The CSR Puzzle: Decrypting its Influence on Financial Distress in India

Neeru Chaudhry and Priya Dhawan*

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Abstract

For a sample of Indian firms, we find that as the firm's engagement in corporate social responsibility (CSR) increases, the financial distress risk decreases. This negative relationship persists during the 2007-2009 financial crisis and Covid-19 pandemic. It exists both before and after the Insolvency and Bankruptcy Code 2016 became effective. The negative effect of CSR spending on financial distress is more dominant when firms engage in social-and-community and employee-related activities and when firms are in the younger stages of the firm life cycle. Firms that spend more (less) than the minimum mandated amount on CSR experience greater (less) reduction in financial distress risk. Foreign promoters, institutional investors, and foreign institutional investors bolster the negative effect of employee-welfare spending on financial distress risk. Firms that engage in social-and-community-related and employee-related CSR activities have lower cost of debt and better credit ratings, which provides such firms with better access to capital markets and hence lowers the risk of financial distress. Our study highlights the importance of integrating CSR in the policymaking directed towards mitigating the financial distress risk. It in turn would reduce the chances of bankruptcy and reduce crises in an economy. Therefore, the findings of this study will be useful for policymakers, regulators, managers, investors, and employees.

Keywords: Corporate social responsibility, financial distress risk, default, Z-Score, India, emerging economies

JEL Classification: G30, G32, G33, M14

* Neeru Chaudhry (email: Neeru.Chaudhry@dms.iitd.ac.in) and Priya Dhawan (email: Priya.Dhawan@dms.iitd.ac.in) are from the Department of Management Studies at the Indian Institute of Technology, Delhi. Priya Dhawan is grateful to receive financial support from the University Grants Commission, India. The authors thank participants at the Asian Finance Association Conference 2023 held at the University of Economics Ho Chi Minh, Vietnam, Sydney Banking and Financial Stability Conference 2023 held at the University of Sydney Business School, Australia, and Annual Research Workshop on Insolvency and Bankruptcy 2024 held at the Indian Institute of Management Ahmedabad, India for their valuable comments and suggestions.

Address for Correspondence: Neeru Chaudhry, Department of Management Studies, Indian Institute of Technology Delhi, New Delhi 110 016, India, Phone: +91 11 2659 1197

1. Introduction

Jensen and Meckling (1976) argue that agency problems that exist between shareholders and managers can be solved with the issuance of debt because of its monitoring role. But, with the introduction of leverage comes the costs of financial distress, which increases the probability of bankruptcy (Opler and Titman, 1993). In perfect capital market, financial distress does not increase with leverage and investors are not worse off if they hold shares of financially-distressed firms (Modigliani and Miller, 1958). However, in real markets, the costs of financial distress and bankruptcy are too high to be ignored. Financial distress is a stage just before bankruptcy where the earnings plummet to a level where a firm is unable to pay interest and principal on its debt (Gordon, 1971). It acts as an early warning signal of bankruptcy for the investors, bankers, policymakers, and other stakeholders (Khoja et al., 2019). The costs of financial distress and bankruptcy costs influence the capital structure decisions of a firm (Acharya et al., 2017). This in turn shapes firms' riskiness, investment behavior, and ultimately the shareholders wealth (Cai and Zhang, 2011).

Myers and Majluf (1984) suggest that managers prefer debt over equity when financing an investment because the cost of debt is lower than the cost of equity. With increases in debt levels, costs of financial distress start to dominate (Nicodano and Regis, 2019). These costs include, for example, high fees paid to legal and accounting experts, loss of sales because customers' willingness to pay high prices declines or they altogether avoid purchasing products, suppliers refuse to supply goods on credit, employees leave firms and it is hard for such firms to hire new ones (Titman, 1984; Berk and DeMarzo, 2007; Elkamhi et al., 2012). Additionally, the distressed firms may engage in fire sale of assets to quickly obtain funds to run the operations (Eckbo and Thorburn, 2008) and suffer from underinvestment (Myers, 1977). The distressed firms lose their market share to their competitors with low leverage who increase their advertising or follow pricing such that the vulnerable distressed firms are wiped

out of the market (Opler and Titman, 1994). Furthermore, the financially distressed firms tend to manipulate earnings (DeFond and Jiambalvo, 1994), engage in tax avoidance activities (Richardson et al., 2015b), are risky and generate lower stock returns, have difficulty in raising funds from the capital markets (Campbell et al., 2008).

The financial distress costs are not limited to individual firms, but they impose costs on the overall economy in the form of increased unemployment and decreased output due to the closure of operations of firms (Banerjee et al., 2020). Such costs have a spillover effect on the creditors, if the amount owed by a distressed firm constitutes a major asset for creditors, causing them to become financially distressed as well (Lian, 2017). The bankruptcies of WorldCom and Enron (among several others) shook the investors' confidence and led to fall in the stock prices in the US, and affected the economy adversely.[1] Thus, reduction in financial distress at the firm-level helps to build an attractive corporate environment and more stable economy (Boubaker et al., 2020). It is evident that financially distressed firms can have an adverse impact on an economy. Therefore, it is important to identify factors that can help reduce the financial distress risk and make firms financially stable.

We investigate whether firms displaying their commitment towards Corporate Social Responsibility (CSR) lowers financial distress risk. Firms may signal their commitment to CSR by spending resources for the welfare of their employees, solving social problems, community welfare, and protecting the environment. Doing so may allow companies to reduce the chances of becoming financially distressed, and if they do become financially-distressed, CSR spending may help them to reduce direct and indirect costs of financial distress. There are several reasons why CSR spending may affect financial distress risk.

[1] Retrieved on May 21, 2024 from https://247wallst.com/special-report/2023/04/16/the-25-biggest-bankruptcies-in-american-history/.

Prior studies show that CSR firms are less risky, are more profitable, and invest efficiently, thus creating value for the shareholders (Waddock and Graves, 1997; Gao and Zhang, 2015; Bhattacharyya and Rahman, 2019). As a substitute to the debt, which plays an important monitoring role in restricting agency problems (Jensen and Meckling, 1976), CSR spending restricts agency problems by reducing the cash available to managers for unproductive activities such as investing in value-destroying activities (Harjoto and Jo, 2011). Furthermore, the cost of debt, cost of equity, and the overall cost of capital are lower for firms that engage more in CSR activities (El Ghoul et al., 2011; Goss and Roberts, 2011; Benlemlih and Bitar, 2018). Moreover, CSR firms have better credit ratings than non-CSR firms (Jiraporn et al., 2014). The evidence documented in these studies suggest that CSR firms have better access to capital markets and face less difficulty in raising funds, which may be required to absorb temporary shocks to their profitability and avoid becoming financially distressed.

Because of positive reputation among different stakeholders, CSR firms are able to avoid indirect costs, which result from customers' not willing to purchase products of financially distressed firms, or suppliers refusing to supply goods to financially distressed firms (Attig et al., 2013; Lin and Dong, 2018; Al-Hadi et al., 2019). Prior studies show that because of strong relationships with the employer, employees are less likely to leave CSR firms during periods of financial distress. Because of their reputational concerns, firms are less likely to manipulate earnings or engage in tax avoidance activities, thus reducing uncertainty related to their future cash flows. The discussion above suggests that CSR spending would help firms to reduce the chances of them becoming financially-distressed and reduce the costs of financial distress and costs of bankruptcy.

India offers a unique setting to examine whether CSR spending causes reduction in the financial distress. Unlike the documented evidence, which is largely based on developed economies, may not be applicable for the emerging markets like India. For instance, lax

corporate governance, and weak legal and enforcement regime that exits in India (La Porta et al., 2000; Shleifer and Wolfenzon, 2002) may enable managers to divert funds through the channel of CSR, funds which otherwise could have been deployed in other profitable investments (Bhandari and Javakhadze, 2017). Furthermore, problem of financial constraints is more prominent in countries with underdeveloped capital markets like India (Khurana et al., 2006). The authors provide explanation that the lack of proper financial institutions that safeguards the investor rights induces wide gap between the internal and external financing costs, thereby, increasing the constraints in financing new projects due to high costs of raising external capital. Financial development improves the access to low cost of financing in the developed nations. A capital market in developed economies aids in absorbing financial shocks whereas capital markets in emerging economies are underdeveloped and suffer from illiquidity (Bekaert and Harvey, 2003; Rojas-Suarez, 2014). Moreover, stock prices dropped for firms that spend more on CSR activities following adoption of mandatory CSR-spending rule in India (Manchiraju and Rajgopal, 2017). Therefore, the CSR firms in developing economies may not realize the same benefits as CSR firms in developed economies do in terms of accessing capital markets so as to absorb shocks to their profitability and avoid becoming financially distressed. It remains open question whether CSR spending reduces financial distress risk in an emerging economy like India.

Another reason that motivates us to conduct this study for Indian markets is that India is growing at a very fast rate.[2] It is expected to become the third largest economy by 2030.[3] This growth projection could be hampered if large number of firms face financial distress risk and become bankrupt. For a sample of Indian firms, Gupta and Mahakud (2023) note that

[2] India's projected real GDP growth rate is about 6.3 per cent for the coming five years whereas for China it is only 4.2 per cent. Retrieved on May 21, 2024 from https://www.imf.org/external/datamapper/NGDP_RPCH@WEO/OEMDC/ADVEC/WEOWORLD.

