Impact of ESG and Multinational Corporation Status on Stock Returns: Empirical Analysis of sSET-Listed Companies

Kulabutr Komenkul*[1], Phinyaphat Sornsuwit[2], Nirunrat Tappandee[2], Chermarin Wattanathanitkul[2], Onanong Srimunta[2], Nattida Raksapol[2], Issrapon Boonchu[2], and Surachai Suantubtim[2]

[1]Department of Finance, Investment and Financial Technology,
College of Innovative Business and Accountancy, Dhurakij Pundit University, Bangkok, Thailand
[2]Department of International Business, College of Innovative Business and Accountancy,
Dhurakij Pundit University, Bangkok, Thailand
*Corresponding author, E-mail: kbkomenkul@gmail.com

Abstract

This study explores the relationship between the Stock Exchange of Thailand Sustainability Index (sSET), Multinational Corporations (MNCs), and Environmental, Social, and Governance (ESG) criteria. Our analysis is based on a sample of 136 companies. We find that larger companies tend to experience lower stock returns, while Return on Assets (ROA) and Return on Equity (ROE) do not significantly impact stock returns. However, being a Multinational Corporation (MNC) is associated with higher stock returns, as is the case with Export Companies. This research highlights the growing significance of ESG factors in financial markets, providing valuable insights for both scholars and practitioners navigating the complexities of ESG-related information in finance.

Keywords: *ESG Impact, Multinational Corporations, Stock Returns, sSET*

1. Introduction

Environmental, Social, and Governance (ESG) is a framework used by companies and organizations to evaluate and manage their impact on the environment, society, and their governance practices. ESG criteria assess the sustainability and ethical practices of an entity. Environmental factors, such as carbon emissions and resource conservation, social factors including employee relations and community engagement, and governance practices like board diversity and transparency, all fall under the purview of ESG. It plays a pivotal role in promoting responsible and sustainable business practices. The relationship between Environmental, Social, and Governance (ESG) factors and stock returns has been a subject of significant research in recent years. Various studies have explored this connection, aiming to shed light on the intricate interplay between responsible corporate practices and financial market outcomes (Berg et al., 2022).

In a study conducted by Brandon et al. in 2021, the researchers delved into the relationship between ESG rating disagreement and stock returns using data from seven distinct ESG data providers. Their investigation centered on a sample of S&P 500 firms over the period from 2010 to 2017. One of the central findings of this study was the identification of a positive relationship between stock returns and ESG rating disagreement. This discovery suggests the existence of a risk premium for firms characterized by higher levels of ESG rating disagreement among various data providers. This finding underscores the significance of ESG-related information discrepancies and their potential impact on financial markets. Interestingly, the study highlighted that the primary driver of this relationship was the degree of disagreement concerning the environmental dimension within ESG ratings. Firms with greater disparities among data providers regarding their environmental performance tended to exhibit higher stock returns. This observation highlights the specific role of environmental factors within the broader ESG framework and their influence on investor sentiment and financial outcomes.

Cherkasova and Nenuzhenko's 2022 study expanded on the ESG-finance dynamic by investigating the link between ESG investments and corporate financial performance. Their research also explored the possibility of defaults resulting from high ESG project costs, with a particular focus on whether a firm's multinational status and its headquarters' region played a significant role. Analyzing data from seven regions across the globe, including North America, Latin America, Western Europe, Eastern Europe, Middle East and Africa, emerging Asia, and Developed Asia, the study covered 1,249 companies from 2011 to 2019. The findings revealed that a company's headquarters' region significantly influenced the relationship between financial performance and ESG activities. Successful ESG development was found to be more common among international firms and those based in Developing or Developed Asia or North America. In contrast, Latin American firms, both local and multinational, faced substantial challenges in implementing ESG

initiatives. These findings offer valuable insights into the complex ESG-finance dynamic within diverse global contexts.

The literature surrounding ESG performance and stock returns is marked by varying findings, leading to a nuanced perspective. Some studies, such as Albuquerque, Koskinen, and Zhang (2019), have reported a positive association between ESG performance and stock returns, implying that companies embracing sustainable practices may enjoy higher returns. Conversely, others, including Chava (2014) and Bolton and Kacperczyk (2020), have presented evidence of lower stock returns for ESG performers. These divergent findings underscore the complexity of the relationship and emphasize the need for a nuanced understanding of the factors at play.

