



## The Impact of Environmental, Social and Governance Index on Firm Value: Evidence from Malaysia

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### ABSTRACT

In this study we investigate the relationship of environmental, social and governance (ESG) practices and the consequences related to their disclosure on the firm's value. Our data is extracted from the final accounts of 122 firms listed on Bursa Malaysia over the period 2011 to 2019 with 1098 observations. We used three instrumental variables in this study in order to find the endogeneity of ESG performance namely, the existence of a CSR committee on the Board of directors, dispersion of forecasted earnings and finally the ownership concentration of the firm. We used three first stage regression models related to ESG disclosure and the interaction between the strength, concern, and disclosure of ESG. Besides that, we also use the second stage regression to investigate the insider effects of ESG activities and ESG disclosure. Our results are consistent with the approach that indicate that ESG strength increases firm value whereas ESG disclosure and ESG concern decreases the firm value. Most importantly, this study finds that ESG disclosures can play the role by which a firm can reduce the negative effect of weakness and improve the positive effect of strength.

**Keywords:** Environmental, Social Governance Practices, ESG Activities, ESG Performance

**JEL Classifications:** F64, M14

### 1. INTRODUCTION

The research objective is driven by the concern that the ESG index affects the market values of Malaysian listed firms. To identify the association between ESG index and firm value, we investigate the interrelationship between the strength and weakness of the firm with respect to environmental and social practices. Lately, numerous researchers worldwide tend to evaluate the impact of ESG in respect of the different domains of business. The focus of this study is to identify the valuation of possible effects of ESG on firm's financial status. However, the question that arises is how the firm value is linked to the ESG related disclosures. Therefore, our research proposal is concerned with identifying the effects of ESG disclosure on both the firm internally and the economy more largely as well as the moderating impact of such disclosures on the firm value. Moreover, ESG disclosure may play dual roles of both strength and weakness for a firm as it reduces information

asymmetries for investors that helps them to realize the firm value more effectively when making their decisions. Similarly, firm value may also be impaired by ESG disclosure in cases where investors find any eye wash or frivolous remarks when making their disclosures.

As far as the financial performance of firms are concerned with respect to ESG disclosures, it needs to be investigated rigorously in the Malaysian economy. As Malaysia is an emerging economy, it should be aware of its strengths and weakness in order to protect both local and international investors. However, previous studies which investigated this same issue in various parts of the world found conflicting results and a lack of unanimity. In the initial stages, ESG practices were considered as a cost and as it exceeded the minimum requirements of legal standards, it started reducing the firm value. However, the whole idea of environmental and social regulatory restrictions is based on the notion that firms must

be compelled to adopt practices that make them responsible for the betterment of the environment and society. Otherwise, they will find it unprofitable or costly and become reluctant to adopt these practices on their own volition. Giese et al. (2019) study found that ESG practices have the potential to increase firm value. Moreover, the disclosure of social and environmental activities improves the management's ability to attract qualified employees and negotiate with them on their own terms. However, these activities also strengthen the firm's interaction with its stakeholders and enhances its reputation in the eyes of the community (Duque-Grisales and Aguilera-Caracuel, 2019).

Some of the earlier empirical studies had conflicting results related to the firm's performance in dealing with ESG effects. Some of the studies reported adverse results regarding the relationship between ESG and firm value. However, Fatemi et al. (2018) found a positive association between ESG and firm value in a meta-analysis but this relationship gradually decreased over time.

It is also been noted within academic circles that many firms, especially well-known multinationals are intending to report on ESG matters with the aim of showing legitimacy and to also enhance their reputations. For instance, in 1996, corporate social responsibility (CSR) was only reported by 300 firms globally. This number gradually increased as time passed and by the end of 2014 the corresponding figure was more than 7000 firms worldwide. However, despite this, the global reporting initiative (GRI) guideline council notes that the overall quality of ESG disclosures remains heterogeneous (Ashwin et al., 2016).

