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ESG and Financial Performance in Enhancing Banking Firm Value: A Study of Banks Listed on the Indonesia Stock Exchange (IDX)

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Abstract

This study aims to analyze the effect of sustainability, intermediation efficiency, credit risk, and profitability on the firm value of banking companies listed on The Indonesia Stock Exchange (IDX) during the 2021-2024 period. Firm value is measured using Tobin's Q while sustainability, intermediation efficiency, credit risk and profitability proxied by ESG score, Net Interest Margin (NIM), Non-Performing Loan (NPL), and Return on Asset (ROA). This study uses quantitative method with panel data regression analysis, and the data are processed using Eviews. The sample in this study is selected using purposive sampling, resulting in 13 banking companies as the final sample. The results of this research show that partially, ESG and NIM do not have a significant effect on firm value, NPL has a significant negative effect on firm value, and ROA has a significant positive effect on firm value. Meanwhile, simultaneously, ESG, NIM, NPL, and ROA have a significant effect on firm value. These findings show that financial and non-financial indicators can play a role in affecting firm value in the banking sector.

Keywords: ESG, NIM, NPL, ROA, Firm Value

1. Introduction

Data from Statistics Indonesia (Badan Pusat Statistik/BPS) indicate that during the 2019–2020 period, the number of commercial banks in Indonesia was approximately one hundred institutions, comprising both conventional and Islamic banks. This figure reflects a highly competitive banking industry, both in maintaining corporate performance and in attracting investors. One of the indicators frequently used by investors as a reference before making investment decisions is firm value.

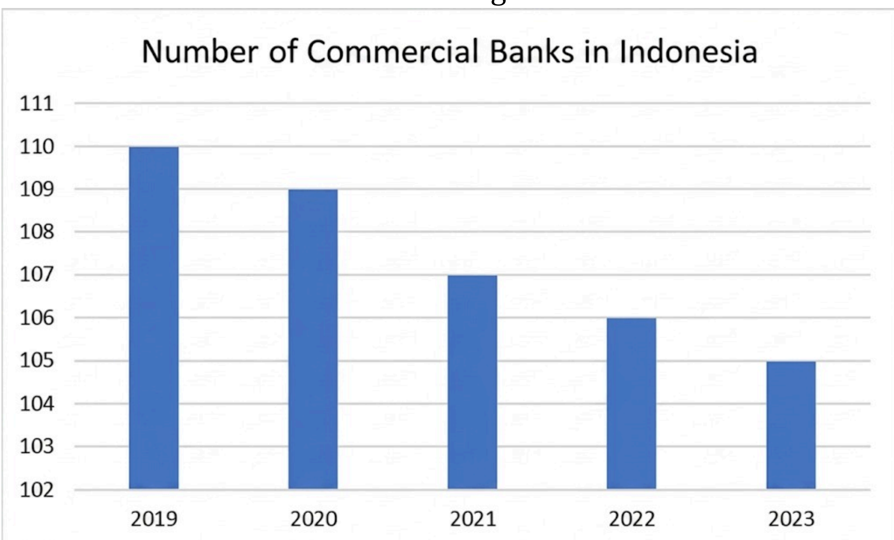

Figure 1. Number of Commercial Banks Bar Chart
Source: Processed by the Author

Firm value can serve as an indicator for evaluating a company as a whole and reflects expected future earnings (Denia et al., 2024). Therefore, one of the primary objectives of corporate management is to maximize firm value (Brigham & Daves, 2019) in order to enhance market confidence.

As markets continue to evolve, efforts to increase firm value can no longer rely solely on financial indicators but must also consider non-financial aspects that reflect business sustainability. In Indonesia, a growing understanding of and interest in ESG (Environmental, Social, and Governance) factors has begun to emerge among both individual and institutional investors (Sugiarto et al., 2023). Increased awareness of ESG is also evident among younger investors, including those without professional backgrounds (Syahfi, 2022). However, the rising interest in ESG is not always followed by investment decisions due to investors' concerns regarding corporate greenwashing practices (Nanlohi et al., 2025). Greenwashing refers to manipulative actions undertaken by companies to mislead the public into believing that their business activities are environmentally friendly.

