# The impact of social, environmental and corporate governance disclosures on firm value

## Evidence from Egypt

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**Abstract**

**Purpose** – The purpose of this paper is to examine the impact of environmental, social, and governance (ESG) practices disclosure and firm value in the Egyptian context. This is done through investigating the influence of being listed and ranked in the Egyptian Corporate Responsibility Index on firm value during the period starting from 2007 to 2016.
**Design/methodology/approach** – Using univariate and multivariate analyses, the findings support the economic benefits of ESG disclosures.
**Findings** – The authors find that firms listed in the ESG index have higher firm value, and that there is a positive association between firms' higher rankings in the index and firm value, as measured by Tobin's *q*.
**Research limitations/implications** – The findings provide feedback to regulators and standard-setters in the developing countries, and more specifically the Egyptian regulators, on the benefits associated with the introduction of the sustainability index (Standard & Poor's (S&P)/EGX ESG index). This, in turn, clarifies how the government's efforts to promote ESG provide benefits to publicly traded firms.
**Practical implications** – By linking ESG to firm value, the ESG index will enable investors to take a leading role in inducing firms to enhance transparency and disclosure, and hence, improving their reporting standards. This, in turn, will ultimately result in improving sustainability and governance practices in Egypt.
**Social implications** – The reported positive market reactions to social and governance practices disclosures can motivate firms to improve their social and governance performance.
**Originality/value** – The study contributes to the literature by addressing the combined economic effects of social and governance disclosures on firm value, and by investigating the economic effects of such disclosures on firm value in an emerging market.

**Keywords** Egypt, Emerging economies, Firm value, ESG
**Paper type** Research paper

## 1. Introduction

A large number of previous studies have analysed the direct link between corporate social responsibility (CSR) and corporate financial performance, and ultimately firm value (Dhaliwal *et al.*, 2011; Harjoto and Jo, 2015; Yadav *et al.*, 2016). Despite these efforts, there are still on-going debates and controversial arguments about the relationship between CSR reporting and firm value (Fatemi *et al.*, 2017). Moreover, although corporate governance (CG) is related to CSR and has an impact on organisational performance (Jo and Harjoto, 2011; McBarnet *et al.*, 2007), it is only few studies that examine both factors together and address the effect of environmental, social and governance (thereafter ESG) disclosures on firm value (see Eccles *et al.*, 2014; Fatemi *et al.*, 2015).

Most of these studies are investigating ESG in developed contexts (e.g. Harjoto and Jo, 2015; Plumlee *et al.*, 2015; Yadav *et al.*, 2016), and very few studies focused on emerging

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markets (see Malarvizhi and Matta, 2016; Siagian *et al.*, 2013). We believe that emerging markets, with its idiosyncrasies in terms of cultural specificity and political volatility, need special interest. In this study, we investigate the combined impact of ESG disclosures on firm values in Egypt. In doing so, we use the Standard & Poor's (S&P)/EGX ESG Index (Egyptian Corporate Responsibility Index)[1]. The Index was constructed recently to rank the best 30 companies from the pool of the top 100 Egyptian companies listed in the Egyptian stock market in terms of their disclosures of social and environmental issues as well as their CG practices. For more reliable results, we investigate a long period that covers the years from 2007 (when the index was first initiated) to 2016. The index uses CG and CSR norms and standards to evaluate the actions and programs of the listed firms. Most of the studies that have addressed Egyptian CG and social practices focused more on the level of adherence to standards and codes (Eldomiaty *et al.*, 2016). Nevertheless, the market consequences of ESG disclosures still remain unclear, especially in the Egyptian context.

We investigate the reactions of an emerging stock market to CG and CSR. That is, we investigate whether the companies that are concerned more with CG and CSR perform better than those that are not. In other words, we address the question of whether CG and CSR matter in an emerging market or, otherwise, they do not make any difference and has no relation to firm value when we come to an emerging market such as Egypt. If ESG is found to have no relation to firm value, for example, this will be the contrast of the case in developed contexts where CG and CSR disclosures are mostly reported to have noticeable (positive) influence on firm value (see Clarkson *et al.*, 2013; Eccles *et al.*, 2014; Middleton, 2015). This debate needs further investigation to stand at the real influence of both CG and CSR practices disclosures in an emerging market. This in turn will help us reveal whether the context and hence the culture (whether developed or emerging) play a part in the influence of CG and CSR disclosures on firm value or not. Thus, this study has two main objectives. The first one, a generic one, is investigating the impact of being listed in the ESG index on firm value. The second objective is more specific: investigating the impact of the ranking of a firm in the ESG index on the firm value (e.g. does the firm value of the company ranked 20th better than the value of the company ranked 30th?).

Our study uses all the listed firms in Egyptian stock market (Sample 1) and the 100 firms listed on the EGX100 (Sample 2) during the period which starts from 2007, concurrent with the start of ESG index, and ends in 2016[2]. Using univariate and multivariate analyses, the findings support the economic benefits of ESG disclosures. In particular, the results indicate a higher firm value for firms listed in the ESG index compared to those listed in EGX100 and all listed firms in the Egyptian stock market. Moreover, we find that firms with higher ranks in the ESG index have a higher firm value, as measured by Tobin's $q$. These results have implications for regulators and investors in the Egyptian stock market. By linking ESG to firm value, the ESG index will enable investors to take a leading role in inducing firms to enhance transparency and disclosure, and hence, improving their reporting standards. This, in turn, will ultimately result in improving sustainability and governance practices in Egypt.

