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The Effect of ESG Score on Profit Informality: Analysis of Future Earnings Response Coefficient on the MSCI Indonesia Index

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ABSTRACT

The purpose of this study is to predict and explain the influence of ESG score on profit information proxied using the *Future Earnings Response Coefficient* (FERC) approach in companies that are members of the MSCI Indonesia Index using a mix method approach. Quantitative data were obtained from annual reports, sustainability reports, and stock price data during the observation period, which were analyzed using FERC-based panel data regression models. Furthermore, a qualitative approach is used to interpret empirical results through the analysis of investor behavior, market characteristics, and the quality of ESG disclosures. The results of the study show that ESG scores did not have a significant effect on profit informability which is reflected in the market response to future profits, and is supported by qualitative findings that show that ESG has informational value for investors in the formation of stock prices. In practical terms, these results confirm the importance of increasing ESG score disclosure as a strategy to increase credibility and market perception.

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INTRODUCTION

The development of sustainability reporting practices over the past decade shows that non-financial information is gaining more attention from investors, especially in markets that are globally integrated and sensitive to governance issues and long-term risks, where ESG scores are increasingly considered alongside financial information in the corporate valuation process (Kim, 2025; Velte, 2025). Investors no longer only focus on historical profits and cash flows, but also consider ESG scores as indicators of risk management and sustainability of a company's business model where the disclosure of ESG scores has the potential to increase transparency and reduce information asymmetry so that it has an impact on risk perception and market (El Ghoul et al., 2011; Gonzaga et al., 2024; Haidar et al., 2021) valuation. In the context of emerging markets, the integration of ESG factors in investment decisions is getting stronger as regulatory pressures and international shareholder expectations increase (Gonzaga et al., 2024; Khanchel & Lassoued, 2022; Van et al., 2025b).

The relevance of ESG information can also be understood through its relationship with profit informativeness, which reflects the extent to which accounting earnings are able to explain stock price movements and future firm performance. In capital market accounting, earnings are considered informative when they are internalized by investors in the price formation process, particularly through expectations of future cash flows. However, in emerging markets such as Indonesia, the informativeness of earnings is often

not fully efficient due to information asymmetry, varying levels of investor sophistication, and differences in disclosure quality. In this context, ESG disclosure is expected to complement financial information by strengthening the credibility and transparency of reported earnings, thereby potentially enhancing their informativeness. Nevertheless, empirical findings remain inconclusive, suggesting that the role of ESG in improving profit informativeness may depend on firm characteristics, disclosure quality, and market conditions, which motivates further investigation in the context of the MSCI Indonesia Index.

Theoretically, the disclosure of ESG scores and earnings informality can be explained through signal theory, where more comprehensive disclosures seek to reduce investor uncertainty and strengthen managerial credibility in managing long-term risk (Suhartini et al., 2024a; Wardhana & Hersugondo, 2025). Previous research has shown that ESG score disclosure is associated with a decrease *in cost of capital* and an increase in market valuation, although its direction and strength vary across countries and often depend on institutional context and governance quality (Dwomor & Mensah, 2024; El Ghoul et al., 2011; Khanchel & Lassoued, 2022). Another study has also found that ESG *disclosures* can affect stock *returns* and idiosyncratic risks, thus underscoring the economic consequences of non-financial information (Horn, 2023; Hussainey et al., 2025).In Indonesia, the relationship between ESG scores and company values shows mixed results, where the mechanism for transmitting information to the market is not completely consistent (Mengko et al., 2022; Wiharjo & Ekadjaja, 2024).

Although research on ESG and earnings information is growing rapidly, most studies still use static *firm value* proxies such as Tobin's Q or *price-to-book value* (PBV) so they have not fully captured the profit informative dimension reflected in stock prices (Dewi, 2023; Postiglione et al., 2024). In addition, studies on global thematic indices that specifically place the MSCI Indonesia Index as the main context are still relatively limited in the accounting literature of the Indonesian capital market (Escobar-Saldívar et al., 2025; Kim, 2025). The differences in the results of previous studies show that there are methodological and contextual variations where sample characteristics can influence empirical findings that open up testing space (Rahat & Nguyen, 2024; Velte, 2025).

