TOWARDS A GREEN TOBIN'S Q HOW ESG FACTORS AFFECT FIRM TOBIN'S Q VALUE; THE CASE OF EGYPT: AN EMPIRICAL STUDY

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Scientific Journal for Financial and Commercial Studies and Research (SJFCSR)

Faculty of Commerce – Damietta University

Vol.5, No.1, Part 1., January 2024

APA Citation:

Yusuf, N. H. (2024). Towards a Green Tobin's Q How ESG factors affect Firm Tobin's Q Value; The Case of Egypt: An Empirical Study, ***Scientific Journal for Financial and Commercial Studies and Research***, Faculty of Commerce, Damietta University, 5(1)1, 707-734.

Website: https://cfdj.journals.ekb.eg/

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Abstract

The current study aimed to find the impact of environmental, societal, and governmental factors on the firm's performance. Additionally, the study tried to build knowledge about the importance of the mentioned factors as one of the trends towards the value of the green Topin's Q. Using the data of 70 Egyptian firms listed on the Egyptian Stock Exchange during the period from 2017 to 2022, the study results showed a significant impact of all the tested factors on the firms' Tobin'q. Based on the study findings, it is suggested that firms included in the Egyptian Sustainability Index should prioritize various initiatives aimed at empowering women and youth, donations, establishment of reward systems, greater attention to healthcare, involve individuals with special needs, support artistic initiatives and civic participation towards education and scholarships, community relief efforts, establish sustainability committees, and adopt more environmentally friendly manufacturing protocols specifically related to packaging and waste disposal.

KEYWORDS: ESG- Tobin's Q- Firm Performance-Egyptian Firms-
ESG factors

1. Introduction

Given the growing global attention towards sustainable development in societies and economies, particularly in emerging contexts, it is imperative to prioritize and diligently pursue comprehensive measures and research in order to accomplish this objective in both the immediate and long-term according to the World Bank report[1].

The World Bank has played a pivotal role in the development and implementation of various new financial instruments, including green bonds, catastrophe bonds, emissions-linked finance, and other performance-based instruments. Nevertheless, there was a strong emphasis on the need to greatly extend the utilization of current instruments and enhance the level of innovation. The establishment of robust collaborations and effective communication among various stakeholders, particularly international banking institutions, governments in emerging market economies, and financial intermediary institutions like the World Bank, plays a pivotal role in attaining the Sustainable Development Goals, which encompass essential climate objectives.

In the current context of international business, the incorporation of environmental, social, and governance (ESG) elements into corporate strategy has evolved beyond being solely an ethical obligation and has instead emerged as a crucial catalyst for firm performance. In the face of a range of complex issues, including climate change, social inequality, and instances of corporate governance shortcomings, there is a growing expectation for firms to make a beneficial societal impact alongside their pursuit of financial prosperity. The emerging paradigm shift has given rise to a growing corpus of research focused on understanding the complex relationship between environmental, social, and governance (ESG) factors and the firm's financial performance.

[1] The report is available at https://www.worldbank.org/en/publication/wdr2023.

The current study aimed to explore the significant overlap between sustainable firm practices and financial performance. ESG factors encompass a wide range of concerns, spanning from environmental sustainability (E), which includes elements such as carbon emissions, resource efficiency, and environmental stewardship, to social responsibility (S), which encompasses areas such as labor practices, diversity and inclusion, and community engagement. Lastly, governance (G) covers aspects such as board structure, executive compensation, and ethical conduct.

In a period characterized by increased stakeholder engagement, investor expectations for transparency, and regulatory pressures, it is crucial to comprehend the degree to which environmental, social, and governance (ESG) variables impact the performance of firms. The evaluation of a firm's performance is crucial in determining its capacity to generate value for both its shareholders and broader society. This assessment is often conducted using financial measures, market valuation, and considerations of long-term sustainability.

The current study undertakes a thorough and meticulous analysis of the relationship between environmental, social, and governance (ESG) variables and the performance of firms. Consequently, the study offered relevant perspectives for a diverse range of stakeholders, including investors, corporate executives, legislators, and scholars. Moreover, the study aimed to investigate the mechanisms and routes by which environmental, social, and governance (ESG) practices influence financial performance, hence enhancing comprehension of the underlying causal links.

The current study will be formulated as follows, Literature review and hypotheses development, research importance, research methodology, discussion, limitations, recommendation and future research, and summary and conclusions.

1.1 Background

Given the ongoing discussion regarding ethical and sustainable business practices, there is a growing necessity for a thorough and substantiated examination of the influence of environmental, social, and governance (ESG) factors on the performance of companies that contribute to the formulation of policies that effectively harmonize financial objectives with societal and environmental considerations.

Within the domain of Accounting and Finance, Tobin's Q has emerged as a prominent measure for evaluating the performance and worth of firms and has also been utilized as an approximation for firm's asset replacement cost (Lewellen & Badrinath, 1997; Lindenberg & Ross, 1981; Ayuba et al., 2019). The extensive application of this metric demonstrates its ability to effectively capture crucial elements pertaining to firm's financial well-being and choices regarding investments.

Tobin's Q is one of the most valuable measurements for firm valuation. Tobin's Q is a measure of corporate performance developed by Nobel laureate James Tobin in 1969. The theory states that Tobin's Q ratio, which is the market value of the firm's assets divided by its replacement cost, indicates the relative efficiency of the firm and can be used to differentiate between efficient and inefficient firms (Tobin, 1969). It is seen as one of the most important financial ratios as it helps assess the performance of businesses. Moreover, it has become an important factor in evaluating investment opportunities in the public and private sectors (Rana et al, 2022). Faria et al., (2022), derives a "Green Tobin's Q" from a dynamic stochastic model which expresses the firm's green efforts (technology and pressure). They provide evidence of a negative impact on Tobin's Q from green technologies and a positive impact on Tobin's Q from green stockholder pressure. Furthermore, they provide empirical evidence regarding pressing issues in the energy transition. Hence, it can be inferred that elevated Q ratios are indicative of the market ascribing greater performance to the firm, taking into consideration these unrecorded aspects and highlights the complex relationship between financial markets, the assessment of assets, and the intangible elements that contribute to a firm's worth (Lewellen & Badrinath, 1997).

