International Review of Financial Analysis 89 (2023) 102833

Contents lists available at ScienceDirect

International Review of Financial Analysis

journal homepage: www.elsevier.com/locate/irfa

Corporate social irresponsibility: The relationship between ESG misconduct and the cost of equity

Leonardo Becchetti [a], Doriana Cucinelli [b], Federica Ielasi [c,*], Monica Rossolini [d]

[a] University of Rome Tor Vergata, Via Columbia 2, 00133 Rome, Italy
[b] University of Parma, Via Kennedy 6, 43123 Parma, Italy
[c] University of Florence, Via delle Pandette 9, 50127, Florence, Italy
[d] University of Milano-Bicocca, Via Bicocca degli Arcimboldi 8, 20126, Milan, Italy

ARTICLE INFO

JEL:
M14
G15

Keywords:
Cost of equity
Reputational risk
Corporate social responsibility
ESG
RepRisk

ABSTRACT

Reputational risk arising from environmental, social, and governance (ESG) conduct is increasingly relevant. This paper studies the role of media coverage related to corporate social irresponsibility (measured by RepRisk) as a source of reputational risk for public companies by verifying the relationship with the cost of equity. The research covers a decade of data, from 2007 to 2017, relative to 731 firms included in the MSCI USA Index. Our results show a positive relationship between reputational risk and the cost of equity capital, demonstrating a positive effect of corporate misconduct on the cost of equity for all three categories of risk: environmental, social, and governance. Moreover our results underline that shareholders are more sensitive to social misconducts. We also find that the cost of misconduct is higher for companies with higher ESG scores than for those with lower ESG scores. Our findings are relevant for practitioners and policy makers, since the cost of equity is one of the channels through which capital markets can encourage firms to make effective efforts aimed at reducing their ESG incidents.

1. Introduction

Reputation is a complex multivariate concept linked to behavioral ethics and is key to corporate performance (de Castro, López, & Sáez, 2006; World Economic Forum, 2022). A firm's accumulated reputational capital is highly relevant to shareholders and capital market participants (Harjoto, Hoepner, & Li, 2021). Reputation is a fundamental factor in assessing and preserving a company's value. Reputational risk, destroying a firm's reputational capital by scandal or misconduct, affects the risk–return relationship with shareholders and other stakeholders. Thus, managing reputational risk becomes one of the main drivers of a firm's value creation.

The issue of reputation management is not just about what a company does but also how it does it: conduct and citizenships, including being environmentally conscious, applying principles of ethical governance, and supporting social causes, are core drivers in building and preserving reputation (RepTrak, 2022). Given the critical role of corporate social responsibility (CSR) in protecting a company's reputation, environmental, social, and governance (ESG) factors are assuming an increasing relevance in the management of reputational risk (Peloza, 2006; UNEP Finance Initiative, 2004; Zurich Sustainability Forum, 2005). Although always present in reputational models, the weight accorded to ESG reputational risk in risk management tools is increasing (RepTrak, 2022).

Prior research demonstrates that investors and analysts price CSR information disclosed by firms in their investment decisions and recommendations (Albarrak, Elnahass, & Salama, 2018; Chen, Chen, & Wei, 2009; El Ghoul, Guedhami, Kwok, & Mishra, 2011; El Ghoul, Guedhami, Kim, et al., 2018; Griffin, Lont, & Sun, 2017; Rjiba, Saadi, Boubaker, & Ding, 2021; Schiemann and Tietmeyer, 2022; Yu, Tanda, Luu, & Chai, 2022; Zhou, Zhu, Qi, Yang, & An, 2021). But what happens in the event of misconduct reported and documented by the media? Reputation and media are symbiotic, influencing one another in an endless loop (RepTrak, 2022). Indeed, greenwashing and CSR-washing practices have increased the disappointment of investors, leading to a growth in the importance of external media coverage, to the detriment of self-reported CSR announcements and disclosure (de Freitas Netto, Sobral, Ribeiro, et al., 2020; Laufer, 2003; Pope & Wæraas, 2016).

* Corresponding author.
E-mail addresses: becchetti@economia.uniroma2.it (L. Becchetti), doriana.cucinelli@unipr.it (D. Cucinelli), federica.ielasi@unifi.it (F. Ielasi), monica.rossolini@unimib.it (M. Rossolini).

https://doi.org/10.1016/j.irfa.2023.102833
Received 1 December 2022; Received in revised form 20 July 2023; Accepted 1 August 2023
Available online 2 August 2023

The paper addresses the gap in the extant literature regarding the valuation of CSR by capital market participants, focusing on corporate social irresponsibility (CSI) and its impact on a firm's cost of funding. The paper investigates whether external media coverage of irresponsible corporate behaviors influences investors' required risk premium and thus impacts the financing costs for listed companies.

We identify exposure to ESG reputational risk using the RepRisk Index (RRI) provided by RepRisk AG. This index measures the reputation loss arising from media coverage of corporate misconduct. The measure intentionally excludes company self-disclosures and can serve as a reality check on how companies conduct their business (Harjoto et al., 2021; Salsbery, 2021). Besides reducing self-reporting bias, RRI overcomes the persistency problem of commercial ESG assessments by being calculated with a high frequency and without offsetting different ESG factors (Bansal, Wu, & Yaron, 2017; Li & Wu, 2020).

The study analyzes a sample of 731 firms in the MSCI USA Index from 2007 to 2017. Our results demonstrate a strong relationship between ESG misconduct, as measured by the RRI, and equity capital costs. These findings show that the reputational risk arising from media coverage of irresponsible ESG behaviors is perceived by investors as a rewardable risk, impacting their required return. The main results of our study also confirm that the specific nature of ESG incidents and corporate ESG scores can explain differences in investors' reactions to bad news.

The contribution of the paper is threefold. First, we contribute to the literature on the relationship between CSR and cost of equity by verifying how media coverage related to irresponsible corporate conduct can send a credible signal to investors (current and potential capital providers) by influencing their risk perceptions. RRI has been used in the literature about the financial impacts of CSI, but to the best of our knowledge, the relationship with the cost of equity has never been specifically investigated. Second, we contribute to the existing literature on the cost of the capital implications of CSR by illuminating the extent of the relationship between ESG misconduct and the cost of equity according to the specific nature of corporate misbehavior (environmental, social, or governance misconduct). Third, our findings enrich and complement the literature on the link between CSR and cost of equity by documenting the role of ESG scores in affecting investors' perceptions of firm riskiness. Some authors identify reputation loss as a firm's inability to meet its stakeholders' expectations (Fombrun, Gardberg, & Barnett, 2000). Reputational risk can thus be understood as deviation from expected optimal behavior. We proxy market expectations with companies' ESG scores, which capture past ESG performance and disclosure, and we verify whether the relationship between RRI and cost of equity is affected by the current ESG score of the company involved in the irresponsible behavior.

Our findings are also relevant for practitioners and policymakers. The issue is of absolute topicality and priority today since the cost of equity is one of the channels through which capital markets can encourage firms to be more responsible. In particular, the increase in the cost of equity in case of corporate irresponsibility could represent a boost for firms to make effective efforts aimed at reducing their ESG incidents. A better understanding of these concepts is crucial in business ethics studies, given the role of capital markets in favoring effective corporate engagement in ESG issues and impacts, which incentivizes a concrete ecological and social transition of listed companies.

The paper is divided into six sections, including the introduction and conclusions. Section 2 presents the previous literature on the relationship between CSR and the cost of equity capital, and our hypotheses on the role of corporate misconduct. Section 3 describes our sample and empirical model. Sections 4 and 5 present the empirical analysis and the main results. The concluding section discusses the main implications of our findings for business management.

2. Literature review

Our study fits into the literature that analyses CSI and its financial consequences regarding firm risk and funding costs.

The literature suggests that socially irresponsible firms are perceived as riskier, given the potential conflicts with stakeholders and the resulting claims, lawsuits, and fines that may translate into significant corporate losses (Cardillo & Chiappini, 2022; Feldman, Soyka, & Ameer, 1997; Frederick, 1995; Freeman, 1984; Galletta, Goodell, Mazzù, & Paltrinieri, 2022; Kacperczyk, 2009; Robinson, Kleffner, & Bertels, 2008; Starks, 2009; Waddock & Graves, 1997). Nevertheless, other studies show that litigation risks represent a small portion of losses caused by misconduct, while the major impact is from reputational damage (Armour, Mayer, & Polo, 2017; He, Du, & Yu, 2022; Karpoff & Lott Jr., 1993). Similarly, other scholars have argued that CSR activities' "insurance-like" protection can preserve financial performance by generating moral capital or goodwill (Godfrey, 2005; Godfrey, Merrill, & Hansen, 2009; Husted, 2005; Salama, Anderson, & Toms, 2011). As well as directly impacting investors' risk perception, CSI can drive analysts' earnings forecast errors higher in magnitude and volatility, representing an additional source of uncertainty (Ajinkya, Sanjeev, & Partha, 2005; Becchetti, Ciciretti, & Giovannelli, 2013; Brown & Zhou, 2012; Chaney, Faccio, & Parsley, 2011).

The literature shows that, in a context of information asymmetry, equity financing costs are negatively associated with the level and quality of disclosure about corporate ESG behaviors (Albarrak et al., 2018; Cuomo, Gaia, Girardone, & Piserà, 2022; El Ghoul et al., 2011; Kim, An, & Kim, 2015; Sharfman & Fernando, 2008). The magnitude of this relationship depends on the country's level of financial transparency, stakeholder orientation, and environmental performance (Dhaliwal, Zhen Li, Tsang, & Yang, 2014; El Ghoul et al., 2018). Since information asymmetry is one of the channels through which CSR affects the equity cost, disclosure standards, and investor protection regulation are other relevant moderators in this relationship (Breuer, Müller, Rosenbach, & Salzmann, 2018; Chen et al., 2009; El Ghoul et al., 2011; Hail & Leuz, 2006). Moreover, Cuomo et al. (2022) underline that after introducing the Non-financial Reporting Directive of 2014, the firms' CSR disclosure rises, which lowers both equity risk and the cost of equity.