While assessing the relationship between ESG and firm value, it is necessary to realize that ESG reporting may reflect many motives beyond merely the limitations of strengths and weaknesses. Changes in ESG policies can be explained by disclosures and bad reputations can also be mitigated by disclosures. There is also the possibility that the firm underreports its ESG disclosures for fear that it would not be able to maintain its earnings track record in future.

## 2. LITERATURE REVIEW

### 2.1. Environmental, Social and Governance

In the initial stages when the concept of ESG was introduced, the relationship between ESG activities and firm periodic growth was consistently negative (Fatemi et al., 2011). This argument is best elaborated by (Kim et al., 2011), that the primary responsibility of a firm should be to maximize the shareholder's profit. The underlying assumption behind this statement is that ESG costs must not exceed the payoff from its activities. A recent study carried out by Aboud and Diab (2018) which explored firm's ESG reporting after winning green awards found that they are experiencing negative abnormal returns. Findings such as these lend credence to suggestions that firms would ultimately be punished by investors for what they perceived to be loss making investments.

Currently there is increased awareness of socially responsible behavior worldwide, so it is generally assumed that activities related

to the welfare of community tend to have a positive reflection on firm's status in term of monetary value (Mervelskemper and Streit, 2017). Velte (2017) notes stakeholder theory argues that non-owner stakeholders have greater opportunities to safeguard their interests under the umbrella of socially responsible behavior. It provides more opportunities for non-owner stakeholders including customers, employees, debtors, and state regulators have comparatively better contracting options and provides a new path for further growth and reduces risk. Moreover, from a strategic management perspective, CSR is neither a cost, constraint nor a charitable act. Indeed, it is a source of opportunity, innovation and competitive advantage (Husted and de Sousa-Filho, 2017).

With respect to empirical analysis, there is a large volume of literature regarding ESG (CSR) factors. Several studies have reported a positive association between ESG and non-financial performance measures such as efficient production process and minimum material and energy consumption.

However, the relationship between ESG practices and financial performance has also been examined in various studies. Numerous studies have found a negative or insignificant relationship between ESG performance and firm value depending on the sample data chosen. Similarly, other studies found a positive relationship between ESG performance and firm value by deploying structural equation modelling in which environmental performance and control is peroxide by economic performance. Previously, El Ghoul et al. (2017) recognize a positive relationship between ESG performance and firm value using the data of 53 different countries.

### 2.2. Environmental, Social and Governance (ESG) Disclosure

The intensity, methods, and format of EGS (CSR) reporting varies from firm to firm. Some firms started reporting ESG performance in accordance with guidelines put forward by the Global Reporting Initiative (GRI) (Vigneau et al., 2015). In order to align with international standards, the initiative of integrated reporting (IIR) has put forward a set of standards which was developed in accordance with the internationally published framework in 2013 (Camilleri, 2018). However, these conventional methods are old and are not accessible by everyone, therefore firms have started using non-traditional methods such as websites and social media in order to disclose their ESG initiatives.

Independent researchers collect the data manually from annual reports and corporate websites in order to develop ratings that define the quality of ESG reporting (Cho et al., 2012). The most recently available ratings of ESG disclosure are provided by specialist commercial information providers. Bloomberg is one of the information providers that compiles the database for ESG ratings.

ESG reporting may use to portray a good image to the public in order to create a favorable perception through documenting changes in its existing policies with respect to ESG matters. For example, the firm may exaggerate its disclosures in order to hide negative effects on the environment caused by its production. In this manner, the firm can maintain its reputation and market

value if checks and balances are weak (Cho et al., 2012). ESG disclosures can be eye washed by slick promotion instead of reflecting the true picture. Furthermore, firms try to show that they are more ESG conscious. There are several ways in which managerial and accounting literature contributed by this study. Initially we are not aware of any study related to social and environmental disclosure, discussing the impact on firm value. Moreover, using Malaysian firms' data we will examine the association of social and environmental disclosure with the main element of that is called firm performance, as firm value always driven from firm performance. We also investigate the notion that state that good corporate investors evaluate the firm value by analyzing firm's reputation, operating environment and earnings growth that ultimately results in quality reported earnings. This study covers the social and environmental disclosure wholly instead of considering impact of one or two areas such as customer satisfaction, environmental performance, and workplace quality.

