"S" as Social:
Global Credit Markets Responses to the Labor and Community Issues

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Abstract

Employing a difference-in-differences approach, we analyze how social incidents in different countries are perceived in global credit markets. Credit Default Swap (CDS) spreads jump immediately for affected firms, with stronger effects for repeated and more severe incidents. The credit market distinguishes between labor-related and community-related issues. CDS spread increases upon labor incidents are greater in consumer-facing and competitive industries, and in countries with stronger employment laws, suggesting that worse firms' internal relationships with employees affects credit risk primarily via a fundamental channel, as evidenced also by their direct impact on investments, leverage, operational costs and profitability. Community incidents do not have a significant impact on these fundamentals and they trigger more pronounced CDS spread increases in countries with weaker institutions and information environments via a signalling channel. Firms' external relationships with communities are particularly important for credit markets where country-institutional and information voids are greater. Furthermore, we find that institutional investors' ownership can ameliorate the adverse effects for both types of incidents.

Keywords: Credit Default Swaps (CDS); Social incidents; Labour-related incidents; Community-related incidents; Consumer-facing firms; Competition; Employment laws; Country-institutional voids; Institutional investors ownership.

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1. Introduction

Stakeholder welfare has increasingly received widespread attention around the world. Our study provides insights into the connection between negative social incidents, i.e., 'S-incidents' (where 'S' denotes the 'social' pillar in a firm's ESG-related policies and practices), and their impact on credit risk assessment of firms around the world. While many studies explore the three pillars of ESG concurrently, our research reveals that 'S-incidents' lead to a systematic reassessment of credit risk, and moreover, within the realm of 'S-incidents', labor- versus community-related incidents are perceived differently by investors in the global credit markets.

Because creditors of a company are generally more sensitive to downside risks than upside gains, social incidents become especially relevant to credit market investors compared to equity holders. Social incidents related to employment and community relationships can escalate fundamental business risk due to loss of customers' trust and loyalty, diminished sales, more entry barriers to new markets, higher labor costs, broader employee dissatisfaction, legal consequences, etc. This can increase firms' business expenses, erode the firm's financial performance, make firms face more credit constraints, and lead to greater default risk.[1] Social incidents could also send signals about firms' reputation risk even when these misconducts have no immediate impact on firms' fundamentals and/or require major corrective actions. The strength of the signal may vary across different country-institutional and information-diffusion environments. It is unclear

[1] A notable example is the UK-based global fast-fashion brand Boohoo, which experienced an ethical and reputational crisis following The Times' revelation of unacceptable working conditions in July 2020. Major retailers, including Next, Zalando, and Amazon, responded by removing Boohoo clothing from their platforms. Boohoo's market value plunged by over £1.5 billion in two days, representing a third of its equity market value loss; the 5-year probability of default and actual spreads increased by over 90% upon the news release (https://nuscri.org/en/data/companyalldata/164232/0/). Boohoo reached RepRisk's high risk category on July 10, 2020 (https://www.reprisk.com/news-research/case-studies/boohoo-group).

whether and how credit markets value poor social practices because investors need to factor in heightened operational risk, intangible reputation risk, and the costs of additional investments to rectify the negative impacts of such incidents. The issue is particularly pronounced internationally, as corporations operating in different nations are embedded in distinct institutional environments where socially responsible standards and behaviors vary considerably across countries (Campbell, 2007; Maignan & Ralston, 2002; Ioannou and Serafeim, 2012).

Exploiting data on over 1,000 corporate social incidents globally between 2007 and 2019, captured by the RepRisk ESG Risk Platform, our study investigates whether and how social incidents matter in credit risk valuation.[2] The data provides detailed information on the date and content of these publicly observable events. Leveraging external media coverage of social incidents helps circumvent two measurement challenges in corporate social responsibility (CSR) and Environmental, Social, and Governance (ESG) research. First, incidents voluntarily disclosed by corporations are susceptible to self-reporting bias and the influence of ESG-washing incentives. Second, CSR or ESG ratings are often time-invariant and subject to measurement divergence, error and data rewriting issues (e.g., see Kruger, 2015; Berg et al. 2021, Berg et al., 2022).

Employing a difference-in-difference approach, we present short-term event study evidence on changes in credit default swap (CDS) spread when social incidents are publicly disclosed for affected firms, compared to a matched group of unaffected firms. The short-run event study method enables us to establish a clear causal relationship between social incidents and changes in credit risk while alleviating concerns about reverse causality. Short-term CDS spread changes

[2] Using artificial intelligence, machine learning, and analysts' manual checks, RepRisk screens daily over 100,000 public sources and stakeholders in 23 languages to systematically identify and assess material ESG risks. One advantage of RepRisk is that it uses Bidirectional Encoder Representations from Transformers (BERT) models, the latest and most important developments in natural language processing (NLP), that mimic human cognitive abilities by highlighting relevant parts of the inputs data in a forward and backward direction simultaneously. Source: https://www.reprisk.com/news-research/resources/the-advantage-of-artificial-human-intelligence-at-reprisk.

capture the re-evaluation of credit risk in response to the arrival of new information associated with corporate misconduct. In contrast, long-run credit risk studies or low-frequency CSR/ESG measures that find a negative relationship between CSR and credit risk cannot rule out the explanation that firms with greater credit risk may engage in more social misconduct. Additionally, the short-term event study provides a cleaner test that is less likely to be affected by the confounding effects of other corporate events over more extended periods.

We find that, within the [-1, 1] day event window around social incidents, the event firms on average suffer a significant 'abnormal' CDS spread increase by 0.93 basis points (bps) more than unaffected firms in the control group. The economic magnitude is sizeable, with the change being *ten* times the average CDS change in a three-day window with no incidents. The market reaction is more pronounced for firms involved in labor-related incidents than communities-related incidents, for those with a history of social incidents (repeat offenders) and for those involving more severe incidents. Specifically, within labor incidents, market reactions are strongest for incidents related to "forced labor," "child labor," "occupational health," and "poor employment conditions", with abnormal CDS spread changes ranging from 1.3bps to 3.1bps for the three-day event window. Those "with impacts on communities" have the most significant effects (1.1bps for [-1, 1] event window) within the category of community-related incidents. Our analysis highlights that 'S-incident recidivism' has a substantial and timely impact on credit risk assessment.

Next, we examine the transmission channels for negative CDS market responses to social incidents. First, we analyze a *fundamental channel*, i.e. we look at whether social incidents have longer-term effects on firms' fundamentals which – if correctly anticipated - increase credit risk assessment. Specifically, we look at the reduction in firms' investments and profitability, increase

in debt, and changes in operational costs, one year after the incidents are reported by the media. We do find such impact on firms' fundamentals, but only for labor-related incidents.

Within the realm of social incidents, the specific nature of labor and community incidents differs markedly. Labor incidents involve employees, a firm's internal and one of core, value-relevant stakeholders. These incidents require an internal focus and can generate tangible operational risks for exposed firms, necessitating corrective actions such as discontinuing the employment of minors or forced labor or child labor, or improving health and employment conditions. In addition, the resolution of such incidents often has legal consequences, such as payment of penalties and remedies that increase business expenses. Moreover, prior studies on employee relations indicate that employee satisfaction enhances firms' productivity and financial performance, leading to positive stock returns and increased market-to-book ratios (e.g., Bird et al., 2007; Edmans, 2011; Faleye and Trahan, 2011; Green et al., 2019). With lower employee satisfaction, labor incidents will increase employment turnover and retention costs, negatively impacting firms' productivity. Hence, labor-related incidents may result in higher extraordinary costs, reduced profitability, increased debt, lower investments, and higher credit risk.

Second, we investigate what firm-, industry- and country-level factors aggravate or mitigate the negative CDS market responses, with an aim to shed further light on the transmission channels, especially given that we find no evidence of the fundamental channel on community incidents. Our analysis reveals distinct moderating factors for labor- versus community-related incidents, indicating that the transmission channel differs markedly between these two types of social incidents.

The effects of labor incidents via a fundamental channel are expected to be more pronounced in consumer-facing industries (Yee et al., 2008; Lee et al., 2020), in industries with intense product

market competition (Francis et al., 2019), and in environments characterized by stronger employment protection laws (Young and Makhija, 2014). Unfavorable employment conditions in consumer-facing sectors can directly impact customer satisfaction, sales, labor costs, and employee turnover, leading to more pronounced impacts on operational performance than in other industries. Companies in competitive industries face greater market competition, barriers to entry, and employee recruitment pressure. Those with better employment practices may gain a competitive advantage, attracting customers who prioritize ethical and social considerations. Further, in environments with more stringent employment protection laws, firms will face increased operational and reputation costs when addressing adverse outcomes resulting from incidents related to labor discrimination, workplace safety and health hazards, or mistreatment of employees.

Our analysis confirms that CDS spread increases associated with labor incidents are indeed greater for firms operating in consumer-facing industries, highly competitive industries, and countries with strong employment protection laws. These results provide evidence supporting that a 'fundamental channel' is of primary importance for labor-related social incidents in the credit market.

In comparison, community-related incidents involve relationships with external (peripheral) stakeholders and are likely to have a 'softer' influence on firms' downside risk. While they may not necessarily affect firm fundamentals or require immediate legal penalties and corrective actions as labor incidents, such incidents can increase reputation risk, akin to an intangible asset that is challenging to value.[3] They could harm firms' moral capital, limit resource access, and

[3] Prior literature suggests that capital markets tend to underestimate the value of intangible assets, including certain aspects of corporate sustainability (e.g., Gompers, Ishii, and Metrick 2003; Edmans 2011; Edmans, Li, and Zhang 2017).

increase information uncertainty. Drawing on signaling theory and the institution-based view, close social connections with external stakeholders can help address institutional voids. This strategic approach is particularly valuable in regions with weaker local institutional infrastructure and more limited access to quality information (Jones, 1995; Miller et al., 2009; El Ghoul et al., 2017). Unlike internal relationship with employees, external relationships with community are particularly important where institutional voids are high. In other words, the news related to these incidents provide cues about the firms' 'social conduct', and the information is more valuable when the signals about the firms are less transparent, either because of the absence of voluntary disclosure, or because of the absence of regulation and external pressure that mandates/ encourages this disclosure.[4] Hence, a poorer country-institutional environment and a weaker information disclosure environment at both the country and firm level could magnify the negative *signalling* effect of community-related incidents by causing a stronger negative impact on CDS spreads soon after these incidents are revealed.

Our empirical analysis demonstrates that news of community-related social incidents is more negatively perceived in the credit market for firms operating in countries with inferior institutional environments, including government efficiency, the overall rule of law, and regulations to prevent and control corporate misconducts. Countries with restricted freedom of speech and no mandatory requirements regarding social incidents and firms with higher information asymmetry trigger a stronger credit market reaction after community incidents, likely due to the accumulation of negative news and a sudden influx of *unexpected* information. Our results support the role of social incidents in providing signals to the credit market and filling institutional voids, in line with El

[4] Prior literature (Cooper et al., 2010; Cuervo-Cazurra, 2006) reports that people in societies with weaker political rights are less likely to express their concerns through the media or NGOs freely, and corruption influences the cost of improving firm's transparency through activities such as bribery.

Ghoul et al. (2017), Su et al. (2016). However, our results also provide evidence that this *signalling channel* dominates the fundamental channel for community incidents.

In the last part of this paper, we show that institutional ownership can mitigate the negative effect for both types of incidents, suggesting that it provides a certification value in stabilizing credit market investors' confidence in firms' ability to address the material consequences and reputation crises following social incidents. The wide expertise with corporate issues of institutional investors could aid firms in resolution of controversies and implement timely corrective actions, thereby reducing credit investors' concerns about firms' default risk. We also provide further analysis that shows our results are robust to a number of checks. Finally, we find that social incidents lead to declines in firms' social ratings post labor-related incidents, confirming that labor incidents have stronger effects on firms.

Our study contributes to the literature on the impact of ESG, and in particular, 'S-incidents', on firm financial performance and risk. Extant studies highlight reputational effects of various corporate irresponsible incidents (e.g., Karpoff and Lott Jr, 1993; Zyglidopoulos, 2001; Armour, Mayer, and Polo, 2017) and the detrimental effects of social misconduct on equity-holder evaluations due to reputation risk (Wong and Zhang, 2022).[5] Unlike prior studies, our study focuses on immediate credit market reactions to a large sample of social incidents in a global setting and conduct a granular analysis of two types of incidents, i.e., labor-related and community-related incidents.

Second, unlike Kölber, Busch, and Jancso (2017) that shows firms with irresponsible corporate conduct face higher financial risk through a media coverage channel, proxied by the reach and

[5] Theoretically, social misconducts could generate substantial unwanted stakeholder attention on firms (Deephouse and Heugens, 2009) because it can damage organizational reputations (Mishina, Block and Mannor, 2012).

severity of coverage, we uncover context-dependent economic transmission channels that social incidents impact credit risk through fundamental business risk and relationships with external stakeholders. We find that the fundamental channel is of primary importance for labor-related incidents while the signalling channel, the country institutions and the information environment are particularly important for community-related incidents.

