Backing Away from ESG? The Effect of Sovereign Rating Downgrades on Corporate Sustainability

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Abstract

Recent global economic and geopolitical events underscore the significance of sovereign risk and the potential for sovereign rating downgrades, which generally precipitate corporate credit rating downgrades. Using a comprehensive dataset of firms from 45 countries over the period 2002–2019, this study explores the effect of credit rating downgrades on firms' environmental, social, and governance (ESG) policies. Leveraging a unique setting that produces exogenous variation in corporate credit ratings triggered by sovereign rating downgrades (the sovereign "ceiling" rule), we provide evidence that facilitates a deeper understanding of the relevance and implications of shareholder/stakeholder theories, while adequately addressing confounding effects. Consistent with the predictions of shareholder theory, we find that firms that are bound by the ceiling rule, and are therefore more exposed to rating downgrades, experience a decline in ESG performance when a sovereign downgrade occurs. Drawing on institutional theory, we then show that the observed decline in ESG performance is concentrated in countries with a shareholder-centric orientation, and among firms with lower institutional ownership from strong social norms countries. Additionally, bound firms are more prone to major ESG incidents damaging their reputation in the aftermath of a sovereign downgrade. Overall, our results suggest that credit rating downgrades significantly affect corporate sustainability practices.

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INTRODUCTION

Rising interest rates and global borrowing costs have recently led credit rating agencies to alter their views on sovereign risk, which has heightened concerns about sovereign debt downgrades and defaults.[1] The effects of sovereign downgrades on firms' financing policies and real economic activity have been studied extensively in the accounting, finance, and economics literature (e.g., Acharya et al., 2018; Adelino & Ferreira, 2016; Almeida et al., 2017; Augustin et al., 2018; Basu et al., 2022; Wang & Xie, 2022). But their connection to environmental, social, and governance (ESG) practices[2] remains largely unexplored. Building on prior research on ESG issues in an international context, where most studies focus on the role of nation-level institutional factors (e.g., Campbell, 2007; Carney et al., 2022; El Ghoul et al., 2017; Kolk, 2016; Liang & Renneboog, 2017; Young & Makhija, 2014), our study helps to fill this gap by conducting a comprehensive investigation of how sovereign downgrades influence ESG policies, exposure to ESG risks, and overall ESG performance.

Our carefully selected research setting provides a fertile ground for generating new insights into the complexities and dynamics of ESG initiatives in periods following credit rating downgrades. We therefore contribute to a deeper understanding of the relevance and implications of shareholder/stakeholder theories for corporate sustainability practices. Our setting also offers distinct advantages in the analysis of our research inquiry. This is empirically challenging because it is difficult to disentangle the various motives for ESG engagement and the potential for reverse causality. ESG performance may convey valuable non-financial information that credit rating agencies consider in assessing firms' creditworthiness (e.g., Attig et al., 2013).

To mitigate these concerns, our empirical analysis exploits the exogenous variation in corporate ratings that is attributable to the sovereign ceiling rule. Specifically, credit rating agencies usually follow a rating ceiling rule that prevents firms from obtaining a rating higher than the sovereign rating

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[1]On August 1, 2023, Fitch Ratings, a major credit agency, downgraded the United States' credit rating from AAA to AA+. Fitch attributed the downgrade to expected fiscal deterioration, an increase in government debt, and the erosion of governance in the U.S. For more details, see "Fitch Downgrades U.S. Credit Rating," *Wall Street Journal* (published August 1, 2023).

[2]"ESG," which is often used interchangeably with "CSR" (corporate social responsibility) and "sustainability", is an umbrella term that refers to incorporating environmental, social, and governance considerations into corporate management decisions (see Liang & Renneboog, 2020).

of their country of domicile (which therefore serves as an upper bound). The implementation of this rule significantly increases the likelihood of a rating downgrade for firms originally rated at or above the upper bound (hereafter, bound firms) following a sovereign downgrade. This enables a direct and clear comparison of the changes in ESG practices and performance in response to a sovereign downgrade for bound versus non-bound firms (those that were originally rated below the sovereign rating).

Researchers hold differing views on the impact of credit rating downgrades on ESG engagement and performance. Shareholder theory (see, e.g., Friedman & Friedman, 1962; Friedman, 1970) predicts that a corporate credit rating downgrade is associated with reduced ESG involvement and poorer ESG performance. This perspective stems from the idea that shareholders, as ultimate owners, prioritize their interests over those of other stakeholders (Friedman, 1970). Furthermore, ESG activities involve substantial expenditures as they require investments and internal resources. This impacts short-term profits and poses a potential risk to shareholder value. Additionally, after a sovereign downgrade, certain firms face financial/operational setbacks and a heightened cost of capital (Almeida et al., 2017; To et al., 2022). This tends to curb their ability and enthusiasm for ESG, while safeguarding shareholder value (Campbell, 2007; Waddock & Graves, 1997). Adverse economic conditions also push managers toward short-term gains. This discourages ESG initiatives, which are typically viewed as long-term investments (Kang, 2016).

An alternative viewpoint is grounded in the stakeholder value perspective. It posits that a corporate credit rating downgrade is associated with a subsequent improvement in ESG engagement and performance. The stakeholder value perspective originates from the notion that the firm is a nexus of explicit and implicit contracts between shareholders and various stakeholders (Donaldson & Preston, 1995; Jensen & Meckling, 1976). Firms thus have an obligation to consider the interests of all stakeholders, not just shareholders. By sustaining good ESG performance, or improving it after a rating downgrade, firms can build moral capital and goodwill (Godfrey, 2005) and signal their commitment not to exploit stakeholders.

Firms may also strategically employ ESG as a means to differentiate themselves from their peers. Research finds this can facilitate alignment with fundamental societal values and simultaneously secure

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competitive advantages, such as attracting socially conscious consumers and improved access to capital (Cheng et al., 2014; Freeman, 2010). These advantages, which become particularly valuable resources in the aftermath of sovereign downgrades, contribute to the upsurge in ESG engagement, ultimately enhancing corporate sustainability.[3]

To evaluate these competing views, we use a sample of 17,895 firm-year observations representing 2,196 firms with credit ratings from 45 countries during the 2002–2019 period. To validate our empirical approach, we first provide evidence on the differential effect of sovereign downgrades on credit ratings of bound versus non-bound firms. We find that about 60% (20%) of bound (non-bound) firms had their credit ratings downgraded in the year of a sovereign downgrade. This suggests that bound firms have a significantly higher probability than non-bound firms of being downgraded.

We next use a difference-in-differences (DiD) setting and find that bound firms tend to experience a deterioration in ESG performance in the year following a sovereign downgrade. In terms of economic significance, our results suggest that, on average, the bound firms in our sample experienced a decline in their ESG score of 6.61% of the sample mean. These findings corroborate the shareholder theory's prediction that a credit rating downgrade for bound firms is linked to a decline in future ESG performance.

We then conduct several additional tests to strengthen the causal interpretation of our main finding. First, we obtain similar results after controlling for a large set of firm- and country-level determinants, as well as a variety of fixed effects (i.e., firm, country, industry, and country by year). Second, we show that, prior to the sovereign downgrade event, there were no significant ESG performance differences between bound and non-bound firms. In fact, the deterioration in ESG performance of bound firms occurs in the year after the sovereign downgrade.

Third, we consider whether the differences in ESG performance between bound and non-bound firms may be attributable to differences in credit quality before the downgrade, rather than to the downgrade itself. To alleviate this concern, we use a regression discontinuity design (RDD) that focuses

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[3] Introducing this alternative perspective, it is important to note that within the current context, such scenarios are less likely to occur. In fact, they may be more prevalent when a credit rating downgrade primarily results from weak firm fundamentals rather than a macro shock, such as a sovereign downgrade, as in our case. We provide further discussion on this issue in our hypothesis development section.

on firms rated just above, at, or just below the corresponding sovereign rating. This ensures there are no significant differences in credit quality across groups. Our results confirm that following a sovereign downgrade, bound firms are more likely than non-bound firms with similar credit ratings to experience a deterioration in their ESG score.

In subsequent tests, we turn our attention to key institutional factors that underpin our findings. We particularly explore the extent to which a country's legal institutions prioritize shareholders over stakeholders, and the level of institutional ownership in countries with strong versus weak Environmental and Social (E&S) norms. In line with our expectations, we find that lower ESG performance of bound firms is concentrated in countries with a shareholder-centric orientation, and in firms with lower institutional ownership from strong social norms countries. Our results survive several robustness tests, which involve alternative ESG measures from different providers and news-based proxies, placebo tests to ensure that our main result cannot be explained by differences in exposure to macroeconomic shocks (other than sovereign downgrades) among bound and non-bound firms, and the use of alternative samples to address potential biases stemming from our sample composition.

Our work contributes to international business research in several ways. First, our findings advance understanding of how shareholder and stakeholder theories are relevant to explaining corporate CSR/ESG practices. The existing body of literature faces the empirical challenge of mitigating the influence of confounding factors and discerning the true motives behind ESG practices. As Finkelstein and Hambrick (1996) note, firm-level actions such as those related to ESG are the product of managerial decisions and discretion. In this study, we use a setting wherein managers' discretion to engage in ESG initiatives is constrained under conditions of increased debt financing costs and economic uncertainty arising from sovereign and corporate rating downgrades (Almeida et al., 2017; Kisgen & Strahan, 2010). This makes it costlier for firms to externally fund ESG initiatives, and more difficult to internally repurpose (shareholder) resources for ESG initiatives. As a result, any improvements in ESG performance in periods following rating downgrades are likely to be indicative of genuine ESG engagement efforts.

Our research design, particularly the use of the DiD analysis, allows us to isolate the impact of exogenous rating changes induced by the sovereign ceiling policy. This effectively reduces the

confounding effects of changes in firm fundamentals that could potentially drive ESG policies. We can therefore confidently contrast the relevance and impact of the shareholder primacy view with stakeholder theory on corporate behavior and sustainable practices. In this regard, our study provides comprehensive evidence in line with the tenets of the shareholder primacy perspective and shows that credit rating downgrades matter to corporate sustainability. We therefore expand the broader literature in economics, finance, and accounting that has predominantly addressed the adverse effects of sovereign rating downgrades on corporate financial/investment policies, information disclosure/reporting quality, and firm performance (e.g., Almeida et al., 2017; Basu et al., 2022 ; Kisgen & Strahan, 2010; To et al., 2022; Wang & Xie, 2022; Wang & Yang, 2023).

Second, our work identifies the important institutional factors that underpin our findings. These include country-level legal and social norms regarding shareholder orientation, as well as firm-level total and foreign institutional ownership from strong social norms countries. We thus enrich the broader body of theoretical and empirical literature on how institutions can impact CSR/ESG performance (e.g., Campbell, 2007; Carney et al., 2022; Dyck et al., 2019; El Ghoul et al., 2017; Ioannou & Serafeim, 2012; Kolk, 2016; Liang & Renneboog, 2017; Young & Makhija, 2014). Our findings suggest that the observed decline in ESG performance in periods following a sovereign downgrade is concentrated in countries with i) shareholder-centric orientation and ii) relatively subdued stakeholder considerations, and among firms with iii) lower institutional ownership from strong social norms countries.

Viewed broadly, this study also contributes to an emerging stream of literature that examines how firms adjust their investments in strategic resources, including CSR, when negative events (macroeconomic and/or firm-specific) occur. Flammer and Ioannou (2021) focus on the 2007–2009 financial crisis and show that despite the sharp increase in borrowing costs, firms largely maintained their CSR investments during that period. Flammer and Kacperczyk (2019) show that firms responded to the threat of knowledge leakage due to the rejection of the "inevitable disclosure doctrine" by several U.S. states by increasing CSR engagement. Akey et al. (2024) find that firms increase CSR investment and earn higher CSR scores in response to unexpected data breaches that damage their reputations. Gao et al. (2023) show that firms increase CSR activities in response to negative stock price shocks unrelated to fundamentals. Karampatsas et al. (2022) note increased CSR engagement when U.S. firms

experienced a corporate rating downgrade from investment-grade to speculative-grade. Unlike their study, which focused on rating changes tied to firm fundamentals, our study focuses on an international context and examines the impact of sovereign downgrades on ESG engagement and performance, driven by exogenous variations in credit ratings. This approach helps eliminate concerns related to omitted variables and reverse causality, offering robust and comprehensive evidence. Our results attribute the negative impact on ESG engagement and performance directly to credit rating changes, distinct from shifts in firm fundamentals.

SOVEREIGN RATING DOWNGRADES: INSTITUTIONAL FRAMEWORK

When rating the creditworthiness of corporate debt issuers, all three major credit rating agencies—S&P, Moody's, and Fitch—maintain a so-called "sovereign ceiling policy." Under this rule, domestic firms are unlikely to receive a rating higher than the sovereign rating of their country of domicile.

Prior to 1997, the ceiling rule was rigidly implemented by rating agencies. But, since then, they have revised their methodologies to allow firms to pierce the country ceiling (i.e., to attain higher ratings than those of their sovereigns). The likelihood of this occurring depends on whether the firm exhibits: 1) superior credit strength and low default dependence *relative* to the sovereign, and 2) low sensitivity to the risk of domestic economic and financial distress. Nevertheless, the sovereign ceiling rule continues to play a crucial role in determining corporate ratings, and few firms have credit ratings higher than those of their sovereigns. Consistent with this view, Borensztein et al. (2013) show that sovereign ratings indeed represent a strong upper bound for rating corporate issuers.

Note that firms with a credit rating at or above the sovereign rating become technically bounded by the implicit ceiling rule (bound firms). They are therefore more likely to be downgraded in the case of a sovereign rating downgrade than their counterparts that were originally rated well below the sovereign rating (non-bound firms). This is confirmed by Almeida et al. (2017), who note that credit rating agencies continue to apply the sovereign ceiling rule in the event of a sovereign downgrade. The relevant analysis based on our sample, as discussed in Part A and presented in Figures IA.1–IA.3 of the

Internet Appendix, validates the assumption that the ceiling rule sharply increases the chances of a credit rating downgrade for bound firms, but not for non-bound firms, in response to a sovereign downgrade. This predetermined rule applies exogenously to all bound firms, regardless of any changes in their underlying fundamentals.

RELATED RESEARCH AND HYPOTHESES

When exploring the motives behind ESG, various theories and distinct perspectives come into play. Shareholder theory, for example, posits that shareholders are the ultimate owners of a firm's assets and hence, their interests (i.e., shareholder value maximization) should take precedence over the interests of other stakeholders (Friedman & Friedman, 1962; Friedman, 1970). Following a sovereign downgrade, firms bounded by the ceiling rule may face impaired financial and operational performance and increased cost of capital (Almeida et al., 2017; To et al., 2022). Note that ESG activities, while socially responsible, require substantial investments and utilization of internal resources. For example, developing technologies for carbon emission reduction policies or workplace safety programs, often requires significant initial investments.[4] The benefits of such investments may not be certain (Margolis et al., 2009), and may take years to materialize, but their immediate effect is to reduce short-term profits. Under such circumstances, firms that are mainly affected by the sovereign downgrade may allocate fewer resources to ESG initiatives in order to protect shareholder value (Campbell, 2007; Waddock & Graves, 1997). In a similar vein, Cohn and Wardlaw (2016) provide empirical evidence that financing frictions, such as negative cash flow shocks or lower cash balances, negatively impact ESG-related investments. Likewise, the tightening financial conditions that arise from a downgrade could induce impacted firms to cut costs, reduce investments in sustainability initiatives, and redirect resources away from ESG-related activities.

The pressure on managers to maintain stock market performance may further exacerbate the need to prioritize short-term gains. This, in turn, could reduce their overall interest in ESG activities

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[4] Xu and Kim (2022) show that U.S. manufacturers spent over $26.57 billion on pollution abatement expenditures in 2005, whizch was approximately 1% of the manufacturing sector's shipment value, or more than 20% of total capital expenditures.

(Kacperczyk, 2009), considering the long-term payoffs (Eccles et al., 2014). Survey evidence by Graham et al. (2005) shows that a significant majority of executives interviewed would sacrifice projects that generate long-term value if their implementation could hinder meeting short-term earnings expectations. During challenging economic conditions, such as sovereign downgrades, we posit that managers could face heightened expectations from shareholders to promptly deliver results and concentrate on mitigating the impact of the downgrade. This may lead to further prioritization of short-term profitability over long-term sustainability efforts.

In sum, the shareholder primacy view predicts that a corporate credit rating downgrade induced by a sovereign downgrade is likely to be associated with a decrease in ESG engagement and performance. This leads to our main hypothesis (H1):

Hypothesis 1: *Following sovereign rating downgrades, firms bound by the ceiling rule are more likely than non-bound firms to exhibit a decline in ESG performance.*

The key assumption underlying H1 is shareholder theory, which argues that companies and managers will act to safeguard profits and shareholder value, even at the cost of socially responsible activities (Campbell, 2007). Alternative perspectives posit that a corporate credit rating downgrade may result in increased ESG engagement and performance.