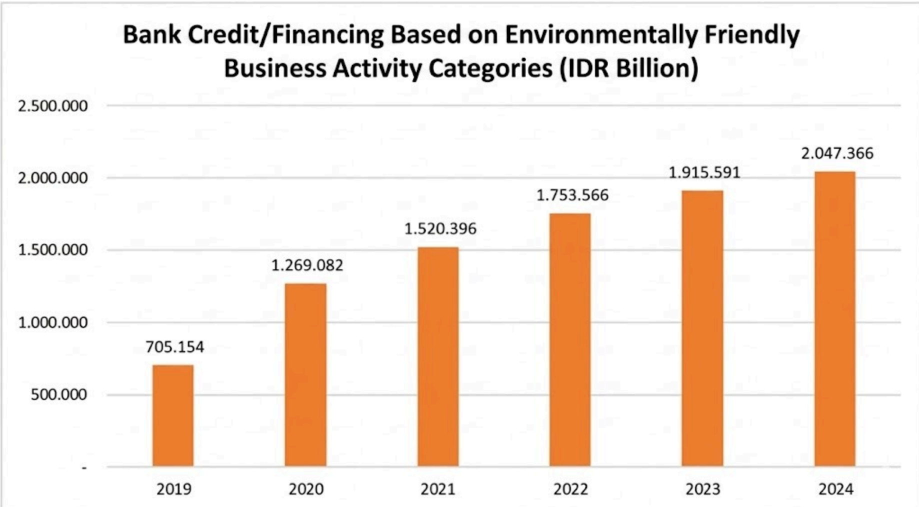

Figure 2. KUBL Credit Development Bar Chart
Source: OJK

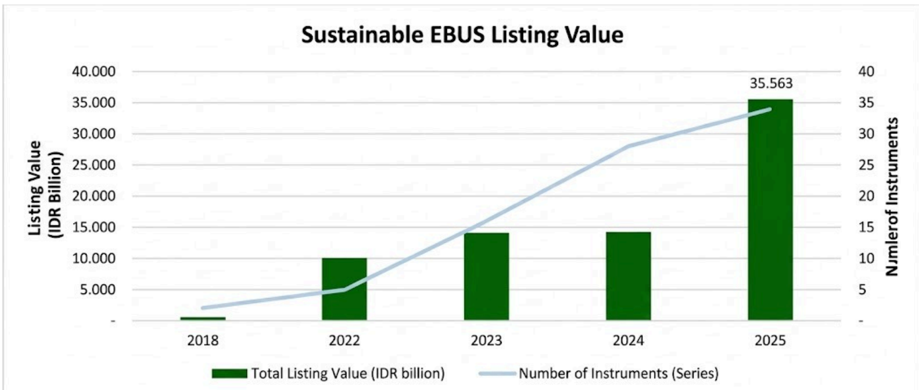

Figure 3. Sustainable EBUS Bar Chart
Source: OJK

Within the banking sector, OJK (Financial Services Authority) issued OJK Regulation Number 51, which requires financial service institutions to formulate a Sustainable Finance Action Plan (Rencana Aksi Keuangan Berkelanjutan/RAKB) as a guideline for implementing sustainable finance, including support for environmentally oriented financing (green financing), such as Environmentally-Oriented Business Credit (Kredit Usaha Berwawasan Lingkungan/KUBL) and

Sustainable Debt Securities and/or Sukuk (Efek Bersifat Utang dan/atau Sukuk Berkelanjutan/EBUS). Although ESG implementation provides positive impacts for the environment and future generations, it faces several challenges, including substantial initial capital requirements, a shortage of human resources proficient in the three ESG pillars, and policy uncertainty (Tong, 2025). These ESG-related phenomena raise the question of whether such complex ESG implementation can genuinely convince investors of a company's commitment and transparency toward sustainability efforts, thereby enhancing firm value in the market.

On the other hand, investors in the banking sector continue to place considerable emphasis on fundamental financial indicators, as these indicators have long served as benchmarks of corporate performance and financial health. One important indicator is the Net Interest Margin (NIM), which reflects a bank's effectiveness in generating net interest income from its earning assets (Reynaldi & Prasetiono, 2024).

NIM is calculated as the difference between interest income from loans and the cost of funds relative to the bank's total earning assets (Athayya & Yulazri, 2025). When the Deposit Insurance Corporation (LPS) Rate increases, banks typically respond by raising lending rates (Nurcahningsih et al., 2025). While higher lending rates may increase banks' interest income, they may also place financial pressure on borrowers and increase the risk of default. This condition suggests that a high NIM cannot always be directly interpreted as a positive signal. Therefore, further analysis is required to determine whether a high NIM is genuinely valued by investors as a positive indicator of firm value.

The potential for default may increase the Non-Performing Loan (NPL) ratio. The NPL ratio measures the proportion of non-performing loans relative to the total loans disbursed by a bank. When NPL increases, banks are required to allocate larger provisions for Allowance for Impairment Losses (Cadangan Kerugian Penurunan Nilai/CKPN) (Setiatin & Dita, 2021). Provisions for CKPN are allocated from bank profits (Susandi & Hidayat, 2025) meaning that an increase in CKPN can reduce profitability. This condition may weaken investor confidence, as it indicates deteriorating credit quality and a reduced ability of banks to generate profits. Nevertheless, the extent to which the NPL ratio influences investor assessments and interest regarding corporate performance and firm value requires further investigation.

