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Effectiveness of ESG practices in enhancing firm value: Evidence from Indonesian banking

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Abstract

This study uses profitability (ROA) as a moderating variable to examine how Environmental, Social, and Governance (ESG) affects the firm value of Indonesian banking firms. Secondary data were obtained from 121 observations of banks listed on the Indonesia Stock Exchange during 2018–2023, covering the pre, during, and post COVID-19 periods. ESG performance was measured using the Bumi Global Karbon (BGK) Foundation score, while Tobin's Q ratio was used to calculate firm value. Panel data regression with a Fixed Effect Model under the Moderated Regression Analysis (MRA) approach was employed. The results show that ESG has a negative effect on firm value, while the ESG ROA interaction has a significantly positive effect, indicating that profitability strengthens ESG's contribution to firm value. Control variables, leverage, and firm size were found insignificant. The findings highlight the need for financial readiness before intensive ESG adoption and the importance of regulatory incentives to promote ESG implementation without reducing profitability.

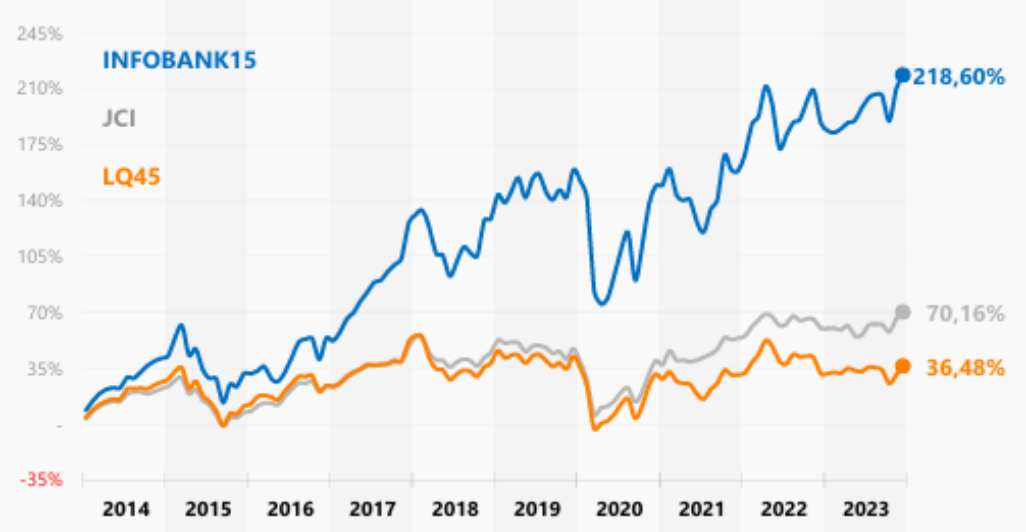
Introduction

In recent years, the global economy has been characterized by heightened uncertainty driven by various factors such as macroeconomic volatility, geopolitical conflicts, climate change, and the accelerating pace of technological disruption. These conditions have affected the stability of the financial sector, including the banking industry in Indonesia, through fluctuations in interest rates, exchange rates, and inflation levels (Murjiani & Adiyanto, 2023). Firm value serves as a key indicator in assessing growth prospects and business risks, particularly amid such uncertainty. A high firm value reflects investors' confidence in a company's ability to generate long-term profits (Savitri et al., 2021).

In the banking industry, firm value measured through Tobin's Q has drawn significant attention from economists and researchers over the past decades. Tobin's Q reflects how effectively bank management utilizes assets to generate added value. Q > 1 indicates that the market values the bank higher than the value of its assets, signifying confidence in its prospects and operational efficiency (Averio et al., 2024). Conversely, a decline in Tobin's Q is often associated with falling stock prices and rising risk perceptions. In the Indonesian context, Q fluctuations reflect macroeconomic pressures, foreign capital outflows, and expectations regarding global interest rates (Jamaludin, 2025).

