“Do ESG practices enhance stock returns through firm fundamentals? Evidence from Indonesia”

AUTHORS	Tilawatil Ciseta Yoda Tafdil Husni Elvira Luthan Rida Rahim

ARTICLE INFO	Tilawatil Ciseta Yoda, Tafdil Husni, Elvira Luthan and Rida Rahim (2026). Do ESG practices enhance stock returns through firm fundamentals? Evidence from Indonesia. *Investment Management and Financial Innovations*, *23*(1), 447-455. doi: 10.21511/imfi.23(1).2026.33
DOI	http://dx.doi.org/10.21511/imfi.23(1).2026.33
RELEASED ON	Monday, 23 March 2026
RECEIVED ON	Monday, 01 December 2025
ACCEPTED ON	Monday, 16 March 2026

JOURNAL	"Investment Management and Financial Innovations"
ISSN PRINT	1810-4967
ISSN ONLINE	1812-9358
PUBLISHER	LLC “Consulting Publishing Company “Business Perspectives”
FOUNDER	LLC “Consulting Publishing Company “Business Perspectives”

NUMBER OF REFERENCES	NUMBER OF FIGURES	NUMBER OF TABLES
39	0	3

BUSINESS PERSPECTIVES

LLC "CPC "Business Perspectives"
Hryhorii Skovoroda lane, 10,
Sumy, 40022, Ukraine

www.businessperspectives.org

Tilawatil Ciseta Yoda (Indonesia), **Tafdil Husni** (Indonesia), **Elvira Luthan** (Indonesia), **Rida Rahim** (Indonesia)

DO ESG PRACTICES ENHANCE STOCK RETURNS THROUGH FIRM FUNDAMENTALS? EVIDENCE FROM INDONESIA

Abstract

This study examines whether Environmental, Social, and Governance (ESG) performance enhances stock returns directly or indirectly through firm fundamentals in an emerging market context. The analysis focuses on non-financial firms listed on the Indonesian Stock Exchange (IDX) over the period 2014–2023, following the expansion of sustainability reporting regulations in Indonesia. The final sample comprises 4,037 firm-year observations, of which 477 contain available ESG scores obtained from a third-party rating database. Panel data regression models with firm-level controls and mediation analysis are employed to test both direct and indirect relationships. The empirical results indicate that ESG performance has a positive and statistically significant effect on total factor productivity (TFP) and return on assets (ROA), suggesting that sustainability practices are associated with improvements in operational efficiency and profitability. In turn, both TFP and ROA exhibit positive and significant effects on stock returns. However, ESG does not demonstrate a statistically significant direct effect on stock returns after controlling for firm fundamentals. Mediation analysis confirms that ESG influences stock returns indirectly through productivity and profitability channels, with productivity emerging as the stronger transmission mechanism. These findings suggest that, in the Indonesian capital market, ESG operates primarily as a fundamental value-enhancing mechanism rather than as an independent pricing signal. Sustainability performance contributes to shareholder value when it strengthens firms' internal efficiency and financial resilience, highlighting the importance of fundamental performance channels in emerging markets.

Keywords sustainability, productivity, profitability, stock returns, signaling

JEL Classification D24, G12, G32, Q56

Type of the article: Research Article

Received on: 1st of December, 2025
Accepted on: 16th of March, 2026
Published on: 23rd of March, 2026

Tilawatil Ciseta Yoda, Lecturer, Business and Economics Faculty, Management Department, Andalas University & Baiturrahmah University, Indonesia.

Tafdil Husni, Professor, Business and Economics Faculty, Management Department, Andalas University, Indonesia. (Corresponding author).

Elvira Luthan, Associate Professor, Business and Economics Faculty, Accounting Department, Andalas University, Indonesia.

Rida Rahim, Associate Professor, Business and Economics Faculty, Management Department, Andalas University, Indonesia.

Conflict of interest statement:
Author(s) reported no conflict of interest

INTRODUCTION

The growing global emphasis on sustainability has increasingly influenced decision-making in capital markets, particularly through the rising importance of Environmental, Social, and Governance (ESG) considerations. Firms are increasingly expected to adopt ESG practices that reflect responsible environmental management, transparent governance structures, and stronger social engagement. Consequently, stock returns are no longer interpreted solely through traditional financial indicators but also through sustainability-related information that reflects firms' long-term risk management and strategic orientation (Vu et al., 2024; Bachner, 2025; Das Anggreni et al., 2025).

Stock returns represent the primary market-based reflection of investor expectations regarding firms' future performance, risk exposure, and growth opportunities (Bai et al., 2023). Traditional asset-pricing theories emphasize profitability and investment characteristics as key determinants of expected returns (Fama & French, 2015; Tan et al., 2024), while behavioral research highlights the role of investor senti-

ment and market reactions (Liu et al., 2023; Wouassom et al., 2022). Within this evolving framework, ESG practices have increasingly been interpreted as signals of corporate resilience, transparency, and long-term value creation (Sinha et al., 2020; Yin et al., 2023).