Third, we provide novel evidence that institutional ownership mitigates the adverse impacts on credit risk for both labor and community incidents. Moreover, social incidents, in particular, labor incidents, have a lasting impact on firms' social ratings.

Our study holds important implications for corporate credit risk management. For instance, firms operating in consumer-facing industries, highly competitive industries, and strong employment protection environments should especially incorporate social responsibilities into their employment policies, considering customers' and investors' growing interest in a firm's practices regarding labor conditions. Firms in countries with weaker institutional environments should actively manage their social reputation and be mindful of the impact of their behaviors on community relationships and credit risk.

The paper is organized as follows. Section 2 conducts a literature review. Section 3 describes the data and sample used and presents summary statistics. Section 4 discusses the empirical methodology and event study results. Section 5 analyzes economic transmission channels and firm-, industry-, and country-level moderating factors. Section 6 concludes.

2. Literature Review

2.1 Equity market valuations of ESG and CSR practices

Most of the previous studies focus on the impact of the broader Corporate Social Responsibility (CSR) and Environment-Social-Governance (ESG) performance in equity markets.[6] For instance, earlier studies show that CSR performance is linked to better financial performance in equity markets and firms can benefit from investing in CSR (e.g., Arya and Zhang, 2009; Menz, 2010; El Ghoul et al., 2011; Flammer, 2015; Albuquerque et al., 2019; Shih et al., 2021) via obtaining lower cost of equity. However, there is mixed evidence on whether ESG can be incorporated into equity valuation in a timely manner.

Some studies show that the financial performance of a firm with poor ESG practices can be hindered by reputational damage (Fombrun and Shanley 1990), whistleblowing employees (Dyck, Morse, and Zingales, 2010), or community resistance to the firm's local projects and lower social capital and trust (Lins, Servaes, and Tamayo 2017). Stocks with good governance generate positive abnormal returns (Sloan, 1996; Gompers et al., 2003). Markets penalties in the case of negative earnings surprises are smaller for firms with higher reputation (Pfarrer et al., 2010).

Other studies show that markets tend to underestimate the value of *intangible assets*, including certain aspects of corporate sustainability; for instance, corporate governance (e.g., Gompers, Ishii, and Metrick 2003), employee satisfaction (Edmans 2011; Edmans, Li, and Zhang 2017). Glossner (2021) finds that investors underreact to firms' worse ESG practices because of the obstacles in estimating the economic implications of ESG. Hong and Kacperczyk (2009) find that 'sin' stocks (alcohol, tobacco, and gaming, which can be seen as a poor S in ESG) display higher returns than other stocks. Investment professionals and institutional investors may not use ESG information due to a lack of comparable and reliable information (Amel-Zadeh and Serafeim,

[6] The wider research on stock market reactions after corporate misconduct, mostly conducted via event-study settings, shows that firms experience significant share price declines after the revelation of misconduct due to their lower expected future profitability and higher risk (e.g., Palmrose et al., 2004, Gande and Lewis, 2009, and Murphy, Shrieves, and Tibbs (2009).

2017). Managerial short-termism may lead to ignoring ESG policies and practices (Bénabou and Tirole 2010).

From a theoretical standpoint, Pedersen et al. (2021) reconcile the opposing views that investors underreact to ESG practices and those arriving at the opposite conclusion. They propose that ESG plays a dual role in affecting investor preferences both directly and indirectly because ESG performance is informative of risk and expected returns. The interplay between these two dimensions allows for various potential outcomes in equilibrium. They argue that the undervaluation of ESG firms is associated with lower investors' demand (in the case of Hong and Kacperczyk, 2009, and Glossner, 2021), rather than investors' lack of ESG interest or attention.

2.2 Credit market valuations of ESG and CSR practices and reputation losses

Regarding the impact of ESG and CSR on credit and debt markets, results are more mixed. Jiraporn et al. (2014) find that more socially responsible firms (better in CSR) enjoy more favorable credit ratings. Goss and Roberts (2011) find that firms with more ESG concerns are charged with higher loan spreads. On the other hand, Bahra and Thukral (2020) show that there are insignificant correlations between ESG scores and credit ratings, but that ESG scores can be used to reduce risks (e.g., volatility and drawdowns). Similarly, Stellner et al. (2015) finds only weak evidence that superior corporate social performance results in systematically reduced credit risk; excellent social performance is rewarded with better ratings and lower credit spreads only if recognized by the surrounding environment where a firm operates.

Earlier studies relying on ESG/CSR ratings or scores suffer from timeliness and measurement divergence and errors issues (e.g., see Kruger, 2015; Berg et al. 2021, Berg et al.,

2022).)[7] Several recent studies investigate the impact of ESG incidents covered by RepRisk on financial risk (Kölber et al., 2017) and bank loan contracting (Becchetti and Manfredonia, 2022). However, they do not explore the differential impact of labor- and community-related social incidents on credit risk assessment. Our study examines the global CDS market response to the specific content of social incidents and the underlying economic mechanisms driving the observed effects based on heterogeneity of the market responses conditional on firm, industry, and country features.

Our paper is also related to theoretical and empirical literature investigating the borrower's reputation on costs of debt. Social incidents lead to greater reputation risk, which may cause litigation risk and changes in customers' preferences customers with a negative impact on the business.[8]

A good reputation reduces the monitoring costs of financial intermediaries to limit moral hazard. Diamond (1989) argues that borrowers with established track records find it more costly to engage in risk shifting to the detriment of lenders, reducing the need of bank monitoring and restrictive covenants. Demiroglu and James (2010) observe that in leverage buyout debt the higher reputation and experience of the private equity groups sponsoring the deals is negatively related to credit spreads, as the deals are viewed by lenders as less risky, resulting in better lending terms.

[7] Recently, ESG ratings providers have come under scrutiny over concerns of the reliability of their assessments. Berg et al. (2021) document widespread changes to the historical rating of Refinitiv ESG. Berg et al. (2022) investigates the divergence of ESG ratings based on data from six prominent ESG rating agencies and detects a rater effect where a rater's overall view of a firm influences the measurement of specific categories.

[8] As Eccles et al. (2007) explain, the company's overall reputation is a function of its reputation among its various stakeholders (creditors, equityholders, customers, suppliers, employees, regulators, and the communities in which the firm operates) in the specific categories which are relevant to these stakeholders (e.g., financial performance, corporate governance, product quality, customer service, employee relations, intellectual capital, handling of environmental and social issues). A strong positive reputation among stakeholders across multiple categories will result in a strong positive reputation for the company overall.

On the other hand, reputational losses reflect the present value of higher contracting costs, leading to the inclusion of adverse adjustment by lenders in bank loan contract terms (Karpoff and Lott, 1993; Karpoff et al., 2008; Deng, Willis, and Xu, 2014; Graham, Li, and Qiu, 2008; Bharath et al., 2008).

Reputational losses after social incidents also send negative signals to the market about firms' agency risk, divert managers' attention, harm firms' credibility, undermine management recruitment and retention, and heighten information uncertainty about firms' prospects. These outcomes likely increase perceptions of default risk by credit market investors. Our study extends this strand of literature to the impact of reputational losses arising from negative social incidents worldwide on corporate credit risk. Moreover, we explore heterogeneity of reputational losses conditional on incident types and firm, industry, and country features.

2.3 Labor-related and community-related incidents and transmission channels

Labor-related social incidents and community-related social incidents differ significantly by nature and may affect corporate credit risk through distinct channels. The former reflects the corporate relationship with employees, a vital type of internal stakeholder. Employees are among a firm's most crucial, value-relevant internal stakeholders, with their human capital representing a major source of value creation, especially in highly competitive industries. Establishing a positive relationship with employees can enhance productivity and financial performance. Good employee treatment fosters loyalty, reduces labor mobility, and mitigates the potential risk of knowledge transfer to rivals, thereby improving operational performance (Yee et al., 2008) and reducing income stream uncertainty (Edmans 2013; Hanse and Wernerfelt, 1989; Preston and O'Bannon 1997). Previous studies on employee relations generally find that employee satisfaction and labor-

friendly policies are positively associated with future stock returns and market-to-book ratios (e.g., Bird et al., 2007; Edmans, 2011; Faleye and Trahan, 2011). In addition, fair treatment of employees may influence the perceived corporate social responsibility by consumers, suppliers, lenders, and other investors (e.g., Becker-Olsen et al., 2006; Edmans, 2011; Glavas and Kelly, 2014; Francis et al., 2019).

The impact of labor practices on firm performance varies across industries. Yee et al. (2008) find that employee satisfaction is significantly related to service quality and customer satisfaction, influencing firm profitability and operational performance in the high-contact service sector. Lee et al. (2020) show that employees' satisfaction and perceptions of managers and firms, as revealed by the average online employee rating realizations on Glassdoor.com, decline more sharply following tax avoidance news in consumer-facing industries. Francis et al. (2019) discover that fair employee treatment reduces loan prices, more substantially affecting firms operating in more competitive industries. Motivated by these studies, we examine whether credit market reactions are more pronounced in consumer-facing sectors and industries with more intense competition.

Community-related social incidents, such as local participation issues or land- and water-grabbing, reflect the corporate relationship with communities, a category of external stakeholders. A good relationship with communities can reduce firm risk (Belkaoui, 1976; Spicer, 1978; Godfrey, 2005; Miller et al., 2009; Albuquerque et al., 2019). In addition, it enables firms to improve access to resources by avoiding decisions that might prompt stakeholders to impede firm objectives and by engaging key stakeholders controlling crucial resources (Berman et al., 1999). Godfrey (2005) presents a theory asserting that corporate philanthropy can generate positive moral capital, such as reputational capital, trust, and positive actions among communities and stakeholders. This

provides firms with insurance-like protection for their relationship-based intangible assets.[9] We contribute to this literature by using observable incidents as a measure of labor or communities-related social misconducts by corporations and by linking them to the response of credit markets.

Transaction costs and signaling theory are often used to explain firms' relationships with external stakeholders. Within the institutional theory, Campbell (2007) argues that the way corporations treat their stakeholders depends on the institutions within which they operate, including public and private regulation, external organizations that monitor corporate behavior, institutionalized norms and organized dialogues among corporations and their stakeholders. Close social connections with external stakeholders help fill gaps in institutional infrastructure, thereby reducing the firm's informational, agency, and transaction costs (e.g., Jones, 1995; Miller et al., 2009). Su et al. (2016) demonstrate that the institutional environment moderates the signaling effect of CSR on a firm's financial performance in countries with less developed capital markets and low information diffusion. El Ghoul et al. (2017) develop a theoretical framework exploring the role of CSR in providing signals to investors and filling institutional voids. They find a more positive relation between CSR and firm value in countries with weaker market-supporting institutions, suggesting greater strategic value of CSR where institutional voids lead to higher transaction costs.

Motivated by this literature, we anticipate that the market reaction to social incidents, and particularly community-related incidents where external stakeholders are involved, is stronger in countries with greater institutional voids. In more developed capital markets with more information, investors can assess firms from other reliable sources. However, in an environment where the local institutional infrastructure is poor and access to information is limited, negative

[9] See Godfrey (2005) for a literature review of empirical and theoretical studies on corporate strategic philanthropy.

incidents news will play a more significant signalling role in filling institutional voids. Our analysis of the moderating role of industry and country institutional factors contributes to understanding different economic transmission channels through which social incidents can affect firms' credit risk.

3. Data, Sample, and Summary Statistics

3.1 Social Incidents Data from RepRisk

We retrieve social incidents' occurrence, nature, and timing from the RepRisk database. Using artificial intelligence, machine learning, and analysts' manual checks, RepRisk analyzes daily-updated news data to flag and monitor *material* ESG violations of international standards. The RepRisk ESG Risk Platform covers more than 245,000 public and private companies across many sectors and markets. RepRisk screens over 100,000 public sources and stakeholders in 23 languages daily to systematically identify and assess material ESG risks.[10] RepRisk research scope comprises 28 ESG issues that are broad, comprehensive, and mutually exclusive. Every risk incident in the RepRisk dataset is linked to at least one of these issues defined following a rules-based methodology and the key international standards related to ESG issues and business conduct. RepRisk maps its data to international ESG and regulatory frameworks, such as Sustainable Development Goals (SDGs), SASB Materiality Map, Sustainable Finance Disclosure Regulation (SFDR), the ten principles of the UN Global Compact, the Australian and UK Modern Slavery Acts, and the German and California Transparency in Supply Chain Acts.

[10] These sources include print media, online media, social media, blogs, government bodies, regulators, think tanks, newsletters, and other online sources at an international, regional, national, and local level. While RepRisk does not verify or validate reported allegations, it conducts quality checks and regularly reviews.