The novelty of this study lies in integrating ESG disclosure quality with the *Future Earnings Response Coefficient* (FERC) model within a mixed methods framework, enabling both empirical testing and contextual interpretation of results. The quantitative approach employs panel data regression to improve estimation stability and control firm heterogeneity, while the qualitative approach interprets findings through investor behavior, market efficiency, and ESG disclosure credibility (Migliavacca, 2024; Thompson et al., 2022; Velte, 2025). This integration strengthens the validity of results by combining measurable relationships with deeper contextual insights (Eccles et al., 2014; Khan et al., 2016a; Simamora, 2025).

This study adopts a positivist paradigm with a mixed methods approach to examine the relationship between ESG scores and earnings informativeness. The quantitative analysis tests causal relationships using panel data regression based on the FERC model, while the qualitative analysis provides deeper explanations of the results by exploring investor perceptions and market dynamics. The study aims to assess the effect of ESG scores on earnings informativeness and market response by considering control variables such as leverage and firm size (Jeriji & Nasfi, 2023; Sebrina et al., 2023).

LITERATURE REVIEW

In capital market accounting, ESG scores represent non-financial information that reflects relevance, reliability, and usefulness for investors. ESG disclosure quality depends not only on report existence but also on depth, consistency, and its linkage to financial performance and risk (El Ghoul et al., 2011; Gonzaga et al., 2024; Haidar et al., 2021).

Quantitatively, index-based ESG measures are more representative, while qualitatively, they function as credible market signals. In Indonesia, disclosure quality is crucial due to high information asymmetry and reliance on report credibility (Simamora, 2025).

Signal theory suggests that firms with strong long-term performance disclose higher-quality information to signal superiority (Huang et al., 2023; Kang et al., 2021). Investors respond positively to ESG disclosures when they are consistent and relevant, but signal effectiveness depends on firm characteristics such as size and ownership (El Ghoul et al., 2011; Gonzaga et al., 2024). In less efficient markets like Indonesia, ESG signals are processed gradually and not always immediately reflected in stock prices (Mengko et al., 2022; Wiharjo & Ekadjaja, 2024).

A number of international studies show that high-quality ESG disclosure is positively associated with profitability, long-term returns, and firm value through mechanisms such as reduced cost of capital and increased investor confidence (Friede et al., 2015a; El Ghoul et al., 2011; Gonzaga et al., 2024). However, findings remain inconsistent, particularly in emerging markets, where investor responses depend on ESG literacy and institutional quality From a mixed methods perspective, these inconsistencies reflect not only statistical variation but also differences in how investors interpret ESG information. Evidence from Indonesia suggests that the impact of ESG on stock returns and firm value is contextual and varies across studies, indicating that not all ESG disclosures carry equal informational value (Fiordelisi et al., 2023; Simamora, 2025; Mengko et al., 2022; Wiharjo & Ekadjaja, 2024).

The MSCI Indonesia Index is selected due to its strong institutional characteristics and relatively stable risk profile, making it suitable for examining the relationship between ESG and profitability (Harfiani, 2022; Wiharjo & Ekadjaja, 2024). This context enables both quantitative testing and qualitative understanding of how investors interpret ESG information. Firms in this index face higher public accountability, increasing the signaling value of ESG disclosures, particularly for income-oriented investors sensitive to long-term risk (Suhartini et al., 2024a; Van et al., 2025a). However, empirical evidence on ESG disclosure within thematic indices remains limited, highlighting the need to examine its incremental value relevance in the Indonesian context (Alhawaj et al., 2023; Dwomor & Mensah, 2024; Tirado-Valencia et al., 2020).

Based on the synthesis of the literature, it can be concluded that the disclosure of ESG score reports has the potential for informational value that can affect the informability of profits through signaling mechanisms, reduction of information asymmetry, and risk assessment by investors (El Ghoul et al., 2011; Velte, 2025). However, in the framework of mixed methods, the relationship is understood as the result of the interaction between the quality of disclosure, company characteristics, and investor perceptions that are dynamic and contextual (Fatemi et al., 2018a; Rahat & Nguyen, 2024) In the Indonesian context, especially in the MSCI Indonesia Index, the role of ESG scores is becoming increasingly relevant as regulators and investors pay increasing attention to ESG issues (Mohammad & Wasiuzzaman, 2021; Van et al., 2025b). This synthesis is the logical basis for the formulation of a research hypothesis that tests the positive influence of ESG scores on the informative of the company's profits (Amir & Serafeim, 2018; Broadstock et al., 2021).