[3] Retrieved on May 21, 2024 from https://www.statista.com/chart/31587/real-gdp-growth-top-6-economies/#:~:text=The%20growth%20of%20most%20highly,the%20ranks%3A%20India%20and%20China.

financially-distressed firms invest less, have lower cashflows, and sales. Therefore, anything that can reduce the firms' financial distress risk is needed to enable India to continue its growth trajectory. It may be applicable to other emerging economies as well. To produce significant economic and social welfare outcomes both at the macroeconomic and corporate level, CSR has been recognized as a critical preliminary requirement (Farah et al., 2021).

Branch and Khizer (2016) note that the bankruptcy laws in India date back to 200 years when it was under colonial rule. Despite undergoing several changes in the Companies Act 2013, the Indian bankruptcy system is still very complicated and time-consuming (Visaria, 2009; Branch and Khizer, 2016). However, following the implementation of Insolvency and Bankruptcy Code and constitution of Insolvency and Bankruptcy Board of India (IBBI) in 2016, the subject of insolvency and bankruptcy has again gained impetus as an area of academic research, which is focused on the Indian capital markets.[4] Our findings will assist IBBI to integrate CSR within its framework and offer solution to mitigate the financial distress risk and bankruptcy risk of Indian firms.

To examine how firms' commitment towards CSR influences the financial distress risk, we use a sample of Indian firms for the period from 2000 to 2022. We include firms which are listed on the Bombay/National Stock Exchange of India and exclude firms belonging to the financial services and banking sector. Following Roy et al. (2022), we use expenditure incurred on CSR activities scaled by total assets (*CSREXP*) as a proxy for a firms' commitment towards CSR. We use Altman's (1968) *ZSCORE* as the measure of financial distress risk, which is our main dependent variable. We find that the financial distress risk decreases as the firm's engagement in CSR increases. We conduct fixed-effects, endogenous treatment effect, two-stage least squares (2SLS) and difference-in-difference analysis to address the endogeneity

[4] Retrieved on May 21, 2024 from https://www.mca.gov.in/Ministry/pdf/TheInsolvencyandBankruptcyofIndia.pdf.

concerns. Similar results are obtained if we measure financial distress risk as *O-Score* following Ohlson (1980) and Griffin and Lemmon (2002), as *ZM-Score* following Zmijewski (1984), and *Revised ZSCORE* based on Altman (2017).

Further analyses reveal that the negative effect of CSR on financial distress risk prevails even during the crises period. The negative relationship between CSR spending and financial distress risk holds even during the crisis's periods. Even when we exclude the crisis period, the baseline results still hold. This relationship exists both before and after the introduction of 2016 bankruptcy code in India though it is stronger in the post-insolvency and bankruptcy code period. We note that the negative relationship between CSR spending and financial distress risk is stronger for young firms than mature or old firms.

The Section 135 of the Companies Act 2013, which became effective from 1st April 2014, mandated companies with a net worth, turnover, or profit above a certain threshold to spend a certain minimum amount on the CSR activities.[5] We observe that at given CSR spending, the financial distress risk decreases with the years following introduction of the Act. This may be attributed to the Act, the IBC 2016, and improvement in the rank of India in the World Bank's ease of doing business report. We refer to companies which do spend the minimum mandated amount on CSR activities as *Comply-firms*. We define *Explain-only firms* as those which explain the reasons for not doing so in their annual report (as required by Section 135). We find no evidence that for a given level of CSR spending, *Comply-firms* experience a greater reduction in financial distress risk compared to *Explain-only firms*. However, we do observe that firms that spend more than the minimum mandated amount observe greater reduction in financial distress risk.

[5] Retrieved on May 21, 2024 from https://www.mca.gov.in/Ministry/pdf/AMENDMENTACT_01082019.pdf.

Further analyses reveal that spending on employee and social-and-community welfare-related activities reduces the financial distress risk whereas environment related CSR spending does not. Moreover, financial distress risk reduces (increases) with increasing foreign institutional investor (FII) ownership, at a given level of spending on social-and-community (environment-related) activities. The negative effect of employee-welfare spending on financial distress risk magnifies at higher levels of foreign promoter, institutional investor, and FII ownership but dampens with domestic promoter ownership. Lastly, an important finding of our study is that cheaper debt and improvement in credit rating are the channels through which spending on social-and-community and employee-welfare related CSR spending reduces the financial distress risk.

By demonstrating that CSR spending reduces financial distress risk for a sample of Indian firms, our study contributes to the finance literature that attempts to determine factors which affect financial distress and bankruptcy risk. Prior studies, for example, show that financial distress risk depends on firm size (Hsu et al., 2015; Boubaker et al., 2020), R&D spending (Zhang, 2015; Apergis et al., 2019), and stages of firm life cycle (Al-Hadi et al., 2019; ElBannan, 2021). We note that the role of CSR spending in reducing financial distress risk is remarkable even during crises period and even when India did not have bankruptcy code in place. Few studies show that the relationship between CSR spending and financial distress risk is sensitive to the stages of a firm life cycle (Al-Hadi et al., 2019) and firms' access to capital markets (Boubaker et al., 2020). We contribute to this literature by illustrating that the effect of CSR spending on financial distress risk is dominant for old firms (than mature or young firms), firms that spend more than the minimum mandated amount (as per the Companies Act), and when CSR spending is on social-and-community or employee welfare. In line with Boubaker et al. (2020), we find that the amount spent on environment protection does not impact the financial distress risk.

Moreover, financial distress risk reduces (increases) with increasing foreign institutional investor (FII) ownership, at a given level of spending on social-and-community (environment-related) activities. The negative effect of employee-welfare spending on financial distress risk magnifies at higher levels of foreign promoter, institutional investor, and FII ownership but dampens with domestic promoter ownership.

Next, we add on to the literature that examines effect of CSR spending on corporate behavior in emerging economies (Bhattacharyya and Rahman, 2019; Feng et al., 2022; Roy et al., 2022). The recent decade have seen a temporal shift from the "investor-oriented" to more "stakeholder-oriented" approach of the firm which is evident from increased allocation of resources on CSR by firms both voluntarily and mandatorily in many countries (Kitzmueller and Shimshack, 2012; Manchiraju and Rajgopal, 2017). Su et al. (2016) argue that firms in emerging economies spend on CSR activities to fill the institutional void (accumulated due to high information asymmetry) by signaling positive image. The authors observe that CSR increases the financial performance in emerging economies due to the positive signaling effect of CSR. Prior studies show the main drivers of financial distress for developed economies (Campbell et al., 2008; Zhang, 2015; Boubaker et al., 2020) but there is a need to look for drivers of financial distress risk in emerging economies which have distinct features of underdeveloped capital markets. Financial distress is an economically significant event for both the firm and its shareholders (Kane et al., 2005). Ensuring the financial stability particularly in the developing economies is essential due to the financial constraints faced by these economies accompanied with unstable financial markets and managerial limitations (Vo, 2016). Therefore, combining the need for studying the factors affecting financial distress for emerging economies and importance of CSR in recent time paves the way to examine the impact of commitment towards CSR on the financial distress risk in emerging economies.

Spending on CSR positively affects the firm performance of the Indian firms (Bhattacharyya and Rahman, 2019), CSR ratings is negatively linked to the stock price crash risk of Chinese firms (Feng et al., 2022), and stock market liquidity is better for Indian firms that are mandated to spend on CSR than those firms that are not (Roy et al., 2022). By providing empirical evidence that CSR spending reduce the financial distress risk and ultimately bankruptcy of Indian, we make significant contribution to the literature on emerging markets.

We also contribute to the literature that examines the role of employee treatment on corporate behavior (Kane et al., 2005; Verwijmeren and Derwall, 2010; Dai et al., 2022). Kane et al. (2005) find that better employee relations help to reduce the likelihood of onset of the financial distress risk. They pinpoint using theoretical arguments that during adverse times, the firm needs to take concessions in the form of reduced wages to improve cashflows which can be obtained only when there have been good employee relations in the past. Verwijimeren and Derwall (2010) suggest for the well-being of employees, companies have low leverage to reduce bankruptcy risk. We add to the work by Kane et al. (2005) and Verwijimeren and Derwall (2010) by showing that spending on employee-welfare related CSR activities reduces the cost of debt and improves credit ratings. We add to the literature available on foreign investors (for example, see Bena et al., 2017; Agarwal and Chaudhry, 2022). Bena et al. (2017) document that with increase in foreign institutional ownership, a firm contributes more funds towards human capital in the form of training to employees. Agarwal and Chaudhry (2022) find that as the foreign promoter ownership increases for a sample of Indian firms, the investment decreases but the investment efficiency increases. We complement this literature by showing that the amount spent on employee welfare would have stronger negative effect on financial distress at higher levels of foreign institutional investors and foreign promoter ownership.

We add to the cost of debt literature that focuses on determining how CSR affects features of the bank loan contract. Goss and Roberts (2011) document that banks offer cheaper loans to US firms that engage in CSR activities because these firms have lower litigation risk. Ye and Zhang (2011) report a U-shaped relationship between CSR spending and interest rates. Jiraporn et al. (2014) document that credit ratings improve with CSR spending on environmental protection but not with spending related to social-and-community and employee welfare. We add to this literature by documenting that for Indian firms, cost of debt reduces and credit ratings improves with spending on social-and-community and employee welfare but not with the amount spent on environmental-related activities.

In a related study, Bose et al. (2021) show that the passage of the Insolvency and Bankruptcy Code (IBC) in India enhances access to credit and lowers the cost of debt for financially-distressed firms than for non-distressed firms. Jadiyappa and Shrivastav (2022) show a negative effect of better creditor rights on the cash holdings in the post-IBC period. This because if better rights are available to creditors, that would ease the credit constraints, and holding more cash would result in higher costs since it is better to lend. We add to this literature by showing that the negative relationship between CSR spending and financial distress risk holds for both pre- and post-IBC period though it is stronger in the post-IBC period.