Some studies analyze the relationship between corporate behavior and financial performance using an indicator called RepRisk Index, which measures a firm reputational risk starting from the news and information the media provides. Kölbel, Busch, and Jancso (2017) verify that negative media coverage can increase financial risk by providing conditions that increase stakeholders' conflicts and the potential for sanctions. Becchetti and Manfredonia (2022) demonstrate that negative media attention related to irresponsible conduct positively and significantly impacts bank loan costs. Likewise, Goss and Roberts (2011) and Chava (2014) show that reckless corporate behavior affects borrowing costs: firms with more significant ESG concerns receive higher loan spreads when they borrow from banks. Other scholars have studied the consequences of reputational risk on financial stock markets. Harjoto et al. (2021) explore the relationship between reputational risk and abnormal shareholder returns. They find that a long–short investment portfolio, built by buying assets with no reputational risk and selling assets with high reputational risk, can earn significantly positive abnormal returns. Likewise, Wong and Zhang (2022) study the relationship between ESG reputational risk and stock performance. They confirm that corporate reputation is considered a relevant intangible asset by investors and that negative media coverage negatively and significantly impacts firm valuation. CSI captured by RepRisk Index can also affect the behaviors of financial analysts. Becchetti, Berkan, and Manfredonia (2021) analyze financial analysts' performance and highlight that analysts' optimistic bias grows in proportion to negative media attention related to ESG misconduct. Similarly, Derrien, Krueger, Landier, and Yao (2021) investigate how sell-side analysts adjust their earnings forecasts following adverse ESG incidents. Nevertheless, to the best of our knowledge, the role played by media coverage of ESG misbehaviors has not been studied explicitly to verify the impact on the cost

of equity and, thus on the required rate of return, given equity investors' perception of corporate risks.

The impact of negative media coverage on equity cost can be due not only to the application of a CSI risk premium but also to the shortening of the investor base (Breuer et al., 2018; Bui, Moses, & Houqe, 2019; El Ghoul et al., 2018; Kim et al., 2015; Merton, 1987; Yu et al., 2022). In fact, ESG-focused and institutional investors prefer to invest in companies engaged in socially responsible activities or divest from so-called sin industries, according to the specific management mandate and the fiduciary relationship with their shareholders (Guenster, Bauer, Derwall, & Koedijk, 2011; Hong & Kacperczyk, 2009). Within this framework, Gantchev, Giannetti, and Li (2019) show that adverse media coverage of firms' ESG practices negatively affects the demand of environmentally and socially conscious investors for stocks. As a consequence, companies with more ESG-motivated investors may experience a more remarkable short-term decline in valuations.

In our study, we extend prior research, which shows that firms with a better CSR performance enjoy a lower cost of equity, and we formally state our prediction in the following hypothesis:

H1. *An increase in a firm's reputational risk deriving from corporate ESG misconduct is positively associated with an increase in its cost of equity.*

Since ESG issues are multidimensional, corporate misbehaviors can impact a specific domain of ESG factors. RepRisk Index captures 30 ESG issues, classified into three main areas: environmental footprint, social (split into the sub-areas of community relations and employee relations), and corporate governance. The perceived relevance and urgency of particular topics can affect the sensitivity of capital market participants on specific news covered by media. According to the nearly 1000 global experts and leaders who responded to the latest Global Risks Perception Survey, the three most severe risks on a worldwide scale over the next ten years are all of an environmental nature, regarding climate action failure, extreme weather, and biodiversity loss (World Economic Forum, 2022).

Previous literature tries to demonstrate the different roles of ESG factors in conditioning market performance and risk. Among others, Sassen, Hinze, and Hardeck (2016) underline that environmental and social performance decreases a firm's idiosyncratic risk, while governance performance does not affect that risk. By analyzing US S&P 500-listed firms, Alareeni and Hamdan (2020) show that disclosure on environmental and social issues is negatively associated with ROA and ROE, while corporate governance disclosure is positively related to ROA and negatively related to ROE. On the other hand, a study by the Principles for Responsible Investment (PRI), focused on the case of Quotient Investors' US Large Cap Sustainable Alpha fund, shows that ESG factors explain 2.4%, 1.6%, and 2.7% of positive excess returns, respectively (PRI, 2016). There is no homogeneity of results within studies investigating the role of ESG subcomponents separately. Also, Chen and Xie (2022) underline the positive and significant effect of ESG disclosure on a firm's financial performance.

Other authors focused their analysis on a strictly defined array of ESG activities for a better focus on data collection or international comparison (Li & Wu, 2020). Quantifiable outcome data are more readily available for specific environmental categories, such as emissions (Doshi, Dowell, & Toffel, 2013; Kim & Lyon, 2011; King & Lenox, 2000; Toffel & Short, 2011) and regulatory standards adoption (Rysman, Simcoe, & Wang, 2018; Simcoe & Toffel, 2014). Yu et al. (2022) show that a company's environmental disclosure is value-relevant to investors and impacts the cost of equity, via the mechanism of reducing market information asymmetry. Likewise, Sharfman and Fernando (2008) noted the positive effect of improved environmental risk management on the cost of equity capital. Chava (2014) suggests an association between the cost of equity and environmental externalities, showing that shareholders demand higher expected returns on stocks excluded by environmental screens. Alessi, Ossola, and Panzica (2021) show the inclusion of a specific risk premium in stock returns associated with greenhouse gas emissions and levels of corporate environmental disclosure. The literature also confirms that environmental policies and corporate reputation on environmental issues can change investors' risk perception, both for retail and institutional investors (Bloomberg Intelligence, 2018; Boone & Uysal, 2018; Fernando, Sharfman, & Uysal, 2017; Trinks, Ibikunle, Mulder, & Scholtens, 2017).

Since RepRisk classifies bad news into the three ESG areas, we verify whether the extent of the impacts of irresponsible behaviors on the cost of equity is conditioned by the specific content of the misconduct by posing the following hypothesis:

H2. *The strength of the relationship between a firm's reputational risk and its cost of equity is affected by the nature of its misconduct (environmental, social, or governance incident).*

Lastly, we want to verify whether certain characteristics of the firm involved in the misconduct can affect the strength of the relationship between the measure of reputational risk and the corporate cost of equity.

Literature on the impact of CSR on firms' performance identifies various moderators of financial outcomes, both internal and external, that can mitigate or exacerbate the effects of corporate behaviors. As regards firm-internal factors, the literature has tested the role of research and development expenditures (Hull & Rothenberg, 2008), level of profitability (McGuire, Sundgren, & Schneeweis, 1988), presence of intangible and slack resources (Graves & Waddock, 1994; Surroca, Trib'o, & Waddock, 2010), quality of corporate governance (Yu et al., 2022; Zhu, 2014), and individual ability to respond to market conditions (Breuer et al., 2018; Cai, Pan, & Statman, 2016; Lau, Ng, & Zhang, 2010).

The present study contributes to this literature by verifying whether the individual firm's sustainability level affects the relation investigated; in other words, we demonstrate the moderating role assumed by corporate responsibility in case of ESG bad news. In doing so, we follow the literature that shows how the effects of reputation depend on a company's prior behavior and on the stakeholders' expectations that are violated by the company's misconduct (Burgoon, 1993; Rhee & Haunschild, 2006). In particular, according to Krüger (2015), investors react strongly to adverse events and weakly to positive events, particularly for corporates with good stakeholder relations. Conversely, even positive events are considered relevant when a company has a history of poor relationships with stakeholders. Goss and Roberts (2011) highlight that banks apply higher interest rates to companies with low CSR but are indifferent to CSR concerns regarding firms regarded as sustainable and responsible. The company's sustainability thus defines a factor that conditions the impact of misbehavior and affects the damage to reputation in case of violation of stakeholder expectations.

Specifically, the moderating role played by prior ESG behavior in conditioning the effect of company responsibility on equity financing costs is documented by Yu et al. (2022), who studied the combined effect of environmental disclosure with the prior year's GHG emissions, confirming the role of last GHG intensity in conditioning investors' risk perceptions. Lastly, the study of Becchetti and Manfredonia (2022) reveals that the implications of the relationship between negative media coverage and banking costs are more severe in the case of misconduct by companies with high reputations. According to this literature, we propose the following hypothesis:

H3. *An increase in reputational risk deriving from corporate misconduct is more strongly associated with an increase in the cost of equity for firms with a higher ESG score than for firms with a lower ESG score.*

3. Data and methodology

3.1. Data

To answer our research questions, we collect data from several

databases. The principal data source for measuring reputational risk is RepRisk AG, one of the main providers of reputational risk measures for listed and non-listed companies. The RepRisk Index is used to construct several financial indexes, such as the Dow Jones Sustainability Index and the FTSE4Good Index series. The RepRisk database defines the level and the trend of a company's reputational risk by running a highly sophisticated algorithm based on daily screening of over 100,000 public sources and stakeholders. These sources are print media, online media, social media including Twitter and blogs, government bodies, regulators, think tanks, newsletters, and other online sources. They range from the international to the regional, national, and local levels. The information is collected in more than 20 languages, allowing us to evaluate the impact of news from the moment it is disseminated at the local level until the moment it is known at the international level. The main aim of RepRisk is to capture, through the media, the general public's perception concerning specific topics related to ESG factors. RepRisk systematically flags and monitors material ESG risks and violations of international standards that can have reputational, compliance, and financial impacts on a company.

The RRI of company A depends only on A's risk incidents. The measure depends on the severity (harshness) of the risk incident or criticism, the reach of the information source, and the novelty (newness) of the issues addressed for the company and project. In other words, RRI depends on the risk incident content, the consequences of the risk incident, the extent of the impact in terms of the number of people involved, the readership/circulation of the information, and the frequency and timing of ESG risk incidents. Scores range between 0 and 100; the higher the score, the higher the company's reputational risk. The score increases when there is essential negative news on a specific firm and decreases when the attention to a particular event deflates.

