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Do ESG Controversies Influence Firm Value? An Analysis with Longitudinal Data in Different Countries

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ABSTRACT

This study aims to analyze the influence of ESG controversies on the value of companies. Annual data from 6,325 companies from 61 countries between 2002 and 2020 were analyzed. In the econometric model developed, the indices prepared by Refinitiv®, made available through the Eikon platform, were used as ESG controversies, in addition to the three variables as proxies of company value: Tobin's Q, Market-to-Book, and Market Capitalization. The results indicate a negative relationship between ESG controversies, and the value of companies measured by Tobin's Q and Market Capitalization proxies. Considering that the value of a firm represents the estimation of returns, our findings corroborate the view that controversies produce negative effects on the evaluation of future results. It contributes to the literature by demonstrating that ESG controversies affect companies based on global analysis and a deepening understanding of the impacts of corporate irregularities.

KEYWORDS

ESG controversies, Company Value, Countries

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As controvérsias ESG influenciam o valor das empresas? Uma análise com dados longitudinais em diferentes países

RESUMO

Esta pesquisa tem por objetivo analisar a influência das controvérsias ESG no valor das empresas. Foram analisados os dados anuais de 6.325 empresas de 61 países no período de 2002 a 2020. No modelo econométrico desenvolvido utilizaram-se como controvérsias de ESG os índices elaborados pela Refinitiv® e disponibilizados por meio da plataforma Eikon, além das três variáveis como proxy de valor da empresa: Q de Tobin, Market-to-Book e Capitalização de Mercado. Os resultados indicam uma relação negativa entre as controvérsias ESG e o valor das empresas mensurado pelas proxies Q de Tobin e Capitalização de Mercado. Considerando que o valor de uma firma representa a estimação de retornos, os achados corroboram a visão de que as controvérsias produzem efeitos negativos nas avaliações dos resultados futuros. Contribui-se com a literatura ao demonstrar que as controvérsias ESG produzem efeitos para a empresas a partir de uma análise a nível global, além aprofundar entendimentos sobre os impactos das irregularidades corporativas.

PALAVRAS-CHAVE

Controvérsias ESG, Valor da Empresa, Países

1. INTRODUCTION

This study aims to analyze the influence of ESG (Environmental, Social, and Governance) controversies on the value of companies. Because of the change in thinking in recent decades about the impacts organizations face and their objectives, companies have begun to develop responsible social practices (Carroll, 2008; Ali et al., 2017; Ye et al., 2020). From this perspective, companies are seen as responsible to society, for the economic, social, and environmental well-being of the region in which they are located, in addition to meeting the different expectations of their stakeholders (Agudelo et al., 2019). However, little attention is given to controversial ESG practices that are considered suspicious, harmful, illicit behavior or belonging to corporate scandals involving environmental, social, and governance pillars.

Due to the impact on business decisions, socially responsible behavior has become relevant in firms' decision-making (Lindgreen & Swaen, 2010). Due to this movement, companies have increased ESG investments in recent years, reflecting the application of resources to a wide range of responsible social actions (Daugaard, 2020). Together, researchers were interested in aspects of ESG practices in companies, seeking to investigate the causes and consequences that management focused on ESG practices can generate (Ali et al., 2017; Daugaard, 2020; Malik, 2015).

The glance at ESG practices has increased in recent years due to the positive returns achieved by companies that invested efforts and resources in converging the two actions with these pillars (Cui & Docherty, 2020). Different studies and ranges report the effects of adopting ESG-oriented practices from financial performance (Huang, 2019; Xie et al., 2019) to intangible elements such as corporate reputation (Capelle-Blancard & Petit, 2019; Jeffrey et al., 2019). However, for companies to obtain positive results, stakeholders must legitimize corporate actions, considering them adequate and appropriate according to their judgments (Alda, 2021).

It should be considered that the stakeholders' view of corporate practices transcends the positive elements of ESG. ESG controversies are present in the daily lives of corporations, gaining the media spotlight and attracting the attention of shareholders (Aouadi & Marsat, 2018). Because they are related to irresponsibility and negative impacts on the environment in which the firm is located, stakeholders do not accept these practices, resulting in unfavorable effects mainly associated with corporate reputation (Sabbaghi, 2020). Sometimes, positive ESG practices seem to reduce the negative consequences of controversies, but the negative results remain for a while (Nirino et al., 2021).

Investors tend to react negatively to the disclosure of ESG controversy actions, representing a breach of ESG practices (Capelle-Blancard & Petit, 2019; Cui & Docherty, 2020). Because of this, shareholders can withdraw investments from corporations and restrict access to capital, reducing value (Aouadi & Marsat, 2018). The company's value translates into its future perspective of generating positive returns for its stakeholders (Li et al., 2019). Therefore, this study argues that ESG controversies can negatively impact the value of companies due to the non-acceptance of these practices by stakeholders.