RepRisk further classifies incidents based on three parameters. First, it provides information on the severity (harshness) of the risk incident or criticism. There are three levels of severity: low, medium, and high severity. This is determined as a function of three dimensions: the consequences of the risk incident (e.g., to health and safety: no further consequences, injury, death); second, the extent of its impact (e.g., one person, a group of people, a large number of people); and whether an accident, negligence or intent cause the risk incident.

RepRisk also classifies incidents based on the outreach of the information source, i.e., readership/circulation and the importance of a particular news outlet in a specific country. All sources are pre-classified by reach: limited reach (local media, smaller NGOs, local governmental bodies, and social media), medium reach (most national and regional media, international NGOs, and state, national, and international governmental bodies), and high reach (the few genuinely global media outlets).

Finally, we also have information on the novelty (newness) of the issues addressed for the company and project, i.e., whether it is the first time a company/project is exposed to a specific ESG Issue in a particular location. Any risk incident is only reflected once in the RepRisk dataset unless the risk profile of the incident changes and increases the reputational risk for the company; that is, if there is a new development related to the same issue, if the problem appears again in a more influential source, or the problem appears again for the same company in the same country after a six-week period, which is a potential signal that the issues are unresolved.

In this study, we focus on social incidents that are defined as incidents impacting on community relations (human rights abuses and corporate complicity, impact on communities, local participation issues, and social discrimination) and labor relations (forced labor, child labor, freedom of association and collective bargaining, discrimination in employment, occupational

health and safety issues, poor employment conditions). A detailed description of these categories of incidents is provided in Appendix A.

We collect information on all social incidents related to firms in all different countries covered over 2007-2019 in the RepRisk database. We then match these data to Markit and Compustat Global to retrieve the affected firms' daily CDS spreads and financial information. CDS spreads are observed at the daily frequency for 5-year maturity contracts. We also build a control sample of unaffected companies based on one-to-one matching with firms affected by social incidents. Each firm in the control group is selected to match each firm in the treatment group based on the firm being located in the same country, operating in the same industry, and having similar size, leverage, cash, ROA, and rating status (investment grade or speculative grade) as the firm recording social-incident news item(s). We collect the CDS and financial data for firms in the control group from Markit and Compustat Global.

3.2 Sample and Summary Statistics

Our final sample consists of 1,754,584 CDS spread daily observations for 170 firms in 15 countries.[11] Financial institutions have been excluded from the sample. We retrieved 1,091 social-related incidents covered by the RepRisk database from 2007-2019. We start in 2007 because that is the year when RepRisk coverage begins. We ended the sample in 2019 since CDS spread behavior was largely affected by the COVID-19 pandemic afterward (Hasan et al., 2023), and confounding effects may be misleading to report clear results around social incidents.

[11] The countries are Australia, Bermuda, Brazil, Canada, Switzerland, Germany, Spain, France, United Kingdom, India, Japan, South Korea, New Zealand, United States, and South Africa. It is important to notice that RepRisk searches for ESG risk incidents in 23 languages – English, Arabic, Chinese, Danish, Dutch, Filipino, Finnish, French, German, Hindi, Indonesian (Bahasa Indonesia), Italian, Japanese, Korean, Malaysian (Bahasa Malaysia), Norwegian, Polish, Portuguese, Russian, Spanish, Swedish, Thai, and Turkish. Hence, the official languages (or, in the case of India and South Africa, at least the main one, respectively Hindi and English) of each country in our sample are all covered.

Table 1 in Panels A and B reports the summary statistics for daily CDS spreads and absolute CDS spread changes by country. India and Bermuda are the countries recording both the highest average CDS spreads, and the highest CDS spread changes over the sample period. Most CDS observations relate to U.S. firms (47%), followed by Japan (23%), the UK (7%), Germany (5%) and France (4%).

[Insert Table 1 here]

Table 2 presents the number of firms by country in our sample and the number of incidents by country and by sub-category of incidents. The number of incidents is higher than the number of firms. The overall incident per firm ratio is about 6:1; some firms are involved in multiple incidents.

[Insert Table 2 here]

The higher percentages of incidents are recorded in the U.S (47%), Japan (18%), the U.K. (16%), and Germany (11%). This tracks the firms' distribution by country, but not in an exact manner. We have 54% of firms located in the U.S. and 22% in Japan, for instance, but only 9% and 3% respectively in the U.K. and Germany. This means we have a proportionally higher concentration of social incidents in the latter two countries than in the former.

In Panel A of Table 3 we report the summary statistics for the variables used in the main regression analysis (in section 4.2) for the full-matched sample of treatment and control firms. The average firm has a 26% leverage ratio and a 9% cash-holdings ratio; in addition, 72% of the firms in the sample issue and trade debt securities with an investment-grade status.

[Insert Table 3 here]

Panel B compares firm variables between the treatment group and the matched group of unaffected firms (control group). It shows the post-match summary statistics for size, leverage,

cash ratio, ROA, and rating status across the two groups. It presents t-tests on the mean differences of each variable, which are statistically insignificant. Hence, the two samples of firms are mostly indistinguishable in terms of all these financial dimensions.

In Panel C, we present a univariate analysis of abnormal CDS spread changes across the two groups of treatment and control firms, i.e., we calculate mean differences and run t-tests to ascertain their statistical significance. For each treated firm and its control firm, we construct the cumulative abnormal CDS spread changes (CA-ΔCDS) over the event window of the social incident. On each day, the abnormal CDS spread change is calculated by subtracting from the firm's absolute CDS spread change the average absolute CDS spread change of all other firms located in the same country. CA-ΔCDS is the sum of abnormal CDS spread changes for each firm in the three days around the social incident event. We find that firms affected by social incidents record, on average, a statistically significant higher (cumulative abnormal) increase in CDS spread around the (-1,+1) and (-2,+2) event windows than unaffected firms. The abnormal CDS spread changes for the treated group within the three-day event window are 0.97 bps higher than those for the control group and statistically significant.

Figure 1 helps to visualize the time patterns of average cumulative abnormal CDS spread changes for the [-5, +5] day event window for the firms affected by social incidents (treatment firms), and for the unaffected firms (control firms). For the former group (continuous line), an abnormal increase of 0.51 basis points starts from the day before the 'bad' event is captured in the news (hence, by the RepRisk database) and then continues until three days after the event when the cumulative increase reaches a peak of 1.14 basis points. For the latter group (dashed line) we observe no impact at all: if anything, the average CDS spread 'abnormally' decreases after the

event, which could indicate a competitive effect after a control firm in the same industry benefits from media coverage of adverse social incidents of affected firms.

[Insert Figure 1 here]

4. Difference-in-Difference Test: Baseline Multivariate Panel Regression

4.1 Main Methodology

In this section, we conduct a differences-in-differences test using a multivariate panel regression, where we include both the treatment and control sample of firms in the sample and account for other variables that can explain CDS spread changes in addition to the social incident event.

In the baseline specification, we regress the cumulative abnormal CDS spread changes (*CA-ΔCDS*) on the variable *Social Incident,* a dummy taking 1 for the treated firm and 0 otherwise. Social incidents are identified by the RepRisk database. In the baseline specifications, we add controls for firm financials: firm size (the natural log of firm assets), leverage, cash holdings, return on investments, and a dummy for the investment-grade rating status, in addition to country or country-by-time and industry-by-time fixed effects. All variables are defined in Appendix B.

4.2 Baseline Results

The main results are reported in Table 4 Panel A. Column (1) shows that a firm affected by social incidents experiences a cumulative abnormal increase in CDS spread of 0.937 basis points higher than a non-affected firm over the three days (-1, 1) around the day of media coverage.[12]

[12] Because the abnormal absolute CDS spread change is calculated with respect to the country-average, the sample mean is zero by construction. Hence, a 0.9 bps cumulative increase reflects the average economic impact of the incident. To provide a size indication with respect to daily absolute CDS spread changes, Table 1 shows that their mean level for the firms in our sample is only 0.03 basis points or about 0.09 for three-consecutive days. Hence, the estimated coefficient in Table 4 is about 10 times the mean level of CDS changes).

The impact remains the same when we add country and industry-by-time fixed effects (in column 2), and it remains statistically significant at the 1% level. Since all our control firms *never* experienced any S-incident, in these regressions, we cannot control for firm fixed effects. There is no within-firm variation and this control will result in perfect collinearity.

[Insert Table 4]

In column (3), we add explicit controls for firm financials along with time-varying country factors: the natural logarithm of GDP, GDP growth, the ratio of total private credit to GDP, which captures the development of the financial sector, and the country-level default risk. In column (4), all these country factors are subsumed by control for country-by-time fixed effects (replacing country-fixed effects). Standard errors are clustered at the firm level in all the regressions, given that the same firms appear in multiple incidents (see Table 2). The social incident dummy remains economically and statistically significant across all specifications: in columns (3) and (4), the estimated coefficients are 0.831 and 0.849, respectively, qualitatively similar to columns (1) and (2). The investment-grade rating dummy has expected negative signs and is statistically significant at 10%. On average, a financially healthier company has a significantly lower abnormal increase in CDS spreads over the event window.

As shown in Table 2, some firms in our sample are repeat offenders. Hence, in Panel B of Table 4, we repeat the baseline regression specification of Panel A column (4) using two definitions of the *Social Incident* dummy. In column (1), the dummy takes a value of 1 only if the firm experiences the social incident for the first time; in column (2), only if the firm is a repeated offender. Notably, the case of repeat offenders is substantially higher than that of first-time offenders. As shown in Column (2), the dummy *Social Incident* causes a significant increase in cumulative abnormal CDS spreads only for those firms that are repeated offenders. Glossner (2021)

shows that there is a strong positive correlation between past ESG incident rates and the realization of future incidents. He documents that about half of all new incidents happen at companies with high incident rates and that past incidents are better predictors of future incident news than ESG ratings. Similarly, we observe that the CDS reactions are limited to firms that had social incidents in the past.

In Panel C, we split the sample by severity of the incidents and repeat the differences-in-differences panel regression. We use the severity variable in the RepRisk database that takes 1, 2, and 3 values. We set the 'Low severity' equal to 1 and the 'High severity' equal to 2 or 3 (the 'high' effectively captures both medium and high severity), depending on the damages caused by the social incident. Low-severity incidents have no impact on CDS spreads. In contrast, high-severity incidents cause, on average, a cumulative increase in CDS spreads 1.4 basis points above the country mean for the affected firms (at the 1% level of statistical significance). This has a more significant impact than the observed effect on the sample of social incidents in the baseline model.

Panel D shows results for longer time windows, ranging from two weeks to six months. The coefficients of the social incidents dummy are positive and significant across all event windows. Moreover, the magnitude of the coefficients increases almost monotonically from 2.7bp within the two-weeks period to 8.8bp within the six-month period. The analysis shows that the impact of social incidents on CDS spreads is not transient.

Further, in Tables 5 and 6, we look at the impact of sub-categories of social issues, as defined by the RepRisk database, on CDS spreads. By comparing columns (1) across these two tables, we find that the average economic impact of labor-related issues is higher in magnitude than the impact of the community-related problems. Table 5 reports that, within the former category, matters related to child labor, forced labor, poor employment conditions, and occupational health

instigate a statistically significant reaction in credit risk re-assessment. Our results align with Chemmanur et al. (2020), illustrating that investors pay attention to the information content of online employee ratings and hence to employment conditions and general employees' satisfaction, which is likely eroded when incidents such as those captured by RepRisk occur.

[Insert Table 5]

Within the category of community-related issues, as shown in Table 6, only incidents with 'Impacts on communities' present a statistically significant coefficient. In contrast, incidents related to human rights abuses, social discrimination, and local participation issues are not statistically significant. This suggests that community-related social incidents only cause an increase in firms' credit risk when they have real effects on communities.

[Insert Table 6]

5. Analysis of Economic Channels

Our results in Tables 4, 5, and 6 suggest that credit market investors seem to scrutinize different types of social incidents and react differently. While incidents with impacts on labor relationships and community relationships are both labeled as social incidents, the media coverage of the two types of incidents has different implications for companies. Markets need to factor in the costs of additional investments to reduce the incidents' negative impact against increased real business risks and loss of reputation as an intangible firm asset. As we discussed earlier, Pedersen et al. (2021) developed a model proposing that ESG score plays two roles: (1) providing information about firm fundamentals and (2) affecting investor preferences.

5.1 The Impact of Social Incidents on Firms' Fundamentals

After appraising the impact of social incidents on credit risk and CDS spreads of global firms over the periods when these incidents are revealed by the media and garner public attention, we are now interested to understand whether there is any longer-term impact of the incidents on firms' fundamentals which the credit market correctly anticipates.

Hence, we run a new set of diff-in-diff regressions where we use as dependent variables the firm's investments growth (CAPEX as a proxy), financial leverage ratio, profitability (ROE), and operational costs *in the year after* the social incidents were revealed. Our key independent variable is again the Social Incident dummy in the previous year, and we hold all controls used in the previous baseline regression (lagged one year). We also differentiate between labor and community-related social incidents.

