

The Impact of ESG Scores on Stock Price Volatility: An Empirical Study of Selected Listed Firms in Egypt (2015–2024)

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Abstract

Purpose: The purpose of this paper is to examine how the sustainability practices of companies in terms of environmental, social score and governance (ESG) score influence stock performance as measured by stock volatility in Egypt.

Methodology: A sample of listed companies in the Egyptian Stock Exchange (EGX) is utilized from 2015 to 2024. Two panel data regression models are measured; the first model tests the impact of environmental and social (ES) score on stock price volatility, while the second model examines the impact of the governance (G) score on stock price volatility. Firm control variables are inserted in the models including firm size, profitability, leverage and stability. EGX subsidiary company provided the ESG scores from 2015 till 2024, while stock prices and financial data are collected from Thomson Reuters Refinitiv Eikon database.

Findings: The empirical results reveal a negative and significant correlation between the governance score and stock price volatility, and no correlation between the ES and stock volatility. Those findings suggest that investors prioritize corporate governance over environmental and social issues in their decision making when evaluating investment risks.

Practical Implications: Sevel implications are drawn to companies, investors and policy makers. Companies should continue enhancing their governance practices while disclosing more environmental and social data. Investors with a low-risk appetite should consider investing in companies with high corporate governance scores. Policy makers should keep

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incentivizing and regulating ESG, while also raising ESG awareness, giving greater consideration to the environmental and social risks and opportunities.

Value: This paper provides valuable insights into the role of ESG investing by exploring its impact on stock performance in Egypt, addressing a gap in the literature on developing countries and considering that ESG investing is at earlier stages in developing markets in comparison to developed countries.

Keywords: Environmental, Social, Governance Score, ESG investing, Stock Price Volatility, EGX, Egypt.

Paper Type: Research Paper.

1. INTRODUCTION

Companies started to incorporate the different sustainability actions by integrating the different environmental, social, and governance (ESG) practices in their business strategy and operation with the aim of building resilience, managing risks, and sustaining long-term sustainable growth (Wang, 2024; Liu et al., 2023). Improving ESG in companies may encourage investors to buy their stocks (Otaify, 2021), and can improve risk management, hence, creating value for businesses and investors (UN PRI, 2006a; N. Xu et al., 2023). This type of investment is called ESG investing, also known as sustainable investing, and sometimes referred to as responsible investing (RI). Investors normally incorporate ESG into their investment strategy for three main reasons: (1) the positive effect on society, (2) the financial losses avoidance by managing risks, and (3) the improved financial returns (Silvola & Landau, 2021).

Sustainable environment leads to healthy society, which leads to strong economies, stable and predictable markets, and by sequence sustainable investments (Sekol, 2024). The urge to adopt sustainability actions is driven by population growth which puts pressure on resources causing inequality in the incomes of the individuals, and which most effects developing countries (Hyske et al., 2022a).

In addition, the unethical and irresponsible actions of businesses, for example bribery to acquire operating license, can damage the business reputation, hence, profits can be negatively impacted. Therefore, there has been a growing need to develop new business models which create value for both the people and the planet (Zsolnai et al., 2023).

UN organizations, governments, policy makers, corporates, asset owners, and asset managers are paying more attention to incorporate ESG in the decision-making process. The 17 Sustainable Development Goals (SDGs), which was initiated by the United Nations (UN) in 2015, and which include 169 sub-targets, encourage the 193 UN State members, including Egypt, to adopt sustainability standards (United Nations, 2015). Egypt is one of the biggest economies in Africa and has strong domestic and international structures that allow for implementing sustainability practices and reporting. In 2016, Egypt launched its Sustainable Development Strategy (SDS 2030) with several sustainability objectives to be achieved by 2030. Those objectives include, among others, enhancing the economic growth through, for example, facilitating the listing of enterprises in the Egyptian Stock Exchange (EGX), and improving corporate governance by requesting the listed companies on EGX to report on their transparency practices (*Egypt Vision 2030*, 2016).

Furthermore, Egypt launched the New Investment Law no. 72 of 2017 which provides several articles to support the social responsibility. The Law encourages sustainability by offering tax incentives to investors who allocate a portion of their annual profits to support environmental and social initiatives such as health, education, and scientific research (General Authority of Investment and Free Zones, 2017).