However, environmental and social disclosure is a mean of transparency to the investors and accountability to the regulators. Moreover, it is helpful for investors and stakeholders to make appropriate decisions easily. It is assumed that, environmental and social disclosure is activity of giving relevant information to the investors and stakeholders in order to make strategic decision (Butar-Butar and Indarto, 2018). Since the relationship between ESG and firm value is concern, the instrumental theory, legitimacy theory and signaling theory is essential to explain this relationship (Moesono et al., 2016).

There is a massive debate going on across the world related to the returns associated with environmental and social governance. The corporate investors focus on the interlinked cost of these practices with respect to the financial returns. Previously, a number of studies tend to prove that the financial performance and corporate social responsibility have a positive relationship (Wang et al., 2018). This is because the management used to exercise discretionary accounting in order to manipulate numbers to satisfy the desired target of investors.

### 2.3. Hypothesis Development

As Malaysia is a rapidly emerging economy and the use of both corporate and social practices is steadily increasing, we have the incentive to investigate the relationship between ESG disclosures and firm value using a sample of Malaysian listed firms.

Our hypothesis assumes that firm value is directly proportional to the ESG index. The more positive the ESG disclosure in annual reports, the more it acts to enhance the firm's value. In other words, we argue that firm disclosures related to ESG activities are positively associated with the moderation of firm value. Therefore, we derived our theoretical model as follows:

Firm Value = f (ESG activities)

Firm Value = f (ESG disclosure)

Firm Value = f (ESG activities x ESG disclosure).

In keeping with the results of previous studies, we are anticipating a positive relationship between ESG disclosures and firm value in all firms. Hence, keeping everything else constant we assume

that ESG strength and firm value are positively associated with each other whereas ESG's concern and firm value are negatively associated with each other. Moreover, managerial motives also have the potential to drive ESG disclosures in different ways. With respect to the previous results, due to inconclusive findings, we are unable to draw the first-order relationship between ESG disclosures and firm value or different attributes of ESG such as ESG strength and ESG weaknesses. We therefore test the simple hypothesis by claiming no relationship amongst each other.

## 3. RESEARCH METHODOLOGY

In order to examine the performance of ESG activities and ESG disclosure individually and ESG activities and ESG disclosure as combined with respect to the increase in firm value, we need to address the omitted variable or simultaneity that can possibly produce the endogeneity of ESG disclosure. Therefore, if the firm value is impacted by ESG disclosure then an error term will arise between firm value and ESG disclosure in the results of regression analysis. Moreover, inconsistency and biasedness may exist in the estimated coefficient. Thus, the instrumental variable approach will be applied in order to manage this endogeneity (Eugster and Wagner, 2015).

In this study, three instrumental variables are used to analyze our potential endogenous variables of ESG disclosure (ESGDIS). The first variable relates to the existence of the CSR committee on the Board of Directors (CSCOM). Previous researchers found that the existence of CSR committee in the firm supports the idea of disclosing information related to the emission of greenhouse gases and reported high quality disclosures. Moreover, previous studies found that the existence of CSR committee on the Board, push the firm to disclose more comprehensive information regarding social issues (Liao et al., 2015). The evidence suggests that the main role of the CSR committee is to provide information related to sustainability to the stakeholders. Therefore, our expectations thus far are related to the correlation of ESG disclosures and our first instrumental variable and we consider it to be high enough to satisfy the relevance requirement. One researcher argued that the firm performance cannot have any impact due to the existence of CSR committee. The evidence extracted by comparing the market value of the firms with audit committee and without audit committee but the results were almost similar. Hence, the instrumental variable used in this study hardly affects firm value, unless it reaches exogeneity.