Based on signal theory and capital market accounting literature, the disclosure quality of ESG reports is seen as non-financial information that has relevance for investors in assessing the company's risks and prospects. In a quantitative approach, this is reflected in the positive relationship between ESG scores and profit informality. Meanwhile, in a qualitative approach, quality ESG disclosures reflect managerial transparency and commitment to sustainability that influence investor perceptions and market responses. Therefore, this study proposes the following main hypotheses:

H1: The disclosure of ESG score reports has a positive effect on the profitability of companies that are members of the MSCI Indonesia Index.

Overall, the formulation of this hypothesis places the quality of ESG score report disclosure as the main variable tested within the framework of capital market accounting, taking into account the fundamental factors of the company that are empirically known to influence market performance. This hypothetical structure allows for a more focused and controlled testing of the informational value of ESG scores in the context of thematic indices on the Indonesia Stock Exchange.

METHODS

Paradigm

This study adopts a mixed methods approach with a sequential explanatory design to examine the relationship between ESG disclosure and earnings informativeness. The quantitative approach, based on a positivist paradigm, tests the causal effect of ESG scores on earnings informativeness proxied by FERC, while the qualitative approach provides contextual insights into how investors interpret ESG information. In capital market accounting, FERC captures how future earnings are reflected in stock prices (Cao et al., 2024; Jeriji & Nasfi, 2023; Weyant, 2022). This approach is relevant as ESG contains both measurable and perceptual dimensions related to investor trust and sustainability literacy (Escobar-Saldívar et al., 2025; Velte, 2025). The model also controls for firm fundamentals such as company size and leverage to strengthen causal inference (Berg et al., 2022; Naibaho & Nabilah, 2025).

Data Collection and Sampling Methods

This study uses a mixed methods approach combining quantitative and qualitative data. Quantitative data consists of secondary data from sustainability reports, audited financial statements, and stock prices of MSCI Indonesia Index companies during 2022–2024, obtained from IDX, annual reports, and platforms such as RTI Business and Yahoo Finance. Qualitative data is derived from documentary analysis of sustainability and annual reports, focusing on ESG disclosure quality, consistency, and strategic narratives to understand how ESG information is presented and interpreted by investors. The sample is selected using purposive sampling with criteria: consistent reporting, audited financial statements, no delisting or prolonged suspension, and no major corporate actions that could affect data consistency.

Variable Operationalization

This study uses independent, dependent, and control variables to strengthen the empirical model. ESG scores are treated as non-financial information influencing investor perceptions of risk and future performance and are measured using annual ESG values of MSCI Indonesia Index companies (Friede et al., 2015b; Sebrina et al., 2023; Thompson et al., 2022). Earnings informativeness is proxied by the future earnings coefficient (Et+1) in the return–earnings model; a significant coefficient indicates that current stock prices reflect future earnings information. Ratio-based measurements support linear regression assumptions and enhance causal interpretation and generalization in the Indonesian capital market context (Hussainey et al., 2025; Velte, 2025).

Model Regresi

This study uses the Future Earnings Response Coefficient (FERC) model developed by Collins et al. (1994) to test the relationship between stock returns and profits over time. This model incorporates components of past earnings, current earnings, and future earnings to identify the extent to which future earnings information has been reflected in the current stock price. The basic FERC model used in this study is as follows:

$$Rit = \beta_0 + \beta_1 Ei_{t-1} + \beta_2 Ei_{t} + \beta_3 Ei_{t+1} + \beta 5 Ri_{t+1} + \varepsilon it$$

The coefficient on past earnings (*b1*) is predicted to be negative, ERC (*b2*) is predicted to be positive, FERC (*b3*) is predicted to be positive and the coefficient on *future returns* (*b4*) is predicted to be negative. To test the influence of ESG scores on earnings reporting, the regression model was extended to include the following ESG variables and their interaction with future earnings:

$$Rit = \beta_0 + \beta_1 Ei\_\{t-1\} + \beta_2 Ei\_\{t\} + \beta_3 Ei\_\{t+1\} + \beta 4 Ri\_\{t+1\} + \beta_5 ESG\_\{t\} + \beta_6 Ei\_\{t-1\}x\ ESG\_\{t\} + \beta_7 Ei\_\{t\}x\ ESG\_\{t\} + \beta_8 Ei\_\{t+1\}x\ ESG\_\{t\} + \beta_9 Ri\_\{t+1\}xESG\_\{t\} + \beta_{10} SIZE\_\{t\} + \beta_{11} LEV\_\{t\} + \varepsilon it$$

