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IS GREEN FINANCING PROFITABLY REWARDING AND BOOST MARKET VALUATION? A COMPARATIVE STUDY ON INDONESIAN BANKS

Cindy Yoel Tanesia[1)], Monalisa[2)], Gracentia Eka Tunaryo[3)], Felicia Hamdani[4)]

[1,2,3,4)]Management, STIE Ciputra Makassar, Indonesia

Corresponding author: cindy.yoel@ciputra.ac.id

Abstract

This research investigates the financial and market implications of green financing adoption within the Indonesian banking sector (2019-2024). While many argue that green projects entail higher risks, this study posits that high commitment to green financing yields superior performance. Using an Independent Sample T-test, we compared 108 observations divided into two groups: High Green Financing (High GF) and Low Green Financing (Low GF) intensity. The results demonstrate a significant disparity in both operational and market performance. Banks in the High GF category achieved a significantly higher Return on Equity (Mean = 13.39%; $p < 0.001$) compared to their counterparts (Mean = 6.64%). Furthermore, market valuation, proxied by Tobin's Q, was significantly higher for the High GF group (Mean = 1.08 vs 0.99; $p = 0.02$). These findings suggest that green financing is not merely a corporate social responsibility burden but a strategic driver that enhances internal profitability and attracts market premium. This study provides empirical support for the "doing well by doing good" hypothesis in the context of Indonesia's emerging sustainable finance landscape.

Keyword: Green Financing, Profitability, Market Value, ROE, Tobin's Q

Introduction

In the last decade, the issue of climate change has forced a big transformation in global financial system(Oppenheim & Dyvik, 2020). Banking sectors as the core of capital allocation, now hold a crucial role in supporting the transition toward low carbon economy (Saif-Alyousfi & Alshammari, 2025). In Indonesia, this commitment was strengthened by Financial Service Authority (OJK) through Sustainable Finance Roadmap and POJK No. 51/2017, which require financial institutions to integrate sustainable principles in their business (Abubakar & Handayani, 2018).

Despite the increasing trend of Green Financing, there are still debates among practitioners and academicians regarding the impact to financial performance (Khan & Vismara, 2025). Some of them argue that financing green project has a more complex risk due to high finance costs, inadequate credit information, technological obsolescence, and constrained access to institutional finance, compare to regular loans (Purkayastha, 2019). However, another point of view stated that banks who adopt green principles will gain a better reputation, lower long-term risk, and higher attractiveness to the global investors who are currently focusing on ESG (Environmental, Social, and Governance) aspects (Porzio & Battaglia, 2024).

This study aims to answer those doubts by looking at each side of bank performance, such as profitability for the internal aspect, which will be measured by Return on Equity, to see how effective banks in managing their capital in green portfolio; and market value as the external aspect, which will be measured by Tobin's Q, to examine how market and investor supports banks that have high commitment to Green Financing. Compared to previous studies that maybe merely look at the linear causal effect, this study uses comparative analysis approach. We divide Indonesian banking sectors in two groups, such as High GF for banks with high green financing intensity and Low GF for banks with low green financing intensity. The result of this study is expected to provide empirical results for the policy makers and top management in banking industry that becoming 'green' is not only a compulsory regulation, but also as a business strategy that allows increase in company's competitive advantage as well as the firm value in the stock market.

Literature Review

Stakeholder Theory

This theory stated that company's sustainability depends on their ability to balance out the benefit of not only the investors, but other various parties (Gutterman, 2023). In the context of banking industry, distributing Green Financing is a form of banks' response to society and regulators' demand of environment protection

(Akomea-Frimpong et al., 2022; Ria et al., 2023). Banks may obtain social legitimacy by fulfilling the expectation of stakeholders (Chedrawi et al., 2020; Islam et al., 2021) that will affect operational efficiency (Belasri et al., 2020) and customer loyalty (Mukhibad et al., 2026; Yen & Chen, 2025), which will increase banks' profitability (Simamora & Andayani, 2025; T.A et al., 2014).

Signaling Theory

Signaling theory emphasizes the importance of how companies should give positive information to the market to reduce information asymmetry (Johan et al., 2025). High level of green financing portfolio will act as a 'signal' that banks possess a good risk management and put concern on long term sustainability (Chen et al., 2022a; Di Tommaso et al., 2025; Mirza et al., 2025). Investors grasp this signal as proof that banks have low environmental risk, that they will pay a higher stock price, which is reflected in the increase of Tobin's Q value (Delmas et al., 2015; Galletta et al., 2025).