To achieve the proposed objective, a sample of 7,140 publicly traded non-financial companies with an ESG Controversies score available on the Refinitiv platform from 2002 to 2020 was used – valuation of companies: Tobin's Q, Market to Book, and Market Capitalization. The results obtained indicate a negative association between ESG controversies and company value. However, this was only confirmed for two of the three proxies used as the value of companies. Bearing in mind that the measurement of company value reflects the ability to generate positive future returns, it can be pointed out that the findings of this study are consistent with the perspective that ESG controversies produce adverse effects on the evaluation of future results, which is translated by the lower value of the signature.

At a time when ESG practices are gaining relevance, today's study and its results look at the negative elements of the environmental, social, and governance pillars, known as the guiding dimensions of corporate decisions. In addition, this investigation ratifies the growing interest of researchers in understanding the impacts of corporate irregularities, as Nieri and Giuliani (2018) commented. Therefore, we seek to contribute to the literature by presenting a global analysis of the influence of ESG controversies on the value of companies.

Additionally, the research results show that market agents are not "blind" to the actions of companies, with particular attention to ESG controversies that have proven to negatively affect the value of companies when measured by market variables. Managers from different countries show the necessary attention in decisions to combat controversial ESG actions to avoid reducing the company's value in addition, to avoid resulting consequences, such as, for example, decapitalization due to capital flight, which constitutes an essential financing item within the capital structure.

2. LITERATURE REVIEW AND RESEARCH HYPOTHESIS DEVELOPMENT

The understanding that companies have responsibilities for the environment in which they are located is not recent; however, in recent years, it has received notoriety due to the growing concern for sustainable development (Hassan et al., 2021; Honig et al., 2015; Ye et al., 2020). From this perspective, the acronym ESG represents an evolution of terminology in studies on the impacts of corporate actions on social well-being. It reflects the integration of environmental, social, and governance aspects in business management to improve organizations' performance in society

(Gillan et al., 2021). Over the years, ESG performance has become a comprehensive indicator of the responsible development of corporate management (Slager et al., 2012; Clementino & Perkins, 2020).

In business models, ESG is a corporate strategy that brings competitive advantages by balancing profit maximization with economic, social, and environmental elements (Ye et al., 2020). This understanding marks the abandonment of the philanthropic vision in adopting responsible social actions by companies and makes them compulsory and necessary within a competitive market (Carroll, 2008). Moreover, due to the greater awareness of ESG elements, investors began to request data on the performance of entities in these areas to be used in investment decisions (Galbreath, 2013).

In the ESG literature, it is possible to find different benefits of these practices. At first, despite not being a consensus, most research finds a positive relationship between a high level of ESG and positive financial performance (Friede et al., 2015; Huang, 2019; Xie et al., 2019). In addition, studies have shown that engaging in ESG activities can help lower a company's cost of capital. This is because such actions can improve decision-making and corporate policies, reduce agency problems and information asymmetry, and ultimately lower the risk of investing in the company. As a result, the company may experience lower borrowing and financing costs. Consequently, there is containment in borrowing and financing costs (Campos-Rasera et al., 2021; Eliwa et al., 2019). Another reported benefit is corporate reputation since ESG practices increase the perception of reliable behavior and appreciation of the company's actions with stakeholders (Jeffrey et al., 2019).

It should be noted that the final result, with the aggregation of the benefits of the superior performance of ESG practices, is the increase in the value of the company (Aboud & Diab, 2018; Fatemi et al., 2018; Malik, 2015; Wong et al., 2021). According to Malik (2015), this occurs because the benefits derived from corporate actions aimed at ESG maximizing profit and providing more excellent operational performance for the company, consequently leading to increased firm value. That is why ESG is used as a short- and long-term strategic tool to add value to the corporation. Furthermore, from the perspective of the Stakeholder Theory, the ESG demonstrates the fulfillment of the expectations of different interested parties of the organization regarding the environmental, social, and governance performance, making it more attractive to investments and thus, increasing the company's returns and finally its value (Li et al., 2018).

Rationally, ESG also adds value to the company through its relationship with its stakeholders (Peloza & Shang, 2011). According to Aouadi and Marsat (2018), ESG practices attract media attention, which, in turn, propagates a positive image of companies regarding the relationship with their stakeholders due to the protection and promotion of the interests of these individuals. For the authors, media visibility helps managers attract more investments and increase the company's value in the market.

