
Does Corporate Governance Shape the Relationship between Corporate Social Responsibility Performance and Financial Distress in Large European Companies?

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Abstract:

Purpose: *This paper aims to investigate the moderating effect of corporate governance on the relationship between corporate social responsibility (CSR) performance and financial distress risk.*

Design/Methodology/Approach: *The empirical analysis comprises a panel data set of 2673 observations over the years from 2010 to 2018 for European companies listed in the STOXX Europe 600. Ordinary least squares multiple regression analysis model was used to test the study hypothesis.*

Findings: *The findings suggest that higher CSR performance significantly reduces the financial distress risk of the firm. These results were robust after several statistical checks. In addition, the link between CSR performance and financial distress risk is moderated by corporate governance. In addition, we show that the negative effect of CSR performance on financial distress risk is more pronounced for firms with a good corporate governance practice.*

Practical Implications: *This paper challenges the intuitive expectation that CSR activities impose unnecessary additional costs to firms, which affects performance.*

Originality/Value: *It is suggested that the relationship between CSR and financial distress, in Europe, is different from the one in the USA. Conclusively, our principal result shows that firms with higher CSR performance exhibit a lower degree of financial distress risk for the European sample.*

Keywords: *Corporate social responsibility, financial distress risk, corporate governance, STOXX Europe 600.*

JEL Classification: *G32, G34, M14, G33, L25.*

Paper type: *Research article.*

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1. Introduction

Over the past two decades, the majority of industrialized countries have been hit by a common phenomenon of financial distress risk and commercial bankruptcy. Since the early work of Modigliani and Miller (1958; 1963), a growing number of economists and experts in finance and law have been paying close attention to the phenomenon of bankruptcy and its impact on the real sector of the economy.

Wruck (1990) defines financial distress risk as the situation a firm is placed in when it does not have sufficient resources to pay its explicit debts at any given time. According to Baldwin and Scott (1983), when a firm's situation deteriorated to the point where it could not meet its financial obligations, the firm entered a state of financial distress. The first distress signals are usually associated with default and the omission or reduction of dividends.

However, other substantial financial indications of distress have emerged long before. These same authors argue that the financial distress risk faced by companies is the result of economic distress, a decline in their performance and a low quality of their management. This is manifested during an incubation period characterized by a series of poor economic conditions and poor management quality that makes costly mistakes. In this study, we consider that CSR strategies can be one of the factors affecting financial distress.

Several papers have examined various positive aspects of corporate social responsibility (CSR). They have documented that CSR is associated with higher financial performance (Lee and Jung, 2016; Xie *et al.*, 2017; Cho *et al.*, 2019; Rettab and Mellahi, 2019, Ali *et al.*, 2020; Ting *et al.*, 2020), organizational performance (Shen and Benson, 2016; Opoku-Dakwa *et al.*, 2018; Khaddage-Soboh *et al.*, 2024) and lower cost of capital (El Ghouli *et al.*, 2011, 2017; Suto and Takehara, 2017; Villarón-Peramato *et al.*, 2018; Bae *et al.*, 2019).

Building on this stream of research, we explore the extent to empirically examine the association between financial distress risk and CSR performance of European firms. This choice is motivated by the fact that Europe is often considered as the leading region for social and environmental responsibility, with the highest environmental standards in the world. For instance, in the 2012 Environmental performance index computed by Yale and Columbia Universities, 18 out of the top 20 countries are in Europe.

We also argue that the association between CSR and Financial distress risk is moderated by the corporate governance. Many studies have sought to elucidate the influence of corporate governance on firms' strategic decisions and value (Borghesi and Chang, 2019; Bing and Li, 2019; Seok *et al.*, 2020; Farooq *et al.*, 2025). For example, Hodgson *et al.* (2011) indicate that good corporate governance practices strengthen firm performance.

At the same time, these practices affect CSR engagement (Dam and Scholtens, 2013; Ortas *et al.*, 2015; Sahut *et al.*, 2019; Gulzar *et al.*, 2019; Zervoudi *et al.*, 2025). Shayuti *et al.* (2019) found that companies with more independent directors and more diverse boards provide better CSR disclosure. Our research concerns the interaction of these two issues, governance and CSR performance. We assess to what extent corporate governance variables moderate the effects of CSR performance on financial distress.

We construct a panel dataset for non-financial listed companies in Europe STOXX 600, covering the period 2010-2018. Our first result shows that firms with higher CSR performance exhibit a lower degree of financial distress. Then, we empirically test the moderating role of corporate governance in the relationship between CSR performance and financial distress.

The remainder of the paper is organized as follows. Section 2 contains the literature review and hypothesis development. Section 3 describes in detail the research design with the sample, the models and measures of variables. Section 4 presents the empirical results. Section 5 concludes the paper.

2. Background and Hypotheses Development

2.1 CSR Performance and Financial Distress

The concept of Corporate Social Responsibility experienced its theoretical construction in the early 1950s (Bowen, 1953), Social and Environmental Responsibility makes its mark on the various methods of business management.

Various research defends that CSR actions reduce the perceived risk of a firm (Jo and Na, 2012; Albuquerque *et al.*, 2019; Wu and Hu, 2019). El Ghouli *et al.* (2011) show that investors perceive socially irresponsible companies as having relatively higher levels of risk. In addition, these companies are also at a higher risk of litigation.