Stakeholder value theory holds that firms are responsible for the interests of a diverse array of stakeholders, beyond just shareholders (Freeman, 2010). Firms also face pressure to manage their ESG reputations (Asante-Appiah & Lambert, 2022), especially following adverse events such as sovereign downgrades that have the potential to harm their reputation. Maintaining or enhancing ESG performance, even after a rating downgrade, could help firms to build moral capital and goodwill (Godfrey, 2005). This signals a firm's commitment to safeguarding stakeholders from exploitation and can serve as a form of insurance for its reputation (Lins et al., 2017; Shiu & Yang, 2017), thereby mitigating potential penalties and boosting intangible resources (Godfrey et al., 2009).

Furthermore, firms can differentiate themselves from competitors, align with societal values, and simultaneously gain a competitive edge (Freeman, 2010). Extant research has shown that involvement in ESG activities can reduce financial risk (Oikonomou et al., 2012), leading to improvement of credit

ratings (Attig et al., 2013) and better access to capital (Cheng et al., 2014; El Ghoul et al., 2011). By using an international sample, El Ghoul et al. (2017) show that CSR initiatives help lower transaction costs and improve access to resources, particularly in countries with less developed equity and credit markets. Kim et al. (2014) find that high CSR firms refrain from hoarding bad news, resulting in lower crash risk. These ESG-related benefits might encourage increased ESG engagement following sovereign downgrades, contradicting the prediction of H1. However, this scenario is unlikely in our current context. This is because when a firm's credit rating downgrade is driven by the sovereign ceiling rule, rather than by weak firm fundamentals, the risk of reputational damage with key stakeholders is mitigated, and signaling incentives are weakened. In fact, managers could attribute any reductions in ESG investments to the sovereign downgrade event. Nevertheless, these possibilities introduce a degree of tension into our main hypothesis. Consequently, whether our results will be consistent with H1 remains an empirical question.

Additional Hypotheses

To corroborate our theory and main hypothesis (H1) that a corporate credit rating downgrade leads to a subsequent decline in ESG engagement and performance, we present two additional hypotheses grounded in the institutional perspective. This perspective provides us with an opportunity to examine the heterogeneous effects of credit rating downgrades on ESG policies and performance.

Building on institutional theory, our second hypothesis underscores the concept that business organizations are embedded in broader social structures comprising various types of institutions. These institutions exert a significant influence on organizational behavior, thereby impacting strategic policies such as ESG considerations (Campbell, 2007; Ioannou & Serafeim, 2012). Institutions shape the rules, norms, and values that guide decision-making processes, and influence corporate behavior. Accordingly, firms are deemed legitimate when their ESG policies and practices align with the prevailing institutional logic and norms of their host country environment (Campbell, 2007; Rathert, 2016).

An important distinction in institutional theory lies in the differentiation between shareholder-oriented and stakeholder-oriented institutions. As discussed in H1, shareholder-oriented institutions

prioritize the interests of shareholders, with a primary focus on maximizing shareholder value (Friedman, 1970). Conversely, stakeholder-oriented institutions recognize the broader range of stakeholders with legitimate interests in an organization's activities and outcomes (Tirole, 2001). By employing this institutional framework of shareholder versus stakeholder orientation, Ioannou and Serafeim (2012) show that firms in countries with stronger shareholder protections tend to exhibit lower levels of CSR performance. In a similar vein, Liang and Renneboog (2017) find that the legal orientation of a firm's home country is the main driver of firm-level CSR performance. They note that firms in common law (civil law) countries, often characterized as shareholder-oriented (stakeholder-oriented), tend to score lower (higher) on CSR ratings. Likewise, Cai et al. (2016) argue that country-level factors, including shareholder-oriented institutions, play an important role in explaining firm-level ESG policies.

In sum, studies indicate that, in countries with shareholder-oriented institutions, shareholders benefit from strong legal protection and exert significant influence over corporate ESG policies. This reinforces the neoclassical shareholder primacy model. As a result, we propose that following a sovereign downgrade, managers in more shareholder-oriented countries will be more responsive to the needs of shareholders. Therefore, we expect a decline in ESG performance to be more pronounced for firms operating in shareholder-oriented than stakeholder-oriented countries. We state our second hypothesis (H2) as follows:

Hypothesis 2: *A decline in ESG performance following a sovereign downgrade is likely to be more pronounced in shareholder-oriented countries than in stakeholder-oriented countries.*

Our third hypothesis focuses on the role of institutional investors in driving corporate ESG policies. Institutional investors have become central stakeholders in global capital markets. They own and manage a large pool of equity capital on behalf of their clients and beneficiaries.[5] It is widely acknowledged that these investors play an important monitoring role, with significant influence over firm policies and outcomes (Chen et al., 2007). They achieve this influence either directly, by

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[5] See "Institutional Investors: The Unfulfilled $100 Trillion Promise" published by the *World Bank* (June 18, 2015).

influencing management and exercising voting rights, or indirectly, by their decisions to buy, or threats to sell, shares (McCahery et al., 2016).

With regard to ESG matters (e.g., climate-related policies), the survey evidence in Stroebel and Wurgler (2021) suggests that pressure from institutional investors is the most powerful mechanism driving corporate behavior change. Empirical studies have also consistently shown the significant influence of institutional investors in shaping firm policies related to ESG (Aggarwal et al., 2011; Ferreira & Matos, 2008; Johnson & Greening, 1999).

While institutional investors can influence ESG policies, however, there is considerable heterogeneity in their preferences and demands. From an institutional perspective, this heterogeneity may be at least partly attributable to the prevalent social norms, cultures, and values in the investor's home country.[6] For example, Dyck et al. (2019) show that institutional investors domiciled in strong social norms countries influence firms to adopt better ESG policies. They find only negligible influence from investors domiciled in countries with relatively weak social norms. This is because the focus on financial returns takes precedence over sustainability concerns in such countries. Ilhan et al. (2023) emphasize the *E*-dimension of ESG policies and document a positive association between high institutional ownership from strong norms countries and better firm-level climate risk disclosures.

In our context, we expect the effect of credit rating downgrades on ESG to be more pronounced for firms with low levels of institutional ownership (IO) from countries with strong social norms. We thus state our third hypothesis (H3) as follows:

Hypothesis 3: *A decline in ESG performance following a sovereign downgrade is likely to be more pronounced for firms with low institutional ownership from strong social norms countries.*

Figure 1 presents a simple conceptual framework for our three hypotheses and for understanding the differential impact of sovereign rating downgrades on the ESG policies of bound versus non-bound firms.

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[6] In fact, there is growing consensus that the international flow of sustainability expertise and practices, especially from regions with a greater commitment to sustainability and countries with higher regulatory quality and environmental performance, is crucial in shaping the ESG dynamics of firms in other countries (see, e.g., Iliev & Roth, 2023).

SAMPLE COLLECTION AND DESCRIPTIVE STATISTICS

Data Sources

We combine several databases to construct our international sample. We use Refinitiv Eikon, formerly Thomson Reuters ASSET4, as our main source for ESG scores. ESG scores from Refinitiv are designed to measure a company's ESG performance, commitment, and effectiveness across 10 main topics[7] based on publicly reported data (including annual and sustainability reports).[8] Scores range from 0 (most negative) to 100 (most positive). We use Bloomberg to obtain information on corporate (foreign currency long-term issuer) ratings and country credit ratings.[9] Of the three major rating agencies—S&P, Moody's, and Fitch—we opt to use S&P ratings because it is often more active in making revisions. It also tends to lead other rating agencies in re-ratings (Almeida et al., 2017). S&P provides corporate credit ratings using letters (AAA to SD/D). We translate these letters into a numerical scale ranging from 1 to 22 (in one-unit increments), where higher numbers indicate better credit ratings (see Table IA.1 of the Internet Appendix for further details).

We then use FactSet (U.S. and international) to obtain financial and accounting information, and multiple sources to obtain country-level information. Finally, we use RepRisk to obtain data on firms' risk exposure to ESG incidents. We use the Reputational Risk Index (data item: "current RRI") provided by RepRisk, which quantifies a firm's exposure to ESG incidents. RRI scores range from 0 (lowest) to 100 (highest), where higher values indicate higher exposure to ESG incidents. For robustness purposes, we also obtain ESG ratings/scores from Morgan Stanley Capital International's (MSCI) Intangible Value Assessment (IVA) database.

Panel A of Table 1 describes the sample selection process. We exclude firms without credit ratings

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[7] These 10 topics are grouped into three ESG pillars: **E**nvironmental (resources use, carbon emissions, environmental product innovation), **S**ocial (workforce, human rights, community and product responsibility), and **G**overnance (management, shareholder and corporate social responsibility (CSR) strategy).

[8] Refinitiv's ESG score has been commonly used in prior studies to measure firms' engagement and performance in ESG-related activities (Dyck et al., 2019; Ioannou & Serafeim, 2012; Liang & Renneboog, 2017; Serafeim & Yoon, 2022).

[9] We use the issuer's "foreign currency long-term ratings" because they are most likely to be bounded by its sovereign rating (Adelino & Ferreira, 2016; Almeida et al., 2017).

(non-rated firms), and financial firms. We also exclude firm-years with missing values for the variables used in our benchmark analysis. The final sample of firms with complete information covers the period 2002–2019 and consists of 2,196 firms from 45 countries with 17,895 firm-year observations. Detailed definitions of all variables are in the Appendix.

[Table 1 about here]

Panel B of Table 1 provides key descriptive statistics for the main variables in our analysis. The mean (median) ESG performance for our sample is 49.00 (49.23), where a perfect score is 100. Panel C of Table 1 reports mean ESG scores for the 45 countries in our sample. The statistics show significant variation. We observe that the countries where firms have the best ESG performance are mostly European (e.g., Denmark and Finland, with mean scores of 66.90 and 65.73, respectively). Countries where firms' ESG scores are the lowest tend to be in Asia (e.g., the Philippines and China, with mean scores of 32.33 and 41.08, respectively).

Table 2 provides the full list of sovereign downgrade years by country, as well as sovereign ratings before and after the downgrade, and number of bound (treatment) firms. The number of bound firms in the year of the sovereign downgrade equals 162 across 18 countries. In Table IA.2 of the Internet Appendix, we present the full list of bound firms with country of domicile, sovereign downgrade year, and ratings before and after the sovereign downgrade.

[Table 2 about here]

EMPIRICAL METHODOLOGY AND RESULTS

Baseline Methodology

Similarly to Adelino and Ferreira (2016), Almeida et al. (2017) and Hasan et al. (2023), we use a DiD approach to exploit the exogenous negative shock to corporate credit ratings caused by sovereign downgrades. Given that sovereign downgrades have a differential impact on the credit ratings of bound (and non-bound) firms due to the ceiling policy, this method allows us to evaluate differences in ESG policies between firms in the treatment (bound firms) and control (non-bound firms) groups. We thus examine and provide evidence on the causal effect of sovereign rating downgrades on firms' ESG policies. Our main DiD model takes the following form:

$$ESG\ Performance_{i,t+1} = \alpha + \beta_1 Bound_{i,t-1} + \beta_2 Sovereign\ Downgrade_{i,t} +$$

$$\beta_3 Bound_{i,t-1} \text{ x } Sovereign\ Downgrade_{i,t} + \gamma X_{i,t} + f_t + v_{i(j\ and\ k)} + \varepsilon_{i,t} \qquad (1)$$

where *ESG Performance* refers to the ESG score of firm *i* in year *t + 1*;[10] *Bound* is a dummy variable that equals 1 if a company's rating is equal to or above that of the sovereign in year *t - 1*, and 0 otherwise; and *Sovereign Downgrade* is a dummy variable that equals 1 if there is a sovereign rating downgrade in firm *i's* country of domicile in year *t*, and 0 otherwise. The main variable of interest is the interaction term *Bound* x *Sovereign Downgrade*. The coefficient (β_3) on this interaction term captures the differential change in firms' ESG performance between bound (treatment) and non-bound (control) firms in response to a sovereign rating downgrade. $X_{i,t}$ is the vector of firm controls, f_t denotes year fixed effects, and v_i (*j and k*) denotes firm (industry and country) fixed effects. We include various firm-level characteristics, following prior international studies on corporate ESG policies (Dyck et al., 2019; Liang & Renneboog, 2017).

Baseline Results

Table 3 presents the DiD regression results on the effect of sovereign downgrades on ESG performance between bound and non-bound firms. Model 1 reports the results from our benchmark specification (Equation (1)) using a simple ordinary least squares regression, with standard errors clustered at the country level. The dependent variable is overall ESG score at the firm level, which attempts to capture a firm's performance and engagement in socially responsible activities. The key explanatory variable of interest is the interaction (DiD) term, *Bound* x *Sovereign Downgrade*. It captures the differential change in firms' ESG performance between bound (treatment) and non-bound (control) firms in response to the sovereign rating downgrade.

[Table 3 about here]

The results in Model 1 of Table 3 show that the coefficient of *Bound* x *Sovereign Downgrade* is negative and statistically significant (β = -3.246, *p* = 0.011). This is consistent with H1, which posits that firms subject to the ceiling rule (i.e., bound firms) are more likely than non-bound firms to exhibit

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[10] We use the one-year forward ESG variable because changes in ESG policies may take time to be reflected in firms' ESG scores (see Akey et al., 2024; Flammer & Bansal, 2017).

a decrease in ESG performance following a sovereign downgrade. The economic magnitude of this finding is also significant: The coefficient in Model 1 is -3.24, which implies that bound firms' ESG performance decreases by 3.24 points relative to non-bound firms in the year after a sovereign downgrade. Since the average ESG score for our total sample of firms is 49.00, this means that bound firms decrease ESG engagement by about 6.61% per year in response to sovereign downgrades.[11] The coefficient estimates on the control variables are consistent with those found in prior studies (Dyck et al., 2019; Liang & Renneboog, 2017).

In Model 2 of Table 3, we re-estimate our benchmark specification (Model 1) with firm fixed effects to control for any firm-specific unobserved time-invariant characteristics that may drive our main findings. We find that the coefficient on the interaction term remains robust even after controlling for firm-level unobserved heterogeneity. In Model 3, we run a similar analysis after replacing year fixed effects with country-by-year fixed effects to control for time-varying unobservable country factors. Our results again remain similar.

Finally, in Model 4, we replace country-by-year fixed effects with a set of country-level controls. Following Liang and Renneboog (2017), we include the country's legal origin (French, German, Scandinavian), globalization index, anti-director rights, control of corruption, political executive constraints, economic freedom, and GDP per capita. We find that the coefficient estimate on *Bound* x *Sovereign Downgrade* remains negative and statistically significant ($\beta = -2.925$, $p = 0.050$). This further alleviates any concerns that the observed effect is a result of other contemporaneous changes in macroeconomic conditions. Collectively, the results in this section support our main hypothesis (H1).

Robustness Tests

Dynamics of ESG performance around sovereign downgrades. A key assumption underlying the causal inference in our main analysis is that the differences between bound and non-bound ESG

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[11] We also examine the specific aspects of firms' ESG scores that are likely to decline after a downgrade by breaking down the ESG score into its stakeholder (E&S) and governance (G) components. The results, presented in Table IA.3, indicate a negative association between the interaction term (*Bound* x *Sovereign Downgrade*) and ESG score components. We note further that stakeholder (E&S) performance holds statistical significance ($p = 0.037$), while governance (G) performance shows marginal (or no) significance ($p = 0.106$). These findings suggest that bound firms may reduce stakeholder investments while focusing only on governance (G) matters.

performance are observed after sovereign downgrades, not before. In other words, in the absence of such a downgrade, we would expect the performance to be similar. This is commonly known as the parallel trend assumption. To verify its validity, we adhere to common practice in the literature and examine whether trends in ESG performance are comparable between bound and non-bound firms prior to a sovereign downgrade.

[Table 4 about here]

In Table 4, we re-estimate our main DiD specification (Equation (1)) by replacing *Bound* with a set of dummies indicating the number of years relative to the year a corporate rating is constrained by the sovereign ceiling (*Bound^k*, where k = -2, -1, 0, +1, and +2). Additionally, we substitute for *Sovereign Downgrade* with a set of dummies indicating the number of years relative to the fiscal year in which a firm's domiciled country experiences a sovereign downgrade (*Sovereign Downgrade^k*, where k= -2, -1, 0, +1, and +2). The primary variables of interest are a set of interactions between *Bound* and *Sovereign Downgrade* (*Bound x Sovereign Downgrade*^{k}, where k = -2, -1, 0, +1, and +2). These interaction terms capture the dynamic effects of the ceiling rule on bound firms' ESG performance around sovereign downgrades. Importantly, they enable us to verify that a change in ESG performance among bound firms (*vis-à-vis* non-bound firms) occurs in the year of or after the sovereign downgrade event, but not prior to it.