Although ESG enables benefits and adds value to the firm, these actions need to be understood as legitimate by stakeholders for this to occur (Alda, 2021; Aouadi & Marsat, 2018; Eliwa et al., 2019). Legitimacy, in Suchman's view (1995, p. 574), "is a generalized perception or assumption that an entity's actions are desirable, adequate or appropriate within some socially constructed system of norms, values, beliefs, and definitions." According to Donaldson and Preston (1995), it is up to company managers to direct resources and select activities to obtain benefits based on the legitimacy of stakeholders. Thus, managers must make ESG behaviors transparent to stakeholders so they can be judged and become (or not) legitimate (Servaes & Tamayo, 2013). If they are not considered legitimate, these practices do not generate benefits.

Stakeholders observe positive and negative ESG actions (Fatemi et al., 2018). The negative elements are called ESG controversies that comprise suspicious, harmful, illegal behavior or corporate scandals that gain the media spotlight and draw the attention of shareholders (Aouadi & Marsat, 2018). In addition, controversies demonstrate deviant organizational practices, misconduct, corporate irregularities, and social irresponsibility (Nieri & Giuliani, 2018).

ESG controversies are understood as actions that can adversely impact stakeholders and thus generate different news that disseminates negative publicity about the company, posing a risk to corporate reputation (Li et al., 2019). This stems from the negative inflection recorded in the news and disseminated in society, which tends to have more repercussions than those with a positive tone (Sabbaghi, 2020). Furthermore, through the news, interested parties obtain information that helps judge controversial actions and hold them accountable for the conduct (Kölbel et al., 2017; Cui & Docherty, 2020).

Although investigated at a lower level compared to ESG, there are different reports regarding the impacts that ESG controversies can have on companies. Corporate reputation is the main element generated by ESG controversies, as these generate doubts about the perspectives of future results of companies and, therefore, lead to interference in other areas, such as financial performance, risk, and company value (Aouadi & Marsat, 2018; Capelle-Blancard & Petit, 2019). In this context, the negative prospect resulting from ESG controversies leads organizations to develop more responsible actions aimed at the environmental, social, and governance dimensions (Li et al., 2019).

According to Dorfleitner et al. (2020), corporations that do not have practices related to ESG controversies can be more profitable from the point of view of investors since the absence of harmful actions is incorporated into the share price. Because of this, companies tend to move away from scandals and illicit aspects to reduce the impacts of controversies. Additionally, this corporate positioning trend can also be explained by the finding that ESG controversies tend to have a more significant impact than practices focused on ESG, with the negative effects of controversies lasting even after an attempt to eliminate them (Nirino et al., 2021).

Specifically, on the influence of ESG controversies on the value of companies, Aouadi and Marsat (2018) argue that stakeholders act as agents of social control of corporate actions, constantly evaluating and judging managers' decisions. Thus, for the authors, when it is non-compliance due to ESG controversies, stakeholders may react negatively, which is incorporated into the company's value. In turn, Capelle-Blancard and Petit (2019) found that negative ESG events generate negative returns on the actions of organizations, with reflections on their value. Convergent with this finding, Cui and Docherty (2020) report that the disclosure of ESG controversies by the media leads to exaggerated negative reactions in the capital market, which decreases the market value. Therefore, the following hypothesis is formulated:

- **H1:** ESG controversies negatively and significantly affect company value.

3. METHODOLOGICAL PROCEDURES

The study population corresponds to publicly traded companies with an ESG Controversies score from the Refinitiv® database from 2002 to 2020. Companies in the financial sector were removed from the population. This elimination of companies is due to their characteristics in accounting records that differ from other sectors, which implies the impossibility of comparative analysis between organizations using all the study variables. The sample comprises 6,325 companies from 61 countries, with annual financial data. Table 1 shows the number of companies distributed by country.

Table 1
Sample of Companies by Country

Country	Quantity of Companies	%	Country	Quantity of Companies	%
South Africa	100	1.58%	Italy	64	1.01%
Germany	158	2.50%	Japan	413	6.53%
Saudi Arabia	15	0.24%	Kuwait	7	0.11%
Argentina	31	0.49%	Luxembourg	1	0.02%
Australia	339	5.36%	Malaysia	54	0.85%
Austria	22	0.35%	Morocco	1	0.02%
Bahrain	2	0.03%	Mexico	41	0.65%
Belgium	40	0.63%	Morocco	48	0.76%
Brazil	81	1.28%	New Zealand	51	0.81%
Canada	285	4.51%	Oman	4	0.06%
Qatar	8	0.13%	Netherlands	49	0.77%
Kazakhstan	1	0.02%	Pakistan	2	0.03%
Chile	33	0.52%	Peru	24	0.38%
China	430	6.80%	Poland	27	0.43%
Colombia	13	0.21%	Portugal	11	0.17%
South Korea	127	2.01%	Kenia	1	0.02%
Denmark	37	0.58%	United Kingdom	342	5.41%
Egypt	6	0.09%	Republic of Ireland	11	0.17%
United Arab Emirates	9	0.14%	Czech Republic	2	0.03%
Slovenia	1	0.02%	Russia	33	0.52%
Spain	55	0.87%	Singapore	61	0.96%
United States of America	2,202	34.81%	Sri Lanka	1	0.02%
Philippines	21	0.33%	Sweden	132	2.09%
Finland	36	0.57%	Switzerland	95	1.50%
France	133	2.10%	Thailand	52	0.82%
Greece	19	0.30%	Taiwan	135	2.13%
Hong Kong	248	3.92%	Turkey	38	0.60%
Hungary	4	0.06%	Uganda	1	0.02%
India	118	1.87%	Vietnam	1	0.02%
Indonesia	38	0.60%	Zimbabwe	1	0.02%
Israel	10	0.16%	**Total**	**6,325**	**100%**

