

The Effect of Green Finance on Firm Value with Profitability as a Mediating Variable in Infrastructure Sector Companies

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ABSTRACT

This study aims to determine and analyze the effect of green finance on firm value with profitability as a mediating variable. This study has a total sample of 16 companies with a purposive sampling technique as a sampling method. The type of data used is secondary data obtained from annual reports, sustainability reports, and company financial reports for four consecutive years. The data analysis method in this study uses Structural Equation Modeling Partial Least Squares (SEM-PLS), and data processing techniques using SmartPLS 4.0 software assistance. The results of this study indicate that green finance affects firm value, green finance affects profitability, profitability affects firm value, and profitability cannot mediate the effect of green finance on firm value.

Keywords: Green Finance; Firm Value; Profitability

INTRODUCTION

Kiwoom Sekuritas Head of Equity Research stated that the infrastructure sector will always be good in the future as the government invests heavily in infrastructure development to boost the economy in the long run. Furthermore, judging from the recent performance, the majority of stocks show growth opportunities for price movements. Although the infrastructure sector is considered to have good prospects this year, there are still many stocks from large infrastructure issuers that fall into the category of undervalued stocks. Undervaluation is a term used to describe an asset that is undervalued or purchased at a price lower than its intrinsic value (Almira & Widhiyanto, 2024).

According to Hidayat & Khotimah (2022), the main goal of the company is to maximize profits or wealth, especially for its shareholders, manifested in the form of efforts to increase or maximize the market value of the company's share price. But in an era that is increasingly concerned about environmental issues, investors are increasingly considering environmental factors in making investment decisions (Harliani, 2024).

Green finance is one of the crucial tools in addressing the impacts of climate change to achieve the Sustainable Development Goals (SDGs) set by the United Nations. Green acts as a financial service that promotes ecological sustainability, climate resistance, and energy efficiency. Green finance is one way to support businesses that care about the surrounding environment through the provision of funds or loans (Rahmanisa, 2023). In addition, Green finance guides industrial businesses to use less energy with the ability to manage financial resources to obtain economic and environmental benefits (Ronaldo & Suryanto, 2022). Gap research, namely the results of research conducted by Yusnia et al. (2024), Yulianti et al. (2024), and Baharudin & Arifin (2023), shows that green finance has a positive effect on firm value. But in contrast to the results of research conducted by Harliani (2024), Ningsi et al. (2024); Alfikri & Susyani, (2024) shows

that green finance has no effect on firm value.

This study uses profitability variables as mediating variables. According to Trisnawaty et al. (2024) profitability is an important indicator that reflects the ability of a company to generate profits. In addition, the level of profitability is also used to assess the effectiveness of management in managing company resources. The company's profit generated is an assessment of the performance of a company in fulfilling the company's obligations to investors and also as a way of creating value for the company which can show the company's prospects in the future (Dewi & Ekadjaja, 2020). A business is said to be successful if it makes a profit, because profit is part of the main goal of a company (Nugraha & Alfarisi, 2020).

Research conducted by Harliani, (2024) shows that profitability is unable to mediate the relationship between green finance and firm value. Likewise, research conducted by Alfikri & Susyani, (2024) shows that profitability cannot moderate the relationship between green finance and firm value.

1. Signal Theory

Signaling Theory was first proposed by Spence, (1973) in his research entitled "Job Market Signaling" which states that the sender (owner of information) gives a signal or signal in the form of information that reflects the condition of a company that is beneficial to the recipient (investor). Signaling theory provides a useful framework to understand how companies communicate their commitment to sustainability. Authentic and transparent signaling is essential for building trust among stakeholders and promoting sustainable growth.

2. Company Value

An increase in firm value also indicates better company performance, and this indirectly indicates the company's ability to increase shareholder prosperity, which is the main goal of the company. High company value indicates that the company has good performance and its future prospects can be trusted by investors (Pambudi et al., 2022). One of the ratios used in this study is Price to Book Value (PBV), If PBV is high, it means that market confidence in the company's prospects is also high (Sudjiman & Sudjiman, 2022).

3. Green Finance

Green Finance is a form of finance that aims to support economic activities and projects that are environmentally sustainable. According to Afifah et al., (2023) green finance involves the financial services sector that provides comprehensive assistance to encourage sustainable economic development by harmonizing environmental, social and economic concerns. Green finance in this study is measured using the Green Coin Rating (GCR) with 6 assessment indicators.

4. profitability

Profitability is the ability of a company to generate profits. According to Sihono, (2024) investors will be motivated to place their funds in profitable companies because by investing in companies that have good performance, investors expect to get a greater return on their investment. The measurement in this study is profitability proxied by Return On Asset. The greater the Return On Asset obtained, the greater the level of profit achieved by the company and the better the position of the company in terms of asset usage (Palayukan et al., 2024).

Suwarno & Hwihanus, (2024) state that the role of Environmental, Social and

Governance as a strong signal that can increase the perception and value of the company in the eyes of stakeholders and investors. According to Jayathilake, (2019) green finance can increase the maximization of stakeholder value and shareholder value. The results of research conducted by Yulianti et al., (2024); Yusnia et al., (2024) and research conducted by Rahmanisa, (2023) show that green finance affects firm value.