As Table 4 shows, the coefficients on *Bound* x *Sovereign Downgrade* before the sovereign downgrade year are both economically and statistically insignificant across all specifications. This confirms the existence of a parallel trend between bound and non-bound firms before the sovereign downgrade. As expected, the coefficients on the interaction term become negative and statistically significant in the year following the downgrade. The economic magnitudes are also substantial. Specifically, the estimates for *Bound x Sovereign Downgrade* range from -2.02 to -2.84. Thus, in the year after a sovereign downgrade, bound firms are likely to experience a decrease in ESG performance of between 4.12% and 5.80% (relative to the sample mean score of ESG).

Figure 2 illustrates these patterns graphically by plotting the coefficient estimates of *Bound* x *Sovereign Downgrade* along with the corresponding confidence intervals (represented by solid vertical lines), based on Model 2 from Table 4. We observe no significant change in the ESG performance of

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bound versus non-bound firms prior to the sovereign downgrade. In contrast, we observe a significant decrease in ESG performance for bound firms after the sovereign downgrade.

[Figure 2 about here]

Overall, the results strongly indicate that the parallel trend assumption holds true. The ESG performance before a sovereign downgrade remains statistically identical for both bound and non-bound firms.

Regression discontinuity design. One potential concern with our main analysis is that the assignment of firms to either the treatment (bound) or control (non-bound) group is determined by an observed rule (i.e., the sovereign ceiling cutoff), rather than being random (Roberts & Whited, 2013). This approach inherently contrasts the ESG performance between two distinct groups: those firms with credit ratings at or above their sovereign and those with ratings below. Such a distinction highlights significant differences in credit quality between the two groups, which may drive our results. In response to this concern, we adopt a regression discontinuity design (RDD), which allows us to compare the ESG performance of bound and non-bound firms with "similar" credit ratings, providing a more accurate assessment of the impact of sovereign downgrades on ESG performance.

To conduct the RDD analysis, we re-estimate our benchmark specification (Model 1 of Table 3) using a subsample of firms that are "close" in ratings to their sovereigns. Specifically, we compute the difference between each firm's rating and its sovereign rating (per the ceiling rule cutoff). We then narrow the sample using a distance window (bandwidth) of 1-rating notch [-1, 0]. A negative (positive) value indicates that a firm's credit rating is just below (just above) the sovereign's rating in the year prior to a sovereign downgrade; a value of 0 signifies that the firm's credit rating is equal to that of its sovereign.

The narrow bandwidth allows us to make bound and non-bound firms more comparable in terms of credit quality.[12] However, due to the influence of the sovereign ceiling rule, the former will be affected by a sovereign downgrade, while the latter will not. In this context, firms rated just below the cutoff

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[12] Our rationale is as follows: Rating agencies assess firms based on their characteristics using a 22-point scale. Due to the limited range of the scale, previous studies have found that firms with adjacent credit ratings share similar characteristics. For example, Chernenko and Sunderam (2012) demonstrate that firms rated just above and just below the investment-grade cutoff exhibit analogous traits, including average investment rates.

point (non-bound firms) serve as a suitable counterfactual for firms rated at the cutoff point (bound firms). This further enhances the precision of identifying how the sovereign ceiling rule impacts the ESG performance of bound firms.[13]

Model 1 of Table 5 presents the results. Consistent with our main findings in Table 3, the coefficient on *Bound* x *Sovereign Downgrade* is both negative and statistically significant at the conventional level ($\beta = -3.45$, $p = 0.067$). This implies that, even when comparing firms with near-identical credit ratings, bound firms are more likely than non-bound firms to exhibit deteriorated ESG performance following a sovereign downgrade. From an economic perspective, the ESG performance of bound firms (those rated at or just above the sovereign) experiences a 3.4-point reduction, equivalent to 6.94% of the sample mean ESG score.

[Table 5 about here]

For robustness purposes, we replicate our RDD analysis in Models 2 and 3 of Table 5 with bandwidths of [-1, 1] and [-2, +1], respectively. Our findings remain consistent, which increases our confidence that we are capturing a genuine effect, rather than one driven by differences in the credit ratings of bound and non-bound firms.

TESTS OF ADDITIONAL HYPOTHESES

In this section, we evaluate our two additional hypotheses grounded in the institutional perspective of ESG/CSR. We explore the heterogeneous impact of credit rating downgrades on ESG policies and performance. In particular, we empirically examine predictions that outline how an observed drop in ESG performance after a sovereign downgrade depends on 1) whether firms operate in countries that focus more on shareholders or stakeholders, and 2) the level of (foreign) institutional ownership held by institutions from countries with strong social norms. These tests provide supplementary evidence of the mechanisms that link credit rating downgrades and ESG performance. They also enhance our

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[13] We conduct another robustness test to account for the fact that bound and non-bound firms may still have different characteristics. To mitigate this concern, we undertake a propensity score matching analysis. The results, presented in Table IA.4 of the Internet Appendix, confirm that following a sovereign downgrade, bound firms experience a significant decline in ESG performance compared to non-bound firms with similar characteristics (see Table IA.4 for details on how the PSM analysis has been implemented).

understanding and identification of these relationships.

Hypothesis 2: Shareholder-oriented Countries

We begin by examining H2, which states that a decline in ESG performance following a sovereign downgrade will be more pronounced among firms operating in shareholder-oriented than stakeholder-oriented countries.

To capture the various dimensions of a country's institutional environment that may influence either stakeholder or shareholder orientation, we construct measures akin to those employed by Dhaliwal et al. (2012) and more recently by Garg et al. (2023). Specifically, we employ Dhaliwal et al.'s (2012) *STAKE* measure, which is the foremost component of a four-factor principal component analysis: 1) *STAKELAW*, which captures a country's legal framework in protecting labor rights and benefits; 2) *CSRLAW*, which identifies the presence of laws pertaining to CSR-related disclosures; 3) *PUBAWARE*, which quantifies the extent of public awareness regarding CSR matters within individual countries; and 4) *PUBAWARE1*, which captures corporate executive officers' viewpoints on CSR activities through surveys.

We also employ the *Exposure Stake Norms* measure introduced by Garg et al. (2023), which uses principal component analysis to holistically capture stakeholder norms. It combines three distinct institutional dimensions: 1) *Corporate Governance*, which assesses the strength of institutions in shaping corporate governance practices within a country; 2) *Stakeholder Co-operation and Collaboration*, which gauges the extent to which stakeholders collaborate and synchronize across economic interactions within a nation; and 3) *Past Progress in Labor-Employer Relations*, which captures the influence of a country's institutions on historical labor-employer relationships. Dimension (3) is a fundamental aspect of the evolution of stakeholder institutions, encapsulating advancements over time. Detailed explanations of all variables can be found in the Appendix.

Table 6 presents a re-estimation of the benchmark specification (Model 1 from Table 3) that considers two subsamples of firms: one from countries with shareholder-oriented perspectives, and the other from countries with stakeholder-oriented perspectives. To create the subsamples, we classify firms as either stakeholder- or shareholder-based depending on whether their country's metric value is above

(below) the median for both *STAKE* (in Models 1 and 2) and *Exposure Stake Norms* (in Models 3 and 4).

[Table 6 about here]

Consistent with H2, the findings in Table 6 show that the decline in ESG performance subsequent to a sovereign downgrade is primarily concentrated in countries with a shareholder-centric orientation. This finding is supported by the negative and statistically significant coefficient on the interaction term between *Bound x Sovereign Downgrade* in both Model 1 (β = -5.397, p = 0.004) and Model 3 (β = -3.349, p = 0.004), which relates to the shareholder-oriented subsamples.

Hypothesis 3: Institutional Investors' Social Norms

We next examine H3, which states that a decrease in ESG performance following a sovereign downgrade is likely to be more pronounced for firms with low institutional ownership from strong social norms countries.

We develop a measure for strong social norm institutional ownership (IO) by following the methodology outlined in Dyck et al. (2019) and Ilhan et al. (2023). This metric, referred to as *Strong Social Norm IO*, captures the proportion of outstanding shares held by institutional investors from countries with strong social norms. To quantify a country's stance on social norms, we employ Yale University's Environmental Performance Index (EPI), which is often utilized in prior studies on ESG (see, e.g., Iliev & Roth, 2023).

Table 7 presents a re-estimation of the benchmark specification (Model 1 from Table 3). It considers two subsamples of firms with low and high (foreign) IO from countries characterized by strong social norms.[14] To create these subsamples, we classify firms as either low- or high-IO (Models 1 and 2), and low- or high-FIO (Models 3 and 4), based on the median values of strong social norms IO (FIO). Consistent with H3, Table 7 shows that a decline in ESG performance subsequent to a sovereign downgrade is primarily concentrated in firms with *low* IO and FIO from strong social norms countries.

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[14] In addition to IO, we focus on FIO to address the findings of previous research, which highlight the predominant role of foreign institutional investors in enhancing corporate strategy and governance (see, e.g., Aggarwal et al., 2011; Ferreira & Matos, 2008). The focus on investors' foreign holdings also helps for identification purposes, as explained in Dyck et al. (2019).

This finding is supported by the negative and statistically significant coefficient on the interaction term between *Bound x Sovereign Downgrade* in both Model 1 (β= -5.173, p = 0.004) and Model 3 (β= -4.420, p = 0.036). This is linked to the low level of institutional investors' influence stemming from countries with strong social norms.

[Table 7 about here]

ADDITIONAL ROBUSTNESS ANALYSES

In this section we conduct supplementary analysis to strengthen the robustness of our results. First, we use two alternative measures for ESG performance scores. Noting Berg et al.'s (2021) concerns about the consistency of historical data provided by Refinitiv, we employ updated ESG scores from Refinitiv (acquired in October 2022). Additionally, we use the ESG rating measure from the Morgan Stanley Capital International (MSCI) Intangible Value Assessment (IVA) database (as in Liang & Renneboog, 2017). The results reported in Tables IA.5 and IA.6 of the Internet Appendix remain robust irrespective of the selected ESG ratings provider and the specific ESG measure employed.

Second, acknowledging the view that there is subjectivity in terms of how external ESG rating agencies such as Refinitiv and MSCI weigh and assess various ESG risks, we put forward an incident-based measure of ESG. More specifically, we employ the Reputational Risk Index (RRI) developed by RepRisk, which uses news reports to identify firms with poor ESG practices, focusing specifically on news coverage of their negative ESG incidents. The findings, presented in Table IA.7 and analytically discussed in Part B of the Internet Appendix, show that bound firms are more likely than non-bound firms to experience an extreme ESG incident following a sovereign downgrade.

Third, we address concerns about the strict exogeneity of sovereign downgrades. When a downgrade becomes more likely, rating agencies (in our case, S&P) could disseminate valuable information to investors and financial markets regarding the credit risk of the sovereign. This would place certain countries under formal review prior to the downgrade (Binici & Hutchison, 2018), raising concerns regarding the validity of our DiD setting. To address this concern, we focus on examining changes in ESG performance of bound firms following sovereign downgrades that were not pre-notified or placed under credit watch by S&P during the year before the downgrade. Our results based on

downgrades that are most likely exogenous, as analytically discussed in Part B and presented in Table IA.8 of the Internet Appendix, are consistent with the main findings. In fact, these results reveal that strictly exogenous downgrades lead to a more pronounced negative impact on the ESG performance of bound firms, which is line with expectations.

Fourth, we ascertain that our results cannot be explained by differences in exposure to macroeconomic shocks (other than sovereign downgrades) between bound and non-bound firms. To do so, we focus on two placebo events, the 2007–2009 financial crisis and economic recessions as defined by the OECD. The results, as discussed in Part B and presented in Table IA.9 of the Internet Appendix, show that bound firms' ESG performance is *not* notably more sensitive to financial crises or economic recessions than that of non-bound firms.

Finally, we conduct additional robustness checks to further alleviate concerns about biases that may stem from our sample composition. More specifically, we repeat our main analysis after dropping certain countries or industries (e.g., to account for the fact that U.S. firms constitute about 50% of our sample, but with a limited number of bound firms; Brazil accounts for 46 of 162 bound firm-year observations; and the sample encompasses countries with limited observations and is limited to rated companies). We discuss all relevant tests in Part B of the Internet Appendix and present the relevant results in Table IA.10. In all cases, the results remain robust.

CONCLUSION

Using a comprehensive dataset of firms across 45 countries from 2002 to 2019, this study investigates the impact of credit rating downgrades on ESG policies adopted by these firms. Our approach takes advantage of a unique setting that generates exogenous variation in corporate credit ratings triggered by sovereign rating downgrades—a phenomenon known as the sovereign "ceiling" rule. This contextual framework adeptly mitigates the influence of confounding factors and facilitates a meaningful comparison between the relevance and impact of the shareholder primacy view and stakeholder theory on corporate behavior and sustainable practices.

We find that firms bound by the ceiling rule—and thus inherently more exposed to sovereign downgrades—experience a decline in ESG performance after such downgrades. Our finding resonates

with the fundamental tenets of shareholder theory. When faced with an adverse incident such as a rating downgrade, bound firms become more inclined to divert resources away from ESG initiatives. They prioritize preserving shareholder value above the interests of other stakeholders.

To deepen our understanding of this outcome, we delve into the underlying mechanisms by drawing on the framework of institutional theory. Our analysis highlights that the observed decline in ESG performance is concentrated in two pivotal domains: countries with a shareholder-centric orientation, where shareholders possess strong legal protection and exert significant influence over corporate decisions, and firms with lower institutional (foreign) ownership originating from countries with strong social norms. By focusing on the consequences of lower ESG performance, our study reveals that bound firms are more likely than non-bound firms to experience significant ESG incidents. These events can damage firms' reputations in the period following a sovereign downgrade.

Overall, our findings underscore the substantial influence that credit rating downgrades have on firms' ESG policies and performance. We thereby emphasize the tangible consequences of these downgrades on corporate sustainability.

REFERENCES

Acharya, V.V., Eisert, T., Eufinger, C., & Hirsch, C. (2018). Real effects of the sovereign debt crisis in Europe: Evidence from syndicated loans. *Review of Financial Studies*, 31, 2855–2896.

Adelino, M., & Ferreira, M.A. (2016). Bank ratings and lending supply: Evidence from sovereign downgrades. *Review of Financial Studies*, 29, 1709–1746.

Aggarwal, R., Erel, I., Ferreira, M., & Matos, P. (2011). Does governance travel around the world? Evidence from institutional investors. *Journal of Financial Economics*, 100, 154–181.

Akey, P., Lewellen, S., Liskovich, I., & Schiller, C. (2024). Hacking corporate reputations. Rotman School of Management Working Paper. Available at SSRN: https://ssrn.com/abstract=3143740.

Almeida, H., Cunha, I., Ferreira, M.A., & Restrepo, F. (2017). The real effects of credit ratings: The sovereign ceiling channel. *The Journal of Finance*, 72, 249–290.

Asante-Appiah, B., & Lambert, T.A. (2023). The role of the external auditor in managing environmental, social, and governance (ESG) reputation risk. *Review of Accounting Studies*, 28, 2589–2641.

Attig, N., El Ghoul, S., Guedhami, O., & Suh, J. (2013). Corporate social responsibility and credit ratings. *Journal of Business Ethics*, 117, 679–694.

Augustin, P., Boustanifar, H., Breckenfelder, J., & Schnitzler, J. (2018). Sovereign to corporate risk spillovers. *Journal of Money, Credit and Banking*, 50, 857–891.

Basu, R., Naughton, J.P., & Wang, C. (2022). The regulatory role of credit ratings and voluntary disclosure. *The Accounting Review*, 97, 25–50.

Berg, F., Fabisik, K., & Sautner, Z. (2021). Is history repeating itself? The (un)predictable past of ESG ratings. European Corporate Governance Institute–Finance Working Paper. Available at SSRN: https://ssrn.com/abstract=3722087

Binici, M., & Hutchison, M. (2018). Do credit rating agencies provide valuable information in market evaluation of sovereign default risk? *Journal of International Money and Finance*, 85, 58–75.

Borensztein, E., Cowan, K., & Valenzuela, P. (2013). Sovereign ceilings "lite"? The impact of sovereign ratings on corporate ratings. *Journal of Banking & Finance*, 37, 4014–4024.

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.

Campbell, J.L. (2007). Why would corporations behave in socially responsible ways? An institutional theory of corporate social responsibility. *Academy of Management Review*, 32, 946–967.

Carney, R.W., El Ghoul, S., Guedhami, O., Lu, J.W., & Wang, H. (2022). Political corporate social responsibility: The role of deliberative capacity. *Journal of International Business Studies*, 53(8), 1766–1784.

Chen, X., Harford, J., & Li, K. (2007). Monitoring: Which institutions matter? *Journal of Financial Economics*, 86, 279–305.