Description :

Ride	= Return of Company I shares in Year T
Ei_{t-1}	= Company earnings I in year T−1 scaled by the stock price at the beginning of year t
Ei_{t}	= Company earnings I in year t scaled by the stock price at the beginning of year t
Ei_{t+1}	= Company I earnings in year T+1 scaled by the stock price at the beginning of year t
Re_{t+1}	= Return of Company I shares in year T+1
ESG_{t}	= company's ESG score i in the current year
SIZE_{t}	= Company size in the current year
LEV_{t}	= The company's leverage in the current year (e.g. DER or total debt/total assets)
εit	= error term

The coefficient of interaction between future earnings and ESG scores represents the value *of the Future Earnings Response Coefficient* which is the main focus of this study (Migliavacca, 2024; Thompson et al., 2022). This model assumes the unidirectional causal effect of ESG scores to stock returns, with variable controls for the isolation of non-SR influences, as per the positivist paradigm. The use of panel regression allows control of unobserved heterogeneity between firms as well as the effects of time that can affect stock returns to handle *unobserved heterogeneity* via fixed/random effects, superior to OLS for cross-section time-series data (Baltagi , 2021; Wooldridge, 2020). ε_{it} is assumed to be an independent normal with a mean of 0 and constant variance.

Data Analysis Methods

This study applies a mixed methods approach with a sequential explanatory design, where quantitative analysis is conducted first and followed by qualitative analysis for deeper interpretation. The quantitative stage includes classical assumption tests (multicollinearity, heteroscedasticity, and autocorrelation) and hypothesis testing using t-tests on the ESG × E_{t+1} interaction within the FERC model, with F-tests and adjusted R^2 used to assess model significance and explanatory power (Baltagi, 2021; Wooldridge, 2020).

The qualitative stage uses content analysis of sustainability and annual reports to assess ESG disclosure quality, consistency, and narrative depth. Thematic coding based on environmental, social, and governance dimensions is applied to understand how ESG information is presented and interpreted by investors, including distinguishing substantive and symbolic disclosures (Escobar-Saldívar et al., 2025; Migliavacca, 2024).

RESULTS AND DISCUSSION

The descriptive statistics in this study provide an overview of the characteristics of the data used, which include stock return variables, earnings, ESG scores, *size*, and *leverage* with a total of 39 observations. The stock return variable in the current year (Return t) has an average value of 5,198.31 with a relatively high standard deviation of 5,847.48, which shows that there is considerable variation in stock performance between

companies in the sample, while the future return (Return t+1) has a higher average of 7,711.90 with a much larger data spread, indicating the potential for increased volatility in the coming period. The earnings variable proxied with EPS shows an increasing trend from the previous period (t-1 EPS of 312.44) to the current period (EPS of 363.28) to the future period (t+1 EPS of 380.25), which reflects the trend of profit growth even though it is still accompanied by a fairly high variation as seen from the standard deviation value of each variable. Furthermore, the ESG score has an average value of 66.05 with a standard deviation of 15.42, which shows that companies in the MSCI Indonesia index have generally had a fairly good level of ESG implementation, although there are still differences in the level of disclosure between companies. To provide an overview of the sample characteristics, Table 1 presents the descriptive statistics of all variables used in this study.

Table 1 Statictics Descriptive

	obs	Mean	Median	Max	Min	Hours of deviation
Return t	39	7711.897	4,615.00	101,000.00	64.00	16,413.97
EPS t-1	39	312.44	249.94	1,136.54	-158.73	328.87
EPS	39	363.28	338.01	1,136.54	-85.10	351.08
EPS t+1	39	380.25	394.56	1,216.87	-85.10	355.12
ESG	39	66.05	66.46	88.77	34.90	15.42
LEVERAGE	39	0.41	0.47	0.90	0.01	0.23

Source: Data processed by researchers (2026)

