

The Moderating Effect of Investor Sentiment on the Relationship between ESG Performance and Future Financial Performance: An Empirical Study from Egypt

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Abstract

This paper examines the role of investor sentiment in influencing the relationship between Environmental, Social, and Governance Performance (ESG) and future financial performance (FFP). Using a sample of EGX ١٠٠ listed companies from ٢٠١٤ to ٢٠٢٠, we find a positive relationship between ESG performance and FFP. We also find that firm-specific investor sentiment (F-SENT) is negatively associated with overall ESG performance, its individual categories, and FFP. While ESG performance generally leads to positive FFP, firm-specific investor sentiment weakens this relationship. This effect is not significant for overall ESG performance, but the governance category does show a significant negative relationship. The findings offer a detailed insight into the complex interactions between investors, ESG, and firm performance, specifically in the Egyptian market. These insights can guide managers and policymakers in decision-making processes, allowing them to craft strategies that align with investor behavior. This study enhances our understanding of

how firm-specific investor sentiment impacts ESG performance and FFP, contributing novel empirical insights to the relationship between ESG and FFP.

Keywords: Investor sentiment, future financial performance, ESG performance

١. Introduction

In light of the global financial crisis and decreasing stakeholder trust, various reforms have been introduced to boost environmental, social, and governance (ESG) practices. These practices involve a firm's commitment to environmental preservation, corporate social responsibility, and good governance. They include initiatives to reduce resource consumption, limit environmental emissions, sustain human rights, improve employment standards, engage with communities, and establish strong internal and external governance mechanisms (Kalia & Aggarwal, ٢٠٢٣; Yoon et al., ٢٠١٨).

In recent years, several studies have focused on the influence of ESG practices on financial performance (FP). Despite extensive research into this relationship, the findings have remained inconclusive, with some studies suggesting that ESG engagement improves FP and yields positive associations (Habib & Mourad, ٢٠٢٣; Nguyen et al., ٢٠٢٢; Fathony et al., ٢٠٢٠; Cho et al., ٢٠١٩). Conversely, other research (Ljungberg & Anton, ٢٠٢٢; Kao et al., ٢٠١٨) suggests a negative relationship, implying that ESG investments may have an

adverse effect on FP. Meanwhile, some studies such as Boukattaya & Omri (٢٠٢١) and Atan et al. (٢٠١٨) find no significant relationship between ESG and FP.

The combination of mixed results, global financial crises, and decreased trust from stakeholders has created the need for reforms aimed at enhancing ESG practices. (Kalia & Aggarwal, ٢٠٢٣; Yoon et al., ٢٠١٨). Similarly, Chen et al. (٢٠٢١) propose that ESG investment initially triggers a "Substitution Effect", resulting in a short-term adverse impact on FP. However, over time, this effect diminishes, giving way to a "Promotional Effect" in which ESG investment gradually boosts FP. In this scenario, a mutually beneficial relationship exists between ESG investment and FP, typically initiated by the former.

Furthermore, several prior studies have investigated the impact of firm-specific investor sentiment in various research areas, including finance (Baker & Wurgler, ٢٠٠٦), ESG performance (Brögger & Kronies, ٢٠٢٢), and FP (e.g., Ur Rehman, ٢٠٢٢; Xiang, ٢٠٢٢; Majid et al., ٢٠٢١). These studies have shown that F-SENT can impact its stock price, and consequently, its market value (Baker & Wurgler, ٢٠٠٧; Brown & Cliff, ٢٠٠٤). Investors with a positive outlook tend to have an overly optimistic assessment of a firm's future cash flows. As a consequence, stock prices can become inflated since they are determined by the present value of expected cash flows. Conversely, investors who hold pessimistic views tend to

undervalue future cash flows, leading to underpriced stocks (Boulton et al., ٢٠٢٠). Also, the sentiment of investors towards a specific firm can affect managerial decisions (Naughton et al., ٢٠١٩; Sun et al., ٢٠١٨; Alzahrani & Rao, ٢٠١٤; Zhaohui & Wensheng, ٢٠١٣). According to Sun et al. (٢٠١٨), in times when investor sentiment is pessimistic, managers tend to issue standalone ESG reports to address and modify investors' unfavorable perceptions. However, during periods of optimistic sentiment, overpriced stocks due to heightened investor optimism can lead managers to invest in less efficient projects. This can create an overinvestment problem, subsequently diminishing FP and overlooking potential projects when their stocks are underpriced (Alzahrani & Rao, ٢٠١٤; Zhaohui & Wensheng, ٢٠١٣; Grundy & Li, ٢٠١٠). Furthermore, Baker and Wurgler (٢٠١٣) argue that managers adjust their strategies based on the fluctuating investor sentiment. They do this by focusing on specific investment projects or restructuring the firm and its securities to optimize its attractiveness to investors.

Investors, as key stakeholders, are increasingly recognizing the growing importance of a firm's non-financial performance. According to the CFA Institute's report in ٢٠١٨, it was highlighted that ESG performance is primarily influenced by customer demand (CFA Institute Principles for Responsible Investment). Consequently, investor sentiment, or their perception of a firm, may be influenced by its ESG performance.

For instance, investors may view firms with superior ESG ratings as safer investment avenues than their lower-rated counterparts, leading to more optimism towards the former and pessimism towards the latter (Ford et al., ٢٠٢٢; Chen & Yang, ٢٠٢٠; Naughton et al., ٢٠١٩).

Stakeholders, including investors, exert external pressure on firms to improve their ESG initiatives. Investors, in particular, play an important role in shaping a firm's value. In recent research, scholars have begun investigating the correlation between investor sentiment and ESG activities. Cheong et al. (٢٠١٧) examine the influence of investors on firms' tendency towards responsible actions. They posit that firms might enhance their ESG efforts in the following year if investor sentiment was negative in the prior year, in a bid to repair their public image and regain investor confidence. Naughton et al. (٢٠١٩) also supported the impact of investor sentiment on ESG performance, indicating that firms step up their ESG strategies in response to investor pessimism. Vuong (٢٠٢٢) stated that this response is particularly prominent among firms that are more reactive to investor sentiment due to their investment horizon and valuation uncertainty.

The relationship between F-SENT, ESG, and FFP remains relatively unexplored, but existing evidence indicates that investor sentiment might influence these associations. This impact may be a result of the firm's strategic decisions, which aim to appeal to sentiment-driven investors. Naughton et al. (٢٠١٩) suggest that these

decisions involve striking a balance between two contrasting goals. One viewpoint stresses the importance of increasing the firm's long-term value through strategies that boost the risk-adjusted present value of future cash flows. On the other hand, an alternative perspective places considerable significance on maximizing the stock price by aligning with the preferences of sentiment-driven investors. However, the quantification and measurement of F-SENT and its effect on FFP and ESG performance remains largely under-researched, particularly in emerging economies. According to existing studies, investor sentiment becomes even more vital for emerging economies characterized by smaller, more volatile firms (Zainudin et al., ٢٠١٩; Baker and Wurgler, ٢٠٠٦). Therefore, examining F-SENT as a factor influencing future financial and ESG performance is particularly appropriate in the context of Egypt.

Our study aims to investigate how firm-specific investor sentiment influences the relationship between ESG performance and FFP among non-financial Egyptian firms from ٢٠١٤ to ٢٠٢٠. We employ principal component analysis (PCA) to develop the F-SENT index for accurate investor sentiment measurement. The PCA allows us to extract the most influential factors from a multitude of potential indicators, thus giving us a nuanced and comprehensive view of investor sentiment specific to each firm in our sample. Moreover, we utilize the ESG score to measure ESG performance, and Tobin's Q to measure FFP.

