THE RELATIONSHIP BETWEEN ESG PERFORMANCE AND EARNINGS MANAGEMENT: THE EMPIRICAL STUDY IN EMERGING MARKET OF ASEAN

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Abstract: ***In the context of increasing global attention for sustainable development, this study investigates the relationship between ESG performance along with its individual pillar (Environment, Social, Governance) and earnings management, with the moderating effects of firm size. Multivariate regressions are conducted on a sample of 596 firm-year observations including listed companies in ASEAN countries from the period from 2019-2023. The results suggest that ESG performance in previous year positively related to real earnings management (REM) in current year. Moreover, among the three pillars of ESG, only governance has a significant positive link with REM and the positive ESG-REM relationship is more pronounced in smaller firms.***

• Keywords: *ESG, earnings management, ASEAN.*

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1. Introduction

Environmental, Social, and Governance (ESG) refEnvironmental, Social, and Governance (ESG) refers to a framework which integrates environmental responsibility, social responsibility, and corporate governance into business strategic management and investment decisions of the investors. Accordingly, stakeholders increasingly recognize that the adoption of ESG principles could safeguard a company's long-term success and create shareholder value, enhance the reputation of the company and open access to new capital sources. In addition, ESG is expected to prevent short-term opportunistic behaviors that prioritize immediate gains over long-term sustainability.

Researchers have traditionally emphasized the direct correlation between ESG initiatives and firm performance or firm value but neglect how the quality of financial reporting interacts with these factors. When firms engage in earnings management (EM) with the intention to manipulate financial statements to a more favorable picture, the true impact of ESG efforts on performance metrics can be concealed. As a result, there is a need to investigate the relationship between ESG and EM, which consequently affects financial reporting quality.

The majority of the existing literatures on ESG-EM relationship have been conducted in developed market, where regulatory frameworks and corporate governance structures are more established (Kim et al., 2012; Velte, 2021). Some research has begun to address ESG issues in Asian countries (Liu et al., 2023; Sun et al., 2024) but studies focusing specifically on the ASEAN region remain scarce.

The focus on ASEAN context is motivated by the fact that, with growing national commitments towards sustainable goals, the region is increasingly integrating ESG practices into their business frameworks. ESG is no longer considered optional but rather an essential framework for transparency and fostering investor confidence.

Therefore, the objective of this study is to examine the relationship between ESG performance in total together with its three main pillars which are Environment, Social, and Governance and two measures of earnings management among ASEAN firms. Additionally, the study will further investigate the mechanism behind it by studying the potential moderating effect of firm size on this relationship.

2. Literature review

2.1. Theoretical framework

The positive relationship between ESG and EM can be explained by agency theory (Jensen & Meckling, 1976). The separation of ownership and management in corporation structure, in conjunction with information asymmetries, generate motivation for opportunistic behaviors by managers (agents) who may have different objectives than

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the owners (principals). As a result, the motivation for firms to engage in EM may increase. Kim et al., (2012) suggest that ESG acts as reputation insurance, providing a positive signal that allows firms to engage in EM while mitigating the negative consequences of any misconduct. When firms engage in greenwashing, the information asymmetry increases, creating noise and makes it difficult for investors to accurately assess the firm's true value, potentially misleading them about its financial health.

The stakeholder theory (Freeman, 1984) posits a negative ESG-EM relationship. The stakeholder theory, which asserts that firms should consider the impact of their operational activities on their stakeholders, not just their shareholders. By aligning their financial reporting and non-financial reporting such as ESG performance, executives can ensure that both aspects are jointly monitored. Consequently, this perspective assumes that managerial opportunism and agency problems are minimized, which constrains EM.

Various empirical studies focus on the link between ESG and EM. Almubarak et al. (2023) finds that ESG disclosure is positively associated with EM, particularly when firms are under financial distress. The study indicates that managers may use ESG as a tool to cover opportunistic behaviors.

On the contrary, the majority of the empirical studies such as Chouaibi & Zouari (2022); Liu et al. (2023); Sun et al. (2024) have identified a negative correlation between ESG and both types of EM. Recent studies by Vatis et al. (2025) finds negative impact of REM on ESG whereas negative impact of AEM on ESG performance is evidenced in the work of Primacintya & Kusuma (2025).