The rest of the study proceeds as follows. Section 2 discusses the related literature and develops hypothesis. Sections 3 and 4 explain the data and research methodology employed in the study, respectively. Section 5 presents our empirical findings. Sections 6 and 7 report the result from additional analyses. Section 8 discusses financial flexibility. Finally, Section 9 concludes the study.

2. Related literature and hypothesis development

2.1 Factors affecting financial distress risk

Prior literature shows that riskiness of a firm (An et al., 2022; Vuong et al., 2024) profitability (Sharpe and Stadnik, 2007), agency problems (Maury and Pajuste, 2005), access to capital and the cost of capital, credit ratings (Becker and Milbourn, 2011), and reputation among stakeholders (Armitage and Marston, 2008) affects the costs of financial distress and increases the chances of bankruptcy.

Firm riskiness affects the levels of financial distress risk. An et al. (2022) argue that cashflow volatility creates uncertainty for the firms to discharge their financial commitments, restricts the access to credit due to high cost of capital charged for the risk of uncertainty, reduces the financial flexibility and heightens the financial distress risk. Ghasemzadeh et al. (2019) find that high earnings volatility induces uncertainty in profits and doubtful profits to fulfil financial commitments and hence increases the financial distress risk. Stock return volatility has gained importance in research due to its impact on the financial stability of firms and nations (Chen et al., 2010). Vuong et al. (2024) observe that as the stock return volatility increases, the financial distress risk increases for a sample of Vietnamese firms. The authors argue that volatility in stock returns hampers the cashflow management, deterring firm to obtain funds from the capital market and increases the chances of default or financial distress risk. The above arguments indicate that riskiness of firm increases the financial distress risk.

Sharpe and Stadnik (2007) observe a positive effect of profitability in reducing the financial distress risk due to efficient management and lower risk. Better profitability leads to a reduced chance of default in the future. Nowadays, focus have been shifted from the agency conflicts between the managers and shareholders to the agency problems that arise because of conflicts between the majority and minority shareholders. Maury and Pajuste (2005) show that

the major dominating shareholders gain at the expense of minority shareholders, often leads to suboptimal decisions, decreased firm value, and heightened financial distress risk. The agency conflicts increases the chance of bankruptcy. As the return on equity increases, the investment returns for investors also increases which makes the financial access easier (attract more investors due to high investment returns) and hence, reduces the financial distress risk (Sharpe and Stadnik, 2007).

Almeida and Philippon (2007) document that higher cost of debt indicates high risk premium and high financial distress risk. Lower cost of debt imposes fewer financial commitments on the firms' future cashflows, improves the liquidity, and reduce the chances of bankruptcy in the future (Boubaker et al., 2020). Li and Faff (2019) show that both market based (e.g. volatility of stock prices) and accounting based (e.g. financial report released by managers) information are important predictors of bankruptcy. This indicates that higher information quality through public disclosures, investors are better able to assess the financial distress risk. Becker and Milbourn (2011) contend that higher credit ratings lead to information dissemination in the financial market and lowers the probability of default on financial commitments. Armitage and Marston (2008) find that corporate reputation eases the process to retain customers, generating higher profits, attract external capital, reduces the state of low cashflows in future, and hence reduces the probability of default.

Thus, the evidence documented in prior studies suggest that firm riskiness, profitability, the severity of agency problems, extent of information asymmetry, availability of funds, cost of raising funds, reputation among stakeholders affects the costs of financial distress and chances of firms going bankrupt.

2.2 Link between financial distress and CSR

Prior literature provides mixed evidence on whether firms engagement in CSR activities reduces firm riskiness, improves firm performance, reduces agency problems and information asymmetry, reduce the cost of raising capital and make access to capital funds easier, and build strong relationships with all the stakeholders, thus reducing the risk of financial distress.

CSR reduces firm riskiness and increases the profit margin. Godfrey (2009) and Attig et al. (2013) note that CSR firms efficiently allocate resources within an organization and incur fewer costs associated with high attrition rate, penalties and fines imposed because of poor environment related policies. Albuquerque et al. (2019) observe that firms that engage in CSR experience lower elasticity of profits to abnormal market shocks. The authors argue that such firms differentiate themselves from other firms based on their CSR policies, which helps in building a loyal base of customers. It in turn allows them to have higher profit margins on their products and lower likelihood of default. Firms which are involved in controversies related to CSR, for instance, polluting the environment attract penalties, making such firms susceptible to increased costs (Husted, 2005). With decrease in the firm riskiness, the chances of default decreases.

Extant literature shows that CSR is effective in enhancing the firm performance (Waddock and Graves, 1997; Eccles et al., 2014; Gao and Zhang, 2015; Fatemi et al., 2015). Waddock and Graves (1997) show that firms spending on the benefit of the community receive tax breaks resulting in cash savings, improving the firm earnings. Eccles et al. (2014) find that firms engaged in CSR have higher accounting and stock market performance due to strong relationships with the stakeholders and better transparency of non-financial information. Fatemi et al. (2015) show the positive effect of CSR on firm performance due to loyal customer base, dedicated employees, and avoids costs that may arise due to non-compliance of government regulations. These studies show that CSR helps to improve the firm performance,

maintains profits, reduces the uncertainty of profits or cashflows to reduce the likelihood of financial distress risk.

There is mixed evidence on whether firms' engagement in CSR restricts agency problems (such as through investing efficiently and making less cash available to managers) and reduces information asymmetry (Harjoto and Jo, 2011). McWilliams et al. (2006) contend that managers may invest in CSR activities, which promote their personal benefits, such as donating to organizations that favor political connections. In contrast, Jo and Na (2012) document that firms spending on CSR disclose both financial and non-financial information in the market and reduces the information asymmetry. Due to improved stakeholder relationships, firms spending more on CSR activities face less difficulties in raising funds from the capital markets, which reduces firm risk. We argue that the commitment of funds towards CSR reduces the agency problems by making less funds available to the managers.

For a sample of 31 countries, Dhaliwal et al. (2014) document that firms disclosing various CSR-related activities such as environmental preservation, employee welfare, contribution towards community, human rights protection etc. in the form of CSR reports have lower information asymmetry than firms that do not release CSR reports. This is because firms engaged in CSR have higher analyst coverage, which makes information dissemination easier in the stock market and helps in reducing information asymmetry. Since information is needed by the shareholders to monitor and evaluate the firms, reduced information asymmetry reduces the cost of equity. They document that the negative effect of CSR disclosures on the cost of equity is more evident in countries that are stakeholder-oriented such as India and the US. Goss and Roberts (2011) document that firms that spend more funds on CSR activities have better access to financing and are able to raise funds at cheaper costs than firms spending less on CSR activities. This is because the firms with greater controversies related to CSR activities for instance, an oil spill by energy company, suffer from negative externalities due to the social

costs imposed on them, and society imposes certain penalties for their actions in the future. This increases the uncertainty of profitability and probability of default on the repaying of the loan amount and interest. The lenders charge a higher rate of interest to cover this risk premium of default from firms that do not commit funds towards CSR and such firms have a high cost of debt and difficulty in raising funds from the capital market. We argue that the commitment of funds towards CSR reduces the information asymmetry in emerging economies like India where already there is higher information asymmetry. Spending on CSR in such economies signals better information transparency and reduces the information asymmetry and makes the access to financial markets easier due to higher information available to the lenders.

Boubaker et al. (2020) show that firms that spend funds on CSR activities have better access to financing due to low cost of debt and equity, making easier access to funds and lower the likelihood of default (low cashflow state do not occur). The authors also show that financially constrained firms with spending on CSR encounter reduced cost of debt or equity, eventually leading to lower financial distress risk. La Rosa et al. (2018) document that firms with engagement in social activities attract lenders due to the positive reputation created and higher information transparency due to non-financial disclosure, and therefore lowers the interest rate charged by the lenders. However, the authors find that this positive effect of social activities on cost of debt becomes insignificant during the global financial crisis period. El Ghoul et al. (2011) and Cao et al. (2015) show that firms which actively participate in CSR activities are perceived to be less risky and therefore socially conscious investors include such companies in their portfolios. These two studies suggest that high CSR firms have higher investor recognition and larger investor base, which leads to risk sharing by large number of investors and thus reduces cost of equity for these firms.

There is mixed evidence on whether commitment of funds towards CSR decreases or increases the investment in firms. Bhandari and Javakhadze (2017) find that CSR reduces the

overall funds available that can be deployed in other profitable investments and reduces the investment. On the contrary, firms spending on CSR have a low cost of capital and lower information asymmetry that can increase the investment (El Ghoul et al., 2011; Benlemlih and Bitar, 2018).

Godfrey (2009), Attig et al. (2013), and Jiraporn et al. (2014) find that firms' involvement in CSR activities is associated with better credit ratings and lower default risk. The authors argue that such firms are able to build positive reputation among different stakeholders, which protects them during adverse situations and ensures that the business is sustainable in the long term. Bénabou and Tirole (2010) advocate the use of CSR policies as an instrument for ensuring that firms are profitable in the long-term. The authors argue that often managers focus on short-term profits. They may attempt to achieve their short-term profit targets, for example, by firing employees. It discourages skilled employees from working in such firms.