We collect the monthly RRI and calculate the average monthly index each year, from 2007 to 2017.[1] We consider different measures of reputational risk: a) the annual average of the current RRI; b) the peak of RRI during the year, and c) the annual standard deviation of the RRI. To detect the relationship between the firm's cost of equity and the different ESG indicators, we also distinguish the RRI in specific environmental, social, and governance indicators.

We collect the data about the firm's characteristics from FactSet and Thomson Reuters databases. Our original sample is based on the companies listed in the MSCI USA index in 2017. When we merge our sample with the data obtained from FactSet and Thomson Reuters, we get a novel dataset of 731 companies. However, RRI is not available for all companies during the period under observation, and therefore our sample is unbalanced. Table 1 shows that the annual average of the current RRI increased during the period under investigation, suggesting that the reputational risk linked to ESG factors has risen.

Looking at the distribution of firms across sectors, Table 2 shows that firms in our sample are more involved in financial services, industry, and services sectors. This feature is due to the constituents of the index we analyzed; on average, the largest firms operate in the financial services sector, while the smallest ones are in the construction sector. However, regarding the average RRI, we observe that firms involved in the agriculture sector have the highest reputational risk, and firms engaged in the financial services and service sectors have the lowest RRI.

Table 1
Sample composition across years.

Year	N. firms' observations	Total assets (000$)	RRI_average
2007	642	23,603,956,137	4.592
2008	657	22,172,878,416	8.777
2009	629	19,270,268,643	7.952
2010	661	23,462,984,151	9.073
2011	686	31,443,032,955	11.242
2012	688	33,166,105,262	13.381
2013	695	34,655,647,002	14.077
2014	703	35,793,159,577	16.843
2015	688	36,105,504,342	16.941
2016	661	37,254,587,426	15.925
2017	667	39,063,043,017	16.562
Total	**7,377**	**335,991,166,928**	**12.401**

Note: The table reports the description of our sample, considering the number of observations by year, the total assets by year, and the average of the RepRisk Indicator.

Table 2
Sample distribution across sectors.

Sector	N. firms' observations	Total assets_average (000$)	RRI_average
Agriculture	11	18,650,090	52.424
Constructions	92	6,447,586	11.961
Financial services	1,559	162,672,359	10.131
Industry	2,611	19,373,468	13.413
Mining	435	17,434,460	15.656
Service	1,971	22,225,489	10.873
Trade	6,98	16,431,974	15.402
Total	**7,377**	**49,534,301**	**12.401**

Note: The table reports the description of our sample, considering the number of observations by sector, the average of total assets by industry and the RepRisk Indicator.

On a subsample of 615 firms, it is possible to investigate the RepRisk components for at least one year observed, distinguishing between the weights of environment, social, and governance reputation. Tables 3 and 4 report information about the weights of the ESG components across years and sectors.

We observe that during the period investigated, the weight of the environmental component decreased, declining from 38.6% in 2007 to 9.61% in 2017, and the social part decreased from 48.5% in 2007 to 39.3% in 2017. In contrast, the governance component became more critical, its weight increasing from 12.9% in 2007 to 42.5% in 2017. This suggests that during the analyzed period, an increasing number of media links/mentions refer to governance misconduct. However, it is interesting to note that the average weight of social misconduct shows the highest value. This suggests that the number of links/mentions for companies referring to social misconduct over the total number of links in the news considered to measure RRI are higher than the links referring to environmental and governance issues.

Our data underline that, depending on the sector considered, the weights of the environment, social, and governance factors are different. In particular, Table 4 highlights that environmental and social aspects are more important than those related to governance for firms that operate in the agricultural and mining industries. For firms involved in construction, industry, and services, the weights of social and governance factors are higher than those of environmental aspects. As expected, governance in the financial service sector weighs more than the other components, at more than 60% of the total. Finally, the social component accounts for more than 50% of the total for firms operating in the trade sector. These data underline that RRI may depend on different aspects differing on the industry in which a firm operates.

[1] To end the analysis in December 2017 allows us to verify the role of the market (and thus, in the specific case of the cost of equity) in discounting reputational risk related to ESG misconduct even in the absence of a context, such as the current one, in which to enact responsible behaviors would seem almost obligatory given the stringent and pressing regulation on ESG in the corporate and financial sphere. After 2017, in fact, regulations and laws aimed at regulating ESG practices and disclosure by companies and markets have been evolving globally: the One Planet Summit that took place in late 2017 accelerated global efforts to combat climate change; the entry into force of the Paris Agreement from late 2017; the European Commission's Action Plan on Sustainable Growth, a sharp increase in the likelihood of global risk related to environmental aspects, starting in 2018 as demonstrated by the World Economic Forum (World Economic Forum, 2018).

Table 3
RepRisk components across years.

Years	N. firms' observations	Total assets (000$)	RRI_ average	E%	S%	G%
2007	107	11,296,179,131	18.907	0.386	0.485	0.129
2008	166	15,057,803,592	24.780	0.372	0.520	0.107
2009	232	14,594,888,520	18.940	0.427	0.444	0.129
2010	223	17,991,482,198	21.438	0.315	0.487	0.198
2011	286	27,634,553,382	23.092	0.233	0.410	0.357
2012	325	28,710,460,335	24.322	0.232	0.382	0.386
2013	378	30,020,532,760	22.808	0.219	0.387	0.394
2014	426	32,387,499,162	24.585	0.225	0.371	0.405
2015	450	33,069,983,340	23.453	0.194	0.394	0.412
2016	414	33,280,153,693	22.253	0.156	0.390	0.454
2017	417	34,650,567,543	22.898	0.183	0.393	0.425
Total	**3,424**	**278,694,103,656**	**22.847**	**0.240**	**0.408**	**0.352**

Note: The table reports the number of observations, the average of total assets, the RRI and the weights of its components considering the period investigated.

Table 4
RepRisk components across sectors.

Sectors	N. firms' observations	Total assets_ average (000$)	RRI_ average	E%	S%	G%
Agriculture	11	18,650,090	52.424	0.357	0.484	0.159
Construction	45	7,366,509	20.626	0.165	0.500	0.335
Financial services	572	361,263,791	22.255	0.096	0.273	0.631
Industry	1,338	31,972,496	22.640	0.253	0.424	0.323
Mining	246	25,087,657	24.587	0.497	0.394	0.110
Service	855	38,745,618	21.777	0.264	0.413	0.323
Trade	357	25,226,208	25.306	0.191	0.551	0.258
Total	**3,424**	**87,529,555**	**22.847**	**0.240**	**0.408**	**0.352**

Note: The table reports the number of observations, the average of total assets, the RRI and the weights of its components considering the sectors in which firms operate.

3.2. Empirical model

To examine the effect of reputational risk on the cost of equity capital, we use Eq. (1) as our main model. The dependent variable is the firm's cost of equity capital, and the primary explanatory variable is RRI.

$$COE_{t,I} = \beta_0 + \beta_1 RRI_{t-1,i} + \beta_2 Financials_{t-1,i} + \beta_3 Markets_{t-1,i} + \beta_4 ZSCORE_{t-1,i} + \beta_5 ESGscore_{t-1,i} + Industry_i + Year_i + \varepsilon \quad (1)$$

We use two main proxies for the cost of equity (COE). We calculate the implied cost of equity capital based on the finite horizon expected return model (Gordon & Gordon, 1997). This implied cost is the internal rate of return that equates the current stock price to the present value of expected future cash flows. According to the finite horizon expected return model, the stock price is the present value of the future dividend. Thus, we calculate $GORDON_t$ by solving Eq. (2):

$$P_t = \frac{E_t(EPS_{t+1})}{GORDONt} \quad (2)$$

where P_t is the stock price at time t, $GORDON_t$ is the implied cost of equity capital, E_t represents the market expectations based on information available in year t, and EPS_{t+1} gives the earnings per share of year $t + 1$. Expected EPS_{t+1} is calculated as the most recent median analyst forecasts before earning announcements in the I/B/E/S (Institutional Brokers' Estimate System) database.

As an alternative proxy for COE we use a variation of the price multiple, the industry-adjusted earnings–price ratio (*IndEP*). We first calculate the median earning price (EP) ratio for all firms with positive earnings in year t in each Fama–French 49 industry group (Fama & French, 1997). Excluding the firm in question, we apply a requirement of at least six positive earnings firms in the industry in year t when calculating the industry median EP. The industry-adjusted EP ratio (*IndEPt*) in year t is then calculated as the difference between the firm's EP ratio and the median industry EP ratio in year t (Francis, Lafond, Olsson, & Schipper, 2005; Liu, Nissam, & Thomas, 2002).

To test our first hypothesis, we use the log of one plus the average of a firm's monthly current reputation risk index in a given fiscal year, according to Asante-Appiah and Lambert (2022), as an explanatory variable in the main model. We verify the robustness of our result using an alternative measure, the RRI peak. The first index reflects the monthly average media and stakeholder attention to ESG issues relative to a particular company. Following the RepRisk methodology, the RRI peak is measured as the highest level of the RRI over the last two years. It can be used as a proxy for the overall reputational risk exposure related to ESG issues of a company. To check the robustness of our results, by also considering the effect of the volatility in the reputational risk on the cost of equity, we introduce a further measure related to the standard deviation of RRI (*RRI_SD*). To test our second and third hypotheses, we add to our model the composition of the RRI, distinguishing between E, S, and G percentages. It is crucial to underline that the E, S, and G components, considered separately, do not highlight the level of E, S, and G reputational risk for each company but rather the percentage of E, S, and G links in proportion to the total number of news that makes up the total RRI. For example, if E component takes the value of 0.20, this means that the links/mentions for a company related to environmental issues represent 20% of the total news quantified in the RepRisk Index. It does not refer to the number of risk incidents, as one risk incident can be linked to multiple issues. Therefore, with this analysis, we aim to test whether the development of exposure to E, S, and G components differently affects the firms' cost of equity over time.