Harjoto and Laksmana (2018) examine the relationship between CSR, risk-taking and the value of the firm. They find that CSR performance is positively associated with the firm value because CSR reduces excessive risk-taking and risk avoidance.

Accordingly, the risk management perspective (Attig *et al.*, 2013) argues that the adoption of CSR activities can provide cover against financial qualms and adverse financial effects. In this context, Gangi *et al.* (2019) study the relationship between social responsibility and bank performance using a sample of 142 banks from 35 countries. The authors show that banks with better CSR scores have an indicator of high-quality management. The reason for companies falling into financial difficulty is due to management's incompetence.

Empirical work investigating the link between CSR and financing decisions finds that the voluntary disclosure of CSR activities leads to a reduction in the firm's cost of capital and better access to finance (Rossi and Harjoto, 2020). El Ghoul et al. (2018) investigate whether corporate environmental responsibility (CER) affects the cost of equity capital for manufacturing firms in 30 countries over the 2002-2011 periods. They illustrate that investment in CER reduces firms' equity financing costs worldwide.

This result suggests that a firm's CER activities are an important determinant of its financing policy. Bae *et al.* (2019) examine whether corporate social responsibility (CSR) affects firms' interactions with customers and competitors and reduces the costs of high leverage using a large sample of 16,390 firm-year observations representing 2,739 firms. They find that that CSR reduces the costs of high leverage as captured by a loss in sales growth.

Yeh *et al.* (2020) investigate whether CSR can affect a firm's cost of equity and debt capital in China's capital market. They show that Chinese firms with higher CSR performance can rapidly reduce their cost of debt capital. Cheng *et al.* (2014) examine the link between CSR strategies and the firm's ability to access finance in capital markets for a sample of companies from a total of 49 countries throughout the world. They find that firms with better CSR performance face significantly lower capital constraints.

García-Sánchez *et al.* (2019) investigate the impact of corporate social responsibility (CSR) disclosure on access to finance for a sample of international firms from 2007 to 2016. They specify that availability of more information about the firm's CSR initiatives eases the financial access. By investigating CSR's impact on financial constraints, Samet *et al.* (2018) observe that firms with higher CSR performance exhibit a lower degree of financial constraints. Consistent with this, Zhao and Xiao (2019) argue that firms with higher CSR performance face significantly lower financial constraints.

However, a rather scarce literature (Gross, 2009; Gupta and Krishnamurti, 2016; Al-Hadi *et al.*, 2017; Shahab *et al.*, 2019) has extended this risk shielding aspect of CSR in connection with a significant feature of firms (i.e., financial distress). For their part, Gross (2009) uses CSR rankings from KLD Analytics over a period from 1991 to 2003, he found a robust and negative relationship between KLD scores and distress in the U.S. context.

Shahab *et al.* (2019) studied the CSR and Financial distress risk relationship by empirically examining 749 Chinese firms over the 2009-2014 period. Their findings revealed that CSR quality ratings significantly reduce Chinese firms' distress levels. Shahab *et al.* (2019) found that employee relationships, community relations, environmental performance and product characteristics are the most important factors in explaining the solvency of companies. Al-Hadi *et al.* (2017) studied the

relationship between positive CSR and Financial distress risk in the Australian context using the OLS regression model to signal that positive CSR performance significantly reduces financial distress risk of the firm.

Boubaker *et al.* (2020) find that high CSR firms exhibit lower financial default risk. Recently, Kachouri and Bida Youssef (2025) examine the relationship between corporate social responsibility and financial distress in a sample of European non-financial firms. The study finds that CSR performance is negatively associated with financial distress, indicating that socially responsible firms are more resilient financially.

Moreover, Gupta and Krishnamurti (2016) investigated the effect of CSR engagement on the likelihood of a troubled company emerging from bankruptcy. Empirical results show that both the moral and exchange capital components of CSR play a role in increasing the company's chances of recovering from bankruptcy.

Closely related to Gupta and Krishnamurti (2016), Lin and Dong (2018) show that moral capital reduces bankruptcy likelihood when the firm grows larger. On the other hand, exchange capital mitigates bankruptcy likelihood when the firm relies on intangible assets to operate and when firms operate in more litigious business environment.

We conjecture that a similar line of argument could account that CSR performance reduces firms' financial distress risk levels. According to these arguments, our first hypothesis is:

H₁: CSR performance reduces financial distress risk.

2.2 Corporate Governance, CSR performance and Financial Distress

Corporate governance covers "all institutions, rules and practices that legitimize the power of managers" (Charreaux, 2006). According to broad approaches supported by Charreaux (2006), the problem of the effectiveness of governance systems can only be posed within the framework extended to all stakeholders, considering the concrete processes of value creation by the firm.

This requirement responds to criticisms made by Rajan and Zingalès (2001) against the pure shareholder vision of governance, which they say is unsuited to new forms of enterprise. Through "responsible governance," company directors and executives must seek to integrate social and environmental intentions into economic goals (Perez, 2009).

Investors evaluate a firm's ability to deal with financial distress risk and recover profitability primarily through its generation of cash flows and earnings potential (Black, 1998). We extend the discussion by examining the effect of the interaction of

CSR performance with corporate governance on the financial distress. A few previous studies have empirically examined the relationship or association between various corporate governance elements and financially distressed companies (Manzaneque *et al.*, 2016; Luqman *et al.*, 2018; Noriza and Mazurina, 2018; Rahmasari, 2019).