The second instrumental variable we use in this study is the dispersion of analysts' earnings forecasts (DAEF). Previous evidence from the literature related to this disclosure indicates that DAEF is negatively associated with the level of disclosure. Anecdotal evidence suggests that disclosure reduces uncertainty in the forecasted earnings and improves the quality of information for analysts. In addition, studies have found that forecasted earnings by analysts are negatively associated with mandated CSR activities and positively associated with voluntary ESG activities (Harjoto and Laksmana, 2018). By comparing all the previous findings, we concluded that DAEF is enough to satisfy the relevance condition of the instrument. There is no conclusive evidence available regarding the association of DAEF and firm

value. Various studies found that higher DAEF results in inflated stock prices and deflated future returns (Sandwidi and Cellier, 2019). On the other hand, other studies reported the association of higher DAEF with low current stock price and higher future profits. Moreover, some studies reported no monotonic association while others failed to find a significant association. In the light of this evidence, we are unable to anticipate the exogeneity of our second instrument. Therefore, we will conduct several post estimations tests to investigate the relevance of our instrument.

The third instrumental variable we used to evaluate the ESG disclosure is the ownership concentration of the firm's stock (OWCFS). Lagasio and Cucari (2019) found the association between OWCFS and the index of disclosure to be negative. For instance, family-owned firms have majority shareholders and are unlikely to disclose information required by law because the disclosures requirements of the public are relatively low. Majority shareholders have access to various resources other than the publicly available disclosure reports which they can easily access during board meetings. Prior research found that firms with high ownership concentrations are less interested in making any type of disclosures (Fatemi et al., 2018). Therefore, we will maximize our efforts to make sure the OWCFS fulfill all the relevant conditions. However, the evidence related to ownership structure and firm performance are mixed, some studies reported a positive relationship, while others reported a negative relationship and some other researchers found no significant relationship at all (Wanzenried, 2018). Therefore, we will conduct several post estimations tests to investigate the validity of our instrument.

To satisfy the requirement of our model, we must look into the interaction terms and account for the potential endogeneity concern with ESG disclosure and ESG activities. We have to draw the line between ESG strength and ESG concern. In the light of previous studies, we use the interaction between ESG strength (ESGSTR) and ESG disclosure (ESGDIS) which is driven by instrumental variables; and the interaction between ESG concerns (ESGCONR) and ESG disclosure (ESGDIS) as the instrumental interaction term among ESGSTR, ESGDIS, and ESGCONR. Hence, our empirical approach based on three first-stage regressions, derived from each of the endogenous variables.

$$ESGDIS = f(CSCOM, DAEF, OWCFS)$$

$$ESGSTR*ESGDIS = f(ESGSTR* CSCOM, ESGSTR *DAEF, ESGSTR *OWCFS)$$

$$ESGCONR*ESGDIS = f(ESGCONR* CSCOM, ESGCONR*DAEF, ESGCONR*OWCFS).$$

In order to examine the satisfaction level of relevance condition and exogenous condition related to our instrumental variable, we will rely on test statistics of several post estimations. The regression results are based on Angrist-Pischke's Partial F-statistic and Shea's Partial R<sup>2</sup> and the results for tests of under-identification, weak identification, and over-identification.

In order to satisfy this research ideology, we use different control variables as followed by previous literature that may play a part

in the development of ESG disclosure, ESG activities, and firm value. These variables include return on asset (ROA) and increase in ROA (INCROA) as a proxy of firm value. Firm size considered to be the simple logarithm of total sale and is denoted by (FSALE). The strength of asset in terms of sales are obtained by asset to sales ratio and denoted by (ASSAL). The amount of debt used by the firm with respect to the equity would be the ratio of debt over equity and is denoted by (DEEQ). Advertising is an expenditure and denoted by (SAEX). Research and development is also an expenditure and is denoted by (REDE). Furthermore, we include the fixed effects of industry and year. Hence, our two-stage model is as follows:

### 3.1. First Stage

$$\begin{aligned} ESGDIS_{i,y} = & \alpha_0 + \beta_1 CSCOM_{i,y} + \beta_2 DAEF_{i,y} \\ & + \beta_3 OWCFS_{i,y} + \beta_4 ESGSTR_{i,y} + \beta_5 ESGCONR_{i,y} \\ & + \beta_6 ROA_{i,y} + \beta_7 INCROA_{i,y} + \beta_8 FSALE_{i,y} + \beta_9 ASSAL_{i,y} \\ & + \beta_{10} DEEQ_{i,y} + \beta_{11} SAEX_{i,y} + \beta_{12} REDE_{i,y} \\ & + INDUSTRY_{i,y} + YEAR_{i,y} + \varepsilon_{i,y} \end{aligned}$$

$$\begin{aligned} SGSTR^* ESGDIS_{i,y} = & \alpha_0 + \beta_1 ESGSTR^* CSCOM_{i,y} \\ & + \beta_2 ESGSTR^* DAEF_{i,y} + \beta_3 ESGSTR^* OWCFS_{i,y} \\ & + \beta_4 ESGSTR_{i,y} + \beta_5 ESGCONR_{i,y} + \beta_6 ROA_{i,y} \\ & + \beta_7 INCROA_{i,y} + \beta_8 FSALE_{i,y} + \beta_9 ASSAL_{i,y} + \beta_{10} DEEQ_{i,y} \\ & + \beta_{11} SAEX_{i,y} + \beta_{12} REDE_{i,y} + INDUSTRY_{i,y} + YEAR_{i,y} + \varepsilon_{i,y} \end{aligned}$$

$$\begin{aligned} ESGCONR^* ESGDIS_{i,y} = & \alpha_0 + \beta_1 ESGCONR^* CSCOM_{i,y} \\ & + \beta_2 ESGCONR^* DAEF_{i,y} + \beta_3 ESGCONR^* OWCFS_{i,y} \\ & + \beta_4 ESGSTR_{i,y} + \beta_5 ESGCONR_{i,y} + \beta_6 ROA_{i,y} + \beta_7 INCROA_{i,y} \\ & + \beta_8 FSALE_{i,y} + \beta_9 ASSAL_{i,y} + \beta_{10} DEEQ_{i,y} + \beta_{11} SAEX_{i,y} \\ & + \beta_{12} REDE_{i,y} + INDUSTRY_{i,y} + YEAR_{i,y} + \varepsilon_{i,y} \end{aligned}$$

### 3.2. Second Stage

$$\begin{aligned} TOBINQ_{i,y} = & \alpha_0 + \beta_1 CSCOM_{i,y} + \beta_2 ESGSTR_{i,y} \\ & + \beta_3 ESGSTR^* CSCOM_{i,y} + \beta_4 ESGCONR_{i,y} \\ & + \beta_5 ESGCONR^* CSCOM_{i,y} + \beta_6 ROA_{i,y} + \beta_7 INCROA_{i,y} \\ & + \beta_8 FSALE_{i,y} + \beta_9 ASSAL_{i,y} + \beta_{10} DEEQ_{i,y} + \beta_{11} SAEX_{i,y} \\ & + \beta_{12} REDE_{i,y} + INDUSTRY_{i,y} + YEAR_{i,y} + \varepsilon_{i,y} \end{aligned}$$

### 3.3. Data and Sample

Since Malaysia is an emerging economy, it must build the ESG mechanisms in order to compete in international markets. Sustainable investment has already been proven to be significant in the development of business and is liked by the shareholders. Stock exchange analysis indicates that investors are deeply interested in ESG related activities and disclosures. Industry experts in Malaysia acknowledge that ESG disclosures would be paramount for the long-term development and stability of a healthy capital market.

Both individual investors and institutions integrate the ESG factor when making investment decisions.

Our sample data was hand collected from the web sites of Malaysian companies. The data collected belongs to companies listed on the Malaysian stock exchange Bursa Malaysia and represents non-financial companies listed on the Malaysian bourse over the period 2011 to 2019. These firms represent different business sectors except the financial sector (because they are subject to different regulatory bodies and compliance requirements) and fulfill the criteria required by the factors comprising ESG research. We didn't include the data of those firms whose core information is missing, for example, total sales or total expenses, or were reluctant to provide transparent information. There are more than 900 companies listed on the Malaysian stock exchange. We selected 122 listed companies which were mostly non-family owned (since family owned companies were not willing to disclose the ESG information in their reports or else try to hide the actual information) that belong to different business sectors with a total of 1098 observations.