From an information perspective, ESG disclosures may reduce information asymmetry and improve transparency, potentially influencing investor decisions and capital allocation (Ammann et al., 2019; Drempetic et al., 2020; Avramov et al., 2022). However, empirical findings on the relationship between ESG and stock returns remain inconclusive. While some studies argue that ESG practices enhance firm value through improved governance and stakeholder relationships, others suggest that sustainability initiatives may impose additional costs that reduce expected returns (Pedersen et al., 2021; Gaia Soana, 2024).

Despite the growing literature on sustainable finance, relatively limited attention has been paid to the mechanisms through which ESG practices influence stock returns, particularly through firm fundamentals. In this context, productivity and profitability may represent important transmission channels. Total factor productivity (TFP) captures firms' efficiency in transforming inputs into outputs and reflects managerial efficiency and innovation capacity (Solow, 1987; Lee & Lee, 2022). ESG-related investments in environmental management, governance improvements, and innovation may therefore enhance firm productivity and financial performance, which ultimately affect stock returns (Xue et al., 2024; Kong et al., 2022).

This issue is particularly relevant in emerging markets. In economies with evolving regulatory frameworks and lower information efficiency, ESG disclosures may not immediately influence stock prices unless they translate into observable improvements in firm fundamentals. Indonesia provides a relevant empirical setting due to the increasing adoption of sustainability reporting practices and policy support for sustainable development (GGGI, 2015).

Accordingly, this study examines whether ESG practices enhance stock returns through firm fundamentals among non-financial firms listed on the Indonesian Stock Exchange. Specifically, the study investigates the mediating roles of total factor productivity and financial performance. By identifying these transmission mechanisms, this study provides new evidence on how ESG practices influence stock returns in an emerging market context.

1. LITERATURE REVIEW AND HYPOTHESES

Sustainability has increasingly become embedded in corporate strategy and capital market evaluation, particularly through the growing relevance of Environmental, Social, and Governance (ESG) performance. In capital markets characterized by information asymmetry, investors rely on observable signals to infer firms' unobservable quality. Signaling theory suggests that credible disclosures reduce adverse selection by distinguishing high-quality firms from weaker counterparts (Connelly et al., 2011). ESG disclosure has therefore emerged as a potential non-financial signal, conveying information about governance standards, environmental risk management, and long-term strategic orientation. Empirical research shows that stronger ESG performance is often associated with improved transparency, lower agency costs, and enhanced stakeholder trust (Fatemi et al., 2018; Drempetic et al., 2020; Avramov et al., 2022). Market-based evidence further indicates that ESG-related information influences investor flows and risk perceptions, particularly when sustainability commitments are perceived as credible (Hartzmark & Sussman, 2019; Awaysheh et al., 2020).

However, whether ESG operates as an independent pricing signal or derives its value relevance from underlying firm fundamentals remains debated. Some studies argue that sustainability initiatives may impose compliance costs and constrain managerial flexibility, potentially weakening short-term financial outcomes (Awaysheh et al., 2020; Pedersen et al., 2021). In contrast, other

http://dx.doi.org/10.21511/imfi.23(1).2026.33

research suggests that ESG contributes to long-term value creation by strengthening governance structures, mitigating operational risks, and fostering innovation (Eccles et al., 2014; Aouadi & Marsat, 2018; Boakye et al., 2021). These contrasting findings suggest that ESG may not directly affect stock returns but instead operate through intermediate performance channels.

From the perspective of the Resource-Based View (RBV), sustainable practices can be interpreted as strategic resources when they are valuable, rare, and difficult to imitate (Wernerfelt, 1984; Barney, 1991). The Natural Resource-Based View further emphasizes that environmental capabilities and sustainability-oriented innovation enhance competitive advantage (Hart, 1995). Firms investing in cleaner technologies, energy efficiency, human capital development, and governance reforms may improve operational efficiency and innovation capacity (Amankwah-Amoah et al., 2019; Danso et al., 2020). Recent empirical studies confirm that ESG performance is positively associated with total factor productivity (TFP), particularly through green innovation and managerial efficiency (Lee & Lee, 2022; Kong et al., 2022; Xue et al., 2024). Nevertheless, short-term productivity reductions may occur when firms face adjustment costs or regulatory pressures (Kong & Qin, 2021). These findings indicate that ESG-driven productivity effects are context-dependent and institutionally embedded.