In addition to intermediation efficiency and credit risk, bank performance can also be assessed through asset management effectiveness. In the banking industry, where the primary business activity involves managing assets to generate profits, asset management effectiveness serves as a key indicator for evaluating overall performance. Return on Assets (ROA) is a measure of a bank's ability to utilize its assets efficiently to generate profits. The higher the ROA, the greater the bank's profitability (Wiadnyani & Artini, 2023). However, whether investors consistently respond to higher ROA with increased firm value remains a relevant question for further research.

Non-financial indicators such as ESG, as well as financial indicators such as NIM, NPL, and ROA, may be factors considered by investors before making investment decisions. The effects of these factors on firm value are not always uniform, as they may be influenced by the characteristics of individual banks. Firm size may serve as a factor that determines the strength or weakness of the relationships among the variables examined in this study. Differences in bank size may affect access to funding, business diversification, asset capacity, and risk management capabilities. Firm size is therefore employed as a control variable in this study to control the effects of the independent variables (ESG, NIM, NPL, and ROA) on firm value, enabling a more accurate analysis.

Several previous studies have examined the relationships between NIM, NPL, ROA, and firm value; however, the findings remain inconclusive. For example, the study conducted by (Hudaja & Marlina, 2024) found that NPL has a significant positive effect on firm value. In contrast, (Susandi & Hidayat, 2025) reported that NPL has no effect on firm value. Meanwhile, (Wiadnyani & Artini, 2023) concluded that NPL has a significant negative effect on firm value.

The inconsistency of previous findings indicates that the effect of NIM on firm value requires further examination. For instance (Hudaja & Marlina, 2024) found that NIM has a significant positive effect on firm value. This finding is inconsistent with the study conducted by (Susandi & Hidayat, 2025) which found no significant effect of NIM on firm value. A different result was reported by (Athayya & Yulazri, 2025) who found that NIM has a significant negative effect on firm value.

Inconsistent findings have also been observed in studies examining the relationship between ROA and firm value (Handayani et al., 2023) found that ROA negatively affects firm value. In contrast, (Limbong, 2022) reported that ROA has a positive and significant effect on firm value.

These differences indicate that the relationships between financial indicators (NIM, NPL, and ROA) and firm value have not yet been explained consistently. Furthermore, studies examining the impact of ESG on banking firm value, particularly during recent periods, remain limited in Indonesia. The findings have also varied, ranging from an insignificant positive effect as reported by (Denia et al., 2024) to a more complex relationship between ESG and firm value, as discussed by (Marpaung et al., 2025). Their study explained that ESG disclosure does not necessarily increase firm value, particularly when its implementation is not supported by adequate governance and risk management. In addition, an inverted U-shaped relationship between ESG and firm value was identified. This suggests that moderate ESG disclosure positively affects firm value; however, excessive disclosure may ultimately lead to a decline in firm value.

The inconsistency of previous research findings and the limited number of studies on ESG within the Indonesian banking sector provide the basis for re-examining the effects of these variables on banking firm value. Accordingly, this study aims to examine the effects of sustainability, credit risk, intermediation efficiency, and profitability on banking firm value, both partially and simultaneously, with firm size serving as a control variable.

2. Methods

This study employed a quantitative research design to examine the effects of sustainability (ESG), intermediation efficiency (NIM), credit risk (NPL), and profitability (ROA) on the firm value of banking companies, with firm size serving as a control variable. The unit of analysis consisted of banking firms listed on the Indonesia Stock Exchange (IDX) during the 2021–2024 period. The sample was selected using purposive sampling based on three criteria: banks continuously listed on the IDX from 2021 to 2024, banks with ESG scores published by Refinitiv Eikon/LSEG throughout the study period, and banks that consistently published annual reports, financial statements, and sustainability reports. The study utilized quantitative secondary data obtained from corporate annual reports, financial statements, sustainability reports, and ESG data from Refinitiv Eikon. Data collection was conducted through documentation methods, while the variables of ROA, NIM, NPL, firm value, and firm size were calculated using established formulas. Data analysis was performed using descriptive statistics and panel data regression techniques to test the proposed hypotheses and address the research objectives. All data processing and statistical analyses were conducted using EViews 13.0 software.