This study contributes to the existing literature in several ways. Firstly, we are among the first to empirically examine how F-SENT influences the relationship between ESG performance and FFP in Egypt. Secondly, it highlights the importance of F-SENT as a driving force behind future financial and ESG performance, thereby shedding light on a relatively underexplored area. Thirdly, by analysing ESG performance into categories, this study offers a detailed perspective on the ESG initiatives undertaken by Egyptian firms in reaction to firm-specific investor sentiment. Finally, by stressing the significant role that F-SENT plays in shaping a firm's ESG strategy, this research may spur ESG advocates to exert pressure on stakeholders, urging them to push firms towards enhancing their ESG endeavours. Overall, our evidence contributes to the literature of stakeholder and behavioural finance theories in explaining both the individual and interactive effects of F-SENT on FFP and ESG performance.

The structure of this research is outlined as follows: In Section ٢, the theoretical framework is discussed. Section ٣ presents a comprehensive review of the relevant literature and the development of hypotheses. Sections ٤ and ٥ delve into the research design, methodology, and findings. Lastly, in Section ٦, conclusions are drawn, and recommendations are presented.

٢. Theoretical Framework

Firms strategically undertake ESG investments to boost their long-term profits, build strong ties with the community, and win the trust of investors. This approach helps to reduce business and legal risks, supporting the firm's survival (e.g., Yoon et al., ٢٠١٨; Han et al., ٢٠١٦). Many studies have investigated the relationship between a firm's ESG performance, F-SENT, and FP of firms (e.g., Jaidi et al., ٢٠٢٢; Boukattaya & Omri, ٢٠٢١; Baker & Wurgler, ٢٠٠٧; Freeman & McVea, ٢٠٠٥). To understand these relationships, researchers have used different theories such as agency, stakeholder, and behavioural finance theories. Each of these theories proposes a unique proposition that guides the understanding of these relationships. These theories will be outlined herein, providing a foundation for subsequent hypothesis development.

According to agency theory, the management of a firm might make decisions that serve their own interests rather than those of the shareholders, including investing in ESG activities. These actions might be perceived as image-enhancement strategies or a waste of resources that could otherwise be distributed to shareholders (Friedman, ١٩٧٠). Managers might increase their investments in ESG initiatives to enhance their image as responsible members of the corporate community. This could create a positive or "warm-glow" effect. However, such an approach may negatively influence shareholder value and firm performance (Barnea and Rubin, ٢٠١٠).

This is because the cost of implementing ESG activities may be greater than the benefits, resulting in lower FP. Boukattaya and Omri (٢٠٢١) shed light on the potential adverse relationship between ESG performance and FP. They posit that managers may prioritize ESG initiatives to enhance their own reputation at the expense of FP and the firm's competitiveness.

Conversely, stakeholder theory suggests that ESG and FP have a positive relationship. This theory emphasizes that firms should consider the interests of all relevant parties, not solely those of the shareholders, when making decisions (Jaidi et al., ٢٠٢٢; Freeman & McVea, ٢٠٠٥). In essence, stakeholders' concerns should be integrated into strategies aiming at achieving both business growth and societal progress (Naseem et al., ٢٠٢٠). This theory suggests that satisfying stakeholders' demands could help firms acquire necessary resources, thereby improving FP (Kalia & Aggarwal, ٢٠٢٣; Nguyen et al., ٢٠٢٠; Aboud & Diab, ٢٠١٨). In addition, Cheng et al. (٢٠١٤) found that firms with strong ESG performance stemming from stakeholder engagement experience fewer financial constraints. Thus, management needs to carefully consider its relations with all stakeholders (Feng et al., ٢٠١٧). Supporting this, Ikram et al. (٢٠٢٠) indicate that the stakeholder theory offers insight into the importance and impact of ESG investment. The influence stakeholders exert on institutional change and firm reputation can enhance ESG efforts, thereby enhancing FP.

Recent empirical evidence also supports the stakeholder theory. It indicates that positive stakeholder perception of ESG performance can foster trust, impact stock prices positively, and, ultimately, improve a firm's FP (Habib & Mourad, ٢٠٢٣; Ademi & Klungseth, ٢٠٢٢; Carnini Pulino et al., ٢٠٢٢). This trust becomes even more crucial in times of unexpected crises, like the COVID-١٩ pandemic, helping firms maintain stable FP (Kalia & Aggarwal, ٢٠٢٣; Hwang et al., ٢٠٢١). Naughton et al. (٢٠١٩) also claim that investors perceive firms with superior ESG performance as more secure investment opportunities, which results in a rise in the value of the firm.

We also draw upon behavioural finance theory to understand the interplay among firm-specific investor sentiment, ESG performance, and FFP. Investors can be divided into two groups: irrational investors influenced by external sentiment and rational investors free from such influence (Baker & Wurgler, ٢٠٠٧). Investor sentiment can be defined as a tendency to speculate and a willingness to take risks (Baker & Wurgler, ٢٠٠٦). Alternatively, it may be viewed as beliefs regarding current investment risks and potential cash flows that may not be based on current circumstances (Baker & Wurgler, ٢٠٠٧). Brown and Cliff (٢٠٠٤) considered that sentiment reflects the market participants' expectations regarding a standard. An investor who is bullish (bearish) predicts returns are higher (lower) than average. Investor sentiment can significantly distort stock prices,

pushing them away from their fundamental values (Xiang, ٢٠٢٢). Classical finance theory states that, in efficient markets where stock prices reflect all pertinent information, investors, presumed to be rational, can expect returns commensurate with systematic risks. However, behavioural finance studies show that investors frequently exhibit irrational behaviour (sentiment) in inefficient markets, causing potential stock misvaluations due to faulty market mechanisms and irrational investor-induced noise then has an impact on FP (Kim & Lee, ٢٠٢٢; Xiang, ٢٠٢٢). When firm-specific investor sentiment is high, stock prices often experience a surge, though they eventually return to their fundamental value in the long run. Conversely, in periods of low firm-specific investor sentiment, stock prices typically start low and gradually increase over time (Sun et al., ٢٠١٨).

F-SENT plays a crucial role in influencing the formulation of firm strategy. Despite the importance of ESG performance, a firm's primary objective remains maximizing shareholder wealth. There remains an ongoing debate whether firms adopt ESG initiatives proactively to increase their FP or reactively, in response to investor demands for socially responsible conduct (Cheong et al., ٢٠١٧). Studies have provided evidence of an inverse relationship between investor sentiment and ESG disclosure. According to Bergman and Roychowdhury (٢٠٠٨), firms tend to strategically release positive news during periods of low investor sentiment to gain advantages. As Dhasmana et al.

(٢٠٢٣) pointed out, although ESG activities may not immediately stimulate a positive investor sentiment, they can have a favourable long-term impact on investors. Therefore, continuous ESG investment is key to generating favourable investor sentiment. Furthermore, according to Bofinger et al. (٢٠٢٢), a higher investor sentiment towards ESG can strengthen the effect of ESG performance on firm valuation measures. For example, a firm that is performing well with ESG might receive a higher value from investors. Investor sentiment is not merely about the stock market, but also about how a firm's ESG efforts can impact its value (Brøgger & Kronies, ٢٠٢٢; Serafeim, ٢٠٢٠). According to this theory, F-SENT can be a significant determinant of FFP. If investors have positive sentiment towards a firm's ESG activities, they are more likely to invest, leading to higher stock prices and better FP.