In further study on how each of the ESG pillars affect EM, Velte (2019) finds that environmental, social, and governance performance negatively influence AEM, with governance having the strongest effect. Similarly, Borralho et al. (2022) reveals that while social and governance disclosures help restraint EM in family firms, environmental disclosure is positively associated with it in non-family firms. Velte (2021) finds that environmental performance significantly reduces AEM but increases REM, suggesting a strategic shift toward less detectable forms of EM in the context of greenwashing.

Given the mixed findings in the recent empirical studies on ESG-EM relationship, it is crucial to explore the moderating effect of firm size on this relationship. It assumes larger companies frequently enjoy scale advantages, which can be challenging for smaller firms to replicate (Velte, 2019). Moreover, larger firms typically produce higher-quality financial information due to their exposure to stricter regulatory oversight and compliance requirements (Borralho et al., 2022). Vatis et al. (2025) finds the negative ESG-EM more pronounced in large firms.

2.2. Hypothesis development

Building on the stakeholder theory and the dominant findings of negative ESG-EM relationship in existing literatures, the following hypotheses are proposed:

H1. ESG is negatively correlated with firms' EM

H2. Environmental performance is negatively correlated with firms' EM

H3. Social performance is negatively correlated with firms' EM

H4. Governance performance is negatively correlated with firms' EM

H5. Firm size significantly enhances ESG-EM relationship.

3. Methodology

3.1. Data

The data set extracted from LSEG Data &Analytics databases has 596 firm-year observations which includes 126 non-financial firms for five-year period from 2019 to 2023 in six ASEAN countries (Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam).

3.2. Dependent variables

Earnings management is the dependent variable of the study, proxied either by AEM or REM.

Accruals earnings management

AEM is measured by discretionary accruals using framework developed by Dechow et al. (1995) with lagged return on assets, as suggested by Kothari et al. (2005). AEM is determined by the following equation:

$$\frac{TA_{i,t}}{A_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{A_{i,t-1}} + \beta_2 \frac{\Delta REV_{i,t} - \Delta REC_{i,t}}{A_{i,t-1}} + \beta_3 \frac{PPE_{i,t}}{A_{i,t-1}} + \beta_4 \frac{IBXI_{i,t-1}}{A_{i,t-1}} + \varepsilon_{i,t}$$

Where:

$TA_{i,t}$: Total accruals of the company i in year t, net income after tax minus operating cash flows

$A_{i,t-1}$: Total assets of company i in year t-1

$\Delta REV_{i,t}$: Net change in revenue of the company i in year t from year t-1

$\Delta REC_{i,t}$: Net change in receivables of the company i in year t from year t-1

$PPE_{i,t}$: Value of property, plant and equipment of the company i in year t

$IBXI_{i,t-1}$: Income before extraordinary items of company i in year t-1

$\varepsilon_{i,t}$: Estimated residual (Discretionary accruals)

Real earnings management

Following Cohen et al.(2010), Roychowdhury (2006), REM is calculated using three key metrics as follow:

REM = AB_CFO – AB_PROD + AB_EXP

First, abnormal operating cash flow (AB_CFO) is the residual (εi,t) of the following model:

$$\frac{CFO_{i,t}}{A_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{A_{i,t-1}} + \beta_2 \frac{Sales_{i,t}}{A_{i,t-1}} + \beta_3 \frac{\Delta Sales_{i,t}}{A_{i,t-1}} + \varepsilon_{i,t}$$

Where:

$CFO_{i,t}$: Operating cash flow of company i in year t

$A_{i,t-1}$: Total assets of company i in year t-1

$Sales_{i,t}$: Net sales of company i in year t

$\Delta Sales_{i,t}$: Change in net sales of company i in year t from year t-1

$\varepsilon_{i,t}$: Estimated residual (Abnormal CFO)

Secondly, abnormal discretionary expense (*AB_EXP*) is the residual in the model follow:

$$\frac{DISX_{i,t}}{A_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{A_{i,t-1}} + \beta_2 \frac{Sales_{i,t-1}}{A_{i,t-1}} + \varepsilon_{i,t}$$