Previous research has provided insights into its efficacy as a beneficial financial measure. In contrast to conventional historical financial performance metrics, Tobin's Q incorporates a firm's market value relative to its asset replacement cost, hence offering valuable insights into its prospective growth and investment prospects. The capacity to compare the statistic across different industries ensures its continued relevance and usefulness in evaluating enterprises operating in diverse economic sectors, so making it a valuable instrument for financial analysis and decision-making.

Also**,** Tobin's Q, a frequently employed metric in financial analysis, has encountered criticism from multiple academicians and researchers. Numerous scholarly investigations have brought attention to substantial apprehensions regarding the efficacy and precision of Tobin's Q. A frequently voiced criticism is that the Tobin's Q ratio is considered excessively volatile, hence compromising its reliability as a tool for evaluating firm performance (Shepherd, 1986). Moreover, it has been argued that Tobin's Q suffers from intrinsic measurement inaccuracies, which further diminishes its reliability as a robust indicator (Mizik & Jacobson, 2009).

An alternative viewpoint about Tobin's Q is that it is regarded as a biased metric susceptible to yielding erroneous positive outcomes (Bendle & Butt, 2018). The presence of this bias has generated skepticism over its appropriateness for a precise assessment of firm valuation. Consequently, an increasing cohort of academics has initiated inquiries on the precision and relevance of Tobin's Q within the context of modern financial analysis. According to Gregory (2021), it is argued that Tobin's Q suffers from a significant level of measurement error, rendering it an inaccurate statistic.

Aligning the points of view of EMH and market confidence more closely when investors maximize their profits and consider all available information when making investment decisions the market participants believe a firm has the ability to present an opportunity, which will increase a firm's worth relative to its assets and the firm market confidence.

According to (Lim and Mali, 2023) a firm with a higher Tobin's Q performance is thought by investors (market confidence) to have a better chance of surviving the firm cycle than one with a lower level of market confidence.

1.2 The Egyptian Exchange (EGX) Sustainability Efforts

The Egyptian Exchange (EGX) is a strong proponent of sustainable development, which aims to satisfy existing needs without jeopardizing the capacity of future generations to satisfy their own. To ensure the prosperity of future generations, EGX will support any sustainable firm practices that would adopt more eco-friendly and energy-efficient solutions. The Sustainable Stock Exchanges program (SSE), started by the UN Secretary-General in 2009, includes four pioneering exchanges, including EGX. The S&P EGX ESG index, the first and only ESG index in the Middle East and North Africa region was also introduced by EGX in March 2010. Its goal is to track the performance of firms listed on EGX that exhibit leadership in environmental, social, and corporate governance (ESG) concerns. The World Federation of Exchanges' Sustainability Working Group (SWG), which was founded in March 2014, counts EGX as an active participant. In fact, in May 2016, EGX was elected Vice Chairman of the SWG for a two-year term that ended in May 2018. Additionally, to oversee its CSR initiatives and guarantee that charitable donations made by EGX, its staff, or market players are used appropriately, the exchange has established an internal committee that works with the ministry of social solidarity.

In 2016 the Egyptian Exchange issued "Model Guidance for Reporting on ESG Performance and SDGs," which aims to promote transparency in the capital market and ensures that listed companies can develop a clear concept of sustainability to issue sustainability reports disclosing their sustainability policies and performance. EGX Model Guidance helps listed companies issue periodical sustainability reports highlighting their performance and practices related to environmental, social, and governance issues, as sustainability reports are considered one of the most important factors influencing investment decisions taken by both institutional and individual investors[2].

[2] The ESG Model Guidance for Reporting on ESG Performance and SDGs can be downloaded from https://www.egx.com.eg/getdoc/98b4f610-5544-4f93-a36e-636d3baf8f45/EGX-Model-Guidance-on-ESG_en-11-10-2016.aspx.

1.2.1 EGX Sustainability Affiliates

EGX is an active member of many international affiliates includes

- Sustainable Stock Exchanges (SSE) Initiative-2012.
- SSE Green Finance Advisory Group.
- WFE Sustainability Working Group (SWG)-2014.
- The United Nations Global Compact (UNGC) – 2016.
- Women's Empowerment Principles (WEPs)-2016.
- Global Investor Statement on Climate Change-2015.
- Marrakech Pledge-2016.
- Financial Stability Board (FSB) Task Force on Climate-related Financial Disclosures (TCFD).
- The African Securities Exchanges Association (ASEA) Sustainability Working Group.

EGX has been an active member of the Sustainable Stock Exchanges Initiative (SSE) since 2012. EGX, together with four other stock exchanges (NASDAQ, Johannesburg, Ibovespa, and Borsa Istanbul), joined to make a public commitment to apply sustainability practices in the Egyptian market, thereby becoming an SSE Partner Exchange. Moreover, EGX launched a Sustainability Committee in 2016, aiming to provide the necessary consultations to manage sustainability at EGX. The Committee includes specialized experts in sustainability.

In compliance with the Global Reporting Initiative (GRI) G4 Standards, EGX released its first annual sustainability report[3] in partnership with its Sustainability Advisory Committee (SAC). The report highlights EGX's accomplishments concerning developing sustainability concepts, incorporating its sustainability strategy into daily operations to effectively manage the Environmental, Social, and Governance (ESG) risks that may arise from its daily operations and activities, and ultimately transitioning to being a sustainable organization.