Cheng, B., Ioannou, I., & Serafeim, G. (2014). Corporate social responsibility and access to finance. *Strategic Management Journal*, 35(1), 1–23.

Chernenko, S., & Sunderam, A. (2012). The real consequences of market segmentation. *Review of Financial Studies*, 25, 2041–2069.

Cohn, J.B., & Wardlaw, M.I. (2016). Financing constraints and workplace safety. *The Journal of Finance*, 71, 2017–2058.

Dhaliwal, D.S., Radhakrishnan, S., Tsang, A., & Yang, Y.G. (2012). Nonfinancial disclosure and analyst forecast accuracy: International evidence on corporate social responsibility disclosure. *The Accounting Review*, 87, 723–759.

Donaldson, T., & Preston, L.E. (1995). The stakeholder theory of the corporation: Concepts, evidence, and implications. *Academy of Management Review*, 20, 65–91.

Dyck, A., Lins, K.V., Roth, L., & Wagner, H.F. (2019). Do institutional investors drive corporate social responsibility? International evidence. *Journal of Financial Economics*, 131, 693–714.

Eccles, R.G., Ioannou, I., & Serafeim, G. (2014). The impact of corporate sustainability on organizational processes and performance. *Management Science*, 60, 2835–2857.

El Ghoul, S., Guedhami, O., & Kim, Y. (2017). Country-level institutions, firm value, and the role of corporate social responsibility initiatives. *Journal of International Business Studies*, 48, 360–385.

El Ghoul, S., Guedhami, O., Kwok, C. C., & Mishra, D. R. (2011). Does corporate social responsibility affect the cost of capital? *Journal of Banking & Finance*, 35(9), 2388-2406.

Ferreira, M.A., & Matos, P. (2008). The colors of investors' money: The role of institutional investors around the world. *Journal of Financial Economics*, 88, 499–533.

Finkelstein, S., & Hambrick, D.C. (1996). *Strategic leadership: Top executives and their effects on organizations*. West Publishing.

Flammer, C., & Bansal, P. (2017). Does a long-term orientation create value? Evidence from a regression discontinuity. *Strategic Management Journal*, 38, 1827–1847.

Flammer, C., & Ioannou, I. (2021). Strategic management during the financial crisis: How firms adjust their strategic investments in response to credit market disruptions. *Strategic Management Journal*, 42, 1275–1298.

Flammer, C., & Kacperczyk, A. (2019). Corporate social responsibility as a defense against knowledge spillovers: Evidence from the inevitable disclosure doctrine. *Strategic Management Journal*, 40, 1243–1267.

Freeman, R.E. (2010). *Strategic management: A stakeholder approach*. Cambridge University Press.

Friedman, M. (1970). A Friedman doctrine: The social responsibility of business is to increase its profits. *New York Times Magazine*, 13, 32–33.

Friedman, M., & Friedman, R.D. (1962). *Capitalism and freedom*. University of Chicago Press.

Gao, L., He, J., & Wu, J. (2023). Standing out from the crowd via CSR engagement: Evidence from non-fundamental-driven price pressure. *Journal of Financial and Quantitative Analysis*. Advance online publication. doi:10.1017/S0022109023000686

Garg, S., Lin, Z., & Yang, H. (2023). Board caste diversity in Indian MNEs: The interplay of stakeholder norms and social embeddedness. *Journal of International Business Studies*, 54, 797–828.

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

Graham, J.R., Harvey, C.R., & Rajgopal, S. (2005). The economic implications of corporate financial reporting. *Journal of Accounting and Economics*, 40, 3–73.

Hasan, I., Kim, S.J., Politsidis, P.N., & Wu, E. (2023). Regulation and information costs of sovereign distress: Evidence from corporate lending markets. *Journal of Corporate Finance*, 82, 102468.

Ilhan, E., Krueger, P., Sautner, Z., & Starks, L.T. (2023). Climate risk disclosure and institutional investors. *Review of Financial Studies*, 36(7), 2617–2650.

Iliev, P., & Roth, L. (2023). Director expertise and corporate sustainability. *Review of Finance*, 27(6), 2085–2123.

Ioannou, I., & Serafeim, G. (2012). What drives corporate social performance? The role of nation-level institutions. *Journal of International Business Studies*, 43, 834–864.

Jensen, M., & Meckling, W.H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3, 305–360.

Johnson, R.A., & Greening, D.W. (1999). The effects of corporate governance and institutional ownership types on corporate social performance. *Academy of Management Journal*, 42, 564–576.

Kacperczyk, A. (2009). With greater power comes greater responsibility? Takeover protection and corporate attention to stakeholders. *Strategic Management Journal*, 30, 261–285.

Kang, J. (2016). Labor market evaluation versus legacy conservation: What factors determine retiring CEOs' decisions about long-term investment? *Strategic Management Journal*, 37, 389–405.

Karampatsas, N., Aktas, N., & Witkowski, A. (2022). Do firms adjust corporate social responsibility engagement after a focal change in credit ratings? *Business & Society*, 61, 1684–1722.

Kim, Y., Li, H., & Li, S. (2014). Corporate social responsibility and stock price crash risk. *Journal of Banking & Finance*, 43, 1–13.

Kisgen, D.J., & Strahan, P.E. (2010). Do regulations based on credit ratings affect a firm's cost of capital? *Review of Financial Studies*, 23, 4324–4347.

Kolk, A. (2016). The social responsibility of international business: From ethics and the environment to CSR and sustainable development. *Journal of World Business*, 51, 23–34.

La Porta, R., Lopez-de Silanes, F., Shleifer, A., & Vishny, R.W. (1998). Law and finance. *Journal of Political Economy*, 106, 1113–1155.

Liang, H., & Renneboog, L. (2017). On the foundations of corporate social responsibility. *The Journal of*

Finance, 72, 853–910.

Liang, H., & Renneboog, L. (2020). Corporate social responsibility and sustainable finance: A review of the literature. European Corporate Governance Institute–Finance Working Paper. Available at SSRN: https://ssrn.com/abstract=3698631.

Lins, K.V., Servaes, H., & Tamayo, A. (2017). Social capital, trust, and firm performance: The value of corporate social responsibility during the financial crisis. *The Journal of Finance*, 72, 1785–1824.

Margolis, J.D., Elfenbein, H.A., & Walsh, J.P. (2009). Does it pay to be good...and does it matter? A meta-analysis of the relationship between corporate social and financial performance. Available at SSRN: https://ssrn.com/abstract=1866371.

McCahery, J.A., Sautner, Z., & Starks, L.T. (2016). Behind the scenes: The corporate governance preferences of institutional investors. *The Journal of Finance*, 71, 2905–2932.

Oikonomou, I., Brooks, C., & Pavelin, S. (2012). The impact of corporate social performance on financial risk and utility: a longitudinal analysis. *Financial Management*, 41(2), 483–515.

Rathert, N. (2016). Strategies of legitimation: MNEs and the adoption of CSR in response to host-country institutions. *Journal of International Business Studies*, 47, 858–879.

Roberts, M.R., & Whited, T.M. (2013). Endogeneity in empirical corporate finance. *Handbook of the Economics of Finance*, 2, 493–572.

Serafeim, G., & Yoon, A. (2022). Stock price reactions to ESG news: The role of ESG ratings and disagreement. *Review of Accounting Studies*, 28, 1500–1530.

Shiu, Y.M., & Yang, S.L. (2017). Does engagement in corporate social responsibility provide strategic insurance-like effects? *Strategic Management Journal*, 38, 455–470.

Stroebel, J., & Wurgler, J. (2021). What do you think about climate finance? *Journal of Financial Economics*, 142, 487–498.

Tirole, J. (2001). Corporate governance. *Econometrica*, 69, 1–35.

To, T.Y., Wu, E., & Zhang, L. (2022). Mind the sovereign ceiling on corporate performance. *Journal of Corporate Finance*, 75, 102253.

Waddock, S.A., & Graves, S.B. (1997). The corporate social performance–financial performance link. *Strategic Management Journal*, 18, 303–319.

Wang, D.S., & Xie, W. (2022). Credit ratings and corporate information production: Evidence from sovereign downgrades. *Journal of Financial and Quantitative Analysis*, 57, 1591–1620.

Wang, R., & Yang, S. (2023). Credit ratings and firm innovation: Evidence from sovereign downgrades. *Journal of Banking & Finance*, 148, 106719.

Xu, Q., & Kim, T. (2022). Financial constraints and corporate environmental policies. *Review of Financial Studies*, 35, 576–635.

Young, S.L., & Makhija, M.V. (2014). Firms' corporate social responsibility behavior: An integration of institutional and profit maximization approaches. J*ournal of International Business Studies*, 45, 670–698.

Appendix
Definitions of Study Variables

This table provides definitions for the key variables used in our analysis. Names in square brackets denote FactSet item names.

Variable Name	Data Definition	Source
Credit Ratings		
Bound	Dummy variable coded as 1 for firms with credit ratings equal to or above the sovereign credit rating at the previous calendar year-end (t - 1), and 0 otherwise.	Bloomberg
Sovereign Downgrade	Dummy variable coded as 1 if a sovereign downgrade event takes place in firm i's country of domicile in year t, and 0 otherwise.	Bloomberg
Environmental, Social, and Governance (ESG)		
ESG Performance (Score)	ESG score of the firm. ESG scores can range from 0 to 100 and are based on ESG performance relative to the company's sector (for environmental and social) and country of incorporation (for governance).	Refinitiv
E&S Score	Average of the environmental and social pillar scores of the firm.	Refinitiv
G Score	Governance score of the firm.	Refinitiv
Reputation Risk Index (RRI)	RepRisk's "current RRI" of firm i at the end of month m of year t. The variable captures the level of negative media and stakeholder coverage of a firm to ESG incidents. RRI can range from 0 (lowest) to 100 (highest), so that a higher value indicates a higher risk exposure to ESG incidents. According to RepRisk documentation, an index value of 0–25 indicates a low incident rate, 25–49 a medium incident rate, 50–59 a high incident rate, 60–74 a very high incident rate, and 75–100 an extremely high incident rate.	RepRisk
Extreme ESG Incident	Dummy variable coded as 1 if a firm's RRI is between 60 and 100, and 0 otherwise.	RepRisk
IVA ESG Rating	ESG rating of the firm that takes values of AAA, AA, A, BBB, BB, B, and CCC, where AAA and CCC represent the highest and lowest ratings, respectively. We convert letters to a 0–6 scale, with AAA equal to 6, and CCC equal to 0.	MSCI IVA
Firm Characteristics		
Firm Size	Natural log of the book value of total assets [ff_assets].	FactSet
Market-to-Book	Ratio of the book value of assets [ff_assets] minus the book value of equity [ff_com_eq] plus the market value of equity [ff_mkt_val] to the book value of assets [ff_assets].	FactSet
Leverage	Ratio of debt [ff debt] to total assets [ff assets].	FactSet
Profitability	Ratio of income before taxes[ff_ptx_inc] to total assets [ff_assets].	FactSet
Tangibility	Ratio of net property, plant, and equipment [ff_ppe_net] to total assets [ff_assets].	FactSet
Country Characteristics		

French Legal Origin	Dummy variable that equals 1 if the country has a French legal origin, and 0 otherwise.	La Porta et al. (1998)
German Legal Origin	Dummy variable that equals 1 if the country has a German legal origin, and 0 otherwise.	La Porta et al. (1998)
Scandinavian Legal Origin	Dummy variable that equals 1 if the country has a Scandinavian legal origin, and 0 otherwise.	La Porta et al. (1998)
KOF Globalization Index	Index that measures the three main dimensions of globalization: 1) economic, 2) social, and 3) political. It also calculates an overall index of globalization and sub-indices, which capture 1) actual economic flows, 2) economic restrictions, 3) information flows, 4) personal contacts, and 5) cultural proximity. A higher score indicates a higher degree of globalization.	Swiss Economic Institute
Anti-Director Rights Index	Index formed by adding 1 if a country 1) allows shareholders to vote by mail, 2) does not require shareholders to deposit their shares prior to the general shareholder meeting, 3) allows for cumulative voting or proportional representation of minorities on the board of directors, 4) has an oppressed minorities mechanism in place, 5) allows shareholders to call for an extraordinary meeting with a minimum percentage of share capital of less than or equal to 10% (the sample median), or 6) allows shareholders to waive their pre-emptive rights only by a shareholders' vote. The index thus ranges from 0 to 5.	La Porta et al. (1998)
Control of Corruption	Extent to which public power is exercised for private gain, including petty and grand forms of corruption, as well as the "capture" of the state by elites and private interests. Coded from –2.5 to 2.5, with higher values corresponding to better governance outcomes.	World Bank
Political Executive Constraints	Index that consists of the following dimensions: 1) unlimited authority (no regular limitations on the political executive's actions as distinct from irregular limitations, such as the threat or actuality of coups or assassinations); 2) intermediate category; 3) slight to moderate limitations on political executive authority (some real but limited restraints on the executive); 4) intermediate category; 5) substantial limitations on political executive authority (the executive has more effective authority than any group to which it is accountable, but is subject to substantial constraints by that group); 6) intermediate category; 7) executive parity or subordination (accountability groups have effective authority equal to or greater than the executive in most areas of activity).	Polity IV

Economic Freedom Index	Heritage Index of Economic Freedom focuses on four key aspects of the economic environment over which governments typically exercise policy control: rule of law (including property rights and freedom from corruption), government size (including fiscal freedom and government spending), regulatory efficiency (including business freedom-the efficiency of government regulation of business, labor freedom, and monetary freedom), and market openness (including trade, investment, and financial freedom). The index ranges from 0 to 100, with a higher score indicating the country has a higher degree of freedom (0 indicating "repressive," and 100 indicating "negligible government interference"). More detailed definitions of each individual category can be found at www.heritage.org.	Heritage Index of Economic Freedom
GDP per Capita	GDP per capita is gross domestic product divided by midyear population. GDP is the sum of the gross value added by all resident producers in the economy, plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for the depreciation of fabricated assets or for the depletion or degradation of natural resources. Data are in 2010 constant U.S. dollars.	World Bank

Subsample Analysis

STAKE	First component obtained from a principal component analysis of the following four variables: STAKELAW, CSRLAW, PUBAWARE, and PUBAWARE1. STAKELAW is a measure for assessing how the legal environment of a country protects labor rights. It is the average rank score of employment laws, social security laws, collective relations laws, and human rights laws. CSRLAW equals 1 if the concerned country has mandatory disclosure requirements for CSR issues, but only for industrial companies or pension funds; 2 if the country has mandatory disclosure requirements for both industrial companies and pension funds; and 0 otherwise. PUBAWARE is calculated as the mean rank score of the number of non-government organizations (NGOs) per millions of population, and the total number of CSR reports issued by organizations divided by millions of population. PUBAWARE1 is the mean rank score of 1) sustainable development priority, 2) ethical practice implementation, 3) social responsibility of business leaders, and 4) corporate responsibility competitiveness.	Dhaliwal et al. (2012)

Exposure Stake Norms	First component obtained from a principal component analysis of the following three variables: corporate governance, stakeholder cooperation and collaboration, and past progress in labor-employer relations. Corporate governance is the mean country-level score of the three indices that measure the stringency of 1) strength of auditing and accounting standards, 2) conflict of interest regulation, and 3) shareholder governance. Stakeholder cooperation and collaboration is the mean country-level score of 1) multi-stakeholder collaboration, and 2) workforce diversity. Past progress in labor-employer relations is the mean country-level scores of the two indices that measure 1) cooperation in labor-employer relations, and 2) workers' rights.	World Economic Forum (WEF) Global Competitive-ness Report
Strong Norms IO/FIO	Fraction of outstanding shares owned by institutional investors from strong social norms countries/foreign institutional investors from strong social norms countries (as defined in Dyck et al., 2019) in one year. We classify an institutional investor's country as in the strong social norms group if its environmental performance index (EPI) exceeds the median in one year.	FactSet
Placebo Events		
Financial CrisisDummy	Dummy variable coded 1 for the years 2007, 2008, and 2009 for every country that did not experience a sovereign downgrade during those years, and 0 otherwise.	World Bank
Economic Recession Dummy	Dummy variable coded 1 if a country experiences more than six months of a recession (as defined by the OECD) without experiencing a sovereign downgrade in year t, and zero otherwise.	World Bank