Source: Survey data.

In terms of economic sectors, companies are distributed as follows: cyclical consumption (14.38%), non-cyclical consumption (7.77%), energy (6.00%), real estate (5.28%), industry (19 .90%), materials (10.84%), health (10.25%), communication services (5.98%), information technology (11.17%), and public utilities (5.28%).

Data collection was performed on the Refinitiv® platform, covering the period from 2002 to 2020 with annual data. For the calculations, the Stata® software was used to apply tests to diagnose the regressions. Estimations were performed considering cross-sectional data using the Ordinary Least Squares (OLS) estimator to determine the statistical relationship between the

dependent and independent variables (Hair et al., 2009). The estimates follow the short panel, in which N > P and unbalanced, since the number of observations differs for all companies (Fávero & Belfiore, 2017).

3.1. Measurements of Company Value

The dependent variable of the investigation corresponds to the value of the company. Different ways of assessing a company's value differ regarding the information needed for the estimates. Thus, three variables represent the company's value: Tobin's Q, Market to Book, and Market Capitalization. The respective operations are described below. The choice of these variables originates from different perspectives in the literature that represent the value of companies. Likewise, using three measurements of different operationalization modes helps verify and analyze different results for each representation of the company's value.

To represent the company's value, the first proxy used is Tobin's Q variable, which verifies the relationship between the market value of a company considering the replacement costs of fixed assets (Nogueira et al., 2010). This study proceeded with Chung and Pruitt's (1994) proposal for company value, which consists of the sum of the company's market value (number of shares multiplied by the share value on the last closing day) and the value of debts (current liabilities minus current assets, plus the carrying amount of long-term debt), divided by total assets for the period.

The second proxy used to represent the company's value corresponds to the Market to Book, which represents the point at which the book value underestimates the company's book value (Roychowdhury & Watts, 2007). Thus, the greater the Market to Book, the greater the value of the company assessed by the market compared to the book value, which corresponds to a more excellent value. According to Galema et al. (2008), the Market to Book is calculated by the ratio between the market capitalization and its book value for the period.

Finally, the third proxy for firm value is estimated by market capitalization. This means that the company's value is measured directly in the market, based on the valuation of the company's shares, so that accounting data that may present estimation biases is not used (Hsua, 2006). Given this, market capitalization is estimated by the natural logarithm of the multiplication between the firm's number of shares and its closing value at the end of the period.

3.2. Proxy for ESG Disputes

As a proxy for ESG controversies, the Refinitiv® index called ESG Controversies is used. This index corresponds to the company's exposure to environmental, social, and governance controversies and negative events reflected in the global media (Refinitiv, 2021), obtained by deducting ESG controversies from the ESG performance score produced by Refinitiv®. Thus, according to Dorfleitner et al. (2020), the controversy index of the cited platform must be analyzed in a contrary way. Thus, the lower the company's ESG controversies, the higher the index score.

According to Refinitiv (2021), when a company is involved in ESG disputes, the ESG Disputes index is calculated by an average between the ESG score and the disputed score. When companies are not involved in disputes, the ESG Disputes index score is the same as the ESG score. The ESG score comprises 178 indicators subdivided into the environmental, social, and governance pillars. 23 controversial items are observed, involving: anti-competition actions; business ethics; intellectual property; public health; tax fraud; human rights; child labor; responsible marketing; environmental impacts, shareholders' rights, accounting disputes, employee health, and strikes, among others.