We contribute to the literature of accounting in developing countries by investigating the economic consequences of ESG disclosures in Egypt. The Egyptian context represents a unique setting to contribute to the on-going debate on the economic consequences of ESG. This is due to the adoption of the relatively new sustainability index known as S&P/EGX ESG index. The S&P/EGX ESG Index is the first of its kind in the Middle Eastern and North African (MENA) region and the second index for sustainable development in the emerging markets after the Indian index known as P&S/India ESG. The regulatory bodies expect that this index improves the level and quality of disclosure on ESG issues for Egyptian investors. Our study uses the unique data set of the Egyptian ESG index which covers the years from 2007 to 2016 to provide new evidence on the usefulness of ESG disclosures and practices. Our findings provide feedback to regulators and standard-setters in the

developing countries, and more specifically the Egyptian regulators, on the benefits associated with the introduction of the sustainability index (S&P/EGX ESG index). This, in turn, clarifies how the government's efforts to promote ESG provide benefits to publicly traded firms.

The paper is structured as follows. Section 2 provides background for the environmental social and governance practices in Egypt. Section 3 presents the literature review. Section 4 notes the research design. Section 5 displays the analysis and results. Finally, Section 6 presents the discussion and conclusions of the study.

## 2. Environmental, social and governance practices in the Egyptian context

Most research that investigates the economic consequences of ESG is applied in developed contexts such as the USA, Canada, and European countries (e.g. Aerts *et al.*, 2008; Harjoto and Jo, 2015; Plumlee *et al.*, 2015; Richardson and Welker, 2001; Yadav *et al.*, 2016). On the other hand, emerging markets remain under-researched although they become the centre of attention of international corporate responsibility initiatives (Malarvizhi and Matta, 2016). Only few studies are applied in emerging markets in general (e.g. Akrout and Ben Othman, 2016; Malarvizhi and Matta, 2016; Siagian *et al.*, 2013) and African markets in particular (e.g. Barako and Brown, 2008; De Villiers and Van Staden, 2006).

Environmental awareness is a relatively new issue for Egyptian corporations. Many firms are still not seriously considering environmental issues (Wahba, 2008). In 1997, for the first time Egypt had a full-time minister of state for environmental affairs to be responsible for activating environmental national and international standards, polices, and initiatives. This recent awareness is expected to achieve sustainable development as well as rehabilitating the effectiveness of the Egyptian Environmental Affairs Agency to monitor the performance of business organisations in environmental issues (Wahba, 2008).

With regard to CG, Egyptian companies were not being assessed in terms of CG practices until recently in late 1990s and beginnings of 2000s when the World Bank and IMF reports started to assess countries' CG and CSR practices (Eldomiaty *et al.*, 2016). In 2002, new listing rules went into effect that increased disclosures and CG requirements for listed firms. In 2003, Egypt complied with the Organisation for Economic Co-operation and Development's Principles of Corporate Governance. Then, the Egyptian Institute of Directors was established with the aim of equipping the Egyptian executives with the proper, relevant knowledge to enhance the social governance activities of their companies. The Egyptian Institute of Directors established codes of CG for private and state-owned companies. It has successfully changed the legal and regulatory framework by tightening insider trading-related provisions, strengthening disclosure rules, requiring companies to institute board-level audit committees. In 2009, the Capital Markets Authority in Egypt created a special CG Department and the Egyptian Stock Exchange began to enforce its listing rules consistently, thus leading to an impressive wave of de-listings from 1,148 in early 2002 to 333 by mid-2009 (see Eldomiaty *et al.*, 2016).

Recently, the Egyptian Financial Supervisory Authority (EFSA) issued an updated version of Egypt's code for CG. The new version emphasises the importance of the role of the board of director and the disclosures of material non-financial information. The new version is more comprehensive and provides detailed guidelines on the best practices that achieve a balance between the interests of various involved parties and emphasis the necessity of comply or explain approach.

As an important landmark on the way of enhancing ESG disclosures in Egypt, the S&P/EGX ESG Index was launched. It is the first of its kind in the MENA region[3]. This index was planned and developed as the premier index in Egypt to address the investors' concern about ESG issues. The index is the responsibility of a committee composed of the Egyptian Institute of Directors, Egyptian Corporate Responsibility Centre, and S&P.

It measures the quality of information that companies make available concerning their CG, environment and social responsibility.

The Egyptian Corporate Responsibility Index is designed to track the performance of the top 100 listed companies on the Egypt Stock Exchange that demonstrates leadership on environmental, social, and CG issues. All of the EGX100 listed companies are evaluated on an annual basis, in order to select the top 30 that can be listed on the ESG index. Then, the index provides investors with exposure to 30 of the best-performing stocks in the Egyptian market as measured by ESG parameters.

Two screening processes take place in order to rank the listed companies, one focusing on environment and social indicators and the other one focusing on CG indicators. Evaluation of companies is made on two stages: the first one involves evaluating the company's disclosure practices based on the information it provides to the public through its annual report, website, press releases or disclosure made to the Egyptian Stock Exchange; and the other one involves evaluating the company's practices through checking the news available in the media, newspapers, specialized magazines, and CSR reports, and also by contacting the regulatory agencies, ministries, and NGOs to know if there is any adverse information or violation made by the company. While the social and environmental variables are based on output obtained from the mapping of Global Reporting Initiative, Global Compact and Millennium Development Goal, governance variables are an adaptation of S&P Dow Jones Indices' existing CG methodology to suit the Egyptian market. Companies are evaluated in relation to the following key areas: ownership structure and shareholder rights, financial and operational information, board and management structure and process, CG and corruption, business ethics and corporate responsibility, environment, employees, community, and customers/product.