3. Results and Discussion

Descriptive Statistics Test

Table 1. Uji Statistik Deskriptif

Description	TOBINS	ESG	NIM	NPL	ROA	SIZE
Mean	1.473462	64.70365	6.136154	2.787500	1.976923	33.08109
Median	1.030000	66.30000	5.030000	2.690000	2.105000	33.35539
Maximum	14.36000	88.71000	24.38000	10.25000	8.860000	35.42552
Minimum	0.880000	27.92000	2.860000	0.000000	-10.85000	28.40720
Std. Dev.	1.921189	16.57330	3.880628	1.852254	3.397647	1.897651
Skewness	6.067894	-0.520022	3.312431	2.089702	-1.463529	-1.045268
Kurtosis	40.63865	2.340678	14.17171	9.203981	7.547700	3.262824
Observations	52	52	52	52	52	52

The dependent variable in this study, namely firm value represented by TOBINS, has a mean value of 1.473462, with a minimum value of 0.880000 recorded by PT Bank Danamon Indonesia Tbk and a maximum value of 14.36000 recorded by PT Bank Aladin Syariah Tbk. The standard deviation of 1.921189 indicates that the data exhibit a relatively high level of dispersion compared to the mean value. A skewness value of 6.067894 suggests that the distribution is highly positively skewed, while the kurtosis value of 40.63865 indicates an extremely peaked distribution relative to a normal distribution.

The first independent variable, ESG, has a mean value of 64.70365, with a minimum value of 27.92000 obtained from PT Bank Amar Indonesia Tbk in 2022 and a maximum value of 88.71000 obtained from PT Bank Rakyat Indonesia (Persero) Tbk in 2023. The standard deviation of 16.57330 indicates a relatively high degree of variation in ESG scores across companies. The skewness value of -0.520022 reflects a slightly left-skewed distribution, while the kurtosis value of 2.340678 indicates a distribution that is somewhat flatter than a normal distribution.

The second independent variable, NIM, has a mean value of 6.136154, with a minimum value of 2.860000 recorded by PT Bank Tabungan Negara (Persero) Tbk and a maximum value of 24.38000 recorded by PT Bank Amar Indonesia Tbk. The standard deviation of 3.880628 suggests considerable variation in NIM values among the sampled banks. The skewness value of 3.312431 indicates a positively skewed distribution, whereas the kurtosis value of 14.17171 signifies a distribution that is substantially more peaked than a normal distribution.

Furthermore, the third independent variable, NPL, has a mean value of 2.787500, with a minimum value of 0.000000 observed in PT Bank Aladin Syariah Tbk and a maximum value of 10.25000 observed in PT Bank Amar Indonesia Tbk. The standard deviation of 1.852254 indicates a moderate level of dispersion in NPL values. The skewness value of 2.089702 reflects a positively skewed distribution, while the kurtosis value of 9.203981 suggests a distribution that is more peaked than a normal distribution.

The fourth independent variable in this study, ROA, has a mean value of 1.976923, with a minimum value of -10.85000 recorded by PT Bank Aladin Syariah Tbk and a maximum value of 8.860000 recorded by PT Bank Maybank Indonesia Tbk. The standard deviation of 3.397647 indicates a relatively high level of variability in ROA values. The skewness value of -1.463529 shows that the distribution is negatively skewed, whereas the kurtosis value of 7.547700 indicates a distribution that is more peaked than a normal distribution.

Finally, the control variable in this study, namely firm size represented by SIZE, has a mean value of 33.08109, with a minimum value of 28.40720 recorded by PT Bank Aladin Syariah Tbk and a maximum value of 35.42552 recorded by PT Bank Mandiri (Persero) Tbk. The standard deviation of 1.897651 indicates relatively low variability in SIZE and suggests that the data points are generally close to the mean value. The skewness value of -1.045268 indicates a left-skewed distribution, while the kurtosis value of 3.262824 suggests a distribution that is relatively close to a normal distribution.

Estimation Model Selection

Chow Test

Table 2. Chow Test

Redundant Fixed Effects Tests
Equation: EQ_PANEL
Test cross-section fixed effects

Effects Test	Statistic	d.f.	Prob.
Cross-section F	15.892014	(12,34)	0.0000
Cross-section Chi-square	98.198057	12	0.0000

Based on the results of the Chow test, the probability value of the cross-section Chi-square is 0.000. Since the probability value is less than 0.05, the decision is to reject H_0. Therefore, the Fixed Effects Model (FEM) is considered more appropriate than the Common Effects Model (CEM).

Hausman Test

Table 3. Hausman Test

Correlated Random Effects - Hausman Test
Equation: EQ_PANEL
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	146.87297 2	5	0.0000

Based on the Hausman test results, the probability value is 0.0000. Since the probability value is less than 0.05, H_0 is rejected. Thus, the Fixed Effects Model (FEM) is the most appropriate model for this study compared with the Random Effects Model (REM). After conducting these two tests, sufficient evidence confirms that FEM is the most suitable model for analyzing the data in this study. Therefore, the Lagrange Multiplier (LM) test is not required.