## 4. RESULTS

### 4.1. Descriptive Analysis

Table 1 below contains the descriptive statistics of our sample data gathered for this study. The mean value of our first variable TOBINQ is 1.89 along with the median of 1.86 and the standard deviation of 1.0. ESG disclosure has a mean value of approximately 21.9 along with the median of 22.9 and the standard deviation of

**Table 1: Descriptive statistics**

Variables	Min.	Max.	Mean	Median	Std. Dev
TOBINQ	1.283	2.163	1.892	1.861	1.001
ESGDIS	13.220	29.213	21.872	22.841	12.823
CSCOM	0.000	1.001	0.513	0.544	0.515
DAEF	0.040	0.150	0.136	0.138	0.212
OWCFS	6.901	12.501	11.780	11.420	11.861
ESGSTR	1.001	6.000	3.313	3.512	3.814
ESGCONR	2.002	6.000	3.674	3.572	2.473
ROA	0.044	0.113	0.082	0.091	0.076
INCROA	-0.268	0.165	-0.003	-0.003	1.383
FSALE	7.634	9.375	8.317	8.127	1.213
ASSAL	0.982	2.416	2.107	2.202	2.211
DEEQ	0.101	0.612	0.417	0.429	0.514
SAEX	0.000	0.024	0.018	0.022	0.058
REDE	0.000	0.025	0.021	0.019	0.032

**Table 2: Correlation analysis**

Variables	1	2	3	4	5	6	7	8	9	10	11
TOBINQ	1.0000										
ESGDIS	-0.0453	1.0000									
ESGSTR	0.0017	0.6355	1.0000								
ESGCONR	-0.1313	0.3261	0.3619	1.0000							
ROA	0.7255	0.0295	0.0817	-0.0467	1.0000						
INCROA	0.0324	0.0209	0.0175	-0.0177	0.0904	1.0000					
FSALE	-0.1642	0.4947	0.6064	0.5715	-0.0111	0.0271	1.0000				
ASSAL	-0.2571	-0.1173	-0.1209	-0.0915	-0.3321	-0.0329	-0.2986	1.0000			
DEEQ	-0.3979	-0.0539	-0.0681	0.0593	-0.3897	0.0251	0.0257	0.3891	1.0000		
SAEX	0.3032	-0.0012	0.0981	-0.0999	0.1763	0.0149	-0.0815	-0.0711	-0.1576	1.0000	
REDE	0.1486	0.1031	0.1678	0.0783	0.1053	0.0128	-0.1098	-0.0918	-0.2496	0.3006	1.0000

Correlation significance denoted by bold numbers, at least 5% level.

12.8. However, the mean value of ESG strength and ESG concern is 3.313 and 3.67 along with the median value of 3.51 and 3.57; and the standard deviation of 3.81 and 2.47. These results are considered reasonable because they are consistent with previous studies in the same area. The descriptive stats of our instrumental variable CSR committee show a mean of 51% and a median of 54%. The mean estimation of our second instrumental variable related to earnings forecasting is 13.6% and the median is 13.8% along with the standard deviation of 21%. The third instrumental variable, the ownership concentration has a mean estimation of 11.8% with a standard deviation of around 12%. Whereas, control variables have mean values as ROA, FSALE, ASSAL, DEEQ, SAEX and REDE are 8%, 8.3%, 201%, 41.7%, 1.8% and 2.1% respectively. This data analysis is consistent with most prior studies related to CSR performance and corporate governance.