Figure 1 shows that the combined banking stock index over the past year has generally trended downward, despite some short-term fluctuations. This indicates pressure on the banking

sector from external factors such as interest rates, inflation, and new regulations. Moreover, Tobin's Q is not merely a valuation metric but also a lens through which market perceptions of a bank's strategy and assets can be understood. In banking research, firm value provides an opportunity to link financial performance with ESG within a unified analytical framework. This forms the basis of the researcher's interest in comprehensively examining banking value.



Source: https://www.idx.co.id/Media/hilbp3aa/fs-infobank15-2023-12.pdf

Figure 1. IDX Banking Index (JKBANK15) 2014–2023

In recent developments, non-financial dimensions have increasingly played a crucial role in determining firm value. Aspects such as environmental sustainability, social responsibility, and good corporate governance collectively known as Environmental, Social, and Governance (ESG) are gaining heightened attention from stakeholders. ESG has become a strategic reference in investment decision-making, particularly amid growing global awareness of climate crises, social inequality, and the importance of corporate transparency (Samy El-Deeb et al., 2023; Tamasiga et al., 2024).

In the Indonesian banking sector, ESG is gradually being integrated into business strategies. Several major banks, such as Bank Rakyat Indonesia (BRI) and Bank Central Asia (BCA), have launched sustainability initiatives, including Sustainable Finance Frameworks emphasizing environmentally friendly financing (Bisnis.com, 2025). However, not all banks have shown consistent improvement in firm value following ESG adoption. This raises questions regarding the effectiveness of ESG in enhancing banks' market performance and opens avenues for further scholarly investigation, particularly in a highly regulated sector like banking.

ESG has the potential to significantly enhance firm value through both reputational gains and risk efficiency. Empirical evidence shows a significant positive correlation between ESG performance and firm value, particularly through mechanisms such as enhancing reputation, lowering the cost of capital, and increasing attractiveness to institutional investors (Tang et al., 2024). ESG can serve as a strong trust signal in the market, driving higher corporate valuations in the long run (Ho et al., 2024; Postiglione et al., 2024; Wedajo et al., 2024; Xiao, 2024; Y. Xu & Zheng, 2024). Conversely, some studies report that ESG activities may negatively impact firm value due to the additional operational burden they impose (Mikołajek-Gocejna, 2024; Mohamad, 2020; Negara et al., 2024; Postiglione et al., 2024). This divergence in findings indicates a relevant research gap, particularly when contextual factors such as a firm's financial condition are considered.

Profitability is a crucial element that could affect how strongly ESG, and firm value are related. A company's ability to efficiently generate profits from its assets is reflected in its

profitability. Firms with high profitability are better positioned to absorb ESG implementation costs and transform them into competitive advantages (Wang, 2025; Y. Xu & Zheng, 2024). Conversely, for firms with low profitability, ESG may represent an additional burden without contributing to value creation (Akbar & Setiana, 2024; Ho et al., 2024). Therefore, profitability is employed as a moderating variable in this study to determine whether it strengthens or weakens the relationship between ESG and firm value.

Unlike previous studies that have taken a general or cross-sectoral approach, this research offers novelty by examining the effect of ESG on firm value with profitability as a moderating variable specifically in the Indonesian banking sector. The study covers the 2018–2023 period, which captures conditions before, during, and after the COVID-19 pandemic a period marked by significant changes in both ESG policies and firms' financial conditions. The banking sector is selected due to its substantial responsibility in supporting the sustainable development agenda, including green financing, as well as regulatory pressures promoting stronger ESG practices, as outlined in the OJK Sustainable Finance Roadmap 2021–2025 (OJK, 2022).

Ultimately, this study is to investigate the moderating influence of profitability in the relationship between Environmental, Social, and Governance (ESG) and firm value in the Indonesian banking industry. The findings are expected to provide both practical and theoretical contributions to investment decision-making, corporate ESG policy formulation, and the enrichment of academic literature on firm value and sustainability in emerging markets.