In 2004, the United Nations released two reports where the three pillars Environmental, Social and Corporate Governance were put together for the first time to form the term ESG. Both reports highlighted that only the material ESG issues can improve the shareholder value. The reports stated the increased amount of empirical evidence that companies' good management of their ESG risks delivers better risk-adjusted financial performance than their industry peers (Sekol, 2024). Several studies measure the impact of ESG on financial and market performance; however, majority of the research is conducted in developed countries.

Therefore, the importance of this research lies in its attempt to examine the impact of the sustainability practices in terms of ESG scores on stock volatility, as a pillar of stock performance, in Egypt since 2015 which is in conjunction with the launch of the 2015 SDGs, the 2016 Egyptian SDS, and

the 2017 Egyptian Investment Law. The research utilizes deductive reasoning to test research hypotheses. Most of the ESG studies are based on archival data (Narula et al., 2024). The quantitative approach is adopted, and statistical descriptive analyses of secondary data are carried out through the utilization of panel data regression models

Research Questions

Q1. Do Environmental and Social (ES) scores affect the stock price volatility of companies listed on the S&P/EGX ESG Index during the 10 years from 2015 to 2024?

Q2. Do Governance (G) scores affect the stock price volatility of companies listed on the S&P/EGX ESG Index during the 10 years from 2015 to 2024?

Research Objectives

The objective of this research focuses on filling the gap in literature by

1. Evaluating the effect of ES scores on stock performance in Egypt from investment perspective from 2015 to 2024.
2. Evaluating the effect of G scores on stock performance in Egypt from investment perspective from 2015 to 2024.

Hypotheses

H1: *ES Scores significantly impact Stock Price Volatility in Egypt*

H2: *G Scores significantly impact Stock Price Volatility in Egypt*

The remainder of this paper is structured as follows: Section 2 presents the literature review; Section 3 outlines the research methodology; Section 4 provides the statistical analysis; Section 5 discusses the findings; Section 6 addresses the limitations and offers recommendations; and Section 7 presents the conclusion.

2. LITERATURE REVIEW

2.1. Theoretical Framework

In the investment realm, there has been continuously greater pressure to evaluate the ESG risks and opportunities which firms deal with to sustain their long-term resilience. For ages, companies have been gaining profits through globalization and increased production, consumption and fuels to bring goods to consumers worldwide. By return, companies are required to

consider and report several essential sustainability issues, which stemmed from the growing production and consumption, such as climate change, biodiversity, social diversity, business ethics, etc. Sustainability reporting in terms of ESG has been gaining more importance just as the financial reporting. ESG reporting is considered a risk management framework that should be considered within the whole investment strategy, and the impact of its associated risks and opportunities on financial performance should be evaluated (Bradley, 2021).

ESG topics are not the same across companies as every organization must identify its major ESG issues and its measurement methodologies that align with their strategy (Sekol, 2024). The Environmental pillar includes issues such as climate change, natural resources use, energy efficiency, air and water pollution, waste management, water scarcity, etc. The Social pillar entails human rights, decent work, diversity, equity and inclusion, product responsibility, customer satisfaction, data protection and privacy, etc. The Governance pillar is concerned with board structure, executive compensation, responsible political engagement, code of conduct, anti-fraud and anti-corruption policies, business ethics, etc. (A-Team Group, 2021; Hyske et al., 2022a; *S&P/EGX ESG Index Methodology*, 2025; UN PRI, 2006b).

The ESG investing was identified by Schanzenbach and Sitkoff (2020) as “an umbrella term that encompasses any investment strategy that emphasizes a firm’s governance structure or the environmental or social impacts of the firm’s products or practices”. The United Nations Principles for Responsible Investment (UN PRI) identifies Responsible Investing as the investing that “involves considering environmental, social and governance (ESG) issues when making investment decisions and influencing companies and assets (also known as active ownership, and sometimes stewardship). It complements traditional financial analysis and portfolio construction techniques” (UN PRI, 2006a).

Policy makers regulate ESG to lower risks and increase opportunities which impact the economy. Policy makers and exchange markets incentive and improve ESG practices (Hyske et al., 2022b; Liu et al., 2023; Said & ElBannan, 2023) by providing initiatives, subsidiaries and tax benefits (Kilic et al., 2022; Kulal et al., 2023; Mallek et al., 2024; Moalla & Dammak,

2023), and by standardizing the ESG frameworks, guidelines, reporting and disclosures (Brock et al., 2023; Dong et al., 2024; Naseer et al., 2023) to make it comparable which will help investors make informed decisions by reducing uncertainties specially in crisis time by providing tools to assess the ESG material and financial risks and opportunities.

