
THE DETERMINANTS PRICE TO BOOK VALUE IN BANKING COMPANIES LISTED ON THE INDONESIA STOCK EXCHANGED

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Abstract

Background: Firm value reflects how the market views a company's performance, particularly in the banking sector. This value is reflected through Price to Book Value (PBV)s, capital gains, and the Price to Book Value (PBV) ratio, which is important to investors. Debt to Equity Ratio (DER) and Return on Assets (ROA) influence PBV, along with sustainability practices such as Green Banking. Further research is needed on the determinants of PBV due to inconsistent findings.

Purpose: This study aims to examine and analyze the effect of Green Banking, Debt to Equity Ratio (DER), and Return on Assets (ROA) on Price to Book Value (PBV), in banking companies listed on the Indonesia Stock Exchange (IDX).

Methodology: The type of research used is associative causal by using quantitative methods. The analytical method used is multiple linear regression with the independent variables Green Banking, Debt to Equity Ratio (DER) and Return on Assets (ROA) and the dependent variable is Price to Book Value (PBV). The data in this study used secondary data taken from www.idx.co.id. The population in this study are banking companies listed on the Indonesia Stock Exchange for the 2025 period.

Results: Green Banking does not directly affect Price to Book Value (PBV). The Debt to Equity Ratio (DER) and Return on Assets (ROA) positively impact PBV. Together, Green Banking, DER, and ROA influence PBV, enhancing investor confidence and increasing firm value through sustainability and financial performance. The findings indicate that environmental performance disclosure alone does not impact market perceptions of firm value. However, combining sustainability initiatives with strong financial metrics boosts investor confidence and firm value.

Keywords: *Green Banking, Debt to Equity Ratio, Return on Assets, Price to Book Value, Banking Companies*

Introduction

In the modern business world, success depends on effective management. The company's goal is to maximize profits to increase corporate value and shareholder welfare. Shareholder welfare is reflected in share prices, which fluctuate according to the company's financial condition. In banking, company value is expressed through share price, capital gains, and Price to Book Value (PBV).

Corporate value plays a central role because its increase reflects investor well-being, which is generally reflected in rising Price to Book Value (PBV)s (Purba & Mahendra, 2022). In the capital market, corporate value influences investor perceptions. This growth in value depends on financial performance and environmental issues. This attention can strengthen a company's image in the eyes of investors and increase its value (Surya et al., 2023). Furthermore, increasing corporate value indicates improved performance across all business units, which impacts owner prosperity and attracts investors (Murdiono et al., 2023).

The banking sector is crucial to the economy, serving as a financial intermediary that supports growth through credit and fund management. By the end of 2024, there were 45 banking companies on the Indonesia Stock Exchange (IDX) with assets exceeding IDR 10,000 trillion. The PBV ratio serves as an indicator for investors. PBV reflects the Price to Book Value (PBV) relative to the book value of equity, with a high PBV indicating market expectations of the company's future prospects (Bringham & Houston, 2021). In 2024, the banking sector on the IDX experienced an average PBV fluctuation of 1.5-2.5 times, influenced by Bank Indonesia and OJK regulations regarding sustainability. The COVID-19 pandemic and the global energy transition have increased the importance of sustainable practices, including Green Banking initiatives that integrate environmental aspects. Sustainable financing in this sector reached IDR 1,200 trillion in 2023, with a projected 20% increase by 2025. Financial factors such as the Debt to Equity Ratio and Return on Assets also influence PBV. Based on the initial observations made by the author, the following data was obtained:

Table 1. Average Value of Green Banking, DER, ROA, and PBV in 2023-2025

Year	GREEN BANKING	DER	ROA	PBV
2023	0,84	3,07	1,07	1,44
2024	0,89	3,43	1,47	1,39
2025	0,96	3,88	1,79	1,57

Source: Processed data, 2026

Based on the results of the initial data analysis, an interesting phenomenon is indicated for further research, where the potential for the Green Banking variable has increased significantly from a score of 0.88 to 0.94. Based on Signaling Theory, this positive trend reflects the increasing transparency of banks in disclosing 21 Green Banking Disclosure Index (GBDI) instruments, while simultaneously sending a signal to investors regarding prospective future risk management. In addition, there is a very clear linear relationship between the increase in ROA from 0.28% to 1.67% and the increase in PBV value from 1.62 to 1.57, indicating that profitability remains a major attraction for investors on the Indonesia Stock Exchange (IDX). Interestingly, the DER variable, which actually increased from 3.07 to 3.88, received a negative response, while the company's PBV value continued to increase in 2025. This phenomenon indicates that investors tend to tolerate increased debt risk as long as banks are able to demonstrate increased profitability and maintain their reputation through good Green Banking practices.