Figure 1
Conceptual Framework
This figure depicts the conceptual framework for our three hypotheses. Analytical definitions of all variables are in the Appendix.
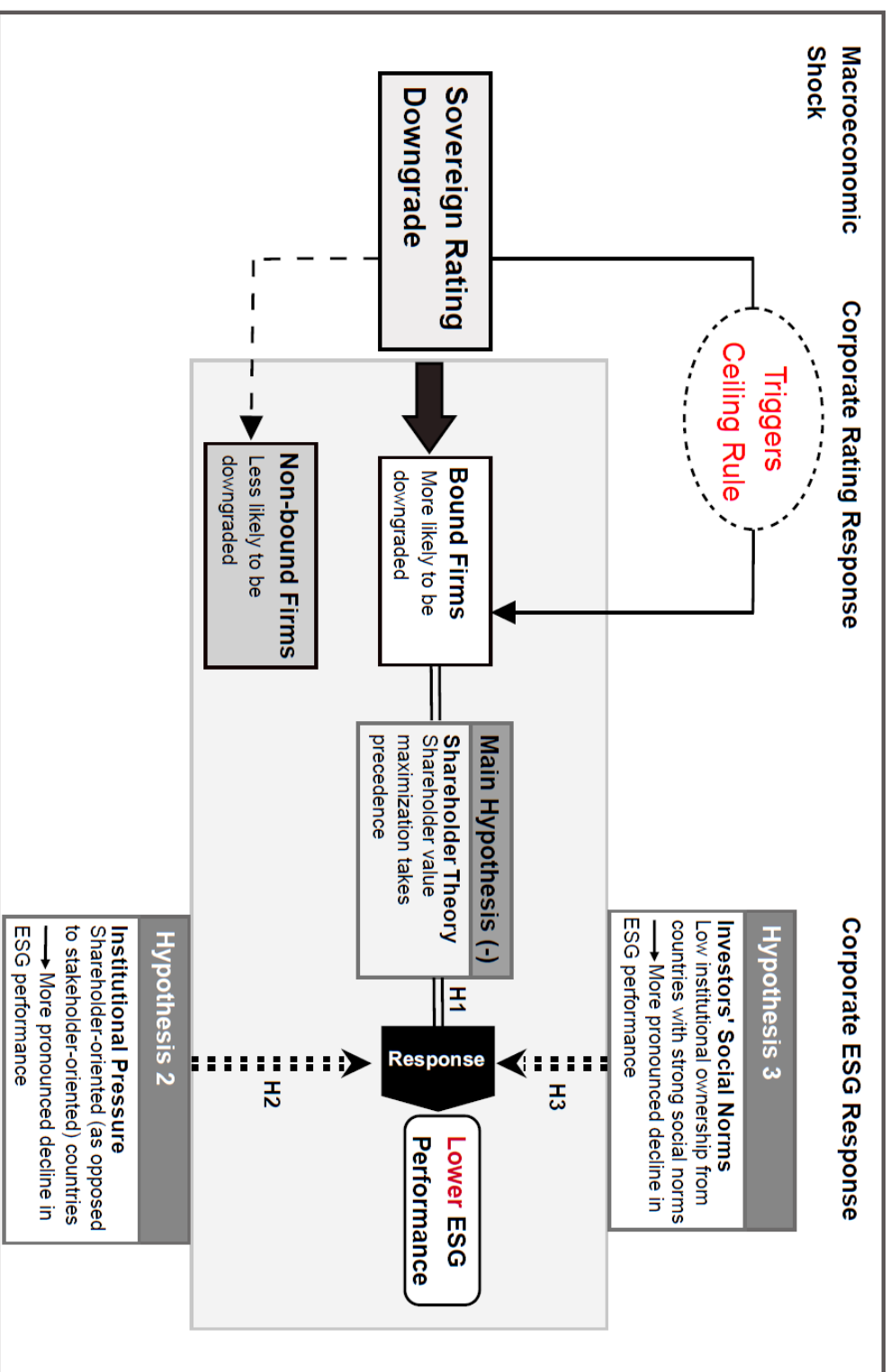
Figure 2
Dynamics of ESG Performance around Sovereign Downgrades

This figure analyzes changes in ESG performance of bound firms (i.e., first rated at or above their sovereign rating) from the two years before to the two years after a sovereign downgrade ($k = 0$), (k - 2 to $k + 2$). Specifically, the figure plots the coefficient estimates of the interaction variable, *Bound* x *Sovereign Downgrade*, and its corresponding confidence intervals (solid blue vertical lines) from the following regression specification:

$$ESG\ Performance_{i,t} = \sum_{k=-2}^{k=+2}(\beta_0 + \gamma_k\ Bound_{i,t-1}^k + \delta_k\ Sovereign\ Downgrade_{i,c,t}^k +$$
$$Bound_{i,t-1}^k\ x\ Sovereign\ Downgrade_{i,c,t}^k) + Firm\ Controls$$
$$+ Year\ FE + Firm\ FE + \varepsilon_{i,t} \qquad (2)$$

where *i*, *c*, and *t* represent firm, country, and year, respectively. $Bound_{i,t-1}$ is a dummy variable that equals 1 for firm *i* in the kth year relative to the year when the firm is bounded by the sovereign ceiling, and 0 otherwise. $Sovereign\ Downgrade_{i,c,t}^k$ (where k = -2, -1, 0, 1, and 2) equals 1 for firm *i* in the kth year relative to the fiscal year in which the firm's operating country *c* experiences a sovereign downgrade, and 0 otherwise. Firm controls include firm size, market-to-book, tangibility, profitability, and leverage. We estimate Equation (2) using firm fixed effects regression. Analytical definitions of all variables are in the Appendix.
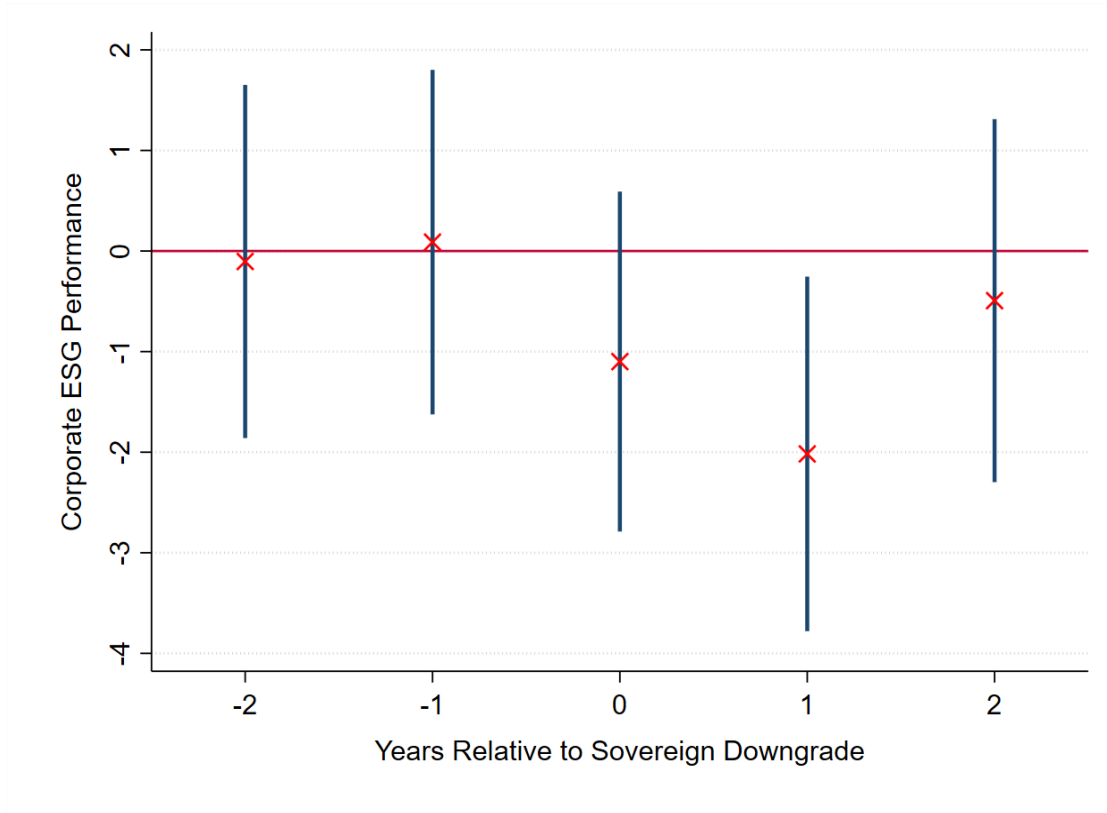
Table 1
Sample Selection and Descriptive Statistics

This table outlines the selection process of our final sample (Panel A), presents descriptive statistics for the main variables used in our analysis (Panel B), and shows the means of environmental, social, and governance (ESG) performance by country for our sample period (Panel C). Analytical definitions for all variables are in the Appendix.

Panel A: Sample Selection	Obs.
Total number of firm-year observations from 2002 to 2019 with Refinitiv Eikon, FactSet, and Bloomberg	535,501
Exclude: Non-rated firms	(502,157)
Exclude: Missing values for the variables used in our main regressions	(15,449)
Final Sample (Total 2,196 unique firms from 45 countries)	17,895

Panel B: Full Sample Summary Statistics

	N	Mean	Median	S.D.	P25	P75
Environment, Social, and Governance						
ESG Performance	17,895	49.00	49.23	21.10	31.72	65.00
Stakeholder (E&S) Performance	17,895	45.70	45.99	25.03	23.21	66.75
G Performance	17,895	54.92	57.10	22.26	38.03	72.74
Firm Characteristics						
Firm Size	17,895	9.077	9.131	1.042	8.289	10.11
Total Assets (in $billions)	17,895	23.68	9.230	39.47	3.970	24.69
Market-to-Book	17,895	1.658	1.404	0.809	1.131	1.902
Tangibility	17,895	0.376	0.315	0.273	0.150	0.568
Profitability	17,895	0.074	0.065	0.085	0.030	0.114
Leverage	17,895	0.339	0.309	0.202	0.205	0.432
Country Characteristics						
French Legal Origin	17,895	0.142	0.000	0.349	0.000	0.000
German Legal Origin	17,895	0.158	0.000	0.364	0.000	0.000
Scandinavian Legal Origin	17,895	0.028	0.000	0.164	0.000	0.000
Globalization Index	17,895	80.05	81.08	6.01	78.37	82.32
Anti-director rights	17,895	4.245	5.000	1.183	4.000	5.000
Control of Corruption	17,895	1.354	1.381	0.622	1.294	1.755
Political Executive Constraints	17,895	6.804	7.000	0.680	7.000	7.000
Economic Freedom	17,895	74.34	76.00	7.02	72.80	78.70
GDP per capita (Ln)	17,895	10.62	10.79	0.56	10.67	10.84

Table 1
Continued

Panel C: Distribution by Country

Country of Domicile	# of Firms	# of Obs.	Mean ESG	Country of Domicile	# of Firms	# of Obs.	Mean ESG
Argentina	8	22	38.05	Luxembourg	8	59	50.26
Australia	47	435	52.69	Mexico	19	135	49.65
Austria	5	53	55.67	Netherlands	21	173	61.49
Belgium	9	79	56.13	New Zealand	11	102	40.71
Brazil	35	265	54.48	Norway	10	96	63.05
Canada	115	1,030	44.70	Peru	9	38	44.95
Chile	16	136	46.42	Philippines	3	23	32.33
China	40	167	41.08	Poland	8	39	36.13
Colombia	5	31	59.24	Portugal	6	48	59.71
Czech Republic	3	31	46.12	Russia	28	249	43.38
Denmark	6	38	66.90	Saudi Arabia	3	36	34.46
Finland	8	85	65.73	Singapore	7	63	42.64
France	60	677	63.85	South Korea	25	225	63.50
Germany	48	467	61.47	Spain	29	208	66.03
Greece	5	50	59.66	Sweden	23	279	60.42
Hong Kong	16	178	45.72	Switzerland	29	267	65.49
Hungary	1	12	63.93	Taiwan	10	103	43.49
India	16	144	63.99	Thailand	7	68	61.36
Indonesia	12	69	52.13	Turkey	9	57	52.40
Ireland	16	124	51.49	Ukraine	1	2	44.94
Israel	3	24	54.81	United Kingdom	110	911	60.12
Italy	20	217	62.77	United States	1,107	8,925	43.92
Japan	218	1,455	47.99	**Total**	**2,195**	**17,985**	**49.00**

Table 2
List of Sovereign Rating Downgrades
This table lists the sovereign rating downgrades in our sample, along with the number of bound firms related to each downgrade.

Country	Downgrade Year	Sovereign Rating		No. of Bound Firms
		Before	After	
Argentina	2018	B+	B	4
Brazil	2014	BBB	BBB-	6
	2015	BBB-	BB+	13
	2016	BB+	BB	15
	2018	BB	BB-	12
China	2017	AA-	A+	1
Colombia	2017	BBB	BBB-	2
Greece	2011	BB+	CC	3
	2015	B	CCC+	4
Hong Kong	2017	AAA	AA+	1
Hungary	2012	BB+	BB-	1
Ireland	2011	A	BBB+	3
Italy	2004	AA	AA-	1
	2006	AA-	A+	2
	2011	A+	A	2
	2012	A	BBB+	2
	2013	BBB+	BBB	7
	2014	BBB	BBB-	9
Japan	2002	AA	AA-	2
	2011	AA	AA-	12
	2015	AA-	A+	12
Mexico	2009	BBB+	BBB	4
Portugal	2011	A-	BBB-	1
	2012	BBB-	BB	3
Russia	2014	BBB	BBB-	5
	2015	BBB-	BB+	13
Saudi Arabia	2015	AA-	A+	1
	2016	A+	A-	3
South Korea	2018	AA	AA-	1
Spain	2012	AA-	BBB-	2
Turkey	2016	BB+	BB	6
	2018	BB	B+	5
United States	2011	AAA	AA+	4
Total				**162**

Table 3
Sovereign Downgrades and Corporate ESG Performance

This table presents analyses of changes in firms' ESG performance following a sovereign rating downgrade. The dependent variable is the firm's ESG score in year $t + 1$. Bound is a dummy variable that equals 1 if a firm has a credit rating equal to or above the sovereign rating in year t - 1, and Sovereign Downgrade is a dummy variable that equals 1 if a firm's country rating is downgraded in year t. The main variable of interest is the interaction between Bound and Sovereign Downgrade (Bound x Sovereign Downgrade). In Model 1, we use year, industry, and country fixed effects. In Model 2, we control for firm and year fixed effects, and in Model 3, we include firm and two-way country-year fixed effects. Model 4 incorporates year and industry fixed effects, as well as a set of country-level controls. P-values are reported in parentheses. Analytical definitions for all variables are in the Appendix.

	Model 1	Model 2	Model 3	Model 4
Bound	2.854	0.877	1.242	4.553
	(0.052)	(0.075)	(0.035)	(0.005)
Sovereign Downgrade	1.380	0.298	-2.897	2.286
	(0.013)	(0.374)	(0.675)	(0.002)
Bound x Sovereign Downgrade	-3.246	-1.917	-2.558	-2.925
	(0.011)	(0.022)	(0.016)	(0.050)
Firm Size	9.623	3.719	3.130	9.568
	(0.000)	(0.000)	(0.000)	(0.000)
Market-to-Book	2.528	0.298	0.338	2.252
	(0.000)	(0.052)	(0.034)	(0.000)
Tangibility	-3.607	-0.999	-0.629	-4.654
	(0.030)	(0.168)	(0.397)	(0.029)
Profitability	7.662	3.652	4.301	7.517
	(0.002)	(0.001)	(0.000)	(0.002)
Leverage	-8.921	-1.608	-1.787	-8.617
	(0.000)	(0.000)	(0.000)	(0.000)
French Legal Origin	-	-	-	4.789
	-	-	-	(0.193)
German Legal Origin	-	-	-	2.838
	-	-	-	(0.341)
Scandinavian Legal Origin	-	-	-	5.217
	-	-	-	(0.103)
Globalization Index	-	-	-	0.616
	-	-	-	(0.002)
Anti-director rights	-	-	-	-0.740
	-	-	-	(0.483)
Control of Corruption	-	-	-	3.88
	-	-	-	(0.020)
Political Executive Constraints	-	-	-	2.550
	-	-	-	(0.008)
Economic Freedom	-	-	-	-0.124
	-	-	-	(0.411)
GDP per capital (Ln)	-	-	-	-6.080
	-	-	-	(0.007)
Intercept	-49.243	-7.573	20.728	-47.241
	(0.000)	(0.001)	(0.000)	(0.026)
Observations	17,895	17,895	17,895	17,895
R^2	0.512	0.858	0.868	0.488
Year Fixed Effects	Yes	Yes	No	Yes
Industry Fixed Effects	Yes	No	No	Yes
Country Fixed Effects	Yes	No	No	No
Firm Fixed Effects	No	Yes	Yes	No
Country x Year Fixed Effects	No	No	Yes	No

Table 4
Dynamics of ESG Performance around Sovereign Downgrades

This table presents analyses of changes in firms' ESG performance around a sovereign downgrade event. The dependent variable is the firm's ESG score in year t. The model specifications are similar to those in Table 3, except that we replace "Bound" with a set of dummies indicating the number of years relative to the year when a firm's rating is bounded by the sovereign ceiling (Bound^k, where k = -2, -1, 0, 1, and 2), and we replace the "Sovereign Downgrade" dummy with a set of dummies indicating the number of years relative to the sovereign downgrade event year (Sovereign Downgrade^k, where k = -2, -1, 0, 1, and 2). The main variables of interest are the interactions between Bound and Sovereign Downgrade (Bound x Sovereign Downgrade^k, where k = -2, -1, 0, 1, and 2). Firm controls include size, market-to-book, tangibility, profitability, and leverage. Macro controls include French, German, and Scandinavian legal origin, globalization index, anti-director rights, control of corruption, political executive constraints, economic freedom, and GDP per capita (see Liang & Renneboog, 2017). P-values are reported in parentheses. Analytical definitions for all variables are in the Appendix.

