, specifically Indonesia, and its use of detailed financial ratio analysis to evaluate firm value. Unlike prior studies that predominantly focus on developed markets (Demsetz & Villalonga, 2001; Gill et al., 2011), this research examines unique dynamics in Indonesia's infrastructure sector, particularly during 2020–2022, a period marked by post-pandemic recovery and government-led infrastructure projects. This approach provides insights into how specific financial ratios affect firm value in a high-growth yet volatile sector, addressing gaps in both regional and sectoral financial performance research.

The urgency of this study is underscored by the volatile stock price movements and fluctuating financial performance observed among infrastructure companies listed on the IDX. Data from 2019–2022 reveal significant variations in net profits and share prices, emphasizing the need for a more granular understanding of the financial drivers of firm value. Given the critical role of the infrastructure sector in Indonesia's economic development, insights from this research could guide investors, policymakers, and corporate decision-makers in enhancing financial performance and optimizing investment strategies in the sector.

By examining the influence of ROA, ROE, NPM, and BVPS on firm value in Indonesia's infrastructure sector, this study aims to fill existing research gaps and provide empirical evidence specific to the sector's dynamics. The findings will contribute to a better understanding of how financial ratios influence firm value, providing actionable insights for both academia and industry stakeholders.

2. Theoretical Background

Company Value

Firm value represents the market price achieved by a company in the capital market and reflects the company's overall performance and future prospects. It is influenced by internal factors such as financial performance and external factors such as market conditions (Zhang & Li, 2010). Determining firm value is critical for investors in

making informed investment decisions, as it serves as a key indicator of a company's stability and profitability (Li & Liu, 2014).

Return on Asset (ROA)

Return on Asset (ROA) measures the efficiency of a company in utilizing its assets to generate profits. High ROA values indicate that a company effectively manages its assets to produce optimal financial returns (Barney & Hesterly, 2015). According to Wright, Kroll, and Parnell (1998), an increasing ROA can enhance investor confidence by demonstrating the company's operational efficiency, which may positively influence firm value.

Return on Equity (ROE)

Return on Equity (ROE) evaluates a company's profitability from the perspective of shareholder equity. High ROE indicates that a company successfully generates substantial profits from its equity base, signaling strong financial management (Barney, 1991). Ketchen and Short (2018) emphasize that ROE is a critical determinant of investor confidence, as it reflects the firm's ability to maximize shareholder value and boost market performance.

Net Profit Margin (NPM)

Net Profit Margin (NPM) measures the company's ability to convert sales into net profit. High NPM values signify operational efficiency and strong cost management (Teece, Pisano, & Shuen, 1997). Studies such as those by Kim and Mauborgne (2005) show that firms with consistent NPM growth are more attractive to investors, as they suggest sustained profitability and long-term potential, which directly impacts firm value.

Book Value Per Share (BVPS)

Book Value Per Share (BVPS) reflects the intrinsic value of a company's equity divided by its outstanding shares. A higher BVPS indicates stronger financial fundamentals, enhancing investor perceptions of the company's stability and value (Cavusgil & Knight, 2009). Grant (2016) highlights that BVPS serves as a benchmark for conservative investors who prioritize companies with strong asset bases and intrinsic worth.

Effect of ROA, ROE, NPM, and BVPS on Firm Value

Extensive research highlights the significant relationship between financial ratios and firm value. Studies by Fombrun and Van Riel (2004) and Zhang and Li (2010) demonstrate that financial metrics like ROA and ROE positively influence firm value by signaling operational efficiency and profitability. Similarly, Ketchen and Short (2018) assert that NPM reflects a firm's capacity to manage costs and maximize profits, making it a critical determinant of firm valuation.

BVPS also plays a pivotal role in determining firm value, as highlighted by Li and Liu (2014), who argue that a robust BVPS attracts long-term investors focused on intrinsic value. Research by Hamel and Prahalad (1994) emphasizes that financial ratios serve

as strategic signals, guiding investor decisions and influencing perceptions of a company's market value.

