

## Real earning management and firm performance of firms listing on Hanoi stock exchange in the context of promoting sustainability disclosure



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### ABSTRACT

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This study investigates the impact of earnings management through real transactions (REM) on corporate financial performance (FP), mediated by sustainability disclosure. Using a sample of 192 companies listed on the Hanoi Stock Exchange (HNX) from 2019 to 2023, the authors analyze the effect of REM on FP, measured by Return on Assets (ROA) and Tobin's Q, representing accounting-based and market-based performance, respectively. The study also examines the mediating role of environmental, social, and governance (ESG) disclosure in this relationship, given its growing importance. Control variables include company size (SIZE), financial strength (Z-SCORE), growth (GROWTH), and audit quality (AUDIT). Secondary data from financial statements and primary ESG scores based on the Global Reporting Initiative (GRI) Standard are analyzed using STATA. Findings reveal that REM negatively impacts FP, with ESG disclosure acting as a significant mediator. The results suggest that firms engaging in REM undermine their financial performance, particularly when sustainability transparency is considered. Consequently, the study emphasizes the need for businesses to prioritize long-term development, strengthen ESG practices, and curb REM activities to sustain financial health and stakeholder trust. Practical implications highlight the importance of integrating ESG standards into corporate strategy to mitigate the adverse effects of short-term earnings manipulation.

**Contribution/ Originality:** This study is one of the few studies that contribute new evidence in examining the impact of earnings management on financial performance in the context of promoting sustainability disclosure in an emerging economy like Vietnam. The research results emphasize the importance of enterprises disclosing sustainable development information, as this not only helps reduce profit adjustment behavior but also makes financial information more transparent, thereby contributing to economic sustainability.

## 1. INTRODUCTION

Transparency and sustainability have become the main concerns in the corporate environment of today since they attract great attention to the relationship between ESG disclosures and EM. Businesses all around are under pressure right now to be financially successful while still operating morally and sustainably. Motivated by rising investor expectations and stricter legal frameworks, companies are now expected to combine financial success with ethical and environmental practices (Eccles, Ioannou, & Serafeim, 2014). This movement toward sustainability emphasizes the need

to examine how financial practices, including earnings management, connect with ESG reporting. Ensuring corporate responsibility and the long-term promotion of ethical business practices depend on exploring this link.

Earnings management (EM) is the intentional manipulation of external financial reporting in response to certain financial performance targets. REM, Classification Shifting, and Accrual-Based Earnings Management (AEM), among other strategies, can help to accomplish this. REM, especially, refers to changing actual business operations, such as decreasing selling prices, easing lending rules, cutting discretionary expenditure, or raising output to lower the cost of goods supplied (Roychowdhury, 2006). This study focuses on REM, which has grown ever more important in response to stricter rules imposed following the adoption of SOX laws. Notwithstanding the vast body of research in international academia dealing with accrual-based earnings management (AEM) (Cohen & Zarowin, 2010; Healy & Wahlen, 1999; Nga & Linh, 2018; Thùy & Hùng, 2024), there has been a relative lack of studies into real earnings management (REM)—especially in terms of ESG disclosures—within emerging economies like Vietnam (Gunny, 2010; Jiang, Habib, & Wang, 2018). In a country where sustainability efforts are being increasingly acknowledged, such a lack is particularly acute. The paucity of academic studies linking REM and ESG in developing economies like Vietnam not only prevents holistic scholarship but also denies organizations access to vital insights required to keep pace with changing regulations and shareholder expectations (Nguyen & Thi Duong, 2022). Filling such a gap in research would offer rich insights into how companies navigate the nexus between financial strategy and sustainability imperatives in changing economic environments. The financial system in Vietnam has witnessed tremendous developments in efforts to improve market transparency and promote sustainable growth. The government has had policies in place to promote sustainable development, such as the Corporate Sustainability Index and the Zero Waste to Nature initiative. However, the integration and application of ESG practices by Vietnamese companies have been uneven and weak in nature (Minh, Thúy, Đa, Bình, & Phương, 2024). Under such circumstances, it becomes important to analyze the role of Resource Efficiency Management (REM) and ESG disclosure in influencing corporate strategy and policy regulation. This study investigates real earnings management and financial performance, concentrating on the mediating role played by ESG disclosure. It fills a major gap in current research in Vietnam and thus makes a contribution to business sustainability and disclosure studies. The study focuses in particular on examining REM practices and FP metrics such as ROA and Tobin's Q, and also tests for a mediating role for ESG disclosure (Roychowdhury, 2006). The course of this study has two objectives: one is to assess the influence of REM on FP among Vietnamese companies, and the other is to understand whether ESG disclosures help in reconciling this relationship. The outline of the article is therefore provided under five different sections: Section II on a review of previous research on the topic, Section III a description of the methods utilized in this study, Section IV on the data analysis and results, and, finally, Section V on the implications of these findings for both theory and practice. For the extraction of these insights, this research relies on data collected during the period from 2019 to 2023 from 192 firms listed on the HNX; it also combines the available financial data with recent ESG evaluations that scored against the popularly accepted GRI standard. The derived datasets were then analyzed by means of SATA software while controlling for the size of the company, general financial health, growth potential, and audit quality in order to test the robustness and reliability of the findings reported in this study. Such findings are expected to furnish valuable insights to business enterprises regarding the prioritization of long-term development and ESG initiatives and supply what might be useful policy recommendations for regulators. This paper aims to contribute to the existing literature on EM and FP to develop a comprehensive perception of sustainable financial practices within the realm of emerging markets. The study thus recommends that businesses become focused on long-term development, emphasize ESG, and ensure that REM behavior is minimal if they are to maintain sustainable financial performance and stakeholder trust (Kim & Li, 2021; Zhao et al., 2018).

The team will investigate these questions to fulfill its goals: First question: What influence does real earnings management (REM) have on the profits of companies listed on the Hanoi Stock Exchange (HNX)? Second question: How does ESG disclosure moderate the relationship between REM and company performance? How does a mediation-

based impact take place through ESG disclosure in the relationship between REM and corporate performance? Third question: In what ways does ESG disclosure moderate the relationship between REM and corporate performance?

## 2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

### 2.1. Literature Review

#### 2.1.1. Impact of Earning Management on Financial Performance

Earnings management (EM) is a strategy frequently employed by executives to shape financial outcomes according to their objectives. The consequences of EM are recognized not just by the owners but also by other stakeholders and affect financial performance (FP). Up to now, there has been much research on earnings management and its impact (Chu, 2012; Cooper, Gulen, & Schill, 2008; Fama & French, 2006; Lu, Onuk, Xia, & Zhang, 2025). However, most studies focus on accrual-based earnings management (AEM), while research on real earnings management (REM) remains limited. Therefore, we decided to focus on the impact of REM on future FP in this paper. The research of Kumar, Vij, and Goswami (2021) based on the financial statements of 108 companies in the non-financial sector of India from 2006 to 2018 shows that REM activities negatively affect the company's FP on both accounting and market efficiency in the near future. This is due to earnings management often involving sacrificing long-term value, such as reducing essential investments or increasing unnecessary expenses, to meet short-term goals. Additionally, it distorts the true financial health of the company, leading to inefficient decision-making and loss of stakeholder trust. Cooper et al. (2008) study, which surveyed US firms over a 40-year period, revealed a negative association between the increase in total assets and future abnormal returns, which is consistent with the above conclusion. Fama and French (2006) study also found consistent results with Chen, Cussatt, and Gunny (2013); Darmawan, Sutrisno, and Mardiaty (2019); Ghaleb, Kamardin, and Tabash (2020) and Tulcanaza-Prieto, Lee, and Koo (2020) studies that accounts payable negatively predicted reported revenues in the next year when using US firms' data. However, these results were inconsistent with Taylor and Xu (2010) study. The authors demonstrated that REM had no significant effect on subsequent-year performance declines. With the same research results as Gunny (2010), it was found that REM will significantly increase company performance in the following years.