In Egypt, the listed companies on the universe index (EGX100) in the EGX are evaluated on an annual basis for their ESG practices. The top 30 rated companies of the total 100 are shortlisted and included in the sustainability index S&P/EGX ESG. The rating agency assigns each company a composite score which is a summation of quantitative and qualitative scores for each of environmental and social (ES) and governance (G) pillars. The quantitative score is based on the company's ESG disclosures while the qualitative score is given based on independent sources of information, news, websites and CSR reports. The scoring methodology considers only the material events which have financial impact on the stakeholders (*S&P/EGX ESG Index Methodology*, 2025). The higher the score, the better the ESG practices of the firm. Highly scored companies are attractive to the responsible investors as those companies tend to have long-term focus, resilience, and better performance for their ability to manage risks (Kulal et al., 2023; Naseer et al., 2023).

2.2. Previous Research

The literature on the impact of ESG scores on stock performance has been increasing in the last two decades. The findings of the previous studies vary according to the country and the duration of measurement. In the USA, Prol and Kim (2022) found a negative relationship between high ESG portfolio performance and portfolio volatility in a sample of 1203 companies in 2018 and 2019. On the contrary, Cheng and Huang (2024) found a significant positive relationship between the ESG scores and the stock volatility taking a sample of 457 of the listed firms in the S&P 500 index from 2013 to 2023.

The study conducted by Moalla and Dammak (2023) in a sample of companies listed on S&P5 500 from 2019 till 2020 revealed that firms with high ESG performance have lower stock price volatility than companies with poor ESG performance, which emphasizes that strong ESG performance

reduces stock price volatility resulting from the COVID-19 shock and promotes resilience and stock price stability.

In Japan, Liu et al. (2023) found negative correlation between ESG scores and stock volatility during COVID-19 using two ESG scores (S&P and FTSE), while when they tested the variables from 2016 till 2021 in normal times excluding COVID-19, the results revealed negative correlation between the S&P ESG and governance only, with no correlation with E and S. When utilizing the FTSE ESG scores, the results remained negative between volatility and governance, however, positive with environmental score, and no correlation with the social score.

In Europe, the results drawn by Uthuslien and Andréasson (2023) reveal that highly ESG-scored portfolio encompass lower risks than low ESG-scored portfolios in a sample of 698 companies in the Nordic countries (Denmark, Finland, Norway, and Sweden) from 2015-2022. Mechrgui and Theiri (2024) found that each of E, S and G score reduces stock volatility when they tested the correlation in a sample of French companies from 2012 to 2022.

In India, Meher et al. (2020) measured a sample of 43 Indian companies for the duration from 2014 to 2018 and indicated no relationship between ESG and stock volatility. In China, J. Yin (2024) found a negative correlation between ESG scores and stock volatility. Naseer et al. (2023) found that ESG scores correlated negatively with stock risk. Z. Xu (2024) found that ESG scores significantly reduces stock return volatility in China taking a sample from 2013 till 2023.

Said and ElBannan (2023) tested the relationship between ESG score and stock risk in a sample of 1,324 firms from 25 emerging countries, including Egypt, in 4 different regions (America, Europe, MENA, and Asia) from 2017 and 2021. The results show a significant negative correlation between the E&S average score and stock volatility.

The mixed results can be attributed to several factors. One major factor is the different ESG scoring methodologies provided by the different ESG data providers for the same company. Another reason is the subjectivity of the rating depending on the evaluator (Christensen et al., 2022). Furthermore, the quality of data disclosed by the company can affect the scoring and may not

lead to an inability to reflect on the actual ESG performance (J. Yin, 2024) taking into consideration that corporates and ESG rating agencies in emerging markets provide less disclosures than firms in developing countries, as a result corporates may get lower scores than their peers in developed markets (Brock et al., 2023). This can be because ESG is at earlier stages in developing countries compared to developed ones (Brière et al., 2024; Elkawy, 2024; J. Yin, 2024; Said & ElBannan, 2023; X. Yin et al., 2023; Yadav et al., 2024).