[3] EGX Sustainability Reports are available at https://www.egx.com.eg/en/Sustainability-Reports.aspx.

Recently, In February 2021, the Financial Regulatory Authority established the regional Center for Sustainable Finance (RCSF). RCSF aims to provide environmentally financial tools for the non-banking sector; in addition, the center aims to enhance the efficiency of raising awareness regarding sustainable finance by launching awareness programs, capacity building, and training not only in Egypt but in the Middle East and Africa as well. The center also aims to disseminate knowledge and partner with reputable bodies and companies.

1.2.2 Financial Regulatory Authority (FSA)Sustainability Efforts

The Financial Regulatory Authority was established by Law No. 10 of 2009 in Egypt. The Authority is responsible for the control and supervision of non-bank financial markets and instruments, including capital markets, futures exchanges, insurance activities, real estate finance, financial leasing, factoring, consumer finance, securitization, and movable guarantees. Regarding sustainability, recently, the Financial Regulatory Authority has launched a proactive work program that enhances policies, regulations, and practices related to sustainability to safely cross into a future full of opportunities for non-financial financial markets.

Banking includes money markets, insurance activities, real estate finance, financial leasing, factoring, medium, small, and microfinance, and consumer finance. Hence, the Financial Supervisory Authority worked on several axes, namely[4]:

- Enhancing sustainability-related disclosures: Disclosure of environmental, social and governance practices related to sustainability and financial disclosures related to climate change
- Leading Women Empowerment
- Green and sustainable finance.

[4] For more details about Financial Regulatory Authority (FSA)Sustainability Efforts refer to the Sustainability Report 2021 at https://fra.gov.eg/wp-content/uploads/2021/06/%D8%AA%D9%82%D8%B1%D9%8A%D8%B1-%D8%A7%D9%84%D8%A7%D8%B3%D8%AA%D8%AF%D8%A7%D9%85%D8%A9-final.pdf.

1.3 Research Problem

In light of the global trend toward a green economy and sustainability, it has become imperative that scientific research be in line with international practical trends, that research efforts should also intensify for more knowledge to answer many questions related to sustainability in general and the impact of its factors in particular on economies locally and internationally. The research problem is to answer the following questions:

1. Is ESG factors affect the Tobin's Q of Egyptian firms?
2. Is there is a way toward the Green Tobin's Q in Egypt?

1.4 Research Aims

The current study aims to examine and explain the role of environmental, social, and governmental factors on the firm performance measured by the Tobin's Q. Furthermore, the study also aims to suggest other factors that may help further measure the Green Tobin's Q.

1.5 Research objectives

The purpose of this study is to explore the Egyptian ESG firms. The study's main objective is divided into the following sub-objectives:

1. Explore the role of environmental, social, and governmental factors in firm performance.
2. Testing the ESG factors to the Egyptian firms' Tobin's Q ratio.
3. Building more knowledge relating to the important factors to formulate the green Tobin's Q in Egypt.

The current study will be formulated as follows; Literature review and hypotheses development, research importance, research methodology, discussion, limitations, recommendation, and future research, and summary and conclusions.

2. Literature Review and hypotheses development

According to (Brainard & Tobin, 1968), the Q-theory of investment states that a Q greater than unity stimulates investment, i.e., when capital is valued more highly in the market than it costs to produce it, investment flows to this opportunity for growth.

(Friedman, 1970) is considered the first to start researching and defining corporate social responsibility (CSR), as he stated in his research in 1969 that firms, in general, practice social responsibility to obtain more profits. Many other studies follow Friedman and explore more profoundly social responsibility in terms of the environment, society, and government (Bissoondoyal et al., 2023; Maji & Lohia, 2023; Kaiser, 2020; Xie et al, 2019; Bhandari & Javakhadze, 2017; Dutordoir, Strong, & Sun, 2018; Griffin, Neururer, & Sun, 2018; Griffin & Mahone, 1997; Hamilton, Jo, & Statman, 1993; Margolis et al., 2009; Renneboog, Ter Horst, & Zhang, 2008b; Renneboog, Ter Horst, & Zhang, 2011).

Similarly, mixed evidence was delivered about the role of environmental information on firms' performance (Mendiratta et al., 2023; Halid et al., 2023; Nguyen et al., 2022; Carnini et al., 2022; Koundouri et al (2021); Nordhaus, 2002; King & Lenox, 2002; Buonanno et al., 2003; Elsayed and Paton, 2006; Newell, 2007; Popp, 2006; Konar and Cohen, 2001).

From a theoretical perspective, (Fatemi et al., 2015) build a theory and develop a model of the firm that delineates the circumstances under which such CSR expenditures may affect the firm value. They analyze the effect of CSR engagement on the firm value by combining the effects of CSR expenses on growth, cost of capital, and probability of survival. They also illustrate the impact of interactions amongst these effects on share value.

Recently, (Gupta et al., 2022) examine how the sustainability practices (ESG scores) affect the firm financial performance measured by (Tobin's Q) and (Market-to-Book ratio) in India for 89 publicly listed firms from 2015 to 2020. Their results support a positive relationship between the firm performance, whether measured by Tobin's Q and Market-to-book ratio, the combined ESG scores, and the individual social pillar scores. The findings imply that an investment in social activities and improving overall ESG scores can enhance financial efficiency and increase the firm market value. In contrast, individual environmental and governance scores have a weak relationship (negative with Tobin's Q and Market-to-book ratio variable), demonstrating that investment in these activities may lead to a lower level of financial efficiency and a decrease in market value.