#### 2.1.2. Impact of Earning Management on ESG

EM is used by businesses for short-term opportunistic strategies, for example, for contracting or borrowing purposes, to "window dress" the FS to mislead information users. These activities have been widely criticized because they can seriously affect the long-term sustainability of the company and reduce the reliability of financial information. Apart from meeting their financial objectives, managers can be involved in ESG activities to gain the trust of stakeholders and enhance enduring relationships.

According to the majority of research, EM has a detrimental impact on ESG (Adeneye et al., 2023; Grimaldi, Caragnano, Zito, & Mariani, 2020). The authors argue that managers try to convey accurate, reliable, and transparent information in order to promote the long-term view that comes from stakeholder theory. Therefore, managers who use less deceptive tactics are more likely to use ESG disclosures as a tactic to support high-quality reporting because they care about preserving positive and long-lasting connections with stakeholders (Thoppan, Nathan, & Victor, 2021). The other stream supports the managerial opportunistic perspective, which is derived from agency theory and sees ESG disclosures as an entrenchment strategy to deceive stakeholders. They believe that if a company improves its sustainability disclosure, it will tend to engage in earnings management (Buerter, Sun, Lee, & Hwang, 2020; Pasko et al., 2021). The company's managers do this only to avoid unwanted stakeholder inspections. This can be considered a "greenwashing" phenomenon, when in fact the companies do not have an ESG strategy embedded in their business operations.

### 2.1.3. Impact of ESG on Financial Performance

Enterprises disclose sustainability information with the aim of meeting the social demand for a responsible business enterprise. Freeman and McVea (2005) argue that successful companies are more sustainable because they can align and meet the interests of all stakeholders. Since around 2000 in Vietnam, unusual changes in society caused by the activities of companies, such as the scandal involving the Vedanian company, have polluted this river. As a result, people are compelled to publish reports on social impacts and provide stakeholders with information about business impacts on the community. The impact of sustainability disclosure on corporate value and profitability has been of interest to researchers and academics for many years. In general, much research has indicated that the effect of this disclosure on financial performance varies across markets and industries.

ESG and the company's growth have been the subject of many studies. Zhao et al. (2018) conducted a study on Chinese listed companies and concluded that higher ESG performance can indeed have an impact on their financial performance promotion. Supporting this view are studies by Ji, Oh, Yoon, and An (2019) in Korean companies; Dalal and Thaker (2019) in Indian companies; Ahmad, Mobarek, and Roni (2021) in FTSE350 UK firms,... In Vietnam, Long (2015) conducted a study to find the relationship between social responsibility and market orientation (MO) with financial performance. His research finally showed that both ESG activities and MO impact the financial performance of enterprises. This aligns with the signaling theory as we mentioned above; companies that can effectively create and maintain a good relationship with not only shareholders but also with other stakeholders (employees, suppliers, customers, the community, the environment,...) tend to achieve success. For instance, contented suppliers will supply higher-quality raw materials, and contented staff will be more driven. According to Barnett (2007), businesses participating in ESG activities may have a negative impact on the company's growth due to the transfer of funds from shareholders to other stakeholders. This result coincides with country-based studies of Folger-Laronde, Pashang, Feor, and ElAlfy (2022) and Landi and Sciarelli (2019).

### 2.1.4. Mediating Relationship between EM, FP, ESG

Information asymmetry between parties makes it more difficult to monitor and regulate managerial behavior (Jensen & Meckling, 2019). Hence, sustainability disclosure is a useful instrument for businesses to guarantee the value of corporate assets by avoiding conflicts of interest. Studies on the mediating link between earnings management (EM), financial performance (FP), and environmental, social, and governance (ESG) have grown noticeably in recent years. In 2020, using a sample of 3,590 year-by-year observations of non-financial companies listed on KOSPI from 2011 to 2013, (Tulcanaza-Prieto et al., 2020). The conclusion about the concurrent relationship between firm value (FV), real earnings management (REM), and ESG is that strong and effective corporate governance in a company builds up its credibility and transparency through the release of information. Therefore, while lowering the possibility for managers to apply EM, enhancing the ESG performance of listed firms might help to increase the market value of the company and the financial performance (FP) of the company. Further research uncovered that corporate performance, to a greater extent, has its ESG performance mediated by the mediation of state-owned listed enterprises' owned ESG. These findings align with the views of (Maharani & Soewarno, 2018) and inform several subsequent studies by Habib (2024).

In summary, the concept of earnings management has spread in developed market contexts where market conditions and regulatory frameworks are more mature. However, emerging countries such as Vietnam do not understand the motivation for earnings management and its importance to corporate performance and sustainability. Hence, this research is implemented to bridge this knowledge gap and provide empirical evidence from a market perspective. Meanwhile, ESG-related factors are becoming more important around the world. Investors, regulators, and other stakeholders demand greater corporate transparency and accountability regarding sustainability activities. Despite the growing importance of ESG, the interaction between ESG integration in annual reporting and earnings management practices in many emerging countries has not been explored. In Vietnam, the application of ESG activities is still in its early stages, and it is difficult for many companies to reconcile the needs of FPS with sustainability. The

research's purpose is to clarify how corporate activities affect corporate performance and how ESG publications violate this relationship with each other, and to provide valuable knowledge for both practitioners and political decision-makers.

## 2.2. Theoretical Background

In the current economic environment, ownership of a company is divided through the management and control of the business. An agency relationship develops between the two parties when the owners divide and delegate decision-making power to the other party. The concept of issues resulting from the division of ownership in agency theory has been validated by Berle and Means, after being expanded by Jensen and Meckling. Agency relationships sometimes lead to problems between managers and shareholders; conflicts arise because people are essentially important components of the economy, and each wants to achieve his or her own goals (Jensen & Meckling, 2019). Agency theory assumes that the different interests of the two parties have led to each party trying to maximize its own profits. Shareholders pursue maximum and rapid returns on their investment while agents expect that they will be satisfied with appropriate incentives. The principal evaluates the agent's performance by considering the possibility of increasing profits; therefore, the agent satisfies the principal's desire to obtain a large compensation. It is clear from the above description that agents are inclined to commit fraud in the company, especially with those with whom they have a special relationship. Agents can manipulate the actual conditions of the company, such as "pretending" the financial statements by using creative accounting that deviates from the rules. This means that the rights as well as the information asymmetry between owners and stakeholders are separated.

First introduced by Kahneman and Tversky (2013), prospect theory explains how individuals make decisions in real-world scenarios. It evaluates a company's future outlook from the capital market's viewpoint by determining the market price per share of a publicly traded company. Susanto and Subekti (2012) argued that profit is the primary indicator of future financial efficiency, and as such, prospect theory uses profit to assess or predict the future market value of companies. The authors concluded that in the context of prospect theory, if managers report a small loss instead of a small profit, it will cause discomfort among investors. This is because investors prefer companies with minimal profits during a given period over those with unstable or unpredictable profits. Consequently, managers are likely to prioritize reporting positive profits rather than losses.