The results are reported in Table 7 and show that only labor-related incidents have a statistically significant impact on these firm's fundamentals. In the multivariate regression analysis, we see that, *ceteris paribus*, labor-related incidents have a negative impact on CAPEX in the year after the incident, as the affected firms may need to reduce investments. We also observe a positive impact of labor incidents on next year's leverage of the affected firms that plausibly need to increase their debt level. Further, there is a negative and statistically significant impact of labor incidents on operational costs one year after the incident: firms may need to reduce this category of costs when they know they face the risk of higher extraordinary costs (litigation costs, etc.) connected to the incident. Finally, albeit weakly from a statistical perspective, we also reveal a negative impact of labor incidents on the affected firms' ROE (the year after the incident) as firms lose customers and profits. Notably, community incidents have no significant impact on any of these fundamental variables.

[Insert Table 7]

5.2 The Fundamental Channel: Industry Features and Employment Protection

The previous analysis shows that labor-related incidents can lead to adverse credit market reactions via a *fundamental channel*. The exposure of incidents that impact employment relationships can generate tangible and measurable business risk to the exposed companies, given that they need to take corrective actions to rectify their practices using child labor or forced labor, or improve health or other employment conditions.[13] This will be translated to higher extraordinary labor costs, greater employee turnovers, lower profits, lower investments, more debt, and escalated credit risk.

If the fundamental channel is relevant, we expect the negative effect of labor-related incidents to be more tangible and severe if firms operate in consumer-facing and highly competitive industries. In such environments, firms need to take immediate and costly actions soon after an incident, to avoid adverse consumers reactions that may translate into losing market shares to competitors (Yee et al., 2008; Lee et al., 2020; Francis et al., 2019). To define the consumer-facing industry, we use Baker, Baugh, and Sammon's (2023) study that links household transactions to firms to provide an accurate picture of their customer base. In so doing, they define the following industries that are mostly consumer-facing: building materials and garden supply,

[13] In the case of Boohoo, the media coverage led more shareholder activism aimed at forcing the company to adopt more responsible policies with regards to employment practices. In 2021 a number of investor advisory groups raised concerns over the board's handling of problems in its supply chain and advised against the high bonuses set to the executives despite an independent report finding they were aware of the problems but failed to act quickly to rectify matters. The fashion retailer is still under accusations of failing to significantly improve working conditions in its supply chain. Campaign groups Labour Behind the Label, ShareAction and the Business & Human Rights Resource Centre said they had found little evidence that Boohoo had changed its commercial purchasing practices to protect workers in its supply chain in Leicester.

general merchandise retailers, grocery stores, restaurants, hotels, personal and business services, utilities, home furnishings, apparel, communications, and airline firms.[14]

We add to our baseline regression specification an interaction variable between the *Social Incident* dummy and a consumer-facing industry dummy (equal to 1 if the firm operates in one of the above-mentioned sectors; otherwise, it is zero). Panel A of Table 8 shows that the coefficient of the interaction term is positive and significant in columns (1) and (5). This indicates that the negative impact of social-related incidents on firm credit risk is more significant for consumer-facing firms than non-consumer-facing firms, but only for labor-related incidents, consistent with the results presented by Lee et al. (2020) in the tax avoidance context and with the finding by Yee et al. (2008) that employee satisfaction is significantly related to service quality and customer satisfaction, while the latter, in turn, influences firm profitability and operational performance in the high-contact service sector.

[Insert Table 8]

Next, in Panel B of Table 8, we add an interaction term between *Social Incident* and a dummy variable for high product market competition. The coefficient is positive and significant in columns (1) and (3). This result suggests that high product market competition aggravates the negative impact of social incidents on credit risk for labor-related incidents but not for community-related incidents.[15] Our result is consistent with the finding of Francis et al. (2019) that the loan cost

[14] These industries cover trillions of dollars of revenue per year and represent a larger portion of GDP than manufacturing. Thy correspond to the two-digit SIC codes: 45, 48, 49, 52, 53, 54, 55, 56, 57, 58, 59, 70, 72, and 73.
[15] In un-tabulated results, we also add to the baseline diff-in-diff regression an interaction between *Social Incident* and an employee satisfaction proxy (i.e., the percentage of employees who states they are satisfied, which is taken from Refinitiv Workspace). The idea is to further validate the fundamental channel, as lower employee satisfaction would increase the negative impact of labor-related incidents in terms of employee turnover and extra business costs associated to recruitment of new employees, re-training, and possibly lawsuits. Despite this variable is available only for a handful of firms (the total observations drop from 2,182 to only 100), we do observe that firms with lower employee satisfaction suffer from a higher impact of labor-related incidents on their CDS spreads, as expected.

reduction effect of fair employee treatment is stronger for firms operating in a more competitive industry.

Further, the negative effect of labor incidents should be more severe in firms that operate in jurisdictions with stronger employment protection laws, as these firms will face higher costs and more complex procedures when addressing adverse consequences resulting from incidents such as labor discrimination, employee mistreatment, workplace safety, and health hazards. Such laws prevent firms from re-staffing and reorganizing labor cheaply and quickly if and when they face, for instance, large employee turnovers or corrective actions to labor-related policies and organizations. For this purpose, we use the country-specific employment laws index defined by Botero, Djankov, LaPorta, López-de-Silanes, and Shleifer (2004). We add to our baseline regression specification an interaction variable between the *Social Incident* dummy and a *Strong Employment Law* dummy (equal to 1 if the firm operates in a country with an employment laws index above the median value and zero otherwise). As expected, Panel C of Table 8 shows that the coefficient of the interaction term is negative and statistically significant only in column (1), i.e., for labor-related incidents. Although the level of statistical significance is only 10%, this result suggests that the negative impact of labor-related incidents on firm credit risk (via increased fundamental business risk) is higher for firms operating under stronger employment protection laws.

5.3 The Signalling Channel: Institutional Quality and Information Environment

In addition to increasing fundamental business risk and material costs, social incidents can increase reputation risk. They could harm firms' moral capital, limit resource access, and increase information uncertainty. This would hurt the firm's credit risk, which is observable via an abnormal increase in CDS spreads around the time of the incident. Consistently with the signaling

theory and the institution-based view, the news related to social incidents can provide cues to investors and creditors about the firms' 'social conduct', and the information is more valuable when the signals about the firms are less transparent and when the environment where the firm operated suffers from some institutional void.

Hence, to discern this additional channel, we first conduct tests based on the country's heterogeneous institutional quality and then on country-level and firm-level information transparency. Specifically, we first test whether, in countries with worse institutional environments to prevent and control firms' misbehaviors, social incidents cause a more significant impact on CDS spreads. A country's institutional environment includes not only regulative elements like formal rules, sanctions, and regulations (Scott, 2001), but also freedom of speech and information likely to alter the corporate responsibility policies' cost-benefit analysis (Palmer, Oates, and Portney, 1995). We may expect that, in countries with more significant information asymmetry and more difficult resolution mechanisms, social incidents will have greater negative consequences and substantially increase uncertainty of firms' prospects, leading to higher required credit risk premiums.

In Panel A of Table 9, we interact the Social Incident dummy with dummies for several institutional quality variables taken from the World Bank database: *Developed Countries*, *Government Effectiveness Index*, *Regulatory Quality Index*, *Rule of Law Index*, and *Control of Corruption Index*.[16] We observe negative and statistically significant coefficients for these interaction terms only for communities-related social incidents, indicating that a worse institutional environment consistently *aggravates* the negative impact on firms' credit risk prices. While the communities-related social incidents may not necessarily affect firms' fundamentals and

[16] All these variables are defined in Appendix B. In these regressions we cannot include controls for these country-level factors alone because we use country-by-time fixed effects and there would be perfect collinearity.

business risk, they have consequences on their reputation risk that are relatively harder to measure in countries with worse governance and regulation environments.

[Insert Table 9]

Next, we examine the role of a country's openness to information circulation and mandatory disclosure requirements. In general, news should have broader relevance when it is more *unexpected*. Firms' social incidents may trigger a different response depending on the ease with which information on these incidents can freely circulate and the level of 'surprise' such information can produce. In countries with limited speech freedom and no disclosure requirements, the media coverage of social incidents should trigger stronger market reactions. In Panel B of Table 9, we interact the *Social Incident* dummy with a dummy variable, *Freedom of Speech*, which is proxied by the Voice and Accountability Index score for the firm's country from the World Bank. We observe that social incidents (specifically, community-related incidents) have a larger impact on CDS spreads in countries with *less* freedom of speech. We also interact with the *Social Incident* dummy with the dummy variable *Mandatory Disclosure*. Similarly, the impact is more extensive in countries with no disclosure requirement for community-related social incidents. Our results indicate that appropriate media coverage of negative community incidents detected by RepRisk in countries with less freedom of speech and no mandatory requirement represents a surge of *unexpected* information that elicits a much stronger market reaction in credit markets.

Finally, in addition to the country-specific information environment considered in Panel B, we examine the role of information transparency at the firm level. Social incidents may trigger a different response depending on the ease with which information specific to the firm can be acquired by investors. Hence, we measure the firm-level information asymmetry by using equity bid-ask spreads, which are higher when there is less information available to investors and traders

and at analysts' coverage, i.e., the number of analysts following the firm. In Panel C of Table 9, we interact the *Social Incident* dummy with a dummy variable *High Information Asymmetry*, which is equal to 1 if the firm's equity bid-ask spread is above the top quartile of all firms' yearly distribution or if the number of analysts following the firm is below the bottom quartile of all firms' annual distribution. We observe that community-related incidents significantly impact CDS spreads in firms with higher information asymmetry. Our results indicate that adverse community incidents for more information opaque firms cause a more substantial market reaction in credit markets.

Overall, our results in this section are consistent with signalling theory and the institution-based view (Jones, 1995; Miller et al., 2009; El Ghoul et al., 2017). The strength of the signal conveyed by social incidents varies across different institutional and information-diffusion environments. Lower institutional quality and opaque information disclosure environment make assessment of reputation losses associated with community incidents more challenging and increase credit risk. Our analysis provides evidence that this signalling channel is of primary importance in the context of community incidents.

Notably, the institutional factors are not significant in the context of labor incidents. The signalling channel becomes of secondary importance if the firms are already punished by market forces (e.g. loss of consumers) or by the country's employment law when imposing corrective actions (e.g., in the case of child labor). Creditors will factor in these risks and their associated costs. Our results suggest that the fundamental channel dominates the signalling channel (emerging with worse institution and information environment) in the context of labor incidents.

5.4 Social Incident and Social Pillar Scores

As a final check to better understand the severity and consequences of social incidents, we examine the impact social incidents have on the social-pillar score of the affected firms. The social pillar score measures corporate performance and transparency in the social aspects. We retrieve these scores from Refinitiv Workspace and compare how they change after the social incident event. We use the same difference-in-difference regression analysis and control variables as in Table 4, with the new dependent variable as the change in social-pillar scores.

The results are reported in Table 10. Columns (1) to (3) report results for social pillar score change from year -1 to year 0 (incident year), while Columns (4) to (6) are for changes from year -1 to year one (after the incident). The *Social Incident* dummy has a negative and statistically significant coefficient at the 1% level in columns (1) and (4) and at the 5% level in columns (3) and (6). Hence, we observe that the social incidents decrease the social pillar scores of the affected firms in the year of the incident with respect to the year before the incident. Still, the effect is primarily driven by labor-related incidents. Also, the social pillar score decreases in the year *after* the incident.

[Insert Table 10]

This analysis provides two interesting insights. First, social incidents not only have an immediate impact on corporate credit markets, but also hurt social ratings over a longer time horizon. Second, the social ratings have 'limited attention' to only one category of the incident, i.e., the labor-related incident, versus a broader reaction of corporate credit markets to both labor and community incidents. This provides further evidence that labor-related and community-related incidents affect the market evaluation of corporate social performance and impact differently, likely due to varying economic transmission channels.

5.5 The Role of Institutional Ownership

Previous studies underscore the role of institutional investors in active ESG engagement. Some related evidence of its positive impact on firms' returns and downside risk reduction are provided respectively by Dimson et al. (2015), Barko et al. (2022), and Hoepner et al. (2023), among others. So, we pose the question: how does the presence of institutional investors affect the market reactions to social incidents? To this end, we use an interaction variable between *Social Incidents* and a dummy variable, *Institutional Ownership*, which is equal to 1 when the firm has a level of institutional ownership above the median level of the sample distribution.

The results of our analysis are reported in Table 11. Firms with higher levels of institutional ownership suffer *less* from both labor- or community-related social incidents after controlling for other firm-specific characteristics. Institutional ownership appears to offer a certification value that mitigates CDS investors' anxiety over repercussions from social incidents. It helps to stabilize investors' and stakeholders' confidence and makes them less concerned about firms' default risk. In addition, owing to their wide expertise with corporate issues, institutional investors could help firms to speed up and smooth the resolution of controversies, and implement corrective actions in a timely manner. Consequently, this helps to mitigate the adverse effects stemming from media coverage of social incidents.