3.3. Econometric Models

The empirical models of the work to test the research hypothesis were adapted from Aouadi and Marsat's (2018) work, which tested the influence of ESG controversies on company value, together with the control variables listed by previous studies. The econometric equations can be seen in Equations 1, 2,nd 3.

$$TOBIN\_Q_{i,t} = \beta_0 + \beta_1 ESG\_C_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 AGE_{i,t} + \beta_4 \Delta SALES_{i,t} + \beta_5 ENDIV_{i,t} + \beta_6 TANG_{i,t} + \mu_{i,t} \quad (1)$$

$$MTB_{i,t} = \beta_0 + \beta_1 ESG\_C_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 AGE_{i,t} + \beta_4 \Delta SALES_{i,t} + \beta_5 ENDIV_{i,t} + \beta_6 TANG_{i,t} + \mu_{i,t} \quad (2)$$

$$MKTCAP_{i,t} = \beta_0 + \beta_1 ESG\_C_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 AGE_{i,t} + \beta_4 \Delta SALES_{i,t} + \beta_5 ENDIV_{i,t} + \beta_6 TANG_{i,t} + \mu_{i,t} \quad (3)$$

where TOBIN_Q, MTB, and MKTCAP represent the natural logarithm for market value, which are respectively Tobin's Q, Market to Book, and Market Capitalization; C_ESG is the Refinitiv® index used as a proxy for ESG disputes; TAM is a company size variable measured by the natural logarithm of total revenues; AGE represents the age in days of the companies calculated from the date of the public offering of shares (IPO); ΔSALES is the natural logarithm of the variation in sales between the period and the previous one; ENDIV is the degree of indebtedness measured by the ratio of total debt to total assets; and TANG is the tangibility measured by the ratio of fixed assets and total assets.

Table 2 presents the expected signs for the variable present in the models of Equations 1, 2, and 3 with their respective references.

Table 2
Expected signs of the independent variables according to the theoretical expectation

Variable	Expected Signal	Reference
ESG_C	+	Capelle-Blancard and Petit (2019); Cui and Docherty (2020)
SIZE	+	El Ghoul et al. (2011); Yu et al., (2018); Capelle-Blancard and Petit (2019)
AGE	+	McBrayer (2018); Sadiq et al. (2020)
ΔSALES	+	Aouadi and Marsat (2018); Fatemi et al. (2018)
ENDIV	–	Fatemi et al. (2018); McBrayer (2018); Yu et al., (2018); and Wong et al. (2021)
TANG	–/+	Li et al. (2018); Wong et al. (2021)

Note: ESG_C (ESG Controversies Index); SIZE (Size); AGE (company registration time); ΔSALES (Sales Variation); ENDIV (Degree of Indebtedness); and TANG (Tangibility).

Source: Prepared by the authors.

4. ANALYSIS AND DISCUSSION OF THE RESULTS

In this session, the results are presented and discussed, seeking to analyze the impact of ESG controversies on the value of companies. The descriptive statistics of the research variables are shown in Table 3.

As shown in Table 3, Market-to-Book is the company value variable with the most significant data variability around the mean (coefficient of variation of 67.162) and the range (88,559.63). On the other hand, Market Capitalization is the variable with less variability (coefficient of variation of 0.065) compared to value proxies and all variables. In turn, Market Capitalization has a coefficient of variation of 1.836. Therefore, It should be noted that behavioral differences exist between the three variables used as proxies for company value.

Table 3
Descriptive Statistics of Research Variables

	Observations	Average	Median	Variation Coeff	Minimum	Maximum
TOBIN_Q	31,681	1.926	1.253	1.836	0.217	381.896
MTB	31,681	7.414	2.336	67.162	0.000	88,559.63
MKTCAP	31,681	22.19	22.189	0.065	12.599	28.434
ESG_C	31,681	92.667	100	0.220	0.532	100
SIZE	31,681	21.629	21.719	0.083	7.842	27.050
AGE	31,681	8,675.849	6,758	0.861	0	55,276
ΔSALES	31,681	19.216	19.288	0.101	6.297	25.403
ENDIV	31,681	0.247	0.239	0.692	0	0.894
TANG	31,681	0.434	0.460	0.501	0	1

Note: TOBIN_Q = Tobin's Q; MTB = Market-to-Book; MKTCAP = Market Capitalization; ESG_C = ESG Controversies Index; SIZE = Size; AGE = Age of the company (minimum zero value corresponds to the zero days of the IPO); ΔSALES = Sales Variation; ENDIV = Degree of Indebtedness; TANG = Tangibility.

Source: Search data.

The ESG Controversies proxy has deviated by approximately 22% from the average, with a maximum score of 100 for average performance indicated by the median. It is important to note that the index used needs to be read reverse regarding controversies, as noted in the previous section. This implies that not all companies engage in suspicious, harmful, or illicit behavior. Nonetheless, it is worth remembering that the index only captures corporate practices that have become public, implying that not all ESG Controversy-related actions may have been discovered or published in the market (Aouadi & Marsat, 2018).