Moreover, (Jinji et al., 2022) investigate the firm’s choice of globalization mode according to the value of Tobin’s Q in Japan. Their findings indicate that Tobin’s Q is negatively related to the ratio of foreign outsourcing (FO) to Foreign Direct Investment (FDI) which explained by the dominance of a higher technology transfer cost for knowledge capital and the imperfect contractibility of knowledge capital over multi-plant economies of scale. Moreover, they show that the relationship between Tobin’s Q and an MNE’s mode choice for globalized activity somewhat differs from the relationship between productivity and a multinational enterprises (MNE’s) choice of the mode for globalized movement.

Furthermore, Kurniawat et al., (2022) Obtained empirical evidence of the impact of sustainability reports and disclosure on firm value and profitability in manufacturing sector firms listed on the Indonesia Stock Exchange for 2016-2020. Using11 manufacturing firms, they prove that sustainability report disclosure affects firm value and profitability, strengthening the sustainability report's positive effect on firm value.

In other sector, Hamzah et al., (2022) examined the Indonesian banking sector, the role of Good Corporate Governance (GCG) in moderating the influence of Corporate Social Responsibility (CSR) on firm performance as proxied by ROE, ROA, and Tobin's Q. Using 9 banks' data for 10 years, they found that CSR has a significant effect on ROA and Tobin's Q. Furthermore, they reveal that managerial ownership alleviates the influence of CSR on ROA and Tobin's Q; meanwhile, institutional ownership is able to strengthen the influence of CSR on ROA and alleviates the influence of CSR on ROE.

With different techniques Gregory, (2021) argued that Tobin's Q results in measurement error due to the effect of Environmental, Social, and Governance factors on productivity and capital structure decisions, which also leads to biases in ROA, and ROE. They recommend more use of alternative measures of corporate financial performance with errors-in-variables estimation techniques that could minimize the effects of the mismeasurements.

Using firm-level and panel data Ishaq et al., (2021) examined the misperceived connection between firm performance and Tobin's Q for 51 Pakistanian manufacturing firms. Using firm-level data and a panel least squares regression estimator to test if the firms' improved operating efficiency impact Tobin's Q. They examined the relative importance of scale decisions versus the cost discipline of firms. Their results found a declining performance (in terms of under-investments) to either bear no impact or inflate Tobin's Q with high statistical significance.

On an international level, Mardini, (2022)[5] used a sample of all non-financial listed firms in 35 countries (7,081 firms) between 2012–2020 to investigate the effect of environmental, social, and governance (ESG) factors on corporate financial performance (CFP). The study finds that both environmental and governance factors play a vital role in enhancing CFP both for the market (Tobin's Q to satisfy stakeholders' decision-making needs) and accounting (return on assets and return on equity) indicators whereas, the social factor has a negative and significant effect on CFP (drains the firm's resources, influence the firm's reputation, and may lead to competitive disadvantage) for market indicators and a negative but not significant effect on CFP for accounting indicators.

In Egypt, Concerning the economic effects of ESG disclosures in Egypt, Aboud and Diab, (2018) demonstrated in their findings that firms listed in the ESG index have greater firm values and that there is a correlation between firm value as evaluated by Tobin's Q and higher index ranks for firms. In 2019 , Aboud and Diab, (2019) further updated their study and examine the recent political volatility in Egypt to test the combined impact of environmental, social, and governance (ESG) ratings on Egyptian companies' market and financial performance (measured by the liquidity,

[5] (Mardini, 2022) uses a sample of 35 countries; Egypt is not among them.

trading volume, and return on assets). to determine the influence of the recent political revolutions on the association between ESG practices and corporate performance. Using the 100 most active Egyptian companies from 2007 to 2016 in the Egyptian Stock Exchange they examine the period from 2007 to 2010 as the pre-revolution period and from 2012 to 2016 as the post-revolution period. They provide evidence of the impact of ESG ratings on financial performance.

Moremover, Helfaya et al., (2022) examined the status quo of environmental goals' disclosures (EGDs) on Egyptian corporate sustainability ratings and firm value. Using the top 100 listed companies in the EGX (EGX-100) from 2009-2014, the study results show that with the high variability and inconsistency of EGDs, EGDs impact both the sustainability ratings and firm value with positive market reactions.

In addition, El-Hendawy et al., (2021) using the panel data of 66 Egyptian firms from year 2010 to 2018 found that ESG factors fully (Role duality and ROE) and partially (audit reputation, role duality and ownership concentration with return on asset. mediates the relationships between corporate governance indicators and firm performance without any mediating role to the relationship between corporate governance and Tobin's Q.

Based on the aforementioned literature, the current study deems it crucial to examine the influence of social responsibility factors in a subsequent timeframe, building upon earlier research conducted in Egypt. Following the enactment of binding legislation by the Egyptian government and relevant authorities within the same framework, the current study holds significance due to its incorporation of the assessment of corporate social responsibility variables and their effects on health, economy, finance, and society during the period of the Corona epidemic.

Based on this, the current study examines the role of environmental, social, and governmental information on firms' Tobin's Q ratio.

H_0: Firms' Tobin's Q is not affected by Egypt's environmental, social, and governmental information.

H_1: Firms' Tobin's Q is affected by Egypt's environmental, social, and governmental information.

3. Research Importance

The current study investigates the nexus between financial performance measured by Tobin's q and environmental efforts; environmental, social, and governmental information and provides valuable policy implications to regulators, investors, creditors, and market participants engaging with Egyptian ESG firms. Further, the study focuses, in particular, on theorizing under what conditions Tobin's q becomes a function of green efforts.

4. Research Methodology

This paper follows a quantitative approach and constructs an empirical model to investigate the evident impacts of the role of firm environmental, social, and governmental information on firms' Tobin's Q ratio.

The study methodology will be covered through the research design, Data sample and description, Research Model, and statistical analysis and empirical results.