Regarding the impact of CG practices on the survival of the distressed firms, Noriza and Mazurina (2018) examined the correlation between CG (board size, board activity, CEO duality, and board independence) and financial distress risk in Malaysia. The sample data used in the study consisted of 47 financially- distressed companies and 47 healthy companies from 2010 to 2016. They found that board activity has a significant relationship with financially distressed companies.

However, the presence of CEO duality, board size and board independence do not show any significant association with financially distressed companies. Rahmasari (2019) examined various corporate governance attributes, such as managerial ownership, institutional ownership, independent commissioners, board of commissioners' size, and board of directors' size, with the likelihood of financial distress risk of Indonesian public listed companies.

The results show that there is a significant negative impact of institutional ownership, the size of board of commissioners and that of directors on financial distress. Recently, Meng *et al.* (2024) explore the relationship between corporate governance and financial distress in Chinese firms using a multidimensional nonlinear approach supported by machine learning techniques. Their study reveals that corporate governance has a significant impact on financial distress.

Given that CSR performance reduces financial distress, and the implementation of good corporate governance protects the company against the risk of financial distress (Shahwan, 2015; Vijayakumaran, 2019), it is also possible that both CSR performance and good corporate governance can jointly impact the financial distress of a firm. Elmagrhi *et al.* (2019) demonstrate the efficacy of governance mechanisms for reducing the diverging interests that constitute the framework of the agency theory regarding CSR practices.

Shayuti *et al.* (2018) investigate the effects of national culture and corporate governance on corporate social responsibility reporting, using a sample of 203 companies in China, Malaysia, India and the United Kingdom. They indicate that corporate governance factors influence both the quality and quantity of CSR reporting, whereas government ownership influences only the quality of reporting.

Last but not least, García-Sánchez *et al.* (2019) explored the relation between corporate governance and CEO ability in influencing corporate social responsibility practices. They indicate the role of corporate governance mechanism (i.e., board independence, the presence of a sustainability committee, and social performance-

related incentives for managers) in enhancing socially responsible performance within a firm. Choi *et al.* (2020) indicate that good governance structure improves firms' CSR activities.

Harjoto and Jo (2011) prove that firms use governance mechanisms, along with CSR engagement, to resolve conflicts between managers and non-investing stakeholders, which can lead to better firm value. Borghesi *et al.* (2019) demonstrate that high-CSR firms were rewarded with lower financing and transaction costs and greater access to capital for their long-term investment focus, increased trustworthiness, and had more stable relationships with internal and external stakeholders.

They also find that implementing corporate governance policies that limit shareholder rights during uncertain times is important because unencumbered boards and managers are able to respond more swiftly to policy shifts in the economic environment with their own strategic changes.

Based on this discussion, we postulate that the association between CSR performance and financial distress risk is likely to be moderated by corporate governance. Stated formally, we hypothesize that:

H₂: Corporate governance moderates the relation between CSR and financial distress risk.

3. Research Design

3.1 Sample and Data

The sample in this study consists of European companies listed in STOXX Europe 600 index between 2010 and 2018. The sample includes 9 super sectors and 17 countries. Firms operating in the financial sector, for the particularity of their activity, were eliminated from the sample. Companies that failed to present complete or consistent information were also discharged. The final panel covers 297 firms, which corresponds to 2673 firm-year observations.

A summary of the sample reconciliation is presented in Table 1, panel A. Panel B presents the distribution of firms across sectors. Three sectors, industrials, consumer goods and consumer services, represent a large portion of the total number of firms. Panel C presents the distribution of firms across countries. Approximately 50% of the sample originates from the UK, France, and Germany.

3.2 Measures

3.2.1 Dependent variable

Financial distress risk is the dependent variable in this study. To improve the robustness of our results, we rely on three measures of financial distress risk used in

the accounting and finance literature, Altman (1968) model (Altman Z), Berger *et al.* (1999) model (Dis_BOS) and Almeida and Campello (2007) model (Dis_AC). The models are each defined in Appendix I. It should be noted that there is a converse relationship between the computed value of these proxies and companies' financial distress, implying that the lower the value of our financial distress risk proxies, the more likely a company is to go bankrupt.

Table 1. *Sample selection and distribution of the sample*

Panel A: Sample Selection					
Stoxx Europe 600		600	5400		
Banks and financial institutions		(139)	(1251)		
Firms with missing data		(164)	(1476)		
Final sample		297	2673		

Panel B: Number of observations based on industry			
ICB code	Industry	N	%
0001	Oil & Gas	20	6.73%
1000	Basic Materials	36	12.12%
2000	Industrials	112	37.71%
3000	Consumer Goods	37	12.46%
4000	Health Care	21	7.07%
5000	Consumer Services	37	12.46%
6000	Telecommunicatio ns	15	5.05%
7000	Utilities	19	6.40%
9000	Technology	20	6.73%
	Total	297	100

Panel C. Sample distribution across countries					
Country	N	%	Country	N	%
Austria	4	1.35%	Norway	5	1.68%
Belgium	11	3.70%	Portugal	1	0.34%
Denmark	9	3.03%	Spain	9	3.03%
Finland	14	4.71%	Sweden	18	6.06%
France	49	16.50%	Switzerland	28	9.43%
Germany	37	12.46%	UK	77	25.93%

Ireland	5	1.68%
Italy	18	6.06%
Netherland	12	4.04%

Source: Own study.