Panel Data Regression Model

Table 4. Regression Model Estimation

Dependent Variable: TOBINS
Method: Panel Least Squares
Date: 03/04/26 Time: 19:46
Sample: 2021 2024
Periods included: 4
Cross-sections included: 13
Total panel (balanced) observations: 52

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	307.4988	25.86517	11.88853	0.0000
ESG	0.013475	0.018849	0.714892	0.4796
NIM	-0.007095	0.108884	-0.065165	0.9484
NPL	-0.920050	0.245610	-3.745981	0.0007
ROA	0.327666	0.092306	3.549795	0.0012
SIZE	-9.217859	0.785917	-11.72879	0.0000

Based on the regression estimation results presented in Table 4, the panel data regression equation is as follows:

$$Y = 307{,}4988 + 0{,}0135X1 - 0{,}0071X2 - 0{,}9201X3 + 0{,}3277X4 - 9{,}2179K$$

Each coefficient can be interpreted as follows:

1. Coefficient of X_1 (ESG) is positive at 0.0135. This indicates that a one-unit increase in the ESG score (X_1) will increase Tobin's Q (Y) by 0.0135, assuming all other variables remain constant. This suggests that better ESG performance tends to increase firm value as measured by Tobin's Q.
2. Coefficient of X_2 (NIM) is negative at -0.0071. This means that a one-unit increase in Net Interest Margin (NIM) will decrease Tobin's Q (Y) by 0.0071, assuming all other variables remain constant. This indicates that an increase in NIM is associated with a tendency for firm value to decline.
3. Coefficient of X_3 (NPL) is negative at -0.9201. This implies that a one-unit increase in Non-Performing Loans (NPL) will decrease Tobin's Q (Y) by 0.9201, assuming all other variables remain constant. This suggests that a higher level of non-performing loans tends to reduce firm value.
4. Coefficient of X_4 (ROA) is positive at 0.3277. This indicates that a one-unit increase in Return on Assets (ROA) will increase Tobin's Q (Y) by 0.3277, assuming all other

variables remain constant. This suggests that higher profitability tends to increase firm value.

5. Coefficient of K (Firm Size) is negative at -9.2179. This implies that a one-unit increase in Firm Size (K) will decrease Tobin's Q (Y) by 9.2179, assuming all other variables remain constant. This indicates that larger firms tend to exhibit lower firm value within this model.

Classical Assumption Tests

Normality Test

The normality test was conducted to determine whether the residuals of the regression model follow a normal distribution. The test was performed using the Jarque-Bera test at a significance level of 0.05. The figure below presents the results of the Jarque-Bera test.

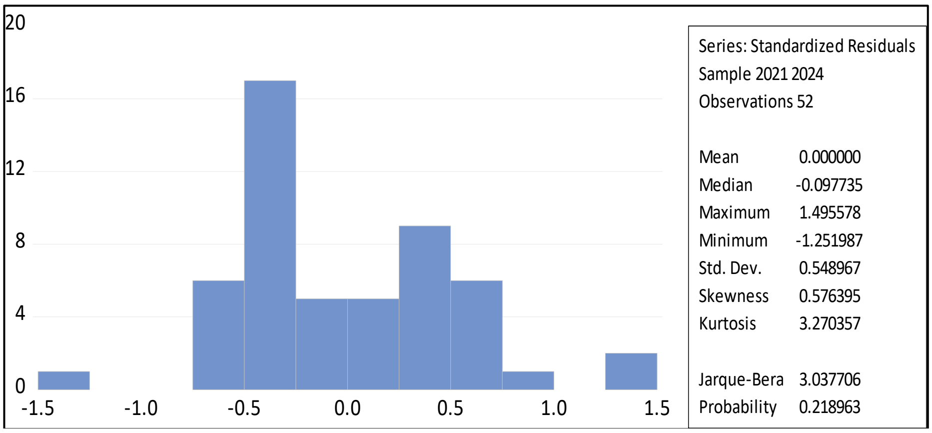

Figure 1. Normality Test

Based on the test results, the Jarque-Bera probability value is 0.218963. Since the probability value exceeds 0.05, the residuals are normally distributed. Therefore, the normality assumption is satisfied.

Heteroskedasticity Test

The heteroskedasticity test was conducted using the Glejser test by regressing the absolute residual values (ABS_RESID) on the independent variables. If the p-value exceeds 0.05, heteroskedasticity is considered absent.