Firms' engagement in CSR activities help them to create social capital, build positive reputation, and form strong relationships with their customers, suppliers, and other stakeholders (Servaes and Tamayo, 2017; Roy et al., 2022). It enables firms to reduce the cost that they may bear when they experience negative shocks. Jo and Na (2012) document that firms spend more on CSR activities to build positive reputation amongst stakeholders. It helps firms to reduce the likelihood of a significant drop in their profits, reduces the costs arising from their disputes with the government and taxation authorities, and avoid large fines that they may be required to pay for polluting the environment. Involvement in CSR activities helps firms to maintain good relationships with their customers, promote ethical practices (such as, not engaging in tax avoidance activities), and spend on protecting the environment (for example, adopting waste disposal mechanism) that saves firms from fines that may arise in

future. The prevention of these future costs helps to reduce the probability of financial default in the future.

In summary, firms' engagement in CSR activities help them to improve firm performance and improve access to capital markets by alleviating agency problems and information asymmetry, which in turn reduces cost of debt/equity and overall cost of capital and improves credit rating. Moreover, it creates a positive reputation among different stakeholders. Based on the discussion in this Section, we predict that the financial distress risk of firms will reduce with increasing CSR expenditure.

3. Data

We collect the stock market and financial data from Prowess dx. Our sample consists of all publicly listed Indian firms that report spending on CSR activities. The stock market data is available from 1997 onwards. We drop 1998 and 1999 from our sample because there were only 123 and 99 observations for CSR expenditure for these two years, respectively.[6] We exclude financial services and banking firms from our sample as different regulations govern them. Observations with missing data required to calculate financial distress risk and control variables are removed. We drop the observations for which data on CSR expenditure either equals zero or is missing. The final sample consists of 28,625 firm-year observations from 2,698 unique firms, for the period from 2000 to 2022.

We proxy financial distress risk by Altman's (1968) Z-score, which assumes that a firm with consistent losses will have shrinking current assets to total assets ratio, a firm is likely to go bankrupt in its initial years of formation, the earnings before interest and tax represent the firm productivity, the declining equity to debt ratio reveals either lower equity to absorb

[6] The number of sample firms ranges from a minimum of 692 observations in 2001 to a maximum of 1,685 observations in 2022.

potential losses or higher debt making bankruptcy more likely, and the sales to total assets ratio indicates the capability of the management in dealing with competition.[7] A high Z-score indicates low financial distress risk.

$$ZSCORE = 1.2\left(\frac{NWC}{ASSETS}\right) + 1.4\left(\frac{RetEarnings}{ASSETS}\right) + 3.3\left(\frac{EBIT}{ASSETS}\right) + 0.6\left(\frac{MVE}{DEBT}\right) + 0.999\left(\frac{Sales}{ASSETS}\right) \quad \ldots (1)$$

where, *NWC* is net working capital, *ASSETS* is the book value of total assets, *RetEarnings* is retained profits, *EBIT* is the earnings before interest and tax, *MVE* is market value of equity capital, *DEBT* is the total value of debt, and *Sales* is the net sales.

Figure 1 shows that there is a consistent rise in *ZSCORE* from 2000 to 2005 indicating a fall in financial distress risk. It is followed by a fall in the *ZSCORE* from 2005 to 2008, showing a rise in the levels of distress risk, perhaps because of the financial crisis of 2007-2009.[8] After that, there is no observable trend in *ZSCORE*, except that it increases from 1.577 in 2019 to 1.962 in 2022. This decrease in the financial distress risk notwithstanding the outbreak of the Covid-19 pandemic can be attributed towards the improvement in the ease of doing business and implementation of the IBC 2016, since it boosted the lending due to enhanced confidence of creditors and assured revival of firms in a time-bound manner.[9]

We follow Roy et al. (2022) and use the expenditure incurred on CSR activities towards social welfare, environmental protection, and staff welfare scaled by the total assets (*CSREXP*).

[7] This measure is commonly used in the finance literature as a proxy for measuring financial distress risk (for example, see, Bugeja, 2015; Richardson et al., 2015a; Boubaker et al., 2020).

[8] In our study, the mean *ZSCORE* ranges from 1.407 to 1.962 for the sample from 2000 to 2022. On the other hand, the mean Z-score for the study by Boubaker et al. (2020) shows a range from 1.310 to 1.790. Their study finds low Z-scores compared to our study and therefore, high levels of financial distress for a sample of US firms from 1991 to 2012.

[9] India jumped 79 positions to reach 63rd rank in the World Bank's Ease of Doing Business report 2020. It showed improvement in the recovery rate for resolving insolvency from 26.5% to 71.6% and reduction in the time taken for insolvency from 4.3 years to 1.6 years. Retrieved on May 21, 2024, from https://pib.gov.in/newsite/printrelease.aspx?relid=193994#:~:text=The%20World%20Bank%20released%20its, assessed%20by%20the%20World%20Bank.

We observe a decline in the CSR expenditure from 2000 to 2010. In 2010, the provision mandating companies to spend certain minimum amount was inserted in the Companies Bill, which turned into an Act in 2013.[10] As a result of this regulatory change, *CSREXP* rises from 0.422% in 2014 to 0.499% in 2020. We observe a slight downfall in the CSR expenditure from 2020 to 2021 owing to the Covid-19 crisis followed by minor increase from 2021 to 2022.

[Insert Figures 1 and 2 here]

Figure 2 shows that most of the CSR spending is on employee welfare, followed by social-and-community welfare and environment-related activities.[11] Table 1 presents descriptive statistics. Our sample comprises of firms from 16 different industries, of which manufacturing sector accounts for approximately 70% of the sample. The mean (median) *ZSCORE* and *CSREXP* are approximately 1.671 (1.647) and 0.477% (0.308%), respectively. We also note that the *CSREXP* is positively correlated with *ZSCORE*. Both the mean and median *ZSCORE* are lower for *Low-CSR* firms than for *High-CSR* firms. The evidence from the univariate analysis provides support to our hypothesis that CSR spending negatively influences the financial distress risk. For our data, the variance inflation factor (VIF) varies between 1 and 2, suggesting that multicollinearity is not an issue (untabulated).

4. Research methodology

To test whether CSR spending affects financial distress risk, we estimate Model (2) using the ordinary least squares (OLS) method.

$$ZSCORE_{i,t} = \beta_0 + \beta_1 lnCSR_{i,t} + \beta_2 lnMB_{i,t} + \beta_3 STKRET_{i,t} + \beta_4 STKVOL_{i,t} + \beta_5 FIRMSIZE_{i,t} + \beta_6 DEP_{i,t} + \beta_7 LEV_{i,t} + \beta_8 CASH_{i,t} + \beta_9 LOSS_{i,t} + \beta_{10} QUICK_{i,t} + Industry\ Dummies +$$

[10] Retrieved on May 21, 2024, from https://eparlib.nic.in/bitstream/123456789/64114/1/15_Finance_21.pdf.
[11] Attig et al. (2023) also report similar pattern for the components of CSR spending.

$$Year\ Dummies + \varepsilon_{it}$$

… (2)

where, *ZSCORE* is the measure of financial distress risk and *lnCSREXP* represents the natural log of amount spent on CSR activities scaled by the total assets. We use the log form of *CSREXP* to address the skewness in its distribution. Following prior literature (Al-Hadi et al., 2019; Boubaker et al., 2022), we control for the natural log of the market-to-book value of equity (*lnMB*), annual stock returns (*STKRET*), total stock return volatility (*STKVOL*) book value of total assets (*FIRMSIZE*), depreciation expense scaled by total assets (*DEP*), long-term borrowings scaled by total assets (*LEV*), cash holdings to total assets ratio (*CASH*), whether a firm reports loss (*LOSS*), and quick ratio (*QUICK*). Model (2) also includes industry and year dummies. We calculate *t*-statistics, which are based on heteroscedasticity-robust standard errors, and cluster standard errors in both firm and year dimensions. To prevent the effect of outliers, all the continuous variables are winsorized at the 1st and 99th percentiles.

5. Empirical results

5.1 Baseline regression results

Table 2 reports the results obtained by estimating the regression model (2). Column (1) shows that the coefficient on *lnCSR* is positive and statistically significant at the 1% level. This result suggests that a 1% increase in CSR spending is associated with an 0.118 increase in the *ZSCORE*. In economic terms, a one-standard deviation increase in the CSR expenditure induces a 0.128 (0.118 × 1.082) increase in *ZSCORE*.[12] The results are both statistically and economically significant. These results provide support to our main hypothesis that the financial distress risk reduces with increasing CSR expenditure.

[12] This indicates a 7.66% (0.128/1.671 = 0.1955 or 19.55 %) increase in the sample average *ZSCORE*.

[Insert Table 2 here]

Consistent with prior literature (Al-Hadi et al., 2019; Boubaker et al., 2020), the results reveal that financial distress risk decreases with market-to-book ratio, stock returns, depreciation, cash holdings, and quick ratio, and increases with stock volatility, size, leverage, and loss.

5.2 Robustness tests

In Column (2), we control for industry-year fixed effects (Claver et al., 2002). We observe a positive and statistically significant coefficient (at the 1% level) on *lnCSR*. Column (3) reports results, which are obtained after including the *CSREXP* and its square in place of *lnCSR* in Model (2). The coefficient on *CSREXP* is positive and that on the square term is negative, both are statistically significant at the 1% level. It implies that *ZSCORE* decreases (increases) with *CSREXP* when *CSREXP* is greater (less) than the inflection point (3.811%).[13] The maximum value of *CSREXP* is 3.310% in our sample; therefore, the relationship between CSR spending and *ZSCORE* is largely positive for this sample.