[Insert Table 11]

5.6 Robustness Checks

In this final section, we conduct some robustness checks on the main results of Table 4 and report the results of these checks in Table 12. First, in column (1) we add controls for environment

and governance (E and G) incidents, as some social incidents appear to have a broader root/impact and to be related to other categories of incidents.[17] After adding these controls, we find that the incident's social nature drives the abnormal increase in CDS spreads. The coefficient of the *Social Incident* dummy remains positive and statistically significant. Even if its magnitude and significance are slightly reduced, the Environment and Governance Incident dummies are statistically insignificant in the regression, indicating that they do not explain the abnormal change in CDS spreads. The finding that 'S'-related news dominates the 'E'-related news is consistent with Vu et al. (2024) showing that the news under the E-pillar provides no abnormal stock returns while the news under the S-pillar are more substantial.

[Insert Table 12]

Next, as about half of our sample includes firms located in the U.S., in column (2), we replicate the main baseline regression excluding U.S. firms to see if our results are robust to potential sample selection bias. Interestingly, the estimated coefficient is much higher than the one estimated in the regression of Table 4 column (4) that uses the whole sample (1.180 vs. 0.849), and its statistical significance is at the 1% level instead of the 5% level. The stronger result suggests that social incidents affect developing countries more than developed countries.

One concern using the absolute CDS spread change as a dependent variable is the 'scale' problem. However, in the regressions, we use *abnormal* CDS spread changes defined as the firm's absolute CDS spread change minus the country average, which should account for the scale problem. To provide further reassurance, in column (3), we use cumulative abnormal CDS spread changes based on CDS spread *percentage change* as the dependent variable, calculated as a firm's

[17] A clear example is provided in footnote 2 for the Boohoo social-incident case in connection to bad governance of the firm. The sample size is smaller than the combined total of labor and community-related incidents because some incidents overlap between the two categories.

percentage change in CDS spreads on day *t* minus the country's CDS percentage change on day *t*. We still find a significant result for the *Social Incident* dummy: for the affected firms, the average cumulative abnormal percentage CDS spread change increases over the event window by 41% more than for unaffected firms.

Finally, in column (4), we use an alternative event window [-2, 2] centered around the social incident day. The impact of the *Social Incident* dummy is still positive and statistically significant.

6. Conclusions

In this paper, we investigate how social incidents in difference countries around the world affects the firm's credit risk, as perceived by global CDS market investors. The difference-in-difference analysis reveals that social incidents lead to higher abnormal CDS spread increases for affected firms (compared to unaffected firms), with stronger market reactions for firms that are repeated offenders and more severe incidents.

More importantly, we document the heterogeneity of market reactions differentiated by the two types of social incidents, labor- vs. community-related incidents. Our results suggest that both lead to changes in CDS spreads (with stronger reactions for labor incidents than community incidents), but likely through different channels.

Our analysis of possible economic mechanisms illustrates that labor-related incidents have a more substantial effect in consumer-facing industries when the product market competition is high and when firms face stronger employment protection laws, suggesting that such incidents provide novel information on firms' fundamental business risk. Communities-related incidents have a more severe effect on firms located in developing countries and countries with poor governance and regulation environments. The market reaction to unexpected news of community-related

incidents is also stronger for firms in countries where the freedom of speech is low, and no mandatory disclosure on social incidents is required, and for firms with higher information asymmetry. These results indicate that community-related incidents affect firms' credit risk by signalling negative social conduct of the firms to investors and creditors. Furthermore, we find that social incidents lead to declines in firms' social ratings post labor-related incidents, confirming that labor incidents have stronger effects on firms. Finally, we show that the presence of institutional ownership mitigates the adverse effects of all type of social incidents.

The contribution of the paper is three-fold. First, our findings complement the extant literature by providing evidence globally that social incidents can affect firms' credit risk and demonstrating a robust and striking difference between labor-related versus communities-related social incidents. Second, our study enriches the literature by examining transmission mechanisms underlying the CDS spread changes, i.e., a fundamental channel and a signalling channel. Third, we provide novel findings that institutional ownership mitigates the adverse impact of social incidents on firms' credit risk for both types of incidents.

Overall, our study provides a granular analysis of the impact of 'S' incidents on credit risk. The findings suggest a pragmatic need for firms to consider social and securities market consequences when making operational and strategic decisions related to employment and communities. They also have implications for corporate managers to consider industry features and country institutional conditions and actively monitor institutional ownership to improve corporate social performance and credit risk management.

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Table 1: Summary Statistics of CDS Spreads by Country

This table provides summary statistics for daily CDS Spread (Panel A) and Absolute Change in CDS Spread (Panel B) for firms in our sample countries.

Panel A. Daily CDS Spread by Country

Country	No. of observations	Mean	Std. dev.	P5	P25	P50	P75	P95
Australia	46,322	155.18	127.29	37.25	64.00	121.02	202.66	391.87
Bermuda	13,878	409.39	479.02	43.50	107.75	155.26	457.53	1484.91
Brazil	19,029	299.91	159.52	123.91	181.98	267.85	357.01	649.15
Canada	54,543	227.80	256.68	41.21	81.13	141.27	284.50	626.18
Switzerland	20,899	78.78	67.14	19.25	38.75	58.85	94.25	231.93
Germany	85,583	122.53	149.44	20.85	46.98	81.20	146.00	351.66
Spain	20,546	237.02	286.24	35.54	64.08	114.18	253.07	966.33
France	66,632	171.99	209.10	28.41	54.87	90.17	210.98	561.56
United Kingdom	115,964	129.57	155.53	28.18	55.15	87.33	138.12	404.79
India	34,430	419.12	386.97	112.66	190.00	271.90	442.85	1484.91
Japan	401,712	127.87	229.18	15.15	35.76	59.90	111.50	433.21
South Korea	30,674	151.89	134.28	40.29	76.42	107.90	172.47	392.04
New Zealand	5,444	220.07	168.00	38.88	67.70	161.95	409.88	447.03
United States	829,854	199.54	246.69	24.19	55.80	102.54	246.57	661.05
South Africa	9,074	298.05	184.99	62.17	188.19	260.64	350.46	645.21
Overall	1,754,584	179.21	239.62	23.11	50.62	93.46	202.51	611.86

Panel B. Daily Absolute Change in CDS Spread by Country

Country	No. of observations	Mean	Std. dev.	P5	P25	P50	P75	P95
Australia	46,218	0.03	11.23	-4.80	-0.47	0.00	0.32	5.00
Bermuda	13,831	0.17	23.83	-10.94	-1.00	0.00	0.96	11.28
Brazil	18,812	0.00	17.00	-11.06	-1.94	0.00	1.65	11.92
Canada	54,305	0.06	7.20	-4.60	-0.31	0.00	0.28	4.90
Switzerland	20,811	0.00	4.39	-2.95	-0.40	0.00	0.30	3.22
Germany	85,353	-0.01	7.17	-4.58	-0.59	0.00	0.44	4.73
Spain	20,484	-0.06	17.04	-6.94	-0.92	0.00	0.54	7.20
France	66,523	0.01	7.77	-7.11	-0.73	0.00	0.54	7.18
United Kingdom	115,756	0.04	8.37	-4.93	-0.63	0.00	0.53	5.28
India	33,759	0.17	24.49	-6.50	0.00	0.00	0.01	7.09
Japan	398,748	0.02	10.02	-2.93	-0.07	0.00	0.03	2.99
South Korea	30,549	-0.03	13.20	-5.93	-0.90	0.00	0.70	5.87
New Zealand	5,411	-0.09	8.50	-3.44	-0.35	0.00	0.20	3.16
United States	826,876	0.03	10.43	-5.14	-0.39	0.00	0.28	5.25
South Africa	9,004	-0.11	17.67	-10.10	-0.94	0.00	0.51	9.85
Overall	1,746,440	0.03	10.80	-5.00	-0.35	0.00	0.24	5.10

Table 2: Distribution of Firms and Social Incidents by Country

This table provides the distribution of firms and social incidents by country in our sample.

			Labor-related social incidents						Communities-related social incidents			
Country	**Number of Firms**	**Number of Incidents**	**Forced labor**	**Child labor**	**Freedom of association**	**Discrimination in employment**	**Occupational health**	**Poor employment conditions**	**Human rights abuses**	**Impacts on communities**	**Local participation issues**	**Social discrimination**
Australia	2	16	2	1	1	0	4	4	6	7	4	0
Bermuda	1	4	1	2	0	0	0	1	3	4	1	0
Brazil	1	3	0	0	1	0	1	1	1	2	1	1
Canada	3	8	0	0	0	0	1	0	3	7	4	1
Switzerland	2	14	1	7	1	0	3	3	3	11	1	0
Germany	5	115	8	7	4	4	27	21	54	56	11	3
Spain	1	1	0	0	1	0	0	1	0	0	0	0
France	2	5	0	0	0	0	0	0	2	2	0	1
United Kingdom	16	171	28	30	20	14	48	73	79	75	9	4
India	2	17	0	1	2	0	3	1	4	13	6	0
Japan	38	200	42	22	15	16	43	56	91	92	31	6
South Korea	3	9	0	0	3	1	1	6	2	4	1	0
New Zealand	1	1	0	0	0	0	0	1	0	0	0	0
United States	92	509	56	35	36	49	120	136	193	208	36	15
South Africa	1	18	0	0	0	0	2	0	10	10	5	1
Total	**170**	**1091**	**138**	**100**	**84**	**84**	**253**	**304**	**451**	**491**	**110**	**32**

Table 3: Summary Statistics of Key Variables and Univariate Tests of CDS Spread Changes

Panel A of this table reports summary statistics of key variables for the full matched sample of treatment and control firms. Panel B reports the post-match summary statistics for our matching variables for the treated group and control group. Each firm in the control group is selected to match each firm in the treated group based on the firm being located in same country, operating in the same industry, having similar size, leverage, cash, ROA, and rating status (investment grade or speculative grade). Panel C reports the univariate test results on abnormal CDS spread changes around social incidents between the treated group and the control group. Variable definitions are provided in Appendix B. Statistical significance at the 10, 5, and 1% level is indicated by *, **, and ***, respectively.

Panel A. Summary Statistics of Key Variables for the Full Sample

Variable	N	Mean	S.D.	Q1	Median	Q3
Social Incident	2182	0.5	0.5	0	0.5	1
Size	2182	9.92	1.15	8.92	10.2	10.99
Leverage	2182	0.26	0.15	0.15	0.25	0.37
Cash Holding	2182	0.09	0.07	0.03	0.07	0.12
ROA	2182	0.13	0.07	0.09	0.12	0.17
Investment Grade	2182	0.72	0.45	0	1	1
Ln(GDP)	2182	29.53	1.04	28.84	29.46	30.42
GDP Growth	2182	1.69	1.75	1.37	2.01	2.56
Private Credit to GDP	2146	159.25	36.25	149.47	174.47	184.57
Country-Level CDS Default Risk	2180	1.29	0.58	1.02	1.19	1.45

Panel B. Comparison of Firm Variables between the Treated Group and Control Group

	Treated Group (Obs.=1091)	Control Group (Obs. =1091)	Difference	T-test P-Value
Size	10.11	9.73	0.38	0.16
Leverage	0.29	0.24	0.05	0.14
Cash Holding	0.08	0.09	-0.01	0.35
ROA	0.13	0.14	-0.01	0.51
Investment Grade	0.71	0.73	-0.02	0.85

Panel C. Univariate Tests on Abnormal CDS Spread Changes around Social Incidents between Treated Group and Control Group

Abnormal CDS Spread Change	Treated Group	Control Group	Difference	T-test P-value
t=-1	0.43	0.00	0.43*	0.43*
t=0	-0.08	-0.16	0.08	0.08
t=1	0.29	-0.17	0.46**	0.46**
t= (-1,+1)	0.64	-0.33	0.97***	0.97***
t= (-2,+2)	0.66	-0.45	1.11**	1.11**

Table 4: Abnormal CDS Spread Changes around Social Incidents: Baseline DID Regression

This table reports the difference-in-differences (DID) regression results on the effect of social incidents on abnormal CDS Spread Changes. Panel A reports the full sample results. Panels B and C report results differentiating incidents by First-time vs. Repeated Incidents, and by severity of incidents, respectively. Panel D presents results for longer-time windows, ranging from two weeks (2W) to six months (6M). Variable definitions are provided in Appendix B. *t*-statistics are calculated from robust standard errors clustered by firm and are displayed in parentheses. Statistical significance at the 10, 5, and 1% level is indicated by *, **, and ***, respectively.