Following prior literature (Ng & Rezaee, 2015; Pfister, Schwaiger, & Morath, 2020), we include several control variables. *Financials* is a vector of a firm's financial and economic characteristics at time $t - 1$. We consider the firm's size measured as the natural logarithm of the total asset (*SIZE*), the return on equity as a measure of the firm's profitability (*ROE*), the litigation dummy (*D_LITIGATION*) that takes one if the firm operates in the high-litigation industry and 0 otherwise,[2] and a

[2] Following Ng and Rezaee (2015), we identify high-litigation industries with SIC codes 2833–2836, 3570–3577, 3600–3674, 5200–5961, and 7370.

dummy loss (*D_LOSS*) equal to 1 if net income for year *t* is negative and 0 otherwise, to control for overall profitability (Ng & Rezaee, 2015). We also include the probability of bankruptcy score (*ZSCORE*) as a proxy for financial distress (Zmijewski, 1984). As a market risk measure, we have the beta to control for systematic risk, and we measure beta using annual stock returns and market returns during the fiscal year. We include the Datastream ESG indicators (ESGscore) to control for sustainability. We also include the linear and the squared values to capture the non-linearity of the relationship between the cost of equity and ESG indicators. We also control for industry and year-fixed effects.

The robust standard errors are used in all the regression models in order to control for heteroskedasticity, while the variance inflation factor (VIF) test is run to check the possible issue of multicollinearity. The results of these tests are reported in the Tables and underline that our estimations are not affected by multicollinearity problems. Moreover, to check for stationarity, we run the Dickey-Fuller test. Descriptive statistics are reported in Table 5, while the correlation matrix is reported in Appendix.

4. Main results

Following the literature on the relationship between ESG performance and cost of equity, we hypothesize that a company with a lower RRI can be considered less risky, facing a lower cost of equity. Conversely, we expect that an increase in the RRI sends a credible signal to investors (capital providers) about the firm's ESG misconduct and increases the cost of equity.

The RRI can change over time, suddenly and consistently. RRI is more volatile than ESG ratings. Indeed, when there is a new risk incident for a company or project, the RRI is recalculated. The magnitude of the increase depends on the severity, reach, and novelty of the incident. As time goes by, the RRI decays if there is no new risk exposure. Given the potential volatility of RRI, we ask whether the trend of RRI can impact the risk expectations of equity investors.

Results for the relationship between RRI and the firm's cost of equity are reported in Table 6. Our findings show that the higher the RRI, the higher the cost of equity, which confirms H1. This suggests that firms with the worst ESG reputation pay a higher cost of equity. The results are confirmed by both measures of the cost of equity used in the empirical analysis. They support the findings of other studies that discovered a positive relationship between reputational risk and the cost of funding (Becchetti & Manfredonia, 2022; Chava, 2014; Goss & Roberts, 2011). Our results also confirm previous research on the determinants of the cost of equity, suggesting that larger firms with lower profit and higher bankruptcy probability are exposed to a higher cost of equity (Ng & Rezaee, 2015). Looking at ESG indicators (simple and squared ESG scores), we observe a parabolic relationship that is initially positive and becomes negative beyond a certain level of sustainability (Barth, Hübel, & Scholz, 2022).

The media and stakeholders' attention can differ according to the specific type of event involving the company. Environmental, social, or governance mediatic relevance can produce different interest levels in readers, particularly among financial investors. Therefore, as a second analysis, we split RRI into three different indicators: a) environmental percentage (*RRI_E*), b) social percentage (*RRI_S*), and c) governance percentage (*RRI_G*). Each indicator represents the weight of media links/mentions on total news about the specific topic. The higher the percentage, the higher the media hype on the particular issue (E, S or G).

The results are shown in Table 7, where the cost of equity is measured by the implied cost of equity capital based on the finite horizon expected return model (Gordon & Gordon, 1997). In Model 1, we include the weights of each ESG pillar that composes RRI simultaneously in the regression model to investigate the relative effects of the different types of misconduct. In this model, the reference category is the weight of environmental misconduct. Subsequently, from Models 2 to 4, we add separately the individual percentages to detect the effect of media relevance for each type of misconduct. Our findings highlight that E, S, and G misconducts are not statistically significant. The RRI continues to be positive and statistically related to the equity cost. These results suggest that the RRI is crucial in defining the cost of equity, measured using the Gordon indicator. At the same time, the weights of each component do not show any significant relationship with the cost of equity.

We also run the analysis with the weight of each RRI component by using *IndEP* as an alternative dependent variable for measuring the cost of equity (Table 8). Also, in this case, the coefficient of RRI is positive and statistically significant, suggesting a positive relationship with the cost of equity. However, considering the weight of each ESG component, we observe that only the percentage of social links/mentions over the total number of news shows a statistically significant positive relationship with *IndEp* measure. The other components, i.e., the percentage of environment and governance issues, do not offer any statistically significant association with our cost of equity estimate. This confirms our H2: the relationship with the cost of equity is conditional on the source of the reputational risk and the media attention on specific ESG topics. When about events related to social issues, the firm's cost of equity is higher. Our findings confirm the results of previous studies (Alareeni & Hamdan, 2020; PRI, 2016; Sassen et al., 2016).

The differences between Tables 7 and 8 may be due to the different interpretations we can give to the *IndEP* variable compared to *GORDON*. *GORDON* includes the expectations of financial analysts in its measurement, whereas *IndEP* can be regarded as a measure of the cost of equity viewed by stockholders, as it considers the difference between earning price ratio of the company observed and the average ratio of the sector in which it operates. The discussion of the GORDON findings accords with the efficient market hypothesis (Fama, 1970; Shleifer, 2000), where prices always reflect all available information. Analysts can be considered rational profit-maximizing investors that evaluate securities rationally. Therefore, the analysts base their forecasts on the negative news on the cost of equity without being affected by the media hype. Thus, considering the *GORDON* measure, RRI shows a positive relationship with the cost of equity. On the other hand, the proportion of E/S/G links to the total number of links in the news is irrelevant. This is because a higher number of links does not imply a higher number of risk incidents, but it just corroborates a higher media hype on a specific issue. Analysts pay more attention to the severity of the risk incidence, the issue's novelty, and the information source's reach. They are less susceptible to media spotlights.

On the other hand, as previously underlined, *IndEP* can be considered a measure of the cost of equity for shareholders. Shareholders are more careful about social misconduct. This could be explained by leveraging the literature on Corporate Social Performance (Clarkson, 1995; Swanson, 1995; Wood, 1991). Clarkson (1995) underlines that the primary stakeholder groups typically comprise shareholders and investors, employees, customers, and suppliers. Good relationship management with primary stakeholders promotes long-term value creation. Attention to social aspects (and CSR) can maximize shareholder value by enabling companies to foster relationships with relevant stakeholders (Albuquerque, Koskinen, & Zhang, 2019; Servaes & Tamayo, 2013).

To verify our third hypothesis, we detect whether reputational risk affects the cost of equity depending on corporate sustainability (proxied by the ESG scores provided by Refinitiv). Accordingly, we add the *D_ESG* score, a dummy variable that takes the value one if the firm has an ESG score higher than the sample median and 0 otherwise. We also interact this dummy variable with RRI. Our findings show that if a firm has a higher ESG score, a worsening of reputational risk increases the cost of equity more than for firms with lower ESG scores. Thus, H3 is confirmed for the equity cost measured using the *GORDON* and the *IndEP* variables (Table 9).

Table 5
Descriptive statistics.

Variable	Obs	Mean	Std. dev.	Min	Max
GORDON	6,423	0.063	0.059	0.000	2.675
IndEP	6,219	0.002	0.090	−0.171	3.367
RRI	7,377	12.401	13.133	0.000	71.500
RRI_PEAK	7,377	21.827	18.786	0.000	79.000
RRI_SD	7,377	3.747	3.926	0.000	26.113
RRI_E	3,424	5.379	6.053	0.000	38.978
RRI_S	3,424	9.457	7.506	0.000	49.987
RRI_G	3,424	8.011	8.709	0.000	51.427
ROE	6,901	0.178	2.798	−181.000	104.364
ZSCORE	5,421	−3.049	1.451	−9.211	18.166
BETA	6,444	1.186	1.404	−79.642	43.738
TOTAL_ASSETS	6,783	49,500.00	211,000.00	0.00	3,330,000.00
LITIGATION	7,377	0.196	0.397	0.000	1.000
D_LOSS	6,594	0.108	0.311	0.000	1.000
ESGscore	6,119	46.894	19.781	0.590	95.150
ENVscore	6,119	37.488	28.430	0.000	98.550
SOCscore	6,119	49.013	21.064	1.090	97.750
GOVscore	6,119	52.600	22.597	0.250	98.530

Note: The table reports descriptive statistics of the variables used in the empirical analysis.

Table 6
Regression model: determinants of the cost of equity.

	(1)	(2)
Variables	Gordon	IndEP
RRI	0.344***	0.312***
	(0.036)	(0.070)
ZSCORE	0.087*	0.012
	(0.047)	(0.093)
SIZE	−0.339***	−0.277**
	(0.051)	(0.119)
ROE	−0.001	0.003
	(0.010)	(0.009)
D_LITIGATION	0.180	−0.213
	(0.140)	(0.460)
D_LOSS	−0.591**	−0.363
	(0.249)	(0.518)
BETA	0.085	0.115
	(0.056)	(0.137)
ESGscore	0.045***	0.032*
	(0.009)	(0.017)
ESGscore2	−0.000***	−0.000
	(0.000)	(0.000)
Constant	6.207***	0.604
	(0.674)	(1.221)
Observations	4,152	3,805
R-squared	0.145	0.066
VIF	5.80	5.83
DF (Fisher) (*p*-value)	0.000	0.000
SECTOR_FE	YES	YES
TIME_FE	YES	YES

Note: Table 6 reports results for the relationship between RRI and the cost of equity. In Model 1, the dependent variable is the cost of equity measured by GORDON. In Model 2, the dependent variable is the cost of equity measured by the industry-adjusted earnings–price ratio (IndEP).