4.1 Research Design

The current study follows the Given, (2008) approach as a quantitative method for testing the nexus between financial performance measured by Tobin's Q and environmental efforts, social, and governmental information. (Gupta et al., 2022; Jinji et al., 2022; Kurniawat et al., 2022; Hamzah et al., 2022; Gregory, 2021; Ishaq et al., 2021; Mardini, 2022, and Aboud and Diab, 2018) address and examines the role of ESG factors on firm performance with different methodologies and samples. The current study examines how the financial performance measured by Tobin's Q is affected by ESG information in Egyptian firms. The following sections discuss the data sample and description, research model, statistical analysis, and empirical results.

4.2 Data Sample and Description

The study data span from the year 2017 to 2022. The sample included 70 Egyptian firms[6] resulting in a total of 420 firm-year observations. The study data collected from:

1- Egyptian Stock market.

2- Egyptian Financial Supervisory Authority.

3- Mubasher Egypt website.

4- Egypt for Information Dissemination – EGID.

5- Firms web sites.

4.3 Research Model

The current study Individually tested the research hypotheses using multivariate regression to examine how the financial performance measured by Tobin's Q is affected by ESG information in Egyptian firms over 2017, 2018, 2019, 2020, 2021, and 2022. The study uses the Tobin's Q ratio as the measure of firm's performance. According to (Li et al., 2018 and Wang et al, 2015), Tobin's Q reflects the firm's past and future financial performance.

H_0: Firms' Tobin's Q is not affected by Egypt's environmental, social, and governmental information.

H_1: Firms' Tobin's Q is affected by Egypt's environmental, social, and governmental information.

$$TQ_{it}= \beta_0+ \beta_1 SIM_{it} + \beta_2 SSC_{it}+ \beta_3 TA_{it}+ \beta_4 LEV_{it}+ \beta_5 SEC_{it} +\varepsilon_{it}$$

Variables:

TQ_{it}: **Tobin's Q**, market capitalization plus long-term debt divided by the book value of total assets.

[6] Financial firms and banks were omitted from consideration due to their distinct characteristics.

SIMit: Firm Sustainability index membership; a dummy variable that is coded as 1 if the firm is included in the ESG index and set to zero otherwise.

SSCit: Firm Sustainability score; the maximum value is 100 and is given to the best firm in the index, and the second-best firm is scored as 99.

TA_{it}*: *Firm total assets logarithm.

LEV_{it}: Firm leverage measured by the total debt divided by total assets.

SEC_{it}: Firm sector.

β: Estimated variables parameters.

ε_{it}: the error term.

4.4 Statistical Analysis and Empirical Results

4.4.1 Statistical Descriptive

Table (1)
Statistical Descriptive

Variables	*Maximum*	*Minimum*	*Mean*	*Standard deviation*
TQ_{it}	5895.29	2.03	130.79	707.2
SIMit	4	0	1.14	1.81
SSCit	9.11	0	0.77	2.06
TA_{it}	1.9	0.004	1.8	3.28
LEV_{it}	30.47	0.01	2.24	3.61

4.4.2 Empirical Results

To discover the statistically significant differences of the ESG factors to Firms' Topin's Q ratio, a Multiple regression test was conducted. This part summarizes and discusses the overall results for examining the study hypothesis; the tests are structured as follows:

H_0: Firms' Tobin's Q is not affected by Egypt's environmental, social, and governmental information.

Table (2)
Regression analysis results

Variables	Coefficient	T value	Sig
SIMit	0.165	3.2	0.001
SSCit	0.252	4.2	0.004
TA_{it}	0.074	3.2	0.001
LEV_{it}	0.202	0.893	0.011
Adj R^2	0.23		

Table (2) shows that the coefficients of firm sustainability index membership and firm sustainability score are positive and significant (0.165, 0.252), respectively and that both firms sustainability index membership and sustainability score affect the firm value in a higher Tobin's Q. Furthermore, the control variables of total assets and leverage both significant and positive relation with Tobin's Q value (0.074, 0.202) ensuring the prior results of (Clarkson et al., 2013) that both total assets and leverage increase firms Tobin's Q value.

4.4.3 Hypothesis Results

The overall results from the analysis indicate the following results

Table (3): Hypotheses results

Hypothesis	**Decision**
H_0: *Firms' Tobin's Q is not affected by Egypt's environmental, social, and governmental information.*	Rejected
H_1: Firms' Tobin's Q is affected by Egypt's environmental, social, and governmental information.	Accepted *
* Significance	

As shown in Table (3), the null hypothesis was rejected. Therefore, the alternative hypothesis was accepted, implying that ESG factors strengthen a firm's performance by building better customer loyalty relationships, and economic, and employee productivity which amplify the stockholder's insights for firms which consistent with other studies results (Carnini et al., 2022; Koundouri et al, Fatemi et al, 2017; Guidry and Patten, 2010; Clarkson et al., 2013).

5. Discussion

Since the term "sustainability[7]" emerged in 1972 as a global political driver that directs nations' economic and strategic future, many studies have provided essential indications of the impact of interest in the applications of sustainability practices toward sustainable development on the countries' economy in general and on firms' financial performance in particular. Many studies (Eccles et al., 2014; Fatemi et al., 2017; Harjoto and Jo, 2015; Yadav et al., 2016) have indicated the impact of environmental, societal, and governance factors on the firm's financial performance. The current study examines the role of environmental, social, and governmental factors on firms' Tobin's Q value. Results show that ESG factors affect the firms' Tobin's Q, and that firms sustainability index membership and firm Sustainability score both significantly affect firms Tobin's Q. Moreover, consisting with previous studies both total assets and leverage (control variables) are significantly and positively affecting firms Tobin's Q.