Where:

$DISX_{i,t}$: Discretionary expenditures of company i in year t

$A_{i,t-1}$: Total assets of company i in year t-1

$Sales_{i,t-1}$: Net sales of company i in year t-1

$\varepsilon_{i,t}$: Estimated residual (Abnormal discretionary expenditures)

Thirdly, abnormal production cost (*AB_PROD*) is the residual from the following model:

$$\frac{PROD_{i,t}}{A_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{A_{i,t-1}} + \beta_2 \frac{Sales_{i,t}}{A_{i,t-1}} + \beta_3 \frac{\Delta Sales_{i,t}}{A_{i,t-1}} + \beta_4 \frac{\Delta Sales_{i,t-1}}{A_{i,t-1}} + \varepsilon_{i,t}$$

Where:

$PROD_{i,t}$: Production costs of year t-1 to year t (measured by total of cost of goods sold and change in inventory)

$A_{i,t-1}$: Total assets for company i in year t-1

$Sales_{i,t}$: Annual net sales for company i in year t

$\Delta Sales_{i,t}$: Change in annual net sales for company i in year t from year t-1

$\Delta Sales_{i,t-1}$: Change in annual net sales for company i in year t-1 from year t-2

$\varepsilon_{i,t}$: Estimated residual (Abnormal Production Cost)

3.3. Explanatory variables

The independent variable in this study is ESG and its three pillars (E_SCORE, S_SCORE, G_SCORE), which was collected from the LSEG Data &Analytics databases. The higher the ESG score, the better the ESG performance.

Firm size (SIZE), measured by natural logarithm (ln) of total assets, has been identified as a moderating variable. This study incorporates several control variables including Leverage (LEV), Market to Book Equity Ratio (MTB) and Return of Assets (ROA), which are related to firm characteristics and commonly employed in this research area. Table 1 summarizes the variables used in the study.

Table 1. Variables of the study

Variable	Measurement	Expected results
Dependent variables		
AEM	Discretionary accruals (Kothari et al., 2005)	
REM	Sum of REM proxies (Roychowdhury, 2006)	
Independent variables		
ESG	Environmental, social and governance score	(-)
E_SCORE	Environmental performance	(-)
S_SCORE	Social performance	(-)
G_SCORE	Governance performance	(-)
Moderating variable		
SIZE	Natural logarithms of total assets	(+)
Control variables		
LEV	Long-term debt scaled by total assets	
MTB	Market-to-book equity ratio	
ROA	Income scaled by total assets	

3.4. Empirical models

To test the hypotheses H1, whether ESG negatively influences EM, the following regression model is proposed:

$$EM_{i,t} = \beta_0 + \beta_1 ESG_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 X_{i,t} + \varepsilon_{i,t} \quad (1)$$

In accordance with approach done by Velte (2019), additional regressions will be performed to analyze the influence of overall ESG performance reported in prior year to earning management practice in current year. The one-year lagged analysis uses earning management variables in year t for ESG performance in year t-1 (LAG_ESG).

To test the hypotheses H2, H3, H4, whether each pillar of ESG (E_SCORE, S_SCORE, G_SCORE) has a significant impact on earnings management, the following multivariate regression models are proposed:

$$EM_{i,t} = \beta_0 + \beta_1 E\_SCORE_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 X_{i,t} + \varepsilon_{i,t} \quad (2)$$

$$EM_{i,t} = \beta_0 + \beta_1 S\_SCORE_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 X_{i,t} + \varepsilon_{i,t} \quad (3)$$

$$EM_{i,t} = \beta_0 + \beta_1 G\_SCORE_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 X_{i,t} + \varepsilon_{i,t} \quad (4)$$

To verify the effect of firm size on the ESG-EM relationship, a sub-sample approach is employed, whereby equation 1 is re-estimated separately for smaller firms (firm size below median) and larger firms (firm size above median). This approach follows the recent empirical study by Vatis et al., (2025), allows for a direct comparison of the ESG-EM link across different firm scales.