In sum, agency, stakeholder, and behavioural finance theories contribute to the understanding of the complex interplay between firm-specific investor sentiment, ESG performance, and FFP. They provide a theoretical lens to explain why and how these variables interact with each other in shaping the firm's FFP in Egypt.

٣. Literature review and hypotheses development

٣.١ ESG performance and FFP

In line with agency theory, it is posited that engaging in ESG activities could have adverse effects on FP. Advocates of this

theory argue that an emphasis on ESG might incur additional costs, which could adversely affect a firm's FP (Friedman, ١٩٧٠). This view has been supported by Ljungberg and Anton (٢٠٢٢), who demonstrate a negative correlation between ESG scores, and FP. Friedman (١٩٧٠) further asserts that ESG can be perceived as an agency problem, negatively impacting FP. Additionally, Kao et al. (٢٠١٨) highlight the possibility of opportunistic behavior by managers, which could result in a negative correlation between ESG performance and FP. Similarly, Duque-Grisales and Aguilera-Caracuel (٢٠٢١) found a negative correlation between ESG performance and FP. They attribute this relationship to the expenses involved in implementing ESG activities and the absence of sufficient institutional support. Moreover, firms that place substantial investments in ESG initiatives might find themselves having to divert operational resources, potentially leading to adverse effects on their overall performance.

On the other hand, stakeholder theory proposes that a firm's FP can be positively influenced by its ESG performance. Firms that actively pursue ESG initiatives are more likely to prioritize the welfare of all stakeholders, which can result in improved profitability, thus positively impacting their FP (for instance, Kim et al., ٢٠١٩; Li et al., ٢٠١٨). Cho et al. (٢٠١٩) find a positive relationship between ESG performance and firm's FP in Korea, attributing it to improved reputations and resolution of

potential disputes among stakeholders. In a similar vein, Javeed and Lefen (٢٠١٩) found a positive correlation between ESG performance and FP in the context of Pakistan. Their research highlights the significance of ESG activities in fostering trust and credibility both within the firm and among external stakeholders.

In line with stakeholder theory, previous studies (see for example, Habib & Mourad, ٢٠٢٣; Ademi & Klungseth, ٢٠٢٢; Vuong, ٢٠٢٢; Yoon et al., ٢٠١٨; Malik, ٢٠١٥) have shown that firms that adopt a long-term, sustainable strategy aligned with their stakeholders' interests can experience a variety of benefits, including improved FP. Additionally, a firm's ESG initiatives can enhance its performance through improved employee satisfaction, brand loyalty, and improved relationships with investors and other stakeholders (e.g., Carnini Pulino et al., ٢٠٢٢; Giang & Dung, ٢٠٢٢; Nguyen et al., ٢٠٢٢; Zeb et al., ٢٠٢١; Naseem et al., ٢٠٢٠; Habaragoda, ٢٠١٨).

In spite of this, some studies indicate that ESG does not significantly affect firm performance or market value (e.g., Boukattaya & Omri, ٢٠٢١; Atan et al., ٢٠١٨). This result is likely due to the multidimensional nature of ESG scores, and the complex trade-offs associated with investing in ESG activities. Finally, some studies offer mixed results (e.g., Kalia and Aggarwal, ٢٠٢٣; Chen et al., ٢٠٢١; Velte, ٢٠١٧; Han et al., ٢٠١٦). Chen et al. (٢٠٢١) find that while ESG initiatives might negatively affect a firm's short-term performance due to initial

costs and missed opportunities, they can boost long-term performance. Kalia and Aggarwal (٢٠٢٣) have pointed out that the connection between ESG scores and FP is not consistent across all firms, as it depends on the specific industry and economic context of the firm. Notably, they found positive effects in the healthcare sector of developed economies, while the effects were insignificant or negative in developing economies. Considering the mixed findings in the existing literature, we develop the first hypothesis for our study:

H1. There is a relationship between ESG performance and FFP.

٣.٢ Firm-specific investor sentiment and FFP

Behavioral finance theory posits that suggests that F-SENT has a significant effect on a firm's FP. When positive, it can increase stock prices, leading to overvaluation. In contrast, when negative, it can decrease prices, leading to undervaluation (Xiang, ٢٠٢٢; Baker & Wurgler, ٢٠٠٧). Numerous studies have demonstrated a positive correlation between investor sentiment and FP. In Portugal, Vieira et al. (٢٠١٩) found that when investors are optimistic, the market valuation of firms tends to rise. Similarly, in the Malaysian market, Zainudin et al. (٢٠١٩) have shown a positive link between investor sentiment and FP, specifically during instances when excessive confidence on the part of investors resulted in paying too much for firms. A similar pattern was found in the USA where Majid et al. (٢٠٢١) concluded that firm innovation leads to positive stock returns indicating

improved FP, a relationship that is strengthened by the presence of optimistic investors. In Japan, Vuong (٢٠٢٢), when firm-specific investor sentiment is high, it could encourage firms to work harder to enhance their FFP and get more positive results from their investments.

In contrast, a number of studies have demonstrated that investor sentiment and FP are inversely correlated. A recent study by Xiang (٢٠٢٢) stressed the importance of investor sentiment when determining a firm's FP and investment decisions. Specifically, firms that go public during a period of optimism exhibit a positive correlation between research and development expenditure and FP, while periods of pessimism engender a negative impact. In addition, Ur Rehman (٢٠٢٢) found that investor sentiment negatively affects FP, free cash flows, and future stock returns in Pakistan. According to Huang et al. (٢٠١٥), an investor excessive optimism about future cash flows results in drives the stock market's overvaluation. When low cash flows are gradually disclosed to investors, overvaluation will reduce, stock prices will drop, and there will be a low stock return in future.

Given this theoretical framework and the empirical evidence, we hypothesize that investor sentiment in Egypt, a market that can exhibit inefficiencies, may cause deviations in stock prices from their fundamental values. Therefore, sentiment-driven decisions

could cause big changes in stock prices, affecting a firm's FFP. Hence, therefore, our second hypothesis is:

H2. There is a relationship between F-SENT and FFP.

٣,٣ Firm-specific investor sentiment and ESG performance

According to behavioral finance theory, investor sentiment, which captures cognitive bias or noise trader risk, can have a significant impact on investment decisions and market outcomes (Baker & Wurgler, ٢٠٠٧). In the case of ESG performance, if investors demonstrate positive sentiment towards a firm's ESG performance, they are likely to perceive the firm as socially responsible and trustworthy. This perception can result in an increased demand for the firm's shares and stimulate further investment in ESG activities. In other words, behavioral finance theory posits that firms' efforts to improve their ESG performance may be more reactive to F-SENT.

Some studies have explored the connection between investor sentiment and ESG performance, but the findings are inconclusive. For instance, Cheong et al. (٢٠١٧) suggest that firms take a reactive approach to F-SENT and market sentiment by improving their ESG performance. Sun et al. (٢٠١٨) report that managers change their ESG disclosure strategies in response to investor sentiment, which enhances the relationship between F-SENT and ESG performance in China. Similarly, Vuong and Suzuki (٢٠٢١) find that F-SENT has a negative impact on ESG performance in Japan.

Further studies by Naughton et al. (٢٠١٩) and Chen & Yang (٢٠٢٠) reveal a positive link between F-SENT and ESG activities. For instance, Naughton et al. (٢٠١٩) find that when investors assign higher value to ESG achievements, the public announcement of ESG plans leads to unexpected positive returns. This implies that firms' commitment to ESG is likely swayed by the attitudes of investors. In addition, Chen and Yang (٢٠٢٠) indicate that in Taiwan, investors react positively to firms with high ESG ratings and negatively to firms with low ESG ratings, underscoring the role of investor sentiment in influencing ESG practices.