The signaling theory introduced by Spence (1973) is used to describe the behavior of parties when processing information differently. This theory divides entities into two aspects: signaling parties and signal parties. This means that you can choose information and signal users about your financial situation to investors. Information can include positive business results, potential projects, and appropriate accounting methods to convince investors about their business situation. Therefore, investors need to identify, define, and compare companies with good or bad business situations to make investment decisions. Enterprises provide information about the quality or value of the enterprise to investors by showing signals through loss-making operations while still calling for investors to increase investment, and through dividend policy by choosing reputable auditing companies to ensure the quality of financial reports (Aerts, Cheng, & Tarca, 2013; Barnett, 2007; Lee, 2017; Spence, 2002).

## 2.3. Research Hypothesis

REM practices such as reducing selling prices or easing credit conditions help increase sales temporarily, thereby boosting short-term ROA. However, this improvement is often short-lived, as the artificially inflated sales figures are unlikely to be sustained over time, resulting in a decline in ROA in subsequent years. Additionally, these strategies might strain customer relationships or lead to higher default risks due to relaxed credit terms. Cutting useful costs, such as research and development costs or advertising costs, is also often applied to increase short-term profits and ROA. However, this can weaken long-term competitiveness and reduce growth potential in the following years (Loan & Thao, 2016). The neglect of investment in these areas can lead to a gradual erosion of market position and a reduced ability to respond to market changes or technological advancements. In addition, selling profitable assets or producing



overcapacity increases accounting profits and ROA temporarily, but inventory, maintenance, and equipment depreciation costs will adversely affect future FP (Silverthorne, 2012). Agency Theory also supports this matter by explaining how managers prioritize short-term FP to achieve personal goals (e.g., bonuses), even if these actions are detrimental to long-term shareholder value. Meanwhile, Prospect Theory suggests that managers are averse to reporting losses and may engage in REM to present marginal profits, maintaining investor confidence temporarily.

Based on the reported and empirical findings of the studies, the research team posits the following hypothesis.

*H<sub>1</sub>: REM negatively affects ROA in the future.*

Engaging in REM by increasing sales through price reductions or credit adjustments can create a positive short-term impression, improving investors' perceptions of the firm's value, thereby increasing Tobin's Q (Chi, Lisic, & Pevzner, 2011). In addition, as Roychowdhury (2006) suggests, firms may resort to cutting useful costs, such as research and development (R&D) and advertising expenses; increasing production; or selling unnecessary assets to increase profits in the short term and create a higher Tobin's Q in the current year. However, this may affect long-term growth or incur hidden costs such as inventory and asset maintenance costs, thereby causing a loss in future firm value and negatively affecting market expectations (Gunny, 2010). Moreover, excessive reliance on REM can erode investor confidence. The reduction in strategic investments, such as innovation and market expansion, signals a lack of commitment to long-term growth and sustainability. This strategic shortfall can lead to diminished investor trust and lowered market expectations. When investors recognize the unsustainable nature of these practices, the firm's market valuation may suffer, leading to a decline in Tobin's Q in the long run. From the above research results, the hypothesis is proposed.

*H<sub>2</sub>: REM negatively affects Tobin's Q in the future.*

The complementary relationship suggests that companies with ESG disclosure are less likely to manipulate their earnings, reinforcing the idea that ESG disclosure is motivated by managers' intentions to make honest and ethical decisions. Some studies have examined whether a stronger commitment to sustainability disclosure is linked to a reduction in the level of REM, focusing on the REM technique. For instance, (Huang & Watson, 2015) suggest that REM creates a conflict between a company's short-term and long-term objectives for sustainable development. Furthermore, it directly impacts the quality of sustainability information provided by the company in its annual or sustainability reports, reducing the transparency and reliability of this information (Ramdhony, 2018). However, no significant relationship was found between ESG disclosure and REM (Garcia & Orsato, 2020). In addition, enterprises in countries with developed legal regimes and state-owned enterprises are more likely to implement REM when engaging in ESG disclosure (Kim & Li, 2021). Therefore, studying the impact of earnings manipulation through real transactions in promoting ESG disclosure on sustainable development in developing countries like Vietnam is very important. Based on the above studies and the financial characteristics of the Vietnamese market, the following hypothesis is proposed.

*H<sub>3</sub>: REM negatively affects ESG.*

ESG initiatives help enterprises build a positive corporate image, which in turn attracts investors and customers, thereby enhancing their competitive advantage (Kim & Li, 2021; Mahrani & Soewarno, 2018). Another study conducted in China also suggests that ESG-focused companies often improve stakeholder trust, leading to higher profits in the long term (Chen, Hung, & Wang, 2018). Effective ESG activities help businesses better manage risks, especially legal and environmental risks, thereby optimizing operational efficiency and increasing ROA. Moreover, research by Grewatsch and Kleindienst (2017) shows that investing in ESG also contributes to increasing employee satisfaction, improving labor productivity, and motivating employees to stay long-term, thereby increasing stable profit growth. Based on these findings, the authors propose the following hypothesis.

*H<sub>4</sub>: ESG has a positive impact on ROA in the future.*

The research of Ricapito (2024) shows that companies implementing long-term ESG strategies often achieve high financial performance by ensuring a consistent growth framework and complying with global sustainability standards.

Participating in the disclosure of ESG information helps a business enhance its reputation in the financial market and improve operational efficiency compared to its competitors. In 2018, after conducting a study, [Mahrani and Soewarno \(2018\)](#) concluded that firms highly committed to ESG initiatives often have lower costs of capital and higher Tobin's Q. [Mahrani and Soewarno \(2018\)](#) explained that this is due to investors' trust in their ability to manage risks and develop sustainably. Another study conducted by [Kim and Li \(2021\)](#) also shows that implementing an ESG strategy in business leads to optimizing financial resources and boosting operational performance. Based on the results of these studies, the research team proposes the following hypothesis H5.

*H<sub>5</sub>: ESG positively affects Tobin's Q in the future.*

As we indicated in the earlier hypothesis, companies involved in REM operations frequently seek to maximize short-term profits. Cutting costs on ESG initiatives or costs related to sustainability disclosure not only reduces the transparency of corporate reports but can also cause investors to lose confidence, thereby negatively affecting long-term financial performance and reducing corporate competitiveness ([Chen et al., 2018](#)). Research by [Kim and Li \(2021\)](#) shows that the risk of imbalance between short-term profits and sustainable development reduces the future performance of companies, including a decrease in return on assets. In addition, failure to maintain ESG commitments can reduce a company's ESG credit score, expose the company to financial and legal risks, and negatively impact future return on assets. From there, the research team proposed the following hypothesis.

*H<sub>6</sub>: REM negatively affects future ROA through the decline in ESG disclosure levels.*

As mentioned, a study conducted in China showed that businesses using REM strategies often lead to cutting costs and investments related to ESG activities ([Chen et al., 2018](#)). When ESG is degraded, it can negatively affect the image and reputation of the business, reducing the "attractiveness" of the business in the market ([Ahmad et al., 2021](#)). Tobin's Q, an index measuring the market value compared to the book value of the business, reflects the market's expectations about performance and long-term growth potential. As ESG activities decline due to REM, risk levels increase and investor confidence is eroded, thereby negatively affecting Tobin's Q. Therefore, our research team hypothesizes that the impact of REM on future Tobin's Q occurs not only directly but also through the decline in firms' ESG commitments.