In Column (4), we conduct Fama and MacBeth (1973) regression to address the concern that the autocorrelation within the firm can lead to biasedness of the standard errors in the pooled OLS regression. The coefficient on *lnCSR* is positive and statistically significant at the 1% level, thus alleviating our concerns related to cross-sectional correlations. Furthermore, in Column (5), we control for serial correlation by calculating the Newey and West (1987) standard errors. Again, the coefficient on *lnCSR* is positive and statistically significant at the 1% level, results that are consistent with our baseline regression results.

[13] Inflection point (3.811%) is obtained as 0.5 × Coefficient on *CSREXP* (0.503) divided by the Coefficient on the square term (0.132).

Lastly, we divide our full sample into manufacturing and non-manufacturing firms. The coefficients on *lnCSR* are positive and statistically significant at the 1% level for both manufacturing firms in Column (6) and non-manufacturing firms in Column (7). These results confirm that our results are not driven by manufacturing firms, which account for approximately 70% of the sample.

In sum, we document robust and consistent evidence that CSR expenditure is negatively associated with financial distress risk. That is, as firms spend higher amounts on CSR activities, the chances of them becoming financially distressed decreases.

5.3 Endogeneity

Our results might be prone to endogeneity, which may arise because of omitted variable bias and self-selection bias. For instance, CSR expenditure may vary endogenously with some of the unobserved characteristics of a firm that affect financial distress risk as well as the firm's decision to spend on CSR activities. In that case, employing pooled OLS results in biased and inconsistent estimates. The results from Wooldridge's (1995) robust score test and a robust regression test, reported in Panel A of Table 3, suggest that *lnCSREXP* be treated as an endogenous variable. We address these endogeneity concerns by estimating the fixed-effects, endogenous treatment effect, two-stage least square (2SLS), and difference-in-difference model. These results are reported in Table 3.

[Insert Table 3 here]

5.3.1 Fixed-effect model

The fixed effect model is used if the omitted variables do not change over time (Wooldridge, 2015). The fixed-effect model involves time-demeaning of all variables to remove the unobserved time-invariant heterogeneity. We estimated Model (2) using fixed-effects model and report results in Column (1). The coefficient on *lnCSR* is positive and

statistically significant at the 1% level. These results are consistent with the main findings reported earlier and alleviate any concerns related to the omitted variable bias.

5.3.2 Treatment-effect model

Next, we address the endogeneity concerns related to self-selection bias. In corporate finance, the firms often make decisions about the investment, financing, and other decisions which are not random, but self-select into their preferred options (Kai and Prabhala, 2007). Heckman (1979) argue that the problem of self-selection bias arise when there is unobserved heterogeneity when we use nonrandomly selected samples. The estimates obtained from the OLS regression is no longer consistent. To address this selection bias, we use the endogenous treatment effect model in which the maximum likelihood estimation provides the consistent estimators (Vella and Verbeek, 1999). This model obtain the estimates of the unobserved heterogeneity accountable for the selection bias to incorporate additional variables in the main structure equation (original model). It requires an equation for the original model (outcome variable: financial distress risk) and an equation for endogenous treatment (whether firm spends on CSR).

By following Manchiraju and Rajgopal (2017), and Roy et al. (2022), we define treatment (control) firms as those which are (not) required to spend a minimum mandated amount on CSR activities as per the Companies Act 2013. The variable *TREATED* is defined as one for treatment firms and zero for control firms.[14] We observe that the p-value for the Wald test of independent equations is 0.000 indicating that we reject the null hypothesis that states that there is no correlation between the treatment errors and outcome errors for the

[14] As per the Companies Act 2013, all firms whose net worth is INR 5 billion or more, turnover is INR 10 billion or more, or net profits of INR 50 million or more in a year are mandated to spend at least 2% of the average net profits generated during the immediately preceding three financial years. There is a comply or explain rule in India, which states, if a firm is unable to spend the minimum mandated amount, then that firm needs to provide explanation for the same in their annual reports.

control and treatment groups. This suggests that the key independent variable of our original model is endogenous. In the first step, we estimate the maximum likelihood model to obtain the likelihood that the firm will spend on CSR activities. Next, we regress the financial distress risk (*ZSCORE*) on the estimates obtained from the earlier step. We use the bootstrapping method to account for the potential correlation of the residuals across firm and year dimensions. We present the results of both the steps in Columns (2) and (3).

Column (2) shows that the likelihood that a firm is a treatment firm increases with market-to-book ratio, firm age, quick ratio, and cashflow, and decreases with stock return volatility, depreciation, and cashflow volatility. Using the estimates obtained in the first step, we now estimate Model (2). Column (3) shows that the coefficient on the variable *TREATED* is positive and statistically significant at the 1% level. These results address concerns related to self-selection bias and confirm that CSR spending causes reduction in financial distress risk.

5.3.3 Instrumental variable regression

We define our first instrumental variable (IV_1) as the number of years for which a firm appears in our sample. We conjecture that if a firm appears a greater number of times in the sample then it is more committed towards their CSR goals. We expect IV_1 to be positively correlated with *CSREXP* but it is not expected to influence financial distress directly. Next, by following prior literature (e.g., El Ghoul et al., 2011; Attig et al., 2013; Benlemlih and Bitar, 2018), we define our second instrumental variable (IV_2) as the annual mean industry CSR expenditure to total sales ratio, calculated by excluding the firm itself. We argue that the expenditure incurred by the peer firms in the same industry would impact the amount spent by a firm on CSR activities. Therefore, we expect IV_2 to be correlated with *CSREXP* and it would have no direct influence on financial distress risk. The null hypothesis that the instruments are weak is rejected with the *F*-statistics of 89.956 significant at the 1% level. Also, Sargan (1958)

and Basmann (1960) test-statistics are statistically insignificant. These results confirm that the model is specified correctly and our instrument variables are valid instruments. We present these results in Table 3 Panel A.

In the first stage, we regress *lnCSR* on the two instruments and control variables as in the Model (2). Column (4) shows the results for the first stage. The coefficients on both the instrument variables are statistically significant at the 1% and 10% level respectively. These results indicate that both instrument variables are highly correlated with *CSREXP*. In the second stage, Model (1) is estimated using the fitted values of *lnCSR* obtained from the first-stage regression. In Column (5), the coefficient on the fitted values of *CSREXP* is positive and statistically significant at the 1% level. These results further confirm that our main regression results are robust to omitted variable bias, which can result in inconsistent OLS estimates.

5.3.4 Difference-in-difference analysis

We perform the difference-in-difference analysis to establish the causal effect of CSR spending on financial distress risk. The exogeneous event that we use is the introduction of Section 135 under the Companies Act 2013. It became effective on April 1, 2014, onwards.[15] The Act requires certain companies to spend on CSR activities at least 2 percent of the average net profits generated in the immediately preceding three financial years. If companies fail to do so, then they are required to explain why the mandated amount is not spent on CSR activities. We follow Manchiraju and Rajgopal (2017), and Roy et al. (2022) to identify the treatment and control groups. Specifically, treatment firms are those which are required to spend certain minimum amount on CSR activities as per Section 135 of the Companies Act 2013. The control firms are those which are not required to do so. Because of CSR spending

[15] Retrieved on May 21, 2024 from https://www.business-standard.com/article/companies/new-companies-act-takes-effect-114033100995_1.html.

becoming mandatory, the decrease in financial distress risk for the treatment firms is greater relative to that observed for the control firms.

[Insert Table 4 here]

We define variable *TREATED* as one for treatment firms and zero for control firms. We match treatment firms with control firms using propensity scores, which are obtained by regressing variable *TREATED* on firm characteristics in a logit model. We match treatment and control firms using nearest neighbor method and caliper width of 0.10.

6. Additional Tests

6.1 Alternative measures of financial distress risk

We use *OSCORE* proposed by Ohlson (1980) as an alternative measure of financial distress risk, presented in Equation (3). The study find that there are four major factors which are significant in affecting the bankruptcy of a firm. The first factor is the size of the firm measured by the total assets (*lnASSETS*). The second factor comprises the financial structure proxied by measuring the leverage (*DEBT/ASSETS*). Next, the third factor measures the performance of the firms (*NETINC/ASSETS* and/or *FFO/DEBT*). The last factor measures the current liquidity (*NWC/ASSETS* or *NWC/ASSETS* and *CURRLIAB/CURRASSETS* jointly). The other factors included in the model developed by Ohlson (1980) included whether the debt is greater than the assets, there are losses for consecutive two years, and negative change in income leading to increased chances of bankruptcy.

$$OSCORE = -1.32 - 0.407(lnASSETS) + 6.03\left(\frac{DEBT}{ASSETS}\right) - 1.43\left(\frac{NWC}{ASSETS}\right) + 0.076\left(\frac{CURRLIAB}{CURRASSETS}\right) - 1.72 * DEBTDUM - 2.37 * \frac{NETINC}{ASSETS} - 1.83 * \frac{FFO}{DEBT} + 0.285 * LOSSDUM - 0.521 * \frac{NETINC_t - NETINC_{t-1}}{|NETINC_t| + |NETINC_{t-1}|} \quad \ldots (3)$$

Then, we adopt *ZMSCORE* (Zmijewski, 1984) as shown in Equation (4).

$$ZMSCORE = -4.336 - 4.513 * \frac{NETINC}{ASSETS} + 5.679 * \frac{DEBT}{ASSETS} + 0.004 * \frac{CURRASSETS}{CURRLIAB} \quad \ldots (4)$$

where, *CURRLIAB* is current liabilities, *CURRASSETS* is the total current assets, *DEBTDUM* is one if the total value of debt is greater than the total assets, otherwise zero, *NETINC* is net income, *FFO* is defined as the funds flow from operations, and *LOSSDUM* is one, if a company reports net loss in the last two years and zero otherwise.