Green Financing & Bank's Financial Performance

Green Financing defined as a financial support to environmental-friendly projects, such as renewable energy, energy efficiency, and pollution prevention (Ar Rahmah, 2025; Sufi et al., 2024). Although they need a more specific monitoring cost, green investments tend to have a lower default risk in the long-term because those sectors obtained support or incentives from the government (Braga et al., 2020; Meles et al., 2023; Safiullah et al., 2022). Green financing reflects the banks' efficiency in allocating their capital into projects that have long-term sustainability (Irfany et al., 2024). The relationship between green financing and profitability can be explained through two main perspectives, such as:

1. Cost Efficiency and Risk Minimization: Banks focusing on green credits tend to conduct tighter due diligence or risk analysis regarding the environmental impact (Zhou et al., 2020). This will help banks to avoid loss from non-performing loans caused by changes in environmental regulation or natural disaster befall debtors. Minimizing these risks directly maintains asset qualities and increases banks net profit (Al-Qudah et al., 2022; Cui et al., 2018).
2. Affordable Funding Access: Banks with strong green portfolios are easier to obtain access on sustainable funding instruments, such as green bonds or soft loans from multilateral institutions (Bedendo et al., 2023a). Lower cost of funds compared to regular funding allows banks to have a higher interest margin, which eventually increases the Return on Equity (ROE) (Tumbelaka & Handogo, 2023).

Empirically, banks in the High GF group show a higher profitability in average, showing that investment in green sectors is not only a costly burden, but a main driver for operational and profitability efficiency.

Green Financing & Bank's Market Performance

Market performance, which is measured by Tobin's Q, reflects the investors assessment of company's future performance beyond the book value (Lim & Mali, 2024). This relationship was based on several factors:

1. ESG Investors Appreciation: Currently, global and domestic investors avoid companies that have high carbon risk (Bolton et al., 2024). Banks that show high level of commitment in green financing shall give a positive signal that they are ready to face the transition to green economy (Bedendo et al., 2023b). This signal reduces risk perception in the market, so that the investors are willing to buy stocks in premium value (Chen et al., 2022b).
2. Reputation and Intangible Values: Implementation of sustainable finance enhances banks' brand image in the public (Anwar et al., 2024). The reputation as "Green Bank" creates a significant intangible value (Xi et al., 2022). High company's value in High GF category proved that market doesn't only see short-term performance but also appreciates banks' strategy in securing the business position in the future of low carbon (Tian et al., 2025).

Therefore, the difference of Tobin's Q between High GF and Low GF groups shows that capital market gives visible financial appreciation for banks who are more proactive in environmental issues. Thus, the significant difference in profitability and market value between those groups of banks proves that green strategy has a concrete contribution to company's competitive advantages.

Financial Performance Comparison between High GF Bank and Low GF Banks

Banks with higher Green Financing level tend to have better operational efficiency because they fund projects that employ modern and energy-saving technologies (Xu et al., 2024; Zhang, 2025). Moreover, pioneer banks in green financing usually get access to affordable funding, which reduces the cost of funds (Andries & Sprincean, 2023).

H1: There is a significant difference in ROE between banks that have high level of Green Financing and banks with low level of Green Financing.

Market Value Comparison between High GF Banks and Low GF Banks

In the era of ESG based investments, market tends to give more appreciation to companies that are transparent in their environmental impact (Mishra, 2025). Banks in the High GF category are considered as banks that have sustainable growth prospects and minimum environmental litigation risks (Oneya & Jemaiyo, 2025). This creates a positive sentiment in the capital market.

H2: There is a significant difference in market value (Tobin's Q) between banks that have high level of Green Financing and banks with low level of Green Financing.

Methods

This study employed quantitative approach with comparative methods. Comparative study aims to compare the existence of one or more variables in two or more samples (Sugiyono, 2018). In this context, the study compares the financial performance and market value of two groups of banks who have different levels of intensity in green financing. The population of this study are the banks registered in Indonesia Stock Exchange (IDX) in the period of 2019 to 2024. Purposive sampling method was employed with several criteria such as banks that consistently published Sustainability Reports, provided nominal data of credit distribution in environment related businesses, have complete financial data regarding ROE and stock price for the calculation of Tobin's Q.

Based on these criteria, 36 observations were obtained that were used as samples of this study, where each group consists of 9 banks, using the average green financing values as the cut-off value to separate companies in High GF group and Low GF group to provide an objective division based on the current banking sector's conditions.

Table 1. List of Banks by Category

High-GF Banks	Low GF Banks
Bank Negara Indonesia (BBNI)	Bank SMBC Indonesia (BTPN)
Bank Rakyat Indonesia (BBRI)	Bank Danamon (BDMN)
Bank Mandiri (BMRI)	Bank Pan Indonesia (PNBN)
Bank Central Asia (BBCA)	Bank Mayapada (MAYA)
Bank CIMB Niaga (BNGA)	Bank Pembangunan Daerah Jawa Barat dan Banten (BJBR)
Bank Maybank Indonesia (BNII)	Bank Pembangunan Daerah Jawa Timur (BJTM)
Bank Artha Graha Internasional (INPC)	Bank Victoria International (BVIC)
Bank Mega (MEGA)	Bank Permata (BNLI)
Bank OCBC NISP (NISP)	Bank Sinarmas (BSIM)

Source: Data Processing Result, 2026

Data analyzed using IBM SPSS software with steps starting from descriptive statistics analysis, homogeneity test, and end with hypothesis test using independent sample t-test to analyze whether there is a significant difference in average of two unrelated sample groups.