Panel A: Whole Sample of Treatment and Control Firms

Dep.= Abnormal CDS Spread Change (-1,+1)	(1)	(2)	(3)	(4)
Social Incident	0.937**	0.937***	0.831**	0.849**
	(2.430)	(2.708)	(2.429)	(2.479)
ln(Assets)			0.220	0.161
			(1.009)	(0.641)
Leverage			-1.491	-1.335
			(-0.846)	(-0.724)
Cash Holding			-6.624*	-7.160
			(-1.689)	(-1.623)
ROA			4.010	3.067
			(0.645)	(0.498)
Investment Grade			-1.398*	-1.409*
			(-1.819)	(-1.915)
Ln (GDP)			-4.644	
			(-0.903)	
GDP Growth			0.527	
			(0.751)	
Private Credit to GDP			-0.024	
			(-0.366)	
Country-Level CDS Default Risk			0.418	
			(0.131)	
Country FE	No	Yes	Yes	No
Country ×Year-Month FE	No	No	No	Yes
Industry × Year-Month FE	No	Yes	Yes	Yes
N	2182	2182	2144	2182
R-squared	0.003	0.346	0.349	0.446

Panel B. Differentiating Incidents by First-time vs. Repeated Incidents

Dep.= Abnormal CDS Spread Change (-1,+1)	(1) First Time	(2) Repeated
Social Incident	0.545	0.974**
	(0.583)	(2.508)
ln(Assets)	0.502	-0.077
	(0.855)	(-0.266)
Leverage	1.729	-2.610
	(0.332)	(-1.333)
Cash Holding	17.396	-12.602**
	(1.309)	(-2.458)
ROA	7.841	1.075
	(0.392)	(0.161)
Investment Grade	-1.708	-1.243
	(-1.051)	(-1.411)
Country × Year-Month FE	Yes	Yes
Industry × Year-Month FE	Yes	Yes
N	340	1842
R-squared	0.432	0.476

Panel C. Differentiating Incidents by Severity of Incidents

Dep.=Abnormal CDS Spread Change (-1,+1)	(1) Low Severity Incident	(2) High Severity Incident
Social Incident	0.311	1.394***
	(0.585)	(2.703)
ln(Assets)	0.097	0.246
	(0.220)	(0.945)
Leverage	1.550	-3.694**
	(0.412)	(-2.140)
Cash Holding	-4.365	-10.478*
	(-0.535)	(-1.870)
ROA	0.405	7.773
	(0.042)	(0.868)
Investment Grade	-1.169	-1.736*
	(-0.842)	(-1.967)
Country × Year-Month FE	Yes	Yes
Industry × Year-Month FE	Yes	Yes
N	1106	1076
R-squared	0.509	0.493

Panel D. The Impact of Social Incidents over Longer Period

	(1) 2W	(2) 1M	(3) 2M	(4) 3M	(5) 4M	(6) 5M	(7) 6M
Social Incident	2.653***	5.999***	5.151***	6.233**	7.186**	8.639**	8.805**
	(3.237)	(3.589)	(2.671)	(2.110)	(2.165)	(2.251)	(2.010)
ln(Assets)	0.257	1.790	3.858***	6.089***	5.139**	6.720**	6.431**
	(0.399)	(1.597)	(2.715)	(3.003)	(2.425)	(2.496)	(2.193)
Leverage	-9.812*	-13.409	-13.638	-31.278**	-34.537*	-31.572	-33.592
	(-1.802)	(-1.607)	(-1.256)	(-2.071)	(-1.950)	(-1.589)	(-1.462)
Cash Holding	-22.039	-8.589	19.831	21.907	-14.673	-41.043	-63.087
	(-1.584)	(-0.396)	(0.718)	(0.567)	(-0.355)	(-0.903)	(-1.352)
ROA	12.181	38.154	7.236	22.985	25.879	44.500	17.204
	(0.894)	(1.616)	(0.276)	(0.617)	(0.577)	(0.866)	(0.307)
Investment Grade	-2.432	-3.751	-5.882	-6.738	-6.135	-10.476	-10.279
	(-1.224)	(-1.170)	(-1.512)	(-1.280)	(-0.953)	(-1.245)	(-1.162)
N	2157	2126	2086	2046	2054	2064	2066
R-sq	0.481	0.434	0.405	0.424	0.433	0.446	0.451

Table 5: Abnormal CDS Spread Changes around Social Incidents: Labor-Related Social Incidents

This table reports the difference-in-differences (DID) regression results on the effect of social incidents on abnormal CDS Spread Changes for labor-related social incidents. Variable definitions are provided in Appendix B. *t*-statistics are calculated from robust standard errors clustered by firm and are displayed in parentheses. Statistical significance at the 10, 5, and 1% level is indicated by *, **, and ***, respectively.

		Sub-categories of labor-related incidents					
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dep.=Abnormal CDS Spread Change (-1,+1)	All labor-related social incidents	Only 'Forced labor'	Only 'Child Labor'	Only 'Freedom of association'	Only 'Discrimination in employment'	Only 'Occupational health'	Only 'Poor employment conditions'
Labor-related Social Incident	1.297***	1.356**	3.057**	-0.373	0.826	1.461*	1.337**
	(2.761)	(2.448)	(2.639)	(-0.322)	(1.090)	(1.656)	(2.425)
ln(Assets)	-0.395	-0.327	-0.912	-1.069	0.208	-0.198	-0.549
	(-1.105)	(-0.819)	(-1.630)	(-1.126)	(0.340)	(-0.350)	(-1.065)
Leverage	3.691	0.088	0.259	8.684	-6.548**	1.883	4.583
	(1.291)	(0.043)	(0.064)	(1.219)	(-2.202)	(0.381)	(1.184)
Cash Holding	2.781	-0.573	-4.898	-10.139	-5.273	3.465	-3.072
	(0.494)	(-0.112)	(-0.529)	(-0.963)	(-0.623)	(0.443)	(-0.411)
ROA	-3.286	-9.086	-19.237	11.365	13.336	-9.081	-4.193
	(-0.401)	(-1.017)	(-1.260)	(0.810)	(1.537)	(-0.524)	(-0.439)
Investment Grade	-1.176	-1.675	-3.238	-0.865	-0.662	-2.755	-0.901
	(-1.243)	(-1.451)	(-1.290)	(-0.355)	(-0.522)	(-1.598)	(-0.827)
Country × Year-Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Year-Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1074	276	200	168	168	506	608
R-squared	0.424	0.534	0.622	0.467	0.539	0.439	0.461

Table 6: Abnormal CDS Spread Changes around Social Incidents:

Communities-Related Social Incidents

This table reports the difference-in-differences (DID) regression results on the effect of social incidents on abnormal CDS Spread Changes for communities-related social incidents. Variable definitions are provided in Appendix B. *t*-statistics are calculated from robust standard errors clustered by firm and are displayed in parentheses. Statistical significance at the 10, 5, and 1% level is indicated by *, **, and ***, respectively.

		Sub-categories of communities-related incidents			
	(1)	(2)	(3)	(4)	(5)
Dep.=Abnormal CDS Spread Change (-1,+1)	All Communities-related social incident	Only 'Human rights abuses'	Only 'Impacts on communities'	Only 'Local participation issues'	Only 'Social discrimination'
Communities-related Social Incident	0.846**	0.720	1.091**	3.580	-0.789
	(2.340)	(1.354)	(2.130)	(1.426)	(-0.477)
ln(Assets)	0.295	0.318	0.100	-0.156	-2.825**
	(1.226)	(0.973)	(0.280)	(-0.099)	(-2.638)
Leverage	-4.414**	-2.487	-4.810	-22.588**	-19.396*
	(-2.311)	(-1.284)	(-1.390)	(-2.063)	(-1.995)
Cash Holding	-14.885***	-16.835***	-6.646	-49.365*	-53.397***
	(-3.030)	(-3.304)	(-0.935)	(-1.697)	(-2.794)
ROA	10.524*	13.435**	4.533	-18.167	-39.328
	(1.688)	(2.033)	(0.455)	(-0.563)	(-1.367)
Investment Grade	-1.458*	-1.739	-1.319	-4.168	8.043**
	(-1.724)	(-1.545)	(-1.197)	(-1.223)	(2.166)
Country × Year-Month FE	Yes	Yes	Yes	Yes	Yes
Ind × Year-Month FE	Yes	Yes	Yes	Yes	Yes
N	1620	902	982	220	64
R-squared	0.523	0.464	0.555	0.688	0.533

Table 7. Social Incidents' Impact on Firms' Fundamentals

This table reports the difference-in-differences (DID) regression results on the effect of social incidents on firms' next-year CAPEX, financial leverage, operation costs, and ROE. Variables' descriptions are provided in Appendix B. Controls are all lagged by one year. *t*-statistics are calculated from robust standard errors clustered by firm and are displayed in parentheses. Statistical significance at the 10, 5, and 1% level is indicated by *, **, and ***, respectively.

	Labor-Related Social Incidents (1)	Communities Related Social Incidents (2)	All Social Incidents (3)	Labor-Related Social Incidents (4)	Communities Related Social Incidents (5)	All Social Incidents (6)	Labor-Related Social Incidents (7)	Communities Related Social Incidents (8)	All Social Incidents (9)	Labor-Related Social Incidents (10)	Communities Related Social Incidents (11)	All Social Incidents (12)
	CAPEX			Financial Leverage			Operational Costs			ROE		
	$(t_{+1} - t_0)$	$(t_{+1} - t_0)$	$(t_{+1} - t_0)$	$(t_{+1} - t_0)$	$(t_{+1} - t_0)$	$(t_{+1} - t_0)$	$(t_{+1} - t_0)$	$(t_{+1} - t_0)$	$(t_{+1} - t_0)$	$(t_{+1} - t_0)$	$(t_{+1} - t_0)$	$(t_{+1} - t_0)$
Social Incident (t_0)	-0.004**	-0.000	-0.001	0.015**	0.006	0.006	-0.036**	-0.007	-0.014	-1.123*	-0.177	-0.423
	(-2.126)	(-0.109)	(-0.659)	(2.136)	(1.207)	(1.303)	(-2.567)	(-0.546)	(-1.109)	(-1.825)	(-0.445)	(-1.249)
ln(Assets)	0.001	0.001	0.001	0.003	0.007**	0.008**	-0.009	-0.010	-0.012	-0.163	-0.509	-0.411
	(0.972)	(0.902)	(1.052)	(0.470)	(2.139)	(2.175)	(-0.630)	(-1.030)	(-1.139)	(-0.508)	(-1.638)	(-1.545)
Leverage	0.004	-0.011	-0.007	-0.233***	-0.173***	-0.187***	0.085	-0.030	0.004	6.021**	2.088	3.433**
	(0.520)	(-1.246)	(-1.061)	(-4.402)	(-4.879)	(-5.749)	(0.808)	(-0.336)	(0.049)	(2.599)	(1.134)	(2.260)
Cash Holding	0.051**	-0.011	0.008	-0.127	-0.019	-0.013	-0.238	-0.352*	-0.325*	-1.567	-2.355	-2.082
	(2.456)	(-0.282)	(0.285)	(-1.159)	(-0.219)	(-0.179)	(-1.141)	(-1.813)	(-1.850)	(-0.380)	(-0.880)	(-0.733)
ROA	0.005	0.050	0.033	0.138	0.053	0.048	0.025	0.276	0.231	5.127	-2.492	-0.064
	(0.236)	(1.341)	(1.166)	(1.304)	(0.644)	(0.630)	(0.114)	(1.575)	(1.316)	(1.062)	(-0.735)	(-0.021)
Investment Grade	-0.000	-0.002	-0.002	0.002	0.010	0.008	0.020	-0.024	-0.016	-1.388**	-0.610	-0.766*
	(-0.021)	(-0.487)	(-0.569)	(0.150)	(1.138)	(0.967)	(0.775)	(-1.039)	(-0.758)	(-2.405)	(-1.546)	(-1.953)
Country × Year-Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ind × Year-Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	982	1513	2048	982	1515	2049	982	1515	2049	980	1515	2047
R-squared	0.563	0.529	0.512	0.553	0.530	0.536	0.520	0.463	0.469	0.508	0.511	0.509

Table 8: Abnormal CDS Spread Changes around Social Incidents: Fundamental Channel

This table reports the difference-in-differences (DID) regression results on the effect of social incidents on abnormal CDS Spread Changes conditional upon whether a firm is in consumer-facing industry (Panel A), product market competition (Panel B), and firms' employee satisfaction (Panel C). Variable are provided in Appendix B. *t*-statistics are calculated from robust standard errors clustered by firm and are displayed in parentheses. Statistical significance at the 10, 5, and 1% level is indicated by *, **, and ***, respectively.