3.2.2 Independent variables

Corporate social responsibility performance:

Following El Ghoul *et al.* (2018) and Stuebs and Sun (2015), we construct an aggregated CSR index by using the annual environmental and social scores obtained from Thomson Reuters-ASSET 4. The environmental score measures a company's impact on living and non-living natural systems, including the air, land and water, as well as complete ecosystems.

The social score measures a company's capacity to generate trust and loyalty with its workforce, customers and society, through its use of best management practices. In the absence of theoretical guidance about how to weight each measure, we follow the convention established by Lin and Dong (2018).

We assign equal importance to each of the two pillars. Thus, the variable CSR is the equally weighted average of both the environmental and the social scores for each focal firm for every year.

3.2.3 Moderating variable

Corporate governance:

For our analysis, we use the annual governance scores obtained from Thomson Reuters-ASSET 4, as Erragragui (2018). The corporate governance pillar measures a company's systems and processes which ensure that its board members and executives act in the best interests of its long-term shareholders. These governance scores describe board structure, board function, shareholder rights, compensation policy and vision and strategy.

3.2.4 Control variables

Following previous research, we include several control variables in our regression models. To measure (R&D) intensity, we use R&D expenditure divided by total assets. We include leverage (LEV), measured as short-term and long-term debt divided by total assets, controls for the level of a firm's indebtedness. We also include cash holding for firm (CASH), measured as cash and marketable securities scaled by total assets.

Additionally, we control for firm's profitability using return on assets (ROA) and we use the natural logarithm of total assets to measure (AGE). Finally, we add dummy variables to control for country, industry and year fixed effects (COUNRTY, IND and YEAR).

3.3 Regression Models

Our base OLS regression model used to examine the association between the extent of CSR performance and financial distress risk is estimated as follows:

$$DIS_{it} = \beta_1 CSR_{it} + \beta_2 AGE_{it} + \beta_3 LEV_{it} + \beta_4 R\&D_{it} + \beta_5 CASH_{it} + \beta_6 ROA_{it} + \beta_{7-15} IND + \beta_{16-24} YEAR + \beta_{25-41} COUNTRY + \epsilon$$

where i = firms 1–397; t = financial years 2010–2018; DIS = Financial distress risk (proxied by Dis_AC, Dis_BOS and DIS_AltmanZ); CSR = the corporate social responsibility performance; AGE = the natural logarithm of total assets; LEV = short-term and long-term debt divided by total assets; R&D = R&D expenditure divided by total assets; CASH = cash holdings by the firm defined as cash and marketable securities scaled by total assets; ROA = return on assets; YEAR, IND and COUNTRY represent year, industry and country fixed effects, respectively; ϵ is an error term.

Our extended OLS regression model used to investigate the association between financial distress, CSR performance and corporate governance is estimated as follows:

$$DIS_{it} = \beta_1 CSR_{it} + \beta_2 CG_{it} + \beta_3 CSR_{it} * CG_{it} + \beta_4 AGE_{it} + \beta_5 LEV_{it} + \beta_6 R\&D_{it} + \beta_7 CASH_{it} + \beta_8 ROA_{it} + \beta_{9-17} IND + \beta_{18-26} YEAR + \beta_{27-43} COUNTRY + \epsilon$$

Where Corporate Governance = measured as the score of corporate governance for each company; CSR * Corporate Governance = an interaction term comprising the Corporate Governance variable multiplied by CSR.

4. Empirical Results

4.1 Summary Statistics

Table 2 provides descriptive statistics for the dependent variable (DIS), independent variable (CSR) and control variables (AGE, LEV, CASH, ROA, R&D). Our Financial distress risk measures DIS_AltmanZ, DIS_BOS and DIS_AC have a mean (median) of 2.992 (1.668), 0.763 (0.334), and 1.120 (0.436), respectively. CSR has a mean (median) of 80.647 (87.930). The mean (median) of our measures of corporate governance are 79.786 (79.840).

Table 2. Descriptive statistics

Variable	Mean	Min	Q ₁	Median	Q ₃	Max	Std. Dev.
Dis_AltmanZ	2.992	-33.488	1.101	1.668	2.663	80.397	2.992
Dis_BOS	0.763	0.000	0.237	0.334	0.438	34.851	1.806
Dis_AC	1.120	0.016	0.325	0.436	0.672	37.765	1.120

CSR	80.647	8.730	75.535	87.930	92.685	96.395	80.647
LEV	23.906	0.000	13.380	22.770	32.750	100.630	15.084
CASH	0.089	0.000	0.032	0.063	0.116	0.955	0.0939
ROA	8.256	-46.19	3.810	6.300	9.840	806.000	22.159
RD	5.816	-0.550	0.460	1.730	4.860	658.210	24.330
AGE	16.140	9.109	14.978	16.123	17.422	20.414	1.718
CG	79.786	72.775	78.830	79.840	80.951	83.406	1.587

Source: Own study.

4.2 Regression Results

Table 3 reports the regression results of the association between CSR performance and financial distress risk (Model 1) over the 2010-2018 period. Higher values of our financial distress risk proxies represent lower levels of distress. In Model (1), the results show that the coefficient on CSR is positive and significant for all measures of financial distress risk ($p < 0.05$ or better), supporting our first hypothesis. Given that CSR increases the firm value (Gregory *et al.*, 2014) and reduces financial risk (Harjoto and Laksmana, 2018; Hsu and Chen, 2015), our results show that socially responsible firms are able to reduce their level of financial distress, supporting H1.

