

# **The Impact of Social, Environmental and Corporate Governance Disclosures on Firm Value: Evidence from Egypt**

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## **Abstract**

This study examines the impact of social, environmental and governance disclosures (ESG) on firm value in the Egyptian context during the period started from 2007 until 2016. Using Univariate and multivariate analysis, we find that firms listed in the ESG index have higher firm value compared to unlisted firms. Furthermore, our results document that the quality of ESG, as measured by the relative rank of firms in the ESG index, is positively associated with firm value. These findings generally support the economic benefits associated with social environmental and governance disclosures. Our findings contribute to the growing literature on the economic consequences of ESG and provide important policy implications in relation to regulating sustainability and governance practices.

## **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 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; Guedhami and Kim, 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 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 S&P/EGX ESG Index (Egyptian Corporate Responsibility Index)<sup>1</sup>. 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 corporate governance 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 corporate governance and CSR norms and standards to evaluate the actions and programs of the listed firms. Most of the studies that have addressed Egyptian corporate governance and social practices focused more on the level of adherence to standards and codes

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<sup>1</sup> For simplicity, throughout the study, the S&P/EGX ESG Index is mostly referred to as the ESG Index.

(Eldomiaty et al., 2016). Nevertheless, the market consequences of ESG disclosures still unclear, especially in the Egyptian context.

We investigate the reactions of an emerging stock market to corporate governance and CSR. That is, we investigate whether the companies that are concerned more with corporate governance and CSR perform better than those that are not. In other words, we address the question of whether corporate governance 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 corporate governance 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 corporate governance 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 corporate governance 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 (for example, does the firm value of the company ranked 20th better than the value of the company ranked 30<sup>th</sup> ? ).

Our study uses all the listed firms in Egyptian Stock market (sample one) and the 100 firms listed on the EGX 100 (sample two) during the period which starts from 2007, concurrent with the start of ESG index, and ends in 2016.<sup>2</sup> Using Univariate and multivariate analyses, the findings support

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<sup>2</sup> 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 behavior of the Egyptian Stock market.

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 EGX 100 and all listed firms in the Egyptian stock market. Moreover, we find that firms with higher ranks in the ESG index have 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 ongoing 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 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 dataset 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 two provides background for the environmental social and governance practices in Egypt. Section three presents the literature review. Section four notes

research design. Section five displays the analysis and results. Finally section six 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 US, 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. Akrouta and Ben Othmanb, 2015; Malarvizhi and Matta, 2016; Siagian et al., 2013) and African markets in particular (e.g. Barako and Brown, 2008; 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, policies and initiatives. This recent awareness is expected to achieve sustainable development as well as rehabilitating the effectiveness of the Egyptian Environmental Affairs Agency (EEAA) to monitor the performance of business organisations in environmental issues (Wehba, 2008).

With regard to corporate governance, 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' corporate governance and CSR practices (Eldomiaty et al., 2016). In 2002, new listing rules went into effect that increased disclosures and corporate governance requirements for listed firms. In 2003, Egypt complied with the Organisation for Economic Co-operation and Development's (OECD) 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 corporate governance 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 Corporate Governance 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 corporate governance. The new version emphasizes 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 provide 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 (EFSA, 2016).

As an important land mark 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<sup>3</sup>. This index was planned and developed as the premier index in Egypt to address the investors' concern about environmental, social and governance issues. The index is the responsibility of a committee composed of the Egyptian Institute of Directors, Egyptian Corporate Responsibility Center, and Standard & Poor's (S&P). It measures the quality of information that companies make available concerning their corporate governance, 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 corporate governance issues. All of the EGX 100 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 environmental, social, and governance 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 corporate governance 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

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<sup>3</sup> The first one was launched in India and it is created by Standard & Poor's (S&P) in collaboration with a local company, CRISIL.

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 corporate governance 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, corporate governance and corruption, business ethics and corporate responsibility, environment, employees, community, and customers/product (see Appendices I and II for details).