Panel A: Consumer-facing industries

Dep.=Abnormal CDS Spread Change (-1,+1)	(1) Labor-Related Social Incidents	(2) Communities Related Social Incidents	(3) All Social Incidents
Consumer Facing Industries ×	3.264*	1.322	2.283*
Social Incident	(1.796)	(0.952)	(1.752)
Consumer Facing Industries	-1.820	-0.288	-0.813
	(-1.135)	(-0.236)	(-0.645)
Social Incident	0.501	0.567	0.326
	(0.878)	(1.493)	(0.910)
ln(Assets)	-0.402	0.286	0.152
	(-1.171)	(1.183)	(0.624)
Leverage	4.862	-3.935*	-0.462
	(1.536)	(-1.844)	(-0.218)
Cash Holding	6.305	-13.860***	-5.096
	(1.077)	(-2.828)	(-1.127)
ROA	-1.782	10.450*	3.504
	(-0.213)	(1.653)	(0.555)
Investment Grade	-1.402	-1.460*	-1.477**
	(-1.592)	(-1.729)	(-2.093)
Country × Year-Month FE	Yes	Yes	Yes
Industry × Year-Month FE	Yes	Yes	Yes
N	1074	1620	2182
R-squared	0.429	0.524	0.448

Panel B: Product Market Competition

Dep.=Abnormal CDS Spread Change (-1,+1)	(1) Labor-Related Social Incidents	(2) Communities Related Social Incidents	(3) All Social Incidents
Social Incident × High Product			
Market	1.838*	0.946	1.317*
Competition	(1.962)	(1.151)	(1.862)
Social Incident	0.923*	0.642*	0.563
	(1.844)	(1.695)	(1.542)
ln(Assets)	-0.423	0.280	0.146
	(-1.213)	(1.157)	(0.588)
Leverage	3.135	-4.426**	-1.495
	(1.102)	(-2.317)	(-0.797)
Cash Holding	3.029	-14.414***	-6.506
	(0.547)	(-2.942)	(-1.512)
ROA	-3.625	10.409	2.823
	(-0.439)	(1.649)	(0.453)
Investment Grade	-1.084	-1.410	-1.350*
	(-1.157)	(-1.637)	(-1.828)
Country × Year-Month FE	Yes	Yes	Yes
Industry × Year-Month FE	Yes	Yes	Yes
N	1074	1620	2182
R-squared	0.427	0.524	0.447

Panel C. Employment Protection Laws

Dep.=Abnormal CDS Spread Change (-1,+1)	(1) Labor-Related Social Incidents	(2) Communities Related Social Incidents	(3) All Social Incidents
Social Incident × Strong Employment Law	1.739*	-0.022	0.847
	(1.709)	(-0.029)	(1.078)
Social Incident	0.637	0.855*	0.526
	(1.090)	(1.853)	(1.218)
ln(Assets)	-0.378	0.295	0.170
	(-1.073)	(1.240)	(0.694)
Leverage	4.310	-4.425**	-0.958
	(1.459)	(-2.285)	(-0.505)
Cash Holding	2.404	-14.873***	-7.533*
	(0.429)	(-2.941)	(-1.681)
ROA	-5.572	10.542*	2.356
	(-0.706)	(1.693)	(0.390)
Investment Grade	-0.978	-1.461*	-1.309*
	(-1.012)	(-1.713)	(-1.742)
Country × Year-Month FE	Yes	Yes	Yes
Ind × Year-Month FE	Yes	Yes	Yes
N	1074	1620	2182
R-squared	0.427	0.523	0.446

Table 9: Abnormal CDS Spread Changes around Social Incidents: Signalling Channel - Country and Firm Heterogeneity Tests

This table reports the difference-in-differences (DID) regression results on the effect of social incidents on abnormal CDS Spread Changes conditional upon whether an institutional quality (Panel A) and whether a country has high level of freedom of speech and imposes mandatory social incident disclosure (Panel B), and whether the firm has higher information asymmetry (Panel C). Variable definitions are provided in Appendix B. *t*-statistics are calculated from robust standard errors clustered by firm and are displayed in parentheses. Statistical significance at the 10, 5, and 1% level is indicated by *, **, and ***, respectively.

Panel A: Countries' Institutional Quality

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Dep.=Abnormal CDS Spread Change (-1,+1)	Labor-related Social Incidents					Communities-related Social Incidents					All Social Incidents				
Developed Countries × Social Incident	-1.526					-4.939*					-4.279*				
	(-0.602)					(-1.828)					(-1.673)				
Government Effectiveness Index × Social Incident		-2.193					-3.696**					-3.399**			
		(-1.355)					(-2.053)					(-2.014)			
Regulatory Quality Index × Social Incident			-0.737					-3.197**					-2.344*		
			(-0.539)					(-2.135)					(-1.726)		
Rule of Law Index × Social Incident				-1.708					-3.243**					-2.599*	
				(-1.205)					(-2.143)					(-1.893)	
Control of Corruption Index × Social Incident					0.271					-2.727**					-2.067*
					(0.221)					(-2.241)					(-1.879)
Social Incident	2.799	4.647*	2.379	3.983*	0.893	5.568**	6.392**	5.438**	5.832**	4.823**	4.973*	5.978**	4.224**	4.865**	3.857**
	(1.120)	(1.870)	(1.179)	(1.773)	(0.477)	(2.064)	(2.269)	(2.395)	(2.379)	(2.509)	(1.949)	(2.268)	(2.076)	(2.208)	(2.248)
ln(Assets)	-0.395	-0.399	-0.405	-0.410	-0.395	0.234	0.241	0.178	0.196	0.237	0.120	0.121	0.085	0.093	0.133
	(-1.105)	(-1.117)	(-1.148)	(-1.159)	(-1.104)	(1.019)	(1.070)	(0.760)	(0.848)	(1.039)	(0.494)	(0.501)	(0.344)	(0.378)	(0.547)
Leverage	3.722	3.791	3.556	3.547	3.702	-3.831**	-3.947**	-4.831**	-4.411**	-4.149**	-0.952	-0.988	-1.659	-1.354	-1.214
	(1.300)	(1.318)	(1.207)	(1.226)	(1.294)	(-2.100)	(-2.172)	(-2.591)	(-2.408)	(-2.304)	(-0.531)	(-0.551)	(-0.889)	(-0.750)	(-0.668)
Cash Holding	2.806	2.830	2.833	2.810	2.757	-15.390***	-15.749***	-15.147***	-15.601***	-15.062***	-7.382*	-7.585*	-7.182*	-7.469*	-7.097
	(0.497)	(0.497)	(0.500)	(0.495)	(0.488)	(-3.198)	(-3.241)	(-3.213)	(-3.253)	(-3.121)	(-1.704)	(-1.745)	(-1.666)	(-1.726)	(-1.630)
ROA	-3.272	-3.257	-2.915	-3.062	-3.428	10.526*	10.623*	12.045**	10.993*	11.266*	3.000	3.110	3.996	3.312	3.644
	(-0.398)	(-0.395)	(-0.349)	(-0.371)	(-0.418)	(1.712)	(1.712)	(1.989)	(1.813)	(1.840)	(0.491)	(0.506)	(0.651)	(0.542)	(0.595)
Investment Grade	-1.168	-1.158	-1.185	-1.154	-1.162	-1.387*	-1.427*	-1.475*	-1.388*	-1.571*	-1.347*	-1.365*	-1.398*	-1.342*	-1.478**
	(-1.231)	(-1.214)	(-1.248)	(-1.212)	(-1.232)	(-1.695)	(-1.759)	(-1.820)	(-1.701)	(-1.952)	(-1.874)	(-1.900)	(-1.924)	(-1.851)	(-2.068)
Country × Year-Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Ind × Year-Month FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	1074	1074	1074	1074	1074	1620	1620	1620	1620	1620	2182	2182	2182	2182	2182
R-squared	0.424	0.425	0.425	0.425	0.424	0.527	0.528	0.529	0.529	0.528	0.448	0.449	0.448	0.448	0.448

Panel B: Countries' Freedom of Speech and Mandatory Social Incident Disclosure Rule

Dep.=Abnormal CDS Spread Change (-1,+1)	(1)	(2)	(3)	(4)	(5)	(6)
	Labor-Related Social Incidents		Communities Related Social Incidents		All Social Incidents	
Social Incident × Freedom of Speech	0.665		-5.840**		-3.581*	
	(0.285)		(-2.525)		(-1.696)	
Social Incident × Mandatory Disclosure		1.746		-1.966*		-1.246
		(1.129)		(-1.884)		(-1.247)
Social Incident	0.524	1.147**	7.556***	1.074***	4.947**	0.984***
	(0.196)	(2.360)	(2.711)	(2.735)	(1.987)	(2.638)
ln(Assets)	-0.387	-0.365	0.193	0.262	0.110	0.146
	(-1.101)	(-1.043)	(0.836)	(1.108)	(0.445)	(0.586)
Leverage	3.770	4.069	-5.159***	-4.900**	-1.752	-1.673
	(1.280)	(1.421)	(-2.720)	(-2.543)	(-0.914)	(-0.901)
Cash Holding	2.801	3.018	-14.877***	-15.595***	-7.055	-7.579*
	(0.498)	(0.558)	(-3.071)	(-3.047)	(-1.613)	(-1.683)
ROA	-3.513	-3.629	11.830*	11.197*	3.735	3.466
	(-0.430)	(-0.447)	(1.965)	(1.793)	(0.613)	(0.565)
Investment Grade	-1.138	-1.073	-1.668**	-1.638*	-1.515**	-1.511**
	(-1.177)	(-1.136)	(-2.044)	(-1.952)	(-2.060)	(-2.050)
Country × Year-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Industry × Year-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
N	1072	1080	1618	1625	2180	2189
R-squared	0.424	0.425	0.529	0.525	0.447	0.446

Panel C: Firms' Information Environment

Information Asymmetry based on:	High Bid-Ask Spread			Low Analysts' Coverage		
	(1)	(2)	(3)	(4)	(5)	(6)
Dep.=Abnormal CDS Spread Change (-1,+1)	Labor-Related Social Incidents	Communities Related Social Incidents	All Social Incidents	Labor-Related Social Incidents	Communities Related Social Incidents	All Social Incidents
Social Incident × High Info Asymmetry	1.663	2.658**	2.194*	1.825	3.474***	2.261**
	(0.968)	(2.232)	(1.941)	(1.135)	(3.294)	(2.308)
High Info Asymmetry	-1.041	1.580	1.194	-1.748	4.373	-0.500
	(-0.734)	(1.120)	(1.008)	(-1.185)	(1.631)	(-0.518)
Social Incident	0.666	0.203	0.149	0.758	-0.311	-0.019
	(1.315)	(0.570)	(0.419)	(1.339)	(-0.848)	(-0.053)
ln(Assets)	-0.363	0.439*	0.287	-0.375	0.201	0.154
	(-0.860)	(1.676)	(1.056)	(-0.746)	(0.700)	(0.501)
Leverage	4.015	-4.398*	-1.627	3.724	-3.127	-0.428
	(1.000)	(-1.750)	(-0.666)	(1.143)	(-1.565)	(-0.211)
Cash Holding	3.947	-18.958***	-9.547**	2.527	-20.781***	-10.260**
	(0.510)	(-3.425)	(-1.977)	(0.373)	(-4.198)	(-2.233)
ROA	2.670	19.782***	11.314	4.970	14.508**	8.501
	(0.259)	(2.989)	(1.648)	(0.513)	(2.404)	(1.276)
Investment Grade	-0.509	-1.294	-0.935	-0.888	-1.969**	-1.545*
	(-0.408)	(-1.461)	(-1.128)	(-0.821)	(-2.157)	(-1.863)
Country × Year-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Ind × Year-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
N	752	1217	1655	899	1372	1865
R-squared	0.441	0.524	0.459	0.466	0.557	0.488

Table 10: Social Incidents and Social-Pillar Scores

This table reports the test results on the effect of social incidents on the firms' social-pillar scores. t_0, t_{-1}, and t_{+1} indicate respectively the year of the social incident, the year before, and the year after. Variable definitions are provided in Appendix B. *t*-statistics are calculated from robust standard errors clustered by firm and are displayed in parentheses. Statistical significance at the 10, 5, and 1% level is indicated by *, **, and ***, respectively.