Literature Review

Resource-Based View (RBV) Theory

The Resource-Based View (RBV) according to theory, a company's capacity to manage internal resources that are rare, valuable, unique, and non-substitutable (VRIN) determines its competitive edge (Barney, 1991). In this context, Environmental, Social, and Governance (ESG) practices are considered intangible resources with strategic potential to enhance reputation, stakeholder trust, and mitigate long-term risks. When ESG practices fulfill the VRIN criteria, they can serve as strategic assets that provide sustainable competitive advantage (Barney & Clark, 2007; Postiglione et al., 2024). This enables firms to increase long-term value through stronger reputation, operational efficiency, and investor appeal.

However, RBV also emphasizes that the effectiveness of ESG implementation is highly contingent on a firm's internal capacity, including profitability. Firms with high profitability have greater financial flexibility to absorb ESG-related costs and integrate them into business strategies (Aydoğmuş et al., 2022; Chininga et al., 2024). Conversely, firms with low profitability often face resource constraints, making ESG initiatives a potential burden that may not contribute meaningfully to firm value (Wu et al., 2024; Xu et al., 2022).

Environmental, Social, and Governance (ESG) and Firm Value

As a non-financial performance indicator, Environmental, Social, and Governance (ESG) plays a central role in determining firm value, especially amid growing global investor expectations for sustainability. ESG underscores the importance of environmental stewardship and social responsibility in business operations, aligning with increasing investor attention to sustainability issues. Strategic ESG implementation can enhance corporate reputation, operational efficiency, and access to cheaper financing, thereby positively influencing firm value (D'Ecclesia et al., 2025; Fatemi et al., 2018).

Empirical studies reveal that strong ESG performance is positively correlated with higher market value. High ESG scores increase investor appeal and reduce risk, ultimately boosting valuations (Liang & Renneboog, 2017; Postiglione et al., 2024). From an RBV perspective, ESG functions as a rare and inimitable intangible asset, creating competitive advantage (Barney, 1991).

However, ESG may become a burden for firms with low profitability due to limited resources to manage sustainability initiatives effectively (Ho et al., 2024; Li et al., 2024).

Beyond reputation-building, ESG also contributes to reducing regulatory risks and improving efficiency. Commitment to environmental protection, fair social practices, and sound governance has been shown to attract investors and lower the cost of capital (Ernst et al., 2025; Liu & Wu, 2023; Miralles-Quirós et al., 2019). Recent studies even suggest that high ESG scores can improve Tobin's Q, including during crisis periods such as the COVID-19 pandemic (Chen et al., 2024). Thus, ESG plays a strategic role in enhancing firm value, although its impact remains highly dependent on internal context and firm capabilities.

H1 : Environmental, Social, and Governance (ESG) has a positive effect on Firm Value.
H1a: Environmental has a positive effect on Firm Value.
H1b: Social has a positive effect on Firm Value.
H1c: Governance has a positive effect on Firm Value.

Profitability, Environmental, Social, and Governance (ESG), and Firm Value

To better understand the variation in ESG's impact on firm value, it is important to examine internal conditions such as profitability, which may either strengthen or weaken the effectiveness of ESG. ESG has become a focal point in investor decision-making as it is perceived to reflect a company's commitment to sustainability. Several studies have demonstrated that ESG can positively influence firm value by enhancing reputation, strengthening stakeholder relationships, and improving access to financing (D'Ecclesia et al., 2025; Fatemi et al., 2018). However, the magnitude of this effect can vary depending on internal conditions, particularly profitability as measured by Return on Assets (ROA).