	Model 1	Model 2	Model 3	Model 4
Bound x Sovereign Downgrade^{-2}	-1.909	-0.104	-0.180	-1.621
	(0.324)	(0.908)	(0.873)	(0.381)
Bound x Sovereign Downgrade^{-1}	-0.846	0.088	-0.068	-0.686
	(0.547)	(0.919)	(0.951)	(0.602)
Bound x Sovereign Downgrade^{0}	-1.965	-1.099	-1.906	-1.736
	(0.139)	(0.202)	(0.082)	(0.230)
Bound x Sovereign Downgrade^{+1}	-2.839	-2.017	-2.560	-2.823
	(0.015)	(0.025)	(0.025)	(0.017)
Bound x Sovereign Downgrade^{+2}	-0.973	-0.493	-0.583	-1.926
	(0.471)	(0.592)	(0.615)	(0.179)
Observations	17,375	17,375	17,375	17,375
R^2	0.504	0.855	0.865	0.479
Bound$^{-2, -1, 0, 1, 2}$	Yes	Yes	Yes	Yes
Sovereign Downgrade$^{-2, -1, 0, 1, 2}$	Yes	Yes	Yes	Yes
Firm Controls	Yes	Yes	Yes	Yes
Macro Controls	No	No	No	Yes
Year Fixed Effects	Yes	Yes	No	Yes
Industry Fixed Effects	Yes	No	No	Yes
Country Fixed Effects	Yes	No	No	No
Firm Fixed Effects	No	Yes	Yes	No
Country x Year Fixed Effects	No	No	Yes	No

Table 5
Regression Discontinuity Design

This table presents results after restricting the sample of bound (treatment) and non-bound (control) firms with similar credit ratings (i.e., those rated "just above" or "at," versus those rated "just below" their sovereign rating). We compute the distance between each firm's rating and its sovereign rating (cutoff) in year (t - 1). In Model 1, our sample includes only firms with a distance window [bandwidth] of [-1, 0]. A negative (positive) value indicates the firm's credit rating is just below (just above) the sovereign rating in the year before a sovereign downgrade, while 0 means the firm's credit rating is equal to (or at) the sovereign rating. In Model 2, our sample uses firms with a rating one notch below, at, or one notch above the corresponding sovereign rating [-1, +1]. In Model 3, our sample includes firms with a rating ranging from two notches below to one notch above the sovereign rating [i.e., -2, +1]. The dependent variable is the firm's ESG score in year t + 1. In Model 1, Bound is a dummy variable that equals 1 if a firm has a credit rating equal to the sovereign rating in year t - 1. In Models 2 and 3, Bound equals 1 if a firm has a credit rating equal to or one notch above the sovereign rating in year t - 1. Sovereign Downgrade is a dummy variable that equals 1 if a firm's country rating is downgraded in year t. The main variable of interest is the interaction between Bound and Sovereign Downgrade (Bound x Sovereign Downgrade). P-values are reported in parentheses. Analytical definitions for all variables are in the Appendix.

	Distance Window		
	[Just Below, At or Just Above]		
Distance = Firm Rating – Sovereign Rating	**Model 1**	**Model 2**	**Model 3**
	[-1,0]	[-1,+1]	[-2,+1]
Bound	1.401	1.661	2.782
	(0.117)	(0.081)	(0.006)
Sovereign Downgrade	1.276	1.507	2.203
	(0.363)	(0.293)	(0.0036)
Bound x Sovereign Downgrade	-3.444	-4.178	-4.711
	(0.067)	(0.021)	(0.001)
Observations	1,363	1,660	2,290
R^2	0.541	0.526	0.546
Firm Controls	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes

Table 6
Sovereign Downgrades and ESG Performance:
The Role of Shareholder Orientation

This table presents a subsample analysis across shareholder-oriented and stakeholder-oriented countries. We split the sample into country groups based on median values of the STAKE variables (Models 1 and 2) and exposure stake norms (Models 3 and 4), with countries having values equal to or above the median, indicating greater stakeholder orientation. STAKE is the first principal component of four variables: STAKELAW, CSRLAW, PUBAWARE, and PUBAWARE1, where the first two proxy for stakeholder orientation related to legal norms, and the latter two proxy for social norms of different countries (as in Dhaliwal et al., 2012). Exposure Stake Norms is the first principal component of three variables: corporate governance, stakeholder cooperation and coordination, and labor-employer relations within a country (as in Garg et al., 2023). Bound is a dummy variable that equals 1 if a firm has a credit rating equal to or above that of the sovereign in year t - 1, and Sovereign Downgrade is a dummy variable that equals 1 if a firm's country rating is downgraded in year t. The main variable of interest is the interaction between Bound and Sovereign Downgrade (Bound x Sovereign Downgrade). P-values are reported in parentheses. Analytical definitions for all variables are in the Appendix.

	Model 1	Model 2	Model 3	Model 4
	Dhaliwal et al. (2012)		Garg et al. (2023)	
	Shareholder-Oriented	*Stakeholder-Oriented*	*Shareholder-Oriented*	*Stakeholder-Oriented*
Bound	2.664	5.562	2.561	8.601
	(0.140)	(0.003)	(0.024)	(0.008)
Sovereign Downgrade	1.998	-0.019	1.843	0.587
	(0.085)	(0.966)	(0.096)	(0.037)
Bound x Sovereign Downgrade	-5.397	-2.534	-3.349	-1.998
	(0.004)	(0.175)	(0.004)	(0.434)
Observations	11,875	4,957	3,682	14,213
R^2	0.492	0.589	0.505	0.538
Firm Controls	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes

Table 7
Sovereign Downgrades and ESG Performance:
The Role of Institutional Ownership

This table presents a subsample analysis across a group of firms with high and low strong social norms institutional ownership (IO) and foreign institutional ownership (FIO). We split the sample into high and low groups based on the median value of strong social norms IO (Models 1 and 2) and strong social norms FIO (Models 3 and 4), with firms having values equal to or above the median, indicating greater institutional ownership from countries where social norms are stronger. Strong social norms IO is the percent of outstanding shares owned by institutional investors from strong social norms countries over a year (as defined by Dyck et al., 2019 and Ilhan et al., 2023). Strong social norms FIO is the percent of outstanding shares owned by foreign institutional investors from strong social norms countries in a given year. We classify an institutional investor's country as in the strong (or weak) social norms group if its environmental performance index (EPI) is higher (or lower) than the median over a given year. Bound is a dummy variable that equals 1 if a firm has a credit rating equal to or above that of the sovereign in year t - 1, and Sovereign Downgrade is a dummy variable that equals 1 if a firm's country rating is downgraded in year t. The main variable of interest is the interaction between Bound and Sovereign Downgrade (Bound x Sovereign Downgrade). P-values are reported in parentheses. Analytical definitions for all variables are in the Appendix.

	Model 1	Model 2	Model 3	Model 4
	Dyck et al. (2019) and Ilhan et al. (2023)			
	Low IO	*High IO*	*Low FIO*	*High FIO*
Bound	2.402	-0.139	1.897	1.321
	(0.194)	(0.952)	(0.317)	(0.458)
Sovereign Downgrade	2.539	0.509	2.108	0.277
	(0.008)	(0.489)	(0.008)	(0.737)
Bound x Sovereign Downgrade	-5.173	-0.932	-4.420	-1.850
	(0.004)	(0.569)	(0.036)	(0.344)
Observations	7,371	7,371	8,981	5,745
R^2	0.427	0.546	0.446	0.456
Firm Controls	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes

Internet Appendix

for

"Backing Away from ESG? The Effect of Sovereign Rating Downgrades on Corporate Sustainability"

PART A. VALIDATION OF THE SOVEREIGN CEILING RULE

In this section, we examine whether the sovereign ceiling rule is indeed applied to firms in our sample. In doing so, we follow prior studies and examine the relationship between sovereign and corporate credit ratings (see Adelino & Ferreira, 2016; Almeida et al., 2017). First, we confirm that very few firms have a credit rating close to *or* above their sovereign's rating. Figure IA.1 shows the distribution of corporate ratings relative to sovereign ratings (i.e., the distance between the corporate credit rating and the corresponding sovereign credit rating) in the year prior to a sovereign downgrade. The *x*-axis denotes relative corporate rating and the *y*-axis denotes the proportion of our sample firm-years for each particular relative rating notch. As shown, the majority of firms in our sample have lower ratings than those of the sovereign (92.7%) and very few attained the same (4.6%) or higher (2.7%) rating. This suggests the sovereign ceiling rule is generally binding in our sample.

We also check whether a sovereign downgrade increases the chances of a rating downgrade for bound versus non-bound firms due to the ceiling rule. Again, we define groups based on their distance between the corporate rating and its corresponding sovereign rating before the sovereign downgrade. Figure IA.2 plots the proportion of firms that are downgraded one year before (-1), in the year of (0), and one year after (+1) a sovereign rating downgrade. Grey bars represent firms rated below their country of domicile (non-bound firms), and navy bars represent firms rated at or above their country of domicile (bound firms), in the year prior to a sovereign downgrade.

As the figure shows, compared with non-bound firms, bound firms are more likely to be downgraded in the year of a sovereign downgrade. In sharp contrast, the proportion of corporate credit rating downgrades one year before and one year after a sovereign rating downgrade is very similar between bound and non-bound firms.

In Figure IA.3, we plot the proportion of firms that experienced a corporate rating downgrade the month before (left panel, IA.3(a)), the month of (middle panel, IA.3(b)), and the month after (right panel, IA.3(c)) a sovereign downgrade. Figure IA.3(a) shows that, one month before a sovereign downgrade, less than 5% of firms downgraded in each group. In contrast, Figure IA.3(b) shows that, in the month of a sovereign downgrade, the potential for a corporate downgrade differed significantly among groups. 40% of firms rated at, and 20% of firms rated above, the bound were downgraded.

Less than 5% of firms rated below the bound were downgraded. As shown in Figure IA.3(c), one month after a sovereign downgrade, the possibility of a corporate downgrade again fell below 15% and it was similar for bound and non-bound firms.

Taken together, these findings validate the assumption that the ceiling rule sharply increases the chances of a credit rating downgrade for bound firms, but not for non-bound firms, in response to a sovereign downgrade.

PART B. ROBUSTNESS

Evidence from Alternative ESG Measures

This section examines the robustness of our findings by using alternative measures for ESG performance scores. First, we employ updated ESG scores from Refinitiv (acquired in October 2022). We conduct this analysis in response to Berg et al.'s (2021) concerns about the consistency of historical data provided by this rating agency. Berg et al. (2021) note that Refinitiv constantly revises its ESG scores, so studies like ours should incorporate updated information as a verification check. The results are in Table IA.5 and confirm that our main findings remain consistent.

To ensure that our inferences are not sensitive to the choice of ESG ratings provider, we turn to the ESG performance measure obtained from the Morgan Stanley Capital International (MSCI) Intangible Value Assessment (IVA) database (as in Liang & Renneboog, 2017). MSCI's ESG rating measures a firm's environmental and social risks and opportunities, as well as the extent to which the firm has developed CSR strategies to manage them. MSCI IVA categorizes ESG ratings into seven groups as follows: AAA, AA, A, BBB, BB, B, and CCC, where AAA indicates the highest performance, AA indicates the second-highest, and CCC indicates the lowest. We convert these letters into a scale ranging from 0 to 6, where AAA corresponds to 6, and CCC corresponds to 0. The results are in Table IA.6, and again confirm that our findings remain consistent.

Evidence from ESG Incidents

Our main results imply that, subsequent to sovereign downgrades, managers of bound firms do not

allocate sufficient investments in ESG initiatives because of their short-term orientation. They aim instead to safeguard shareholder value. A reduction in ESG investments could lead to higher short-term profits, but may also increase the risk of ESG incidents.[15] Consistent with this argument, Cohn and Wardlaw (2016) find that when operating cash flows decline, firms tend to reduce investments in workplace safety. This in turn results in higher injury rates among employees.

In this section, we examine whether bound firms are more likely than non-bound firms to experience a major ESG incident following a sovereign rating downgrade.[16] To test this notion, we employ a novel and innovative measure, the Reputational Risk Index (RRI) developed by RepRisk. This index uses news reports to identify firms with poor ESG practices, focusing specifically on news coverage of their negative ESG incidents. The variable *RRI* quantifies the level of risk exposure to ESG incidents that firm i faces in year t. *RRI* is an integer variable that ranges from 0 to 100, with higher values indicating greater exposure to ESG incidents.

Table IA.7 presents the results. The dependent variable is *Extreme ESG Incident*, which is a dummy variable that equals 1 if a firm exhibits a high incident rate (i.e., an RRI value between 60 and 100) in year $t + 1$ (Model 1), or a high incident rate in either year $t + 1$ or $t + 2$ (Model 2) (see Colak et al., 2024).[17] We maintain the same control variables as outlined in our benchmark specification (Model 1 of Table 2). The findings indicate that bound firms are more likely than non-bound firms to experience an ESG incident following a sovereign downgrade. This is in line with our main hypothesis (H1). It offers supporting evidence that managers of bound firms are more likely to engage in poor ESG practices, which can lead to an increase in ESG incidents subsequent to a sovereign downgrade.

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[15] For example, a mining company may reduce costs by lowering environmental standards, which would increase short-term profits but also heighten the risk of an environmental incident. British Petroleum (BP) provides anecdotal evidence of this. BP's long history of poor ESG practices (such as neglecting basic environmental and safety rules and failing to invest in critical infrastructure) led to incidents such as the Texas City Refinery explosion and the Deepwater Horizon oil spill.

[16] As discussed in the main body of the paper, putting forward an incident-based measure helps deal with the subjectivity in terms of how external ESG rating agencies such as Refinitiv and MSCI weigh and assess various ESG risks.

[17] We measure RRI for firm i after converting monthly "current RRI" data to annual data. Specifically, we choose the RRI of the month in which the RRI that year reaches its highest level. If the RRI is equally high in two or more months, we choose the month it first peaked. This procedure is suggested by RepRisk, and has been used in prior studies to analyze the risk exposure of a company over a 12-month time frame (see also Colak et al., 2024).

Evidence from Negative Credit Outlook

We have documented that a sovereign downgrade serves as an exogenous shock to bound firms, which influences their ESG practices and policies when compared to non-bound firms. Nevertheless, there may be concerns about the strict exogeneity of sovereign downgrades. This is because, when a downgrade becomes more likely, rating agencies (in our case, S&P) could disseminate valuable information to investors and financial markets regarding the credit risk of the sovereign. This would place it under formal review prior to the downgrade (Binici & Hutchison, 2018). To address this concern, we focus on examining changes in ESG performance of bound firms following sovereign downgrades that were not pre-notified or placed under credit watch by S&P during the year before the downgrade. This approach enhances the likelihood of considering fully exogenous downgrades.

As presented in Table IA.8, the results show that the impact of sovereign downgrades on bound firms' ESG policies remains consistent. Additionally, as expected, the findings indicate that a more immediate shock induces an even more pronounced negative effect on the ESG performance of bound firms.

Placebo Tests

Another question related to our identification framework is whether factors beyond sovereign rating downgrades may be responsible for the observed difference in impact on the ESG performance of bound and non-bound firms. For example, it is possible that bound firms react more strongly to adverse macroeconomic events like financial crises or economic recessions rather than being specifically influenced by sovereign downgrades. In such a scenario, bound firms' ESG performance would exhibit a significantly greater decline than that of non-bound firms.

To address this concern, we conduct a placebo test. Specifically, we re-estimate our benchmark specification (Model 1 of Table 2) by replacing *Sovereign Downgrade* with two "placebo events" indicators, *Financial Crisis* and *Economic Recession*. *Financial Crisis* equals 1 for the years 2007, 2008, and 2009, and 0 otherwise. *Economic Recession* equals 1 for a country-year with more than six months of recession (defined by the OECD) in year *t*, and 0 otherwise. The main variables of interest are the interactions between *Bound* and the two placebo events (*Bound* x *Financial Crisis* and *Bound*

x *Economic Recession*). They capture the DiD effect of placebo events on bound firms' ESG performance.[18]

The results are in Table IA.9. We find that the coefficients of the interaction terms in Models 1 and 2 are statistically insignificant. This suggests that bound firms' ESG performance is not notably more sensitive to financial crises or economic recessions than that of non-bound firms. Note that these findings do not imply that other adverse macroeconomic conditions have no influence on firm-level ESG performance. Rather, economic downturns do not differentially impact the ESG policies of bound and non-bound firms.