2.3. Research Gap

Despite the growing number of research and studies trying to explore the effect of ESG performance on the investment performance, the research is still limited in the emerging and developing markets (J. Yin, 2024; Said & ElBannan, 2023) with the research focus in United States, the European markets, and Asia (Cheng & Huang, 2024; Yadav et al., 2024). Therefore, this paper seeks to evaluate the performance of ESG investing in Egypt as a developing and emerging country.

Furthermore, there is no consensus on the correlation between ESG score and stock volatility as the literature reveals mixed results between negative, positive and no correlation. Accordingly, this research paper tries to add valuable insights state of sustainable investing for companies, investors, and policymakers in Egypt by evaluating the correlation between ESG scores and stock price volatility in a sample of listed Egyptian companies on the EGX.

3. METHODOLOGY

3.1. Population and Sampling

Egypt, being one of the emerging and developing countries, is selected to be the sample country. The targeted population is the companies listed on the EGX. The Final sample consists of 80 firms for the duration from August 2015 to August 2024. The original data was cleared to exclude companies missing financial data, delisted companies, and companies with negative liabilities. The ESG scores were collected from EGX subsidiary firm, while the stock prices and the financial data of companies were collected from Thomson Reuters Refinitiv Eikon database.

Sampling is based on the availability of data. EGX has only one sustainability index (S&P/EGX ESG) which was established in 2007. Despite

that scores are given to all the companies listed on the universe index (EGX 100 EWI), EGX can only provide the scores for the 30 companies on the S&P/EGX ESG index from 2015 as the scores for the universe index are only available since 2022.

3.2. Variables and Research Models

The dependent variable is the stock price volatility representing the stock risk, and it is calculated annually using the coefficient of variance (CV):

$$CV = \frac{\sigma}{\mu}$$

Where σ is the standard deviation of the daily stock prices, capturing the dispersion or variability, for the duration from the beginning of August at a year (P_{t-1}) till the end of July of the following year (P_t) which is the same duration of the S&P/EGX ESG index rebalance, and μ is the average (arithmetic mean) of the daily stock prices for the same duration.

The independent variables are the ES score and the G score. Similar to several research (Mallek et al., 2024; Meher et al., 2020; Prol & Kim, 2022), the individual ESG scores are utilized. The ES scores are collected per company from EGX as one rather than two separate E and S scores, while the G score is provided as a separate score (S&P/EGX ESG Index Methodology, 2025). The independent variables are lagged for one year following the hypothesis that responsible investors are interested in holding stocks in highly ESG-scored stocks, therefore, the dependent variables are measured post announcement of the scores in August of each year.

Stock performance in terms of volatility is affected by firm-specific conditions such as firm size, book-to-market ration, leverage, ROA, cash flow yield, etc., and ESG (Cheng & Huang, 2024; Liu et al., 2023; Prol & Kim, 2022). Accordingly, the control variables included in the model are the firm size measured by the natural logarithm of total assets (TA), the firm's profitability measured by the return on assets (ROA), firm's leverage measured by total debt to total equity (D/E), and firm's stability measured by total assets by total liabilities (TA/TL). The stock prices and the financial data are collected from Refinitiv Eikon database. Figure (1) includes the research models.

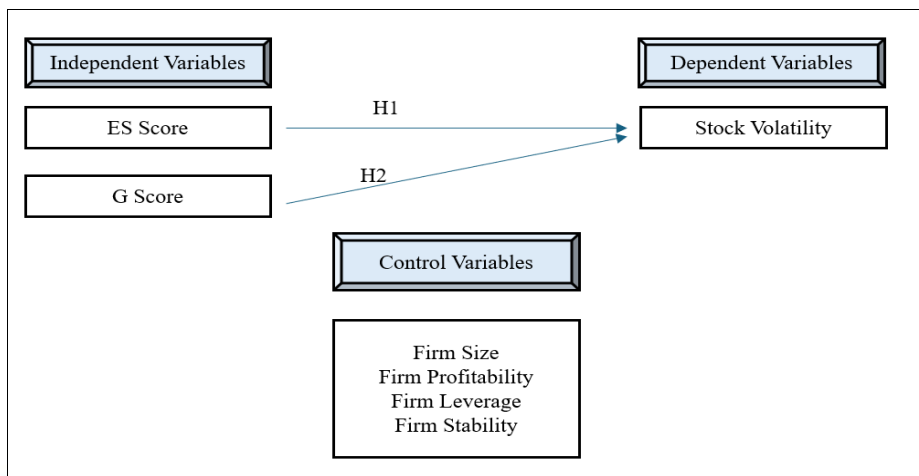


Figure (1)