In explaining the role of profitability, the Resource-Based View offers a relevant theoretical foundation. According to RBV (Barney, 1991), firms possessing superior resources such as high profitability are better equipped to manage ESG policies effectively. High profitability provides financial flexibility, enabling firms to finance ESG initiatives without disrupting operations, thereby transforming ESG into a competitive advantage (Liang & Renneboog, 2017). In contrast, firms with low profitability face resource constraints, making ESG initiatives more likely to become a cost burden with limited value creation (Li et al., 2024).

Therefore, profitability is expected to strengthen the relationship between ESG and firm value. Firms with high profitability are generally better positioned to optimize ESG benefits, making sustainability disclosures more credible and attractive to investors (Zhang, 2025).

H2: Profitability strengthens the relationship between Environmental, Social, and Governance (ESG) and Firm Value.

Research Method

This study uses secondary data and a qualitative methodology. The information comes from the 2018–2023 annual reports and sustainability reports of businesses that are listed on the Indonesia Stock Exchange (IDX). ESG data was obtained from reports compiled by the Bumi Global Karbon (BGK) Foundation. BGK Foundation is an independent organization that is a member of the Global Reporting Initiative (GRI), a supporting member of the Taskforce on Climate-related Financial Disclosure (TCFD), and an accredited silver solution provider from the Carbon Disclosure Project (CDP). BGK Foundation has conducted various analyses and research related to sustainability, as well as environmental, social, and governance impact analyses of corporate activities aimed at advancing various industry sectors. Meanwhile, financial data including firm value, profitability, and total assets were collected from the respective companies' annual reports. The BGK Foundation is an independent non-profit organization with no affiliation to any specific financial institution, ensuring objectivity and transparency in its assessments.

The study population consists of all companies listed on the IDX during the specified period. The sample was selected using a purposive sampling technique with the following criteria: The company consistently published both annual reports and sustainability reports during 2018–2023, The company had complete data on ESG scores, profitability, and firm value, and ESG data were available from a credible source, namely the BGK Foundation. Based on these criteria, a total of 144 observations were obtained in the form of panel data, covering both cross-sectional and time-series dimensions.

Table 1. Measurement Table

Variabel	Formula	Reference
Firm Value	Tobin'sQ = (Equity Market Value + Liabilities Market Value)/ (Equity Book Value + Liabilities Book Value)	(Aydoğmuş et al., 2022; Gillan et al., 2021)
Environmental, Social, and Governance	BGK ESG Index Score	(BGK Foundation, 2020)
Profitability	$ROA = \frac{Net\ Profit}{Total\ Assets}$	(Hidayat & Khotimah, 2022)
Leverage	$DER = \frac{Total\ Liabilities}{Total\ Equity}$	(Martini, 2024)
Firm Size	Firm Size = Log Natural (Total Assets)	(Chatterjee & Eyigungor, 2023; Hidayat & Khotimah, 2022)

The dependent variable in this study is firm value, measured using Tobin's Q ratio (Yu et al., 2018), calculated as the ratio of the market value of equity plus the book value of debt to total assets. The independent variable is the ESG score, representing corporate performance across environmental, social, and governance dimensions. The moderating variable is profitability, measured by Return on Assets (ROA), the ratio of net income after tax to total assets—which reflects the efficiency of a company in generating profit. Control variables include leverage and firm size. Data analysis was conducted using panel data regression with a Moderated Regression Analysis (MRA) approach, utilizing EViews version 13 software. The regression model used is as follows:

$$FVit = \alpha+\beta1ESGit+\beta2ROAit+\beta3ESGit\times ROAit+\beta4LVit+\beta5SIZEit+\varepsilon it$$

Notes:
FVit : Firm value (Tobin's Q) of company i in year t
ESGit : ESG disclosure score of company i in year t
ROAit : Return on Assets of company i in year t
LVit : Leverage of company i in year t
Sizeit : Firm size of company i in year t
α : Intercept
β : Regression coefficient
εit : Error term

Results and Discussion

A number of model selection tests, including the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM), were carried out utilizing the Chow, Hausman, and LM tests in order to identify the best panel regression model for this investigation. Based on the model selection process, both the Chow and Hausman tests yielded p-values of less than 0.05, indicating that the best model was the Fixed Effect Model (FEM). This study employed an unbalanced panel data approach, as the available database contains only 122 out of the total 144

observations. Consequently, there is a variation in the number of data points for ESG metrics and other associated variables.