Financial performance represents another fundamental channel through which ESG may influence firm value. Sustainability practices can enhance profitability by reducing operational risks, improving stakeholder relationships, and strengthening reputational capital (Eccles et al., 2014; Duric & Topler, 2021). Governance improvements reduce agency conflicts, environmental management lowers risk exposure, and social engagement enhances legitimacy (Boakye et al., 2021). Although some studies document neutral or negative short-term profitability effects, growing evidence suggests that strategically integrated ESG initiatives are positively associated with return on assets and long-term financial resilience (Aouadi & Marsat, 2018; Awaysheh et al., 2020).

In asset pricing theory, stock returns are ultimately driven by firm fundamentals. Profitability and productivity are recognized as central determinants of expected returns (Fama & French, 2015; Ang et al., 2020). Firms with stronger productivity generate more efficient cash flows, sustain competitive advantage, and exhibit greater adaptability to economic shocks (Constantinides et al., 2023; Adrangi & D'Amico, 2023). Similarly, profitability serves as a core indicator of value creation and is widely incorporated into investment decisions, particularly in emerging markets where investors rely heavily on observable accounting outcomes (Yin et al., 2023; Bao et al., 2023). Therefore, if ESG enhances productivity and financial performance, and if these fundamentals are priced by investors, ESG may influence stock returns indirectly rather than directly.

Despite extensive research on ESG and firm value, limited attention has been given to the joint examination of productivity and profitability as transmission mechanisms linking ESG to stock returns. Most studies analyze either direct ESG–return relationships or ESG–profitability associations without incorporating total factor productivity as a mediating variable. This gap is particularly relevant in emerging markets, where non-financial information may not be immediately priced unless supported by observable improvements in operational efficiency and financial outcomes. Accordingly, this study investigates whether ESG performance affects stock returns directly or indirectly through total factor productivity and financial performance among Indonesian listed firms.

1.1. Hypothesis development

H1: *The ESG index has a positive and significant effect on a firm's total factor productivity.*

H2: *The ESG index has a positive and significant effect on firm financial performance.*

H3: *Total factor productivity has a positive and significant effect on stock returns.*

H4: *Firm financial performance has a positive and significant effect on stock returns.*

H5: *Total factor productivity positively mediates the relationship between the ESG index and stock returns.*

H6: Firm financial performance positively mediates the relationship between the ESG index and stock returns.

H7: The ESG index has a positive and significant effect on stock returns.

2. RESEARCH METHODS

This study employs a quantitative research design using panel data analysis to examine the relationship between Environmental, Social, and Governance (ESG) performance, firm fundamentals, and stock returns. The empirical analysis is conducted on non-financial companies listed on the Indonesian Stock Exchange (IDX). The observation period covers the post-2013 period, following the increasing adoption of sustainability reporting practices in Indonesia. Firm-level financial and market data are obtained from publicly available financial statements and market databases, while ESG scores are sourced from third-party sustainability rating providers. After data screening and matching across sources, the final sample consists of 4,037 firm-year observations, with ESG data available for a subset of 477 firm-year observations. This structure reflects the limited but growing coverage of ESG reporting among Indonesian listed firms.

Stock returns (RETURN) serve as the dependent variable and are measured as annual stock returns, capturing investors' market-based assessment of firm value. ESG performance (ESG) is the main independent variable, represented by an aggregate ESG index score that reflects firms' environmental, social, and governance practices. Two mediating variables are employed to capture firm fundamentals. Total factor productivity (TFP) measures firms' efficiency in transforming inputs into outputs and represents operational performance beyond conventional financial ratios. Financial performance is proxied by return on assets (ROA), which reflects firms' profitability and efficiency in utilizing total assets.

Several control variables are included to account for firm characteristics commonly associated with productivity, profitability, and stock returns. Firm size is measured by the natural logarithm of total assets (*LnTA*), firm age by the natural logarithm of company age (*LnAGE*), market capitalization by the natural logarithm of market value (*LnMCAP*), and sales by the natural logarithm of total sales (*LnSALES*). Leverage (*LEV*) is calculated as the ratio of total debt to total assets, while asset tangibility is measured by the ratio of property, plant, and equipment to total assets (*PPE*).

To examine the proposed hypotheses, this study estimates a series of panel regression models. The baseline model evaluates the direct effects of ESG performance, productivity, and financial performance on stock returns:

$$RETURN_{i,t} = \alpha + \beta_1 TFP_{i,t} + \beta_2 ROA_{i,t} + \beta_3 ESG_{i,t} + \sum \gamma Control_{i,t} + \varepsilon_{i,t}. \quad (1)$$

To assess the impact of ESG on firm fundamentals, the following models are estimated:

$$TFP_{i,t} = \alpha + \beta_1 ESG_{i,t} + \sum \gamma Control_{i,t} + \varepsilon_{i,t}. \quad (2)$$

$$ROA_{i,t} = \alpha + \beta_1 ESG_{i,t} + \sum \gamma Control_{i,t} + \varepsilon_{i,t}. \quad (3)$$

Finally, mediation effects are tested by estimating models that include ESG and the mediating variables simultaneously:

$$RETURN_{i,t} = \alpha + \beta_1 ESG_{i,t} + \beta_2 Mediator_{i,t} + \sum \gamma Control_{i,t} + \varepsilon_{i,t}, \quad (4)$$

where *i* denotes firms and *t* denotes time.