On the other hand, Dhasmana et al. (٢٠٢٣) identified a complex relationship between investor sentiment and ESG performance in Indian firms, where ESG performance variations influenced investor sentiment, but investor sentiment did not affect ESG performance, implying a lack of investor interest in the firms' ESG activities. Lastly, Ford et al. (٢٠٢٢) highlighted that in the U.S., firms boasting superior ESG scores primarily boosted investor optimism. Given the mixed empirical literature, however, our third hypothesis is that:

H3. There is a relationship between F-SENT and ESG performance.

٣.٤ ESG performance and FFP: The moderating effect of firm-specific investor sentiment

In line with the behavioral finance theory, firm-specific investor sentiment, defined as investors' collective attitude toward a

specific firm, may shape the firm's actions, including its ESG performance (Baker & Wurgler, ٢٠٠٧). When the sentiment is positive, firms are often incentivized to bolster their ESG performance to maintain or increase this favorable perception. In contrast, negative sentiment could diminish the connection between ESG performance and FFP, leading to an underestimation of superior ESG performance. Moreover, stakeholder theory suggests that firms bear responsibilities to all their stakeholders, which include addressing ESG issues (Freeman & McVea, ٢٠٠٥). A firm's engagement in ESG activities often reflects its commitment to meeting stakeholder expectations. Thus, positive investor sentiment may drive a firm to improve its ESG performance to meet these expectations, thereby indirectly influencing its FFP.

Empirical evidence provided by Vuong (٢٠٢٢) indicates that the connection between ESG performance and FP is lessened by investor sentiment in Japanese firms. In addition, Vuong & Suzuki (٢٠٢١) argued that internal or external pressures motivate firms to foster relationships with stakeholders, including investors, which consequently affects their ESG performance and FP. Cheong et al. (٢٠١٧) indicated that investors may favor firms with superior ESG performance. This result suggests that investor sentiment may play a significant role in influencing the ESG performance-FP relationship, particularly when the market outlook deteriorates, and investors seek to invest in safer assets.

Furthermore, Yi and Xiugang (٢٠١٨) concluded that investor sentiment causes stock price volatility and indirectly drives firms' inefficient investments, leading to a misallocation of social resources. This scenario may impede the growth of the capital market and reduce the relationship between ESG performance and FFP. Accordingly, we suggest that F-SENT may have a substantial impact on ESG performance and FFP. Hence, we develop the fourth hypothesis for our study.

H4. F-SENT moderates the relationship between ESG performance and FFP.

٤. Research methodology

٤.١ Data and sample

The initial sample comprises all firms listed on the EGX ١٠٠ index from ٢٠١٤ to ٢٠٢٠. However, ١٦١ firm-year observations from the financial sector were excluded due to unique accounting standards and rules. An additional ١١٤ firm-year observations without ESG scores were also eliminated. As a result, the analysis is based on a final sample comprising ٤٢٥ firm-year observations. Table (١) offers an in-depth breakdown of the research sample. As shown in Panel A of Table (١), the sample distribution over time is reasonably uniform across the years, ranging from ١٢,٢% to ١٦%. The sample's time distribution, displayed in Panel B of Table (١), includes firms from twelve industries. The Real Estate industry makes up the largest

proportion of the sample (٢١,٦%), followed by Food, Beverages and Tobacco (١٨,٦%), and Basic Resources (١٤,٦%).

Data relating to FFP, and firm-specific investor sentiment were gathered from firms' annual financial reports, as well as the Bloomberg and DataStream databases. Furthermore, ESG score data were sourced from the Risk Management Department of the Egyptian Stock Exchange.

Table ١: Sample composition

Panel A. Time distribution		
year	frequencies	%
٢٠١٤	٥٢	١٢,٢
٢٠١٥	٥٦	١٣,٢
٢٠١٦	٥٥	١٢,٩
٢٠١٧	٦٢	١٤,٦
٢٠١٨	٦٨	١٦
٢٠١٩	٦٨	١٦
٢٠٢٠	٦٤	١٥,١
Total	٤٢٥	١٠٠
Panel B. Industry distribution		
Industry	frequencies	%
Food, Beverages, and Tobacco	٧٩	١٨,٦
Basic Resources	٦٢	١٤,٦
Building Materials	٣١	٧,٣
Contracting& Construction Engineering	٢٠	٤,٧
Industrial Goods, Services and Automobiles	٢١	٤,٩
Shipping & Transportation Services	٢٧	٦,٤
Travel & Leisure	٢٨	٦,٦
Textile & Durables	٢٩	٦,٨
Health Care & Pharmaceuticals	٢٠	٤,٧
Real Estate	٩٢	٢١,٦
Trade & Distributors	٧	١,٦
Paper & Packing	٩	٢,١
Total	٤٢٥	١٠٠

٤,٢ Model specification and variable definition

To test our hypotheses regarding firm-specific investor sentiment and ESG performance's impact on FFP, we run the following multivariate regression models using ordinary least squares (OLS). Firstly, to test the effect of ESG performance on FFP (H^١), we develop the following empirical model:

$$\text{Tobin's } Q_{it} = \beta_0 + \beta_1 L.ESG_{it-1} + \beta_2 MTB_{it-1} + \beta_3 FSIZE_{it-1} + \beta_4 LEV_{it-1} + \beta_5 GRO_{it-1} + \beta_6 Industry + \beta_7 Year + e_{i,t} \quad (1)$$

Secondly, to test the effect of F-SENT on FFP (H^٢), we develop the following model:

$$\text{Tobin's } Q_{it} = \beta_0 + \beta_1 F-SENT_{it-1} + \beta_2 MTB_{it-1} + \beta_3 FSIZE_{it-1} + \beta_4 LEV_{it-1} + \beta_5 GRO_{it-1} + \beta_6 Industry + \beta_7 Year + e_{i,t} \quad (2)$$

Thirdly, to test the effect of F-SENT on ESG performance (H^٣), we develop the following model:

$$ESG_{it} = \beta_0 + \beta_1 F-SENT_{it-1} + \beta_2 MTB_{it-1} + \beta_3 FSIZE_{it-1} + \beta_4 LEV_{it-1} + \beta_5 GRO_{it-1} + \beta_6 Industry + \beta_7 Year + e_{i,t} \quad (3)$$

Finally, to examine the moderating effect of F-SENT on the relationship between ESG performance and FFP (H^٤), we develop the following model:

$$\begin{aligned} \text{Tobin's } Q_{it} = & \beta_0 + \beta_1 F\text{-}SENT_{it-1} + \beta_2 L\text{-}ESG_{it-1} + \beta_3 F\text{-}SENT * \\ & L\text{-}ESG_{it-1} + \beta_4 MTB_{it-1} + \beta_5 FSIZE_{it-1} + \beta_6 LEV_{it-1} + \beta_7 \\ & GRO_{it-1} + \beta_8 Industry + \beta_9 Year + e_{i,t} \end{aligned} \quad (4)$$

where i and t represent firm and year, respectively. Tobin's Q is used as a forward-looking measure of FFP. This ratio is calculated by adding the firm's book value of liabilities to its market value of equity, and then dividing it by the total assets of the firm (Vuong, 2022; Zainudin et al., 2019).

ESG performance (ESG): The S&P/EGX ESG Index is utilized in this study as an indicator of a firm's ESG performance. This index, as the first ESG index in Egypt, offers investors an effective tool to evaluate and compare the ESG performance of firms within the EGX 100. It also encourages firms to enhance their ESG practices and reporting, thereby gaining a competitive advantage that may attract more investment. The index thus plays a critical role in guiding sustainable investment decisions and improving overall ESG performance within the Egyptian stock market. It is jointly managed by S&P Dow Jones Indices and the Egyptian Exchange (EGX), with the former responsible for index development and ESG criteria establishment, and the latter handling the computation and management of the ESG scores for listed firms (EGX, 2021).