Creditors claim a risk premium from firms with bad results in the environment. Companies with higher environmental results have lower debt costs. Such evidence shows that creditors are concerned with the survival of businesses and are better able to reward companies with lower interest rates (Jung *et al.*, 2018). These results are consistent with the argument that firms with higher CSR levels do enjoy a lower risk of financial distress, suggesting that better CSR performance is rewarded with less financial defaults (Boubaker *et al.*, 2020).

In same line, Wu *et al.* (2020) found that the CSR score will not only benefit social development but also enable firms to reduce the risk of bankruptcy. Similarly, Al-Hadi *et al.* (2017) indicate that positive engagement in CSR activities significantly decreased the financial distress of Australian firms. Using a sample of 749 Chinese firms over the 2009–2014 period, Shahab *et al.* (2019) found that CSR engagement indeed reduces the likelihood of firms falling into financial distress.

Concerning control variables, ROA influences positively the degree of financial distress risk for Dis_BOS, Dis_AC and DIS_AltmanZ and are statistically significant ($p < 0.05$ or better). The regression coefficient for AGE is positive for Dis_BOS, Dis_AC and DIS_AltmanZ and statistically significant ($p < 0.10$). Large companies logically have more resources and face greater pressure to reduce financial distress risk (Al-Hadi *et al.* 2017). The regression coefficient for CASH is positive for Dis_AC and DIS_Altman Z and statistically significant ($p < 0.05$ or better). The regression coefficient for R&D is negative for Altman Z and statistically significant ($p < 0.05$).

Table 3. *Regression results*

	DIS AltmanZ Model 1	Dis AC Model 2	Dis BOS Model 3
CSR	0.0131*** (2.56)	0.00981*** (3.61)	0.0044** (2.22)
LEV	-0.0277*** (-4.50)	-0.0110*** (-3.39)	0.0022 (0.92)
AGE	0.3881*** (6.60)	0.3458*** (11.11)	0.2122*** (6.87)
CASH	2.4787** (2.19)	5.0155*** (8.37)	0.2193 (0.48)
ROA	0.0267*** (6.66)	0.0049** (2.31)	0.0042*** (2.71)
R&D	-0.0065** (-1.56)	-0.0032 (2.33)	0.00066 (0.41)
Constant	-2.7149*** (-2.60)	-4.6234*** (-8.35)	-1.2971*** (-3.17)
YEAR FE	YES	YES	YES
INDUSTRY FE	YES	YES	YES
COUNTRY FE	YES	YES	YES
Observations	2673	2673	2673
Adj. R2	0.1040	0.1033	0.1803

Note: Higher values of our financial distress proxies represent lower levels of distress. CSR is the annual corporate social responsibility performance. LEV is leverage, measured as short term as short-term and long-term debt divided by total assets. Age is firm age. ROA is returned on assets. CASH is cash holdings by the firm defined as cash and marketable securities scaled by total assets. R&D is R&D intensity measured as R&D expenditure divided by total assets. *t*-Statistic values are in the parentheses. Statistical significance at the 10, 5 and 1% levels is indicated by *, ** and ***, respectively.

Source: Own study.

The estimations of models (2) are required to test the moderation hypothesis (i.e., H2). Table 4 shows that the regression coefficient for CG is positive for DIS_BOS and DIS_AltmanZ and statistically significant ($p < 0.01$). This finding confirms that firms with high corporate governances are thus less likely to be subject to financial distress.

Some researchers examining the effect of good corporate governance on financial distress note that corporate governance is one of the keys to economic performance improvement, including the partnership between company management, the board of directors, and shareholders and other stakeholders that must go hand in hand with each other. Good corporate governance seeks to advance company success, such as the pattern of corporate conduct as measured by performance, growth, structure of financing, and shareholder treatment.

When accounting knowledge is augmented by corporate governance, financial distress is more predictable. This is due to the nature of good corporate governance, which is beneficial in maintaining partnerships and avoiding major mistakes in the strategy of the organization to ensure that mistakes can be easily corrected and addressed so that business goals can be accomplished (Africa, 2019).

The regression coefficient of the interaction term between CSR and CG is positive and significant ($p < 0.05$ or better) for Dis_AC and DIS_BOS and DIS_AltmanZ and

therefore supports H2. The interaction between CSR and corporate governance can increase the occurrence of financial distress.

The estimates in Table 4 are in line with the evidence given by Shahab *et al.* (2019). They indicate that a Good corporate governance score comes with less financial distress and default risks, likely leading to a more attractive corporate environment, better financial stability and more crisis-resilient economies. In same line, Buerthey *et al.*, (2019) indicate that strengthening CG structures protects the interest of shareholders and improves market confidence.

Jacoby *et al.* (2019) confirms that internal corporate governance structures and the correlation of executive compensation with environmental performance foster and enable managers to be more responsible for environmental sustainability, thereby enhancing the accountability of an organization on environmental issues directly and indirectly. Cullinan *et al.* (2020), Miloud (2024) and Lu and Wang, (2020) also demonstrate that the strong corporate governance structures encourage CSR performance.