The appropriate panel data estimation method is determined through a sequence of specification tests. The Chow test is used to choose between the common effects model and the fixed effects model. The Hausman test is subsequently applied to select between fixed effects and random effects models. In addition, the Lagrange Multiplier test is employed to compare the common effects and random effects specifications. The final model selection is based on statistical significance and model consistency.

To examine the indirect effects of ESG performance on stock returns through productivity and financial performance, mediation analysis is conducted using the Sobel test. This approach allows for statistical validation of the mediating role of total factor productivity and return on assets in the ESG-stock return relationship.

http://dx.doi.org/10.21511/imfi.23(1).2026.33

3. RESULTS

This section presents the empirical results of the study. The analysis begins with descriptive statistics to summarize the characteristics of the variables used in the sample. Subsequently, panel regression results are reported to examine the relationships between ESG practices, firm fundamentals, and stock returns. Finally, mediation analysis is conducted to evaluate whether productivity and financial performance act as transmission channels linking ESG performance and stock returns.

3.1. Descriptive statistics

The descriptive statistics in Table 1 present the main characteristics of the research variables used in this study. The return variable has the highest number of observations, namely 4,037, with an average value of 0.161 and a standard deviation of 1.319. The range of RETURN values is relatively wide, ranging from –0.987 to a maximum of 44, indicating very high volatility in the returns on the sample companies' shares. The total factor productivity (TFP) variable also consists of 4,037 observations, with an average of 0.012 and a standard deviation of 1.647. The minimum TFP value is very low at –20.814, while the maximum value is 5.591, showing quite extreme differences in productivity efficiency performance between companies. A company's profitability variable, measured by ROA, shows an average of 0.018 with a standard deviation of 0.318. The minimum ROA value reaches –10.889, indicating that some companies experienced significant losses, while the maximum value of 4.693 shows that there are companies with very high profitability in this sample.

Meanwhile, the ESG variable has fewer observations (477) with an average score of 6.363 and a standard deviation of 2.368. The ESG value range between 1 and 11 indicates varying levels of adoption of sustainability practices among companies. The company size characteristic, proxied by LnTA, has an average of 22.292 with a standard deviation of 1.854 and a value range of 15.086 to 28.408. This indicates a relatively stable distribution of company sizes. The company age variable (LnAGE) recorded an average of 3.461 with relatively small variation (Std. Dev 0.507), reflecting not too large differences in company age in the sample.

The market capitalization variable (LnMCAP) shows a large spread with a standard deviation of 4.202 and a value range of 0 to 30.343, indicating a very wide gap in the market value of companies. Furthermore, LnSALES has an average of 21.224 and a standard deviation of 2.539, indicating significant variation in company revenue. The leverage variable (LEV) has an average of 0.699 with a relatively large standard deviation (2.003) and a maximum value of 65, indicating that there are companies with very high debt levels. Finally, the PPE variable has an average of 0.306 with a standard deviation of 0.260, and a value range between 0 and 0.933, indicating that the portion of fixed assets to total assets varies between companies.

Table 1. Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
RETURN	4037	0.161	1.319	–0.987	44
TFP	4037	0.012	1.647	–20.814	5,591
ROA	4037	0.018	0.318	–10.889	4.693
ESG	477	6,363	2,368	1	11
LnTA	4,037	22,292	1,854	15,086	28,408
LnAGE	4037	3,461	0.507	1,099	4,852
LnMCAP	4037	20,966	4,202	0	30,343
LnSALES	4,037	21,224	2,539	0	26,481
LEV	4,037	0.699	2,003	–0.268	65
PPE	4037	0.306	0.26	0	0.933

3.2. Regression results

Before estimating the model, all classical assumptions in panel data regression were tested to ensure that the model met the Best Linear Unbiased Estimator (BLUE) criteria. Tests for multicollinearity, heteroscedasticity, autocorrelation, and model specification showed that the model used was free from significant statistical assumption violations, so that the estimation results were valid for inferential interpretation. In addition, model selection was carried out through a series of Chow Tests, Lagrange Multiplier Tests, and Hausman Tests so that the panel data regression model used in each equation was the most empirically appropriate model. Thus, the estimation results shown in Table 2 provide a reliable picture of the effect of ESG on TFP, financial performance, and company stock returns.