Several previous studies have shown that various factors can influence company value. For example, research by Setyawati et al. (2022) found that *Green Banking* has a positive influence on PBV. However, different results were shown by Salsabila (2025) who stated that *Green Banking* in fact, it has no significant effect on PBV. Similarly, Pratama and Wijaya's (2023) study revealed that ROA has a significant positive effect on PBV, while Handayani and Sukirno's (2021) study revealed that ROA has a positive but insignificant effect. Liability factors also provide mixed findings, with several previous studies finding DER to have a negative effect on PBV. For example, Anggelina et al.'s (2025) study found DER to have a negative effect on PBV, while Atmini et al.'s (2025) study found DER to have a significant positive effect on PBV.

Green Banking itself is a governance practice in the banking industry that emphasizes the integration of environmental aspects into business activities to encourage sustainable growth that aligns with economic, social, and ecological dimensions (Salsabila, 2025). Global awareness of sustainable development and climate change is driving attention to Green Banking. This encompasses green financing, energy efficiency, and lending policies that consider environmental impacts.

In practice, Environmental responsibility is defined as a form of environmental responsibility carried out by banks with sustainable business strategies, both through internal policies and by encouraging customers to adopt environmentally friendly practices (Winarto et al., 2021). Banking activities are shifting from paper-based systems (*paper-based*) towards the system *paperless*, which is expected to be able to suppress *carbon footprint* and carbon emissions (Nath et al., 2014 in Anggraini et al., 2020).

Company value is not only influenced by *Green Banking*. However, there are other factors such as profitability and liabilities. Profitability reflects the extent to which a company is able to generate profits through financial indicators such as total assets, sales, and net profit from capital employed. These indicators are generally measured by ROA and ROE, which serve to assess management's effectiveness in managing company resources to generate profits (Khoiriah, 2019) in (Salsabila, 2025). Profitability is not just a number in the financial statements, but also reflects management's ability to convert resources into economic value. Indicators such as Return on Assets are important for measuring operational effectiveness in achieving net profit. A company's ability to manage assets for profit is an effort to improve shareholder welfare. Solid profitability supports market recognition of a company's value and performance, especially in the dynamic Indonesian banking sector, where profitability is influenced by many factors.

Profitability is not simply a final figure in a financial report, but rather a reflection of management's strategic ability to transform resources into real economic value. Indicators such as Return on Assets (ROA) are crucial for measuring the extent to which operational effectiveness aligns with net profit targets. In general, a company's ability to optimize assets to support profits is a tangible manifestation of its efforts to maximize shareholder wealth. Therefore, stronger profitability, stronger market recognition of the company's added value and fundamental performance. Particularly in Indonesia's dynamic banking ecosystem, profitability is a central variable influenced by both internal and external factors, ultimately becoming a key determinant of a company's public value.

In addition to profitability, liabilities also influence a company's value. Liabilities are a company's financial obligations arising from past transactions. They include debts or obligations that must be repaid through the delivery of assets or services in the future. On the balance sheet, liabilities are listed on the liabilities side and serve as a source of funding in addition to capital. Understanding liabilities is important for management and investors because they are related to liquidity and solvency risks. Furthermore, liabilities also influence capital structure and financial health, particularly in the banking sector.

According to Weygandt and Worfield (2020) in the book *Intermediete Accounting* Liabilities are defined as present obligations of an entity arising from past events, the settlement of which is expected to result in an outflow from the entity of resources embodying economic benefits. Liabilities are divided into two types: short-term liabilities and long-term liabilities. Short-term liabilities include obligations due within one year, while long-term liabilities include obligations due after one year. In addition, there are also contingent liabilities.

Several key indicators are used to measure the impact of liabilities on company performance, such as the Debt to Equity Ratio (DER). DER is calculated as Total Liabilities divided by equity. An ideal value below 1 indicates a healthy capital structure, while a value above 1 indicates a high risk. In banking, DER has unique limitations because customer deposits are recorded as liabilities. According to Pratama & Handayani (2022), a high DER in the banking sector is normal because the greater the funds collected from the public, the higher the liability ratio. However, this actually indicates strong public trust in the bank. According to Brigham and Houston (2019), in financial management principles, although DER is an indicator of capital structure, a bank's health should not be judged solely by its debt ratio (Atmini et al., 2025). According to Frank & Goyal (2008) in Salsabila (2025), the Trade-off theory holds that each company has a target capital structure based on profitability, business risk, and the effective tax rate. The essence of this theory is finding the optimal capital structure, the point at which a company's value reaches its maximum. In the context of the author's research, this theory explains why the increase in DER from 3.07 to 3.88 in 2025 was still accompanied by an increase in PBV. This is suspected because the bank is still in a position where the benefits of using debt outweigh the risk of bankruptcy.