Firms are evaluated on the basis of publicly disclosed information using two screens, one concentrating on

environmental & social indicators (ES) and the other on governance indicators (GOV). The composite ESG score for every firm is ascertained through a blend of both quantitative and qualitative assessments: (١) A quantitative score, derived from two factors the transparency and disclosure (T&D) of each firm's ESG practices. Then, the raw values for each factor are computed. After that, these values were standardized to ensure equitable comparisons between firms. (٢) A qualitative score assessed using unbiased data sources such as news articles, websites, and ESG filings, enables the index to evaluate each firm's actual performance beyond their formal disclosures. The composite score for each firm is the sum of the quantitative and qualitative scores, with firms then ranked based on these composite scores to determine the top ٣٠ firms that can be included on ESG index.

Firm-specific investor sentiment (F-SENT): In this study, we adopt the methodology employed in previous research (Vuong, ٢٠٢٢; Ur Rehman, ٢٠٢٢; Vuong & Suzuki, ٢٠٢١; Seok et al., ٢٠١٩) by employing principal component analysis (PCA) to measure the F-SENT index. This process is divided into four stages. Firstly, prior to executing the PCA, we eliminate any “rational” influences. In line with Baker and Wurgler's orthogonalization procedure (٢٠٠٦), we regress each proxy against a set of microeconomic variables (firm fundamental factors). These variables include firm size, return

on assets before interest, return on assets, earnings per share, dividends, cash holdings, cash flow from operations, tangible assets, and investment expenses. Consequently, every firm in a specific time period holds the same value; thus, firm-specific investor sentiment is time-variant. The irrational component is represented by the residuals obtained from this orthogonalization process.

In the second stage, we construct the F-SENT index. Unlike Baker and Wurgler (٢٠٠٦), we apply firm-specific investor sentiment (Vuong, ٢٠٢٢; Kim et al., ٢٠٢١) instead of market sentiment. Using PCA, we assess five modified proxies (or residuals) obtained from the first stage and their lagged variables. These proxies include overnight returns (SR), price earnings ratio (PE), log of trading volume (LTV), turnover ratio (Dturn), and adjusted turnover ratio (ADturn) (e.g., Dhasmana et al., ٢٠٢٣; Fu et al., ٢٠٢١; Seok et al., ٢٠١٩; Aboody et al., ٢٠١٨; Han & Li, ٢٠١٧).

In the third stage, we calculate the bivariate correlation coefficients between the five adjusted proxies from stage (١) and the index from stage (٢). Then, we select sentiment proxies that correlate significantly with the index from the second stage. Finally, after selecting three components - overnight returns (SR), log of trading volume (LTV), and turnover ratio (Dturn) - that are significantly and positively correlated with the F-SENT index, we repeat the PCA. The first principal component derived

from this analysis represents the F-SENT index. The calculated PCA explains ٦١% of the variance. After the stages previously mentioned, the F-SENT is calculated as follows:

$$F-SENT_{i,t-1} = .059 SR_{i,t-1} + .963 LTV_{i,t-1} + .963 Dturn_{i,t-1}$$

Control variables: In line with prior studies, we incorporated several control variables that could potentially influence the analyzed relationships (see, for instance, Ford et al., ٢٠٢٢; Vuong, ٢٠٢٢; Naughton et al., ٢٠١٩; Sun et al., ٢٠١٨). These include the market-to-book ratio (MTB), firm size (FSIZE), financial leverage (LEV), and growth ratio (GRO). Table ٢ provides a comprehensive description of all variables included in our analysis.

Table ٢. Variable definitions

Variable	Symbol	Description and Measurement
Dependent variable		
Future financial performance	Tobin's Q	(Book value of liabilities+ market value of equity) / total assets
Independent variable		
Firm-specific investor sentiment	F-SENT	Principal component of overnight return, log trading volume, and turnover ratio.
Environmental, Social, and Governance performance	ESG	The firm's performance in relation to environmental, social, and governance activities.
Control variable		
Market-to-book	MTB	Market value of equity / book value of equity.

Variable	Symbol	Description and Measurement
ratio		
Firm size	FSIZE	Log of total assets.
Financial leverage	LEV	Total liability / total assets.
Growth ratio	GRO	(Revenue of past year - revenue of current year)/ revenue of past year.
Firm- specific investor sentiment index		
Overnight returns	SR	$\frac{O_{i,j} - C_{i,j-1}}{C_{j-1}}$ $O_{i,j}$ is the stock's opening price of firm i in day j. $C_{i,j-1}$ is the stock's closing price of firm i in previous day.
Price earnings ratio	PE	The relative value of market price and earnings per share.
log trading volume	LTV	This variable indicates investor participation, with a large value of LTV can be interpreted as high optimistic investor sentiment (Luo et al., ٢٠٢١).
Turnover ratio	Dturn	= Average change in the monthly share turnover. = (monthly share turnover of the firm (i) during the current year - monthly share turnover during the past year). Where monthly share turnover is calculated as (monthly trading volume /the total number of shares traded during the month). High Dturn refers high demand from sentiment investors, which causes rational investors to leave the market and contributes to the volatility of the financial markets (Han & Li, ٢٠١٧).
Adjusted turnover ratio	ADturn	$\frac{TV_{i,t}}{N \text{ of outstanding shares}} \times \frac{R_{i,t}}{R_{i,t}}$ $TV_{i,t}$ is trading volume of share (i) at year (t) ,

Variable	Symbol	Description and Measurement
		and $R_{i,t}$ is return on share (i) at year t. A positive ADturn indicates greater trading activity; it can be interpreted as optimistic expectations. While, A negative ADturn indicates smaller trading activity, it can be interpreted as pessimistic expectations (Kim & Lee, ۲۰۲۲; Luo et al., ۲۰۲۱).

۵. Empirical results and discussion

۵,۱

Descriptive

statistics

Table ۳ presents the descriptive statistics for all variables used in the analysis. It reveals that the mean of Tobin's Q is ۱,۵۲۷, with a standard deviation of .۹۰۴, suggesting that the sampled firms are generally valued favorably by the market. This result is consistent with Boukattaya & Omri (۲۰۲۱), and the standard deviation is relatively high, indicating a significant variation among them. Furthermore, the mean of F-SENT is .۷۶۶, with a standard deviation of .۶۰۴. These findings are consistent with earlier research (Fu et al., ۲۰۲۱; Anusakumar, ۲۰۱۷), providing valuable insights into investor sentiment consistency among the firms studied. Table ۳ also reveals that the average ESG performance is ۱۲۱,۸۱۴, with a standard deviation of ۸,۶۳۱. These findings are consistent with earlier research (Ghardallou, ۲۰۲۲). It is evident from this distribution that firm listed on the EGX ۱۰۰ exhibit a wide range of ESG performance.