Table 2. Panel data regression

	TFP	ROA	Return	Return	Return
ESG	(0.017)***	(0.002)***			0.027
	0.099	0.009			0.004
TFP			(0.056)***		
			0.165		
ROA				(0.109)***	
				0.264	
LnTA	(0.047)***	(0.005)***	(0.074)***	(0.061)***	(0.171)***
	−0.331	−0.064	−0.273	−0.396	−0.621
LnAGE	(0.074)***	0.007	0.304	0.304	0.416
	−0.232	0.001	0.411	0.466	0.13
LnMCAP	(0.022)***	(0.002)***	(0.034)***	(0.034)***	(0.061)***
	−0.068	0.015	0.59	0.589	0.685
LnSALES	(0.050)***	(0.005)***	(0.052)***	0.016	0.08
	0.445	0.044	−0.161	−0.02	−0.017
LEV	(0.184)***	0.019	0.027	(0.027)***	(0.335)***
	0.557	−0.017	−0.013	0.001	2.903
PPE	0.164	(0.017)***	(0.219)***	(0.210)***	(0.331)***
	−0.015	−0.08	0.544	0.374	0.747
_cons	0.759	(0.077)***	(1.670)***	(1.643)***	3.668
	−0.786	0.228	−5.226	−5,975	−3.073
R-squared	0.102	0.23	0.023	0.02	0.036
F stat	0	0	0	0	0

Note(s): This table presents the results of multiple linear regression analysis where ***, **, and * indicate the level of significance (rejecting the null hypothesis) at the 1, 5, and 10% levels, respectively. The numbers in parentheses are standard errors.

The regression analysis results show that the ESG index has a positive and significant effect on a company's TFP, with coefficients of 0.099 and 0.9 indicating significance at the 1% level ($p < 0.01$). Findings provide empirical support for Hypothesis 1, which asserts that companies with higher sustainability scores can improve resource utilization efficiency, thereby increasing total factor productivity (TFP). Furthermore, ESG has also been proven to have a positive and significant effect on company financial performance (ROA), with a coefficient of 0.009 and significance of 1%. These results confirm Hypothesis 2 and are consistent with the stakeholder theory perspective, which states that greater attention to environmental and governance aspects increases legitimacy and market confidence, which is then reflected in stronger profitability

Furthermore, TFP has a positive and significant effect on stock returns, with a coefficient of 0.165 and a significance level of 1%, thus supporting Hypothesis 3. Investors appear to give a premium to increased operational productivity, which reflects competitive advantages and long-term growth potential. Additionally, financial performance (ROA) has a significant positive effect on returns, with a coefficient of 0.264 and a significance level of 1%, which strengthens Hypothesis 4. This finding confirms that profitability remains a key indicator considered by the market in stock valuation. However, the regression results show that ESG does not have a significant direct effect on returns, where the ESG coefficient on returns is not significant in the main model ($p > 0.10$), even though in one of the alternative models, a small positive coefficient of 0.004 was found, but still not significant. Thus, Hypothesis 7 is not fully supported by the research results. This condition indicates that sustainability information has not been fully internalized in the capital market valuation mechanism, so that ESG has a more indirect effect on returns, through increased company productivity and profitability.

3.3. Mediation analysis

Table 3. Mediation effect analysis

Statistics	TFP	ROA
Estimates	Sobel	Sobel
Indirect effect	0.016	0.002
Sobel Test	2.616	2.188
p-value	0.004	0.014

The mediation analysis results indicate that TFP acts as a positive and significant mediator in the relationship between ESG and stock returns. The indirect effect value through TFP is 0.016, with a Sobel test result of 2.616 and significance $p = 0.004$ ($p < 0.01$). Thus, Hypothesis 5 is empirically supported. This finding indicates that better ESG implementation can drive increased company productivity, which is ultimately appreciated by the market in the form of increased stock returns. Additionally, financial performance (ROA) was also found to positively and significantly mediate the relationship between ESG and stock returns. The indirect effect was 0.002, and the Sobel test value was 2.188 with a significance of $p = 0.014$ ($p < 0.05$), so Hypothesis 6 can be accepted. This shows that companies with higher ESG scores are able to increase their profitability, and this increased profitability contributes to increased stock returns in the market.

http://dx.doi.org/10.21511/imfi.23(1).2026.33

4. DISCUSSION

The empirical findings provide important insights into how ESG performance translates into firm value within an emerging market context. The positive and significant association between ESG and total factor productivity confirms that sustainability initiatives are linked to measurable improvements in operational efficiency. This evidence is consistent with the Natural Resource-Based View, which argues that environmental and governance capabilities can become strategic resources that enhance competitiveness (Hart, 1995; Amankwah-Amoah et al., 2019). Empirically, this result aligns with prior findings showing that ESG engagement fosters cleaner technologies, managerial efficiency, and innovation-driven productivity gains (Kong et al., 2022; Xue et al., 2024). However, the present study goes further by demonstrating that productivity is not merely a complementary outcome but a central transmission mechanism through which sustainability creates shareholder value.