Table 5. Heteroskedasticity Test

Dependent Variable: ABS(RESID)
Method: Panel Least Squares
Date: 03/04/26 Time: 19:56
Sample: 2021 2024
Periods included: 4
Cross-sections included: 13
Total panel (balanced) observations: 52

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	20.66653	11.22076	1.841813	0.0742
ESG	0.005095	0.008177	0.623087	0.5374

NIM	0.042423	0.047236	0.898107	0.3754
NPL	-0.031481	0.106550	-0.295457	0.7694
ROA	0.002086	0.040044	0.052090	0.9588
SIZE	-0.626539	0.340944	-1.837658	0.0749

Based on the table above, all independent variables have p-values greater than 0.05. Therefore, heteroskedasticity is not present in the model, indicating that the homoscedasticity assumption is satisfied.

Multicollinearity Test

The multicollinearity test was conducted to determine whether strong linear relationships exist among the independent variables. This test was performed using Variance Inflation Factor (VIF) values. A VIF value greater than 10 indicates multicollinearity.

Table 6. Multicollinearity Test

Variance Inflation Factors
Date: 03/04/26 Time: 19:57
Sample: 2021 2024
Included observations: 52

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	125.9054	76957.31	NA
ESG	6.69E-05	172.6161	1.507638
NIM	0.002231	53.82012	2.469750
NPL	0.011353	56.79288	2.874061
ROA	0.001604	6.434768	2.604273
SIZE	0.116243	77757.86	2.146497

The table shows that all centered VIF values are below 10. Therefore, there is no indication of multicollinearity among the independent variables, and the multicollinearity assumption is satisfied.

Autocorrelation Test

The autocorrelation test was conducted to identify whether residuals are correlated across time periods within the same panel unit. In addition to calculating the Durbin-Watson (DW) statistic, the lower bound (dL) and upper bound (dU) values from the Durbin-Watson table were also determined.

Table 7. Autocorrelation Test

Effects Specification			
Cross-section fixed (dummy variables)			
Root MSE	0.543663	R-squared	0.918351

Mean dependent var	1.473462	Adjusted R-squared	0.877526
S.D. dependent var	1.921189	S.E. of regression	0.672345
Akaike info criterion	2.311334	Sum squared resid	15.36962
Schwarz criterion	2.986764	Log likelihood	-42.09468
Hannan-Quinn criter.	2.570278	F-statistic	22.49500
Durbin-Watson stat	1.448029	Prob(F-statistic)	0.000000

Based on Table 7, the Durbin-Watson statistic is 1.448029 with the number of observations (n) equal to 52 and the number of independent variables (k) equal to 5. Referring to the Durbin-Watson table at a 5% significance level, the lower bound (dL) is 1.3512 and the upper bound (dU) is 1.7694.

A model is considered free from autocorrelation if the Durbin-Watson statistic falls within the interval:

$$\mathbf{dU < DW < 4 - dU}$$

In this study:

$$\mathbf{4 - dU = 4 - 1.7694 = 2.2306}$$

Thus, the autocorrelation-free region is:

$$\mathbf{1.7694 < DW < 2.2306}$$

Since the calculated DW value is 1.4480 and falls within the interval:

$$\mathbf{1.3512 < 1.4480 < 1.7694}$$

the Durbin-Watson statistic lies in the inconclusive region for positive autocorrelation. Therefore, no definitive conclusion can be drawn regarding the presence or absence of autocorrelation based on the Durbin-Watson test at the specified significance level.

Although the Durbin-Watson result falls within the inconclusive region, the model remains suitable for use because the test does not provide conclusive evidence of autocorrelation, and the other classical assumption tests do not indicate any serious violations.

Interpretation of Results

Table 8. Results Interpretation

Dependent Variable: TOBINS
Method: Panel Least Squares
Date: 03/04/26 Time: 19:58
Sample: 2021 2024
Periods included: 4
Cross-sections included: 13
Total panel (balanced) observations: 52

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	307.4988	25.86517	11.88853	0.0000
ESG	0.013475	0.018849	0.714892	0.4796
NIM	-0.007095	0.108884	-0.065165	0.9484
NPL	-0.920050	0.245610	-3.745981	0.0007
ROA	0.327666	0.092306	3.549795	0.0012
SIZE	-9.217859	0.785917	-11.72879	0.0000

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Schwarz criterion	2.986764	Log likelihood	-42.09468
Hannan-Quinn criter.	2.570278	F-statistic	22.49500
Durbin-Watson stat	1.448029	Prob(F-statistic)	0.000000

F-Test

The F-test is conducted to examine whether all independent variables simultaneously affect the dependent variable. The null hypothesis (H_0) states that all independent variables do not simultaneously affect the dependent variable. In contrast, the alternative hypothesis (H_1) states that all independent variables simultaneously affect the dependent variable.