Higher values of *OSCORE* and *ZMSCORE* indicate high financial distress risk. Lastly, we use the *Revised ZSCORE* by following Altman (2017).

We report the results by replacing the dependent variable as *O-Score* and *ZM-Score* in Model (2) in Table 5. In Column (1), the coefficient on *lnCSR* is negative and statistically significant at the 1% level. It indicates that as the expenditure on CSR increases, the *O-Score* decreases. Moreover, in Column (2), the coefficient on *lnCSR* is again negative and statistically significant at the 1% level. Therefore, both results convey that with an increase in the commitment of funds towards CSR activities, there is a decrease in the levels of financial distress risk.

[Insert Table 5 here]

Moreover, Altman (2017) revised the existing *ZSCORE* measure for both public and private firms, and manufacturing and non-manufacturing firms. The *ZSCORE* was calculated using the market value of business and can be applied only to the public listed firms. On the other hand, *revised ZSCORE* replaced the market value of equity with book value of equity and eradicated the sales by total assets to remove the industry specific effect (Altman, 2017). Then, we run our model (2) with the dependent variable as *Revised ZSCORE* by following Altman (2017) for robustness.[16] Column (3) shows that the coefficient on the *lnCSR* is still positive and statistically significant at the 5% level, consistent with the main results.

6.2 Crises and Insolvency and Bankruptcy Code period

Moving to the next set of analysis, we uncover the impact of CSR on financial distress risk during five subperiods: namely Global financial crisis (2007-2009), Covid-19 crisis (2020-2022), excluding crisis period, before the implementation of IBC (2000-2016), and after the implementation of IBC (2017-2022). We test whether the baseline results still hold for these subperiods. We present these results in Table 6.

[Insert Table 6 here]

Lins et al. (2017) define the global financial crisis period from August 2008 to March 2009. This period witnessed Lehman Brothers' collapse and the S&P 500 index crash to the lowest point of the crisis. Gulati and Kumar (2016) consider the period from 2007 to 2009 for the influence of the global financial crisis on profitability of the Indian banks. We follow Gulati and Kumar (2016) and cover the same sample period (three-year window) for assessing the

[16] The revised *ZSCORE* is calculated as:
Revised ZSCORE = 3.25 + 6.56 * Working Capital/Total Assets + 3.26 * Retained Earnings/Total Assets + 6.72 * Earnings Before Interest and Taxes/Total Assets + 1.05 * Book Value of Equity/Book Value of Total Liabilities

impact of CSR on financial distress risk for Indian firms. Column (1) shows that the coefficient on *lnCSR* is positive and statistically significant at the 1% level.

Covid-19 was declared a public health emergency of international concern on January 30, 2020, and the global pandemic on March 11, 2020, by the World Health Organization (Ding et al., 2021). Bae et al. (2021) specify the Covid-19 crisis period from February 18, 2020, to March 20, 2020. The Government of India took a major step by imposing a 21-day lockdown in the country from March 25, 2020, and it was followed by further lockdowns (four phases of lockdown till May 31, 2020).[17,18] Rao et al. (2021) show that Covid-19 has a negative impact on stock returns for a sample of Indian firms for the period from March 2020 to November 2020, during which the lockdown was imposed. We consider all these events and by following Chaudhry and Kattamuri (2024), we cover a three-year window from 2020 to 2022 to explore the impact of CSR on financial distress risk during the Covid-19 regime.

In Column (2), we find a positive and statistically significant coefficient on *lnCSR* at the 1% level. We further note that the magnitude of the coefficient is larger than that observed in baseline results. This indicates that the negative effect of CSR on financial distress risk is much stronger in a pandemic period than normal period. However, the magnitude of the coefficient is lower in Global financial crisis period indicating that during a financial crisis, the firms may divert funds from CSR, whereas during a pandemic, firms maintain or increase their CSR spending (gain confidence of stakeholders). Thus, the decrease in financial distress risk observed during the pandemic period is through spending on CSR, which results from the reputation and trust built during such adverse scenarios further enhancing the access to funds. Moreover, in Column (3), to check whether the baseline results hold when we exclude the crisis

[17] Retrieved on May 21, 2024 from https://www.nytimes.com/2020/03/24/world/asia/india-coronavirus-lockdown.html.
[18] Retrieved on May 21, 2024 from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7785398/.

period, we run the original model (2) by excluding these years and again find a positive coefficient (with similar magnitude) on *lnCSR* which is significant at the 1% level.

Lastly, to test that our results are not driven by the implementation of the IBC 2016, we divide our sample into two subperiods, 2000-2016 (Pre-IBC period) and 2017-2022 (Post-IBC period), and perform the baseline regression from model (2) separately for these periods. In Columns (4) and (5), we note positive coefficients on *lnCSR*, statistically significant at the 1% level. This indicates that the Code does not affect the negative effect of CSR on financial distress risk. These results will help IBBI to gain insights from the CSR spending and assist in public policy decision making regarding making CSR as effective tool to reduce the chances of bankruptcy of Indian firms.

6.3 Firm life cycle stages

Next, we explore the impact of different stages of the firm life cycle on the relationship between CSR and financial distress risk. Guariglia (2008) argues that young firms are more prone to information asymmetries. This is because in the early stages of business, the firms do not have a long historical record of performance, and are usually not listed on exchanges, hence low level of public disclosures. Due to lack of historical record and limited public disclosure, the investors are not confident in lending to such firms, and young firms face constraints in raising funds from financial market. But as age increases, more information in the form of public disclosures and historical record of performance, investors have more information, and lend easily to older firms. Hadlock and Pierce (2010), using different estimation models, show that as firm age increases, the financial constraints decreases. Thus, young firms have difficulty in accessing funds from the financial markets and are more financially constrained than mature or old firms.

On the other hand, Eliwa et al. (2021) argue that due to increased attention towards CSR, the lending institutions integrate the CSR spending or disclosure in their risk assessment or creditworthiness reports while lending to firms. This is because if lenders lend to firms with no or less CSR spending, this may lead to adverse response from other stakeholders towards the lending unit. Moreover, the authors highlight that reporting and spending on CSR activities, improves the information quality of firms, lowering the information asymmetry between firms and lenders, and the debt contract becomes more marketable to such firms. Goss and Roberts (2011) find that firms with greater CSR controversies are not able to raise funds easily because lenders charge high risk premium for the risk of increased costs relating to environmental penalties in the future. These studies suggest that spending on CSR improves creditworthiness of firms through non-financial disclosure, reducing the costs of raising funds, and leads to easier access to funds. Raising funds easily reduces the chances of low cashflow state in future and reduces the levels of financial distress risk. We argue that as a firm is young, spending on CSR is more effective in reducing the financial distress risk relative to when the firm is mature or old.

We divide the full sample into three sub-samples and estimate the model (2) again. Following Owen and Yawson (2010), we divide our full sample into three subsamples based on their age (young, mature, and old firms). Young (old) firms consist of firms in the lowest (fourth) quartile. The middle two quartiles are classified as mature firms. We follow prior literature and use three different proxies for firm age. We present these results in Table 7.

[Insert Table 7 here]

We follow Agarwal and Chaudhry (2022) and measure firm age as the number of years counted from the date of incorporation of the firm (*INCORP*). The coefficients on *lnCSR* from Columns (1) to (3) are positive and statistically significant at the 1% levels, for young, mature,

and old firms. We observe that the magnitude of the coefficient is greater for young firms than for old and mature firms. Next, we follow DeAngelo et al. (2006) and estimate firm age as ratio of retained earnings to total equity (*RE/TE*) and ratio of retained earnings to total assets. In Columns (4) to (6), the coefficient on *lnCSR* is positive and significant only for the young and mature firms and again the magnitude of coefficient is higher for young firms than mature firms. We find similar results in Column (7) to (9) where the results are more stronger for young firms than for mature or old firms.

Overall, the empirical evidence suggests that the negative relation between CSR spending and financial distress risk is stronger for young firms than for mature and old firms. Since the young firms face difficulty in raising the funds from the markets and face high chances of default in future due to low cashflow state, spending on CSR is more effective to reduce the cost of obtaining funds and reduces the chances of financial distress for young firms than mature or old firms.

6.4 Mandatory CSR period

In this subsection, we conduct various set of analyses in respect to passing of the mandatory provision of CSR spending for certain companies in India. We examine whether the mandatory provision affects the relationship between CSR spending and financial distress risk. We present the results in Table 8. We include the variable, *POST2014,* as one for mandatory-CSR regime (2015-2021) and zero for voluntary-CSR regime (2000-2014). The coefficient on the interaction term is significant, suggesting that relationship between CSR spending and financial distress risk is influenced by the mandatory regime. We find that the coefficient on *POST2014* is positive and statistically significant at the 1% level, indicating that the financial distress risk is lower for period after 2014. This can be attributed to the period in which the IBC 2016 was passed and improved rank of India in the ease of doing business. Since the costs

associated with bankruptcy got significantly reduced, the risk of financial distress levels also got abridged. The aim of the Code is empowerment of creditors, they got assurance that the Code will maximize the value of assets of distressed firms and recover the dues in case of any default.[19] This enhanced the funding to firms, reduced the overall levels of financial distress risk for non-financial firms, and accelerated the economic growth and activities in India.

[Insert Table 8 here]

For the next two tests, we consider the period from 2015 to 2022 because the provisions related to mandatory expenditure on CSR activities under the Companies Act became effective from April 1, 2014. We define *Comply-firms* as those that spend the minimum mandated amount on CSR activities and *Explain-only firms* as those that spend less than the minimum mandated amount and explain the reasons for the same in their annual report. We compute variable *EXPLAIN* as a dummy variable with one if the total unspent CSR amount (as defined in Prowess database) is greater than zero, and zero otherwise. In Column (2), the coefficient on the interaction term is insignificant. This indicates that there is no empirical evidence that for a given level of CSR spending, *Comply-firms* experience a greater reduction in financial distress risk compared to *Explain-firms*.