These results alleviate any concerns about the susceptibility of bound firms to macroeconomic conditions and reinforce our interpretation concerning the causal impact of sovereign downgrades on bound firms' ESG performance.

Sample Composition

In this section, we conduct additional robustness checks to further alleviate concerns about biases that may stem from sample composition. First, we acknowledge that our sample includes certain countries— such as Germany, Canada, and Switzerland—that have never encountered a sovereign downgrade. To address this, we refine our benchmark specification (Model 1 of Table 2) by restricting our analysis to countries that have experienced at least one sovereign downgrade (see Model 1 of Table IA.10).

Second, we consider the heterogeneous impact of country-level shocks on different industries. Certain industries, like utilities, are arguably more directly connected to the government through support or the sale of goods and services. As a result, they may be more vulnerable to sovereign rating downgrades due to the potential reduction in government support. If this scenario holds, our main finding could potentially capture reduced government spending on certain industries, rather than the genuine effect of sovereign downgrades through the sovereign ceiling rule. To address this concern, we exclude utilities (SIC codes 4900–4999), and re-examine the relationship between credit rating downgrades and ESG performance (see Model 2 of Table IA.10).

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[18] To disentangle the placebo events from sovereign downgrades, we exclude country-year observations involving a sovereign downgrade during the financial crisis or a domestic recession.

We also recognize the potential for certain countries to disproportionately affect our bound and total firm samples. For example, U.S. firms constitute about 50% of our sample. However, the U.S. has only experienced one sovereign rating downgrade. Our bound firm sample from the U.S. comprises just four firm-year observations. Conversely, Brazil contributes only 365 observations, but it accounts for 46 of 162 bound firm-year observations in Table 2 of the paper. To mitigate concerns about overrepresentation of U.S. firms in our total sample, and Brazilian firms in our bound firm sample, we exclude U.S. and Brazilian firms in Models 3 and 4 of Table IA.10, respectively. Additionally, we acknowledge that our dataset encompasses countries with limited observations and is limited to rated companies. In response, we exclude firms from countries with fewer than 100 observations throughout our sample period (see Model 5 of Table IA.10), and we include companies in our sample period with no credit rating (see Model 6 of Table IA.10).

Last, we acknowledge that our *Sovereign Downgrade* variable fails to account for instances where a country experienced a downgrade followed by an upgrade within the same calendar year. To address this, we redefine *Sovereign Downgrade* as a dummy variable that equals 1 when a country undergoes one or more sovereign downgrades followed by one or more sovereign upgrades.[19] We subsequently re-estimate our benchmark specification in Model 7.

Table IA.10 presents the results. They reveal that the negative and statistically significant impact of sovereign downgrades on the ESG performance of bound firms persists across all specifications. This robustness check reinforces our main findings of the paper.

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[19] In our sample period, only Greece in 2012 saw a downgrade followed by an upgrade, prompting us to assign a Sovereign Downgrade value of 1, adding three bound firm-year observations to our sample.

REFERENCES

Adelino, M., & Ferreira, M.A. (2016). Bank ratings and lending supply: Evidence from sovereign downgrades. *Review of Financial Studies*, 29, 1709–1746.

Almeida, H., Cunha, I., Ferreira, M.A., & Restrepo, F. (2017). The real effects of credit ratings: The sovereign ceiling channel. *The Journal of Finance*, 72, 249–290.

Berg, F., Fabisik, K., & Sautner, Z. (2021). Is history repeating itself? The (un)predictable past of ESG ratings. European Corporate Governance Institute–Finance Working Paper. Available at SSRN: https://ssrn.com/abstract=3722087.

Cohn, J.B., & Wardlaw, M.I. (2016). Financing constraints and workplace safety. *The Journal of Finance*, 71, 2017–2058.

Colak, G., Korkeamäki, T. P., & Meyer, N. O. (2024). ESG and CEO turnover around the world. *Journal of Corporate Finance*, 84, 102523.

Liang, H., & Renneboog, L. (2017). On the foundations of corporate social responsibility. *The Journal of Finance*, 72, 853–910.

PART C: TABLES AND FIGURES

Table IA.1
Credit Ratings Numerical Scale

This table converts Standard & Poor's credit rating notations to a numerical scale.

Numerical Rating	S&P Rating
22	AAA
21	AA+
20	AA
19	AA-
18	A+
17	A
16	A-
15	BBB+
14	BBB
13	BBB-
12	BB+
11	BB
10	BB-
9	B+
8	B
7	B-
6	CCC+
5	CCC
4	CCC-
3	CC
2	C
1	SD/D

Table IA.2
List of Treated (Bound) Firms

This table reports the full list of bound firms alongside their country of domicile, year of downgrade, and rating at the beginning and end of the year of the downgrade.

	Year		Corporate Rating	
Country of Domicile	**of Sovereign Downgrade**	**Company**	Before Sov. Downgrade	After Sov. Downgrade
Argentina	2018	Capex SA	B+	B
		Pampa Energia SA	B+	B
		Transportadora de Gas del Sur SA	B+	B
		YPF SA	B+	B
Brazil	2014	Ambev SA	A	A
		Centrais Eletricas Brasileiras SA	BBB	BBB-
		Embraer SA	BBB	BBB
		Petroleo Brasileiro SA	BBB	BBB-
		Ultrapar Participacoes SA	BBB	BBB
		Vale SA	A-	A-
	2015	Ambev SA	A	A-
		Braskem SA	BBB-	BBB-
		Brf SA	BBB-	BBB
		Companhia Energetica de Sao Paulo	BBB-	BB+
		Centrais Eletricas Brasileiras SA	BBB-	BB+
		Embraer SA	BBB	BBB
		Gerdau SA	BBB-	BBB-
		Klabin SA	BBB-	BBB-
		Localiza Rent A Car SA	BBB-	BBB-
		Petroleo Brasileiro SA	BBB-	BB
		Transmissora Alianca De Energia	BBB-	BB+
		Ultrapar Participacoes SA	BBB	BBB-
		Vale SA	A-	BBB
	2016	Ambev SA	A-	BBB+
		Braskem SA	BBB-	BBB-
		Brf SA	BBB	BBB
		Companhia Energetica de Sao Paulo	BB+	BB
		Centrais Eletricas Brasileiras SA	BB+	BB
		Embraer SA	BBB	BBB
		Gerdau SA	BBB-	BBB-
		Hypera SA	BB+	BB+
		Jbs SA	BB+	BB
		Klabin SA	BBB-	BB+
		Localiza Rent A Car SA	BBB-	BB+
		Oi SA	BB+	D
		Transmissora Alianca De Energia	BB+	BB
		Ultrapar Participacoes SA	BBB-	BB+
		Vale SA	BBB	BBB-

Country of Domicile	Year of Sovereign Downgrade	Company	Corporate Rating	
			Before Downgrade	After Downgrade
Brazil	2018	Ambev SA	BBB+	BBB
		Braskem SA	BBB-	BBB-
		BRF SA	BBB-	BB
		Companhia de Saneamento	BB	BB-
		Centrais Eletricas Brasileiras SA	BB	BB-
		Energisa SA	BB	BB-
		Gerdau SA	BBB-	BBB-
		Klabin SA	BB+	BB+
		Sao Martinho SA	BB+	BB+
		Suzano SA	BB+	BBB-
		Transmissora Alianca De Energia	BB	BB-
		Vale SA	BBB-	BBB-
China	2017	China Shenhua Energy Co Ltd	AA-	A+
Colombia	2017	Ecopetrol SA	BBB	BBB-
		Interconexion Electrica SA	BBB	BBB-
Greece	2011	Hellenic Tel. Organization SA	BBB-	B
		Public Power Corporation SA	BB+	CCC
		Titan Cement Co SA	BB+	BB-
	2015	Ellaktor SA	B+	CCC+
		Hellenic Tel. Organization SA	BB	B+
		Public Power Corporation SA	B	CCC-
		Titan Cement Co SA	BB	BB
Hong Kong	2017	Mtr Corp Ltd	AAA	AA+
Hungary	2012	MOL Hungarian Oil & Gas Plc	BB+	BB+
Ireland	2011	Accenture Plc	A+	A+
		Covidien Plc	A	A
		Medtronic Plc	AA-	AA-
Italy	2004	Eni Spa	AA	AA
	2006	Eni Spa	AA	AA
		Terna Spa	AA-	AA-
	2011	Eni Spa	A+	A+
		Terna Spa	A+	A
	2012	Eni Spa	A+	A
		Terna Spa	A	A-
	2013	Atlantia Spa	BBB+	BBB+
		Enel Spa	BBB+	BBB
		Eni Spa	A	A
		Hera Spa	BBB+	BBB
		Luxottica Group Spa	BBB+	BBB+
		Snam Spa	A-	BBB+
		Terna Spa	A-	BBB+
	2014	A2A Spa	BBB	BBB
		Atlantia Spa	BBB+	BBB+

Country of Domicile	Year of Sovereign Downgrade	Company	Corporate Rating Before Downgrade	After Downgrade
		Edison Spa	BBB+	BBB+
		Enel Spa	BBB	BBB
		Eni Spa	A	A
		Hera Spa	BBB	BBB
		Luxottica Group Spa	BBB+	A-
		Snam Spa	BBB+	BBB
		Terna Spa	BBB+	BBB
Japan	2002	FUJIFILM Holdings Corp	AA	AA
		Toyota Motor Corp.	AAA	AAA
	2011	Canon Inc.	AA	AA
		Chubu Electric Power Company	AA	A+
		Denso Corporation	AA	AA-
		Elec Power Development Co	AA	A+
		Nippon Telegraph and Telephone Co	AA	AA
		NTT DoCoMo, Inc.	AA	AA
		Osaka Gas Co Ltd	AA	AA-
		Shikoku Electric Power Co	AA	A+
		Takeda Pharmaceutical Co	AA	AA-
		Tokyo Electric Power Co	AA	B+
		Tokyo Gas Co Ltd	AA	AA-
		Toyota Motor Corp.	AA	AA-
	2015	Canon Inc	AA	AA
		Denso Corporation	AA-	AA-
		East Japan Railway Company	AA-	AA-
		FUJIFILM Holdings Corp	AA-	AA-
		Japan Tobacco Inc.	AA-	AA-
		Nippon Telegraph and Telephone Co	AA	AA-
		NTT DoCoMo, Inc.	AA	AA-
		Osaka Gas Co., Ltd.	AA-	AA-
		Seven & I Holdings Co., Ltd.	AA-	AA-
		Tokyo Gas Co., Ltd.	AA-	AA-
		Toyota Industries Corp.	AA-	AA-
		Toyota Motor Corp.	AA-	AA-
Mexico	2009	America Movil Sa De CV	BBB+	BBB+
		Grupo Bimbo Sa De CV	BBB+	BBB
		Grupo Televisa Sab	BBB+	BBB+
		Kimberly-Clark de Mexico SAB de CV	A-	A-
Portugal	2011	EDP-Energias de Portugal SA	A-	BBB
	2012	Cimentos de Portugal SGPS SA	BBB-	BB
		EDP-Energias de Portugal SA	BBB	BB+
		PHarol SGPS SA	BBB-	BB+

Country of Domicile	Year of Sovereign Downgrade	Company	Corporate Rating	
			Before Downgrade	After Downgrade
Russia	2014	Federal Grid Co of the Unif	BBB	BBB-
		Gazprom PJSC	BBB	BBB-
		LUKOIL PJSC	BBB	BBB-
		Rosneft Oil Co	BBB	BBB-
		Transneft PJSC	BBB	BBB-
	2015	Federal Grid Co of the Unif	BBB-	BB+
		Gazprom PJSC	BBB-	BB+
		Gazprom Neft Pjsc	BBB-	BB+
		LUKOIL PJSC	BBB-	BBB-
		MegaFon PJSC	BBB-	BB+
		Mmc Norilsk Nickel Psjc	BBB-	BBB-
		Mobile TeleSystems PJSC	BBB-	BB+
		Novatek PJSC	BBB-	BB+
		PhosAgro PJSC	BBB-	BBB-
		Rosneft Oil Co.	BBB-	BB+
		Rosseti PJSC	BBB-	BB+
		Transneft PJSC	BBB-	BB+
		Uralkali PJSC	BBB-	BB-
Saudi Arabia	2015	Saudi Electricity Co.	AA-	A+
	2016	Saudi Basic Industries Corp.	A+	A-
		Saudi Electricity Co.	A+	A-
		Saudi Telecom Co.	A+	A-
South Korea	2018	Korea Electric Power Corporation	AA	AA
Spain	2012	Enagas Sa	AA-	BBB
		Red Electrica Corp Sa	AA-	BBB
Turkey	2016	Anadolu Efes Biracilik ve Malt Sanayii AS	BBB-	BBB-
		Arcelik AS	BB+	BB+
		Koc Holding AS	BBB-	BBB-
		Turkiye Sise ve Cam Fabrikalari AS	BB+	BB
		Turk Telekomunikasyon AS	BBB-	BBB-
		Turkcell Iletisim Hizmet	BBB-	BBB-
	2018	Anadolu Efes Biracilik ve Malt Sanayii AS	BBB-	BBB-
		Arcelik AS	BB+	BB+
		Koc Holding AS	BBB-	BB-
		Turk Telekomunikasyon AS	BBB-	BB-
		Turkcell Iletisim Hizmet	BBB-	BB-
United States	2011	Automatic Data Processing	AAA	AAA
		Exxon Mobil Corp	AAA	AAA
		Johnson & Johnson	AAA	AAA
		Microsoft Corp	AAA	AAA

Table IA.3

Governance (G) and Stakeholders' (E&S) Performance

This table presents regression results on the effect of sovereign downgrade on governance and stakeholder performance. The dependent variables are Governance (G) and Stakeholder (E&S) score in year $t + 1$. *Bound* is a dummy variable that equals 1 if a firm has a credit rating equal to or above that of the sovereign in year $t - 1$, and *Sovereign Downgrade* is a dummy variable that equals 1 if a firm's country rating was downgraded in year t. The main variable of interest is the interaction between Bound and Sovereign Downgrade (*Bound* x *Sovereign Downgrade*). Regressions includes year, industry, and country fixed effects. Firm controls include firm size, market-to-book, tangibility, profitability, and leverage. *P*-values are reported in parentheses. Analytical definitions for all variables are in the Appendix of the main paper.

	Governance Performance	E&S Performance
Bound	1.397	3.146
	(0.394)	(0.079)
Sovereign Downgrade	-0.108	1.969
	(0.815)	(0.010)
Bound x Sovereign Downgrade	-2.602	-3.244
	(0.106)	(0.037)
Observations	17,895	17,895
R^2	0.170	0.556
Firm Controls	Yes	Yes
Year Fixed Effects	Yes	Yes
Industry Fixed Effects	Yes	Yes
Country Fixed Effects	Yes	Yes

Table IA.4
Propensity Score Matching

This table presents results from the propensity score matching analysis for bound (treated) and non-bound (control) firms. Bound firms had the same or better credit rating than that of the sovereign at the beginning of the sovereign downgrade year. Non-bound firms had a lower credit rating than that of the sovereign at the beginning of the sovereign downgrade year. Panel A presents the mean values of ESG for bound and non-bound firms in the year prior to the sovereign downgrade. Panel B presents the results from a covariate balance test, which assesses whether average covariate values (firm-level determinants) are similar across bound and non-bound firms. *t*-stat denotes the difference in means between bound and non-bound firms. We match each bound firm to a non-bound firm from the same country and year in firm size, market-to-book, tangibility, profitability, and leverage, with nearest-neighbor replacement using *psmatch2* in STATA. *psmatch2* allows for imposing a common support condition by dropping treatment observations whose p-scores are higher than the maximum or less than the minimum p-score of the controls. In Panel C, we re-estimate our benchmark results (Model 1, Table 3 of the main paper) on the propensity matched sample. The dependent variable is the firm's ESG score in year $t + 1$. *Bound* is a dummy variable that equals 1 if a firm has a credit rating equal to or above that of the sovereign in year $t - 1$, and *Sovereign Downgrade* is a dummy variable that equals 1 if a firm's country rating is downgraded in year t. The main variable of interest is the interaction between Bound and Sovereign Downgrade (*Bound x Sovereign Downgrade*). *P*-values are reported in parentheses. Analytical definitions for all variables are in Appendix of the main paper.