Table ۳: Descriptive statistics

Variables	Mean	Median	S.D.	Minimum	Maximum
Tobin's Q	١,٥٢٧	١,١٦٢	.٩٠٤	.٠٣	٣,٣٩
F-SENT	.٧٦٦	.٧٦٤	.٦٠٤	-.٧٢	٢,٢٥
ESG	١٢١,٨١٤	١٢٠,٠٠٠	٨,٦٣١	١٠١,٧٠	١٤٥,٧٠
MTB	١,٩٠٢	١,٢٦٩	١,٧٢٦	-١,٧٢	٥,٥١
FSIZE	٢٠,٩٨٩	٢١,٠٦٤	١,٥٠٤	١٦,٩٦	٢٤,٤٧
LEV	.٤١٠	.٣٨١	.٢٤٨	.٠٠	١,٠٥
GRO	-.١٤٧	-.١١٦	.٤١٣	-١,٠٢	.٧٢

Table ٤ presents the results of a Pearson correlation matrix for all variables involved in the regressions. There is a positive association between Tobin's Q and ESG, MTB, and LEV, with a ١% significance threshold, and a negative association with F-SENT. In addition, the low correlation among all the independent and control factors suggests that multicollinearity is not a significant concern. This result is further corroborated by the variance inflation factors (VIF), all of which fall below ٤, indicating no multicollinearity.

Table ٤: Correlation matrix

Variables	١	٢	٣	٤	٥	٦	٧
١. Tobin's Q	١						
٢. F-SENT	-.٢١٣***	١					
٣. ESG	.١٧٤***	.٠٥٨	١				
٤. MTB	.٦٠٥***	-.٠٩٩**	.١٧١***	١			
٥. FSIZE	.٠٤٧	-.٠٥٦	.٣٩٨***	.١٧٨***	١		
٦. LEV	.٢٤١***	-.١٣١***	-.٠٧٠	.٠٦٥	.٠٨١*	١	
٧. GRO	.٠٤٤	.٠٢٨	.٠١٣	-.٠٤٠	-.٠٨٣*	-.٠٣٨	١

Note: *, **, and *** represent significance at 0.10, 0.05, 0.01 respectively.

٥,٢ Regression analyses and discussion

Table ٥ shows the regression results of the effects of ESG performance and F-SENT on FFP, as measured by Tobin's Q. Model ١ in Table ٥ reveals that the adjusted R^2 value is ٠,٥٠٩. This indicates that ٥٠,٩% of the variability in the FFP can be explained by the independent and control variables. It also demonstrates a positive association between ESG performance and Tobin's Q ($t = ١,٦٩٠$, $p = ٠,١٠$), supporting Hypothesis ١ (H_1). This finding is consistent with previous studies (e.g., Habib and Mourad, ٢٠٢٣; Giang & Dung, ٢٠٢٢; Javeed and Lefen, ٢٠١٩), indicating a significant positive effect of ESG performance on FFP. This finding is also consistent with stakeholder theory, suggesting that by participating in ESG initiatives, firms can obtain essential resources and meet the expectations of stakeholders, leading to improved FP in the following years (e.g., Kalia & Aggarwal, ٢٠٢٣; Nguyen et al., ٢٠٢٠; Aboud & Diab, ٢٠١٨). Among the control variables, the MTB and LEV ratios were found to be positively associated with FFP.

Moving to Model ٢ of Table ٥, the adjusted R^2 value is ٠,٥١٠, indicating that ٥١% of the variation in the FFP can be explained by the independent and control variables. Moreover, F-SENT shows a statistically significant negative relationship with Tobin's Q ($t = ١,٨٨٣$, $p = ٠,٠٥$), which gives empirical support for Hypothesis ٢ (H_2). This result aligns with related studies

(e.g., Ur Rehman, ٢٠٢١; Huang et al., ٢٠١٥; Baker & Wurgler, ٢٠٠٦), indicating that F-SENT adversely affects FFP. This evidence further supports the behavioral finance theory, suggesting that low F-SENT in the current year may improve FP in the subsequent year (Xiang, ٢٠٢٢; Baker & Wurgler, ٢٠٠٧). A possible explanation could be that pessimistic investors may encourage firms to reduce investments and focus on more valuable investment projects, thereby enhancing future financial prospects. Conversely, high investor sentiment might lead to overinvestment in projects with negative NPV, consequently diminishing FFP.

Table ٥: The effect of ESG performance and F-SENT on FFP

Variables	Tobin's Q					
	Model (١)			Model (٢)		
	β	Std. Error	t-value	β	Std. Error	t-value
Constant	.٤٦٣	.٦٣٢	.٧٣٣	١,١٢٩	.٥٤٦	٢,٠٦٩**
L.ESG	.٠٠٧	.٠٠٤	١,٦٩٠*			
F-SENT				-.١٠٩	.٠٥٨	-١,٨٨٣**
MTB	.٢٨٩	.٠٢٠	١٤,٢١٧***	.٢٨٩	.٠٢٠	١٤,٢٠٥***
FSIZE	-.٠٤١	.٠٢٧	-١,٥٢٨	-.٠٢٥	.٠٢٥	-١,٠٠٥
LEV	.٨٠٩	.١٣٢	٦,١١٨***	.٧٥٤	.١٣٢	٥,٧٢٣***
GRO	.١٠٣	.٠٧٨	١,٣٢٦	.١٠٣	.٠٧٨	١,٣٢٦
Year	Included			Included		
Industry	Included			Included		
F-value	٢١,٠١٢***			٢١,٠٧٩***		
R ^٢	٠,٥٣٥			٠,٥٣٦		
Adjusted R ^٢	٠,٥٠٩			٠,٥١٠		
VIF	less than ٤			less than ٤		

Observations ٤٢٥

٤٢٥

*Note: *, **, and *** represent significance at 0.10, 0.05, 0.01 respectively.*

Table ٦ presents the results of OLS regressions, investigating the impact of F-SENT on ESG performance and its moderating role in the relationship between ESG performance and FFP. In Model ٣ of Table ٦, the adjusted R^٢ value is ٠,٢٧٤, indicating that %٢٧,٤ of the change in the ESG is interpreted through the control and independent variables. Also, it is evident that there is a significant negative relationship between F-SENT and ESG performance ($t = -٣,٣١٢$, $p = ٠,٠٠١$). Accordingly, this finding provides empirical support for Hypothesis ٣ (H٣). This result suggests that negative F-SENT in the previous year may motivate the firm to improve its ESG performance in the following year. This, in turn, may improve its reputation and attract additional investments. This evidence is consistent with several empirical studies (e.g., Vuong & Suzuki, ٢٠٢١; Cheong et al., ٢٠١٧), indicating a significant adverse impact of F-SENT on ESG performance. Firms exhibiting low F-SENT tend to enhance their ESG performance as a strategic response to modify negative investor expectations. Conversely, firms with high F-SENT are less likely to improve ESG performance. In relation to the control variables, our findings indicate that firms characterized by higher MTB ratios, larger sizes, and lower LEV ratios are more likely to enhance their ESG performance.

To test Hypothesis ٤, which examines whether F-SENT moderates the relationship between ESG performance and FFP, we created an interaction variable between ESG performance and F-SENT variables (i.e., F-SENT*L.ESG). Model ٤ of Table ٦ shows that the adjusted R^٢ value is .٥١٣. This indicates that ٥١,٣% of the variability in the FFP can be explained by the control and independent variables. The regression results show that the coefficient associated with F-SENT * L.ESG in relation to Tobin's Q has a negative value ($t = -٠,٦٨٠$, $p < .٠٧٢$). However, it lacks statistical significance. This result suggests that there is no moderating influence of F-SENT on the relationship between overall ESG performance and FFP.