Notably, Pastor, Stambaugh, and Taylor (2021) have emphasized the critical distinction between expected and realized stock returns. Their work highlights that while high ESG performers may exhibit lower expected stock returns, the dynamics of realized returns may differ. This insight underscores the importance of delving deeper into the underlying mechanisms governing the ESG-stock return relationship and underscores the ongoing debate within the field.

Taechaubol's study, focusing on the Stock Exchange of Thailand (SET), investigated the impact of ESG and Corporate Social Responsibility (CSR) on investor attention. The study focused on two categories: the ESG100 and Thailand Sustainability Investment (TSI) lists. The findings revealed significant negative abnormal returns associated with the TSI list announcement, whereas the ESG100 list generated less significant negative abnormal returns. However, these returns were economically insignificant, rendering them ineffective for profitable trading strategies. The study also failed to identify a specific type of investor displaying a stronger preference for CSR stocks. The research suggested that while investors exhibited interest in ESG/CSR initiatives, market reactions were limited, underscoring the evolving nature of sustainability integration in the SET.

The body of literature surrounding ESG and stock returns remains dynamic and evolving, necessitating continued research to elucidate the intricacies of this relationship. As sustainability considerations continue to gain prominence in the global financial landscape, understanding how ESG performance influences stock market outcomes is pivotal for investors, policymakers, and corporations alike. The practical implications of these findings are of paramount importance. The study prompts consideration of the implications for firms' equity cost of capital. Firms with substantial ESG rating disagreement may face varying perceptions of risk in the market, potentially translating into differences in their cost of capital. Furthermore, the study has implications for investment managers and asset owners who employ ESG-focused investment strategies, highlighting the need for a nuanced understanding of ESG ratings and the potential impact of rating discrepancies on investment decision-making processes.

This comprehensive review of existing literature sets the stage for our research, which aims to contribute to the growing body of knowledge on the intricate relationship between ESG, stock returns, multinational corporations, and the Stock Exchange of Thailand (SET).The Stock Exchange of Thailand (SET) includes the sSET Price Index, a stock index reflecting common stock prices beyond the SET50 and SET100 indices. This group of stocks consists of common stocks with regular trading liquidity and a specified proportion of minority shareholders. In essence, sSET incorporates ESG criteria into its selection process for companies to be included in the index. This means that companies with strong ESG practices are more likely to be part of the sSET Index, which is designed to attract investors interested in sustainable and responsible investments. So, ESG and sSET are related because sSET relies on ESG data as a fundamental factor in its sustainability assessment and selection of companies for the index. Comprehensive summary. Indeed, the relationship between the Stock Exchange of Thailand Sustainability Index (sSET) and multinational corporations is primarily indirect. While sSET focuses on Thai companies and assesses their sustainability practices within Thailand, multinational corporations may or may not be part of the sSET, depending on their operations and commitment to sustainability in the Thai market. sSET serves as a tool for investors and stakeholders to identify sustainable practices among Thai-listed companies.

Multinational Corporations (MNCs), also known as multinational enterprises or transnational corporations, operate in multiple countries, conducting business activities like production, marketing, and sales across borders. They often have diverse workforces and may transfer employees between different locations. MNCs are recognized globally and have brand presence across multiple countries. However, the relationship between the sSET, MNC, and ESG is centered on sustainability. The sSET serves as a benchmark for companies in Thailand, including MNCs, to showcase their commitment to responsible business practices and attract investors who prioritize ESG factors. MNCs, in turn, play a significant role in shaping ESG practices and standards both locally and globally.

Our paper focuses on the sSET, MNC, and ESG, examining their interconnectedness in the context of sustainable business practices and financial outcomes. Our main findings from regression analysis shed light on the factors influencing stock returns within a sample of 136 companies. Notably, we discovered that larger companies, as indicated by the variable LNSIZE (natural logarithm of company size or market capitalization), tend to experience lower stock returns, holding other variables constant. However, Return on Assets (ROA) and Return on Equity (ROE) were not found to significantly impact stock returns in the analyzed models. In contrast, being a Multinational Corporation (MNC) was associated with higher stock returns, a significant finding supported by statistically significant coefficients and t-stats. Similarly, Export Companies exhibited higher stock returns, underpinned by positive coefficients and statistically significant t-stats. The inclusion of industry dummy variables in our analysis accounted for industry-specific effects on stock returns. These findings provide valuable insights into the multifaceted dynamics of stock returns, offering a nuanced understanding of the factors at play in this financial context.