Based on the table above, the F-statistic is 22.49500 with a probability value of 0.0000. Since the probability value is less than 0.05, the decision is to reject H_0. Therefore, it can be concluded that the independent variables included in the model simultaneously have a significant effect on Tobin's Q (Y).

t-Test

The t-test is employed to assess the partial effect of each independent variable on the dependent variable. The null hypothesis (H_0) states that, individually, the independent variable does not affect the dependent variable. Conversely, the alternative hypothesis (H_1) states that the independent variable has a significant effect on the dependent variable when considered individually.

Based on Table 4.9, the results for each independent variable are as follows:

1. ESG (X_1) has a probability value of 0.4796. Since the probability value exceeds 0.05, the decision is to fail to reject H_0. Therefore, ESG (X_1) does not have a significant partial effect on Tobin's Q (Y).
2. NIM (X_2) has a probability value of 0.9484. Since the probability value exceeds 0.05, the decision is to fail to reject H_0. Therefore, NIM (X_2) does not have a significant partial effect on Tobin's Q (Y).
3. NPL (X_3) has a probability value of 0.0007. Since the probability value is less than 0.05, the decision is to reject H_0. Therefore, NPL (X_3) has a significant partial effect on Tobin's Q (Y).
4. ROA (X_4) has a probability value of 0.0012. Since the probability value is less than 0.05, the decision is to reject H_0. Therefore, ROA (X_4) has a significant partial effect on Tobin's Q (Y).

Coefficient of Determination

The coefficient of determination (R^2) value of 0.918351 indicates that the independent variables included in the model are capable of explaining 91.84% of the variation in Tobin's Q. The remaining 8.16% is explained by other factors that are not included in the research model.

Discussion

The Effect of Sustainability on Firm Value

The ESG variable exhibits a positive coefficient value of 0.013475. This figure indicates that every increase in the ESG score tends to be followed by an increase in firm value, as proxied by Tobin's Q. However, the probability value of ESG is 0.4796, which is greater than the significance level of 0.05, indicating that the effect of ESG on firm value is not statistically significant. Therefore, ESG has not been proven to have a significant effect on firm value, although the direction of the relationship is positive. This finding is inconsistent with the initial research hypothesis, which predicted that ESG would have a positive effect on firm value. Accordingly, H1 is rejected. The findings of this study support those of (Putri et al., 2022) and (Wulanningrat & Hadiorajitno, 2025) who concluded that ESG does not have a significant impact on firm value.

Based on signalling theory, ESG should serve as a positive signal for investors because it reflects a company's commitment to environmental, social, and governance aspects. However, the results of this study indicate that ESG does not significantly affect firm value. This suggests that the ESG signals communicated by companies are not yet strong enough to influence investors' decisions. The insignificance of ESG may be attributed to the limited knowledge of Indonesian investors regarding ESG, coupled with the lack of information dissemination from the government concerning ESG practices (Rahayu, 2024). This indicates that ESG implementation in Indonesia remains in the early stages of adaptation, leading investors to rely more heavily on financial information when making investment decisions (Satrio et al., 2025). Furthermore, the level of transparency in ESG reporting, which is still considered moderate (Saraswati et al., 2024) along with the existence of greenwashing practices (Nanlohi et al., 2025) may create doubts regarding the credibility of ESG implementation within companies. Consequently, even when a company reports a high ESG score, investors tend to remain skeptical of the information. This condition prevents ESG from becoming a sufficiently strong signal for investors, resulting in its insignificant effect on firm value.

The Effect of Intermediation Efficiency on Firm Value

The NIM variable has a coefficient value of -0.007095, indicating a negative relationship. This suggests that an increase in NIM tends to be accompanied by a decrease in firm value. However, the probability value of NIM is 0.9484, which is greater than the established significance level. Therefore, NIM does not have a significant effect on firm value. Although the relationship is negative, NIM has not been able to exert a significant influence on firm value. This finding is inconsistent with the hypothesis formulated at the beginning of the study; therefore, H2 is rejected. The result is consistent with the findings of Putri et al. (2022), who concluded that NIM has no significant effect on firm value.

According to signalling theory, NIM may serve as a signal to investors regarding the effectiveness of a bank's intermediation function. However, the findings of this study suggest that the signal conveyed by NIM is not sufficiently strong to influence investors' assessments of the company. This may be because NIM only measures net income generated from banking intermediation activities, whereas bank revenue streams have become increasingly diversified (Yuniarsa & Annis, 2020) including fee-based income, trading and investment income, digital banking services, investment activities, and other digital services. Consequently, investors tend to focus on the bank's overall ability to generate profits rather than on a single source of income (Wijaya & Amelia, 2017) As a result, changes in NIM do not necessarily alter investors' perceptions of firm value.