*H<sub>7</sub>: REM negatively affects Tobin's Q in the future through the decline in ESG disclosure levels.*

Figure 1 presents the seven hypotheses of the study as mentioned above.

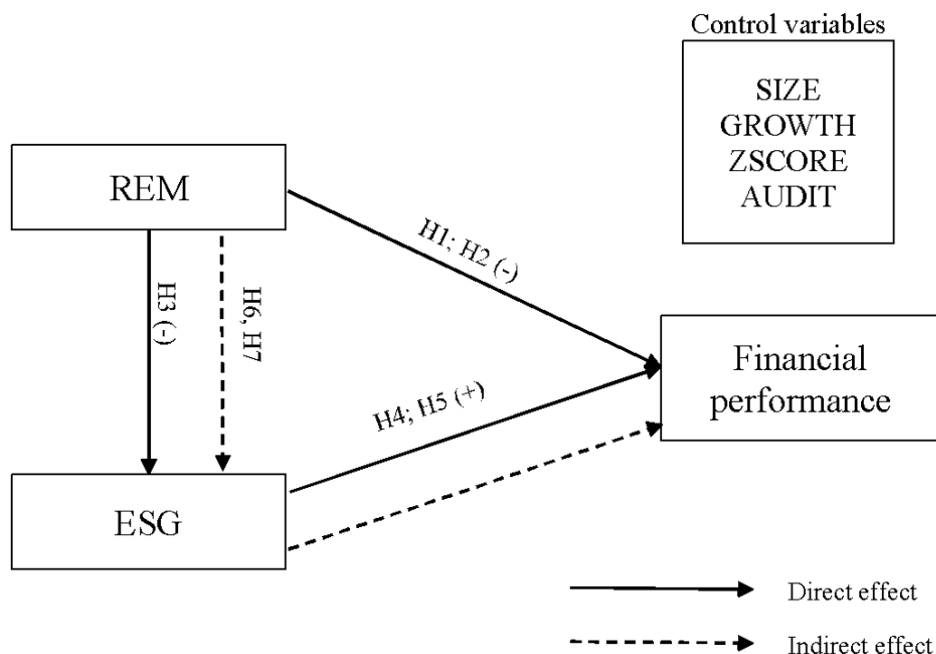


Figure 1. Impact of real earning management on firm performance through sustainability disclosure.

### 3. RESEARCH METHODOLOGY

#### 3.1. Data Collection

The research data is based on companies listed on the Hanoi Stock Exchange (HNX). The study was conducted at HNX instead of the entire Vietnamese stock market because, when calculating market-based financial performance indicators, it is necessary to use market index data, while the two exchanges have different market indexes. Specifically, the HNX classifies industries according to the HaSIC standard - the industry classification standard of the Hanoi Stock Exchange, and the measured market index is the HNX index; the Ho Chi Minh Stock Exchange (HOSE) classifies industries based on the Global Industry Classification Standard (GICS), and the measured market index is the Vn index.

Through preliminary research and research on official statistical websites of the Stock Exchanges, the authors have compiled and synthesized the overall size of about 300 in the VNX-Allshare index set. From the population, the sample will be selected by random sampling method. We use PPS sampling software, randomly selecting 192 elements for the sample from the list of all listed companies.

In addition, the authors also stratified the population according to some special criteria (size, industry, business area, etc.) to ensure that the selected sample is the most representative. Regarding the sampling criteria, [Nguyễn \(2013\)](#) stated: "The elements of the selected sample must ensure that they satisfy certain characteristics of the research population," or in other words, the selected sample must be representative of the whole. Applied to this study, the authors selected a sample size of 192 companies.

The selected sample includes a full representation of the groups of companies according to different criteria of industry, size, business location, and business characteristics. Our research time is 5 years, from 2019 to 2023 because this is the period when information about sustainable development is becoming popular in the Vietnamese stock market. This data is publicly available on the Vietstock company's website. The data has been verified by audit firms and the State Securities Commission, ensuring consistency across all websites and other information providers. The firms in different industries are shown in [Table 1](#), which also describes the detailed sample size. [Table 2](#) describes the variables, including independent variables, dependent variables, and moderator variables in terms of symbols and measurement of each variable.

**Table 1.** Sample summary by industry.

Industry	Number of companies	Number of observations	% of the sample
Construction	36	180	18.75%
Healthcare	5	25	2.60%
Information & communication	11	55	5.73%
Manufacture	60	300	31.25%
Mining, oil and gas	12	60	6.25%
Professional, scientific and technical activities	8	40	4.17%
Real estate	6	30	3.13%
Transportation	13	65	6.77%
Customer goods & services	26	130	13.54%
Administrative service & education	15	75	7.81%
Total	192	960	100.00%



Table 2. Variables in the research models.

No	Variable name	Symbol	Measure
1	Real earning management	REM	$\frac{DISEXP_t}{A_{t-1}} = \alpha_0 + \alpha_1 \frac{S_t}{A_{t-1}} + \varepsilon \quad (1)$ $\frac{PROD_t}{A_{t-1}} = \beta_0 + \beta_1 \frac{S_t}{A_{t-1}} + \beta_2 \frac{\Delta S_t}{A_{t-1}} + \beta_3 \frac{\Delta S_{t-1}}{A_{t-1}} + \varepsilon \quad (2)$ $\frac{CFO_t}{A_{t-1}} = \gamma_0 + \gamma_1 \frac{S_t}{A_{t-1}} + \gamma_2 \frac{\Delta S_t}{A_{t-1}} + \varepsilon \quad (3)$ REM = (-1) Residuals of (1) + Residuals of (2) + (-1) Residuals of (3)
2	Return on assets	ROA	$ROA = \frac{Net\ income}{Total\ assets} \times 100$
3	Tobin's Q Ratio	Tobin's Q	$Tobin's\ Q = \frac{Market\ Capitalization + Total\ Debts}{Total\ Assets}$
4	Sustainability disclosure	ESG	$ESG_{ij} = \frac{\sum_{l=1}^k X_{ij}}{n_{ij}}$ <ul style="list-style-type: none"> <li>• ESG<sub>ij</sub> is the SDI of the i-th component of the j-th enterprise (<math>0 \leq ESG_{ij} \leq 1</math>)</li> <li>• X<sub>ij</sub> = 0 if the i-th question of the j-th enterprise has no information</li> <li>• X<sub>ij</sub> = 1 if the i-th question of the j-th enterprise has information about the question</li> <li>• n<sub>ij</sub> is the expected number of questions for the i-th component of the j-th enterprise (<math>n = 1, 2, 3, \dots, k</math>)</li> </ul>
5	Firm size	SIZE	$SIZE = Ln\ (total\ assets)$
6	Firm growth	GROWTH	$GROWTH = \frac{Market\ value\ of\ equity}{Book\ value\ of\ equity}$
7	Financial strength	Z-SCORE	$ZSCORE = 3.3 \times \frac{Net\ Income}{Total\ Assets} + 1.0 \times \frac{Total\ Sales}{Total\ Assets}$ $+ 1.4 \times \frac{Retained\ Earnings}{Total\ Assets} + 1.2 \times \frac{Working\ Capital}{Total\ Assets}$ $+ 0.6 \times \frac{Market\ Value\ of\ Equity}{Total\ Liabilities}$
8	Audit	AUDIT	AUDIT = 1 (FS audited by big four) AUDIT = 0 (FS not audited by big four)

### 3.2. Variable Measurements

The research team used the GRI standards as criteria to measure the level of sustainability disclosure on the environment, economy, society, governance of enterprises, and general sustainability disclosure presented in the table at the end of this paper (Appendix). The process of calculating ESG variables was conducted by the team, as shown in Figure 2.