5. Robustness checks

To check the robustness of our main analysis, we conduct the following additional tests on both our cost of equity measures: i) we consider as the main explanatory variable the RRI peak instead of the average RRI (Table 10, Model 1 and 4); ii) we consider the standard deviation of the annual average RRI, measured on monthly data, to demonstrate whether the volatility in the ESG reputational risk can

Table 7
Cost of equity (measured by GORDON) and RRI ESG components.

Variables	(1)	(2)	(3)	(4)
RRI	0.309***	0.354***	0.322***	0.340***
	(0.076)	(0.039)	(0.041)	(0.037)
RRI_E%	–	−0.146	–	–
		(0.192)		
RRI_S%	0.233	–	0.192	–
	(0.144)		(0.149)	
RRI_G%	0.127	–	–	0.056
	(0.300)			(0.152)
ZSCORE	0.087	0.089*	0.087*	0.087*
	(0.126)	(0.047)	(0.047)	(0.047)
SIZE	−0.340**	−0.339***	−0.337***	−0.340***
	(0.122)	(0.051)	(0.051)	(0.051)
ROE	−0.000	−0.001	−0.000	−0.001
	(0.006)	(0.010)	(0.010)	(0.010)
D_LITIGATION	0.171	0.170	0.177	0.178
	(0.472)	(0.140)	(0.141)	(0.139)
D_LOSS	−0.592*	−0.593**	−0.588**	−0.593**
	(0.258)	(0.249)	(0.249)	(0.249)
BETA	0.085	0.084	0.086	0.085
	(0.147)	(0.055)	(0.056)	(0.056)
ESGscore	−0.000*	−0.000***	−0.000***	−0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
ESGscore2	0.046***	0.046***	0.045***	0.045***
	(0.008)	(0.009)	(0.009)	(0.009)
Constant	6.237***	6.226***	6.191***	6.229***
	(1.560)	(0.675)	(0.675)	(0.684)
Observations	4,152	4,152	4,152	4,152
R-squared	0.146	0.145	0.146	0.145
VIF	5.390	6.210	6.200	6.210
DF (Fisher) p-value	0.000	0.000	0.000	0.000
TIME FE	YES	YES	YES	YES
SECTOR FE	YES	YES	YES	YES

Note: Table 7 reports the results of the relationship between RRI ESG components and the cost of equity measured with the GORDON variable. In Model 1, the independent variable is the value of RRI split into the E, S, and G components; in Model 2, we consider only the environmental component of RRI; in Model 3, the independent variable is the social components of RRI; and in Model 4, the independent variable is the governance components of RRI.

Table 8
Cost of equity (measured by IndEP) and RRI ESG components.

Variables	(1)	(2)	(4)	(3)
RRI	0.238***	0.281***	0.242***	0.324***
	(0.070)	(0.058)	(0.059)	(0.073)
RRI_E%	–	0.511	–	–
		(0.368)		
RRI_S%	0.675***	–	0.663***	–
	(0.239)		(0.242)	
RRI_G%	0.043	–	–	−0.149
	(0.241)			(0.245)
ZSCORE	0.011	0.012	0.012	0.013
	(0.072)	(0.071)	(0.071)	(0.072)
SIZE	−0.278***	−0.282***	−0.277***	−0.276***
	(0.105)	(0.107)	(0.106)	(0.105)
ROE	0.004	0.004	0.004	0.003
	(0.008)	(0.008)	(0.008)	(0.008)
D_LITIGATION	−0.223	−0.200	−0.223	−0.214
	(0.270)	(0.271)	(0.270)	(0.272)
D_LOSS	−0.357	−0.378	−0.357	−0.363
	(0.510)	(0.513)	(0.510)	(0.510)
BETA	0.117	0.115	0.116	0.114
	(0.132)	(0.132)	(0.132)	(0.132)
ESGscore	−0.000	−0.000	−0.000	−0.000
	(0.000)	(0.000)	(0.000)	(0.000)
ESGscore2	0.033**	0.031**	0.033**	0.032**
	(0.013)	(0.013)	(0.013)	(0.013)
Constant	0.578	0.618	0.568	0.568
	(1.190)	(1.208)	(1.198)	(1.190)
Observations	3,805	3,805	3,805	3,805
R-squared	0.068	0.067	0.068	0.066
VIF	5.300	6.100	6.100	6.110
DF (Fisher) p-value	0.000	0.000	0.000	0.000
TIME FE	YES	YES	YES	YES
SECTOR FE	YES	YES	YES	YES

Note: Table 8 reports the results of the relationship between RRI ESG components and the cost of equity measured by the industry-adjusted earnings–price ratio (IndEP). In Model 1, the independent variable is the value of RRI and the weight of its component, i.e., the percentage of E, S, and G. In Model 2, we consider only the environmental component of RRI; in Model 3, the independent variable is the social components of RRI; and in Model 4, the independent variable is the governance components of RRI.

increase the cost of equity depending on the level of RRI (Table 10, Models 2, 3, 5 and 6); iii) we provide an in-depth analysis excluding the financial intermediaries from our sample (Table 11); iv) we control for the possible endogeneity issue referred to the RRI measure by running an Instrumental Variable regression model (Table 12).[3]

Table 10 reports the first and second robustness analyses. The results show that our main findings are confirmed when using the peak of RRI in each year; in other words, there is a positive and statistically significant relationship between reputational risk and cost of equity (Models 1 and 4). Looking at the standard deviation of *RepRisk*, our results show a positive relationship between reputational risk and cost of equity only when firms have an RRI lower than the sample median (Models 3 and 6). This result suggests that the variation of reputational risk is relevant and affects the cost of equity only when the firm has a good ESG reputation (low RRI); in contrast, when the firm already has a higher RRI, and therefore a worse ESG reputation, the variability of reputation does not affect the cost of equity.[4]

Our main analysis includes financial institutions. Given their differences from other economic sectors in terms of regulations, accountability rules, and business models, we run the analysis again to check the robustness of our main results, this time excluding financial intermediaries. Our findings, reported in Table 11, show that RRI has a positive and significant relationship with the cost of equity, while the percentage of E, S, and G links/mentions do not show any statistically significant relationship with our dependent variable. These findings confirm the results of the main analysis, i.e. the financial analysts pay more attention to the firms' reputational risk and are not affected by the media hype related to particular events.

As a final robustness check, we consider the endogeneity issues. Indeed, our results may be affected by endogeneity bias due to the correlation between firm characteristics and our measure of reputational risk. In particular, our measure of reputational risk may be correlated with firm size, other measures of ESG issues by Refinitiv Eikon, etc. These variables may also affect the cost of equity. To control for endogeneity, we run a single-equation instrumental variables regression via the two-stage least-squared regression (IVregress 2SLS) (Wooldridge, 2005). Following previous studies (Becchetti & Manfredonia, 2022; El Ghoul et al., 2011; Kim, Li, & Li, 2014), we adopt the average industry-level RRI as an instrumental variable.

We run the IVregress 2SLS model on both the *GORDON* and *IndEP* variables. The results of the second-stage regression are reported in Table 12. The findings are consistent with the main analysis, as our main coefficients maintain their sign and significance when we estimate the model with the instrumental variable.

Table 9
Cost of equity, reputational risk, and ESG scores.

	(1)	(2)
Variables	Gordon	IndEP
RRI	0.302***	0.217***
	(0.048)	(0.076)
ZSCORE	0.085*	0.032
	(0.047)	(0.062)
SIZE	−0.359***	−0.154*
	(0.052)	(0.081)
ROE	−0.000	0.008
	(0.010)	(0.010)
D_LITIGATION	0.153	0.013
	(0.138)	(0.208)
D_LOSS	−0.598**	−0.249
	(0.250)	(0.464)
BETA	0.089	0.051
	(0.056)	(0.091)
D_ESGscore	0.213	−0.099
	(0.145)	(0.183)
RRI*D_ESGscore	0.104*	0.156*
	(0.062)	(0.085)
Constant	7.294***	0.119
	(0.648)	(0.971)
Observations	4,152	4,064
R-squared	0.143	0.029
VIF	2.15	1.97
DF (Fisher) p-value	0.000	0.000
SECTOR_FE	YES	YES
TIME_FE	YES	YES

Note: Table 9 reports the results of the relationship between RRI and the cost of equity. In Model 1, the independent variable is the average RRI during the year observed; the dependent variable is the cost of equity measured by GORDON. In Model 2, the independent variable is the average RRI during the year observed; the dependent variable is the cost of equity measured by IndEP.

6. Discussion and conclusions

This study analyzes the role of media coverage related to CSI, as measured by RepRisk, on equity financing costs for listed companies. It contributes to the literature that studies the relationship between CSI and related financial performance in several ways.

First, whereas previous literature focuses on the impact of ESG issues on the cost of debt, our analysis focuses on the cost of equity. In

[3] As another robustness test, we run our main models considering other two variables: EPS and stock illiquidity. All the results are confirmed. They are not reported in the paper but are available upon request.

[4] As an alternative measure of the RRI peak, we also use the logarithm of one plus RRI peak in the regression model. All the results are confirmed. They are not reported in the paper but are available upon request.

Table 10
Cost of equity and alternative measures of reputational risk.