The positive relationship between ESG and financial performance also supports prior research documenting that sustainability practices reduce agency costs, strengthen stakeholder trust, and improve profitability (Fatemi et al., 2018; Boakye et al., 2021). From a signaling perspective, ESG disclosure may convey credible information regarding governance quality and long-term orientation (Connelly et al., 2011). Nevertheless, unlike evidence from developed markets where ESG often exerts both direct and indirect valuation effects (Hartzmark & Sussman, 2019; Vu et al., 2024), the Indonesian context reveals a different dynamic. Here, ESG-driven value creation appears to operate primarily through internal performance improvements rather than immediate market revaluation.

Consistent with asset-pricing theory, both productivity and profitability exhibit positive and significant effects on stock returns, reaffirming that investors continue to prioritize fundamental performance indicators when forming valuation expectations (Fama & French, 2015; Ang et al., 2020; Adrangi & D'Amico, 2023). This pattern is particularly pronounced in emerging markets, where investors rely more heavily on observable financial outcomes than on non-financial disclosures (Yin et al., 2023). The absence of a significant direct ESG–return relationship therefore aligns with mixed evidence reported in prior studies, especially in markets where sustainability information has not yet become a fully independent pricing factor (Pedersen et al., 2021; Fatemi et al., 2018).

Importantly, the mediation analysis clarifies this mechanism by demonstrating that ESG influences stock returns indirectly through productivity and financial performance, with total factor productivity emerging as the stronger channel. This finding extends previous literature that has largely emphasized profitability as the dominant mediator (Aouadi & Marsat, 2018; Gaia Soana, 2024). By identifying efficiency-based performance as the primary conduit of sustainability-driven value creation, this study contributes to the evolving ESG–asset-pricing debate and highlights the role of operational capability in explaining return variation (Tu et al., 2025; Adrangi & D'Amico, 2023).

Overall, the results indicate that ESG operates as a fundamental value signal rather than a direct market sentiment signal in the Indonesian capital market. Sustainability performance enhances shareholder value when it strengthens firms' productive efficiency and financial resilience, but it does not independently drive pricing absent improvements in fundamentals. This interpretation refines prior debates by showing that the economic consequences of ESG depend on the maturity of capital markets and the extent to which sustainability information is internalized into measurable firm performance.

CONCLUSION

This study aims to examine whether Environmental, Social, and Governance (ESG) performance affects stock returns directly or indirectly through total factor productivity and financial performance among non-financial firms listed on the Indonesian Stock Exchange. The results show that ESG performance has a positive and significant effect on both productivity and profitability, indicating that sustainability

practices contribute to improvements in operational efficiency and financial outcomes. Productivity and profitability are also positively associated with stock returns, confirming that market valuation remains closely linked to firm fundamentals. However, ESG does not have a significant direct effect on stock returns, while mediation analysis demonstrates that ESG influences returns indirectly through productivity and financial performance.

These findings suggest that ESG functions primarily as a fundamental value mechanism rather than an independent pricing signal in the Indonesian capital market, meaning that sustainability creates shareholder value when it strengthens firms' productive capacity and financial resilience. Future research can extend this study by expanding ESG coverage across sectors, applying alternative ESG measures based on disclosures or text-based indicators, and adopting longer investment horizons to better capture dynamic market adjustment. Incorporating moderating factors such as governance quality, ownership structure, and firm-specific risk may also clarify the conditions under which ESG more strongly influences firm value in emerging market contexts.

AUTHOR CONTRIBUTIONS

Conceptualization: Tilawatil Ciseta Yoda, Tafdil Husni, Elvira Luthan, Rida Rahim.
Data curation: Tilawatil Ciseta Yoda.
Formal analysis: Tilawatil Ciseta Yoda.
Funding acquisition: Tilawatil Ciseta Yoda.
Investigation: Tilawatil Ciseta Yoda, Tafdil Husni.
Methodology: Tilawatil Ciseta Yoda, Tafdil Husni, Elvira Luthan, Rida Rahim.
Validation: Tilawatil Ciseta Yoda, Tafdil Husni, Elvira Luthan, Rida Rahim.
Writing – original draft: Tilawatil Ciseta Yoda, Tafdil Husni, Elvira Luthan, Rida Rahim.
Writing – review & editing: Tilawatil Ciseta Yoda, Tafdil Husni, Elvira Luthan, Rida Rahim.