Research Models

Source: Compiled and Desigend by the Researcher

4. STATISTICAL ANALYSIS AND RESULTS

Two panel data regression models are used to answer the two research questions. The first regression model tests the impact of the ES score on stock price volatility and the second model measures the correlation between the G score and the stock price volatility. Due to the panel structure of the dataset, appropriate statistical tests are applied to identify the most suitable estimation method for each dependent variable.

4.1. Multicollinearity

First, correlation matrix is used if two control variables correlated greater than 0.8, one of them shall be excluded. After modelling, VIF checked. If Variance Inflation Factor (VIF) is greater than 5 multi-collinearity suspected and if VIF is greater than 10, then multicollinearity is assumed, and the less important variable shall be excluded. Table (1) shows the result of the correlation matrix that none of the variables correlates greater than 0.8. Accordingly, none of the variables are excluded following the correlation matrix test.

Table (1)

Correlation Matrix

Variables	Total assets	ROA	D/E	TA/TL	G Score	ES Score	Volatility
Total assets	1	-0.15	0.2	-0.4	0.32	0.47	-0.14
ROA	-0.15	1	-0.23	0.1	-0.33	0.1	-0.03
D/E	0.2	-0.23	1	-0.19	0.12	0.04	0.05
TA/TL	-0.4	0.1	-0.19	1	-0.19	-0.18	0.04
G Score	0.32	-0.33	0.12	-0.19	1	0.08	-0.18
ES Score	0.47	0.1	0.04	-0.18	0.08	1	-0.04
Volatility	-0.14	-0.03	0.05	0.04	-0.18	-0.04	1

Source: Statistics Software R version 4.4.2, table designed by the researcher

The VIF results as shown in table (2) reveal no correlation greater than 5. Accordingly, none of the control variables are excluded.

Table (2)

VIF Results

ES Score and Volatility	VIF	G Score and Volatility	VIF
Total assets	1.41487	Total assets	1.17638
ROA	1.05193	ROA	1.11559
D/E	1.07155	D/E	1.07521
TA/TL	1.15631	TA/TL	1.16406
ES Score	1.25767	G Score	1.10187

Source: Statistics Software R version 4.4.2, table designed by the researcher

4.2. Model Selection and Endogeneity Testing

To identify the most suitable panel regression specification for each dependent variable, a structured series of diagnostic procedures is employed. Comparison was conducted between Fixed Effects (FE) models and the Random Effects (RE) models using the Hausman specification test to statistically justify the choice between the FE and RE models. Then, the Breusch-Pagan test is conducted to detect heteroskedasticity in the residuals,

followed by the Wooldridge test for autocorrelation to assess first-order serial correlation within panel entities. Finally, to evaluate the Cross-sectional Dependence (CD), the Pesaran test is utilized.

The results reveal the selection of the RE models since the p-value is insignificant in both models. For the model measuring the correlation between ES score and stock volatility, heteroskedasticity and cross-sectional dependence are detected. The model is adjusted using the Heteroskedasticity-robust standard errors (SE) are utilized. As for the other model measuring the correlation between the G score and stock volatility, heteroskedasticity, autocorrelation, and cross-sectional dependence are detected. Therefore, the model is adjusted by using the Driscoll-Kraay standard errors (SE).

4.3. Statistical Results

4.3.1. ES Scores and Stock Price Volatility

Table (3) includes the regression results of the correlation between the combined Environmental and Social (ES) score and stock price volatility. The coefficient for ES is positive (0.114) and marginally significant ($p = 0.070$), indicating a potential tendency for firms with stronger environmental and social performance to exhibit higher volatility. Regarding the control variables, the natural log. of total assets shows a negative but statistically insignificant relationship with volatility (coefficient = -0.008, $p = 0.272$) suggesting limited evidence that firm size reduces risk. Profitability, as measured by ROA, is not significantly associated with volatility (coefficient = 0.004, $p = 0.969$) nor are the leverage (debt to equity) and stability (total assets per total liabilities) indicators. These results imply that the ES score might influence volatility independently of the firm's core financial structure or performance.