Descriptive statistics provide an initial overview of the distribution and characteristics of the data used in this research. The average firm value was recorded at 1.1592 with a standard deviation of 1.1675, indicating a relatively high variation across firms. The mean ESG score of 0.3520 with a standard deviation of 0.2498 reflects heterogeneous levels of ESG disclosure. This finding aligns with prior studies suggesting that, in developing countries, ESG disclosure practices are still influenced by voluntary regulation, weak governance, and potential greenwashing (Adardour et al., 2025; da Silva, 2025; Singhania & Saini, 2023).

In terms of financial characteristics, ROA had a relatively low mean value of 0.0116, with a wide range (-0.0853 to 0.0967), suggesting significant differences in profitability performance among firms. The mean leverage ratio of 0.7424 indicates that most firms in the sample relied on debt-dominated capital structures. Meanwhile, firm size measured using the natural logarithm of total assets had a mean of 32.3995, implying that the majority of the sample comprised large firms. This descriptive overview provides a basis for understanding the potential relationships among variables in the regression model.

Table 2. Descriptive Statistics

Variable(s)	Mean	Median	Maximum	Minimum	Std. Dev.	Observations
FV	1.1592	0.9629	13.8807	0.0553	1.1675	144
ESG	0.3520	0.2466	0.9433	0.0600	0.2498	122
ROA	0.0116	0.0128	0.0967	-0.0853	0.0254	144
LV	0.7424	0.8353	0.9321	0.0407	0.2256	144
Size	32.3995	32.7604	35.2142	27.2184	1.6795	144

Notes: FV: Firm Value; ESG: ESG Disclosure Score; ROA: Return on Assets; LV: Leverage; SIZE: Firm Size
Source: Results of researcher's statistical data (2025)

Subsequently, Pearson correlation analysis was performed to identify preliminary relationships among variables. The results indicate that the correlation between ESG and ROA (0.0897) and between ESG and LV (0.1478) were weak ($r < 0.3$), while the correlation between ESG and firm size (0.4455) was moderate. The correlations between ROA and LV (-0.0902), and between ROA and firm size (0.2702), were also weak. Meanwhile, leverage and firm size showed a moderate correlation of 0.5079. The absence of strong correlations among independent variables suggests low multicollinearity risk, indicating that the regression model used is reasonably valid.

The regression model used in this study was statistically significant. The F-statistic of 8.916 with a significance level of $p < 0.01$ and an adjusted R-squared of 0.6468 indicate that approximately 64.68% of the variation in firm value can be explained by ESG, ROA, the ESG×ROA interaction, leverage, and firm size.

Table 3. Correlation Matrix

	ESG	ROA	LV	Firm Size
ESG	1.0000			
ROA	0.0897	1.0000		
LV	0.1478	-0.0902	1.0000	
Size	0.4455	0.2702	0.5079	1.0000

Notes: FV: Firm Value; ESG: ESG Disclosure Score; ROA: Return on Assets; LV: Leverage; SIZE: Firm Size
Source: Results of researcher's statistical data (2025)

Individually, ESG and ROA had significant negative effects on firm value, with coefficients of -4.0916 and -96.8881 ($p < 0.01$), respectively. Conversely, the ESG×ROA interaction had a

significant positive effect, with a coefficient of 224.3652 ($p < 0.01$), suggesting that profitability strengthens the effect of ESG on firm value.