It should be noted that there is a wide range (99.468) of the values of the ESG Controversies index among companies. This leads to the perception that there are both companies with less controversial practices and those with more. Two prominent American companies stand out with the highest behavior related to ESG Controversies; in first place is a company from the Information Technology sector (score of 0.532), and in second place is one from the Communication Services sector (score of 0.625). Next, a Brazilian firm in the materials sector is presented (score of 0.735); a Russian from the energy sector (score of 0.877), and a South African from the materials sector (score of 0.877). Finally, it is noticed that the index covers different corporations. However, it is verified in the analysis of the data that those from the United States are the ones that contribute with the highest and lowest values of the index of controversies. However, this is due to the significant number of entities in the country that compose the index sample.

The regression analysis for panel data follows from the initial findings made through descriptive statistics. Initially, the models described in the previous section were estimated using the Pooled Ordinary Least Squares (POLS) estimator for panel data to verify whether the variables used are exogenous (Cameron & Trivedi, 2009), whose results will be described below.

After POLS estimation, the Shapiro-Francia test was applied for the normality of the residues for each regression. The results obtained for Tobin's Q models (W'= 0.957; Prob>Z = 0.000), Market to Book (W'= 0.959; Prob>Z = 0.000), and Market Capitalization (W'= 0.959; Prob>Z = 0.000) led to the rejection of the null hypothesis of normality of errors and, consequently, the acceptance of the alternative hypothesis of non-normality. Despite the breach of the assumption of normality for the regression, according to Gujarati and Porter (2011), this assumption can be made more

flexible in data from large samples as it does not interfere with the consistency of the model, given the amount of information for the calculations.

After the normality test, the heteroscedasticity test was performed using the Breusch-Pagan/ Cook-Weisberg and White tests. For the three models, Prob> χ^2 = 0.000 led to the rejection of the null hypothesis that the errors are homoscedastic and the acceptance of the alternative hypothesis of heteroscedasticity. The multicollinearity between the variables explanatory by May of the Variance Inflation Factor (VIF) was also verified. The results did not indicate multicollinearity, with an overall VIF of 1.83. No explanatory variable showed multicollinearity. The individual VIF results of the variables are presented in Table 4.

According to Gujarati (2019), OLS estimators are better unbiased linear estimators upon finding the non-normality of the error terms. Furthermore, given the problem of heteroscedasticity, Fávero (2013) suggests using the method of robust standard errors with grouping in the estimates to control and reduce heteroscedasticity. Thus, the estimation of the models was first performed by POLS with robust standard errors grouped by company in the sample. The regression results can be seen in Table 4.

Table 4

Results of Panel Data Regressions with POLS Estimation with Robust Standard Errors with Grouping by Company

Dependent Variables	Tobin's Q		Market-to-Book		Market Capitalization		VIF
	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value	
ESG_C	**-0.006** *** *(-5.94)*	0.000	**-0.204** *(-1.18)*	0.237	**-0.006** *** *(-10.26)*	0.000	1.11
SIZE	**-0.484** *** *(-9.41)*	0.000	**-13.199** *(-1.066)*	0.290	**0.508** *** *47.68*	0.000	3.36
AGE	** **-8.32x10**$^{-6}$ *(-2.23)*	0.025	**0.001** *0.98*	0.326	**-2.14x10**$^{-6}$ *(-1.14)*	0.253	1.11
ΔSALES	**0.121** *** *6.90*	0.000	**3.465** *0.99*	0.320	**0.086** *** *12.84*	0.000	3.05
ENDIV	**-1.617** *** *(-10.05)*	0.000	**46.071** *1.27*	0.203	**-0.775** *** *(-10.44)*	0.000	1.19
TANG	**-1.895** *** *(-14.48)*	0.000	**-16.407** *(-2.23)*	0.026	**0.595** *** *10.96*	0.000	1.17
Constant	**12.034** ***	0.000	**234.557**	0.261	**10.013** ***	0.000	
R^2	0.0709		0.0012		0.5530		
Prob > F	0.0000		0.0000		0.0000		

Note: ESG_C = ESG Controversies Index; SIZE = Size; AGE = Age of the company; ΔSales = Sales Variation; ENDIV = Degree of Indebtedness; TANG = Tangibility. Regressions were estimated using robust standard errors grouped by company. *, ** and *** represent statistical significance of 10%, 5% and 1% respectively.

Source: Search data.

Using the POLS estimation, tests were carried out to detect which estimation of the regressions would be the most adequate. This effort focuses on ensuring that the inferences of the results are convergent with the reality of the analyzed data. Thus, the Breusch-Pagan Lagrange Multiplier (LM) tests were performed to compare the estimators of the models obtained by POLS and

by random effects, whose result is Prob> χ^2 = 0.000 for the three models of the study. The Chow F test was applied in comparing the POLS method and the fixed effects, resulting in the three models Prob > F = 0.000. Finally, the Hausman test was applied to compare the models estimated by fixed effects with those by random effects; in the three equations, the test resulted in Prob> χ^2 = 0.000. Thus, based on the last test, it was found that estimation by fixed effects is the most suitable for the present study compared to random effects.