To determine the weight that each company will be given in the index, a quantitative score is calculated for the company – a quantitative ranking based on the three factors: transparency and disclosure of CG, environmental practices, and social practices. Then, it will be assigned a qualitative score. Here, independent sources of information, news stories, websites, and CSR filings are used to evaluate the actual performance of the company on a scale of 5 to 1. Finally, a composite score is calculated for each company by summing the qualitative score and the quantitative score. Such index represents a unique setting to examine the economic consequences of ESG practices.

Using this index, we examine the combined economic implications of being listed in the ESG index and of the rankings of the listed firms in the index. We expect that a firm which is being listed in the index and given an advanced rank to enjoy a higher firm value compared to those firms that are not listed or those that are listed but given later ranks, as measured by Tobin's $q$. We employ all reports of the index since it was launched in 2007.

## 3. Literature review

### *3.1 Social and environmental disclosures and firm value*

The consequences of CSR disclosure have been the subject of a contentious debate in the academic research over the last two decades or so. The literature has reported various results concerning the influence of CSR disclosure on firm value (e.g. Brammer *et al.*, 2006; Clarkson *et al.*, 2013; De Villiers and van Staden, 2011; Dhaliwal *et al.*, 2014; Griffin and Sun, 2012; Konar and Cohen, 2001; Yadav *et al.*, 2016).

Several studies have reported a positive impact of CSR. For example, Blacconiere and Patten (1994) document that, while chemical companies experienced negative share price returns after a significant chemical leak (the Union Carbide Bhopal leak), the stock price reaction was mitigated for firms with better environmental disclosures. Relatedly, Blacconiere and Northcutt (1997) find that chemical firms with more extensive environmental disclosures reports had a weaker negative reaction to environmental

regulation than other firms. Richardson *et al.* (1999) report that companies that voluntary engage in social and environmental behaviour may avoid the adverse effect of future regulatory costs on their future cash flows.

Konar and Cohen (2001) demonstrated substantial enhancement of the intangible asset value of firms through improved environmental performance. Dhaliwal *et al.* (2011) find that more voluntary environmental disclosure decreases the cost of equity capital (COEC) for the firm and Clarkson *et al.* (2013) find that firms that have higher quality environmental disclosure generate higher ROA than competitors. Harjoto and Jo (2015) find that CSR activities reduce analyst dispersion of earnings forecast, volatility of stock return and cost of capital (COC), and increase firm value. Yadav *et al.* (2016) find that green rank of firms has a positive impact on their performance in the stock market. They find that investors perceive this announcement as positive news, leading to significant positive standardised cumulative abnormal returns.

Those scholars see CSR to be much more than a cost, a constraint, or a charitable deed. Rather, it can be a source of opportunity, innovation, and competitive advantage (Porter and Kramer, 2006). CSR here is seen as an effective tool for strengthening a firm's interactions with its stakeholders who want to partner with, patronise or work for environmentally responsible firms (Branco and Rodrigues, 2006; Cho and Patten, 2007). This allows for more efficient contracting (Jones, 1995) and leads to risk reduction (Fatemi and Fooladi, 2013). This, in turn, can ultimately enhances a firm's reputation or corporate image (Rao and Holt, 2005), contributing to overall growth. This positive implication of CSR disclosures on firm value can be clearly explained through stakeholder theory. Here, CSR is seen as an optimal choice to minimise potential conflicts with stakeholders and to enhance stakeholders' perceptions of the appropriateness of their firms' pro-social and environmental actions (Freeman, 1984; Guidry and Patten, 2010).

However, a stream of research shows that CSR activities can add value to the firm but only under certain conditions. For example, Aerts *et al.* (2008) find that the association between environmental disclosure and a lower COEC vary by: industry (weaker for environmentally sensitive industries), country (stronger for European than North American companies), and disclosure venue (stronger for print for North American companies and for web-based disclosures for European companies). Dhaliwal *et al.* (2011) find that firms with a high COEC are more likely to release a standalone CSR report. Jo and Harjoto (2011) find that CSR activities that address internal social enhancement within the firm, such as employees' diversity, firm relationship with its employees, and product quality, enhance the value of firm more than other CSR subcategories for broader external social enhancement such as community relation and environmental concerns. Griffin and Sun (2012) find that shareholders positively respond to disclosures about greenhouse gas emissions, and that the responses are more positive for smaller companies with limited public information availability. Servaes and Tamayo (2013) find that CSR and firm value are positively related for firms with high customer awareness, while the relationship is either negative or insignificant for firms with low customer awareness.

Harjoto and Jo (2015) classified CSR into legal and normal, they found that normative (rather than legal) CSR reduces analyst dispersion, stock returns volatility, and COC. Nekhili *et al.* (2017) investigate the moderating role of family involvement in the relationship between CSR reporting and firm market value. They find market-based financial performance to be positively related to CSR disclosure for family firms and negatively related to CSR disclosure for nonfamily firms. Finally, El Ghoul *et al.* (2017) find CSR to be more positively related to firm value in countries with weaker market institutions. They find that CSR is associated with: improved access to financing in countries with weaker equity and credit markets; greater investment and lower default risk in countries with more limited business freedom; and longer trade credit period and higher future sales growth in countries with weaker legal institutions.