This study contributes to the growing body of research that emphasizes the relevance of ESG factors in the context of financial markets. It underscores the intricate relationship between ESG ratings and stock returns. These insights are of particular significance in an era where sustainability considerations play an increasingly vital role in investment decision-making and corporate strategy formulation. As such, the study provides valuable insights for both scholars and practitioners seeking to navigate the complexities of ESG-related information in the world of finance.

2. Objectives

The objectives of the study can be categorized into the following:

1) Measure the influence of Environmental, Social, and Governance (ESG) indicators on stock returns.
2) Analyze the relationship between ESG performance and stock market outcomes.
3) Examine how multinational operations impact the relationship between ESG performance and stock returns.

These objectives are designed to provide a clear and measurable framework for the study, allowing for precise analysis and assessment of the relationships under investigation.

3. Materials and Methods

Econometric modeling plays a pivotal role in deciphering intricate relationships within the financial landscape, particularly when examining the nexus between Environmental, Social, and Governance (ESG) indicators, company-specific factors, and stock returns. In this section, we elucidate the foundation and structure of our econometric model adapted from the studies of Pastor et al. (2021) and Brandon et al. (2021)., designed to unearth the underlying dynamics that govern stock returns for companies listed on the Stock Exchange of Thailand (sSET).

Our research hinges on the premise that ESG indicators, in conjunction with firm-specific attributes, exert a discernible influence on stock returns. To unravel this interplay, we have incorporated a comprehensive set of explanatory variables encompassing company size (lnSIZE), financial ratios such as Return on Assets (ROA) and Return on Equity (ROE), as well as key determinants of corporate globalization, Multinational Corporation (MNC) status, and Export orientation. Additionally, we account for the diversifying effect of industry categorization, thereby encapsulating sector-specific nuances.

For analyzing the relationship between explanatory and dependent variables of interest, cross-sectional data estimations were applied with the help of ordinary least square (OLS). The proposed models for each of these techniques have been expressed in the following equations.

$$R_{i,t} = \alpha + \beta_1 ESG_{i,t-1} + \beta_2 lnSIZE_{i,t-1} + \beta_3 ROA_{i,t-1} + \beta_4 ROE_{i,t-1} + \beta_5 MNC_{i,t-1} +$$

$$\beta_6 Export_{i,t-1} + \sum_{j=7}^{13} \beta_{i,j} IND_{i,j} + \varepsilon_i$$

where,

Dependent Variable:

Return (R): Stock return calculated by the formula: $(P_t - P_{t-1}) / P_{t-1}$, where P_t is the stock price at time t, and P_{t-1} is the stock price at time t-1.

Explanatory Variables:
ESG index as a dummy variable. ESG $_{t-1}$ equals 1 if companies exhibit high performance in environmental, social, and governance (ESG) aspects, aligning with SET's criteria for sustainable operations. This includes proficient risk management, innovative approaches, and responsible supply chain management.
ESG $_{t-1}$ equals 0 for companies that do not meet these criteria.
lnSIZE $_{t-1}$ is the natural logarithm of company size or market capitalization at time t-1.
ROA $_{t-1}$ is Return on asset (%) at time t-1.
ROE $_{t-1}$ is Return on equity (%) at time t-1.
MNC equals to 1 if the company is a Multinational Company (MNC), indicating that it operates and conducts business activities in multiple countries or regions around the world, often with subsidiaries, affiliates, or branches in numerous countries, and engages in various business activities on an international scale.
MNC equals to 0 if the company is not a Multinational Company.
EXPORT equals to 1 if the company is an Export Company (Exporter), signifying its specialization in selling goods or services produced within its home country to customers located in foreign countries. The primary purpose of an export company is to engage in international trade and expand its market reach beyond its domestic borders. EXPORT equals to 0 if the company is not primarily engaged in export activities.
IND Dummy Variables for 8 Industries in Listed Companies in Thailand.
CONSUMER = 1 if the company belongs to the Consumer Goods industry (Consumer) and 0 if the company does not belong to the Consumer Goods industry.
FINANCE = 1 if the company belongs to the Financial Services industry (Finance) and 0 if the company does not belong to the Financial Services industry.
INDUSTRIAL = 1 if the company belongs to the Industry Group (Industrial) and 0 if the company does not belong to the Industry Group.
RESOURCE = 1 if the company belongs to the Resource Extraction industry (Resource) and 0 if the company does not belong to the Resource Extraction industry.
SERVICE = 1 if the company belongs to the Service industry (Service) and 0 if the company does not belong to the Service industry.
TECH = 1 if the company belongs to the Technology sector (Tech) and 0 if the company does not belong to the Technology sector.
PROP = 1 if the company belongs to the Real Estate sector (Prop) and 0 if the company does not belong to the Real Estate sector.
AGRO = 1 if the company belongs to the Agricultural industry (Agro) and 0 if the company does not belong to the Agricultural industry.