Table 4. CSR performance, corporate governance and financial distress

	DIS AltmanZ Model 1	Dis AC Model 2	Dis BOS Model 3
CSR	0.7958*** (3.54)	0.0170 (0.14)	0.2420*** (2.77)
CG	0.2398 (1.03)	0.4190*** (3.35)	0.2224** (2.45)
CSR*CG	0.0098*** (3.46)	0.000067 (0.04)	0.0029*** (2.70)
LEV	-0.0282*** (-4.71)	-0.0096*** (-3.00)	0.0018 (0.78)
AGE	1.0619*** (13.49)	0.6179*** (14.64)	0.4554*** (14.90)
CASH	3.0513*** (2.77)	5.2109*** (8.83)	0.4384 (1.03)
ROA	0.0235*** (6.02)	0.0035* (1.70)	0.0028 * (1.86)
R&D	-0.01517*** (-3.66)	-0.0076*** (-3.45)	-0.0034** (-2.13)
Constant	5.9847 (0.33)	24.4020** (2.47)	11.7382* (1.64)
YEAR FE	YES	YES	YES
INDUSTRY	YES	YES	YES
FE			
COUNTRY	YES	YES	YES
FE			
Observation	2673	2673	2673
s			
Adj. R2	0.1656	0.1577	0.1449

Note: CSR is the annual corporate social responsibility performance. CG is the annual corporate governance score. CSR*CG is the interaction between CSR and corporate governance. LEV is leverage, measured as short term as short-term and long-term debt divided by total assets. Age is firm age. ROA is returned on assets. CASH is cash holdings by the firm defined as cash and marketable securities scaled by total assets. R&D is R&D intensity measured as R&D expenditure divided by total assets. *t*-Statistic values are in the parentheses. Statistical significance at the 10, 5 and 1% levels is indicated by *, ** and ***, respectively.

Source: Own study.

4.3 Robustness Checks

4.3.1 CSR categories

We rerun our results by dividing CSR performance into seven subgroups: environment (ENV) Model 1, employment quality (EMP) Model 2, community (COM) Model 3, diversity (DIV) Model 4, customer practices (PR) Model 5 and health and safety (SAF) Model 6 and test the association between each of the subgroups and financial distress (Table 5 in Appendix I).

The results prove that the conclusions obtained in this paper are robust. We observe that financial distress risk associated with DIS_AltmanZ, DIS_AC and DIS_BOS is significantly positively associated with environment, diversity, health & safety and employment quality ($p < 0.10$ or better). This provides continued support for H1.

4.3.2 Sample composition

Approximately 50% of the sample originates from UK, France, and Germany. In an additional test, we repeat the analysis after rejecting observations from these countries. The results prove that the conclusions obtained in this paper are robust, as displayed in Table 6.

Table 5. *Sensitivity analysis related to the sample (Without three countries)*

	DIS_AltmanZ Model 1	Dis_AC Model 2	Dis_BOS Model 3
CSR	0.0205*** (2.66)	0.0092** (2.27)	0.0086** (2.22)
LEV	-0.0256*** (-2.82)	0.0063 (1.32)	0.0101** (2.20)
AGE	0.5651*** (5.25)	0.3235*** (5.70)	0.3318*** (6.12)
CASH	2.99e-08 (0.78)	4.05e-08** (1.99)	-3.20e-08* (-1.65)
ROA	0.0657*** (10.01)	0.0106*** (4.65)	0.0142*** (4.31)
R&D	0.0240** (2.30)	0.0164*** (2.97)	0.0105** (1.99)
Constant	-7.0411*** (-3.92)	-4.8813***(-5.39)	-4.5915 (-4.85)
YEAR FE	YES	YES	YES
INDUSTRY FE	YES	YES	YES
COUNTRY FE	YES	YES	YES
Observations	1206	1206	1206
Adj. R2	0.2414	0.1984	0.1636

Note: Higher values of our financial distress proxies represent lower levels of distress. CSR is the annual corporate social responsibility performance. LEV is leverage, measured as short term as short-term and long-term debt divided by total assets. Age is firm age. ROA is returned on assets. CASH is cash holdings by the firm defined as cash and marketable securities scaled by total assets. R&D is R&D intensity measured as R&D expenditure divided by total assets. *t*-Statistic values are in the parentheses. Statistical significance at the 10, 5 and 1% levels is indicated by *, ** and ***, respectively.

Source: Own study.

4.3.3 Corporate social responsibility, corporate governance subgroups, and financial distress risk interaction

We find (Table 4) consistent evidence that corporate governance moderates the relation between CSR performance and financial distress. This provides continued support for H2.

Additionally, we divide corporate governance into five subgroups: board structure, board function, shareholder rights, compensation policy and vision and strategy and test the association between each of the subgroups and financial distress. These results (see Table 7 in Appendix I) provide continued support for H2.

5. Conclusion

Using a representative sample of European listed firms for the period 2010–2018, this paper summarizes the relationship between CSR performance and financial distress. This relationship is rarely studied in CSR literature (El Ghouli *et al.*, 2018; Shahab *et al.*, 2019). This study provides evidence that The CSR activities of the company develop trust in the organization and improve firms' sustainability and competitive position because of the social exchange mechanism.