	Gordon			IndEP		
	MEDIAN_RRI			MEDIAN_RRI		
	Mod.1	Mod. 2	Model 3	Model 4	Model 5	Model 6
Variables		ABOVE	BELOW		ABOVE	BELOW
RRI_PEAK	0.028***	–	–	0.026***	–	–
	(0.003)			(0.005)		
RRI_SD	–	−0.111	0.230***	–	−0.038	0.319***
		(0.131)	(0.070)		(0.184)	(0.088)
ZSCORE	0.042	0.072	0.062	0.066	0.141*	0.064
	(0.057)	(0.065)	(0.085)	(0.057)	(0.078)	(0.090)
SIZE	−0.424***	−0.243***	−0.836***	−0.306***	−0.080	−0.706***
	(0.070)	(0.062)	(0.187)	(0.098)	(0.083)	(0.238)
D_LITIGATION	0.104	0.380*	−0.063	−0.012	0.248	−0.244
	(0.139)	(0.221)	(0.186)	(0.229)	(0.368)	(0.274)
D_LOSS	−0.708***	−0.536	−1.062***	−0.395	−0.116	−0.872
	(0.253)	(0.356)	(0.371)	(0.491)	(0.749)	(0.554)
BETA	0.114*	0.150	0.085	0.138	0.560**	0.004
	(0.069)	(0.122)	(0.064)	(0.131)	(0.226)	(0.066)
ESGscore	0.045***	0.071***	0.035**	0.022*	0.029	0.033*
	(0.010)	(0.014)	(0.020)	(0.012)	(0.018)	(0.019)
ESGscore2	−0.002***	−0.000***	−0.000	−0.000	−0.000	−0.000*
	(0.195)	(0.245)	(0.240)	(0.000)	(0.000)	(0.000)
Constant	6.634***	5.728***	10.654***	1.059	−0.392	4.238**
	(0.743)	(0.830)	(1.634)	(1.104)	(1.292)	(2.149)
Observations	4,260	2,377	1,883	3,909	2,191	1,718
R-squared	0.127	0.123	0.128	0.031	0.026	0.053
SECTOR_FE	YES	YES	YES	YES	YES	YES
TIME_FE	YES	YES	YES	YES	YES	YES

Note: Table 10 reports the results of the relationship between reputational risk and the cost of equity. In Models 1 and 4, the independent variable is the peak of RRI during the year observed; in Models 2, 3, 5, and 6, the independent variable is the standard deviation of RRI. Models 2 and 5 refer to firms with an RRI higher than the sample median. Models 3 and 6 refer to firms with an RRI lower than the sample median. In models 1, 2, and 3, the dependent variable is the cost of equity measured by GORDON. In models 4, 5, and 6, the dependent variable is the cost of equity measured by IndEP.

Table 11
Robustness check without financial intermediaries.

	(1)	(2)	(3)	(4)	(5)
Variables	GORDON	GORDON	GORDON	GORDON	GORDON
RRI	0.338***	0.323***	0.336***	0.320***	0.335***
	(0.037)	(0.045)	(0.039)	(0.040)	(0.037)
RRI_E%			0.027		
			(0.162)		
RRI_S%		0.158		0.167	
		(0.142)		(0.132)	
RRI_G%		0.029			0.051
		(0.152)			(0.138)
ZSCORE	0.161***	0.162***	0.160***	0.162***	0.161***
	(0.050)	(0.050)	(0.050)	(0.050)	(0.050)
SIZE	−0.321***	−0.320***	−0.321***	−0.320***	−0.323***
	(0.053)	(0.053)	(0.053)	(0.053)	(0.053)
ROE	−0.002	−0.002	−0.002	−0.002	−0.003
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
D_LITIGATION	0.212	0.211	0.214	0.209	0.210
	(0.140)	(0.140)	(0.140)	(0.141)	(0.140)
D_LOSS	−0.669***	−0.665***	−0.669***	−0.666***	−0.671***
	(0.253)	(0.253)	(0.253)	(0.253)	(0.253)
BETA	0.087	0.087	0.087	0.087	0.087
	(0.058)	(0.059)	(0.059)	(0.059)	(0.058)
ESGscore	0.040***	0.040***	0.040***	0.040***	0.040***
	(0.009)	(0.009)	(0.009)	(0.009)	(0.009)
ESGscore2	−0.000**	−0.000**	−0.000**	−0.000**	−0.000**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Constant	6.607***	6.589***	6.605***	6.598***	6.623***
	(0.675)	(0.681)	(0.675)	(0.675)	(0.681)
Observations	3,975	3,975	3,975	3,975	3,975
R-squared	0.138	0.138	0.138	0.138	0.138
SECTOR_FE	YES	YES	YES	YES	YES
TIME_FE	YES	YES	YES	YES	YES

Note: Table 11 reports the results of the relationship between RRI and the cost of equity in a subsample that does not include the financial intermediaries. In Model 1, the independent variable is the average RRI during the years observed; in Model 2, in addition to RRI the E, S, and G components are included; in Models 3, 4, and 5 we consider respectively, only the E, S, and G component of the RRI. In all models, the dependent variable is the cost of equity measured by GORDON.

Table 12
Second-stage IVregress 2SLS results on GORDON and IndEP variables.

Variables	Model 1 Gordon	Model 2 IndEP
RRI	0.364***	0.370***
	(0.054)	(0.088)
ZSCORE	0.084**	0.009
	(0.043)	(0.067)
SIZE	−0.348***	−0.305***
	(0.049)	(0.080)
ROE	−0.000	0.004
	(0.020)	(0.027)
D_LITIGATION	0.182	−0.218
	(0.111)	(0.281)
D_LOSS	−0.594***	−0.380
	(0.163)	(0.284)
BETA	0.085*	0.113*
	(0.046)	(0.069)
ESGscore	0.045***	0.031**
	(0.009)	(0.014)
ESGscore2	−0.000***	−0.000*
	(0.000)	(0.000)
Constant	4.391***	−0.298
	(0.951)	(1.408)
Observations	4,152	3,805
R-squared	0.145	0.066
Country FE	YES	YES
Year FE	YES	YES
Prob > F	0.000	0.000

Note: Table 12 reports the results for the relationship between RRI and the cost of equity measured by GORDON and IndEP, using an instrumental variable approach. The instrument adopted in the regression is the average industry-level RRI. In Model 1, the dependent variable is GORDON; in Model 2, the dependent variable is IndEP.

particular, to the best of our knowledge, until now, no study has been conducted on the relationship between the cost of equity and the firms' reputational risk measured with the RepRisk Index. Among the main advantages of this indicator are the external origins of the factors that contribute to determining the measure. Unlike ESG ratings, which are typically based on the communication of companies regarding their policies and approaches to sustainability, the RepRisk Index derives from media coverage of irresponsible behaviors, thus excluding the influence of greenwashing and CSR-washing practices. Furthermore, compared to the ESG scores typically calculated by specialized rating agencies, the indicator used in our analyses reacts swiftly to corporate misconduct and consequently becomes more volatile. More meaningful insights are thus accessible using the indicator's trend, annual peak, and relative standard deviation.

We demonstrate that media coverage related to irresponsible corporate conduct sends a credible signal to investors by influencing their risk perceptions and, consequently the required return. We detect a positive relationship between the firm's reputational risk, measured by RRI, and its cost of equity capital. Our results show that RepRisk should be considered one of the effective instruments available to investors for monitoring the reputational risk of companies.

We also contribute to the literature on CSR's cost of equity implications by analyzing the relationship between ESG misconduct and the cost of equity according to the specific nature of corporate misbehavior: environmental, social, or governance misconduct. We demonstrate that the relationship between reputational risk and cost of equity depends not only on the firms' ESG characteristics but also on the specific nature of the news covered by the media. Environmental, social, and governance issues produce different levels of interest in readers, particularly among financial investors. In all our analyses, the media coverage with the greatest impact on equity costs is related to social factors. Shareholders seem particularly sensitive to new covering social factors. Since social factors are those that most directly affect important stakeholders of the company, such as employees, the actors of the supply chain, and the reference community, irresponsible conduct in this area can considerably increase the risks perceived by shareholders, thereby affecting the cost of equity.

Lastly, we offer insights into the literature that identifies loss of reputation as a firm's inability to meet the expectations of its stakeholders (Fombrun et al., 2000). This suggests that firms with the worst ESG reputations pay a higher cost of equity. Nevertheless, this relationship is not linear, considering the ESG characteristics of the company. Looking at ESG indicators (simple and squared ESG scores), we observe a parabolic relationship that is initially positive but becomes negative beyond a certain level of sustainability. Consequently, if a company has an ESG score above the median, an increase in the RepRisk indicator has a higher impact on its cost of equity. At a high level of ESG scores, the information power of the reputational risk index is extreme, and therefore an increase in RepRisk has a significant impact on the cost of equity.

One of the main limits of our analysis is the sample time frame. In future researches, it will be interesting to extend the time span and analyze how in a scenario of increased awareness of the importance of ESG issues, even induced by regulatory constraints, the market reacts to misconduct. The punishment in terms of cost of capital is expected to be stronger, consistent with recent literature (Becchetti & Manfredonia, 2022; Cuomo et al., 2022; Wong & Zhang, 2022; Yu et al., 2022), and as one of the analyses in the paper (Table 9) seems to anticipate where the cost of misconduct is higher for more ESG compliant firms.

The results of this study are particularly useful for company managers in understanding the impact of irresponsible conduct, in terms of funding costs. Our findings will allow managers to increase their awareness of their strategic and operational decisions regarding ESG, considering the related financial repercussions. The implications of our results are beneficial for business management because they allow the verification of the impact of misconduct by taking into account the particular area of misconduct (environmental, social, or governance), as well as the specific condition of each company in terms of ESG reputation.

In this context, the relevant impact of media coverage related to corporate misconduct can guide shareholders' and managers' decisions in the same direction. Our analysis shows that negative media coverage can significantly affect the cost of equity through the risk perceptions of shareholders. At the same time, the literature has demonstrated that CEOs are judged on their firms' ESG conduct (Cai et al., 2016). Reputation related to media coverage and stakeholders' attention can thus play a fundamental role in promoting CSR by helping align the interests of managers and shareholders, particularly concerning social issues.

Compliance with ethical standards

All authors declare that they have no conflicts of interest.
No Humans and animals have been involved in this research.

Acknowledgement

We would like to thank for their helpful advices and comments all the discussants and the participants at the conferences Ffea, 1st Conference On International, Sustainable And Climate Finance And Growth, Università Degli Studi Di Napoli Parthenope; Wolpertinger conference 2022 held at CUNEF, Madrid; ADEIMF Annual Conference, held by University of Bari and Foggia (Italy).