### 4.2. Correlation Analysis

Table 2 shows the cross-correlation of variables of ESG index and firm value. It indicates that Tobin's q has a positive correlation with ESGSTR, ROA, INCROA, SAEX, and REDE. Amongst them, Tobin's q and ROA has a strong and significant correlation with a value of 0.7255. It is negatively correlated with ESGDIS, ESGCONR, FSALE, ASSAL, and DEEQ. Overall, the correlation of Tobin's q with control variables is significant except for INCROA. ESG disclosure has a positive correlation with all the variables excluding ASSAL, DEEQ, and SAEX. There is significant correlation between ESG disclosure and ESGSTR, ESGCONR, FSALE, ASSAL, DEEQ, and SAEX. Moreover, the correlation of ESG disclosure and ESG strength is the strongest amongst other variables with a value of 0.6355. ESG strength has a negative correlation with ASSAL and DEEQ, and other variables carry a positive correlation. It has a significant correlation with all variables except INCROA. ESG strength has the strongest correlation with FSALE with the value of 0.6064 which indicates that firm sale significantly increases with the existence of ESG strength. ESG concern has a positive correlation with FSALE and DEEQ and negative correlation with ROA, INCROA, and ASSAL. ESG concern has significant correlation with all control variables except for ROA and INCROA which are indicative of performance.

### 4.3. Regression Results of ESG Performance, ESG Disclosure and Firm Value

Table 3 contains the results of 2 stage least squares. The first three columns present the investigation of first stage regression related to

**Table 3: Regression results of ESG performance, ESG disclosure and firm value**

Variables	First-stage ESGDIS	First-stage ESGSTR* ESGDIS	First-stage ESGCONR* ESGDIS	Second-stage TOBINQ
CSCOM	5.5815*** (3.82) (0.000)	-28.2702*** (-2.93) (0.005)	-27.1805*** (-3.37) (0.003)	
DAEF	-5.7494 (-1.47) (0.419)	-22.5017 (-1.11) (0.276)	-62.8657** (-2.49) (0.015)	
OWCFS	-0.1576*** (-4.35) (0.000)	-0.6068** (-2.25) (0.028)	-0.5228 (-1.55) (0.131)	
ESGDIS				-0.0184** (-2.11) (0.041)
ESGSTR	1.0248*** (3.79) (0.000)	31.7635*** (8.78) (0.000)	3.8884*** (3.73) (0.000)	0.0741* (1.93) (0.058)
ESGSTR*ESGDIS				-0.0019* (-1.86) (0.068)
ESGSTR*CSCOM	0.1558 (0.78) (0.451)	12.1599*** (5.41) (0.000)	1.2463 (1.26) (0.217)	
ESGSTR*DAEF	1.5991** (2.46) (0.017)	0.9631 (0.18) (0.873)	8.8285*** (2.79) (0.008)	
ESGSTR*OWCFS	0.0242*** (3.79) (0.000)	0.923 (0.79) (0.441)	0.1083*** (3.73) (0.003)	
ESGCONR	-0.0606 (-0.20) (0.85)	-2.4568 (-1.33) (0.211)	19.5824*** (8.64) (0.000)	-0.0815** (-2.09) (0.043)
ESGCONR*ESGDIS				0.0033** (2.27) (0.031)
ESGCONR*CSCOM	-0.5897* (-1.86) (0.071)	-3.1586 (-1.58) (0.131)	9.0638*** (3.88) (0.000)	
ESGCONR*DAEF	0.871 (0.97) (0.35)	7.8686 (1.48) (0.15)	11.2845 (1.61) (1.61)	
ESGCONR*OWCFS	0.0203** (2.19) (0.03)	0.1219** (2.19) (0.03)	0.73 (0.75) (0.47)	
ROA	-0.5545 (-0.09) (0.94)	27.50 (0.53) (0.61)	14.0011*** (3.73) (0.00)	11.2651*** (15.13) (0.00)
INCROA	0.1279 (0.99) (0.331)	-0.0703 (-0.09) (0.95)	0.6033 (1.11) (0.28)	-0.0195* (-1.68) (0.099)
FSALE	1.5237*** (2.890) (0.001)	1.6367 (0.470) (0.655)	3.97 (1.610) (0.117)	-0.1173*** (-3.13) (0.003)
ASSAL	-0.3121* (-1.91) (0.055)	-1.2685 (-1.21) (0.238)	-0.3566 (-0.44) (0.679)	-0.0433*** (-3.01) (0.005)
DEEQ	-1.053* (-1.98) (0.05)	-1.207 (-0.39) (0.72)	-6.760* (-1.96) (0.06)	-0.113*** (-2.66) (0.01)
SAEX	-10.0077 (-1.58) (0.12)	-79.1831 (-1.66) (0.11)	-52.0679** (-2.14) (0.04)	1.0493* (1.96) (0.06)
REDE	13.65 (0.98) (0.33)	72.17 (1.07) (0.30)	69.41* (1.83) (0.08)	1.38** (1.99) (0.05)
Constant	5.7912	-23.3164	-30.3318	2.5925***