H1 : Green Finance Affects Company Value

Corporations use green finance as a strategic approach to increase profitability while minimizing environmental damage. By implementing green finance, companies can increase their profits without damaging the environment (Alfikri & Susyani, 2024). The results of previous research conducted by Siddikee et al., (2018); Goeliling et al., (2023); Hasanah & Hariyono, (2022) and Ahmad & Rahman, (2024) with the result that green finance has a positive effect on profitability.

H2 : Green Finance Affects Profitability

Based on signal theory, information about profitability is a good signal for investors that shows the successful management of its resources, so that it will have a positive impact on the welfare of shareholders. Thus, the higher the company's profitability, the higher the company's value (Nahdhiyah & Alliyah, 2023). Previous research results from Palayukan et al., (2024); Trisnawaty et al., (2024); Sari & Faisal, (2024) and WP et al., (2024) with the result that profitability has a positive and significant effect on firm value.

H3 : Profitability Affects Company Value

According to Foanto et al., (2021) The relationship between signal theory and corporate social responsibility, firm value and profitability is that the more extensive the information on Corporate Social Responsibility activities disclosed by the company, the more it will provide a positive signal to stakeholders and shareholders which then causes their level of trust in the company to also increase. Based on signalling theory, improving environmental performance signals that the company has a good reputation and business sustainability so that it becomes an important capital in creating the company's competitive advantage in increasing profitability and this increase will maximize company value (Hapsari, 2021).

H4 : Green Finance Affects Firm Value Through Profitability

METHOD

The population in this study were all infrastructure sector companies listed on the Indonesia Stock Exchange (IDX) in the 4-year observation period, namely 2020-2023. Sampling was carried out using purposive sampling technique. With secondary data collection based on financial reports, sustainability reports and annual reports. Data processing techniques using SmartPLS 4.0 software assistance. With the data analysis method using Structural Equation Modeling Partial Least Squares (SEM-PLS).

RESULTS AND DISCUSSION

1. Descriptive Statistics

Descriptive statistics are used to analyze data based on information collected from financial and sustainability reports for each indicator that measures the variables studied.

Table. 1 Descriptive statistics

No.	Variables	indicator	Mean	Scale min	Scale max	Standard deviation
1	Green Finance	GCR	0,831	0,167	1.000	0,254
2	Profitability	ROA	-0.598	-33.110	0,738	4.160
3	Company Value	PBV	1.568	-0.321	6.828	1.363

Based on table 1, the results of descriptive statistical tests can be seen that the green finance variable as measured by GCR has a minimum value of 0.167, a maximum value of 1,000, and an average value of 0.831, with a standard deviation value of 0.254. The firm value variable as measured by PBV has a minimum value of -0.321, a maximum value of 6,828, and an average value of 1,568, while the standard deviation value is 1,363. The profitability variable as measured by ROA has a minimum value of -33.110, a maximum value of 0.738, and a mean value of -0.598, while the standard deviation value is 4.160.

2. R-Square

The R-Square value is the coefficient of determination on endogenous constructs. In general, the R-Square value is 0.67 (strong), 0.33 (moderate) and 0.19 (weak) (Sihombing et al., 2024).

Table 2. R-square

	<i>R-Square</i>	<i>R-Square adjusted</i>
Company Value	0,272	0,248
Profitability	0,013	-0,003

Based on table 2, the results show that the R-Square value on firm value is 0.272, meaning that 27% is influenced by the independent variable in the form of green finance and the mediating variable of profitability. While the other 73% is influenced by other factors besides the variables studied. While the R-Square value on profitability is 0.013, meaning that 1.3% is influenced by the independent variable in the form of green finance. Meanwhile, 98.7% is influenced by other factors besides the variables studied. So it can be said that the model is categorized as weak.

3. F-Square

F-Square or Effect Size this test measures how much change in endogenous variables is caused by changes in exogenous variables. the interpretation of the F-Square value, namely 0.02, can be said to be small (weak), 0.15 can be said to be moderate and 0.35 can be said to be large (strong).

Table 3. F-Square

	<i>F-Square</i>
Green Finance -> Company Value	0,281
Green Finance -> Profitability	0,013
Profitability -> Company Value	0,059

Based on table 3, the results show that the effect of green finance variables on firm value has an F-Square value of 0.281, meaning that the effect of green finance on firm value has a medium effect size. Meanwhile, the variable effect of profitability on firm value has an F-Square value of 0.059, meaning that the variable has a small effect size. Similarly, green finance on profitability is 0.013, which means that the variable has a small effect size.

4. Q-Square

A Q-square value greater than 0 (zero) indicates that the model has predictive relevance, while a Q-square value of less than 0 (zero) indicates that the model lacks predictive relevance (Sihombing et al., 2024).