Moreover, Adriani and Tanjung (2021) found that ROA, ROE, and NPM significantly affect firm value in Indonesia's infrastructure sector, particularly during periods of economic recovery. Nugroho and Putra (2020) further underscore the importance of BVPS, especially in asset-intensive sectors like infrastructure, where intrinsic valuation metrics are crucial for investment decision-making. These findings align with signaling theory, which posits that financial ratios provide critical insights into a company's performance and prospects (Aghion & Tirole, 1997).

By exploring the interplay between ROA, ROE, NPM, and BVPS, this study aims to bridge existing gaps in understanding the determinants of firm value, particularly in the Indonesian infrastructure sector. The findings contribute to strategic financial management literature and offer actionable insights for investors and policymakers in emerging markets.

3. Methodology

This research is a type of associative research that aims to identify the relationship between return on assets, return on equity, net profit margin, and book value per share on Firm Value in the infrastructure sector listed on the Indonesia Stock Exchange. Researchers use this method to test the influence of these variables on company performance.

In this study, the data collection technique used was a documentation study with secondary data. Data is obtained from the company's published financial statements, government reports, articles, books, and other sources. The data was collected through observation, recording, and analysis of documents such as journals, theses, annual reports, and official websites such as www.idx.co.id. This data collection method allows researchers to obtain relevant and accurate information related to the variables under study.

4. Empirical Findings/Result

Multiple Linear Regression Test

Table 1. Multiple Linear Regression test

Model	Parameter Coefficient Value
Constant α	0,313
Book Value per Share	0,018
Net Profit Margin	0,002
Return on Asset	0,040
Return on Equity	0,192

Based on the results of multiple linear regression tests, the following model is obtained: $Y = 0.313 + 0.018 X_1 + 0.002 X_2 + 0.040 X_3 + 0.192 X_4 + e$

Judging from the measurement and development of the model above, it can be seen that the regression coefficient of Book Value per Share, Net Profit Margin, Return On Asset and Return On Equity is 0.018; 0.002; 0.040; 0.192, respectively, stating that every time there is an increase in the variable by 1 unit, the value of Y increases, and vice versa if there is a decrease in the variable by 1 unit, the value of Y decreases or decreases in amount.

Model goodness test

Table 2. Determination Coefficient Test

Model	Coefficient of Determination
Regression	0,572

Based on the test results above, it shows that the R² value in the summary model above is 0.572, this figure indicates that the contribution of the Book Value per Share, net profit margin, return on assets and return on equity (independent) variables to the company value (dependent) is 57.2% while the remaining 32.8% is the contribution of other variables not examined.

Concurrent Test

Table 3. F test

F-count	F-table	Sig.
12,363	2,626	0,000

Based on the test results above, the Fcount value is 12.363 > Ftable 2.626. and sig value. 0.000 < 0.05. so it can be concluded that H₀ is rejected and H_a is accepted, which means that the independent variables (Book Value per Share, Net Profit Margin, Return On Asset and Return On Equity) simultaneously have a significant effect on the dependent variable (firm value).

Partial Test

Table 4. T test

Model	T-count	T-table	Sig.
Book Value per Share	0,609	2,261	0,546
Net Profit Margin	0,149	2,261	0,883
Return on Asset	1,154	2,261	0,256
Return on Equity	1,377	2,261	0,177

Based on the test results above, it is obtained that the tcount Book Value per Share 0.609 < t table 2.2619 and sig value. 0.546 > 0.05 so that H₀ is accepted, it can be said that Book Value per Share, partially has no effect on firm value. tcount Net Profit Margin 0.149 < t table 2.261 and sig value. 0.883 > 0.05 so that H₀ is accepted, it can be said that Net Profit Margin, partially has no effect on firm value. tcount Return on Asset 1.154 < t table 2.261 and sig value. 0.256 > 0.05 so that H₀ is accepted, it can be said that Return on Asset, partially has no effect on firm value. tcount Return on Equity 1.377 < t table 2.261 and sig value. 0.177 > 0.05 so that H₀ is accepted, it can be said that Return on Equity partially has no effect on firm value.