Next, we include the variable *MANDATED* as one if the total amount spent on CSR is greater than the minimum mandated amount and zero otherwise. In Column (3), the coefficient on the interaction term is positive and statistically significant at the 5% level, suggesting that firms that spend more than the minimum mandated amount get additional benefit in terms of reduced financial distress risk. This can be the large firms that have higher debt ratios and suffer from greater chances of default. Increased CSR spending helps such firms to reduce the

[19] Retrieved on May 21, 2024 from https://ibbi.gov.in/uploads/resources/bab98dcdcd8e62cdf90f491cd7265fb4.pdf.

chances of financial default due to enhanced reputation, lower cost of debt, and enhanced credit ratings.

Overall, the results indicate that the introduction of the mandatory spending provision of the Section 135 of the Companies Act magnifies the relationship between spending on CSR and financial distress risk of Indian firms. However, CSR spending more than the mandated amount does benefit the firm in terms of abridged financial distress risk. This suggests that instead of mandatory rule, government in similar economies can frame a flexible rule as that of India to promote CSR spending in these countries.

6.5 Components of CSR

Brown and Dacin (1997) find that firms with better social performance are associated with higher brand value and reputation. This leads to higher consumer product evaluations and higher sales growth potential. Boubaker et al. (2020) show that the firms with higher growth opportunities attract more investors, thus eases the raising of funds and lowers financial distress risk. Subsequently, the amount spent on social-and-community-related activities reduces the risk of financial distress. Firms manage their environmental risks by spending on environment-related activities such as emissions treated on site. Sharfman and Fernando (2008) argue that the reduced future environmental litigations and improved stakeholder relationships helps to reduce firm risk and lowers the cost of capital (Sharfman and Fernando, 2008). Therefore, spending on environment-related activities lowers the cost of capital, ease the access to obtain funds, and lowers the financial distress risk.

Kane et al. (2005) reports that firms that maintains good employee relations suffer from less risk of financial distress due to availing temporary labor concessions in distress scenarios. This suggests that firms spending for the welfare of employees obtain support of them in the form of reduced wages and that is likely to reduce the likelihood of low cashflow state and

financial distress. Considering these set of arguments in prior literature, this subsection examines the impact of different components of CSR on the financial distress risk. We re-estimate Model (2) by replacing *lnCSR* with *lnSOCIAL, lnENVIRON* and *lnEMP*. Variable *lnSOCIAL* is estimated as the natural log of the amount spent on social-and-community-related activities scaled by total assets. *lnENVIRON* is defined as the natural log of the amount spent on environment-related activities, scaled by total assets. Lastly, *lnEMP* is computed as the natural log of the amount spent on employee-welfare related activities scaled by total assets. We report the results in Table 8.

The coefficient on *lnSOCIAL* is positive and statistically significant at the 1% level, as shown in Column (4). It indicates that the firms' commitment displayed towards society will result in higher *ZSCORE* or lower financial distress risk. Then, in Column (5), the insignificant coefficient on *lnENVIRON* shows that spending towards the environment does not result in reduction in the financial distress risk. Our results are in line with Boubaker et al. (2020), who document that firm's commitment towards environment does not reduce the financial distress risk for a sample of US firms. The positive and statistically significant coefficient on *lnEMP* at the 1% level suggests that the financial distress risk reduces when firms spend more funds on activities directed towards welfare of the employees.

In summary, it is the spending on community-and-employee-welfare-related activities that reduces the financial distress risk and spending towards the environment does not benefit the firm. In the subsequent analyses, we analyze the three components rather than combined CSR spending for detailed analysis of the channels through which CSR expenditure affect the financial distress risk.

6.6 Corporate governance mechanisms

We now examine the impact of different corporate governance mechanisms on the relationship between CSR spending and financial distress risk. First, we explore how the levels of financial distress risk varies with CSR spending in the presence of domestic promoters, foreign promoters, institutional investors, and foreign institutional investors. Second, we examine whether the negative relation between CSR spending and financial distress risk varies with different attributes of the board of the firms.

6.6.1 Investor types

First, we identity several types of investors that exist in the Indian corporate scenario and look into its impact on the relationship between CSR spending and financial distress risk. We include investors namely domestic promoters (*Domestic promoters*), foreign promoters (*Foreign promoters*), institutional investors (*Institutional Investors*) and foreign institutional investors (*FII*).[20] We define *Domestic promoters*, *Foreign promoters*, *Institutional investors*, and *FII* as the proportion of total equity shares owned by domestic promoters, foreign promoters, institutional investors, and foreign institutional investors. We use interaction term to examine the incremental effect of the investor type on the relationship between CSR spending and financial distress risk. We present these results in Table 9 Panel A.

[Insert Table 9 here]

In Columns (1) to (2), we note that the coefficient on the investor types are not statistically significant, but the coefficients on *lnSOCIAL* remain positive and statistically significant at the 1% level. The negative effect of community-related CSR expenditure on financial distress risk is strengthened when there are foreign promoters. However, the results are significant at the 10% level. These results suggest that there is no incremental effect of the

[20] The word "promoters" is commonly used in India to refer to the controlling shareholders. These investors exercise significant control over management and board.

investor types namely, domestic promoters and foreign promoters on the relationship between *lnSOCIAL* and *ZSCORE*. In Columns (3) and (4), we observe the interaction terms to be positive and statistically significant at the 1% level. This indicates that at the given CSR spending on social-and-community-related activities, the financial distress risk decreases with increasing institutional and foreign institutional investors.

For the Columns (5)-(8), the coefficient on *lnENVIRON* still remains statistically insignificant showing that spending on environment related activities do not influence financial distress risk. An interesting finding is to note that at given CSR spending on environmental-related activities, financial distress risk increases with increasing foreign institutional investors statistically significant at the 1% level. This suggests that spending on environmental-related activities is seen as risky by the foreign institutional investors.

Lastly, the coefficients on *lnEMP* are negative and statistically significant at the 1% level in Columns (9)-(12). The negative coefficient on the interaction term in Column (9) suggests that as the ownership of domestic promoters increases, the negative effect of employee-welfare spending on financial distress risk weakens. The coefficients on the interaction term, in Columns (10) - (12) are positive and statistically significant at the 5% or better level. That is, at the higher levels of foreign promoters, institutional investor and foreign institutional investor ownership, the negative effect of employee-welfare spending on financial distress risk magnifies. By demonstrating that foreign investors decrease financial distress risk, we complement the work of Ting et al. (2008), who find that the foreign owners induces pressure on auditors to show high credit worthiness, that improves the access to funds and reduces the default risk of firms. In line with Li et al. (2021), we find that institutional investors reduces financial distress risk due to effective monitoring of potential risks faced by a firm.

Overall, investor types do not influence how social-and-community and environment-related spending affect financial distress risk. However, the negative effect of social-and-community related CSR spending on financial distress risk is magnified when there are institutional and foreign institutional investors. Further foreign promoters, institutional and foreign institutional investor ownership bolster the negative effect of employee-welfare spending on financial distress risk. In contrast, the presence of domestic promoters weaken this negative effect.

6.6.2 Board attributes

Another set of corporate governance mechanisms is based on the quality of board that exists in a firm. We examine the incremental effect of different board attributes (size, independence, busyness, and directors' attendance) on the relationship between CSR spending and financial distress risk with the help of interaction term. We define *Large board* as one (zero) if the board size is greater (smaller) than the sample median board size, *Board independence* as the proportion of independent directors to the total number of directors on board, *Busy board* as one if there are three or more directors on the board are also directors on the board of other companies, and *Attendance* as one if at least 50% of the directors attend half of the board meetings held during a year and zero otherwise. The results are presented in Table 9 Panel B.

For the Columns (1) to (4), the coefficient on the interaction term and the board attributes are not statistically significant but the coefficient on *lnSOCIAL* are positive and statistically significant at the 1% level except when we control for board independence. Column (2) shows that when we include the interaction term with *Board independence* in the regression model, the coefficient on the *lnSOCIAL* becomes insignificant. This could possibly be because *lnSOCIAL* variable may be capturing some of the effect of how board independence influence decisions related to CSR spending. Overall, these results show that the negative

relationship between CSR spending on social-and-community related activities and financial distress risk prevails when we control for board quality.

Columns (5)-(8) display insignificant effect of environment-related CSR spending on financial distress risk, which does not change with board attributes. Interestingly, we observe that the interaction term is positive and statistically significant at the 5% level in the Column (5) indicating that at given environmental spending, the financial distress risk decreases with increases in board size.

In Columns (9)-(12), the coefficients on *lnEMP* are positive and statistically significant at the 1% level. The insignificant coefficients on the interaction terms indicate that there is no incremental effect of board quality on how employee-related CSR spending affects financial distress risk. In contrast to Li et al. (2021), who document that board characteristics like board independence affects financial distress risk of sample of Chinese firms, we find no empirical evidence that the quality of board influences financial distress risk in India.

In conclusion, the finding that companies' spending funds on community and employee-welfare reduces level of financial distress risk, is robust to the controlling of board quality.