Appendix A. Appendix

A.1. Pairwise correlations

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
(1) RRI	1.000						
(2) ZSCORE	0.055*	1.000					
	(0.000)						
(3) SIZE	0.513*	−0.089*	1.000				
	(0.000)	(0.000)					
(4) LITIGATION	0.040*	−0.131*	0.064*	1.000			
	(0.001)	(0.000)	(0.000)				
(5) DLOSS	−0.044*	0.239*	−0.217*	0.015	1.000		
	(0.001)	(0.000)	(0.000)	(0.238)			
(6) BETA	−0.017	0.017	−0.117*	−0.045*	0.079*	1.000	
	(0.193)	(0.252)	(0.000)	(0.001)	(0.000)		
(7) ESGscore	0.474*	0.019	0.505*	0.100*	−0.083*	−0.068*	1.000
	(0.000)	(0.221)	(0.000)	(0.000)	(0.000)	(0.000)	

Note: The table reports the correlations between our independent variables.

References

Ajinkya, B., Sanjeev, B., & Partha, S. (2005). The association between outside directors institutional, investors and the properties of management earnings forecasts. *Journal of Accounting Research, 43*(3), 343–376.

Alareeni, B. A., & Hamdan, A. (2020). ESG impact on performance of US S&P 500-listed firms. *Corporate Governance: The International Journal of Business in Society, 20*(7), 1409–1428. https://doi.org/10.1108/CG-06-2020-0258

Albarrak, M. S., Elnahass, M., & Salama, A. (2018). The effect of carbon dissemination on cost of equity. *Business Strategy and the Environment, 28*, 1179–1198.

Albuquerque, R., Koskinen, Y., & Zhang, C. (2019). Corporate social responsibility and firm risk: Theory and empirical evidence. *Management Science, 65*(10), 4451–4469.

Alessi, L., Ossola, E., & Panzica, R. (2021). What greenium matters in the stock market? The role of greenhouse gas emissions and environmental disclosures. *Journal of Financial Stability, 54*(June). https://doi.org/10.1016/j.jfs.2021.100869

Armour, J., Mayer, C., & Polo, A. (2017). Regulatory sanctions and reputational damage in financial markets. *Journal of Financial and Quantitative Analysis, 52*(4), 1429–1448.

Asante-Appiah, B., & Lambert, T. A. (2022). The role of the external auditor in managing environmental, social, and governance (ESG) reputation risk. *Review of Accounting Studies*, 1–53.

Bansal, R., Wu, D., & Yaron, A. (2017). *Is socially responsible investing a luxury good?*. Working paper,. Durham, NC: Duke University.

Barth, F., Hübel, B., & Scholz, H. (2022). ESG and corporate credit spreads. *The Journal of Risk Finance, 23*(2), 169–190. https://doi.org/10.1108/JRF-03-2021-0045

Becchetti, L., Berkan, A., & Manfredonia, S. (2021). Media coverage, corporate social irresponsibility conduct and financial analysts' performance. *Corporate Social Responsibility and Environmental Management, 28*(5). https://doi.org/10.1002/csr.2176

Becchetti, L., Ciciretti, R., & Giovannelli, A. (2013). Corporate social responsibility and earnings forecasting unbiasedness. *Journal of Banking & Finance, 37*, 3654–3668.

Becchetti, L., & Manfredonia, S. (2022). Media, reputational risk, and bank loan contracting. *Journal of Financial Stability, 60*, Article 100990.

Boone, A., & Uysal, V. B. (2018). Reputational concerns in the market for corporate control. *Journal of Corporate Finance, 61*, Article 101399. https://doi.org/10.1016/j.jcorpfin.2018.08.010

Breuer, W., Müller, T., Rosenbach, D., & Salzmann, A. (2018). Corporate social responsibility, investor protection, and cost of equity: A cross-country comparison. *Journal of Banking & Finance, 96*(C). Elsevier.

Brown, L. D., & Zhou, L. (2012). *Interactions between analyst earnings forecasts and management earnings forecasts*. SSRN. http://ssrn.com/abstract=2002345.

Bui, B., Moses, O., & Houqe, M. N. (2019). Carbon disclosure, emission intensity and cost of equity capital: Multi-country evidence. *Accounting and Finance, 60*, 47–71. https://doi.org/10.1111/acfi.12492

Burgoon, J. K. (1993). Interpersonal expectations, expectancy violations, and emotional communication. *Journal of Language and Social Psychology, 12*(1–2). https://doi.org/10.1177/0261927X93121003

Cai, Y., Pan, C. H., & Statman, M. (2016). Why do countries matter so much in corporate social performance? *Journal of Corporate Finance, 41*, 591–609. https://doi.org/10.1016/j.jcorpfin.2016.09.004

Cardillo, G., & Chiappini, H. (2022). The credit risk of sustainable firms during the pandemic. *Global Business Review, 23*(6), 1462–1480.

de Castro, G. M., López, J. E. N., & Sáez, P. L. (2006). Business and social reputation: Exploring the concept and Main dimensions of corporate reputation. *Journal of Business Ethics, 63*, 361–370. https://doi.org/10.1007/s10551-005-3244-z

Chaney, P., Faccio, M., & Parsley, D. (2011). The quality of accounting information in politically connected firms. *Journal of Accounting and Economics, 51*(1–2), 58–76.

Chava, S. (2014). Environmental externalities and cost of capital, in managerial. *Science, 60*(9).

Chen, K. C. W., Chen, Z., & Wei, K. C. J. (2009). Legal protection of investors, corporate governance, and the cost of equity capital. *Journal of Corporate Finance, 15*, 273–289. https://doi.org/10.1016/j.jcorpfin.2009.01.001

Chen, Z., & Xie, G. (2022). ESG disclosure and financial performance: Moderating role of ESG investors. *International Review of Financial Analysis, 83*, Article 102291.

Clarkson, M. E. (1995). A stakeholder framework for analyzing and evaluating corporate social performance. *Academy of Management Review, 20*(1), 92–117.

Cuomo, F., Gaia, S., Girardone, C., & Piserà, S. (2022). The effects of the EU non-financial reporting directive on corporate social responsibility. *The European Journal of Finance*, 1–27.

Derrien, F., Krueger, P., Landier, A., & Yao, T. (2021). ESG news, future cash flows, and firm value (august 11, 2021). In *Swiss Finance institute research paper no. 21-84, August 2021*. https://doi.org/10.2139/ssrn.3903274

Dhaliwal, D., Zhen Li, O., Tsang, A., & Yang, Y. G. (2014). Corporate social responsibility disclosure and the cost of equity capital: The roles of stakeholder orientation and financial transparency. *Journal of Accounting and Public Policy, 33*, 328–355. https://doi.org/10.1016/j.jaccpubpol.2014.04.006

Doshi, A. R., Dowell, G. W. S., & Toffel, M. W. (2013). How firms respond to mandatory information disclosure. *Strategic Management Journal, 34*(10), 1209–1231.

El Ghoul, S., Guedhami, O., Kim, H., et al. (2018). Corporate environmental responsibility and the cost of capital: International evidence. *Journal of Business Ethics, 149*.

El Ghoul, S., Guedhami, O., Kwok, C. C. Y., & Mishra, D. (2011). Does corporate social responsibility affect the cost of capital? *Journal of Banking & Finance, 35*.

Fama, E., & French, K. (1997). Industry costs of equity. *Journal of Financial Economics, 43*, 153–193. https://doi.org/10.1016/S0304-405X(96)00896-3

Fama, E. F. (1970). Efficient capital markets: A review of theory and empirical work. *The Journal of Finance, 25*(2), 383–417.

Feldman, S. J., Soyka, P. A., & Ameer, P. G. (1997). Does improving a firm's environmental management system and environmental performance result in a higher stock price? *Journal of Investing, 6*, 87–97.

Fernando, G., Sharfman, M., & Uysal, V. B. (2017). Corporate environmental policy and shareholder value: Following the smart money. *Journal of Financial and Quantitative Analysis, 52*, 2023–2051. https://doi.org/10.1017/S0022109017000680

Fombrun, C. J., Gardberg, N. A., & Barnett, M. L. (2000). Opportunity platforms and safety nets: Corporate citizenship and reputational risk. *Business and Society Review, 105*(1), 85–106.

Francis, J., Lafond, R., Olsson, P. M., & Schipper, K. (2005). The market pricing of accruals quality. *Journal of Accounting and Economics, 39*(2), 295–327.

Frederick, W. C. (1995). *Values, nature and culture in the American Corporation*. New York: Oxford University Press.

Freeman, E. (1984). *Strategic management: A stakeholder approach*. Pitman.

de Freitas Netto, S. V., Sobral, M. F. F., Ribeiro, A. R. B., et al. (2020). Concepts and forms of greenwashing: A systematic review. *Environmental Sciences Europe, 32*(19). https://doi.org/10.1186/s12302-020-03003

Galletta, S., Goodell, J. W., Mazzù, S., & Paltrinieri, A. (2022). Bank reputation and operational risk: The impact of ESG. *Finance Research Letters, 103494*.

Gantchev, N., Giannetti, M., & Li, R. (2019). Does money talk? Market discipline through selloffs and boycotts. In *ECGI working paper series in Finance, no. 634, September*.

Godfrey, P. C. (2005). The relationship between corporate philanthropy and shareholder wealth: A risk management perspective. *Academy of Management Review, 30*, 777–798.

Godfrey, P. C., Merrill, C., & Hansen, J. (2009). The relationship between corporate social responsibility and shareholder value: An empirical test of the risk management hypothesis. *Strategic Management Journal, 30*(4), 425–445.

Gordon, J. R., & Gordon, M. J. (1997). The finite horizon expected return model. *Financial Analysts Journal, 53*(3), 52–61.

Goss, A., & Roberts, G. S. (2011). The impact of corporate social responsibility on the cost of bank loans. *Journal of Banking & Finance, 35*(7), 1794–1810.