The current study believes, through its results, that Egyptian Sustainability Index firms should direct more of their practices towards women and youth empowerment activities, donations, developing reward systems, in addition to more attention to health care, more involvement of people with special needs, and support for artistic initiatives and civic participation (education, scholarships, etc.), community relief, the formation of sustainability committees, and more environmentally friendly manufacturing protocols related to packaging.

[7] The first international conference to make the environment a top priority was the United Nations Conference on the Environment in Stockholm in 1972. The Stockholm Declaration and Action Plan for the Human Environment, as well as a number of resolutions, were all endorsed by the participants as guiding principles for good environmental management. The definition was initially issued by the report of the Brundtland Commission in 1987, emanating from the World Commission on Environment and Development, supported by the United Nations.

6. Limitations

Although a significant step in evaluating Tobin's Q's efficacy empirically, the present study has its limitations. First, the current study relies on data from a single emerging market. We expect that our findings are generalizable to other emerging and developed markets. Future research that uses longitudinal data of firms operating in diverse industries in multiple markets would help confirm our expectations. Second, the study confirms the apprehensions of scholars who raised their concerns against Tobin's Q's use, considering its inherent bias. However, the study does not assess the magnitude or extent of bias generated by Tobin's Q compared to other performance measures. A study that tackles this issue would provide valuable insights and has promising research potential.

7. Recommendation and Future Research

Based on the study results and its related discussion, several recommendations have been presented as follows:

1. Replications of the current study are needed to validate the current study results.
2. Future research also may test other firm performance measures.
3. Future research also may address longitudinal changes and investigate other Egyptian firms.

8. Summary and Conclusions

This study investigated the impact of environmental, societal, and governmental factors on firm value, as measured by the Tobins Q. It is known that the aforementioned factors are among the factors related to sustainability and one of the main axes of green influence on investor decisions, according to (Faria et al., (2022). The results of the current study indicated that environmental, social and corporate governance factors affect the companies' Tobin Q, and that the membership of companies in the sustainability index and the degree of firm sustainability significantly affect the companies' Tobin Q. Moreover, consistent with previous studies, both total assets and financial leverage (control variables) significantly and positively influence Tobin Q in Egyptian firms.

References

Aboud, A., & Diab, A. (2018). The Impact of Social, Environmental and Corporate Governance Disclosures on Firm Value: Evidence from Egypt. *Journal of Accounting in Emerging Economies*. Retrieved at https://www.emerald.com/insight/content/doi/10.1108/SAMPJ-06-2018-0167/full/pdf.

Aboud, A., & Diab, A. (2019). The financial and market consequences of environmental, social and governance ratings: The implications of recent political volatility in Egypt. *Sustainability Accounting, Management and Policy Journal*.

Ayuba, H., Bambale, A. J. A., Ibrahim, M. A., & Sulaiman, S. A. (2019). Effects of Financial Performance, Capital Structure and Firm Size on Firms' Value of Insurance Companies in Nigeria. Journal of Finance, Accounting & Management, 10(1).

Bendle, N. T., & Butt, M. N. (2018). The misuse of accounting-based approximations of Tobin's q in a world of market-based assets. *Marketing Science*, *37*(3), 484–504. https://doi.org/10.1287/mksc.2018.1093.

Bissoondoyal-Bheenick, E., Brooks, R., & Do, H. X. (2023). ESG and firm performance: The role of size and media channels. *Economic Modelling*, *121*, 106203.

Brainard, W. C., & Tobin, J. (1968). Econometric models: Their problems and usefulness. American Economic Review, Papers and Proceedings, 58, 99–122.

Bhandari, A., & Javakhadze, D. (2017). Corporate social responsibility and capital allocation efficiency. Journal of Corporate Finance, 43, 354-377.

Buonanno, P., Carraro, C., Galeotti, M. (2003). Endogenous induced technical change and the costs of Kyoto. Resource and Energy Economics 25 (1), 11–34.

Butt, M. N., Baig, A. S., & Seyyed, F. J. (2021). Tobin's Q approximation as a metric of firm performance: an empirical evaluation. *Journal of Strategic Marketing*, 1-17.

Carnini Pulino, S., Ciaburri, M., Magnanelli, B. S., & Nasta, L. (2022). Does ESG disclosure influence firm performance? Sustainability, 14(13), 7595.

Clarkson, P.M., Fang, X., Li, Y. and Richardson, G.D. (2013), "The relevance of environmental disclosures: are such disclosures incrementally informative?", Journal of Accounting and Public Policy, Vol. 32 No. 4, pp. 410-431.

Dutordoir, M., Strong, N. C., & Sun, P. (2018). Corporate social responsibility and seasoned equity offerings. Journal of Corporate Finance, 50, 158-179.

EL-Hindawy, M. A. M.; Shusha, A.; and Rady, A. M. (2021). Corporate Governance, Environmental and Social Responsibility and Firm Performance: Evidence from Egypt, *Scientific Journal for Financial and Commercial Studies and Research*, Faculty of Commerce, Damietta University, 2(1), pp. 455- 526.

Elsayed,K. & Paton, D. (2005). The impact of environmental performance on firm performance: static and dynamic panel data evidence. Structural Change and Economic Dynamics, 16 (3), 395-412.

Eccles, R.G., Ioannou, I. and Serafeim, G. (2014), "The impact of corporate sustainability on organizational processes and performance", Management Science, Vol. 60 No. 11, pp. 2835-2857.

Fatemi, A., Glaum, M., & Kaiser, S. (2018). ESG performance and firm value: The moderating role of disclosure. *Global Finance Journal*, *38*, 45-64.

Fatemi, A., Fooladi, I., & Tehranian, H. (2015). Valuation effects of corporate social responsibility. Journal of Banking & Finance, 59, 182-192.

Faria, J. R., Tindall, G., & Terjesen, S. (2022). The Green Tobin's q: theory and evidence. *Energy Economics*, *110*, 106033.