Table ٦: The effect of F-SENT on ESG performance and its moderating role in the ESG performance -FFP relationship

Variables	Model (٣) ESG			Model (٤) Tobin's Q		
	β	Std. Error	t-value	β	Std. Error	t-value
Constant	٧٢,٦١٢	٦,٣١٧	١١,٤٩٥***	.٤٤٧	.٦٣٥	.٧٠٤
F-SENT	-٢,٢١٠	.٦٦٧	-٣,٣١٢***	-.١٣٦	.٠٦٠	-٢,٢٥٨**
L. ESG				.٠٠٩	.٠٠٤	٢,٠٧١**
F-SENT * L.ESG				-.٠٠٥	.٠٠٨	-.٦٨٠
MTB	.٥٤٦	.٢٣٥	٢,٣١٧**	.٢٨٥	.٠٢٠	١٣,٩٦٤***
						*
FSIZE	٢,٣٣٦	.٢٩٢	٧,٩٩٢***	-.٠٤٣	.٠٢٧	-١,٥٩١
LEV	-٤,٠٧١	١,٥٢٤	-٢,٦٧٢***	.٧٨٣	.١٣٢	٥,٩١٥***
GRO	.٧٦٧	.٨٩٩	.٨٥٤	.٠٩٥	.٠٧٨	١,٢٢٨
Year	Included			Included		
Industry	Included			Included		
F-value	٨,٢٨٥***			١٩,٦٢٣***		

R ²	٠,٣١٢	٠,٥٤١
Adjusted R ²	٠,٢٧٤	٠,٥١٣
VIF	less than ٤	less than ٤
Observations	٤٢٥	٤٢٥

*Note: *, **, and *** represent significance at 0.10, 0.05, 0.01 respectively.*

٥,٣ Additional analysis and robustness checks

We conducted several further analyses to ensure the robustness of our results. First, in an effort to control potential omitted variable bias, we included additional control variables. We used Chief Executive Officer Duality (CEO-Duality) and the existence of independent directors on the board (B-IND). The CEO duality is measured using a dummy variable equal to ١ when the CEO also serves as the chairman and ٠ otherwise. The variable B-IND is defined as the percentage of independent members on the board (Zeb et al., ٢٠٢١; Huang et al., ٢٠١٥). Taking into account the additional variables, we have replicated our models shown in Tables ٥ and ٦. The results are presented in Tables ٧ and ٨ and are similar to those presented in Tables ٥ and ٦.

Table ٧: Additional analysis: the effect of ESG performance and F-SENT on FFP

Variables	Model (١) Tobin's Q			Model (٢) Tobin's Q		
	β	Std. Error	t-value	β	Std. Error	t-value
Constant	.٦٠٥	.٦٥٧	.٩٢٢	١,٤٣٣	.٥٨٠	٢,٤٧١**
L ESG	.٠٠٩	.٠٠٤	٢,١٤٩**			
F-SENT				-.١٠٩	.٠٥٧	-١,٩٠٤**
MTB	.٢٨٨	.٠٢٠	١٤,٢٣٩***	.٢٨٨	.٠٢٠	١٤,٢٥٢***
FSIZE	-.٠٤٩	.٠٢٧	-١,٨٢٥*	-.٠٢٩	.٠٢٥	-١,١٤٩

LEV	.٧٥٥	.١٣٤	٥,٦١٩***	.٦٩٢	.١٣٤	٥,١٤٩***
GRO	.١١٠	.٠٧٧	١,٤١٨	.١٠٩	.٠٧٨	١,٤٠٥
B-IND	-.٤٣٠	.١٥٧	-٢,٧٤٥***	-.٤٠٧	.١٥٦	-٢,٦٠٤***
CEO-Duality	.٠٧٠	.٠٧٨	.٩٠٠	.٠٥١	.٠٧٨	.٦٥٣
Year	Included			Included		
Industry	Included			Included		
F-value	١٩,٩٠٣***			١٩,٨١٣***		
R ^٢	٠,٥٤٥			٠,٥٤٤		
Adjusted R ^٢	٠,٥١٨			٠,٥١٧		
VIF	less than ٤			less than ٤		
Observations	٤٢٥			٤٢٥		

Note: *, **, and *** represent significance at 0.10, 0.05, 0.01 respectively.

Table ٨: Additional analysis: the effect of F-SENT on ESG performance and its moderating role in the ESG performance -FFP relationship

Variables	Model (٣) ESG			Model (٤) Tobin's Q		
	β	Std. Error	t-value	β	Std. Error	t-value
Constant	٧١,٢٠٥	٦,٧٢٨	١٠,٥٨٣***	.٥٩٢	.٦٦٠	.٨٩٧
F-SENT	-٢,٢٠٦	.٦٦٧	-٣,٣١٠***	-.١٤٤	.٠٦٠	-٢,٤٠٥**
L. ESG				.٠١١	.٠٠٤	٢,٥٧٥***
F-SENT * L.ESG				-.٠٠٧	.٠٠٨	-.٨٨٩
MTB	.٥٥٥	.٢٣٥	٢,٣٦٢**	.٢٨٣	.٠٢٠	١٣,٩٨٥***
FSIZE	٢,٣٤٩	.٢٩٢	٨,٠٤٢***	-.٠٥١	.٠٢٧	-١,٨٩٥*
LEV	-٣,٧٠٠	١,٥٦٠	-٢,٣٧٢**	.٧٢٣	.١٣٤	٥,٣٨٣***
GRO	.٦٧٣	.٩٠٠	.٧٤٨	.١٠١	.٠٧٧	١,٣١٢
B-IND	٢,٧٧٨	١,٨١٢	١,٥٣٣	-.٤٤٨	.١٥٦	-٢,٨٧٢***
CEO-Duality	-١,٤٣٥	.٩٠٣	-١,٥٩٠	.٠٧٣	.٠٧٨	.٩٣٤
Year	Included			Included		
Industry	Included			Included		
F-value	٧,٩٠٨***			١٨,٧٧٥***		

R ²	٠,٣٢٣	٠,٥٥٢
Adjusted R ²	٠,٢٨٢	٠,٥٢٣
VIF	less than ٤	less than ٤
Observations	٤٢٥	٤٢٥

*Note: *, **, and *** represent significance at 0.10, 0.05, 0.01 respectively.*

Second, we decomposed ESG performance into two ESG categories: Environmental and Social performance (ES) and Governance performance (GOV). We then further examined the influence of these ESG categories on FFP and the moderating role of F-SENT in this relationship. Several key findings emerged from this supplementary analysis: (١) The results shown in Table ٩ are similar to our previous findings, revealing a positive statistically significant relationship between ESG categories (L.GOV , L.ES) and Tobin's Q at the ٥% and ١٠% significance levels, respectively. Moreover, GOV exhibits a more pronounced impact on FFP in comparison to ES, which is consistent with previous studies (e.g., Velte, ٢٠١٧; Han et al., ٢٠١٦). A possible reason for this observation might stem from Egypt's sustained emphasis on governance practices since the "Egyptian Guide to Corporate Governance" was released in ٢٠٠٥. (٢) Interestingly, unlike the overall ESG performance, the moderating effect of F-SENT on the relationship between the GOV category and Tobin's Q (F-SENT * L.GOV) is a negative statistically significant while the effect of F-SENT on the relationship between ES category and Tobin's Q (F-SENT * L.ES) is not significant. More specifically, the moderating effect of F-SENT is insignificant at the level of overall ESG performance or within the ES category. However, the GOV category exhibits a significant negative association in the

presence of F-SENT. Thus, these findings provide partial support for Hypothesis ٤.