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 corporate governance, 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 environmental, social and governance 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 Sunuse, 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 voluntarily 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, patronize 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 enhance 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 minimize 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 cost of equity capital 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 cost of equity capital are more likely to release a stand-alone 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 Sunuse (2012) find that shareholders respond positively 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 cost of capital. 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 (BSE) in India. In a related study, Akrouta and Ben Othmanb (2015) investigate the effect of environmental disclosure levels on the stock market liquidity of Arab Middle Eastern and North African (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 Akrouta and Ben Othman's (2015) study also brought evidence from the Egyptian context, our study is different in a number of respects. Firstly, 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 environmental, social and governance disclosures on firm values in Egypt rather looking at the each of them individually. Thirdly, while Akrouta and Ben Othman (2015) 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 corporate governance; For example, Gompers et al. (2003) analyse the empirical relationship of a governance index with corporate performance and find that corporate governance is strongly correlated with stock returns during the 1990s. Asbaugh et al. (2004) find that firms with better governance have lower cost of equity capital 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 corporate governance 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 corporate governance 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 corporate social responsibility and corporate governance have originated from distinct academic strains of thought, the concerns and problems they address are converging. Now corporate governance 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 develop 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 corporate governance framework that now addresses the concerns of the social, environmental, and public arena (McBarnet, 2007). The literature on the aspects of good corporate governance has shown that corporate governance is strongly related to CSR (Beltratti, 2005; Pava and Krausz, 1996; Stanwick and Stanwick, 1998). For example, Kaymak and Besktas (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 positive impact on firm value. For example, Peiris and Evans (2010) suggest that ESG factors impact corporate financial performance and therefore are relevant for consideration of investment decision-makers. Jo and Harjoto (2011) find the CSR choice is positively associated with the internal and external corporate governance 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 nonfinancial 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.*

*H 2: 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. 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 EGX 100 firms, the second control group consists of all listed firms in the Egyptian Stock market. Table one below shows the final number of observations used in regression analysis.

**Table 1: Sample Size**

Items	EGX100 Sample	All listed Sample
Initial number of observations <sup>5</sup>	900	2043
Less: Financial firms	70	264
Less:Missing observations	79	259
Number of observation used in regression	751	1507

## ***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.

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

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

<sup>4</sup> As noted earlier, this study excludes 2011 due to the political and economic unrest and the abnormal behaviour of the Egyptian Stock market.

<sup>5</sup> For all listed sample, the number of firms listed is 227 firms over nine years. For EGX100, the number of firms is 100 over nine years.

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 2 summarizes the definitions of the variables.

**Table 2: Summary of Variable measurement**

Variables	Definitions
Tobin's q	The market value of assets divided by the replacement value of assets. <sup>6</sup>
ESG LISTING	A dummy variable coded as one if the firm is listed in the ESG index ; otherwise, it is coded as zero
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 one if the firm is listed in the EGX index; otherwise, it is coded as zero

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

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<sup>6</sup> 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).

companies in terms of their environmental, social and corporate governance performance. It includes 30 firms from a pool of hundred 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<sup>7</sup>. 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)<sup>8</sup>, 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 three 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 % and the average leverage is 49 %.

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<sup>7</sup> 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.

<sup>8</sup> Leverage is defined as the ratio of total debt to total assets.

**Table 3: Descriptive statistics and correlation matrix**

Panel (A) Descriptive statistics						
Variable	Mean	Median	P25	P75	SD	
<b>Tobin's q</b>	1.91	1.3	1	1.82	3.58	
<b>ROA</b>	0.086	0.042	0.005	0.111	0.397	
<b>LOGTA</b>	13.6	13.5	12.3	14.9	1.91	
<b>LEVERAGE</b>	0.495	0.454	0.268	0.693	0.311	
<b>CapEx</b>	0.047	0.014	.002	0.05	0.122	

  

Panel (B) Spearman Correlation Matrix						
	Tobin's q	ROA	LOGTA	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

\*\*\*, \*\*, \* indicate to statistical significance at the 1%, 5%, and 10% levels, respectively, based on two-tailed tests

**Variables definition:** 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 zero. ESGLISTING is a dummy variable coded as one if the firm is listed in the ESG index; otherwise, it is coded as zero

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 q; the coefficient of correlation is positive and significant (.14\*\*\*). This finding suggests that firms which perform well along with the three parameters of environment, society and corporate

governance have higher firm value. These results are consistent with prior studies which see that social, environmental and corporate governance disclosures enhances firm value (Dhaliwal et al. 2011; Jo and Harjoto, 2011; Peiris and Evans, 2010; Yadav et al., 2016). 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 (.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<sup>9</sup>. 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 four 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.