Table 4. Moderated Regression Analysis (MRA)

Variable(s)	C	t-Stat	Prob
C	0.5192	0.0551	0.9562
ESG	-4.0916	-5.9894	0.0000***
ROA	-96.8881	-10.475	0.0000***
ESG*ROA	224.3652	7.4993	0.0000***
Leverage	1.6017	1.0793	0.2832
Firm Size	0.0307	0.1074	0.9147
R-squared	0.7285		
Adj R-Squared	0.6468		
F-statistic	8.916		
Prob (F-stat)	0.0000***		

Notes: FV: Firm Value; ESG: ESG Disclosure Score; ROA: Return on Assets; LV: Leverage; SIZE: Firm Size; *,**,***: Prob. Value 0.1, 0.05 and 0.01
Source: Results of researcher's statistical data (2025)

ESG practices implemented in isolation, without profitability support, may actually reduce firm value. This suggests that ESG is not yet perceived by the market as a value driver, particularly when companies cannot effectively manage its implementation costs. ESG initiatives require substantial investments in reporting, training, and operational restructuring (da Cunha et al., 2025), which, without adequate profitability, become a financial burden. However, when firms have high ROA, ESG can be integrated into business strategies and generate added value. Thus, ESG has the potential to become a strategic resource only when supported by strong internal financial capacity.

The regression results highlight the crucial role of profitability (ROA) in amplifying ESG's impact on firm value. Firms with high ROA are generally better positioned to absorb ESG implementation costs and embed them into value-creation strategies. In this sense, ROA acts as a catalyst that enables ESG to contribute positively to firm value (Akbar & Setiana, 2024; Aydoğmuş et al., 2022). In other words, ESG can be a strategic asset only if a firm has the financial capacity to manage it effectively. This finding reinforces the Resource-Based View (RBV) perspective, which emphasizes the importance of internal resources in this case, profitability in transforming intangible assets such as ESG into sustainable competitive advantages (Barney, 1991). Under the RBV framework, ESG that is not merely compliance-oriented but fully integrated into corporate strategy, possesses VRIN (Valuable, Rare, Inimitable, Non-substitutable) attributes, enhancing investor trust, reducing long-term risk, and strengthening firm value.

The findings also reveal that the effects of Environmental (E), Social (S), and Governance (G) components on firm value vary. From the RBV perspective, these ESG dimensions represent intangible resources that may create competitive advantages if managed effectively. The E variable showed a positive but insignificant coefficient, suggesting that environmental initiatives have not yet delivered tangible benefits to firm value, possibly due to high implementation costs and long payback periods. Conversely, the S variable had a significant negative effect, possibly reflecting that spending on social programs has not yet been offset by short-term financial gains or integrated into strategic capabilities. The G variable exhibited a positive but insignificant coefficient, consistent with RBV's view that good governance has potential to enhance firm value, though its effects may take longer to materialize.

Interaction analysis between ESG components and ROA provided deeper insights. The E×ROA interaction showed a negative and insignificant effect, indicating that high profitability does not yet effectively enhance the contribution of environmental initiatives to firm value. Conversely, the S×ROA interaction had a large and significant positive coefficient, suggesting that

profitable firms have the financial capacity to implement effective social programs that positively impact firm value. The G×ROA interaction showed a negative coefficient with marginal significance, possibly reflecting governance-related adjustment costs or agency costs in highly profitable firms.

Table 5. Moderated Regression Analysis (MRA) – ESG Indicator

Variable(s)	C	t-Stat	Prob
C	3.0229	0.3617	0.7184
E	0.4524	0.4164	0.6781
S	-7.2529	-5.2719	0.0000***
G	2.9474	1.6991	0.0928*
ROA	-81.5974	-6.4528	0.0000***
E*ROA	-60.8164	-1.156	0.2505
S*ROA	441.2926	6.4658	0.0000***
G*ROA	-149.8071	-1.9194	0.0581*
LV	2.4862	1.8583	0.0664*
Size	-0.0758	-0.2983	0.7661
R-squared	0.7974		
Adj R-Squared	0.7246		
F-statistic	10.9493		
Prob (F-stat)	0.0000***		