DER limits in banking are dynamic; as long as the bank maintains a stable level of profitability, a high DER value is still considered safe. Therefore, based on the data the author has processed, the average DER value in the 2023-2025 range 3.07-3.88 should be considered safe. In previous research, Nugroho (2023) found that DER had a significant negative effect on PBV in IDX banking, as excessive liabilities increased the risk of bankruptcy. Pratama (2025) stated that long-term liabilities dominate the capital structure of state-owned enterprises (SOEs), with an average DER of 6-8, which affects ROA through interest expense. Sari et al. (2025) added that disclosure of sustainable liabilities can reduce the effective DER by up to 12% in banks that implement this approach.

Preliminary data analysis results indicate that the potential for Green Banking in banks listed on the IDX increased from 0.84 in 2023 to 0.96 in 2025. This reflects improved transparency and a positive signal for investors. Furthermore, there is a strong correlation between increased profitability from Return on Assets (ROA) and the company's market value through Price to Book Value (PBV). Despite the increase in the Debt to Equity Ratio (DER), the PBV value remains elevated, indicating that investors understand the risks of debt as long as the bank shows good profit growth. This study focuses on the simultaneous influence of these three variables for the period 2025. In the banking industry, the application of Trade-off Theory is closely associated with a firm's ability to generate profits. According to Myers (2001), as cited in Nugroho (2023), firms with higher profitability tend to employ greater levels of debt in order to maximize the benefits of the tax shield. This argument is consistent with the findings of the present study, where an increase in Return on Assets (ROA) was accompanied by higher Debt to Equity Ratio (DER) and Price to Book Value (PBV). These findings suggest that investors tend to perceive higher leverage in banking firms as acceptable, provided that it is supported by strong operational efficiency, as reflected in a high ROA. Consequently, the market interprets the firm's capital structure as a positive expansion strategy that enhances firm value, which is reflected in a higher PBV.

Methods

The type of research used is in the form of associative causal using quantitative methods. This study uses multiple linear regression analysis, moderated regression analysis and uses secondary data taken from www.idx.co.id. The population in this study are the banking companies listed on the Indonesia Stock Exchange for the year 2025. The number of samples in this study is 31 companies.

Results and Discussions

Descriptive Analysis

Descriptive statistical analysis is a description of the data from the variables used in the study, namely the variables Green Banking, Debt to Equity Ratio (DER), Return on Assets (ROA), AND Price to Book Value (PBV).

Table 2. Descriptive Analysis of Research

	N	Minimum	Maksimum
Green Banking (X1)	31	0,76	1
DER (X2)	31	0,14	9,64
ROA (X3)	31	-3,75	7,15
PBV (Y)	31	0,3	5,89

Source: Processed data, 2026

Based on the research data that has been presented in the table above, it can be seen the description of each variable as follows :

- Green Banking**
The Green Banking has a minimum value of 0,76, a maximum value of 1. The biggest Green Banking Disclosure Indeks is PT. Bank Central Asia Tbk. and 14 other banking companies in 2025 is 1, while the lowest Green Banking Disclosure Indeks is PT. Allo Bank Indonesia Tbk. in 2025 which is 0,76.
- Debt to Equity Ratio (DER)**
The Debt to Equity Ratio (DER) has a minimum value of 0,14 , a maximum value of 9,64. The biggest Debt to Equity Ratio (DER) is PT. Bank Pembangunan Daerah Jawa Barat dan Banten Tbk. in 2025 is 9,64, while the lowest Debt to Equity Ratio (DER) is PT. Bank Tabungan Negara Tbk in 2025 which is 0,14.
- Return on Assets (ROA)**
The Return on Assets (ROA) has a minimum value of -3,75 , a maximum value of 7,15. The biggest Return on Assets (ROA) is PT. Bank BTPN Syariah Tbk. in 2025 is 7,15, while the lowest Return on Assets (ROA) is PT. Bank Raya Indonesia Tbk in 2025 which is -3,75.
- Price to Book Value (PBV)**
The Price to Book Value (PBV) has a minimum value of 0,3 , a maximum value of 5,89. The biggest Price to Book Value (PBV) is PT. Super Bank Indonesia Tbk. in 2025 is 5,89, while the lowest Price to Book Value (PBV) is PT. Bank Woori Saudara Indonesia 1906 Tbk in 2025 which is 0,3.