Results and Discussions

Descriptive Statistics

Table 2. Descriptive Statistics

Variable	Group	N	Mean	Std Deviation
ROE	High GF	53	13.3883%	7.3792%
	Low GF	55	6.6391%	6.44931%
Tobin's Q	High GF	53	1.0764	0.19868
	Low GF	55	0.9949	0.01923

Source: Data Processing Result, 2026

Tabel 1 shows that banks in High GF group consistently have higher average value for both ROE and Tobin's Q compare to banks in Low GF Group, which indicates that banks in High GF group have a higher operational profitability as well as the market value.

Profitability Comparison Analysis (ROE)

The result of Independent Sample T-test for ROE shows the t-stats of 5.049 with 0.000 significance level, thus accepting H1. This proves the existence of significant profitability difference between banks that actively engage in green financing and banks that are not. The mean difference of 6.75% shows a concrete efficiency in the profitability for banks that implement sustainability principles.

Table 3. ROE Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means				
	F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Equal variances assumed	2.047	0.155	5.049	106	0.000	6.74921	1.33678

Source: Data Processing Result, 2026

Market Value Comparison Analysis (Tobin's Q)

Test result for Tobin's Q shows t-stats of 2.441 with 0.017 significance level and thus accepting H2 as well. This confirms the significant difference in market value between banks in different groups. Investors give higher valuation to banks in the High GF category compare to Low GF category.

Table 4. Tobin's Q Independent Samples Test

	Levene's Test for Equality of Variances		t-test for Equality of Means				
Equal variances not assumed	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
	6.594	0.012	2.441	94.116	0.017	0.08151	0.3339

Source: Data Processing Result, 2026

Green Financing Influence on Operational Advantages

The findings of this study, which show that banks in High GF group category have relatively higher ROE, breaks the assumption that implementation of green financing will reduce company's profit. This result aligns with Stakeholder Theory on how banks that respond to environmental issues gain better customer loyalty and efficiency in risk management (ROY, 2025). Green portfolio in Indonesia tends to be distributed to sectors that have support from government regulation (Guild, 2020), such as renewable energy, which in effect may control the risk and give stable returns.

Market Response towards Green Commitment

The higher Tobin's Q value in High GF group (1.08) shows the existence of Premium Valuation for banks that are transparent in ESG related issues. According to Signaling Theory, green financing activities give a signal to the market that those banks have a future management that are adaptive to climate change risks (Fiordelisi et al., 2022). Investors consider banks with high green portfolio as a more secure asset and promising in the long-term, thus pushing the stock price up above the book value (Glavas, 2020; Tian et al., 2025).

Conclusion

There is a significant statistical difference in the profitability level between banks with high and low intensity of Green Financing. Banks that actively distribute green loans have higher ROE on average (13.39%) compared to the less active banks (6.64%). This shows that the implementation of sustainable financing in Indonesia has given a positive impact to banks' capital efficiency and operational profit.

A significant difference is also found in the company's value in the stock market. Banks in High Green Financing category have a relatively higher Tobin's Q value (1.08) compare to banks in Low Green Financing category (0.99). This proves that market give appreciation in the form of premium value to banks that have stronger environmental commitment, which is considered as a signal of better long-term risk management.

In overall, this study confirms that Green Financing is not merely one of the compliance instruments but has become a driver of competitive advantage that increase both internal and external performance.

Suggestion

Banks' management need to expand their credit portfolio toward environmental related sectors. Considering the positive relationship between ROE and Tobin's Q, banking sectors should integrate ESG with credit evaluation standard of procedure to reduce long-term default risk. Governments and regulators are expected to give incentives for banks that are proactively engage in Green Financing, for instance through the relaxation of minimum reserve requirements or tax incentives. These kinds of incentives will hopefully be able to motivate banks in the Low GF category to immediately make the transition towards green banking practice. Investors may use Green Financing intensity as one of fundamental indicators in choosing stocks in banking sectors. Banks with high level green portfolios tend to have a better market valuation and a more measurable risk profile amid low carbon economy trends. This study has limitations in the sample size (108 observations) and disregarded other factors that may contribute to the difference of ROE and Tobin's Q in both groups such as firm size, operating expense ratio, non-performing loan, loan-loss provisions, and other potential variables. Future research are expected to expand the observation period and add other variables to see whether the increase in profitability is simultaneous with the risk increase specifically in green projects.

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