These explanatory variables will be used in your regression model to explore and analyze the relationships between ESG performance, company characteristics, and stock returns within different industry categories in listed companies in Thailand.

4. Results and Discussion

The analysis of the variables reveals significant variation in returns, sizes, and performance metrics across the 136 firms. We present a comprehensive analysis of the key variables used in our research. From Table 1, these variables include Return(%), SIZE (THB million), ROA(%), and ROE(%). We have calculated various statistics to better understand the central tendency and dispersion of the data. The Return variable exhibits significant variation, with returns ranging from -5.0406% to 84.3038%. The mean return is negative, indicating that, on average, the investments have not been profitable. The relatively high standard deviation suggests considerable dispersion in returns, indicating that some investments have experienced substantial volatility.

The SIZE variable represents the size of Thai listed companies in Thai Baht (THB) million. The data ranges from 212.50 THB million to 2,630.00 THB million, with an average size of 2,085.4 THB million. The standard deviation is relatively high, indicating substantial variability in the company size. ROA represents the Return on Assets as a percentage. The data ranges from a minimum of -78.00% to a maximum of 622.00%. The mean ROA is 12.3308%, indicating that, on average, the assets have generated a positive return. However, the wide standard deviation suggests significant variability in ROA values, with some

investments experiencing extreme fluctuations. ROE represents the Return on Equity as a percentage. The data ranges from a minimum of -58.90% to a maximum of 45.13%. The mean ROE is 9.9786%, suggesting that, on average, the investments have provided a positive return to equity holders. The standard deviation indicates variability in ROE values, although it is relatively narrower compared to ROA.

Table 1 Descriptive Statistics

Variables	N	Minimum	Maximum	Mean	Std.
Return (%)	136	-5.0406	84.3038	-7.6952	19.4681
SIZE (THB million)	136	212.50	2,630.00	2,085,4	3,471.70
ROA (%)	136	-78.00	622.00	12.3308	53.827
ROE (%)	136	-58.90	45.13	9.9786	13.8123

Note: Return (%): This variable represents the percentage change in stock prices; SIZE represents the market capitalization of the companies in Thai Baht (THB) million; ROA (%) stands for "Return on Assets" expressed as a percentage; ROE (%) is "Return on Equity" as a percentage.

From Table 2, the correlation analysis reveals significant relationships between certain variables. Return is positively correlated with LNSIZE, MNC status, and export activities, suggesting that larger firms, multinational corporations, and companies involved in international trade tend to have higher returns. ESG is negatively correlated with MNC status, implying that multinational corporations often have lower ESG scores. Notably, LNSIZE exhibits a strong negative correlation with ROE, indicating that larger companies tend to have lower returns on equity. However, no significant correlations were found between ROA or ROE and other variables. These findings provide valuable insights into the intricate relationships between sustainability, financial performance, and internationalization in the context of the studied firms.

Table 2 Correlation Analysis

Variables	Return	ESG	LNSIZE	ROA	ROE	MNC	Export
Return	1.00	-0.01	-0.185*	0.004	0.095	0.187*	0.181*
ESG	-0.01	1.00	0.007	0.107	0.079	-0.171*	0.101
LNSIZE	-0.185*	0.007	1.00	-0.062	-0.383**	0.033	-0.164
ROA	0.004	0.107	-0.062	1.00	0.113	-0.058	0.087
ROE	0.095	0.079	-.383**	0.113	1.00	-0.022	0.124
MNC	0.187*	-0.171*	0.033	-0.058	-0.022	1.00	0.195*
Export	0.181*	0.101	-0.164	0.087	0.124	.195*	1.00

Return (%): This variable represents the percentage change in stock prices; SIZE represents the market capitalization of the companies in Thai Baht (THB) million; ROA (%) stands for "Return on Assets" expressed as a percentage; ROE (%) is "Return on Equity" as a percentage; MNC is a Multinational Company (MNC), indicating that it operates and conducts business activities in multiple countries. and ;EXPOR, if the company is an Export Company (Exporter), signifying its specialization in selling goods or services produced within its home country to customers located in foreign countries.
*Correlation is significant at the 0.05 level.
**Correlation is significant at the 0.01 level.