The results of the multicollinearity test using the uncentered Variance Inflation Factor (VIF) showed that there was a fairly serious indication of multicollinearity in the regression model used. This can be seen from the very high VIF values in the eps_t1 (42.65) and eps_t (36.82) variables, as well as eps_t0 (11.80) which are also above the general threshold (VIF > 10), indicating that these variables have a very strong correlation with each other. Meanwhile, control variables such as lev (4.99) and esg (4.79) were still within tolerance limits and relatively did not cause multicollinearity problems. The Mean VIF value of 17.19 further reinforces the existence of serious problems in the model, which has the potential to cause the estimated coefficient to be unstable and difficult to interpret economically. This condition is most likely caused by the use of several earnings variables (EPS) from adjacent periods (t0, t, t1) that conceptually have high correlation, so it is recommended to select more representative variables or simplify the model to reduce multicollinearity. To ensure the reliability of the regression model, multicollinearity is examined using the Variance Inflation Factor (VIF), as presented in Table 2.

Table 2 Multicollinearity Test using Variance Inflation Factor (VIF)

	LIVE	1/LIVE
Return t	2.07	0.483047
EPS t-1	11.8	0.084718
EPS	36.82	0.027158
EPS t+1	42.65	0.023446
ESG	4.79	0.208730
LEVERAGE	4.99	0.200410

Source: Data processed by researchers (2026)

The results of the Chow test to compare the Common Effect Model (CEM) with the

Fixed Effect Model (FEM) showed an F-statistical value of 2.71 with a Prob > F of 0.1098, which means that the probability value is greater than the general significance level (α = 5%). Thus, there is not enough evidence to reject the zero (H0) hypothesis that the CEM model is more appropriate than FEM. This means that the difference in individual characteristics (cross-section) is not significant in affecting the relationship between variables in the model, so the use of the Common Effect Model (CEM) is considered more appropriate and efficient than the Fixed Effect Model (FEM) in this study. Table 3 presents the results of the Chow test used to compare the suitability of the Common Effect Model (CEM) and the Fixed Effect Model (FEM).

Table 3 Chow Test : CEM vs FEM

Test Statistic	Value
F-statisctic	2.71
Df (1, 32)	-
Prob > F	0.1098

Source: Data processed by researchers (2026)

The results of Hausman's test used to compare the Random Effect Model (REM) with the Fixed Effect Model (FEM) showed a chi-square value of 9.29 with a probability of 0.0982. This probability value is above the conventional significance level of 5%, so statistically there is not enough evidence to reject the null hypothesis that the difference in coefficients between the two models is not systematic. Thus, the Random Effect model is considered more appropriate because it provides a more efficient estimate under the assumption that individual effects do not correlate with independent variables in the model. However, the probability value that is relatively close to the significance threshold indicates a weak indication of potential differences in individual characteristics that may not be fully accommodated, so the interpretation of the results still needs to be done carefully considering the consistency of the model and the possibility of further testing as a form of robustness check. Table 4 reports the results of the Hausman test used to assess whether the Random Effect Model (REM) or the Fixed Effect Model (FEM) is more appropriate.

Table 4 Hausman Test: REM vs FEM

Variable	FEM (b)	REM (B)	Difference (b − B)	Std. Error
Return (rt1)	0.4223265	0.3964705	0.025856	0.0088608
EPS t-1 (eps_t0)	-5.44843	-5.120755	-0.3276743	—
EPS t (eps_t)	2.637204	-2.26987	4.907074	1.595382
EPS t+1 (eps_t1)	8.217901	7.671587	0.5463136	—
ESG	-70.7819	-3.035578	-67.74632	38.41167
Leverage (lev)	6455.906	3038.762	3417.144	1642.756
Hausman χ^2 (df = 5)	**9.29**			
Prob > χ^2	**0.0982**			

Source: Data processed by researchers (2026)

The results of the Breusch-Pagan Lagrange Multiplier (LM) test used to compare the Common Effect Model (CEM) with the Random Effect Model (REM) showed a chibar² value of 3.18 with a probability of 0.0374, which is smaller than the significance level of 5%. These findings indicate that the null hypothesis stating the absence of individual effect variance (Var(u) = 0) can be rejected. Thus, there is empirical evidence that the heterogeneity between individuals (cross-section effect) is significant and cannot be ignored in the model. Therefore, the use of the Random Effect Model (REM) is more appropriate than the Common Effect Model (CEM), because REM is able to accommodate specific variations between entities that are not observed but affect dependent variables. These results also

confirm that the pooled approach (CEM) has the potential to produce biased estimates due to ignoring the existing data panel structure. To determine the presence of random effects in the panel data model, the results of the Breusch–Pagan Lagrange Multiplier (LM) test comparing the Common Effect Model (CEM) and the Random Effect Model (REM) are presented in Table 5.