Dependent Variables:	Change in Social Pillar Score (t_0 - t_{-1})			Change in Social Pillar Score (t_{+1} - t_{-1})		
	(1)	(2)	(3)	(4)	(5)	(6)
	Labor-Related Social Incidents	Communities-Related Social Incidents	All Social Incidents	Labor-Related Social Incidents	Communities-Related Social Incidents	All Social Incidents
Social Incident (t_0)	-1.996***	-0.771	-1.252**	-2.836***	-1.316	-1.806**
	(-2.724)	(-1.132)	(-2.267)	(-2.647)	(-1.279)	(-2.106)
ln(Assets)	-0.296	-0.403	-0.205	0.390	-0.080	0.112
	(-0.491)	(-0.977)	(-0.600)	(0.374)	(-0.113)	(0.167)
Leverage	-2.493	0.643	-1.572	1.138	-1.120	-1.589
	(-0.627)	(0.169)	(-0.499)	(0.221)	(-0.234)	(-0.409)
Cash Holding	8.112	8.811	5.591	18.387	13.754	13.474
	(0.707)	(0.778)	(0.704)	(1.018)	(1.030)	(1.120)
ROA	-13.318*	-9.306	-10.133*	-20.287	-17.662*	-19.749**
	(-1.742)	(-1.333)	(-1.824)	(-1.615)	(-1.801)	(-2.307)
Investment Grade	1.287	0.610	0.708	0.370	0.652	0.612
	(0.980)	(0.504)	(0.760)	(0.178)	(0.436)	(0.455)
Country × Year-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
Ind × Year-Month FE	Yes	Yes	Yes	Yes	Yes	Yes
N	782	1197	1651	661	1013	1411
R-squared	0.545	0.442	0.480	0.539	0.504	0.534

Table 11: Abnormal CDS Spread Changes around Social Incidents:

Institutional Ownership

This table reports the difference-in-differences (DID) regression results on the effect of social incidents on abnormal CDS Spread Changes conditional upon firm institutional ownership. Variable definitions are provided in Appendix B. t-statistics are calculated from robust standard errors clustered by firm and are displayed in parentheses. Statistical significance at the 10, 5, and 1% level is indicated by *, **, and ***, respectively.

Dep.=Abnormal CDS Spread Change (-1,+1)	(1) Labor-Related Social Incidents	(2) Communities Related Social Incidents	(3) All Social Incidents
Social Incident × Institutional Ownership	-4.563**	-3.443**	-3.159**
	(-2.436)	(-2.014)	(-2.091)
Institutional Ownership	0.677	4.373	2.462
	(0.192)	(1.631)	(1.010)
Social Incident	3.378***	2.340**	2.205**
	(2.806)	(2.229)	(2.332)
ln(Assets)	-0.541	0.215	0.032
	(-1.553)	(0.780)	(0.119)
Leverage	1.662	-5.275**	-2.275
	(0.582)	(-2.430)	(-1.168)
Cash Holding	3.645	-17.802***	-9.124*
	(0.546)	(-3.223)	(-1.775)
ROA	-10.797	9.893	0.486
	(-1.272)	(1.532)	(0.074)
Investment Grade	-0.459	-1.473	-1.333*
	(-0.487)	(-1.509)	(-1.720)
Country × Year-Month FE	Yes	Yes	Yes
Industry × Year-Month FE	Yes	Yes	Yes
N	963	1479	1997
R-squared	0.423	0.514	0.439

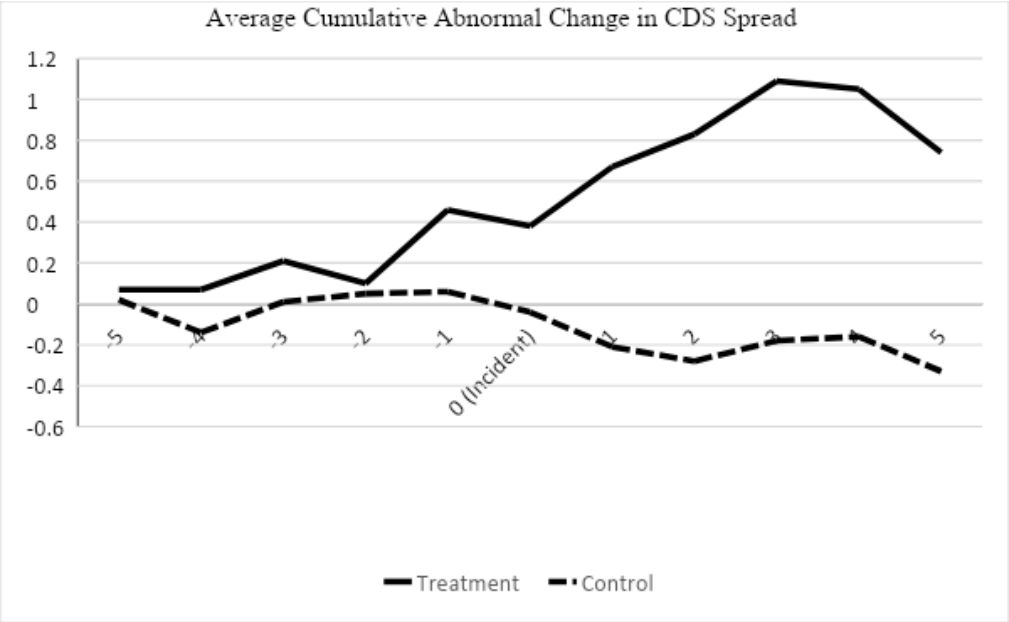
Table 12: Abnormal CDS Spread Changes around Social Incidents: Robustness Tests

This table reports the robustness test results on the effect of social incidents on abnormal CDS Spread Changes. Variable definitions are provided in Appendix B. *t*-statistics are calculated from robust standard errors clustered by firm and are displayed in parentheses. Statistical significance at the 10, 5, and 1% level is indicated by *, **, and ***, respectively.

Dep.= Abnormal CDS Spread Change (-1,+1)	(1) Control for Environment and Governance Incidents	(2) Excluding U.S. Firms	(3) Using 3-day cumulative abnormal *percentage* CDS changes	(4) Using Alternative Event Window (-2,+2)
Social Incident	0.906*	1.180***	0.406**	0.942*
	(1.913)	(2.642)	(2.122)	(1.802)
ln(Assets)	0.166	-0.040	0.115	0.381
	(0.662)	(-0.103)	(0.780)	(0.983)
Leverage	-1.329	-0.510	-1.546	-3.307
	(-0.719)	(-0.200)	(-1.610)	(-1.048)
Cash Holding	-7.141	-13.458*	-4.856*	-12.677**
	(-1.621)	(-1.738)	(-1.904)	(-2.125)
ROA	3.109	12.998	1.273	5.726
	(0.508)	(1.650)	(0.585)	(0.591)
Investment Grade	-1.411*	-0.465	-0.444	-2.750**
	(-1.915)	(-0.513)	(-1.273)	(-2.440)
Environment Incident	-0.149			
	(-0.262)			
Governance Incident	0.006			
	(0.009)			
Country × Year-Month FE	Yes	Yes	Yes	Yes
Ind × Year-Month FE	Yes	Yes	Yes	Yes
N	2182	1164	2182	2168
R-squared	0.446	0.567	0.411	0.458

Figure 1: Abnormal Change in CDS Spreads Around Social Incidents

This figure shows the cumulative abnormal change in CDS Spreads around social incidents for the [-5, 5] event window.



Appendix A - Description of RepRisk Incidents-Category 'Social Issues'

This table provides a classification and description of RepRisk social incidents.

Labor-related Social Incidents
Forced Labor This issue refers to the use of forced or compulsory labor by an employer. This includes, for example, bonded labor, prison labor, exploitative practices, full or partial restrictions on freedom of movement, withholding of wages, threats of deportation for illegal workers, etc.
Child Labor This issue refers to the use of child labor by an employer, according to the ILO Conventions. This includes, for example, child prostitution, child pornography, child trafficking, etc. for those under 18 years old.
Freedom of association This issue refers to violations of workers' rights to organize and collectively bargain. This includes, for example, interfering with union formation and participation, retaliation against striking workers, refusal to comply with union agreements, etc.
Discrimination in employment This issue refers to treating people differently or less favorably because of characteristics that are not related to their merit or the inherent requirements of the job, such as gender, religion, nationality, age, etc. Discrimination can arise either when gaining access to employment or once employees are in work.
Occupational health and safety issues This issue refers to health and safety matters in the context of employee relations within a company. This includes, for example, lack of safety for employees at work, occupational accidents related to poor health and safety measures, sickness among workers related to production processes, negligence resulting in work-related accidents, etc.
Poor employment conditions This issue refers to poor employment conditions. This includes, for example, "slave-like" working conditions, "sweatshop" labor, harassment, and mistreatment of employees (including sexual), issues related to labor contracts and/or pay, illegal employment, unfair dismissals, spying on employees, etc.
Communities-related Social Incidents
Human rights abuses and corporate complicity This issue is linked when a company is accused of committing or being complicit in human rights abuses. This includes, for example, violence against individuals, threat of violence, child and forced labor, human trafficking, organ trafficking, privatization of water sources, privacy violations, supporting oppressive regimes or terrorist organizations, trading in "blood diamonds" or "bush gold," etc.
Impact on communities This issue relates to activities of a company that leads to problems or worries for a community, such as a village or town or a group of people with common interests, values, preferences, social background, etc. This includes, for example, land- and water-grabbing, negative impacts on a community's livelihood/employment opportunities, relocation of communities, safety impacts, access to lifesaving drugs, etc.
Local participation issues

This issue covers instances in which local communities or individuals are not appropriately consulted about the activities of a company, do not benefit appropriately from their activities, or when companies use unethical tactics, such as imprisonment or harassment, to silence their critics.
Social discrimination This issue refers to treating people differently or less favorably because of certain characteristics, such as gender, racial, ethnic, or religious, outside of an employment setting (such as customers). See “Discrimination in employments” for discriminatory treatment of employees.

Appendix B: Variable Definitions

This table provides the definitions and data sources of variables used in the study.

Variable name	Variable definition	Source
Abnormal CDS Spread Change (-1,+1)	Firm's three-day cumulative spread change around social incident. Abnormal spread changes are calculated by subtracting from the firm's absolute CDS spread change the average absolute CDS spread change of all other firms located in the same country.	Compustat, Markit, and RepRisk
Social Incident	An indicator variable that takes the value of 1 for the firm on the day of incident, and 0 otherwise.	RepRisk
Ln(Assets)	Natural logarithm of total assets (AT), in US dollars.	Compustat
Leverage	Book value of debt (DLTT+DLC) scaled by the book value of total assets (AT)	Compustat
Cash holding	Cash holding (CHE) scaled by the book value of total assets (AT)	Compustat
ROA	Operating income before depreciation (OIBDP) scaled by the book value of total assets (AT).	Compustat
Investment Grade	An indicator variable that takes the value of 1 for investment-grade firms, and 0 otherwise.	Compustat
Ln(GDP)	A country's Ln(GDP), in thousands of $US dollars.	World Bank
GDP Growth	A country's GDP growth	World Bank
Private Credit to GDP	A country's private credit as a proportion of GDP.	World Bank
Country-Level CDS Default Risk	1-year average probability of default for firms in a country.	National University of Singapore, Risk Management Institute, CRI
Incident Severity	Severity of the incident, determined by the consequence of the incident, extent of the impact, and cause of the incident.	RepRisk
Developed countries	Dummy variable that takes the value of 1 for developed countries, and 0 otherwise.	IMF
Government effectiveness index	Captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation, and the credibility of the government's commitment to such policies. The relative dummy variable equals one if a country's score is above the median across all countries in the sample.	World Bank

Regulatory quality index	Captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. The relative dummy variable equals one if a country's score is above the median across all countries in the sample.	World Bank
Rule of law index	Captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. The relative dummy variable equals one if a country's score is above the median across all countries in the sample.	World Bank
Control of Corruption Index	Captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. The relative dummy variable equals one if a country's score is above the median across all countries in the sample.	World Bank
Freedom of Speech	Voice and Accountability Index from the World Bank. Captures perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media. The relative dummy variable equals one if a country's score is above the median across all countries in the sample.	World Bank
(Strong) Employment Laws Index	Measures the protection of labor and employment laws as the average of: (1) Alternative employment contracts; (2) Cost of increasing hours worked; (3) Cost of firing workers; and (4) Dismissal procedures. The 'alternative employment contracts' measure the existence and cost of alternatives to the standard employment contract. The 'dismissal procedures' measure worker protection granted by law or by mandatory collective agreements against dismissal. The relative dummy variable equals one if a country's score is above the median across all countries in the sample.	World Bank
Consumer facing industries	Consumer facing industries identified by Baker, Baugh, and Sammon (2023). They correspond to two-digit SIC codes: 45,48,49,52,53,54,55,56,57,58,59,70,72,73.	Baker, Baugh, and Sammon (2023)
(High) Product Market Competition	Product Market Competition is measured by the Herfindahl Index (sum of squared market shares) at the industry-year level. The market share of an	Compustat

	individual firm is calculated by using the firm's net sales (Compustat annual item SALE) divided by the total sales value of the entire industry. The relative dummy variable 'High Production Market Competition' equals one if the industry is in the bottom-low HHI quartile by year.	
(High) Bid-Ask Spread	Bid-Ask Spread is the natural logarithm of the average of daily effective spread. Daily effective spread is calculated as two times the absolute value of trading price minus bid-ask midpoint, all divided by trading price. The relative dummy variable 'High Bid Ask Spread' equals one if the firm is in the top quartile of the bid-ask spread distribution by year.	CRSP
(Low) Analyst Coverage	Analyst coverage is the number of analysts covering the firm during the year. The relative dummy variable 'Low Analyst Coverage' equals one if the firm is in the bottom quartile of the analyst coverage distribution by year.	I/B/E/S