As for the goodness-of-fit indicators, the model shows a low explanatory capacity with an R-squared of 0.107 and an adjusted R-squared of 0.091, suggesting that around 9–11% of the variability in volatility is explained by the predictors. The model's AIC and BIC values are notably low and negative at -679 and -657, respectively, which can be attributed to the generally low levels of volatility observed in the data. Low volatility implies limited variability in the residuals, leading to smaller penalized likelihood values and thus lower information criteria. The mean absolute error (MAE)

of 0.054 aligns with this pattern, reflecting modest prediction errors consistent with stable volatility data. Although the overall p-value does not indicate strong statistical significance, the goodness-of-fit metrics suggest the model is parsimonious and appropriate for capturing the subtle influences of ES and other financial predictors on volatility within this dataset.

$$\text{Volatility} = 0.114 \cdot \text{ES Score} + \varepsilon$$

Table (3)

ES Scores and Stock Price Volatility

Statistical Analysis	Coefficient	SE	Statistic	p-Value
Constant	0.16	0.104	1.535	0.126
ES Score	0.114	0.063	1.821	0.07
Total Assets	-0.008	0.007	-1.101	0.272
ROA	0.004	0.109	0.038	0.969
D/E	0.001	0.003	0.413	0.68
TA/TL	0	0.002	-0.189	0.85
R^2	0.107			
Adj. R^2	0.091			
AIC	-679			
BIC	-657			
MAE	0.054			
P-Value	0.622			

Source: Statistics Software R version 4.4.2, table designed by the researcher

4.3.2. G Scores and Stock Price Volatility

This model reveals a significant negative relationship between governance (G) and stock price volatility. The results are revealed in table (4). The coefficient for G is -0.242 with a p-value of 0.029, indicating that firms with stronger governance practices tend to have more stable stock movement. As for the control variables, none show significant associations with volatility.

The coefficient for firm size (log of total assets) is -0.005 ($p = 0.481$), again suggesting a weak and statistically insignificant tendency for larger firms to experience reduced volatility. ROA is slightly negative (-0.037) but also non-significant ($p = 0.737$), and the debt-to-equity ratio has virtually no effect (coefficient = 0.000, $p = 0.903$). Similarly, the stability ratio (total assets per total liabilities) is not a significant predictor. Collectively, these results emphasize the unique role of governance quality in reducing volatility, independent of the firm's size, profitability, or capital structure.

The model also demonstrates a modest explanatory power with an R-squared of 0.131 and an adjusted R-squared of 0.115, indicating that about 11.5–13% of the variation in volatility is accounted for by the model predictors. The negative and relatively low values of AIC (-687) and BIC (-665) are consistent with the observed low volatility in the data, reflecting the limited residual variance and penalization in the model fit criteria. The mean absolute error (MAE) of 0.052 further indicates a reasonably precise fit given the stability in volatility measures. Notably, the variable G score shows a statistically significant negative association with volatility ($p = 0.029$), suggesting that higher G values are linked to reduced volatility. Overall, the goodness-of-fit measures and significance levels support the model's suitability for capturing the nuanced impact of G on stock price volatility in this dataset.

$$\text{Volatility} = 0.371 - 0.242 \cdot \text{G Score} + \varepsilon$$

Table (4)

G Scores and Stock Price Volatility

Statistical Analysis	Coefficient	SE	Statistic	p-Value
Constant	0.371	0.107	3.464	0.001
G Score	-0.242	0.111	-2.191	0.029
Total Assets	-0.005	0.007	-0.706	0.481
ROA	-0.037	0.109	-0.337	0.737
D/E	0	0.003	0.123	0.903
TA/TL	-0.001	0.002	-0.386	0.7