A firm in financial difficulty can also be sanctions such as the loss of the company's reputation. In balance, a company will carry out CSR activities provided that the marginal benefits of this measure exceed the marginal costs. A business strategy to reduce financial distress will become more attractive and as the potential costs of financial distress increase (Al-Hadi *et al.*, 2017).

Our second objective was to examine the interaction of CSR performance and governance, i.e., does CSR performance interact with governance and influence financial distress in this way? Previous studies have not examined the combined effect of these two forces. We find that firms with good corporate governance scores and higher level of CSR performance are associated with reduced levels of financial distress. The study further found through probing that firms can win the trust of investors by implementing good corporate governance policies.

It is in line with the previous results (Borghesi *et al.*, 2019; Harjoto and Jo, 2011), which indicate that corporate governance and CSR pilots come primarily from personal values and personal ethics. In fact, personal experience and respect for people and the environment led to good practices and stakeholder engagement in the company's prosperity.

This paper enriches the conclusions of existing theoretical review articles, such as (Gross, 2009; Gupta and Krishnamurti, 2016; Al-Hadi *et al.*, 2017; Shahab *et al.*, 2019), by summarizing the relationships between CSR performance and financial distress. Consequently, this study contributes to extant literature by examining the impact of corporate governance in the relation between CSR performance and

financial distress. We add to the literature by documenting that firms with positive CSR engagement are less likely to file for bankruptcy when they are in deep financial distress and are more likely to experience accelerated recovery from distress.

The key implication of this study is that CSR performance affects financial distress not only but also via its interaction effect with corporate governance. These results have important implications for firm management given that firms with higher CSR performance are more likely to experience accelerated recovery from distress.

First, companies are invited to engage more in CSR activities that align managers and shareholders' interest and reduce likelihood of bankruptcy.

Second, we suggest that managers who can develop successful CSR strategies can generate tangible benefits for their firms in reducing financial distress.

Third, our findings are potentially useful to market participants when making investment decisions, in determining the likelihood that a firm will be exposed to financial distress.

Moreover, this study provides a more in-depth understanding of the characteristics of the CSR firms. Finally, our study also contributes to the debate on whether "doing good" can help a firm "do well".

However, our paper still has the following two limitations in the current state. First, the sample is based on European firms. It will be interesting to include unlisted firms. Second, we examine the financial distress that occurs in different stages, and we are unable to relate CSR activity to the different stages of financial distress. Finally, Current research could be extended to use other moderate variables (e.g., organizational justice, social capital, organizational trust) to gain a more comprehensive understanding of the influence of CSR on financial distress.

Our study opens interesting future research. First, the present work can be extended by examining the effect of corporate governance mechanism on financial distress. Second, it would be worthy to examine whether, and in what ways, CSR affects financial distress.

Moreover, the relations proposed are not tested considering the cultural factors and their implications such as the organizational culture and ethics. Future studies can benefit from our recommendations and can advance literature.

Finally, this study focuses on how CSR performance affects financial distress, it should be noted that a distressed firm has other exit options. For example, a firm may opt for being acquired or merged with another firm. How prior CSR

engagement affects the possibility of or the way a firm is merged is an interesting topic.

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Appendix I:*Variable definitions and measurements*

Variables	Definition and measurement
DIS_AltmanZ	Altman (1968) predicting bankruptcy as a financial distress measures calculated as: $(1.2 * \text{Working Capital}/\text{Total Assets} + 1.4 * \text{Retained Earnings}/\text{Total Assets} + 3.3 * \text{Earnings Before Interest and Taxes}/\text{Total Assets} + 0.6 * \text{Market Value of Equity}/\text{Book Value of Total Liabilities} + 0.99 * \text{Sales}/\text{Total Assets})$
DIS_BOS	Financial distress model of Berger, Ofek and Swary (1996) calculated as: $(0.715 * \text{Receivable} + 0.547 * \text{Inventory} + 0.535 * \text{Net PPE})/\text{Total Assets}$
DIS_AC	Financial distress model of Almeida and Campello (2007) calculated as: $((\text{Cash} + 0.715 * \text{Receivable} + 0.547 * \text{Inventory} + 0.535 * \text{Net PPE})/\text{Total Assets})$
CSR	Equally weighted average of the environmental and the social score.
CG	The governance score.
CASH	Cash holding for firm, defined as cash and marketable securities scaled by total assets
ROA	Profitability of the firm, measured as operating income scaled by total assets
LEV	Leverage, measured as long-term debt (and short-term debt) scaled by total assets
R&D	Research and development expense ratio, measured as research and development expense scaled by lagged assets. Missing values for research and development expense are set to zero.
AGE	The natural logarithm of total assets

Source: Own study.

COU	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
N	2673	2673	2763	2763	2673	2763	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673
Adj. R2	0.1164	0.1152	0.1148	0.1166	0.1160	0.1176	0.1161	0.1144	0.1124	0.1126	0.1107	0.1138	0.0916	0.0958	0.0928	0.0926	0.0940	0.0930

Note: The dependent variable is financial distress. *DIV* is diversity score. *COM* is community score. *CUS* is customer practices score. *EMP* is employee relations score. *SAF* is safety score. *ENV* is environmental score. *LEV* is leverage, measured as short term as short-term and long-term debt divided by total assets. *Age* is firm age. *ROA* is returned on assets. *CASH* is cash holdings by the firm defined as cash and marketable securities scaled by total assets. *R&D* is R&D intensity measured as R&D expenditure divided by total assets.

t-Statistic values are in the parentheses. Statistical significance at the 10, 5 and 1% levels is indicated by *, ** and ***, respectively. **Source:** Own study.