Focusing on developing countries, Malarvizhi and Matta (2016) reveal that there is no significant relationship between the level of environmental disclosure and firm performance through investigating the listed firms in Bombay Stock Exchange in India. In a related study, Akrout and Ben Othman (2016) investigate the effect of environmental disclosure levels on the stock market liquidity of Arab MENA companies. They find that the level of environmental disclosure provided in the annual reports is positively associated with stock market liquidity, as measured by bid–ask spread.

Although Akrout and Ben Othman's (2016) study also brought evidence from the Egyptian context, our study is different in a number of respects. First, our study uses a longer period that starts from 2007 and ends in 2016 to obtain a more reliable result. Second, it investigates the combined effect of ESG disclosures on firm values in Egypt rather looking at the each of them individually. Thirdly, while Akrout and Ben Othman (2016) examine the effect of environmental disclosure levels on the stock market liquidity, our study instead addresses the anticipated impact on firm value given the inconclusive results in prior studies.



### *3.2 Corporate governance and firm value*

The above noted studies focus on the market or economic consequences of CSR. Likewise, other studies address the consequences of CG, for example, Gompers *et al.* (2003) analyse the empirical relationship of a governance index with corporate performance and find that CG is strongly correlated with stock returns during the 1990s. Asbaugh *et al.* (2004) find that firms with better governance have lower COEC resulting in higher firm value. Durnev and Kim (2005) find firms with higher governance and transparency rankings are valued higher in stock markets. Jo and Harjoto (2011) find that board leadership, board independence, blockholders' ownership, and institutional ownership play a relatively weaker role in enhancing firm value, as compared to the role played by CSR activities. Investigating Indonesian public firms, Siagian *et al.* (2013) find positive associations between CG and firm value and negative associations between reporting quality and the proxies for firm value.

This relationship between governance practices and corporate performance has been explained in the literature through agency theory. The shared understanding in these studies is that effective CG reduces the control rights conferred to managers for the ultimate objective of enhancing the economic value of the company (Yadav *et al.*, 2016).

### *3.3 Hypotheses development*

Although CSR and CG have originated from distinct academic strains of thought, the concerns and problems they address are converging. Now CG no longer encompasses just the rules and regulations that are used for monitoring managerial behaviour, but also considers issues related to ethics, accountability, and disclosure (Lerach, 2002). As a result, today, many large firms develops several self-regulatory devices on a voluntary basis which include corporate codes of conduct, non-financial reporting practices, and the creation of institutional channels to establish a dialogue with stakeholders (Kaymak and Bektas, 2017). From this perspective, the CSR approach, which balances the needs of disparate groups with the goals of shareholders, can be incorporated into a CG framework that now addresses the concerns of the social, environmental, and public arena (McBarnet *et al.*, 2007). The literature on the aspects of good CG has shown that CG is strongly related to CSR (Beltratti, 2005; Pava and Krausz, 1996; Stanwick and Stanwick, 1998). For example, Kaymak and Bektas (2017) indicated that board independence and board size are strongly and positively related to several CSR practices.

The question of how the ESG disclosure affects a firm's financial performance and, ultimately, its value has been the subject of contentious debate – that is, ESG is reported to have not only various but also conflicting influences on firm value (e.g. Fatemi *et al.*, 2017;

Plumlee *et al.*, 2015; Horvathova, 2010; Peiris and Evans, 2010; Jo and Harjoto, 2011). A stream of research reported that ESG disclosure has a positive impact on firm value. For example, Peiris and Evans (2010) suggest that ESG factors impact corporate financial performance and therefore are relevant for the consideration of investment decision-makers. Jo and Harjoto (2011) find that the CSR choice is positively associated with the internal and external CG and monitoring mechanisms, including board leadership, board independence, institutional ownership, analyst following, and anti-takeover provisions. Relatedly, some studies report a positive association between ESG and non-financial performance measures, including process efficiency and reduced material and energy consumption (Aras and Crowther, 2008; Siagian *et al.*, 2013; see also, e.g., Al-Tuwaijri *et al.*, 2004; Bajic and Yurtoglu, 2016; Dimson *et al.*, 2015; Eccles *et al.*, 2014; Fatemi *et al.*, 2015; Ge and Liu, 2015; Krüger, 2015).

Nevertheless, a number of studies reported a non-significant association between ESG performance disclosure and financial performance or firm value (e.g. Horvathova, 2010; McWilliams and Siegel, 2000; Plumlee *et al.*, 2015). In contrast, Fatemi *et al.* (2017), for example, find ESG disclosures, *per se*, to decrease firm valuation (see also Brammer *et al.*, 2006; de Villiers and van Staden, 2011; Dhaliwal *et al.*, 2014). This latter view is mainly rooted in neoclassical theory (see Vance, 1975; Wright and Ferris, 1997). The argument, according to neoclassical theory, as Friedman (1970) suggests, is that the maximisation of owners' profits is the firm's only social responsibility. And the underlying assumption is that the payoffs of ESG activities do not exceed their costs. In fact, as Kim and Lyon (2015) note, a few recent papers continue to find that firms reporting engagement in environmentally friendly activities or winning green awards experience negative abnormal returns (see also Jacobs *et al.*, 2010; Lyon *et al.*, 2013).

Appreciating the above noted association between social and governance practices, we seek to contribute to the related few studies that address the combined impact of ESG practices disclosures on firm value by focusing on the Egyptian market. We argue that firms engaged in ESG practices and recognised by the stock market authority (i.e. included in the ESG index) are more likely to gain competitive advantage and to be perceived more positively by investors. This is investigated through testing the following two hypotheses:

*H1.* Firms that are listed in ESG index have a higher firm value compared to non-listed firms.

*H2.* There is a positive association between the rank in the ESG index and firm value.