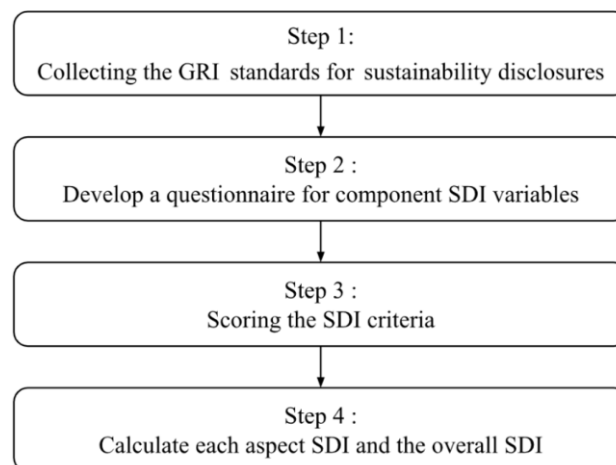


Figure 2. Scoring procedure for SDI facets and SDI overall.

Drawing from the theoretical framework and prior research, we have developed hypotheses H1 to H7 and present the proposed research model as follows.

- Effect of real earning management on future FP

$$ROA_{t+i} = \alpha_0 + \alpha_1 REM_t + \alpha_2 SIZE_{t+i} + \alpha_3 ZSCORE_{t+i} + \alpha_4 GROWTH_{t+i} + \alpha_5 AUDIT_{t+i} + \alpha_6 ROA_t + \epsilon_{it}$$

$$Q_{t+i} = \beta_0 + \beta_1 REM_t + \beta_2 SIZE_{t+i} + \beta_3 ZSCORE_{t+i} + \beta_4 GROWTH_{t+i} + \beta_5 AUDIT_{t+i} + \beta_6 Q_t + \epsilon_{it}$$

- Effect of real earning management on ESG disclosure

$$ESG_t = \alpha_0 + \alpha_1 REM_t + \alpha_2 SIZE_t + \alpha_3 ZSCORE_t + \alpha_4 GROWTH_t + \alpha_5 AUDIT_t + \epsilon_{it}$$

- Effect of ESG disclosure on future FP

$$ROA_{t+i} = \alpha_0 + \alpha_1 ESG_t + \alpha_2 SIZE_{t+i} + \alpha_3 ZSCORE_{t+i} + \alpha_4 GROWTH_{t+i} + \alpha_5 AUDIT_{t+i} + \alpha_6 ROA_t + \epsilon_{it}$$

$$Q_{t+i} = \beta_0 + \beta_1 ESG_t + \beta_2 SIZE_{t+i} + \beta_3 ZSCORE_{t+i} + \beta_4 GROWTH_{t+i} + \beta_5 AUDIT_{t+i} + \beta_6 Q_t + \epsilon_{it}$$

- Effect of real earning management on future FP through ESG disclosure

$$ROA_{t+i} = \alpha_0 + \alpha_1 REM_t + \alpha_2 ESG_{t+i} + \alpha_3 SIZE_{t+i} + \alpha_4 ZSCORE_{t+i} + \alpha_5 GROWTH_{t+i} + \alpha_5 AUDIT_{t+i} + \alpha_6 ROA_t + \epsilon_{it}$$

$$Q_{t+i} = \beta_0 + \beta_1 REM_t + \beta_2 ESG_{t+i} + \beta_3 SIZE_{t+i} + \beta_4 ZSCORE_{t+i} + \beta_5 GROWTH_{t+i} + \beta_5 AUDIT_{t+i} + \beta_6 Q_t + \epsilon_{it}$$

## 4. RESULTS AND DISCUSSION

### 4.1. Descriptive Statistics

Table 3 provides descriptive statistics for the variables used in the model to assess the effect of EM on FP. The REM's average is 0.0011922, the minimum is -4.327301, and the maximum is 2.708139. This indicates that from 2020 to 2021, during the severe and stressful period of Covid-19, managers tended to adjust negative profits to avoid tax burdens. This aligns closely with the findings of Kousenidis, Ladas, and Negakis (2013) regarding the impact of crises on FP. However, by 2022, firms adjusted their earnings positively to recover profits and attract investment. The decline in the average FP variable in year t+1 also clearly shows that REM and future business FP have a negative relationship.

**Table 3.** Descriptive statistics of the variables.

Variables	Mean	Standard deviation	Min	Max
REM	0.001	0.351	-4.327	2.708
ROA <sub>t</sub>	0.046	0.059	-0.195	0.470
ROA <sub>t+1</sub>	0.049	0.058	-0.195	0.470
Q <sub>t</sub>	1.071	0.526	0.182	6.350
Q <sub>t+1</sub>	1.072	0.537	0.145	6.350
ESG	0.295	0.081	0.114	0.75
AUDIT	0.152	0.359	0	1
SIZE	19.926	1.413	16.646	24.017
ZSCORE	3.506	3.872	-0.441	38.180
GROWTH	1.286	1.034	0.001	9.260

Source: Summary of the group's results.

FP variables (ROA and Q) showed an increase in average values in year t+1 compared to year t. This increase can be attributed to efforts by companies to recover after the COVID-19 pandemic. Strategies such as cost optimization, improved asset utilization, and operational restructuring helped businesses enhance profitability and efficiency. Additionally, investor optimism, reflected in rising stock prices, boosted Tobin's Q, indicating confidence in corporate recovery.

The ESG variable has a minimum, maximum, and mean value of 0.1143, 0.75, and 0.2956, respectively, and a standard deviation of 0.0809. These figures indicate moderate dispersion in ESG scores across companies, reflecting significant differences in adherence to ESG criteria, ranging from very low to very high levels. This suggests that not all companies prioritize sustainability and governance equally.

The AUDIT variable is a moderator variable in the study. When one of the Big 4 firms (Deloitte, EY, PWC, and KPMG) performs auditing of the company's financial statements, the value of this variable is 1; and 0 when the financial statements are audited by other firms. The average value of 0.1520833 and the standard deviation of 0.3592888 show that only about 15% of the sample's companies are audited by Big 4 audit firms, which is 5.7 times fewer than the 85% of the companies in the sample that are audited by other firms.

Financial strength (Z SCORE) is calculated by dividing total debt by total assets. After analysis, the Z SCORE has a minimum, maximum, and average value of -0.4406973, 38.1797, and 3.506649, respectively. Combined with a standard deviation of 3.872443, it shows a significant difference in financial strength among companies listed on the HNX.

The company size variable (SIZE) has a maximum value of 24.01698, a minimum of 16.64608, and an average of 19.92626, showing uniformity in the scale of companies listed on the HNX. Meanwhile, the GROWTH variable reflects substantial differences in the development of companies, with the maximum value being approximately nine times the minimum value.

#### 4.2. Assessing the Correlation between Variables

Table 4 indicates the correlation matrix between the variables of our research. The dependent variables all have negative correlation coefficients with the independent variables.

Table 4. Correlation matrix.