Table 5 Breusch-Pagan LM Test: CEM vs REM

Component	Variance (Var)	Standard Deviation (SD)
Residual (e)	686,404.8	828.4955
Random Effect (u)	2,130,516	1,459.629
Total (rt)	3.42e+07	5,847.476
LM Statistic (chibar²)	**3.18**	
Prob > chibar²	**0.0374**	

Source: Data processed by researchers (2026)

The REM results show the model is jointly significant (Wald $\chi^2 = 456.86$; $p = 0.000$), indicating it can explain stock return variation. Partially, eps_t0 has a negative and significant effect ($p = 0.002$), while its interaction with ESG (eps_t0_esg) is also significant ($p = 0.008$), suggesting ESG moderates the relationship between past earnings and returns. However, eps_t1 (FERC) and ESG are not significant, nor are other interactions and leverage, indicating no strong evidence that ESG improves the relevance of future earnings. Overall, ESG's role is limited and more evident in historical earnings than future earnings. Table 6 presents the results of the panel regression analysis used to test the impact of ESG scores on profit informativeness within the FERC framework.

Table 6 Uji Hypothesis : ESG → FERC

Variable	Coefficient	Std. Error	z-statistic	Prob.	95% Confidence Interval
Return (rt1)	0.7843611	0.626928	1.25	0.211	[-0.4443952 ; 2.013117]
EPS t-1 (eps_t0)	-11.12143	3.671538	-3.03	0.002***	[-18.31751 ; -3.925345]
EPS t (eps_t)	24.20293	29.80515	0.81	0.417	[-34.2141 ; 82.61995]
EPS t+1 (eps_t1)	-18.50036	30.09372	-0.61	0.539	[-77.48296 ; 40.48225]
ESG	30.32933	36.30934	0.84	0.404	[-40.83568 ; 101.4943]
Leverage (lev)	-978.1263	1603.029	-0.61	0.542	[-4120.004 ; 2163.752]
EPS t-1 × ESG	0.1564473	0.058533	2.67	0.008***	[0.0417248 ; 0.2711698]
EPS t × ESG	-0.4352001	0.4347276	-1.00	0.317	[-1.287251 ; 0.4168504]
EPS t+1 × ESG	0.379458	0.4388433	0.86	0.387	[-0.4806591 ; 1.239575]
Return × ESG	-0.0064988	0.0100675	-0.65	0.519	[-0.0262307 ; 0.0132332]
Constant	-56.96436	2063.224	-0.03	0.978	[-4100.809 ; 3986.88]
R-squared (Within / Between / Overall)			**0.9632 / 0.9197 / 0.9385**		
Wald Chi-square (10)			**456.86**		
Prob > Chi-square			**0.0000**		
Obs per group (min / avg / max)			**3 / 3.0 / 3**		
Sigma_u / Sigma_e / Rho			**170.45349 / 463.61903 / 0.11907685**		

Source: Data processed by researchers (2026)

The FGLS results show that the model is jointly significant (Wald $\chi^2 = 1121.44$; $p = 0.000$), indicating strong explanatory power for stock returns. Partially, eps_t0 has a negative and significant effect ($p = 0.001$), while ESG shows a positive and significant effect ($p = 0.001$), suggesting ESG enhances firm value. The interaction eps_t0_esg is also significant ($p = 0.003$), indicating ESG strengthens the relevance of past earnings information. However, eps_t1 (FERC) is not significant ($p = 0.402$), indicating no consistent market response to future earnings. Other variables and interactions, including ESG moderation on future earnings, are also insignificant, as is leverage. Overall, ESG plays a

stronger role in enhancing the relevance of historical earnings than future earnings. As part of the hypothesis testing, Table 7 presents the FGLS regression results examining the influence of ESG on profit informativeness within the FERC framework.