Table 3 presents the results of a regression analysis that aims to examine the factors influencing stock returns for a sample of 136 companies. The analysis includes various explanatory variables, and two different models are presented, labeled as (1) and (2). The adjusted R-squared values are 0.291 for (1) and 0.292 for(2). These values represent the proportion of the variance in stock returns explained by the independent variables in the models. The F-statistics are 3.033 for Model (1) and 3.047 for Model (2). These statistics assess the overall significance of the regression models. A higher F-statistic suggests a more significant overall fit of the model to the data. The maximum Variance Inflation Factor (VIF) values are 1.864 for Model (1) and 1.643 for Model (2). VIF measures multicollinearity among independent variables, and values below 5 generally indicate low multicollinearity.

In our discussion of the findings, we observed several significant results from our regression analysis that provide insights into the relationship between various variables and stock returns in our sample (Albuquerque et al., 2019; Chava, 2014; Bolton & Kacperczyk, 2020). Firstly, the variable LNSIZE, which represents the natural logarithm of company size or market capitalization, consistently exhibited a negative coefficient of approximately -0.030 in both Model (1) and Model (2). This finding suggests that, when holding other variables constant, an increase in the size of a company is associated with a decrease in stock returns. In other words, larger companies tend to have lower stock returns in our analysis. In Model (1), we included Return on Assets (ROA) as a variable, but its coefficient was -0.003 with a t-stat of -0.089, indicating

that ROA is not a statistically significant predictor of stock returns in this model. In Model (2), we introduced Return on Equity (ROE) as a variable, and it exhibited a coefficient of 0.031 with a t-stat of 0.241. While ROE was positively associated with stock returns, the coefficient was not statistically significant, implying that ROE does not have a statistically significant impact on stock returns in this context.

One of the notable findings in our analysis pertains to the variable MNC, which represents whether a company is a Multinational Corporation. In both Model (1) and Model (2), MNC exhibited positive coefficients of approximately 0.066 with statistically significant t-stats of 1.965 and 1.983, respectively. This suggests that being a Multinational Corporation is associated with higher stock returns, indicating the potential benefits of multinational operations on stock performance.

Nevertheless, the variable Export, representing whether a company is an Export Company, displayed positive coefficients of approximately 0.047 with t-stats of 1.382 and 1.360 in both models. This finding suggests that being an Export Company is not associated with higher stock returns.These results provide valuable insights into the factors influencing stock returns within our sample of companies. The negative relationship between company size (LNSIZE) and stock returns, along with the lack of statistical significance for ROA and ROE, suggests that larger companies may face challenges in achieving high stock returns, and that traditional financial performance metrics like ROA and ROE may not be the primary drivers of stock returns in this context.

In the context of our research, it's important to connect these findings with previous research on ESG and stock returns. The literature review highlighted the varying findings in previous studies, with some reporting a positive association between ESG performance and stock returns, while others suggested the opposite. This diversity of findings underscores the complexity of the relationship between ESG and stock returns and emphasizes the need for a nuanced understanding of the factors at play (Brandon et al., 2021; Cherkasova & Nenuzhenko, 2022; Pastor et al., 2021a).

Furthermore, the distinction made by Pastor, Stambaugh, and Taylor (2021) between expected and realized stock returns is crucial. Their work highlights that high ESG performers may exhibit lower expected stock returns, but the dynamics of realized returns can differ. This insight underscores the importance of exploring the underlying mechanisms that govern the ESG-stock return relationship, which remains an ongoing debate within the field. Taechaubol's study, which focused on the Stock Exchange of Thailand (SET), offered insights into the impact of ESG and Corporate Social Responsibility (CSR) on investor attention. While significant negative abnormal returns were associated with the TSI list announcement, the ESG100 list generated less significant negative abnormal returns. These findings reflect the evolving nature of sustainability integration in the SET and the varied investor reactions to different ESG initiatives.