Table 7. Corporate social responsibility, corporate governance subgroups and financial distress interaction

	DIS_Altman					DIS_AC					DIS_BOS				
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5	Model 1	Model 2	Model 3	Model 4	Model 5
CSR	0.0139** (2.68)	0.0130** (2.53)	0.0179** * (3.41)	0.0213** * (3.28)	0.0141** (2.73)	0.0099** * (3.60)	0.0102** * (3.74)	0.0122** * (4.39)	0.0099** (2.89)	0.0101** * (3.69)	0.0048* * (2.40)	0.0048* * (2.39)	0.0065** * (3.19)	.0068** (2.69)	0.0045** (2.24)
COMP	0.0042 (1.26)					0.0179** * (3.23)					0.0022* (1.68)				
BO-ST		0.0022* (1.94)					0.0027** (1.85)						0.0036* * (2.87)		
BO-FU			0.0146** * (4.64)					0.0070** * (4.20)					0.1502** * (5.20)		
VIS-ST				0.0095** (2.09)					0.0004 (0.02)					0.0038* (1.86)	
SH-RI					0.0093** (3.12)					0.0019 (1.21)					0.0023* (1.69)
CSR*COM	0.0066* (1.89)					0.0002 (0.15)					0.0035* (1.90)				
CSR*BO-ST		0.0065** (2.43)					0.0096** (2.90)						0.0028* * (2.73)		
CSR*BO-FU			0.0194** * (3.96)					0.0183** * (3.99)					0.0284** * (4.60)		
CSR*VIS-ST				0.0132** (2.59)					0.0102** (2.72)					0.0032* (1.74)	
CSR*SH-RI					0.0185** (2.57)					0.0024** (2.54)					0.0039** (2.71)
LEV	-0.0278*** (-4.48)	-0.0279*** (-4.50)	- 0.0285**	- 0.0286**	- 0.0274**	- 0.0095**	- 0.0096**	- 0.0097**	-0.0095** (2.89)	-0.0094** (-2.86)	0.002 (0.82)	0.0017 (0.72)	0.0016 (0.70)	0.0017 (0.72)	0.0019 (0.82)

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		*	*	*	*	*	*	*	*	*	*	*	*	*	*
		(-4.61)	(-4.60)	(-4.42)	(-2.89)	(-2.94)	(-2.98)								
Age	0.3863*** (6.52)	0.3884*** (6.54)	0.4016** *	0.4072** *	0.3928** *	0.3445** *	0.3403** *	0.3510** *	0.3448** *	0.3456** *	0.153** *	.1501** *	0.1608** *	0.1606** *	0.1555 ***
cash	2.5099** (2.20)	2.4801** (2.18)	2.334** (2.06)	2.437** (2.14)	2.2941** (2.02)	5.047*** (8.36)	4.990*** (8.26)	4.9755** *	5.0455** *	5.0075** *	0.223 (0.50)	0.145 (0.33)	0.143 (0.32)	0.1949 (0.44)	0.1867 (0.42)
roa	0.0268*** (6.63)	0.02677** *	0.0261** *	.0271*** (6.70)	0.0272** *	0.0049** (2.30)	0.0048** (2.26)	0.0046** (2.16)	0.0049** (2.30)	0.0050** (2.35)	0.004** (2.72)	0.0041* *	0.0039** (2.53)	0.0043** (2.77)	0.0043** (2.73)
R&D	-0.0068 (-1.64)	-0.0065 (-1.56)	-0.0065 (-1.55)	-0.0075* (-1.78)	-0.0066 (-1.58)	-0.0035 (-1.58)	-0.0036* (-1.66)	-0.0033 (-1.51)	-0.0035 (-1.57)	-0.0035 (-1.58)	0.00044 (0.31)	0.0004 (0.27)	0.0006 (0.42)	0.0003 (0.22)	0.0006 (0.40)
constant	-2.5098** (-2.36)	-2.7021** (-2.53)	-2.6344** (-2.51)	-2.9840** (-2.81)	-2.3429** (-2.47)	- 4.5392**	- 4.4563**	- 4.6082**	- 4.6424**	- 4.5673**	-1.192** (-2.86)	-1.089** (-2.61)	-1.263** (-3.08)	- 1.3764**	- 1.2537**
YEAR FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
IND FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
COUN FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
N	2673	2673	2763	2763	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673	2673
Adj. R2	0.1173	0.1168	0.1239	0.1182	0.1200	0.1150	0.1144	0.1220	0.1161	0.1166	0.0943	0.0962	0.1026	0.0942	0.0936

Note: Higher values of our financial distress proxies represent lower levels of distress. CSR is the annual corporate social responsibility performance. COMP is compensation policy. BO-ST is board structure. BO-FU is board function. VIS-ST is vision and strategy. SH-RI is shareholder rights. LEV is leverage, measured as short term as short-term and long-term debt divided by total assets. Age is firm age. ROA is returned on assets. CASH is cash holdings by the firm defined as cash and marketable securities scaled by total assets. R&D is R&D intensity measured as R&D expenditure divided by total assets. t-Statistic values are in the parentheses. Statistical significance at the 10, 5 and 1% levels is indicated by *, ** and ***, respectively.

Source: Own study.