Notes: FV: Firm Value; ESG: ESG Disclosure Score; ROA: Return on Assets; LV: Leverage; SIZE: Firm Size; *,**,***: Prob. Value 0.1, 0.05 and 0.01
Source: Results of researcher's statistical data (2025)

Social resources thus appear most capable of leveraging profitability to increase firm value, whereas environmental and governance dimensions require more targeted, long-term strategies for their benefits to materialize optimally. Strengthening the integration and differentiation of ESG practices is therefore necessary to achieve sustainable competitive advantages.

When compared to prior studies, these findings align with Aydoğmuş et al., (2022) and Y. Xu & Zheng, (2024), who found that ESG positively affects firm value when combined with strong financial performance. However, they contrast with Mikołajek-Gocejna, (2024) and Sadiq et al., (2020), who argued that ESG always has a positive effect regardless of internal capacity. This divergence underscores the importance of considering contextual variables such as profitability levels and industry sector when evaluating ESG's effectiveness in value creation. Regarding control variables, leverage and firm size had no significant effect on firm value. High leverage does not necessarily indicate poor risk or efficiency, as in the banking sector, debt usage often forms an integral part of the business model (Alemu & Worku, 2025; Lily & Danarsari, 2024). This underscores that internal financial factors may be more decisive for firm value than size or capital structure.

These findings carry important practical implications for corporate management. The results indicate that the success of ESG initiatives is highly dependent on the firm's internal financial readiness. Therefore, companies should strengthen operational efficiency and profitability before aggressively expanding their ESG programs. Meanwhile, for regulators such as the Financial Services Authority (OJK) or the government, these findings provide valuable insights that financial incentives or support can encourage ESG adoption without exerting excessive pressure on profitability. In addition to comprehensive analysis over the entire period, this study also explores temporal dynamics to capture variations in the influence of ESG and ROA under different conditions.

To deepen the understanding of ESG and profitability dynamics under different contexts, a follow-up analysis was conducted by dividing the sample into distinct time periods in Table 6.

The regression results by period provide a more contextual interpretation of the relationship between ESG, ROA, and firm value. Overall, from 2018 to 2023, ESG exhibited a significant negative impact on firm value, while ROA also showed a negative effect. However, the interaction term ESG×ROA demonstrated a significantly positive influence. When the dataset was split into three subperiods pre pandemic (2018–2019), pandemic (2020–2021), and post pandemic (2022–2023) distinct patterns emerged, reflecting how the global crisis context influenced the relevance of ESG and firm performance.

Table 6. Moderated Regression Analysis (MRA) –Additional Analysis

PERIOD	2018–2019		2020–2021		2022–2023		2018–2023	
Best Model	REM		FEM		FEM		FEM	
AVG_ESG	-0.7276	0.0001***	-4.0266	0.1212	-0.1670	0.7954	-4.0916	0.0000***
ROA	3.5544	0.2970	-129.5986	0.0000***	-8.4625	0.2130	-96.8881	0.0000***
AVG_ESG × ROA	47.8875	0.0002***	245.8184	0.0680*	59.0112	0.0690*	224.3652	0.2529
LV	0.6267	0.0373**	9.4241	0.3308	6.7052	0.0023***	1.6017	0.2832
TA	0.0203	0.6086	1.0738	0.0751*	-3.0124	0.0000***	0.0307	0.9147
R^2	(0.7440)		(0.9501)		(0.9791)		(0.7286)	
Adj. R^2	(0.6830)		(0.8725)		(0.9483)		(0.6469)	
F-Stat.	(12.20)		(12.25)		(31.81)		(8.91)	
Prob (F)	0.0000***		0.0000***		0.0000***		0.0000***	

*Notes: FV: Firm Value; ESG: ESG Disclosure Score; ROA: Return on Assets; LV: Leverage; SIZE: Firm Size; *,**,***: Prob. Value 0.1, 0.05 and 0.01*

Source: Researcher's statistical results (2025)

Due to the need to identify the most appropriate model among Fixed Effects Model (FEM), Common Effects Model (CEM), and Random Effects Model (REM), the selected estimation approach may vary across periods. This variation reflects the model selection process, which is based on the statistical characteristics and suitability of each panel structure within the respective time frames.