**Table 4: Nonparametric tests of the hypotheses**

Items	ESG LISTING	NON-EGS LISTING	Mann-Whitney test / t test
Tobin's q (ESG LISTING versus All Listed)	3.114	1.697	z = 5.564***
Tobin's q (ESG LISTING versus EGX100)	3.114	1.709	z= 2.902***
Tobin's q (ESG LISTING versus All Listed)	3.114	1.697	t =6.0033***
Tobin's q (ESG LISTING versus EGX100)	3.114	1.709	t = 3.8922***

The findings are consistent with hypothesis 1 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

<sup>9</sup> We performed nonparametric tests because the Tobin's q is not normally distributed.

the Tobin's q of ESG 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 cost of equity capital (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 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 five 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 EGX 100 listed firms. We used the pooled regressions with a robust standard error, clustered by firm<sup>10</sup>. Our regression controls for time and industry fixed effect.

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<sup>10</sup> Using random effect regression, the results remain the same.

**Table 5: Regression analysis for the relationship between firm value and ESG Listing and ESG Ranking.**

	All Listed sample		EGX100 Sample		All Listed sample		EGX100 sample	
	Coef.	T.value	Coef.	T.value	Coef.	T.value	Coef.	T.value
<b>ESG LISTING (H1)</b>	0.208**	2.441	0.159**	2.23				
<b>ESG RANKING (H2)</b>					0.263***	3.47	0.165**	2.5
<b>LOGTA</b>	0.042*	1.687	0.063**	2.02**	0.037***	5.39	0.057***	5.859
<b>ROA</b>	0.521***	5.568	0.665***	3.323***	0.528***	15.532	0.684***	9.827
<b>LEVERAGE</b>	0.011	0.054	0.241	0.982	0.014***	0.35	0.251***	4.704
<b>CapTA</b>	0.204	0.75	0.061	0.148	0.208*	1.861	0.068	0.31
<b>EGX100+</b>	0.058	1.637			0.069***	4.073		
<b>Cons</b>	0.86	3.176	1.151**	3.018***	0.801***	8.86	1.088	8.082
<b>N.of Observation</b>		1507		751		1507		751
<b>adj. R-sq</b>		0.2542		0.2938				0.2825
<b>Time Effect</b>		Yes		Yes				Yes
<b>Industry Effect</b>		Yes		Yes				Yes
<b>Firm Clustered SE</b>		Yes		Yes				Yes

$TQ_{it} = \alpha + \beta_{it} \text{ ESG LISTING} + \beta_{it} \text{ ROA} + \beta_{it} \text{ LOGTA} + \beta_{it} \text{ LEVERAGE} + \beta_{it} \text{ CapTA} + \beta_{it} \text{ EGX100} + \text{Industry FE} + \text{Year FE}$   
(Hypothesis 1)

$TQ_{it} = \alpha + \beta_{it} \text{ ESG RANKING} + \beta_{it} \text{ ROA} + \beta_{it} \text{ LOGTA} + \beta_{it} \text{ LEVERAGE} + \beta_{it} \text{ CAX} + \beta_{it} \text{ EGX100} + \text{Industry FE} + \text{Year FE}$   
(Hypothesis 2)

+ EGX100 is excluded when testing EGX sample.

\*\*\*, \*\*, \* indicate statistical significance at the 1%, 5%, and 10% levels, respectively, based on two-tailed tests

Variables definition: 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 one if the firm is listed in the ESG index; otherwise, it is coded as zero. 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 one if the firm is listed in the EGX index; otherwise, it is coded as zero.

In this study, we expected that the listed firms in the ESG index may have higher firm value (hypothesis one) and that this value may increase along with the relative ranking of these firms in the ESG index (hypothesis two). 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 hypotheses one and two. The coefficient of ESG LISTING is positive and significant ( $\beta = 0.208^{**}$ ), suggesting that firms listed in the ESG index have higher firm value compared to non-listed firms<sup>11</sup>.

Furthermore, the results suggest that the higher the relative rank in the ESG index, the higher the firm value. Consistent with hypothesis two, 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 hypotheses one and two, but with lower significance. Table five 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 corporate governance 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

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<sup>11</sup> 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.

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 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 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 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 nonsignificant 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 corporate governance 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 firm value. In particular, the results indicate a higher firm value for firms listed in the ESG index compared to EGX 100 and all listed firms in the Egyptian stock market. Moreover, we find that firms with higher ranks in the ESG index have 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 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. Akrouf & Ben Othman 2015; Malarvizhi and Matta, 2016; Siagian et al., 2013) and in African markets in particular (e.g. Barako and Brown, 2008; Villiers and Van Staden, 2006). As regards the Egyptian market, most of the studies that have addressed Egyptian corporate governance 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 environmental, social and governance issues. It allows investors to more accurately value firms based on environmental, social and governance 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 EGX 100. 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 EGX 100 in terms their ESG performance. To deal with this issue, we used two control groups: EGX 100 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.

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