REFERENCES

1. Adrangi, B., & D'Amico, J. N. (2023). Equity Returns and the Output Shocks in a Dynamic Stochastic General Equilibrium Framework. *Journal of Risk and Financial Management, 16*(5). https://doi.org/10.3390/jrfm16050257
2. Amankwah-Amoah, J., Danso, A., & Adomako, S. (2019). Entrepreneurial orientation, environmental sustainability and new venture performance: does stakeholder integration matter? *Business Strategy and the Environment, 28*(1), 79-87. https://doi.org/10.1002/bse.2191
3. Ammann, M., Bauer, C., Fischer, S., & Muller, P. (2019). The impact of the Morningstar sustainability rating on mutual fund flows. *European Financial Management,* 520-553. https://doi.org/10.1111/eufm.12181
4. Ang, T. C. 'Chewie,' Lam, F. Y. E. C., & Wei, K. C. J. (2020). Mispricing firm-level productivity. *Journal of Empirical Finance, 58*(June), 139-163. https://doi.org/10.1016/j.jempfin.2020.05.008
5. Aouadi, A., & Marsat, S. (2018). Do ESG Controversies Matter for Firm Value? Evidence from International Data. *Journal of Business Ethics, 151*(4), 1027-1047. https://doi.org/10.1007/s10551-016-3213-8
6. Avramov, D., Cheng, S., Lioui, A., & Tarelli, A. (2022). Sustainable investing with ESG rating uncertainty. *Journal of Financial Economics, 145*(2), 642-664. https://doi.org/10.1016/j.jfineco.2021.09.009
7. Awaysheh, A., Heron, R. A., Perry, T., & Wilson, J. I. (2020). On the relation between corporate social responsibility and financial performance. *Strategic Management Journal, 41*(6), 965-987. https://doi.org/10.1002/smj.3122
8. Bachner, F. (2025). Decoding market reactions: Analysis of divergent signals of ESG ratings. *International Review of Financial Analysis, 103*(March), 104161. https://doi.org/10.1016/j.irfa.2025.104161
9. Bai, C., Duan, Y., Fan, X., & Tang, S. (2023). Financial market sentiment and stock return during the COVID-19 pandemic. *Finance Research Letters, 54*(February), 103709. https://doi.org/10.1016/j.frl.2023.103709
10. Bao, J., Hou, K., & Zhang, S. (2023). Systematic default and return predictability in the stock and bond markets. *Journal of Financial Economics, 149* (3), 349-377. https://doi.org/10.1016/j.jfineco.2023.05.006
11. Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. *Journal of Management, 17,* 99-120. https://doi.org/10.1177/014920639101700108
12. Boakye, D. J., Tingbani, I., Ahinful, G. S., & Nsor-Ambala, R. (2021). The relationship between environmental management performance and financial performance of firms

http://dx.doi.org/10.21511/imfi.23(1).2026.33

listed in the Alternative Investment Market (AIM) in the UK. *Journal of Cleaner Production, 278,* 124034. https://doi.org/10.1016/j.jclepro.2020.124034