Table ٩: The effect of ESG categories on FFP and the moderating role of F-SENT in this relationship

Variables	Model (١) Tobin's Q			Model (٢)& (٤) Tobin's Q		
	β	Std. Error	t-value	β	Std. Error	t-value
Constant	١,٥٦٥	.٥٨٨	٢,٦٦١**	١,٧٥٧	.٥٨١	٣,٠٢٣***
F-SENT				-.١٤٦	.٥٥٨	-٢,٥٠٨***
L.GOV	.٠٠٨	.٠٠٤	٢,٢١٣**	.٠٠٩	.٠٠٤	٢,٥٧٣***
L.ES	.٠٤٨	.٠٢٥	١,٨٦٩*	.٠٤٣	.٠٢٥	١,٧١٧*
F-SENT*L. GOV				-.٠١٤	.٠٠٧	-٢,٠٨٣**
F-SENT*L. ES				.٠٢٦	.٠٥١	.٥١٢
MTB	.٢٨٦	.٠٢٠	١٤,١٨٣***	.٢٨١	.٠٢٠	١٣,٩٨٥***
FSIZE	-.٠٤٤	.٠٢٦	-١,٧٠٧*	-.٠٤٢	.٠٢٦	-١,٦٢٦
LEV	.٧٥٨	.١٣٤	٥,٦٧٤***	.٧١٢	.١٣٤	٥,٣٢٣***
GRO	.٠٩٨	.٠٧٧	١,٢٦١	.٠٧٨	.٠٧٧	١,٠٠٧
B-IND	-.٤١٧	.١٥٥	-٢,٦٨٧***	-.٤١٢	.١٥٥	-٢,٦٦٥***
CEO-Duality	.٠٤٩	.٠٧٨	.٦٢٧	.٠٥٤	.٠٧٧	.٧٠٣
Year	Included			Included		
Industry	Included			Included		
F-value	١٩,٤٤٢***			١٧,٩٥٢***		
R ^٢	.٠,٥٥٠			.٠,٥٦١		
Adjusted R ^٢	.٠,٥٢٢			.٠,٥٢٩		
VIF	less than ٤			less than ٤		
Observations	٤٢٥			٤٢٥		

Note: *, **, and *** represent significance at 0.10, 0.05, 0.01 respectively.

Finally, we examined the effect of F-SENT on the subsequent performance of ESG categories. We re-ran Equation ٣, using ESG categories. The results, reported in Table ١٠, remain consistent in terms of sign and significance, implying that

our evidence is robust when estimating a lagged F-SENT - ESG structure. This result is consistent with prior studies (e.g., Vuong & Suzuki, ٢٠٢١; Cheong et al., ٢٠١٧), which suggest that negative F-SENT in the previous year may motivate a firm to enhance its ESG performance in the subsequent year. Firms with low F-SENT are more likely to improve their Governance (GOV) and Environmental and Social (ES) performance to alter investors' pessimistic expectations.

Table ١٠: The effect of F-SENT on ESG categories

Variables	Model (٣) GOV			Model (٣) ES		
	β	Std. Error	t-value	β	Std. Error	t-value
Constant	- ١٦,٠٢٤	٨,٠١٣	-٢,٠٠٠**	- ٤٢,٦٥٨	٧,٧١٩	-٥,٥٢٦***
F-SENT	- ٢,٦٤١	.٧٩٤	- ٣,٣٢٧***	- ١,٤٩٢	.٧٦٥	- ١,٩٥٢**
MTB	.٤٠٢	.٢٨٠	١,٤٣٧	.٧٢٦	.٢٦٩	٢,٦٩٣***
FSIZE	٢,٥٥٦	.٣٤٨	٧,٣٤٨***	٢,١٢٢	.٣٣٥	٦,٣٣٢***
LEV	-٢,٩٤٠	١,٨٥٨	-١,٥٨٣	-٢,٠٤٥	١,٧٨٩	-١,١٤٣
GRO	.٥٩٨	١,٠٧٢	.٥٥٧	١,٣٣٧	١,٠٣٣	١,٢٩٤
B-IND	٥,٨٦٣	٢,١٥٨	٢,٧١٧***	١,١٣٤	٢,٠٧٩	.٥٤٦
CEO-Duality	-١,٨٥٥	١,٠٧٥	-١,٧٢٦	-.٥١٠	١,٠٣٥	-.٤٩٢
Year	Included			Included		
Industry	Included			Included		
F-value	٧,٨٦٧***			٧,٢٤١***		
R ^٢	٠,٣٢٢			٠,٣٠٤		
Adjusted R ^٢	٠,٢٨١			٠,٢٦٢		
VIF	less than ٤			less than ٤		
Observations	٤٢٥			٤٢٥		

Note: *, **, and *** represent significance at 0.10, 0.05, 0.01 respectively.

٦. Conclusions and Recommendations

This study investigates the role of firm-specific investor sentiment in moderating the association between ESG performance and Financial Firm Performance (FFP). Drawing upon agency theory, stakeholder theory, and behavioral finance theory, our comprehensive analysis encompasses a dataset of ٤٢٥ firm-year observations from firms listed in Egypt from ٢٠١٤ to ٢٠٢٠. To the best of our knowledge, this is the first study to empirically investigate the moderating effect of firm-specific investor sentiment on the relationship between ESG performance and FFP in the Egyptian business environment.

Our results show a positive relationship between ESG performance and FFP, lending empirical support to Hypothesis ١. This indicates that strengthening ESG strategies and stakeholder relationships could enhance FFP of Egyptian firms, providing additional support for the stakeholder theory. In addition, we find that F-SENT negatively affects FFP and ESG performance, which supports the behavioral finance theory that emphasizes the influence of irrational investor behavior on these outcomes. This result confirms Hypothesis ٢ and ٣. Finally, although the relationship between ESG performance and FFP is positive, this relationship weakens in the presence of F-SENT. Specifically, this relationship becomes insignificant when evaluated at the level of overall ESG performance. However, within the various categories of ESG performance, the governance category exhibits

a significant negative association in the presence of firm-specific investors' sentiment. Thus, these findings provide only partial support for Hypothesis ٤.

This research offers several theoretical and practical implications, particularly relevant to the Egyptian context. The results of this research offer vital practical implications for firm management and policy makers. Remarkably, the positive association between ESG performance and FFP suggests that firms should consider bolstering their ESG strategies. By doing so, they can enhance relationships with their stakeholders, thereby improving their FFP. This could be particularly useful in the Egyptian business landscape, where ESG performance could become a strategic tool to increase firm competitiveness and sustainability. Moreover, the significant negative relationship between F-SENT and both FFP and ESG performance highlights the need for firms to effectively manage investor expectations and perceptions. This could involve transparency in operations, timely and accurate disclosures, and engagement in dialogue with investors to align their understanding with the firm's strategic objectives. Theoretically, our research extends stakeholder theory by providing empirical evidence that supports the positive effect of ESG strategies on FP in an emerging economy. It further strengthens the behavioral finance theory by confirming the significant role of investor sentiment, irrational behaviors, in influencing financial and ESG performance.

This study has some limitations and suggestions for future research. Firstly, our analysis is limited to Egyptian firms, limiting the generalizability of our findings. The variability of investor sentiment, ESG performance, and financial indicators across differing cultural, political, and economic landscapes implies the need for replications of this study across varied institutional and cultural contexts. Secondly, our research focuses on how F-SENT moderates the relationship between ESG and FFP. For future research, it would be beneficial to replicate our study with an emphasis on evaluating the impact of market sentiment. Finally, our study's quantitative focus may not fully capture the complexity of the relationships studied. Future research could benefit from qualitative methods, such as interviews, to get in-depth insights from stakeholders like investors and firm managers. This would enrich the understanding of the dynamics between firm-specific investor sentiment, FFP, and ESG performance. Despite these limitations, we believe that our study offers significant contributions to understanding the dynamic interaction between F-SENT, ESG performance, and FFP in the Egyptian context.

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