The fixed effects estimator with robust standard errors was used to evaluate the heterogeneity found in the variables, following Fávero and Belfiore (2017). The results for each regression are shown in Table 5.

Table 5
Results of Panel Data Regressions with Fixed Effects Estimation with Robust Standard Errors

Dependents Variable	Tobin's Q		Market-to-Book		Market Capitalization	
	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
ESG_C	**0.001** ** *2.00*	0.045	**0.018** *0.70*	0.485	**0.001** *** *3.64*	0.000
SIZE	**-0.426** *** *(-4.69)*	0.000	**-3.560** *(-1.22)*	0.222	**0.448** *** *18.59*	0.000
AGE	**3.69x10^{-4}** *** *3.42*	0.001	**0.002** *1.10*	0.271	**7.2x10^{-4}** *** *16.13*	0.000
ΔSALES	**0.047** *** *5.91*	0.000	**4.346** *0.99*	0.322	**0.034** *** *11.19*	0.000
ENDIV	**-0.616** *** *(-3.70)*	0.000	**153.751** *1.16*	0.248	**-0.835** *** *(-12.42)*	0.000
TANG	**-1.264** *** *(-5.47)*	0.000	**147.852** *0.96*	0.335	**-0.172** ** *(-2.12)*	0.034
Constant	**10.605** ***	0.000	**-131.882**	0.394	**11.445** ***	0.000
R^2 within	0.0249		0.0012		0.2563	
Prob > F	0.0000		0.0095		0.0000	

Note: ESG_C = ESG Controversies Index; SIZE = Size; AGE = Age of the company; ΔSales = Sales Variation; ENDIV = Degree of Indebtedness; TANG = Tangibility. Regressions were estimated using robust standard errors. *, ** and *** represent statistical significance of 10%, 5% and 1% respectively.

Source: Search data.

It is observed in Table 5 of the three models of the study that only two proxies for company value demonstrate a positive and significant relationship with the index of ESG controversies: Tobin's Q with a significance of 5% and the Market Capitalization of 1 %. Furthermore, we obtained prob>F = 0.0000 for models with Tobin's Q and Market Capitalization and prob>F = 0.0095 for Market-to-Book. The non-statistical significance of Market-to-Book alone may indicate that this variable is not a good proxy for company value.

On the other hand, it is believed that Tobin's Q and Market Capitalization are more suitable proxies since they include the market value in their calculation, measured by multiplying the price of shares and their outstanding quantity. Given the above, we chose to analyze only the significant models.

However, in particular, the result of the model that did not show statistical significance with the Market-to-Book variable used to represent the company's value corroborates the findings of Hulten and Hao (2008). This study revealed a gap between the valuations of companies on the market and the Market-to-Book; this variable needs to capture intangible items measured by the market and is not evidenced in accounting. By way of example, items such as the actual value of brands, research and development, reputation, legitimacy, and other intangibles stand out. That said, it is inferred that the non-significance found may be related to the market pricing of intangible elements.

Remember that the index used to verify ESG disputes measures companies' exposure to disputes in ESG performance. Because of this, according to Dorfleitner et al. (2020), the analysis must be done inversely to assess the impact of ESG controversies. In other words, the lower the index score, the more ESG controversies the organization has. Therefore, it can be statistically inferred that the greater the ESG controversies, the lower the company's value, pointing to the non-rejection of the research hypothesis of a negative and significant association between the two elements. Furthermore, this finding is reinforced because the result is maintained in two measurements evaluating firms' value.

Considering that the assessment of the company's value reflects the company's ability to grant stakeholders positive and satisfactory future returns, as Li et al. (2019) comment, the analysis of the results reiterates this interpretation. Therefore, when verifying that ESG controversies impact the company's value, these practices negatively affect the evaluation of future results. Thus, the greater the ESG controversies, the lower the prospect of future returns for stakeholders.

An exciting aspect is a result found in the company value variables with the controversy index, despite the difference presented in the level of statistical significance of the variables Tobin's Q (p-value<0.01) and Market Capitalization p-value<0.05) indicated in equations (1) and (3) in Table 5, observe the same value in both coefficients (β_1). This shows consistency of the main finding of the study, demonstrating that stakeholders end up putting pressure on companies with effects on the value of shares down when harmful practices occur in the environmental, social, and governance aspects (Cui & Docherty, 2020; Galbreath, 2013; Servaes & Tamayo, 2013).

The variation in sales was significant for the models, with a positive association with the company's value, demonstrating that the corporation's growth impacts value. Still positively, age showed a positive and significant relationship with the proxies for value, indicating that the time of existence of a company affects its value.