Panel A: Original sample before downgrade				
	Bound	**Non-Bound**	**Diff.**	***t*-stat**
ESG Performance	57.88	46.22	11.65	6.97
Panel B: After Propensity Score Matching the year before downgrade				
ESG Performance	57.587	54.105	2.481	0.73
Firm Size	9.692	9.723	-0.031	-0.28
MTB	1.317	1.168	0.149	1.96
Tangibility	0.452	0.440	0.012	0.30
Profitability	0.073	0.055	0.018	1.52
Leverage	0.365	0.385	-0.020	-0.74
Panel C: Regression results on the matched sample				
Bound		3.746		
		(0.194)		
Sovereign Downgrade		0.713		
		(0.648)		
Bound x Sovereign Downgrade		-4.526		
		(0.015)		
Observations		812		
R^2		0.614		
Year Fixed Effects		Yes		
Industry Fixed Effects		Yes		
Country Fixed Effects		Yes		
Firm Controls		Yes		

Table IA.5
Evidence from Updated Version of Refinitiv ESG Data

This table presents analyses of changes in firms' ESG policies following a sovereign rating downgrade using more recent ESG data (downloaded in October 2022). The dependent variable is the firm's ESG score$^{Recent\ Version}$ in year $t + 1$. *Bound* is a dummy variable that equals 1 if a firm has a credit rating equal to or above that of the sovereign in year t - 1, and *Sovereign Downgrade* is a dummy variable that equals 1 if a firm's country rating is downgraded in year t. The main variable of interest is the interaction between Bound and Sovereign Downgrade (*Bound x Sovereign Downgrade*). In Model 1, we use year, industry, and country fixed effects. In Model 2, we control for firm and year fixed effects. In Model 3, we include firm and two-way country-year fixed effects. Model 4 incorporates year and industry fixed effects, as well as a set of country level controls. The firm controls include firm size, market-to-book, tangibility, profitability, and leverage. The country controls include French, German, and Scandinavian legal origin, globalization index, anti-director rights, control of corruption, political executive constraints, economic freedom, and GDP per capita. *P*-values are reported in parentheses. Analytical definitions for all variables are in Appendix of the main paper.

	Model 1	Model 2	Model 3	Model 4
Bound	2.455	0.936	1.470	4.307
	(0.047)	(0.061)	(0.014)	(0.002)
Sovereign Downgrade	1.471	0.415	-2.804	2.343
	(0.010)	(0.223)	(0.686)	(0.002)
Bound x Sovereign Downgrade	-2.739	-1.761	-2.409	-2.472
	(0.019)	(0.036)	(0.024)	(0.092)
Observations	17,621	17,621	17,621	17,621
R^2	0.507	0.855	0.866	0.484
Year Fixed Effects	Yes	Yes	No	Yes
Industry Fixed Effects	Yes	No	No	Yes
Country Fixed Effects	Yes	No	No	No
Firm Fixed Effects	No	Yes	Yes	No
Country x Year Fixed Effects	No	No	Yes	No
Firm Controls	Yes	Yes	Yes	Yes
Country Controls	No	No	No	Yes

Table IA.6
Evidence using MSCI IVA Ratings

This table presents regression results on the effect of a sovereign downgrade on firms' ESG performance. The dependent variable in this analysis is the MSCI IVA ESG rating in $t + 1$, which is an integer ranging from 0 to 6. *Bound* is a dummy variable that equals 1 if a firm has a credit rating equal to or above that of the sovereign in year t - 1, and *Sovereign Downgrade* is a dummy variable that equals 1 if a firm's country rating is downgraded in year t. The main variable of interest is the interaction between Bound and Sovereign Downgrade (*Bound x Sovereign Downgrade*). Model 1 is a random effect ordered probit regression; Model 2 is a random effect ordered logit regression. Both models include year, industry, and country fixed effects. Firm controls include size, market-to-book, tangibility, profitability, and leverage. *P*-values are reported in parentheses. Analytical definitions for all variables are in Appendix of the main paper.

	Model 1	**Model 2**
Bound	0.366	0.636
	(0.023)	(0.039)
Sovereign Downgrade	0.060	0.089
	(0.267)	(0.361)
Bound x Sovereign Downgrade	-0.243	-0.412
	(0.069)	(0.080)
Observations	15,097	15,097
Log pseudo-likelihood	-21645	-21361
Year Fixed Effects	Yes	Yes
Industry Fixed Effects	Yes	Yes
Country Fixed Effects	Yes	Yes
Firm Controls	Yes	Yes

Table IA.7
Evidence from ESG Incidents

This table shows evidence from logit models predicting the likelihood of extreme ESG incidents following a sovereign downgrade. The dependent variable in Model 1 is Extreme ESG Incident, which is a dummy variable that equals 1 if a firm has a high incident rate (i.e., a RepRisk Index (RRI) between 60 and 100) in year t +1; and in Model 2 if a firm has a high incident rate in either year $t + 1$ or $t + 2$. The RRI ranges from 0 to 100, and captures firm-level risk exposure to ESG incidents. *Bound* is a dummy variable that equals 1 if a firm has a credit rating equal to or above that of the sovereign in year t - 1, and *Sovereign Downgrade* is a dummy variable that equals 1 if a firm's country rating is downgraded in year t. The main variable of interest is the interaction between Bound and Sovereign Downgrade (*Bound x Sovereign Downgrade*). *P*-values are reported in parentheses. Analytical definitions for all variables are in Appendix of the main paper.

	Extreme ESG Incident	
	Model 1	**Model 2**
Bound	1.200	1.044
	(0.012)	(0.028)
Sovereign Downgrade	0.390	0.250
	(0.089)	(0.336)
Bound x Sovereign Downgrade	0.799	0.674
	(0.043)	(0.035)
Observations	15,618	15,618
Pseudo R^2	0.400	0.393
Firm Controls	Yes	Yes
Year Fixed Effects	Yes	Yes
Industry Fixed Effects	Yes	Yes
Country Fixed Effects	Yes	Yes

Table IA.8
Evidence from Negative Credit Watch

This table presents analyses of changes in bound firms' ESG performance following sovereign downgrades that were not placed under (neutral or negative) credit watch by rating agencies in the year before the downgrade. The dependent variable is the firm's ESG score in year $t + 1$. *Bound* is a dummy variable that equals 1 if a firm has a credit rating equal to or above that of the sovereign in year $t - 1$, and *Sovereign Downgrade* is a dummy variable that equals 1 if a firm's country rating is downgraded in year t. The main variable of interest is the interaction between Bound and Sovereign Downgrade (*Bound x Sovereign Downgrade*). *P*-values are reported in parentheses. Analytical definitions for all variables are in Appendix of the main paper.

	Model 1
Bound	1.171
	(0.567)
Sovereign Downgrade	1.530
	(0.005)
Bound x Sovereign Downgrade	-4.902
	(0.003)
Observations	17,363
R^2	0.510
Firm Controls	Yes
Year Fixed Effects	Yes
Industry Fixed Effects	Yes
Country Fixed Effects	Yes

Table IA.9
Placebo Events and ESG Performance

This table presents placebo analyses on changes in firms' ESG performance following two placebo events (financial crisis and economic recession). The dependent variable is the firm's ESG score in year $t + 1$. Bound is a dummy variable that equals 1 if a firm has a credit rating equal to or above the sovereign rating in year t - 1. Financial Crisis is a time indicator that equals 1 for all countries in the sample over the period 2007–2009. Economic Recession is an indicator that equals 1 if a country experiences more than six months of a recession (based on the composite economic indicators from the OECD) in year t. The main variable of interest is the interaction between Bound and Financial Crisis in Model 1, and Bound and Economic Recession in Model 2. *P*-values are reported in parentheses. Analytical definitions for all variables are in Appendix of the main paper.

|	**Model 1**	**Model 2**
Bound	2.805	2.011
	(0.039)	(0.221)
Financial Crisis	16.166	-
	(0.000)	-
Bound x Financial Crisis	-2.235	-
	(0.119)	-
Economic Recession	-	-0.008
	-	(0.977)
Bound x Economic Recession	-	1.145
	-	(0.347)
Observations	17,895	17,895
R^2	0.512	0.512
Firm Controls	Yes	Yes
Year Fixed Effects	Yes	Yes
Industry Fixed Effects	Yes	Yes
Country Fixed Effects	Yes	Yes

Table IA.10
Sample Composition

This table presents results from additional robustness tests. Model 1 excludes firms from countries that did not experience a sovereign downgrade during our sample period. Model 2 excludes firms from the utilities industry. Models 3 and 4 exclude U.S. and Brazilian firms, respectively. Model 5 excludes firms from countries with fewer than 100 observations in our sample period. Model 6 includes firms without credit ratings. Model 7 includes cases where a country has been downgraded, and then subsequently upgraded, within the same calendar year, by considering it as a sovereign downgrade. The dependent variable is the firm's *ESG score* in year $t+1$. *Bound* is a dummy variable that equals 1 if a firm has a credit rating equal to or above that of the sovereign in year t -1, and *Sovereign Downgrade* is a dummy variable that equals 1 if a firm's country rating is downgraded in year t. The main variable of interest is the interaction between Bound and Sovereign Downgrade (*Bound x Sovereign Downgrade*). *P*-values are reported in parentheses. Analytical definitions for all variables are provided in the Appendix of the main paper.

|	Exclude countries without sovereign downgrades	Exclude utility firms	Exclude U.S. firms	Exclude Brazilian firms	Exclude countries with fewer than 100 observations	Include non-rated firms	Include countries with downgrades and subsequent upgrades
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Bound	3.362	2.725	2.284	3.217	3.211	7.355	2.855
	(0.023)	(0.129)	(0.067)	(0.067)	(0.037)	(0.000)	(0.053)
Sovereign Downgrade	1.487	0.918	1.277	1.437	1.158	0.235	1.380
	(0.020)	(0.070)	(0.042)	(0.085)	(0.016)	(0.663)	(0.013)
Bound x Sov. Downgrade	-3.688	-2.670	-2.705	-2.630	-4.412	-4.270	-3.220
	(0.002)	(0.066)	(0.002)	(0.035)	(0.043)	(0.006)	(0.011)
Observations	14,659	13,720	8,970	17,630	16,868	46,828	17,895
R^2	0.512	0.538	0.520	0.515	0.517	0.434	0.512
Firm Controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Figure IA.1
Frequency Distribution of Corporate and Sovereign Credit Rating Gaps

The figure shows the distribution of corporate ratings relative to sovereign credit ratings (i.e., the difference between the two) for a firm's country of domicile in the year prior to a sovereign downgrade. The *x*-axis denotes the relative corporate rating. The *y*-axis denotes the proportion of our sample firm-years for each relative rating notch. Grey bars represent firms rated below their country of domicile (non-bound firms); navy bars represent firms rated at or above their country of domicile (bound firms).
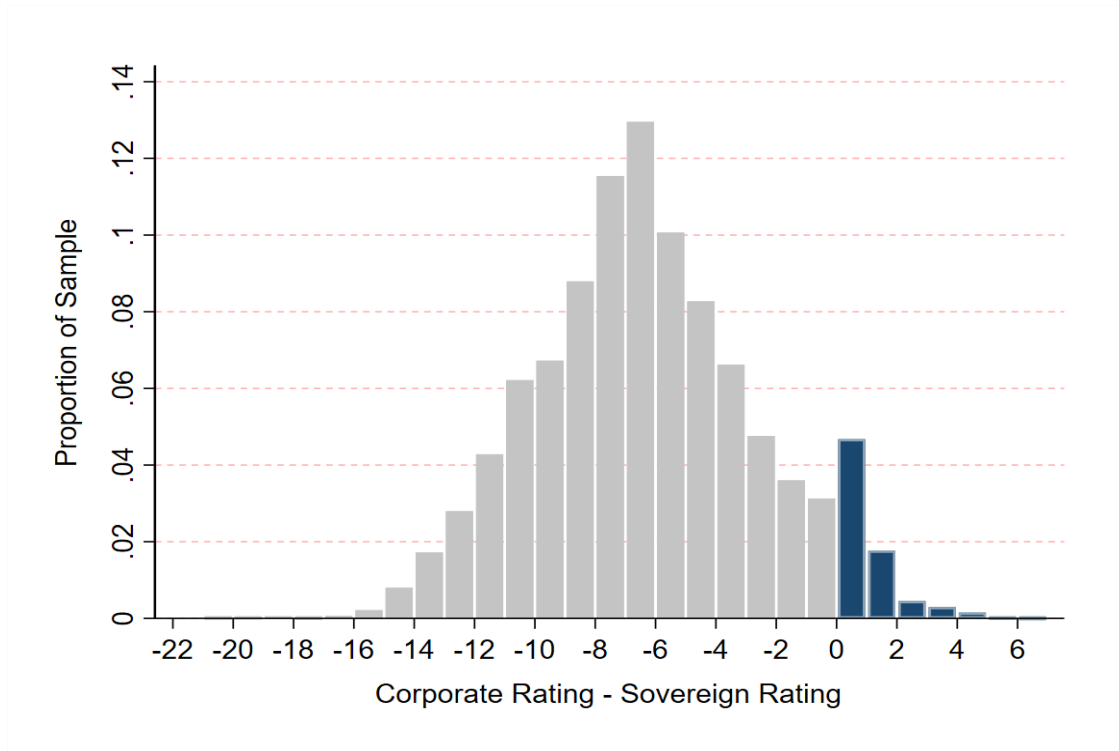
Figure IA.2
Proportion of all firms downgraded one year before, year of, and one year after
a sovereign downgrade

This figure shows the fraction of all firms downgraded one year before (-1), in the year of (0), and one year after (1) a sovereign downgrade, according to the pre-downgrade difference between the corporate credit rating and its corresponding sovereign ratings. Grey bars represent firms rated below their country of domicile (non-bound firms); navy bars represent firms rated at or above their country of domicile (bound firms) in the year prior to a sovereign downgrade event.
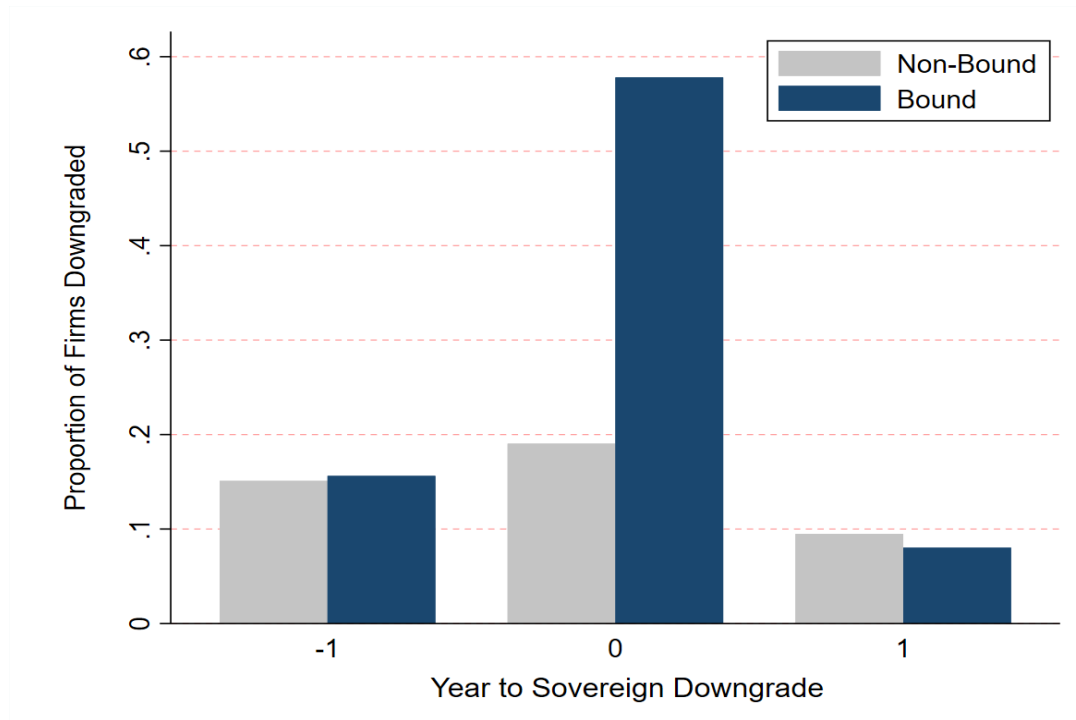
Figure IA.3

Proportion of firms in each group with a rating downgrade in the month before, month of, or month after a sovereign downgrade

This figure depicts the proportion of firms that had a corporate rating downgrade, grouped by pre-downgrade distance between corporate credit rating and the corresponding sovereign credit rating, the month before (left panel), month of (middle panel), or month after (right panel) a sovereign downgrade. Grey bars represent firms rated below their country of domicile (non-bound firms); navy bars represent firms rated at or above their country of domicile (bound firms).

(a)   (b)   (c)