Variables	ROA <sub>t</sub>	Q <sub>t</sub>	REM	ESG	SIZE	GROWTH	ZSCORE	AUDIT	ROA <sub>t+1</sub>	Q <sub>t+1</sub>
ROA <sub>t</sub>	1.000									
Q <sub>t</sub>	0.3060	1.000								
REM	-0.3110	-0.1497	1.000							
ESG	0.1530	0.0887	-0.1442	1.000						
SIZE	-0.1394	-0.0472	0.1684	0.1288	1.000					
GROWTH	0.0025	0.3485	0.0120	0.0001	0.0092	1.000				
ZSCORE	0.4045	0.4826	-0.0796	-0.0129	-0.3422	0.0340	1.000			
AUDIT	0.0069	-0.0080	0.0427	0.0315	0.3057	-0.0392	0.0070	1.000		
ROA <sub>t+1</sub>	0.6267	0.2747	-0.3529	0.1928	-0.1419	-0.0366	0.3875	0.0015	1.000	
Q <sub>t+1</sub>	0.2984	0.7241	-0.1223	0.0946	-0.0586	0.2057	0.4141	0.0018	0.3135	1.000

Source: Summary of the group's results.

This shows that the relationship between REM and future FP is negative, even with the mediating involvement of ESG reporting disclosure. The above analysis results also indicate that the variables are eligible for inclusion in the regression analysis. The regression results of each model on the relationship between the variables will be presented in the following section.

#### 4.3. Empirical Result

The regression findings show that the REM's coefficient is negative, -0.0118 at the 1% significance level, indicating that businesses utilizing REM will cause future ROA to decline. Additionally, the results in Table 5 also show that organizations with better financial health are more likely to achieve higher FP in the future, according to the Z-SCORE coefficient.

At the 10% level of significance, the AUDIT coefficient is 0.00340, implying a positive link between audit and future ROA. Being audited can be beneficial since it increases transparency and trust, which contributes to better FP. The SIZE and GROWTH variables are not statistically significant, implying that growth must be paired with other criteria, such as cost control and operational efficiency, to actually enhance FP.

Regarding Tobin's Q, the results show that REM actually reduces Tobin's Q in the future (the figures are -0.0573 and 1%). Investors and the market tend to not appreciate companies that apply REM, so the market value of the company declines. The regression coefficients of the three variables SIZE, Z-SCORE, and GROWTH are all positive numbers at the 1% level. Larger firms tend to have higher market values due to economies of scale and better competitiveness. The

coefficient of -0.0213 and a significant level of 10% indicate that strict auditing can reduce the ability to implement profit-manipulation strategies and clarify financial irregularities, thereby affecting market valuation and decreasing the value of Tobin's  $Q$ .

**Table 5.** Impact of real earning management (REM) on financial performance.

Variables	ROA <sub>t+1</sub>	Tobin's $Q_{t+1}$
REM	-0.0118*** (-5.69)	-0.0573*** (-3.85)
SIZE	-0.0000645 (-0.18)	0.0221*** (7.71)
Z-SCORE	0.00356*** (9.55)	0.0244*** (9.36)
GROWTH	-0.000228 (-0.41)	0.0717*** (10.30)
AUDIT	0.00340* (2.01)	-0.0213* (-2.23)
$ROA_t /$ $Tobin's Q_t$	0.529*** (20.05)	0.605*** (25.87)
_cons	0.00861 (1.24)	-0.205*** (-3.34)
Panel data model type	FGLS	FGLS
N	960	960
R-square	0.4358	0.6225

**Note:** \*\*\*, \*\* and \* represent significance levels at 1%, 5% and 10%, respectively.

**Source** Summary of the group's results.

**Table 6.** Impact of real earning management (REM) on sustainability disclosure (ESG).

Variables	ESG
REM	-0.0347*** (-5.45)
SIZE	0.00982*** (5.17)
Z-SCORE	0.000476 (0.76)
GROWTH	0.00104 (0.44)
AUDIT	-0.00364* (-0.53)
_cons	0.0985* (2.56)
Panel data model type	FGLS
N	960
R-square	0.4150

**Note:** \*\*\* and \* represent significance levels at 1% and 10%, respectively.

**Source** Summary of the group's results.

The regression findings show the intricate connection between FP and an organization's ESG score and therefore support hypothesis H3. Specifically, the independent variable REM has a negative effect on ESG. The regression coefficient of -0.0347 for the variable REM is statistically significant at the 1% significance level. This demonstrates that businesses that prioritize short-term growth are less concerned with sustainability. On the other hand, SIZE's regression coefficient is 0.00982, suggesting that large businesses with greater influence and resources are more active in implementing sustainable activities. Surprisingly, the variables Z-SCORE and GROWTH do not have a major influence on ESG, indicating that the financial situation and growth rate of the enterprise are not the only determinants of ESG. In addition, the figures for the AUDIT variable are -0.00364 and at the 10% significance level, meaning that when auditing activities increase, ESG tends to decrease slightly, possibly because enterprises with ESG issues are often less closely monitored by auditors. This result aligns with [Handayati et al. \(2025\)](#).

**Table 7.** Impact of sustainability disclosure (ESG) on financial performance (FP).

Variables	ROA <sub>t+1</sub>	Tobin's Q <sub>t+1</sub>
ESG	0.0349*** (3.96)	0.0135* (0.25)
SIZE	-0.000505 (-1.18)	0.0190*** (6.28)
Z-SCORE	0.00402*** (10.72)	0.0245*** (9.51)
GROWTH	-0.0000600 (-0.13)	0.0725*** (10.74)
AUDIT	0.000978 (0.66)	-0.0194* (-2.07)
ROA <sub>t</sub> / Tobin's Q <sub>t</sub>	0.497*** (19.33)	0.606*** (26.08)
_cons	0.00680 (0.77)	-0.148* (-2.28)
Panel data model type	FGLS	FGLS
N	960	960
R-square	0.4262	0.6175

Note: \*\*\* and \* represent significance levels at 1% and 10%, respectively.

Source: Summary of the group's results.

With the ROA model, the coefficient of the ESG is 0.0349, statistically significant at 1%, showing that  $ESG_t$  has a positive, significant impact  $ROA_{t+1}$ , emphasizing that improving ESG brings quick financial benefits in a short time, which is consistent with our hypothesis H4. ROA is also strongly influenced by other factors, such as financial health (Z-SCORE) with a coefficient of 0.00402, showing that businesses with good financial capacity often have higher ROA; and ROA year t with a high coefficient of 0.497, showing that current financial efficiency has a big influence on the future. Notably, GROWTH and SIZE with coefficients close to 0 (-0.00006 and -0.000505) provide that firm growth does not play a big role in determining the next year's ROA. The coefficient of the AUDIT variable is 0.000978, which is very small and statistically insignificant, indicating that audit quality does not seem to directly affect short-term asset profitability.

**Table 8.** Impact of real earning management (REM) on financial performance (FP) through sustainability disclosure (ESG).