(Contd...)

Table 3: (Continued)

Variables	First-stage ESGDIS	First-stage ESGSTR* ESGDIS	First-stage ESGCONR* ESGDIS	Second-stage TOBINQ
	(1.11)	(-0.75)	(-1.27)	(7.95)
	(0.285)	(0.481)	(0.226)	(0.000)
Industry	Included	Included	Included	Included
Year	Included	Included	Included	Included
F-stat	23.61***	58.12***	47.56***	27.92***
Adj R <sup>2</sup>	53.82%	87.21%	81.13%	60.07%
N	1098			

t-statistics and P-values are given in ().\*\*\*, \*\*and\* denotes significance at the 1%, 5% and 10% level two-sided test

ESG disclosure and the interaction between the strength, concern, and disclosure of ESG. The fourth column presents the second stage regression, which investigates the influence of ESG activities and ESG disclosure. Moreover, it also investigates the interaction between ESG activities, ESG disclosure, and firm performance.

In Table 3, the reported results determine that all three first-stage regression shows that CSR committee (CSCOM) is a significant determinant in all three first-stage regressions explaining the ESG disclosure (ESGDIS). Earning forecasting (DAEF) only has significant results with the third regression result of first stage which is the interaction of ESG concern and ESG disclosure. However, the ownership concentration is a significant determinant in first and second, first-stage regression analysis that is ESGDIS and the interaction of ESGSTR and ESGDIS. Hence, the existence of the CSR committee supports ESG disclosures and the ownership structure tends to resist it. Our results show a variance of around 60% in the second stage of Tobin's q. The results indicate that firm value is significantly increased by ESG strength whereas, it is significantly decreased by ESG concern and ESG disclosure.

## 5. CONCLUSION

This study examines the association between ESG index and firm value. The results obtained by the regressions indicate that firm value increases with ESG strength and decreases with ESG concern and ESG disclosure. It is suggested that in the presence of ESG strength, the ESG disclosures shouldn't be higher because it may weaken the positive uplift in valuation derived from ESG strength. A possible explanation for this finding, is that if the disclosure is higher, then it could be surmised that the firm is trying to justify the high level of ESG cost. The negative valuation effects of ESG concern are also weakened by the disclosures. However, it provides the opportunity for the firm to legitimize their behavior by explaining the appropriateness of their ESG policies and the related operational benefits for the investors. In other words, the firm can convince investors that they can overcome the weaknesses identified in ESG by changing the existing mode of conducting their operations.

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## APPENDIX

### Appendix

Variable	Description	Source
TOBINQ	Tobin's q (market value of equity + book value of asset - book value of equity - deferred taxes)/book value of asset]	DataStream
ESGDIS	ESG disclosure level	Bloomberg
CSCOM	Availability of CSR committee	DataStream
DAEF	Dispersion of analysts' earnings forecasts	I/B/E/S
OWCFS	Ownership concentration of firm's stock	DataStream
ESGSTR	ESG Strength	KLD
ESGCONR	ESG concerns	KLD
ROA	Return on asset	DataStream
INCROA	Incremental effects Return on asset	DataStream
FSALE	Firm's total sale	DataStream
ASSAL	Concentration of asset with respect to the sale (assets/sales)	DataStream
DEEQ	Debts over equity (debt/equity)	DataStream
SAEX	Sales expense (including advertising and marketing) with respect to the total sale	DataStream
REDE	Research and development expense	DataStream