## 4. Research design

### *4.1 Sample construction*

As discussed above, this study examines the combined impact of being listed in the ESG index and of the rankings of the listed firms on firm value. We test our hypotheses using two samples. The first sample consists of all the listed firms in Egyptian Stock market (thereafter all listed sample). In this sample, we examine the economic impact of being listed in the ESG index (thereafter, ESG listing) as well as the economic impact of the ranking of the listed firm in the ESG index (thereafter ESG ranking) on firm value, compared to all the other listed firms in the Egyptian stock market. The second sample will be limited to only the 100 firms listed on the EGX100 (thereafter EGX100). In this case, the analysis examines the impact of ESG listing and ESG ranking on firm value relative only to the firms listed in EGX100. The period covered in both cases begins in 2007, concurrent with the start of ESG index and ends in 2016[4]. All listed firms with complete data available from DataStream are employed in the analysis. Our sample includes three groups of firms. The first group is the main group, and it is constituted of the 30 firms included in the ESG index (treatment group). The second and the third groups

are control firms. While the first control group consists of the EGX100 firms, the second control group consists of all listed firms in the Egyptian Stock market. Table I shows the final number of observations used in regression analysis.

*4.2 Research model and variables measurement*

This study uses two models to test the two hypotheses using the EGX and all listed samples. The only difference between the two samples is that we control for the EGX100 listing in all sample regressions. The models are as follow:

$$TQ_{it} = \alpha + \beta_{it}\,\text{ESG LISTING} + \beta_{it}\,\text{ROA} + \beta_{it}\,\text{LOGTA} + \beta_{it}\,\text{LEVERAGE} + \beta_{it}\,\text{CAX} + \beta_{it}\,\text{EGXLISTING} + \text{Industry FE} + \text{Year FE}, \quad (1)$$

$$TQ_{it} = \alpha + \beta_{it}\,\text{ESG RANKING} + \beta_{it}\,\text{ROA} + \beta_{it}\,\text{LOGTA} + \beta_{it}\,\text{LEVERAGE} + \beta_{it}\text{CAX} + \beta_{it}\,\text{EGXLISTING} + \text{Industry FE} + \text{Year FE}. \quad (2)$$

The two variables of interest here are ESG LISTING and ESG RANKING. While ESG LISTING is used to examine the impact of the ESG listing on firm value, ESG RANKING addresses the impact of the relative rankings in the ESG index on firm value, as measured by Tobin's *q*. Our models control for the size, profitability, leverage, capital expenditure, and industry and year effects. Table II summarises the definitions of the variables.

In terms of variables measurement, ESG LISTING is a dummy variable which is coded as 1 if the firm is listed in the ESG index; otherwise it is coded as 0. ESG RANKING is the relative score based on the ESG index ranking. As outlined earlier, the ESG Index ranks the

| Items | EGX100 sample | All listed samples |
|---|---|---|
| Initial number of observations | 900 | 2,043 |
| Missing observations | 149 | 523 |
| Number of observation used in regression | 751 | 1,507 |

**Notes:** For all listed samples, the number of firms listed is 227 firms over nine years. For EGX100, the number of firms is 100 over nine years

**Table I.** Sample size

| Variables | Definitions |
|---|---|
| Tobin's *q* | The market value of assets divided by the replacement value of assets |
| ESG LISTING | A dummy variable coded as one if the firm is listed in the ESG index; otherwise, it is coded as 0 |
| ESG RANKING | The relative score based on the ESG index ranking |
| SIZE (LOGTA) | The natural logarithm of total assets |
| Return on assets (ROA) | The operating income divide by total assets |
| Leverage (LEVERAGE) | The total debt divided by total assets |
| Capital expenditure ratio (CapTA) | The ratio of capital expenditure to total assets |
| EGX listing | A dummy variable coded as 1 if the firm is listed in the EGX index; otherwise, it is coded as 0 |

**Notes:** The market value of assets is represented by the sum of the book value of assets and the market value of common stock outstanding. From this summation, the sum of book value of common stock and balance sheet deferred taxes is subtracted. The replacement value of assets is represented by the book value of assets (Bauer *et al.*, 2004)

**Table II.** Summary of variable measurement

Egyptian companies in terms of their environmental, social, and CG performance. It includes 30 firms from a pool of 100 Egyptian firms, and it uses an innovative score-weighting scheme to rank them. As the index includes the top 30 firms, the ranking was converted to a relative score in which the maximum value is 30 and is given to the best firm in the index, and the second best company is scored as 29 and so on. In other words, the top firm in the index (i.e. the one which is ranked the first) is scored as 30 out of 30, and the second firm is scored as 29 out of 30, and so on[5]. This ranking is revised annually.

Our study controls for a set of factors that influence the firm value. Similar to prior studies, we control for the firm size (LOGTA), the ratio of capital expenditures to assets (CAPEX/ASSETS), profitability (ROA), leverage (LEVERAGE)[6], and EGX listing (EGXLISTING) (e.g. Ammann *et al.*, 2011; Lemmon and Lins, 2003).

## 5. Results

### *5.1 Descriptive analysis*

As noted above, this study examines the combined impact of ESG index listing and ESG ranking on firm value. This is based on the suggestion that companies that have higher ESG performance are more likely to have higher firm value (Section 3.3). Table III provides the descriptive statistics and the correlation matrix of the variables. Panel A shows the descriptive statistics for all variables. It shows that the average value of Tobin's *q* is 1.9 with standard deviation of 3.57. It also shows that the average return on assets of the sample is 8 per cent and the average leverage is 49 per cent.