4. Findings and discussion

4.1. Descriptive analysis

Table 2 provides an overview of descriptive statistics for the variables in the study. While AEM has mean value close to zero, the mean value of REM indicates that ASEAN firms manipulate earnings upwards using REM. The standard deviation for REM is larger than for AEM, and its range is much wider, meaning firms exhibit more variation of REM compared to AEM.

The average overall ESG score indicates a good relative ESG performance according to the grading system by LSEG but considerable variation across firms. The minimum ESG score of 3.070 represents an "ESG laggard" and a maximum score of 91.921 represents an "ESG leader". Among its three pillars, the average social score is the highest and the mean of environmental score is the lowest.

Table 2. Descriptive statistics

Variable	Obs.	Mean	Std. dev.	Min	Max
AEM	596	0.00	0.05	-0.20	0.23
REM	596	0.08	0.27	-1.26	1.33
ESG	596	53.73	17.36	3.07	91.92
S_SCORE	596	58.52	19.58	1.58	98.03
G_SCORE	596	51.39	21.79	2.43	95.35
E_SCORE	596	49.84	22.94	0.00	97.13
SIZE	596	21.71	1.30	18.21	25.34
LEV	596	0.18	0.15	0.00	0.67
MTB	596	4.20	7.57	0.25	60.67
ROA	596	0.09	0.07	0.00	0.64

4.2. Correlation matrix

Table 3. Pearson correlation matrix

	AEM	REM	ESG	S_SCORE	G_SCORE	E_SCORE	SIZE	LEV	MTB	ROA
AEM	1.000									
REM	-0.332	1.000								
ESG	-0.150	0.124	1.000							
S_SCORE	-0.111	0.086	0.890	1.000						
G_SCORE	-0.181	0.061	0.693	0.410	1.000					
E_SCORE	-0.035	0.109	0.839	0.762	0.338	1.000				
SIZE	-0.058	0.120	0.253	0.274	0.088	0.297	1.000			
LEV	-0.119	-0.014	0.010	0.023	-0.006	0.002	0.414	1.000		
MTB	-0.106	0.309	0.236	0.196	0.164	0.185	-0.197	0.007	1.000	
ROA	0.042	0.445	0.044	0.010	0.053	0.039	-0.353	-0.410	0.395	1.000

The correlation analysis reveals negative correlation between the overall ESG score and AEM, suggesting a potential constraining effect, following stakeholder theory (Freeman, 1984). Conversely, the matrix reveals a positive correlation between ESG and REM, align with agency theory (Jensen & Meckling, 1976).

4.3. Regression analysis

To examine the relationship between ESG performance and earnings management, the study employed a multivariate regression analysis with panel data. Durbin-Wu-Hausman test results in Two-Way Fixed-Effects (TWFE) being the most appropriate for all models. Then, a series of diagnostic test are conducted. First, Modified Wald test reveals heteroskedasticity issue; hence the TWFE model is estimated using robust standard errors clustered at the firm level. Wooldridge test for autocorrelation finds no evidence of a first-order serial correlation problem. Finally, the average Variance Inflation Factor (VIF) of 5.63 suggests a moderate level of multicollinearity.

Table 4 summaries the final regression models with positively significant relationship between previous year's ESG (LAG_ESG) and governance performance (LAG_G_SCORE) with REM.

Table 4. Regression results

	(1) Fixed Effect AEM	(2) Fixed Effect REM	(3) Fixed Effect REM	(4) Fixed Effect REM	(5) Fixed Effect REM
LAG_ESG	-0.000131	0.00141*			
	(0.768)	(0.052)			
LAG_E_SCORE			0.000715		
			(0.168)		
LAG_S_SCORE				-0.00028	
				(0.717)	
LAG_G_SCORE					0.00122*
					(0.050)
SIZE	0.0577**	-0.114*	-0.115*	-0.114**	-0.116*
	(0.045)	(0.051)	(0.053)	(0.050)	(0.053)
LEV	-0.0269	0.189*	0.173	0.175*	0.164
	(0.677)	(0.077)	(0.108)	(0.094)	(0.121)
MTB	0.00156	-0.00821**	-0.00750**	-0.00732**	-0.00739**
	(0.207)	(0.004)	(0.009)	(0.008)	(0.009)
ROA	0.0299	2.440***	2.191***	2.164***	2.180***
	(0.752)	(0.000)	(0.000)	(0.000	(0.000)
_cons	-1.263**	2.317*	2.391*	2.410*	2.394*
	(0.043)	(0.066)	(0.063)	(0.058)	(0.063)
Year dummy fixed effect	Yes	Yes	Yes	Yes	Yes
N	484	484	462	462	462
adj. R-sq	0.056	0.571	0.421	0.419	0.431