R^2	0.131
Adj. R^2	0.115
AIC	-687
BIC	-665
MAE	0.052
P-Value	0.043

Source: Statistics Software R version 4.4.2, table designed by the researcher

5. DISCUSSION

The empirical findings provide a thoughtful analysis for the role of sustainability practices on stock movement in Egypt being a developing country. The objective of this research is to measure the impact of the environmental, social, and governance (ESG) scores on the stock price volatility in Egypt during 10-year period from 2015 to 2024. The significance of this research lies in its effort to assess the application of the ESG concept in Egypt since 2015 which is in conjunction with the launch of the UN SDGs in 2015, the Egyptian SDS in 2016, and with the introduction of the new Investment Law in 2017 which offered tax incentives to companies promoting sustainable practices. Accordingly, valuable insights are drawn to companies, investors, and policy makers to support informed decision-making process, enhance sustainable investment strategies, and guide future regulatory developments aligned with ESG principles in the Egyptian market. This study hypothesizes that ESG scores can lower stock volatility. Panel data regression models are utilized to test the research hypotheses. The statistical results do not support the first hypothesis that environmental and social scores can impact stock price volatility. However, the findings support the second hypothesis that the governance score can negatively and significantly reduce stock volatility.

The governance findings support the perspective that effective governance reduces agency conflicts, improves strategic oversight, and promotes consistent financial performance, thereby lowering risk. Consistent with the

findings by Liu et al. (2023) and Mechrgui and Theiri (2024), the results of this research also confirm the strong and critical role corporate governance plays in reducing stock volatility. This relationship is grounded in the core purpose of governance, which rationale on the management and mitigation of organizational risk. Governance structures are designed to ensure accountability, transparency, and control within the firm. When companies implement policies such as anti-fraud, anti-corruption, and internal compliance mechanisms, they demonstrate their commitment to ethical conduct and operational integrity, and are likely to be perceived as more reliable, stable, and better equipped to navigate market uncertainties. Company efforts to mitigate material risks lead to better branding, investor confidence and, by sequence, reducing the financial risks.

Moreover, the results further imply that investors recognize and value this risk-management role of governance in their investment decisions and that they give greater weight to governance-related factors compared to environmental and social considerations. While ESG is a composite of three pillars, governance appears to carry more immediate and tangible implications for financial risk and performance, making it a priority for risk-averse investors. According to Bradley (2021), some investors believe that governance is the core component of the three ESG pillars as strong governance leads to good management of environmental and social issues.

As for the absence of correlation between ES scores and stock volatility, those findings are inconsistent with the findings of Mechrgui and Theiri (2024) but consistent with the results of Liu et al. (2023) and Meher et al. (2020). The lack of correlation could be attributed to the high cost of implementation, particularly for the environmental practices such as adopting solar energy, for example, which entails huge investment costs. Such costs pose barriers for many firms leading them to postpone, deprioritize, or implement less environmental and social upgrades especially with tough macroeconomic conditions. As a result, the impact of ES initiatives on stock risk can be challenging to be evaluated.

Another explanation for no correlation between ES score and stock risk can be that listed companies disclose less data regarding their environmental and social practices which could affect the score. The less ES information

provided by companies, the less effective decisions investors can make. Furthermore, awareness level of companies on the material ES issues to be disclosed can be another reason weakening the ES-risk correlation. Companies could have some challenges identifying their material environmental and social issues to report as such factors differ according to each market sector (Kulal et al., 2023). This lack of clarity may result in generic or misaligned disclosures that fail to reflect actual ES performance.

Based on the aforementioned findings, this research indicates several practical implications for companies, investors and policy makers. For companies, their investment in implementing effective governance pays off in terms of stock price stabilization resulting from enhancing their internal control and transparency leading to better branding and investor confidence. Therefore, companies should sustain and extend their governance practices to leverage their risk enhancement standards.

Nevertheless, companies should also communicate more on their environmental and social practices by assessing their current stand and establishing a structured framework and action plan to advance these E and S initiatives. Companies shall leverage their E and S awareness level, considering the huge potential financial losses associated with inadequate E and S management as well as the huge prospective cost benefits of implementing material E and S practices. Environmental risks- such as pollution incidents- and social risks- such as discrimination among employees- can lead to litigation cases and reputational damage resulting in financial losses and lower stock prices. On the other hand, cost savings and financial benefits can stem from utilizing E and S opportunities such as optimizing the use of natural resources. Therefore, companies are encouraged to manage and disclose the material E and S risks and opportunities. By doing so, companies can substantially lower expenses, avoid unnecessary costs, and retain a good reputation in front of investors and the different stakeholders.