Table 4. Q-Square

	R_1^2	R_2^2	$1 - (1 - R_1^2)(1 - R_2^2)$	Q-Square
Nilai Perusahaan	0,272		1- 0,718	0,282
Profitabilitas		0,013		

5. Hypothesis Testing

The significance level used in this study is 5% ($\alpha = 0.05$). If the T-statistic > (more than) 1.96 and the P-value < (less than) 0.05 then it meets the significance requirements.

Table 5. Path Coefficient Direct Effect

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics	P values
GF -> NP	0,455	0,449	0,098	4,668	0,000
GF -> P	0,112	0,115	0,049	2,308	0,021
P -> NP	0,208	0,235	0,066	3,155	0,002

1. The correlation coefficient value shows that green finance has an effect on firm value. This can be seen based on table 4, with a T-Statistic value of 4.668 which means more than (1.96) and a P-Value of 0.000 which means less than (0.05), then H1 is accepted.
2. The correlation coefficient value shows that green finance affects profitability. This can be seen based on table 4, with a T-Statistic value of 2.308 and a P-Value of 0.021. With a T-Statistic value of 2.308 means more than (1.96) and a P-Value of 0.021 means less than (0.05), then H2 is accepted.
3. The correlation coefficient value shows that profitability affects firm value. This can be seen based on table 4, with a T-Statistic value of 3.155 and a P-Value of 0.002. if the T-Statistic value of 3.155 means more than (1.96) and the P-Value value of 0.002 means less than (0.05), then H3 is accepted.

Table 6. Specific Inderect Effect

	Original sample (O)	Sample mean (M)	Standard	T	P values
GF -> P -> NP	0,023	0,027	0,014	1,624	0,104

The correlation coefficient value of testing indirect effects (mediation) shows that profitability is not able to mediate the relationship between green finance variables and firm value. . This can be seen based on table 5, with a T-Statistic value of 1.624 and a P-Value of 0.104. If the T-Statistic value of 1.624 means less than (1.96) and the P-Value value of 0.104 means more than (0.05), then H4 is

rejected.

Discussion

The first hypothesis is accepted. Signal theory explains that companies with good prospects will provide positive signals to investors to reduce information asymmetry. The implementation of green finance can be a positive signal for investors because it shows the company's commitment to sustainability and social responsibility. Thus increasing investor confidence, attracting their interest, and ultimately increasing the company's share price. This is supported by Zhang *et al.*'s research, (2020) which states that companies that apply green finance principles have a higher company value, because they can attract investors who care about sustainability. The results of this study are in line with the results of research conducted by Yulianti *et al.*, (2024); Yusnia *et al.*, (2024) and research conducted by (Rahmanisa, 2023), when a company implements sustainable or environmentally friendly finance it will increase the value of the company.

The second hypothesis is accepted. Signaling theory explains that companies use certain signals or information to provide indications about their performance and prospects to investors. The signal is in the form of participation in green finance initiatives, the information can be obtained in non-financial reports or in sustainable reports. Investors who receive positive signals from companies involved in green finance tend to be more trusting and willing to invest. This can increase company value and ultimately increase profitability. According to Ahmad & Rahman, (2024) Companies that prioritize environmental, social, and other factors are more likely to obtain greater profitability results in the long term. The results of this study are in line with research conducted by Siddikee *et al.*, (2018); Goeliling *et al.*, (2023); Hasanah & Hariyono, (2022) and Ahmad & Rahman, (2024), The better the company implements green finance, the better the profit the company will get.

The third hypothesis is accepted. This research is in line with Signal Theory, this theory explains the reasons behind companies sharing financial statement information with the public, especially in the capital market, and how these companies send signals that are interpreted by users of financial statements. This implies that information about the company's profitability causes a favorable reaction from investors and shareholders. Research conducted by Dewi & Ekadjaja, (2020) also supports signaling theory, which states that if the company has an increasing profit or corporate profit, it is a signal that the company has good prospects in the future. The results of this study are in line with research conducted by Palayukan *et al.*, (2024); Trisnawaty *et al.*, (2024); Sari & Faisal, (2024) and WP *et al.*, (2024), The better the profit a company gets, the better the company's value.

The fourth hypothesis was rejected. The insignificant result can be caused by several things, first, green finance investments often have a long time horizon and do not immediately generate significant financial benefits in the short term. Although these investments can improve corporate reputation and reduce environmental risks, their impact on profitability is not seen instantly. Second, the cost of implementing green finance can be substantial and strain a company's profitability. Such investments in green technologies, sustainable production processes or environmental certifications require substantial resources. While the benefits are only felt in the future, so these costs can suppress the company's current profit margins.

Harliani, (2024) states that companies that implement green finance must understand that there are other factors that are more relevant in influencing financial performance improvement, and do not always guarantee an increase in company value in a short time.

CONCLUSIONS

Based on the test results and discussion as presented, it can be concluded that green finance affects firm value, green finance affects profitability, profitability affects firm value, and finally green finance has no influence on firm value through profitability.

For researchers who want to conduct research on the same topic in the future, it is recommended to add observation periods and research samples that are not only in infrastructure sector companies, so that the research sample can have a wider scope. and is expected to add other variables that can increase company value. in addition to adding variables it is also advisable to add measurement indicators that can affect the relationship between these variables.

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