Variables	ROA <sub>t+1</sub>	Tobin's Q <sub>t+1</sub>
REM	-0.0114*** (-5.73)	-0.0564*** (-3.76)
ESG	0.0223** (2.61)	0.0372 (-0.67)
SIZE	-0.0000687 (-0.17)	0.0220*** (7.55)
Z-SCORE	0.00385*** (10.06)	0.0251*** (9.47)
GROWTH	0.00000194 (0.00)	0.0722*** (10.22)
AUDIT	0.00174 (1.13)	-0.0217* (-2.21)
ROA <sub>t</sub> / Tobin's Q <sub>t</sub>	0.524*** (19.91)	0.599*** (25.37)
_cons	0.00112 (0.14)	-0.188** (-2.94)
Panel data model type	FGLS	FGLS
N	960	960
R-square	0.4373	0.3575

Note: \*\*\*, \*\* and \* represent significance levels at 1%, 5% and 10%, respectively.

Source: Summary of the group's results.



ESG's coefficient is 0.0135 in the Tobin's Q model, which is presented 10% level. This shows that ESG has a positive impact, but to a lesser extent than ROA, because investors often evaluate ESG as a long-term strategic factor, rather than an immediate impact factor. Typically, the Tobin's Q index in year t, with a very high coefficient of 0.606, a statistical significance of 1%, is the most important variable, indicating that the current market value greatly determines the future. In addition, the coefficients of 0.019 and 0.0245 of SIZE and Z-SCORE also have relative, statistical significance of 1%, meaning that larger companies often have higher market values. This is reasonable because large companies often have strict management systems and stricter requirements on information transparency, thus gaining trust from investors. AUDIT's coefficient is -0.0194 explains that although high-quality audits can improve transparency, large audit costs (especially for Big 4 organizations) can increase fixed costs, negatively affecting market value.

In Table 8, the REM coefficient is significant at the 1% level ( $\alpha = -0.0114$ ;  $\beta = -0.0564$ ), indicating a negative effect on FP; however, it declines by 0.0223 and 0.0372 respectively after adding ESG. The results of the three models indicate that ESG has an important role in REM - ROA/Tobin's Q relationship. Hence, we have the equation as follows:

$$ROA_{t+i} = 0.00112 - 0.0114 REM_t + 0.0223 ESG_{t+i} - 0.0000687 SIZE_{t+i} + 0.00385 ZSCORE_{t+i} + 0.00000194 GROWTH_{t+i} + 0.00174 AUDIT_{t+i} + 0.524 ROA_t + \epsilon_{it}$$

The relationships between the control variables SIZE, GROWTH and AUDIT with  $ROA_{t+1}$  are not statistically significant. On the other hand, Z-SCORE has a significant effect on  $ROA_{t+1}$  with a regression coefficient of 0.00385.

$$Q_{t+i} = -0.188 - 0.0564 REM_t + 0.0372 ESG_{t+i} + 0.0220 SIZE_{t+i} + 0.0251 ZSCORE_{t+i} + 0.0722 GROWTH_{t+i} - 0.0217 AUDIT_{t+i} + 0.599 Q_t + \epsilon_{it}$$

Although they are not statistically significant, the moderator variables SIZE, Z-SCORE, and GROWTH all exhibit positive effects on the dependent variable *Tobin's Q*<sub>t+1</sub>, with regression coefficients of 0.020, 0.0251, and 0.0722, respectively. However, *Tobin's Q*<sub>t+1</sub> is significantly impacted negatively by the variable AUDIT, which has a regression coefficient of -0.0219. With a regression coefficient of 0.599, the *Tobin's Q*<sub>t</sub> likewise has a positive effect on the dependent variable *Tobin's Q*<sub>t+1</sub>.

Table 9. Path analysis.

Direct effect	Coefficient	P value	Standard errors	Results
REM-> ROA	-0.050	0.000	0.005	Supported
REM -> Tobin's Q	-0.210	0.000	0.048	Supported
Indirect effect	Coefficient	P value	Standard errors	Results
REM -> ESG -> ROA	-0.003	0.005	0.001	Supported
REM-> ESG -> Tobin's Q	-0.015	0.014	0.008	Supported

Source: Summary of the group's results.

Based on Table 9, ESG disclosure acted as a mediating role in the relationship between REM and FP. The coefficient of the indirect effect of REM on future ROA and Tobin's Q through ESG disclosure was -0.0027 and -0.0148, with p-values of 0.005 and 0.014. This shows that the indirect effect of this variable was weaker than the direct effect. Thus, because both the direct and indirect effects were significant, it can be concluded that ESG was a partial mediating variable between REM and future FP.

#### 4.4. Discussion

##### 4.4.1. Impact of REM on Future Financial Performance

The above research results show that REM and future FP have an inverse relationship. This means that through REM transactions, managers can boost revenues by exploiting the results on the financial statements, resulting in higher revenues and profits. However, over the years, investors will be disappointed because the company's FP is not as expected. This is explained by the fact that past earnings adjustments will reduce future FP. This result is consistent

with Prospect Theory Kahneman and Tversky (2013) and Signaling Theory Spence (2002) and is similar to previous results (Healy & Wahlen, 1999; Subramanyam, 1996). An example is when a company adopts strategies such as reducing prices or extending credit terms to increase sales (a form of REM); we can interpret this as a signal that the company is having difficulty maintaining sales or profits in the usual way. As Jensen and Meckling (2019) have likened, REM abuse is like using a dose of heroin, which brings initial satisfaction but harrowing consequences. This result is consistent with agency theory, in which managers' opportunistic behavior to maximize short-term personal benefits can harm the long-term interests of shareholders.

#### 4.4.2. Impact of REM on ESG Disclosure

From the analysis results in part 4.3, we can conclude that REM has an adverse impact on ESG. The reason is that businesses ignore ESG issues to prioritize short-term profits and often do not care about environmental, social, or governance issues. In contrast, encouraging executives to communicate about ESG can help businesses gain internal and external trust and boost strong, lasting relationships (Escrig-Olmedo, Fernández-Izquierdo, Ferrero-Ferrero, Rivera-Lirio, & Muñoz-Torres, 2019). Therefore, they have concealed earnings irregularities by under-disclosing strict regulations in ESG reports. From there, they avoid unwanted scrutiny from stakeholders because ESG disclosure is not yet a mandatory requirement for businesses in Vietnam. These actions lead to the case that a company with more earnings management will likely have a lower ESG score because executives are typically only interested in profits, consistent with the agency theory that agency conflicts following opportunistic behavior by managers affect shareholders (Adeneye et al., 2023). ESG goals and objectives may change as a result of managers' opportunistic behavior in modifying actual earnings and spending for ESG investments. In order to avoid greenwashing, guarantee a sustainable development environment, and provide information users with transparent information, prompt solutions are therefore required.

#### 4.4.3. Impact of ESG on Future Financial Performance

The findings of our team's analysis indicate that ESG in year  $t$  positively influences financial performance (FP) in the following year ( $t+1$ ), which is consistent with numerous prior and recent studies (Dalal & Thaker, 2019; Fu & Li, 2023; Zhao et al., 2018) and specifically, Tobin's  $Q$  is less influenced by ESG than ROA. This is because ROA reflects internal operating efficiency, which can be improved quickly thanks to ESG policies (ESG has a direct impact through effective cost management, improving reputation, and increasing operational efficiency). In the short term (after just one year), the business's profits can demonstrate the effectiveness of ESG initiatives, which assist companies in better managing operational factors (environment, society, and governance) and enhancing profitability. Meanwhile, Tobin's  $Q$  is dependent on investor and market evaluations, requiring time to observe and trust in ESG effectiveness. Enterprises that want to increase FP need to invest heavily in ESG, not only because of the short-term impact on ROA but also because of the long-term benefit of increasing market value.