The Effect of Credit Risk on Firm Value

The NPL variable has a coefficient value of -0.920050, indicating a negative relationship. This result shows that an increase in NPL is associated with a decline in firm value. The probability value of NPL is 0.0007, which is lower than the significance level of 0.05. Therefore, it can be concluded that NPL has a significant effect on firm value. Given its negative coefficient, NPL is found to have a significant negative effect on firm value.

The findings of this study reinforce the results of (Wiadnyani & Artini, 2023) dan (Athayya & Yulazri, 2025) who reported that NPL has a significant negative effect on firm value. This finding is also consistent with signalling theory, as NPL may serve as a negative signal to investors regarding credit quality and a bank's ability to manage credit risk. This relationship can be explained by the fact that when the risk of non-performing loans increases, the Allowance for Impairment Losses (CKPN) must also be increased. The establishment of higher CKPN provisions reduces profitability and contributes to a decline in investor confidence regarding the bank's stability, which in turn affects investors' valuation of the company (Athayya & Yulazri, 2025). Therefore, NPL is considered a highly sensitive ratio for investors, and any change in this ratio can significantly influence firm value.

The Effect of Profitability on Firm Value

The ROA variable has a coefficient value of 0.327666, indicating a positive relationship. This result suggests that an increase in ROA is accompanied by an increase in firm value. The probability value of ROA is 0.0012, which is lower than 0.05, leading to the conclusion that ROA has a significant effect on firm value. Given its positive coefficient, ROA can be said to have a significant positive effect on firm value.

This finding is consistent with the studies conducted by (Rossa et al., 2023) and (Nur Ayu et al., 2025) which found that ROA has a significant positive effect on firm value. The results support signalling theory because a strong ROA sends a positive signal that the company's asset management and profit-generating capabilities are operating effectively. This provides assurance that the company is able to utilize its assets efficiently, thereby attracting new investors (Br Ginting & Sussanto, 2024).

The Simultaneous Effect of Sustainability, Intermediation Efficiency, Credit Risk, and Profitability on Firm Value

The simultaneous test produced an F-statistic value of 22.49500 and a probability value of 0.0000. The probability value, which is lower than 0.05, indicates that ESG, NIM, NPL, and ROA collectively have a significant effect on firm value. Therefore, the independent variables included in this study are simultaneously capable of influencing firm value. This condition reflects that the value of banking firms is not determined by a single indicator but rather by a combination of financial and non-financial indicators. Consequently, although ESG and NIM do not have a significant effects individually, both variables continue to contribute to the model when analyzed together with NPL and ROA.

4. Conclusion

The objective of this study is to analyze the effects of sustainability, intermediation efficiency, credit risk, and profitability on the firm value of banking companies during the 2021–2024 period, using a total sample of 13 banks. Based on the research findings and discussions presented in the previous chapter, the following conclusions can be drawn:

The ESG variable does not have a significant effect on firm value. This result indicates that the disclosure of ESG factors in the sustainability reports of banking companies is not sufficiently strong to alter investors' perceptions of firm value. This may be attributed to the fact that ESG considerations still receive limited attention from investors during the investment decision-making process.

The NIM variable does not have a significant effect on firm value. This finding suggests that a high Net Interest Margin (NIM) does not necessarily lead to an increase in firm value from the investors' perspective. This condition may occur because NIM only measures one source of banking income, namely interest income, whereas in the modern banking industry, revenue streams have become more diversified. Investors, therefore, tend to place greater emphasis on a bank's overall ability to generate income rather than on interest income alone.

The NPL variable has a significant negative effect on firm value. This implies that any increase in the Non-Performing Loan (NPL) ratio can reduce firm value in the eyes of investors. An increase in NPL indicates a higher proportion of non-performing or defaulted loans, which results in lower interest income and higher provisions for Allowance for Impairment Losses (CKPN). Both factors reduce the bank's overall earnings and diminish investor confidence in the bank's performance. Consequently, investors tend to assign a lower valuation to the company due to concerns regarding its ability to manage credit effectively.

The ROA variable has a significant positive effect on firm value. This finding indicates that an increase in Return on Assets (ROA) can enhance firm value from the investors' perspective. This is attributable to the increase in overall profitability, which reflects the bank's efficiency in utilizing its assets to generate returns. Such performance encourages investors to assign a higher valuation premium to banks with superior ROA levels.

Simultaneously, ESG, NIM, NPL, and ROA have a significant effect on firm value. This result indicates that the value of banking firms is not determined by a single factor but is influenced by a combination of both financial and non-financial factors. Although ESG and NIM do not exhibit significant effects individually, these variables remain integral components of the model and, together with NPL and ROA, contribute to explaining variations in firm value when tested simultaneously.

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