The time-period analysis revealed compelling dynamics. Before the pandemic (2018–2019), ESG had a negative effect on firm value, except for firms with high ROA, which were able to transform ESG into a strategic advantage. During the pandemic (2020–2021), ESG lost its significance, while ROA showed a negative effect, highlighting the dominant role of financial pressure. In the post-pandemic period (2022–2023), firm size became a significantly negative factor, suggesting that larger firms faced greater challenges in navigating the sustainability transition after the crisis. The variable LV has a significant positive effect in several periods, indicating that effective use of leverage can improve financial performance, while TA has a significant negative effect in 2022–2023, reflecting potential inefficiency in the use of large assets. Overall, the R^2 value and Prob (F) indicate that the regression model has strong explanatory power and is simultaneously significant.

Overall, the effectiveness of ESG is strongly shaped by both external contexts and the internal conditions of the firm. In stable pre-pandemic periods, ESG required strong profitability to yield positive value effects. Conversely, during the crisis, high profitability was insufficient to amplify the impact of ESG. In the post-pandemic period, although ESG remained insignificant, new challenges emerged for large firms in adjusting their sustainability strategies.

Therefore, ESG will only serve as a consistent strategic resource for enhancing firm value if it is embedded as part of a long-term strategy, rather than as a mere response to external pressures or crises. Consequently, both investors and regulators should adopt adaptive and context-sensitive approaches to ESG evaluation, considering firms' internal capabilities and their position within the business cycle.

Conclusion

Based on the findings of this study, it can be concluded that Environmental, Social, and Governance (ESG) practices directly exert a negative influence on the firm value of banking companies in Indonesia. Nevertheless, corporate profitability, as measured by Return on Assets (ROA), is proven to significantly and positively moderate this relationship. This implies that ESG will contribute positively to firm value only when supported by adequate financial performance. These findings reinforce the relevance of the Resource-Based View (RBV) approach, which emphasizes that internal resources such as profitability are essential for managing and optimizing intangible assets like ESG as a source of long-term competitive advantage. Meanwhile, control variables such as leverage and firm size generally show no significant impact on firm value, although leverage exhibits a positive contribution in the post-pandemic period. Furthermore, the effectiveness of ESG is strongly influenced by external conditions, such as the COVID-19 pandemic, which alters the direction and significance of the relationships between variables across different time periods.

These findings carry important practical implications for various stakeholders. For corporate management, the results underscore the need for financial readiness and operational efficiency before fully adopting ESG, ensuring that sustainability initiatives truly generate added value. For investors, ESG information should not serve as the sole indicator in investment decision-making; a combination of sustainability indicators and financial performance remains the primary reference. Meanwhile, for regulators such as the Financial Services Authority (OJK), these results provide valuable input that policy incentives and institutional support are necessary to encourage ESG implementation without undermining corporate profitability, particularly during the transition towards a sustainable economy.

This study has several limitations that should be acknowledged. First, ESG measurement is conducted in an aggregate manner, making it impossible to analyze the specific contributions of each environmental, social, and governance dimension. Second, the research scope is limited to banking companies in Indonesia during the 2018–2023 period, which warrants caution in generalizing the results to other sectors and countries. For future research, it is recommended to expand the scope of analysis to other industries or conduct cross-country studies to test the consistency of the findings in different contexts. Additionally, analyzing ESG at the dimensional level is essential to gain a deeper understanding of the role each aspect plays in creating firm value.

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