In Panel B, the correlation matrix provides initial evidence that there is a positive relationship between the relative rank of the firm in the ESG index and the firm value, as measured by Tobin's *q*; the coefficient of correlation is positive and significant (0.14***). This finding suggests that firms which perform well along with the three parameters of environment, society, and CG have a higher firm value. These results are consistent with prior studies which see that social, environmental, and CG disclosures enhances firm value (Dhaliwal *et al.*, 2011; Jo and Harjoto, 2011; Peiris and Evans, 2010; Yadav *et al.*, 2016).

*Panel A: Descriptive statistics*

| Variable | Mean | Median | P25 | P75 | SD |
|---|---|---|---|---|---|
| Tobin's *q* | 1.91 | 1.3 | 1 | 1.82 | 3.58 |
| ROA | 0.086 | 0.042 | 0.005 | 0.111 | 0.397 |
| LOTA | 13.6 | 13.5 | 12.3 | 14.9 | 1.91 |
| LEVERAGE | 0.495 | 0.454 | 0.268 | 0.693 | 0.311 |
| CapEx | 0.047 | 0.014 | 0.002 | 0.05 | 0.122 |

*Panel B: Spearman correlation matrix*

| | Tobin's *q* | ROA | LOTA | LEVERAGE | CapEx | ESGRANK |
|---|---|---|---|---|---|---|
| Tobin's *q* | 1 | | | | | |
| ROA | 0.3188*** | 1 | | | | |
| LOGTA | 0.0896** | 0.0004 | 1 | | | |
| LEVERAGE | −0.1811*** | −0.1954*** | 0.3612*** | 1 | | |
| CapTA | 0.1155*** | 0.2997*** | 0.0017 | −0.0966*** | 1 | |
| ESGRANKING | 0.1423*** | 0.0643** | 0.3378*** | 0.0835*** | 0.0542*** | 1 |

**Notes:** Tobin's *q* is defined as the market value of assets divided by the replacement value of assets. ROA is the operating income divide by total assets. LOGTA is the natural logarithm of total assets. Leverages is the total debt divided by total assets. CapTA is the ratio of capital expenditure to total assets. ESGRANKING is the relative score based on the ESG index ranking. EGX listing is a dummy variable coded as one if the firm is listed in the EGX index; otherwise, it is coded as 0. ESGLISTING is a dummy variable coded as 1 if the firm is listed in the ESG index; otherwise, it is coded as 0. *,**,***Statistically significant at the 10, 5, and 1 per cent levels, respectively, based on two-tailed tests

**Table III.**
Descriptive statistics and correlation matrix

In addition, the matrix shows that there is positive relationship between the rank of the firm in the ESG index and both the size and profitability. Furthermore, the matrix implies that there is no multicollinearity issue; the highest correlation is "0.33***".

*5.2 Main analysis*

*5.2.1 Univariate analysis*. We performed nonparametric tests to investigate the effect of ESG listing on firm value as measured by Tobin's *q*[7]. We run Mann–Whitney tests to examine the equality of the mean and median of treatment and control groups. As explained above, we use two control groups (All listed and EGX100). Table IV presents the comparisons between the treatment and control groups. It presents the nonparametric tests of the hypotheses through comparing the median of Tobin's *q* values of listed firms in the ESG index and EGX100 and all listed firms.

The findings are consistent with *H1* in that the firm value of the listed firms in the ESG index is significantly higher than that of control groups. *t*-test and Mann–Whitney test imply that the Tobin's *q* of EGS index listed firms is higher than the Tobin's *q* of all listed firms ($z = 5.56$***, $t = 6.003$***) or EGX index listed firms ($z = 2.908$***, $t = 3.89$***). However, the impact is more obvious if we use all listed firms as a control group. These findings suggest that ESG disclosures enhance a firm's reputation or corporate image, contributing to overall growth. Our findings are in line with Dhaliwal *et al.* (2011) who find that more voluntary environmental disclosure decreases the COEC, and Durnev and Kim (2005) who find that firms with higher governance and transparency rankings are valued higher in stock markets.

*5.2.2 Multivariate analysis*. The univariate analysis provides initial evidence that firms listed in the ESG index have a higher firm value compared to other firms. Also, the correlation matrix suggests that there is a positive association between firm value and ESG ranking. Table V presents the pooled regression results for the impact of being listed in the ESG index and of the ranking of the listed firms on firm value using two samples. The first sample includes all listed firms, while the second sample includes only EGX100 listed firms. We used the pooled regressions with a robust standard error, clustered by firm[8]. Our regression controls for time and industry fixed effect.

In this study, we expected that the listed firms in the ESG index may have a higher firm value (*H1*) and that this value may increase along with the relative ranking of these firms in the ESG index (*H2*). To test these two hypotheses, two variables of interest are regressed against firm value (ESG LISTING and ESG RANKING) using two samples. With regard to all listed sample, the findings are consistent with the expectations in *H1* and *H2*. The coefficient of ESG LISTING is positive and significant ($\beta = 0.208$**), suggesting that firms listed in the ESG index have a higher firm value compared to non-listed firms[9].