p-values in brackets
** p<0.1, ** p<0.05, *** p<0.001*

The coefficient for LAG_ESG is statistically significant at the 10% level in model (2) with adjusted R-squared of the model is 0.571, representing a high overall explanatory power of the model. This result suggests that the better ESG performance reported in the current year is statistically associated with a notable increase in real earnings management in the next year. Further analysis indicates that among the three pillars of ESG, only one-year lagged governance performance is positively related to REM.

The finding is contrary to the majority of recent empirical studies that confirm the negative influence of ESG on REM (Liu et al., 2023; Vatis et al., 2025; Primacintya & Kusuma, 2025) but in line with few research results in positive relationship between ESG-AEM (Almubarak et al., 2023) or environment performance and REM (Velte, 2021).

The positive ESG-REM link is well aligned with Agency theory (Jensen & Meckling, 1976). In a study that exclusively examines the relationship between environmental performance and earnings management, Velte (2021) finds that environmental score restricts AEM but promotes REM. He explains that environmental performance might be used as a mask to conceal the managers' harmful influence on financial reporting. In addition, Almubarak et al., (2023) finds that financial distress significantly enhances the positive ESG-EM relationship.

Table 5. Sub-sample analysis

	(2A) Smaller Firms REM	(2B) Larger Firms REM
LAG_ESG	0.00250**	0.0000664
	(0.032)	(0.922)
SIZE	-0.242**	-0.0900
	(0.023)	(0.179)
LEV	0.205	0.158
	(0.124)	(0.178)
MTB	-0.00991	-0.00872
	(0.223)	(0.390)
ROA	2.490***	2.084***
	(0.000)	(0.000)
_cons	4.756**	2.023
	(0.030)	(0.186)
Year dummy fixed effect	Yes	Yes
N	242	242
adj. R-sq	0.543	0.422
p-values in brackets		
** p<0.1, ** p<0.05, *** p<0.001*		

The result of sub-sample analysis is presented in Table 5. The moderating effect of firm size is confirmed as the positive relationship between lagged ESG and REM is only found in smaller firms. The positive and significant relationship between ESG and REM can only be found in smaller firms because smaller firms are often resource-constrained to undertake expensive ESG investment initiatives while maintaining short-term performance targets. This leads to managers' motivation to increase the use of earnings manipulation.

Regarding AEM, the non-significant negative relation is noted in all models.

5. Conclusion

This study aims to examine the relationship between overall ESG performance together with each pillar (Environmental, Social, and Governance) and earnings management practice among ASEAN companies, also investigating how firm size moderates this relationship.

The study is conducted with the sample of 596 firm-year observations which are listed companies in ASEAN countries from the period from 2019-2023. The dependent variables of the studies are accrual-based earnings management (AEM) and real earnings management (REM) as the proxies for earnings management. Independent variables include ESG overall score and its individual pillar scores.

The final regression models show a significantly positive relationship between prior-year ESG performance and current-year REM, suggesting a one-year lagged effect. Further analysis indicates only one-year lagged governance performance is positively related to REM and the positive relationship between lagged ESG and REM is only found in smaller firms. In conclusion, with one-year delayed impact, ESG performance positively influence only REM in smaller firms, in which governance is main contributing factor.

This study offers significant implications for academics, policymakers, and industry stakeholders. For theoretical standpoint, this study provides empirical evidence about positive ESG-EM relationships that align with agency theory in emerging ASEAN region. In terms of actionable insight for regulators, it is essential to establish guidelines and monitoring mechanisms such as simplified ESG reporting standard and realistic implementation roadmaps that tailor to smaller firms which are in the early stage of ESG adoption. Lastly, the study emphasizes managers and investors to look beyond ESG scores, urging leaders to foster a genuine culture of sustainable performance.

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