The degree of indebtedness showed a negative and significant relationship with Tobin's Q and Market Capitalization. The verified ratio was expected since the debt has implications for organizations. Indebtedness is an indicator of high additional costs, which reduces the profitability of its operations, increasing the probability of a possible bankruptcy (Scott, 1977). In addition, more outstanding debt reduces investments in the company's ultimate objective, as it seeks to focus its efforts on settling its obligations. Thus, there is a reduction in returns for shareholders.

An unexpected result refers to the negative and significant relationship between the size variable and Tobin's Q for company value. This means that, for this company value variable, the smaller the company size, the greater its market value. However, for the variable Market Capitalization as a company value, the relationship with the size is significant and positive. In this case, it is demonstrated that the greater the Market Capitalization, the greater the entity's size. The first explanation that can be made regarding this divergence lies in the estimation of each variable.

Although the result of the relationship between size and Tobin's Q differs from what was expected, it is consistent with the findings of the work by Aouadi and Marsat (2018). Overcoming the relational aspect found, a possible explanation would be that larger companies tend to get more attention from the media and market analysts, resulting in a reduction in informational asymmetry (El Ghoul et al., 2011). Because of this, these would be the firms with the highest disclosure of ESG controversy practices due to their exposure that impacts company value (Li et al., 2018). Therefore, the negative relationship between size and value is mediated by controversies.

The findings of this research corroborate the literature on the impacts of ESG controversies on companies, such as their value, which was the focus of this work. Therefore, ESG controversies are necessary to consider in the management of companies, as they interfere with the reputation and legitimacy of corporate actions with consequences of their effects (Alda, 2021; Eliwa et al., 2019; Servaes & Tamayo, 2013). For all this, it is reiterated that corporations have responsibilities with the environment in which they find themselves, as presented by Carroll (2008). Therefore, it is considered that ESG practices should not only be positive but also be aimed at reducing harmful, illegal, and suspicious conduct in the environmental, social, and governance pillars since their existence impacts the value of companies.

5. FINAL CONSIDERATIONS

The last few years have been marked by changes in the understanding of how companies operate. The current understanding refers to the responsibility of companies to the environment in which they find themselves, and so they must develop practices aimed at environmental, social, and governance aspects to maximize the interests of all their stakeholders. The literature demonstrates positive returns for companies with ESG practices. However, ESG controversies can also impact organizations. In particular, its effects influence the value of the corporation. Therefore, this research aimed to analyze the influence of ESG controversies on the value of companies.

The results demonstrated a positive and significant relationship at the 1% level between the ESG Controversies index and two value variables. As the index used to proxy disputes has an inverse reading, that is, the lower the index, the greater the ESG disputes that the entity has, it is inferred that there is a negative association between ESG disputes and the value of the company. It is noticed that ESG controversies affect corporate legitimacy and reputation and can have different short-term and long-term implications. The effects of ESG controversies on company value were found, which extend to different countries and have prominent effects on the valuation of companies based on market valuation aspects. Part of this may have to do with investors' judgments about the inconsistencies of ESG controversies and the consistency of a globally shared view.

The study's findings suggest a need for further exploration of ESG practices in both theoretical and practical realms. Recognizing that a corporation's ESG controversies could significantly affect its future, potentially more so than efforts focused on upholding and advancing ESG principles, is essential. Therefore, weighing the positive and negative aspects of ESG is indispensable. Moving forward, additional research in this area is highly encouraged.

In short, the limitations of the study regarding the results are highlighted. These are limited to the chosen sample, analyzed the totality of the data, and the individualities of the influence of the ESG controversies on the company's value were not contemplated. Thus, other researchers can look into relevant aspects at the individual level that mediates the analyzed relationship.

Nevertheless, it is understood that the findings of this investigation contribute to the literature by showing that ESG dispute practices also affect companies, precisely their value and that this can be considered for companies from different countries.

Likewise, it has implications for managers, who must pay attention to decisions related to the increase in ESG controversies, as it will impact the view that market agents have about the company and, consequently, will produce effects on its value. With this, it is suggested that the directors of different organizations in the world combat corporate practices related to ESG controversies, enjoying benefits such as the valuation of the firm they manage. Furthermore, one of the relevant aspects of this study is to recognize in the theoretical model developed the qualitative characteristics of environmental, social, and governance controversies in the value of the company so that not only financial performance generates value for the company but also socially responsible actions.

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GP: Research conceptualization, information collection, and data analysis. Elaboration of the literature review and development of the research hypothesis. I am writing article chapters. PC: Guidance on the research hypothesis, methodology, and processes for formal data analysis. Supervised statistical procedures. General review of the manuscript, with particular attention to the analysis of results.

CONFLICTS OF INTEREST

The authors declare no financial or non-financial conflict of interest in this manuscript or during its preparation.