Furthermore, the results suggest that the higher the relative rank in the ESG index, the higher the firm value. Consistent with *H2*, the coefficient of ESG RANKING is positive and significant ($\beta = 0.263$***), as expected. Thus, it is not only important or enough for a firm to be listed in the index, but the position/rank of the firm in the index also matters a lot. Likewise, the findings using EGX sample are consistent with *H1* and *H2*, but with lower

| Items | ESG LISTING | Non-ESG LISTING | Mann–Whitney test/*t*-test |
|---|---|---|---|
| Tobin's *q* (ESG LISTING vs All Listed) | 3.114 | 1.697 | $z = 5.564$*** |
| Tobin's *q* (ESG LISTING vs EGX100) | 3.114 | 1.709 | $z = 2.902$*** |
| Tobin's *q* (ESG LISTING vs All Listed) | 3.114 | 1.697 | $t = 6.0033$*** |
| Tobin's *q* (ESG LISTING vs EGX100) | 3.114 | 1.709 | $t = 3.8922$*** |

**Notes:** *,**,***Statistically significant at the 10, 5, and 1 per cent levels, respectively, based on two-tailed tests

**Table IV.**
Nonparametric tests of the hypotheses

| | All listed samples | | EGX100 sample | | All listed sample | | EGX100 sample | |
|---|---|---|---|---|---|---|---|---|
| | Coef. | *T* value | Coef. | *T* value | Coef. | *T* value | Coef. | *T* value |
| ESG LISTING (*H1*) | 0.208** | 2.441 | 0.159** | 2.23 | | | | |
| ESG RANKING (*H2*) | | | | | 0.263*** | 3.47 | 0.165** | 2.5 |
| LOGTA | 0.042* | 1.687 | 0.063** | 2.02** | 0.037*** | 5.39 | 0.057*** | 5.859 |
| ROA | 0.521*** | 5.568 | 0.665*** | 3.323*** | 0.528*** | 15.532 | 0.684*** | 9.827 |
| LEVERAGE | 0.011 | 0.054 | 0.241 | 0.982 | 0.014*** | 0.35 | 0.251*** | 4.704 |
| CapTA | 0.204 | 0.75 | 0.061 | 0.148 | 0.208* | 1.861 | 0.068 | 0.31 |
| $EGX100^{+}$ | 0.058 | 1.637 | | | 0.069*** | 4.073 | | |
| Cons | 0.86 | 3.176 | 1.151** | 3.018*** | 0.801*** | 8.86 | 1.088 | 8.082 |
| No. of observations | | 1,507 | | 751 | | 1,507 | | 751 |
| Adj. $R^2$ | | 0.2542 | | 0.2938 | | | | 0.2825 |
| Time effect | | Yes | | Yes | | | | Yes |
| Industry effect | | Yes | | Yes | | | | Yes |
| Firm clustered SE | | Yes | | Yes | | | | Yes |

**Notes:** Tobin's $q$ is defined as the market value of assets divided by the replacement value of assets. ESG RANKING is the relative score based on the ESG index ranking. ESG LISTING is a dummy variable coded as 1 if the firm is listed in the ESG index; otherwise, it is coded as 0. LOGTA is the natural logarithm of total assets. ROA is the operating income divide by total assets. LEVERAGE is the total debt divided by total assets. CapTA is the ratio of capital expenditure to total assets. EGX listing is a dummy variable coded as 1 if the firm is listed in the EGX index; otherwise, it is coded as 0. $TQ_{it} = \alpha + \beta_{it}$ ESG LISTING + $\beta_{it}$ ROA + $\beta_{it}$ LOGTA + $\beta_{it}$ LEVERAGE + $\beta_{it}$CapTA + $\beta_{it}$ EGX100+Industry FE + Year FE (*H1*); $TQ_{it} = \alpha + \beta_{it}$ ESG RANKING + $\beta_{it}$ ROA + $\beta_{it}$ LOGTA + $\beta_{it}$ LEVERAGE + $\beta_{it}$CAX + $\beta_{it}$ EGX100 + Industry FE + Year FE (*H2*) + EGX100 is excluded when testing the EGX sample. *,**,***Statistically significant at the 10, 5, and 1 per cent levels, respectively, based on two-tailed tests

**Table V.**
Regression analysis for the relationship between firm value and ESG listing and ESG ranking



significance. Table V shows that the coefficients of ESG LISTING and ESG RANKING are positive and significant ($\beta = 0.159^{**}, 0.165^{**}$), respectively. Then, these results, in general, suggest that firms that perform well in relation to the three parameters of environmental, social, and CG practices have higher firm value, as measured by Tobin's $q$, when compared to their counterparts in the market. This is consistent with the view that ESG performance enhances a firm's reputation and brings economic benefits to the firm (Armitage and Marston, 2008; Fatemi *et al.*, 2017; Plumlee *et al.*, 2015; Jo and Harjoto, 2011).

These findings can be explained by the idea that firms' environmentally and socially responsible behaviour as well as effective CG practices can: enhance employees' morale and hence productivity (Beltratti, 2005; Bhattacharya *et al.*, 2008; Moskowitz, 1972); improve management team's capabilities (Branco and Rodrigues, 2006); attract new customers and foster their loyalty (Albuquerque *et al.*, 2015; Ramlugun and Raboute, 2015); reduce the regulatory burden (Neiheisel, 1995); and increase customer satisfaction (Pérez and Rodriguez del Bosque, 2015).

Considering the above, ESG disclosures can function as a tool to minimise potential conflicts with stakeholders (not only shareholders) and to enhance stakeholders' perceptions of the appropriateness of their firms' actions (Freeman, 1984; Guidry and Patten, 2010). Thus, this observed positive implication of ESG disclosures on firm value can be explained through the stakeholder theory. This is based on the view that socially and environmentally responsible behaviour along with CG practices and better satisfies the interests of all stakeholders (e.g. investors, debtors, employees, customers, and regulators). This, in turn, helps firms obtain the stakeholder support and hence the resources necessary to enhance its value (Jones, 1995).