Friedman, M. (1970). A Friedman doctrine: The social responsibility of business is to increase its profits. The New York Times Magazine, 13(1970), 32-33.

Given, L. M. (Ed.). (2008). The Sage encyclopedia of qualitative research methods. Sage publications.

Gregory, R. P. (2021). Why ROE, ROA, and Tobin's Q in regressions aren't good measures of corporate financial performance for ESG criteria. *Available at SSRN 3775789*.

Griffin, P. A., Neururer, T., & Sun, E. Y. (2018). Environmental performance and analyst information processing costs. Journal of Corporate Finance.

Gupta, A., Pardo, P., & Cooper, M. (2022). The Contribution of Sustainable Practices to Financial Performance and Firm Value in Companies in Developing Countries: The Case of India. Retrieved at https://johat.org/wp-content/uploads/2022/07/4-Gupta-Pardo-Cooper.pdf.

Guidry, R.P. and Patten, D.M. (2010), "Market reactions to the first-time issuance of corporate sustainability reports: evidence that quality matters", Sustainability Accounting, Management and Policy Journal, Vol. 1 No. 1, pp. 33-50.

Hamilton, S., Jo, H., & Statman, M. (1993). Doing well while doing good? The investment performance of socially responsible mutual funds. Financial Analysts Journal, 49(6), 62-66.

Helfaya, A., Aboud, A. & Amin, E. (2022). An Examination of Corporate Environmental Goals Disclosure, Sustainability Performance and Firm Value-An Egyptian Evidence. Retrived at https://www.researchgate.net/publication/363271956_An_Examination_of_Corporate_Environmental_Goals_Disclosure_Sustainability_Performance_and_Firm_ValueAn_Egyptian_Evidence_Running_Head_Environmental_Sustainability_Goals_Disclosure_and_Firm_Value/citations#fullTextFileContent

Harjoto, M. A., & Jo, H. (2015). Legal vs. normative CSR: Differential impact on analyst dispersion, stock return volatility, cost of capital, and firm value. *Journal of Business Ethics*, *128*(1), 1-20.

Halid, S., Rahman, R. A., Mahmud, R., Mansor, N., & Wahab, R. A. (2023). A Literature Review on ESG Score and Its Impact on Firm Performance. International Journal of Academic Research in Accounting Finance and Management Sciences, 13(1), 272-282.

Ishaq, M., Islam, Y., & Ghouse, G. (2021). Tobin's Q as an Indicator of Firm Performance: Empirical Evidence from Manufacturing Sector Firms of Pakistan. *International Journal of Economics and Business Administration, IX*, (1), 425-441.

Jinji, N., Zhang, X., & Haruna, S. (2022). Does Tobin's q Matter for a Firm's Choice of Globalization Mode? In *Deep Integration, Global Firms, and Technology Spillovers* (pp. 49-69). Springer, Singapore. Retrieved at https://link.springer.com/chapter/10.1007/978-981-16-5210-3_4

Kerin, R. A., & Sethuraman, R. (1998). Exploring the brand value-shareholder value nexus for consumer goods companies. *Journal of the Academy of Marketing Science*, *26*(4), 260. https://doi.org/10.1177/0092070398264001.

King, A., & Lenox, M. (2002) Exploring the locus of profitable pollution reduction. Management Science, 48 (2), 289-299.

Konar, S. & Cohen, M.A. (2001) Does the market value environmental performance? Review of Economics and Statistics, 83 (2), 281-289.

Koundouri, P., Pittis, N., & Plataniotis, A. (2021). The impact of ESG performance on the financial performance of European area companies: An empirical examination. ICSD 2021.

Krasnikov, A., Mishra, S., & Orozco, D. (2009). Evaluating the financial impact of branding using trademarks: A framework and empirical evidence. *Journal of Marketing*, *73*(6), 154–166. https://doi.org/10.1509/jmkg.73.6.154.

Kurniawati, D., Riwayati, H. E., & Firdaus, A. (2022). Effect Of Sustainability Report On Manufacturing Sector Firm Value With Profitability As A Moderation Variable. *Dinasti International Journal of Digital Business Management*, *3*(5), 755-765.

Lewellen, W. G., & Badrinath, S. G. (1997). On the measurement of Tobin's Q. *Journal of Financial Economics*, *44*(1), 77–122. https://doi.org/10.1016/S0304-405X(96)00013-X.

Li, Y., Gong, M., Zhang, X.Y. and Koh, L. (2018) 'The impact of environmental, social, and governance disclosure on firm value: the role of CEO power', *The British Accounting Review*, Vol. 50, No, 1, pp.60–75.

Lim, H. J., & Mali, D. (2023). Does Market Performance (Tobin's Q) Have A Negative Effect on Credit Ratings? Evidence From South Korea. Asia-Pacific Financial Markets, 1-28.

Lindenberg, E. B., & Ross, S. A. (1981). Tobin's Q ratio and industrial organization. *Journal of Business*, *54*(1) 1–32. https://doi.org/10.1287/isre.1100.0281.

Maji, S. G., & Lohia, P. (2023). Environmental, social and governance (ESG) performance and firm performance in India. Society and Business Review, 18(1), 175-194.

Mardini, G. H. (2022). ESG factors and corporate financial performance. *International Journal of Managerial and Financial Accounting*, *14*(3), 247-264.

Margolis, Joshua D. and Elfenbein, Hillary Anger and Walsh, James P., Does it Pay to Be Good...And Does it Matter? A Meta-Analysis of the Relationship between Corporate Social and Financial Performance (March 1, 2009). Available at SSRN: https://ssrn.com/abstract=1866371.

Mendiratta, A., Singh, S., Yadav, S. S., & Mahajan, A. (2023). ESG Controversies and Firm Performance in India: The Moderating Impact of Government Effectiveness. Global Business Review, 09721509231151490.