We contribute to the broader discussion on the relationship between ESG, stock returns, and other corporate factors. They suggest that factors such as company size, multinational status, and export orientation can influence stock returns, and the impact of traditional financial performance metrics like ROA and ROE may not be as significant. These findings underscore the complexity of the ESG-stock return relationship and the need for further research to explore the underlying mechanisms and dynamics at play in different contexts. This result also indicates that industry dummy variables are included in the regression models, but specific coefficient values are not provided. The presence of industry dummies suggests that the analysis accounts for industry-specific effects on stock returns. This regression analysis suggests that company size (LNSIZE), and being a Multinational Corporation (MNC) are statistically significant factors associated with stock returns. However, EXPORT, Return on Assets (ROA) and Return on Equity (ROE) do not appear to have a statistically significant impact on stock returns in the analyzed models. The inclusion of industry dummy variables accounts for industry-specific effects in the analysis.

Table 3 Regression Analysis

Variables	Model (1)		Model (2)	
	Coefficient	t-stats	Coefficient	t-stats
Constant	0.502	1.588	0.468	1.362
LNSIZE	-0.030**	-2.015	-0.029**	-1.983
ROA	-0.003	-0.089	-	-
ROE	-	-	0.031	0.241
MNC	0.066**	1.965	0.066**	1.983
Export	0.047	1.382	0.046	1.360
Industry Dummy	Yes		Yes	
N	136		136	
Adj. R^2	0.291		0.292	
F-stats	3.033		3.047	
Max VIF.	1.864		1.643	

Return (%): This variable represents the percentage change in stock prices; SIZE represents the market capitalization of the companies in Thai Baht (THB) million; ROA (%) stands for "Return on Assets" expressed as a percentage; ROE (%) is "Return on Equity" as a percentage; MNC is a Multinational Company (MNC), indicating that it operates and conducts business activities in multiple countries. and ;EXPOR, if the company is an Export Company (Exporter), signifying its specialization in selling goods or services produced within its home country to customers located in foreign countries.
*Statistically significant at the 0.05 level.
**Statistically is significant at the 0.01 level.

5. Conclusion

In conclusion, our research has uncovered several important findings that contribute to our understanding of the complex relationship between various factors and stock returns within a sample of 136 companies. We aimed to achieve three primary objectives: to measure the influence of Environmental, Social, and Governance (ESG) indicators on stock returns, to analyze the relationship between ESG performance and stock market outcomes, and to examine how multinational operations impact the relationship between ESG performance and stock returns.

Our findings reveal valuable insights into the factors influencing stock returns. Firstly, we observed a consistent negative relationship between company size, represented by the variable LNSIZE (natural logarithm of company size or market capitalization), and stock returns. This suggests that, all else being equal, larger companies tend to experience lower stock returns. Furthermore, our analysis showed that Return on Assets (ROA) and Return on Equity (ROE) did not have statistically significant impacts on stock returns in the models, emphasizing that traditional financial performance metrics may not be the primary drivers of stock returns in this context. However, a noteworthy finding pertains to the variable MNC, which denotes whether a company is a Multinational Corporation. In both models, MNC exhibited positive coefficients with statistically significant t-stats, indicating that being a Multinational Corporation is associated with higher stock returns.

Connecting our findings to the broader literature on ESG and stock returns, we acknowledge the diversity of results in previous studies. Some researchers have reported a positive association between ESG performance and stock returns, while others have found evidence to the contrary. This variability underscores the complexity of the relationship between ESG and stock returns, emphasizing the need for a nuanced understanding of the contributing factors. Moreover, the distinction between expected and realized stock returns, as highlighted by Pastor et al. (2021), emphasizes that high ESG performers may exhibit lower expected stock returns, but the dynamics of realized returns can differ. This insight underscores the ongoing debate within the field about the mechanisms that govern the ESG-stock return relationship. Taechaubol's study, focusing on the Stock Exchange of Thailand (SET), revealed the impact of ESG and Corporate Social Responsibility (CSR) on investor attention. The findings indicated varied investor reactions to different ESG initiatives, highlighting the evolving nature of sustainability integration in the SET.

Our research has contributed to the growing body of knowledge that emphasizes the significance of ESG factors in financial markets. It underscores the intricate relationship between ESG ratings and stock returns, particularly in an era where sustainability considerations are increasingly influential in investment decision-making and corporate strategies.

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