Graves, S. B., & Waddock, S. A. (1994). Institutional owners and corporate social performance. *Academic Management Journal, 37*(4), 1034–1046.
Griffin, P. A., Lont, D. H., & Sun, E. Y. (2017). The relevance to investors of greenhouse gas emission disclosure. *Contemporary Accounting Research, 34*(2), 1265–1297. https://doi.org/10.1111/1911-3846.12298
Guenster, N., Bauer, R., Derwall, J., & Koedijk, K. (2011). The economic value of corporate eco-efficiency. *European Financial Management, 17*(4). https://doi.org/10.1111/j.1468-036X.2009.00532.x
Hail, L., & Leuz, C. (2006). International differences in cost of equity capital? Do legal institutions and securities regulations matter? *Journal of Accounting Research, 44*, 485–531. https://doi.org/10.1111/j.1475-679X.2006.00209.x
Harjoto, M. A., Hoepner, A. G. F., & Li, Q. (2021). Corporate social irresponsibility and portfolio performance: A cross-national study. *Journal of International Financial Markets Institutions and Money, 70*(C). https://doi.org/10.1016/j.intfin.2020.101274
He, F., Du, H., & Yu, B. (2022). Corporate ESG performance and manager misconduct: Evidence from China. *International Review of Financial Analysis, 82*, Article 102201.
Hong, H., & Kacperczyk, M. (2009). The price of sin: The effects of social norms on stock market. *Journal of Financial Economics, 93*, 15–36. https://doi.org/10.1016/j.jfineco.2008.09.001
Hull, C. E., & Rothenberg, S. (2008). Firm performance: The interactions of corporate social performance with innovation and industry differentiation. *Strategic Management Journal, 29*(7), 781–789.
Husted, B. W. (2005). The relationship between corporate social responsibility and shareholder value: An empirical test of the risk management hypothesis. *Journal of Business Ethics, 60*(2), 175–183.
Intelligence, B. (2018). *Sustainable investing topic primer*.
Kacperczyk, A. (2009). With greater power comes greater responsibility? Takeover protection and corporate attention to stakeholders. *Strategic Management Journal, 30*(3), 261–285.
Karpoff, J. M., & Lott, J. R., Jr. (1993). The reputational penalty firms bear from committing criminal fraud. *The Journal of Law and Economics, 36*(2), 757–802.
Kim, E. H., & Lyon, T. P. (2011). Strategic environmental disclosure: Evidence from the Doe's voluntary greenhouse gas registry. *Journal of Environmental Economics and Management, 61*(3), 311–326.
Kim, Y., Li, H., & Li, S. (2014). Corporate social responsibility and stock price crash risk. *Journal of Banking & Finance, 43*, 1–13.
Kim, Y. B., An, H. T., & Kim, J. D. (2015). The effect of carbon risk on the cost of equity capital. *Journal of Cleaner Production, 93*, 279–287. https://doi.org/10.1016/j.jclepro.2015.01.006
King, A. A., & Lenox, M. J. (2000). Industry self-regulation without sanctions: The chemical industry's responsible care program. *Academic Management Journal, 43*(4), 698–716.
Kölbel, J. F., Busch, T., & Jancso, L. M. (2017). How media coverage of corporate social irresponsibility increases financial risk. *Strategic Management Journal, 38*(11).
Krüger, P. (2015). Corporate goodness and shareholder wealth. *Journal of Financial Economics, 111*(2), 304–329.
Lau, S. T., Ng, L., & Zhang, B. (2010). The world price of home bias. *Journal of Financial Economics, 97*, 191–217. https://doi.org/10.1016/j.jfineco.2010.04.002
Laufer, W. S. (2003). Social accountability and corporate greenwashing. *Journal of Business Ethics, 43*, 253–261. https://doi.org/10.1023/A:1022962719299
Li, J., & Wu, D. A. (2020). Do corporate social responsibility engagements Lead to real environmental, social, and governance impact? *Management Science, 66*(6), 2564–2588.
Liu, J., Nissam, D., & Thomas, J. (2002). Equity valuation using multiples. *Journal of Accounting Research, 40*, 135–172.
McGuire, J. B., Sundgren, A., & Schneeweis, T. (1988). Corporate social responsibility and firm financial performance. *Academic Management Journal, 31*(4), 854–872.
Merton, R. C. (1987). A simple model of capital market equilibrium with incomplete information. *The Journal of Finance, 42*, 483–510. https://doi.org/10.1111/j.1540-6261.1987.tb04565.x
Ng, A. C., & Rezaee, Z. (2015). Business sustainability performance and cost of equity capital. *Journal of Corporate Finance, 34*, 128–149.
Peloza, J. (2006). Using corporate social responsibility as insurance for financial performance. *California Management Review, 48*(2), 52–72.
Pfister, B., Schwaiger, M., & Morath, T. (2020). Corporate reputation and the future cost of equity. *Business Research, 13*(1), 343–384.
Pope, S., & Wæraas, A. (2016). CSR-washing is rare: A conceptual framework, literature review, and critique. *Journal of Business Ethics, 137*(1), 173–193.
PRI. (2016). *PRI practical guide to ESG integration for equity investing*.
Reptrak. (2022). *Global RepTrack® 100 report 2022*. The RepTrak Company. available at https://www.rankingthebrands.com/.
Rhee, M., & Haunschild, P. R. (2006). The liability of good reputation: A study of product recalls in the U.S. automobile industry. *Organization Science, 17*(1), 101–117. https://doi.org/10.1287/orsc.1050.0175
Rjiba, H., Saadi, S., Boubaker, S., & Ding, X. S. (2021). Annual report readability and the cost of equity capital. *Journal of Corporate Finance, 67*, Article 101902. https://doi.org/10.1016/j.jcorpfin.2021.101902
Robinson, M., Kleffner, A., & Bertels, S. (2008). *The value of a reputation for corporate social responsibility: Empirical evidence*. Working Paper,. University of Michigan.
Rysman, M., Simcoe, T., & Wang, Y. (2018). *Differentiation strategies in the adoption of environmental standards: LEED from 2000–2014*. Working paper. Boston: Boston University.
Salama, A., Anderson, K., & Toms, J. S. (2011). Does community and environmental responsibility affect firm risk: Evidence from UK panel data 1994–2006′. *Business Ethics: A European Review, 20*, 192–204.
Salsbery, J. A. (2021). *The ESG behaviors of multinational enterprises: An exploration of emerging and developed market norms*. Dissertation. Georgia State University. https://doi.org/10.57709/22831181. Available at.
Sassen, R., Hinze, A.-K., & Hardeck, I. (2016). Impact of ESG factors on firm risk in Europe. *Journal of Business Economics, 86*(8), 867–904. https://doi.org/10.1007/s11573-016-0819-3
Schiemann, F., & Tietmeyer, R. (2022). ESG controversies, ESG disclosure and analyst forecast accuracy. *International Review of Financial Analysis, 84*, Article 102373.
Servaes, H., & Tamayo, A. (2013). The impact of corporate social responsibility on firm value: The role of customer awareness. *Management Science, 59*(5), 1045–1061.
Sharfman, M. P., & Fernando, C. S. (2008). Environmental risk management and the cost of capital. *Strategic Management Journal, 29*, 569–592.
Shleifer, A. (2000). *Inefficient markets: An introduction to behavioural finance*. Oup Oxford.
Simcoe, T., & Toffel, M. W. (2014). Government green procurement spillovers: Evidence from municipal building policies in California. *Journal of Environmental Economics and Management, 68*(3), 411–434.
Starks, L. T. (2009). Corporate governance and corporate social responsibility: What do investors care about? What should investors care about? *The Financial Review, 44*, 461–468.
Surroca, J., Trib'o, J. A., & Waddock, S. (2010). Corporate responsibility and financial performance: The role of intangible resources. *Strategic Management Journal, 31*(5), 463–490.
Swanson, D. L. (1995). Addressing a theoretical problem by reorienting the corporate social performance model. *Academy of Management Review, 20*(1), 43–64.
Toffel, M. W., & Short, J. (2011). Coming clean and cleaning up: Does voluntary self-reporting indicate effective self-policing? *Journal of Law and Economics, 54*(3), 609–649.
Trinks, A., Ibikunle, G., Mulder, M., & Scholtens, B. (2017). *Greenhouse gas emissions intensity and the cost of capital*. University of Groningen, Research Institute SOM (Systems, Organisations and Management), 17017-EEF.
UNEP Finance Initiative. (2004). *The materiality of social, environmental and corporate governance. Issues to equity pricing, June*.
Waddock, S. A., & Graves, S. B. (1997). The corporate social performance financial performance link. *Strategic Management Journal, 18*(4), 303–319.
Wong, J. B., & Zhang, Q. (2022). Stock market reactions to adverse ESG disclosure via media channels. *The British Accounting Review, 54*(1). s.
Wood, D. J. (1991). Corporate social performance revisited. *Academy of Management Review, 16*(4), 691–718.
Wooldridge, J. M. (2005). *Unobserved heterogeneity and estimation of average partial effects* (pp. 27–55). Identification and inference for econometric models: Essays in honor of Thomas Rothenberg.
World Economic Forum. (2022). *The global risks report 2022* (17th ed.) ISBN 978-2-940631-09-4.
Yu, E. P., Tanda, A., Luu, B. V., & Chai, D. H. (2022). Environmental transparency and investors' risk perception: Cross-country evidence on multinational corporations' sustainability practices and cost of equity. *Business Strategy and the Environment, 30*(8), 3975–4000. https://doi.org/10.1002/bse.2852
Zhou, F., Zhu, J., Qi, Y., Yang, J., & An, Y. (2021). Multi-dimensional corporate social responsibilities and stock price crash risk: Evidence from China. *International Review of Financial Analysis, 78*, Article 101928.
Zhu, F. (2014). Corporate governance and the cost of capital: An international study. *International Review of Finance, 14*.
Zmijewski, M. E. (1984). Methodological issues related to the estimation of financial distress prediction models. *Journal of Accounting Research*, 59–82.
Zurich Sustainability Forum. (2005). *The market value of reputation, September*.