Mizik, N., & Jacobson, R. (2009). Financial markets research in marketing. *Journal of Marketing Research*, *46*(3), 320–324. https://www0.gsb.columbia.edu/mygsb/faculty/research/pubfiles/3346/FinancialMarketsResearch(JMR2009).pdf .

Newell, R.G., (2007). Climate technology research, development, and demonstration: funding sources, institutions, and instruments.

Issue Brief 9 in Assessing U.S. Climate Policy Options. Resources for the Future, Washington, DC.

Nguyen, D. T., Hoang, T. G., & Tran, H. G. (2022). Help or hurt? The impact of ESG on firm performance in S&P 500 non-financial firms. Australasian Accounting, Business and Finance Journal, 16(2), 91-102.

Nordhaus, W.D. (2002). Modeling induced innovation in climate-change policy. In: Grübler, A., Nakicenovic, N., Nordhaus, W.D. (Eds.), Technological Change and the Environment. Resources for the Future, Washington, DC, pp. 182–209.

Ohnemus, L. (2009). B2B branding: A financial burden for shareholders. *Business Horizons*, *52*(2), 159–166. https://doi.org/10.1016/j.bushor.2008.10.004.

Park, S., & Gupta, S. (2012). Handling endogenous regressors by joint estimation using copula. *Marketing Science*, *31*(4), 567–586. https://doi.org/10.1287/mksc.1120.0718.

Popp, D., (2006). R&D subsidies and climate policy: is there a "free lunch"? Climatic Change 77 (3–4), 311–341

Rao, V. R., Agarwal, M. K., & Dahlhoff, D. (2004). How is manifest branding strategy related to the intangible value of a corporation? *Journal of Marketing*, *68*(4), 126–141. https://doi.org/10.1509/jmkg.68.4.126.42735.

Rana, M. W., Zhang, S., Ali, S., & Hamid, I. (2022). Investigating green financing factors to entice private sector investment in renewables via digital media: Energy efficiency and sustainable development in the post-COVID-19 era. *Sustainability*, *14*(20), 13119.

Renneboog, L., Ter Horst, J., & Zhang, C. (2008). The price of ethics and stakeholder governance: The performance of socially responsible mutual funds. Journal of corporate finance, 14(3), 302-322.

Renneboog, L., Ter Horst, J., & Zhang, C. (2011). Is ethical money financially smart? Nonfinancial attributes and money flows of socially responsible investment funds. Journal of Financial Intermediation, 20(4), 562-588.

Shepherd, W. G. (1986). Tobin's Q and the structure-performance relationship: Comment. *The American Economic Review*, *76*(5), 1205–1210. https://www.jstor.org/stable/1816488.

Simon, C. J., & Sullivan, M. W. (1993). The measurement and determinants of brand equity: A financial approach. *Marketing Science*, *12*(1), 28–52. https://doi.org/10.1287/mksc.12.1.28.

Tobin, J. (1969). A general equilibrium approach to monetary theory. *Journal of Money, Credit and Banking*, *1*(1), 15–29. https://doi.org/10.2307/1991374.

Wang, D. H.-M., Chen, P.-H., Yu, T. H.-K., & Hsiao, C.-Y. (2015). The effects of corporate social responsibility on brand equity and firm performance. Journal of Business Research, 68, 2232 - 2236.

Xie, J., Nozawa, W., Yagi, M., Fujii, H., & Managi, S. (2019). Do environmental, social, and governance activities improve corporate financial performance? Business Strategy and the Environment, 28(2), 286–300. https://doi.org/10.1002/bse.2224

Yadav, P. L., Han, S. H., & Rho, J. J. (2016). Impact of environmental performance on firm value for sustainable investment: Evidence from large US firms. *Business strategy and the environment*, *25*(6), 402-420.

التوجه نحو مقياس توبين كيو الأخضر

كيف تؤثر العوامل البيئية والاجتماعية والحوكمة على قيمة توبين كيو للشركة: حالة مصر: دراسة إمبريقية

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الملخص:

هدفت الدراسة الحالية إلى معرفة تأثير العوامل البيئية والمجتمعية والحوكمة على أداء الشركة. بالإضافة إلى ذلك، حاولت الدراسة بناء المعرفة حول أهمية العوامل المذكورة كأحد الاتجاهات نحو قيمة مؤشر توبين كيو Topin's Q الأخضر. وذلك باستخدام بيانات ٧٠ شركة مصرية مدرجة بالبورصة المصرية خلال الفترة من ٢٠١٧ إلى ٢٠٢٢، أظهرت نتائج الدراسة وجود تأثير معنوي لجميع العوامل التي تم اختبارها على قيمة توبين كيو للشركات. بناءً على نتائج الدراسة، اقترحت الدراسة أن تقوم الشركات المدرجة في مؤشر الاستدامة المصري بإعطاء الأولوية لمختلف المبادرات التي تهدف إلى تمكين المرأة والشباب، والتبرعات، تبني أنظمة المكافآت المرضية، وزيادة الاهتمام بالرعاية الصحية للعاملين، وإشراك الأفراد ذوي الاحتياجات الخاصة، ودعم المبادرات الفنية والمشاركة المدنية فيما يتعلق بالتعليم والمنح الدراسية، وزيادة جهود الإغاثة المجتمعية، وإنشاء لجان الاستدامة داخل الشركات، واعتماد بروتوكولات صديقة للبيئة تتعلق على وجه التحديد بالتعبئة والتخلص من النفايات.

الكلمات المفتاحية:

مؤشر العوامل البيئية والمجتمعية والحوكمة- توبين كيو- الأداء المالي- الشركات المصرية- العوامل البيئية والمجتمعية والحوكمة