Table 7 Uji Hypothesis

Variable	Coefficient	Std. Error	z-statistic	Prob.	95% Confidence Interval
Return (rt1)	0.6071806	0.4612216	1.32	0.188	[-0.2967971 ; 1.511158]
EPS t-1 (eps_t0)	-10.85293	3.343994	-3.25	0.001***	[-17.40704 ; -4.298824]
EPS t (eps_t)	29.96418	26.5469	1.13	0.259	[-22.06678 ; 81.99514]
EPS t+1 (eps_t1)	-22.52278	26.89176	-0.84	0.402	[-75.22966 ; 30.1841]
ESG	29.00856	8.984076	3.23	0.001***	[11.40009 ; 46.61702]
Leverage (lev)	-983.648	1293.999	-0.76	0.447	[-3519.839 ; 1552.543]
EPS t-1 × ESG	0.1578934	0.053705	2.94	0.003***	[0.0526336 ; 0.2631533]
EPS t × ESG	-0.5239816	0.3867067	-1.35	0.175	[-1.281913 ; 0.2339497]
EPS t+1 × ESG	0.4376191	0.3919088	1.12	0.264	[-0.3305081 ; 1.205746]
Return × ESG	-0.0037702	0.0073816	-0.51	0.610	[-0.0182379 ; 0.0106976]
Model Type		**FGLS (Cross-sectional time-series)**			
Panel Assumption		**Homoskedastic, no autocorrelation**			
Number of Observations		**39**			
Number of Groups		**13**			
Time Periods		**3**			
Wald Chi-square (10)		**1121.44**			
Prob > Chi-square		**0.0000**			

Source: Data processed by researchers (2026)

Based on a series of tests that have been conducted, there are several empirical and conceptual justifications that can explain why ESG variables do not show a significant influence on the Future Earnings Response Coefficient (FERC). First, in terms of market characteristics, the results show that the variables representing future profit information (eps_t1) are insignificant, thus implicitly indicating that the market is not fully forward-looking in processing accounting information. In the context of emerging markets such as Indonesia, investors tend to rely more on historical information (backward-looking) than future profit projections, so the FERC mechanism does not work optimally. These findings are consistent with prior literature showing that the market's ability to anticipate future earnings depends heavily on information efficiency and investor sophistication (Kelly et al., 2019). When market efficiency is relatively limited, long-term ESG signals are less likely to be directly internalized in stock prices.

Second, methodologically, the presence of a fairly high indication of multicollinearity in the earnings variable (EPS between periods) has the potential to cause distortions in the estimation of regression coefficients, thereby reducing the statistical power of ESG variables in explaining FERC. High multicollinearity can magnify standard errors and decrease the significance of variables, even if they are theoretically relevant. This is crucial because the FERC model inherently relies on dynamic relationships between profit periods, so when these variables are strongly correlated with each other, the marginal ESG contribution becomes difficult to clearly identify (Al-Baidhani et al., 2017; Kolozsvari & Macedo, 2016).

Third, from the perspective of ESG theory and value relevance, the insignificance of ESG to FERC can be explained through the issue of the quality and homogeneity of ESG disclosure itself. ESG disclosure in many companies, especially in emerging markets, is still compliance-driven and does not fully reflect the substance of sustainability performance. This causes investors to doubt the credibility of ESG information, so it does not make it the main basis for forming future earnings expectations. Recent studies suggest that only material, decision-useful ESG disclosures are associated with long-term financial

outcomes, while symbolic or boilerplate disclosures tend to have limited informational value (Amel-Zadeh & Serafeim, 2018a; Christensen et al., 2021a; Khan et al., 2016b). Consequently, when ESG disclosure lacks depth and differentiation, its impact on forward-looking measures such as FERC becomes limited.

Fourth, the results of the study actually show that ESG has a stronger role in moderating the relationship between historical profit (eps_t0) and stock return than future profit. This indicates that ESG functions more as a legitimacy mechanism or reputational signal for performance that has occurred, rather than as a strong predictor of future performance. Within the framework of stakeholder theory and legitimacy theory, ESG is often used by companies to strengthen investors' perception of current operational stability and sustainability, rather than as an explicit signal for future earnings (Gillan et al., 2021; Tawiah et al., 2022). Therefore, empirically it is natural that ESG is not significant to FERC, because the market responds more to ESG in the context of a confirmatory role than a predictive role.