Multiple Linear Regression Analysis

Table 3. Multiple Linear Regression Test Results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	22.470	17.188		1.307	.202
Green Banking	4.779	19.093	.032	.250	.804
DER	2.660	.549	.605	4.848	.000
ROA	2.701	.678	.473	3.983	.000

- Dependent Variable: Prece to Book Value

Source : Processed data

Based on the table above, the multiple linear regression equation is obtained as follows:

$$Y = 22,470 + 4,779X_1 + 2,660X_2 + 2,701X_3 + e_i$$

- The constant (a) is 22,470 meaning that if the Green Banking, Debt to Equity Ratio (DER), and Return on Assets (ROA) increase or equal to 0 then the share price is 22,470 ceteris paribus, assuming other variables are constant.
- The regression coefficient (X_1) is 4,779, meaning that if the Green Banking increases by one unit, it will increase the Price to Book Value (PBV) by 4,779, assuming other variables are constant.
- The regression coefficient (X_2) is 2,660, meaning that if the Debt to Equity (DER) increases by one unit, it will increase the Price to Book Value (PBV) by 2,660, assuming other variables are constant.
- The regression coefficient (X_3) is 2,701, meaning that if Return on Assets (ROA) increases by one unit, it will increase the Price to Book Value (PBV) by 2,701, assuming other variables are constant.

Coefficients of Determination (R^2)

Testing the coefficient of determination aims to determine the contribution of the independent variable to the rise and fall of the dependent variable.

Table 4. Test Results for the Coefficient of Determination

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.799 ^a	.638	.598	7.09754

a. Predictors : (Constant), Green Bnaking, DER, ROA

b. Dependent Variable : Price to Book Value

Source : Processed data, 2026

The results of the test for the coefficient of determination show that the value of Adjusted R square is 0.598, this means that the effect of the Green Banking, Debt to Equity Ratio (DER), and Return on Assets (ROA) together on the Price to Book Value is 59,8 percent.

Partial Test (t test)

In the Green Bnaking variable, a significance value of $0,804 > 0,050$ is obtained, so it can be interpreted that Green Banking has no significant effect on PBV value in Banking Companies listed on the IDX in 2025.

For the Debt to Equity Ratio (DER) variable, a significance value of $0,000 < 0,050$ is obtained, so it can be interpreted that DER has a significant effect on PBV in Banking Companies listed on the IDX in 2025.

In the Return on Assets (ROA) variable, a significance value of $0,000 < 0,050$ is obtained, so it can be interpreted that ROA has a significant effect on PBV in Banking Companies listed on the IDX in 2025.

Simultant Test (F test)

Table 5. Simultant Test Result

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2675.922	3	891.974	22.226	.000 ^b
	Residual	1083.563	27	40.132		
	Total	3759.485	30			

a. Dependent Variable: PBV

b. Predictors: (Constant), Green_Banking, ROA, DER

Source : Processed data, 2026

Based on the table above, it shows that the variables Green Banking, DER, and ROA have a simultaneous effect on PBV, because the calculated F value of 22.226 is greater than the F Table of 2.96. This means that the size of Green Banking, DER, and ROA, together affect PBV.

Discussions

Effect of Green Banking on Price to Book Value (PBV)

The Green Banking has no significant effect as evidenced by the results of the partial test with a significance value of $0,804 > 0,050$. This indicates that investors in the Indonesian capital market currently do not yet make disclosure of information on environmentally friendly programs a primary consideration in assessing equity or banking stock prices. This research is in line with Salsabila research (2025) which states that Green Banking does not have a significant effect on Price to Book Value.

Effect of Debt to Equity Ratio on Price to Book Value (PBV)

The Debt to Equity Ratio has a significant effect as evidence by the results of the partial test with a significance value of $0,000 < 0,050$ with a positive relationship. This shows that if the Debt to Equity Ratio value increases, the Price to Book Value will increase (in the same direction). This means that the higher the Debt to Equity Ratio, the higher the company's price to book value. This research is in line with Atmini, et al. research (2025) which states that the Debt to Equity Ratio has a effect on price to book value.

Effect of Return on Assets on Price to Book Value (PBV)

The Return on Assets has a significant effect as evidenced by the results of the partial test with a significance value of $0,000 < 0,050$ with a positive relationship. This shows that if the Return on Assets value increases, the Price to Book Value will increase (in the same direction). This means that the higher the Return on Assets, the higher the company's price to book value. This research is in line with Pratama and Wijaya research (2023) which states that the Return on Assets has an effect on price to book value.

Effect of Green Banking, Debt to Equity Ratio, and Return on Assets on Price to Book Value (PBV)

Based on the F-test, The Green Banking, Debt to Equity Ratio, and Return on Assets jointly influence Price to Book Value in banking companies listed on the IDX in 2025, with the calculated F-value greater than the tabulated F-value. This indicates that the combination of these three elements influences company value.

The theory discusses Signaling Theory and Trade-Off Theory in investor assessments in the financial industry. From a Signaling Theory perspective, the capital market views the combination of Green Banking and ROA signals as complete information, which drives buying interest and increases stock prices. Meanwhile, Trade-Off Theory explains that productive debt management can support credit expansion and investment without increasing bankruptcy risk.

This conclusion is also supported by previous research, which shows that the combination of leverage, profitability, and transparency in Green Banking is important information for investors in determining PBV.

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