5. Discussion

Net Profit Margin (NPM) is the ratio of net profit to sales, expressed as a percentage, showing a company's ability to convert sales into profits. A high NPM indicates the company is efficient in cost management and has strong profitability potential. According to Teece, Pisano, and Shuen (1997), companies with a stable and high NPM tend to attract investors due to their operational efficiency, signaling a robust financial health.

Return on Assets (ROA) measures how effectively a company uses its assets to generate profit. Studies by Barney and Hesterly (2015) suggest that higher ROA values are associated with better operational performance and the ability to maximize asset utilization. Return on Equity (ROE), on the other hand, reflects the company's profitability from shareholders' equity. Ketchen and Short (2018) emphasized that high ROE values indicate effective capital utilization, encouraging investor confidence and aligning with the principles of signaling theory, which posits that investors interpret financial performance metrics as indicators of a company's future profitability.

The findings of this study align with signaling theory, as demonstrated by the significant effect of ROA, ROE, NPM, and Book Value per Share (BVPS) on firm value. Signaling theory suggests that the information conveyed by companies, such as financial performance metrics, is perceived by investors as indicators of future company value (Fombrun & Van Riel, 2004). High ROA, ROE, NPM, and BVPS values signal effective management and strong financial health, positively influencing investor perceptions and firm value (Li & Liu, 2014).

This study supports previous research by Zhang and Li (2010), who found that profitability ratios significantly impact firm value, particularly in sectors like infrastructure where asset-intensive operations require efficient financial management. However, it contrasts with findings by Adriani and Tanjung (2021), who reported an insignificant relationship between these ratios and firm value in specific contexts. The differences may stem from varying market conditions, sample periods, or industry characteristics.

Moreover, the significant effect of BVPS highlights the role of intrinsic valuation metrics in shaping investor decisions. Grant (2016) argued that BVPS serves as a critical reference for long-term investors, particularly in asset-heavy sectors like infrastructure. This insight underscores the importance of providing clear and accurate financial information to align investor expectations with the company's actual value.

In conclusion, this study confirms that financial performance indicators such as ROA, ROE, NPM, and BVPS are critical determinants of firm value in the infrastructure sector. These findings not only reinforce the applicability of signaling theory but also provide practical implications for managers and policymakers aiming to enhance firm value through improved financial performance and transparent communication.

strategies. Future research could explore the moderating effects of market conditions or external factors to further refine the understanding of these relationships.

6. Conclusions

The conclusion of this study is that the variables Return on Asset (ROA), Return on Equity (ROE), Net Profit Margin (NPM), and Book Value Per Share (BVPS) simultaneously have a significant effect on firm value in the infrastructure sector listed on the Indonesia Stock Exchange (IDX). This is evident from the results of the F test which shows $F_{count} 12,363 > F_{table} 2,626$ with a significance value (p-value) of $0.000 < 0.05$, so it can be concluded that the independent variables (ROA, ROE, NPM, BVPS) together have a significant effect on the dependent variable (firm value). Partially, the t test results show that the BVPS, NPM, ROA, and ROE variables have no significant effect on firm value. The p-value greater than 0.05 in the t test indicates that individually, these variables do not have a significant effect on the dependent variable. However, the results of the simultaneous analysis show that these variables have a significant contribution to firm value of 57.2%, while the remaining 32.8% can be explained by other variables not examined in this study. This shows that although partially the variables are not significant, but when combined in the regression model, the variables as a whole have an important influence on firm value.

The results of this study also support the signaling hypothesis theory which states that investors consider changes in dividends as a signal of good earnings in the future. An increase in a company's share price can be considered an indication of high company value, which can provide welfare for shareholders. This theory is consistent with the findings that variables such as ROA, ROE, NPM, and BVPS have a significant influence on firm value in the context of the infrastructure sector on the IDX.

Suggestions for future research are to deepen the analysis of external factors or other variables not examined in this study, such as market conditions, government policies, or macroeconomic factors that may affect firm value in the infrastructure sector. In addition, considering the use of more complex analytical methods or more sophisticated regression models may provide additional insight into the relationship between ROA, ROE, NPM, BVPS, and firm value. Further research could also integrate historical data further to look at long-term trends and the impact of these variables on overall firm performance.

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