With regard to control variables, consistent with prior studies (e.g. Ammann *et al.*, 2011; Newson and Deegan 2002; Clarkson *et al.*, 2013), the coefficients of the size (LOGTA) and profit (ROA) are positive and significant. This finding further ensures that large and profitable firms have a higher firm value, as measured by Tobin's $q$.

## 6. Conclusion

A large portion of studies in the literature addresses the market consequences of CSR disclosures *per se* (e.g. Brammer *et al.*, 2006; Clarkson *et al.*, 2013; De Villiers and van Staden, 2011). Other studies focus on the consequences of CG *per se* (Durnev and Kim, 2005; Gompers *et al.*, 2003). In this study, we see both concepts as closely related based on the view that they both address converging problems and concerns. So, we seek to contribute to the few studies which investigate the market consequences of both CSR and CG practices disclosure (e.g. Fatemi *et al.*, 2017; Jo and Harjoto, 2011; Peiris and Evans, 2010; Plumlee *et al.*, 2015). These studies report conflicting results as regards the influence of ESG disclosures on firm value. For example, Peiris and Evans (2010) find that ESG disclosure has a positive impact on firm value. Horvathova (2010) and McWilliams and Siegel (2000) find a non-significant association between ESG performance disclosures and financial performance. On the other hand, Dhaliwal *et al.* (2014) and Brammer *et al.* (2006) find a negative relationship between ESG and a company's financial performance.

We contribute to this academic debate by examining the economic implications of ESG disclosures in emerging markets, and more particularly in Egypt. The Egyptian context presents an advantage due to the recent use of the sustainability index S&P/EGX ESG. ESG index ranks the best 30 companies from a pool of the top 100 Egyptian companies listed in the Egyptian stock market in terms of their disclosures of social and environmental issues as well as their CG practices. For the purpose of obtaining a reliable result, we use a longer period that starts from 2007 and ends in 2016. We find that the findings support the economic benefits of ESG disclosures, as measured by the firm value. In particular, the results indicate a higher firm value for firms listed in the ESG index compared to EGX100 and all listed firms in the Egyptian stock market. Moreover, we find that firms with higher ranks in the ESG index have a higher firm value, as measured by Tobin's $q$. This indicates to the idea that, for the best usefulness of ESG disclosures, the concern of a company should not only be confined to be enlisted in the index, but it should also enjoy an advanced ranking in the index.

Our study contributes to the few studies that address the economic implications of ESG disclosures in emerging markets. We noticed few studies that investigate the financial implications of ESG disclosures in emerging markets in general (e.g. Akrout and Ben Othman 2016; Malarvizhi and Matta, 2016; Siagian *et al.*, 2013) and in African markets in particular (e.g. Barako and Brown, 2008; De Villiers and Van Staden, 2006). As regards the Egyptian market, most of the studies that have addressed Egyptian CG and social practices focus more on the level of adherence to standards and codes (Eldomiaty *et al.*, 2016); nevertheless, the economic consequences of ESG disclosures still unclear in the Egyptian context. We add to these studies by addressing the economic implications of ESG disclosures in the Egyptian market.

The results of this study have implications for regulators and investors in the Egyptian stock market. This is explained through addressing the economic impact of the ESG index which we believe to play an important role in enhancing ESG practices and disclosures in Egypt. This index was developed as the primary index in Egypt to address the investors' concern about ESG issues. It allows investors to more accurately value firms based on ESG indicators. Then, the reported results of the study provide reflections to policy makers concerning the usefulness of the index. Further, by linking ESG to firm value, the index can enable investors to take a leading role in inducing firms to enhance transparency and disclosure and ultimately improve their reporting standards. This, in turn, will ultimately result in improving sustainability and governance practices in Egypt. This indicates how the Egyptian government's efforts to promote ESG can provide benefits to publicly traded firms.

A limitation of this study is that the index is constructed out of EGX100. But we sought to take the advantage of the relatively new corporate responsibility index which ranks the

best 30 companies out of the pool of EGX100 in terms their ESG performance. To deal with this issue, we used two control groups: EGX100 and all the listed firms in the Egyptian stock market). A future study can use a larger population, for example, by testing ESG of all companies in the Egyptian stock market. Further, we believe that a more interactive research in which the researcher significantly engages with the researched subjects is necessary to further explain the cultural and political reasons behind the noticed positive influence of ESG disclosures on firm value in a less-developed context.

## Notes

1. For simplicity, throughout the study, the S&P/EGX ESG Index is mostly referred to as the ESG Index.
2. EGX 100 is a price index introduced in 2009, which tracks the performance of the 100 active companies in the Egyptian stock market. This study excludes 2011 due to the political and economic unrest and the abnormal behaviour of the Egyptian stock market.
3. The first one was launched in India and it is created by Standard & Poor's (S&P) in collaboration with a local company, CRISIL.
4. As noted earlier, this study excludes 2011 due to the political and economic unrest and the abnormal behaviour of the Egyptian stock market.
5. As an alternative procedure, the companies were ranked according to a score in which the maximum value is 100 and is given to the best company in the index, and the second best company is scored as 99 and so on, and the results remained the same.
6. Leverage is defined as the ratio of total debt to total assets.
7. We performed nonparametric tests because the Tobin's $q$ is not normally distributed.
8. Using random effect regression, the results remain the same.
9. We performed an analysis for the pre-2011 period (2006–2010) and post-2011 period (2012–2016) and the results remained quantitatively the same in both periods.

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