For investors, the findings indicate that governance is appreciated as a risk management tool more than environmental and social issues. First, investors who seek low investment risk should assess the governance practices of companies in terms of the quality of internal controls and policies, board

structure, etc. Second, Investors are encouraged to exercise their active ownership rights to pressure executive management to adopt the material ESG pillars. In line with Bradley (2021), investor engagement and stewardship are always considered an integral part of good governance which sets the ground rules that align the objectives of all stakeholders and avoid mismanagement and conflicting goals.

Third, because ESG issues differ across sectors and sometimes across companies in the same sectors, investors should directly communicate their specific ESG values to the investees and request companies to put clear definitions of the different ESG pillars, their associated risks and opportunities. In this way, investors would have clear standards for evaluating ESG issues. Fourth, investors are encouraged to adopt a long-term perspective on ESG. Although governance scores show the most direct link to risk reduction, environmental and social factors play a growing role in shaping sustainable performance. Therefore, investors are encouraged to keep stressing on the implementation and reporting of the material environmental and social practices.

For policymakers, the findings highlight the strong regulations of governance demonstrated by their ability to reduce stock risk. First, policy makers are encouraged to continue mandating corporate governance disclosures to support companies sustaining their risk management and branding. Second, regulators should provide more incentives to ESG practices with particular emphasis on environmental and social dimensions to encourage companies to adopt E and S initiatives and disclosures. Third, the stock exchange shall continuously improve, facilitate and educate disclosure standards in collaboration with sector experts considering that ESG issues vary across industries. This could lead to more relevant, sector-specific reporting and can support investors taking more informed and accurate investment decisions.

6. RECOMMENDATIONS

The study draws several recommendations to companies, investors and policy makers. Companies are recommended to keep enhancing their governance policies with the objective of sustaining stock price stability and investor confidence. To achieve this objective, companies are recommended to

continuously update governance policies covering internal audits, anti-corruption, and fraud prevention, and to monitor the governance performance in terms of financial impact and outcomes. In addition, companies are recommended to improve their environmental and social policies with the objective of mitigating long-term environmental and social risks and unlock operational and reputational opportunities, leading to enhanced efficiency and less stock volatility. Recommended actions include identifying and assessing the material sector-specific E and S issues, develop an action plan to address different risk mitigation measures, and measure the performance against clear key performance indicators.

Investors are recommended to keep considering governance issues in their investment decision making. The objective is to sustain investing in well governance-managed companies to enhance the required stock performance. For this, investors can take several actions including evaluating the ongoing governance structure and measures according to the regulation and assessing its related risks and opportunities. Additionally, investors are advised to engage in ESG Stewardship through their active ownership stressing on the E and S pillar enhancement. The objective is to influence investees' actions towards better environmental and social actions, disclosures and impact. For this, investors can exercise their voting rights to promote stronger ES oversight and board accountability, can communicate their specific E and S priorities, definitions and required outcomes with the executive boards.

For policy makers, the research provides recommendations to them to environmental and social reporting incentives with the objective of strengthening ESG integration in business practices, particularly in sectors with high E and S impact. Recommended actions to be taken include collaboration with industry experts to define sector-specific ESG disclosure templates and launched capacity-building programs to promote firms' knowledge on identifying and reporting their material ESG factors.

7. LIMITATIONS

This research has some limitations that may affect the generalizability of the findings. First, the research utilizes the announced scores by the EGX while there are other ESG sources such as Thomson Reuters and Bloomberg,

therefore, future researchers are encouraged to utilize other ESG data sources. This leads to the second limitation of sample size. The sample of this research considers only the 30 listed companies on the sustainability index S&P/EGX ESG due to data limitations provided by EGX, therefore, future research can consider bigger sample available from other different ESG data sources.

8. CONCLUSION

The objective of this research is to measure whether the corporate sustainability actions in terms of ESG scores impact the stock performance as measured by stock price volatility in Egypt as one of the emerging and developing markets. A sample of 80 listed firms from 2015 and 2024 were selected from the EGX to measure the aforementioned correlation.

The empirical findings reveal that governance can lower stock price volatility, and that investors with appetite to averse risk do not consider the environmental and social pillars in their investment decision making or they appreciate governance over the environmental and social issues. Those findings bring important implications to investees, investors and policy makers. Companies are encouraged to keep enhancing their governance practices and to communicate more environmental and social disclosures, investors who prefer low risks should consider highly governance scored companies, and policy makers should keep regulating the ESG with enhancement to the environmental and social pillars.

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