The results of the empirical test showed that the ESG variable did not have a significant influence on the profitability proxied through the Future Earnings Response Coefficient (FERC), so the main hypothesis of the study was not statistically supported. These findings indicate that, in the context of companies that are members of the MSCI Indonesia Index, ESG information has not been fully internalized in future earnings expectations reflected in stock prices. Quantitatively, this condition is reflected in the insignificance of the future earnings variable (E_{t+1}) and the interaction between ESG and these components. Thus, these results show that the mechanism of stock price formation in the Indonesian capital market still does not fully reflect forward-looking information, so the role of ESG in increasing the informability of future earnings is limited.

To obtain a more comprehensive understanding, the quantitative findings need to be interpreted through a qualitative approach that considers the temporal characteristics of the variables used. In this perspective, ESG is essentially an indicator that reflects long-term sustainability performance, whereas the FERC model used in this study is more sensitive to short-term profit expectations. This time horizon mismatch causes long-term ESG information to not be fully reflected in the market's response to future earnings in a relatively limited observation period. Previous literature supports this argument by showing that the impact of ESG on financial performance tends to be lagged and takes time to internalize in stock prices (Albuquerque et al., 2020; Giese et al., 2019; Khan et al., 2016c). Therefore, the insignificance of ESG to FERC in this study can be understood as a consequence of temporal limitations in capturing the economic effects of ESG.

In addition, the characteristics of investor behavior in emerging markets also affect the weak relationship between ESG and profit information. Investors in the Indonesian capital market tend to be more oriented towards historical financial information than non-financial information that is strategic and long-term. This is reflected in the results of the study which shows that historical profit (E_{t-1}) has a significant influence on stock returns, while future profits do not. The findings indicate that the market is still backward-looking in processing information, so ESG signals that theoretically function as indicators of future prospects have not been fully responded to by investors. Prior evidence indicates that investors often use ESG information for screening purposes rather than as a primary valuation input, particularly in markets with lower ESG literacy (Amel-Zadeh & Serafeim, 2018b; Krueger et al., 2020).

Furthermore, the quality and credibility of ESG disclosures are important factors that can explain the insignificance of the empirical relationships found. In practice, ESG disclosures in many companies are still compliance-driven and do not fully reflect strategic integration in the company's business model. This condition causes the ESG information presented to tend to be symbolic and have limited informational value for investors. Empirical literature shows that only high-quality and material ESG disclosures are associated with stronger financial performance and market responses (Christensen et al.,

2021b; Friede et al., 2015c; Khan et al., 2016c). Therefore, the ESG insignificance in FERC's model can be interpreted as a reflection of the quality of disclosure that is not yet strong enough to directly affect future earnings expectations.

The results show that ESG plays a stronger role in moderating the relationship between historical earnings and stock returns than future earnings, indicating it functions more as confirmation of past performance than as a predictor. From signal and legitimacy perspectives, ESG disclosure enhances credibility and investor confidence, even though it does not improve the informativeness of future earnings. Overall, the study contributes by showing that the ESG–earnings relationship is contextual. The mixed-method approach provides deeper insight, indicating that ESG effectiveness as a market signal depends on time horizon, disclosure quality, and investor characteristics, rather than being universally applicable.

CONCLUSION

This study examines the effect of ESG scores on profit informativeness proxied by the Future Earnings Response Coefficient (FERC) in companies included in the MSCI Indonesia Index. The results indicate that ESG does not have a significant effect on profit informativeness, and future earnings variables are also not significant, suggesting that the market has not fully internalized forward-looking information in stock price formation. These findings reflect the characteristics of emerging markets, particularly Indonesia, where investors tend to rely more on historical information than long-term non-financial disclosures. The insignificance of ESG in the FERC model can be explained by the mismatch in time horizon between ESG as a long-term indicator and FERC as a short-term market response proxy, as well as by the limited quality and credibility of ESG disclosures that remain largely compliance-driven. However, ESG is found to strengthen the relationship between historical earnings and stock returns, indicating its role as a confirmatory signal of past performance rather than a predictor of future performance. Overall, the relationship between ESG and profit informativeness is contextual and influenced by investor behavior, disclosure quality, and market structure, thereby contributing to the literature by providing a deeper understanding of the role of ESG in emerging capital markets.

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