#### 4.4.4. Impact of REM on Financial Performance Through Decline in ESG Disclosure

Based on the research results, hypotheses H6 and H7: ESG disclosure level has a mediating role in the relationship between REM and future FP is accepted. ESG acts as a mediator between REM and FP: REM is often seen as a short-term profit manipulation that can reduce long-term value if perceived by stakeholders. However, ESG disclosure can mitigate these negative impacts by building trust and creating shareholder value. This implies that businesses can improve long-term FP and offset REM by implementing sound ESG practices. Furthermore, by encouraging openness in corporate governance, ESG disclosure lessens doubts regarding REM practices. Investors can assess a company's REM and future financial potential by looking at the level of ESG disclosure. As a result, socially responsible businesses are often valued by investors and shareholders, increasing their stock value and enhancing their ability to attract investment capital.

## 5. CONCLUSION AND POLICY IMPLICATIONS

In summary, the impact of Real Earnings Management (REM) on the Financial Performance (FP) of HNX-listed companies, measured by accounting and market-based indicators, in the context of promoting sustainability disclosure has been disclosed in our research. Using data from 192 HNX-listed companies in Vietnam from 2019 to 2023, the results emphasize the relationship between REM, FP, and Environmental, Social, and Governance (ESG) factors of a company.

It can be seen that the impact of earnings management (EM), especially real earnings management (REM), on corporate sustainability and financial stability is significant not only in the near future but also in the far-reaching future. Shareholders and executives who implement EM will also be the ones who ultimately bear the long-term consequences of earnings manipulation. While using REM, the financial indicators in the short term will be boosted at a high rate, but in the long term, they will decline to compensate for the overstatement in the past. The negative consequences of REM include a decline in ESG scores. In Vietnam, ESG disclosure is not compulsory, so when REM is applied, the information will not be disclosed fully to ensure that REM remains undetected. Poor ESG performance results in unreliable financial reporting that is misleading and even deceptive to investors and other stakeholders.

As stakeholders are concerned about sustainability, the negative impact of REM on ESG ratings can lead to a decrease in reputation, finance, partnerships, and market opportunities. ESG disclosures help companies build and maintain trust between corporations and their stakeholders, ensuring long-term sustainability. When using REM, they not only challenge corporate sustainability practices but also make companies appear less trustworthy and less committed to responsible governance. The decline in ESG ratings due to REM also indicates that companies cannot separate their financial goals from their responsibilities to stakeholders and society.

However, there are certain shortcomings in our study that need to be improved in subsequent investigations. Initially, the sample of the research only includes 192 firms listed on the Hanoi Stock Exchange (HNX), not the whole market in Vietnam. If other research can expand the study to firms listed on the Ho Chi Minh City Stock Exchange (HOSE) or unlisted firms, it could provide more comprehensive insights into the relationship between REM, ESG disclosure, and financial performance in a wider stock market. Second, the time period of research is only 5 years, from 2019 to 2023; it is the period when sustainability disclosure is promoted, so if the time series can include the years when ESG is not popular, it can provide a comparison between the two periods to determine whether the impact is different or not. Third, if future research can mix the three types of EM, including REM, AEM, and classification switching, the findings will be more valuable because our research focuses only on REM.

Businesses that prioritize transparency and sustainability are more likely to secure long-term profitability, attract investment, and maintain a competitive edge in the marketplace. Hence, this study also provides some actionable suggestions for important parties, such as investors, corporate managers, and regulators, to reduce REM and promote corporate sustainability practices.

For corporate managers, it is important to recognize the negative effects of REM in the long term as well as improve transparency and integrity in financial reporting. Companies should establish internal mechanisms to ensure ESG information is compliant and minimize the possibility of manipulative practices. Publishing an annual sustainability report according to GRI standards is an effective measure to ensure information transparency.

For investors, improving financial literacy and financial information is critical. Investors should equip themselves with knowledge of financial information to make informed decisions, avoid potential risks, and support companies that are aligned with their values of transparency and sustainability. Moreover, investing in companies that have disclosed sustainability is also a useful way to push back against REM and ensure a transparent securities environment.

For regulators, strengthening sustainability disclosure requirements, enforcing penalties for environmental management practices, and promoting ESG disclosure through frameworks such as the GRI Standards are important steps to maintain a stable financial market.

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## APPENDIX

The table of Appendix 1 presents the detailed SDI (Sustainability Disclosure Index) scale of the enterprise based on GRI standards. The table classifies the published items into three main groups: GOV\_SDI, ECO\_SDI and ENV\_SDI. The research team has provided a score for each GRI to serve as a measure of the ESG index for each company.

Appendix 1. Detailed SDI scale of the enterprise.

GRI standards	Scale		Scores
GOV_SDI	GRI 102: General disclosures	GRI 102-1 → GRI 102-49	49
	GRI 103: Management approach	GRI 103-1 → GRI 103-3	3
ECO_SDI	GRI 201: Economic performance	GRI 201-1 → GRI 201-4	4
	GRI 202: Market presence	GRI 202-1 → GRI 202-2	2
	GRI 203: Indirect economic impacts	GRI 203-1 → GRI 203-2	2
	GRI 204: Procurement practices	GRI 204-1	1
	GRI 205: Anti-corruption	GRI 205-1 → GRI 205-3	3
	GRI 206: Anti-competitive behavior	GRI 206-1	1
	GRI 207: Tax	GRI 207-1 → GRI 207-4	4
ENV_SDI	GRI 301: Materials	GRI 301-1 → GRI 301-3	3
	GRI 302: Energy	GRI 302-1 → GRI 302-5	5
	GRI 303: Water and effluents	GRI 303-1 → GRI 303-5	5
	GRI 304: Biodiversity	GRI 304-1 → GRI 304-4	4
	GRI 305: Emissions	GRI 305-1 → GRI 305-7	7
	GRI 306: Waste	GRI 306-1 → GRI 306-5	5
	GRI 307: Environmental compliance	GRI 307-1	1
	GRI 308: Supplier environmental assessment	GRI 308-1 → GRI 308-2	2
SOC_SDI	GRI 401: Employment	GRI 404-1 → GRI 404-3	3
	GRI 402: Labor	GRI 402-1	1
	GRI 403: Occupational health and safety	GRI 403-1 → GRI 403-10	10
	GRI 404: Training and education	GRI 404-1 → GRI 404-3	3
	GRI 405: Diversity and equal opportunity	GRI 405-1 → GRI 405-2	2
	GRI 406: Non-discrimination	GRI 406-1	1
	GRI 407: Freedom of association and collective bargaining	GRI 407-1	1
	GRI 408: Child labor	GRI 408-1	1
	GRI 409: Forced or compulsory labor	GRI 409-1	1
	GRI 410: Security practices	GRI 410-1	1
	GRI 411: Rights of indigenous peoples	GRI 411-1	1
	GRI 412: Human rights assessment	GRI 412-1 → GRI 412-3	3
	GRI 413: Local communities	GRI 413-1 → GRI 413-2	2
	GRI 414: Supplier social assessment	GRI 414-1 → GRI 414-2	2
	GRI 415: Public policy	GRI 415-1	1
	GRI 416: Customer health and safety	GRI 416-1 → GRI 416-2	2
	GRI 417: Marketing and labeling	GRI 417-1 → GRI 417-3	3
	GRI 418: Customer privacy	GRI 418-1	1
	GRI 419: Socioeconomic compliance	GRI 419-1	1

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