13. Connelly, B. L., Certo, S. T., Ireland, R. D., & Reutzel, C. R. (2011). Signaling theory: A review and assessment. *Journal of Management, 37*(1), 39-67. https://doi.org/10.1177/0149206310388419
14. Constantinides, G. M., Montone, M., Potì, V., & Spilioti, S. (2023). Sentiment, Productivity, and Economic Growth. *SSRN Electronic Journal*. Retrieved from https://ideas.repec.org/p/nbr/nberwo/31031.html
15. Danso, A., Adomako, S., Amankwah-Amoah, J., Owusu-Agyei, S., & Konadu, R. (2020). Environmental sustainability orientation, competitive strategy and financial performance. *Business Strategy and the Environment, 28*(5), 885-895. https://doi.org/10.1002/bse.2291
16. Das Anggreni, N., Lukviarman, N., Rahim, R., & Alfarisi, F. M. (2025). The effect of two-tier board characteristics on firm value: The mediating role of corporate reputation in Indonesia. *Investment Management and Financial Innovations, 22*(4). https://doi.org/10.21511/imfi.22(4).2025.33
17. Drempetic, S., Klein, C., & Zwergel, B. (2020). The Influence of Firm Size on the ESG Score: Corporate Sustainability Ratings Under Review. *Journal of Business Ethics, 167*(2), 333-360. https://doi.org/10.1007/s10551-019-04164-1
18. Duric, Z., & Topler, J. P. (2021). The role of performance and environmental sustainability indicators in hotel competitiveness. *Sustainability (Switzerland), 13*(12). https://doi.org/10.3390/su13126574
19. Eccles, R. G., Ioannou, I., & Serafeim, G. (2014). The impact of corporate sustainability on organizational processes and performance. *Management Science, 60*(11), 2835-2857. https://doi.org/10.1287/mnsc.2014.1984
20. Fama, E. F., & French, K. R. (2015). A five-factor asset pricing model. *Journal of Financial Economics, 116*(1), 1-22. https://doi.org/10.1016/j.jfineco.2014.10.010
21. Fatemi, A., Glaum, M., & Kaiser, S. (2018). ESG performance and firm value: The moderating role of disclosure. *Global Finance Journal, 38,* 45-64. https://doi.org/10.1016/j.gfj.2017.03.001
22. Gaia Soana, M. (2024). Does ESG contracting align or compete with stakeholder interests? *Journal of International Financial Markets, Institutions and Money, 96.* https://doi.org/10.1016/j.intfin.2024.102058
23. GGGI. (2015). *Green growth investment projects* (Annual Report). https://gggi.org/report/2015-annual-report-transitioning-toward-green-growth/
24. Hart, S. L. (1995). A natural-resource-based view of the firm. *The Academy of Management Review, 20*(4), 986-1014. https://doi.org/10.2307/258963
25. Hartzmark, S. M., & Sussman, A. B. (2019). Do Investors Value Sustainability? A Natural Experiment Examining Ranking and Fund Flows. *The Journal of Finance, 74*(6), 2789-2837. http://www.jstor.org/stable/45222766
26. Kong, D., & Qin, N. (2021). Does Environmental Regulation Shape Entrepreneurship? *Environmental and Resource Economics, 80*(1), 169-196. https://doi.org/10.1007/s10640-021-00584-8
27. Kong, G., Wang, S., & Wang, Y. (2022). Fostering firm productivity through green finance: Evidence from a quasi-natural experiment in China. *Economic Modelling, 115*(March), 105979. https://doi.org/10.1016/j.econmod.2022.105979
28. Lee, C., & Lee, C. (2022). How does green finance affect green total factor productivity? Evidence. *Energy Economics, 107*(October 2021), 105863. https://doi.org/10.1016/j.eneco.2022.105863
29. Liu, Z., Lu, S., Li, B., & Wang, S. (2023). Time series momentum and reversal: Intraday information from realized semivariance. *Journal of Empirical Finance, 72*(June 2023), 54-77. https://doi.org/10.1016/j.jempfin.2023.03.001
30. Pedersen, L. H., Fitzgibbons, S., & Pomorski, L. (2021). Responsible investing: The ESG-efficient frontier. *Journal of Financial Economics, 142*(2), 572-597. https://doi.org/10.1016/j.jfineco.2020.11.001
31. Sinha, A., Sengupta Tuhin, & Alvarado, R. (2020). Munich Personal RePEc Archive Interplay between Technological Innovation and Environmental Quality: Formulating the SDG Policies for Next 11 Economies. *Journal of Cleaner Production, 242*(118549). https://doi.org/10.1016/j.jclepro.2019.118549
32. Solow, R. (1987). We'd better watch out. *New York Times Book*. https://api.semanticscholar.org/CorpusID:142762397
33. Tan, X., Liu, G., & Cheng, S. (2024). How does ESG performance affect green transformation of resource-based enterprises: Evidence from Chinese listed enterprises. *Resources Policy, 89.* https://doi.org/10.1016/j.resourpol.2023.104559
34. Tu, Q., Zuo, L., Liang, A., & Liu, D. (2025). Does ESG rating divergence decrease enterprise productivity? Evidence from China Qiang Tu. *Research in International Business and Finance, 77*. https://doi.org/10.1016/j.ribaf.2025.102967
35. Vu, T. N., Junttila, J. P., & Lehkonen, H. (2024). ESG news and long-run stock returns. *Finance Research Letters*, *60*(July 2023). Retrieved from https://ideas.repec.org/a/eee/finlet/v60y2024ics1544612323012874.html
36. Wernerfelt, B. (1984). A Resource-based View of the Firm. *Strategic Management Journal, 5,* 171-180. https://doi.org/10.1002/smj.4250050207
37. Wouassom, A., Muradoğlu, Y. G., & Tsitsianis, N. (2022). Global momentum: The optimal trading approach. *Journal of Behavioral and Experimental Finance, 36,* 100756. https://doi.org/10.1016/j.jbef.2022.100756
38. Xue, Q., Jin, Y., & Zhang, C. (2024). ESG rating results and corporate total factor productivity. *International Review of Financial Analysis, 95.* https://doi.org/10.1016/j.irfa.2024.103381
39. Yin, X. N., Li, J. P., & Su, C. W. (2023). How does ESG performance affect stock returns? Empirical evidence from listed companies in China. *Heliyon, 9*(5), e16320. https://doi.org/10.1016/j.heliyon.2023.e16320