7. Channels through which CSR expenditure affects financial distress risk

7.1 Cost of debt

Goss and Roberts (2011) show that banks charge higher interest rates for firms involved in high controversies related to CSR activities such as penalties charged for polluting the environment. These penalties lead to high future costs and an increase in the probability of default of the firms. To account for default risk, the bank increase the interest rates and henceforth the cost of debt increases for the firms. La Rosa et al. (2018) show that firms with better engagement in the social-and-community related activities attract lenders, making access

to finance easier for such firms and lowering the cost of debt. The authors support their results with theoretical framework and argues that CSR reduces the information asymmetry, agency costs of debt, and build reputation. These studies suggest that CSR helps firms to access funds from the capital market and, therefore, reduces the levels of financial distress risk. Given these arguments, we hypothesize CSR reduces cost of debt, and that leads to a reduction in financial distress risk.

To test our conjecture, that CSR reduces the cost of debt, and that leads to a reduction in financial distress risk, we replace our dependent variable *ZSCORE* with the cost of debt (*KD*). We follow Ye and Zhang (2011) to estimate the cost of debt. It is calculated as the total interest expenses expressed as a percentage of the total borrowings outstanding. We use ordinary least square regression. We control for variables in prior literature (Goss and Roberts, 2011; Ye and Zhang, 2011; La Rosa et al., 2018) that may affect the relationship between different components of CSR and cost of debt. We include, *FIRMSIZE*, defined as the natural log of the book value of total assets, then *LEV*, which is long-term borrowings scaled by total assets, *EBIT_TA*, defined as the earnings before interest and taxes scaled by book value of total assets, *CF*, calculated as the cash flows from operating activities scaled by total assets, *lnMB*, estimated as the natural logarithm of the market value of equity divided by the book value of equity, *LN_SALES*, defined as the natural logarithm of total sales, and lastly we control for government ownership, *GOVT*, and foreign institutional investors, *FII*. We report the results in Table 10.

[Insert Table 10 here]

We note that the coefficient on *lnSOCIAL* is negative and statistically significant at the 1% level in Column (1) suggesting that companies spending on social-and-community related activities does lead to a reduction in the cost of debt. Column (2) show insignificant effect of

environment-related activities on the cost of debt. In Column (3), the coefficient on *lnEMP* is negative and statistically significant at the 1% level.

In summary, the empirical evidence discussed in this subsection suggests that cost of debt declines with firms spending more on social-and-community-related and employee-related activities. The funds that are spent on protecting the environment does not have any impact on the cost of debt. This indicates that cost of debt is a channel through which spending on social-and-community-related and employee-related activities affects the financial distress risk.

7.2 Credit ratings

Attig et al. (2013) and Jiraporn et al. (2014) show that higher engagement in CSR helps to improve the firm's credit ratings and reduces the default risk. They highlight that CSR builds strong relationships with government and community in general and does not lead to future litigations that may impact the future profitability of firms. In this way, the firms' commitment towards CSR reduces the future costs, enhances future profitability, and improves the credit ratings for the firms. We, therefore, hypothesize that the CSR improves the credit ratings and reduces the financial distress risk.

To test our hypothesis, we replace our dependent variable *ZSCORE* with the total credit ratings score calculated by following the credit ratings for the long-term debt available in the Prowess dx database. The long-term debt is rated from high to poor rating as "highest safety," "high safety," "adequate safety," "moderate safety," "inadequate safety," "substantial risk," "high risk," and "default", we assign scores from 1 to 8 (1 for "default", and 8 for "highest safety"), and then add the scores to obtain the variable *CRTNG* for each firm, and each year. We regress *CRTNG* on the different components of CSR and control variables using the ordinary least square regression. We follow Becker and Milbourn (2011), Attig et al. (2013),

and Jiraporn et al. (2014), and include control variables, *FIRMSIZE*, defined as the natural log of the book value of total assets, *LEV*, which is long-term borrowings scaled by total assets, *RND*, estimated as the research and development expenses scaled by total assets, *CF*, calculated as the cash flows from operating activities scaled by total assets, *SD_CF*, estimated as the standard deviation of *CF*, using data for trailing three years, *COVERAGE*, defined as the ratio of earnings before interest and taxes plus interest expenses scaled by the interest expenses, *OPINC*, which is the operating income estimated as the earnings before interest and taxes scaled by total sales, and lastly *CAPEX*, which is the capital expenditure incurred divided by total assets. The results are presented in Table 10.

We observe that the coefficient on *lnSOCIAL* in Column (4) is positive and statistically significant at the 5% level indicating that spending towards community welfare does lead to improvement in the credit ratings. In Column (5), we note a statistically insignificant coefficient on *lnENVIRON*, suggesting that spending on activities protecting the environment does not lead to enhancement in the ratings. Lastly, Column (6) shows that the coefficient on *lnEMP* is positive and statistically significant at the 1% level. These results suggest that spending on community and employee welfare improves the credit ratings for companies. We complement the findings of Verwijmeren and Derwall (2010), who document that US firms with strong employee relations have higher credit ratings and lower chances of bankruptcy.

In sum, the empirical evidence suggests that improvement in total credit ratings is a potential mechanism, which explains why financial distress risk reduces as firms spend more funds on the welfare of the community and employee. Overall, the results from last and this section indicate that social-and-community and employee-related CSR spending reduces the cost of debt, leading to improvement in the credit ratings, and hence reduces the financial distress risk of the firms.

8. Financial flexibility

Lastly, we move towards the impact of CSR spending on the financial distress risk at different levels of leverage (debt-ratios) in the firm. Debt ratios are strongly positively related to bankruptcy costs (Voung et al., 2024). High levels of leverage increases the chances of default on loans and increases the financial distress risk. Firms with high leverage need effective risk management strategies for the financial stability of firms. We argue that even the high levels of leverage increases the bankruptcy costs, CSR helps to create reputation, lowers the cost of debt, and improves credit ratings, and hence reduce the financial distress risk for firms even with high leverage. We follow Vuong et al. (2024), use leverage as a proxy for financial flexibility, and divide the full sample into three subsamples based on leverage (high, medium, and low level). Low (high) leverage firms consist of firms in the lowest (fourth) quartile. The middle two quartiles are classified as medium leverage firms. We present the results in Table 11.

[Insert Table 11 here]

We observe that the coefficients on *lnSOCIAL* across the Columns (1) to (3) are positive and statistically significant at the 1% level. However, the magnitude of the coefficient is stronger as the leverage decreases in the firm. This is because as leverage increases, the interest cost increases, which may divert the flow of funds from CSR to interest expenses. But we can still show that commitment of funds towards social-and-community related CSR decreases the financial distress risk even at high levels of leverage. We do not find any evidence of reduction in financial distress risk with environment-related CSR spending. Lastly, we find that the coefficients on *lnEMP* are positive and statistically significant at the 1% level, again indicating that employee-related CSR spending acts reduces the bankruptcy risk at high levels of financial leverage.

In sum, our results provide support to our previous findings that CSR is effective in reducing the cost of debt and improving the credit ratings due to better reputation and hence helps in reducing the financial distress risk even at high levels of leverage, although the effect is stronger at low levels of leverage.

9. Conclusion

This paper examines the relationship between the CSR spending and financial distress risk. We use a panel dataset of 28,625 firm-year observations from 2,698 unique Indian firms and sample period from 2000 to 2022. We find a negative and statistically significant relationship between CSR expenditure and financial distress risk. We use a battery of tests to eradicate concerns related to endogeneity. The negative relationship between CSR spending and financial distress risk holds for alternative measures of financial distress risk. We note that our finding of lower financial distress risk with increasing CSR spending persists during the financial crisis of 2007-2009, Covid-19 pandemic, crisis-free, and both pre-and-post-IBC 2016 period. The implementation of IBC is a major reform in dealing with bankruptcy of Indian firms. We show that the negative effect of CSR on financial distress risk prevails irrespective of the IBC. However, the effect is slightly stronger in the post-IBC period than that observed for the full sample period. In addition, the negative relation is stronger for young firms than for mature or oldfirms.

In the wake of the Covid-19 outbreak and business failures across the world, our study is relevant in a way that firms with high financial distress risk can obtain credit in light of spending towards CSR even in distressed scenarios.

It is the spending on social-and-community and employee-welfare-related activities that reduces the financial distress risk. Corporate governance mechanisms do not influence this relationship. However, the negative effect of social-and-community related CSR spending on

financial distress risk is magnified when there are institutional and foreign institutional investors. Further foreign promoters, institutional, and foreign institutional investor ownership bolster the negative effect of employee-welfare spending on the financial distress risk. Engagement in CSR influences the financial distress risk through its positive effect on reducing the cost of debt and improving credit ratings. Cost of debt and credit ratings are the channels through which spending towards the social-and-community and employee-related activities reduce the financial distress risk.

Our research provides input for public policy decision making. This study helps the policymakers to design policies on mandatory CSR by the corporates, which reduces the financial distress risk. It will be especially useful for the policymakers to make stringent provisions for the firms on spending towards the community and employees for a financially stable firm. It can help the IBBI to integrate CSR within its framework that can help to mitigate the distress risk and in turn reduces the chances of bankruptcy of Indian firms. It will also be beneficial for the managers to design CSR policies in order to reduce the financial distress risk, avoid bankruptcy, and ensure financial stability of corporates.

Employees can choose to work in those firms which spend funds towards their welfare and are ready to work in lower salaries for such firms at adverse scenarios. Moreover, since distress reduces, bankruptcy is avoided, further helping in preserving jobs and preventing unemployment in the country. Investors can invest in portfolios consisting of firms that engage in CSR activities so as to restrain from risky stocks which can give negative returns due to the financial distress of firms. Finally, our study will give insights to the bankers in their lending decisions so that they can judge the quality of their lending and avoid their assets turning into non-performing assets.

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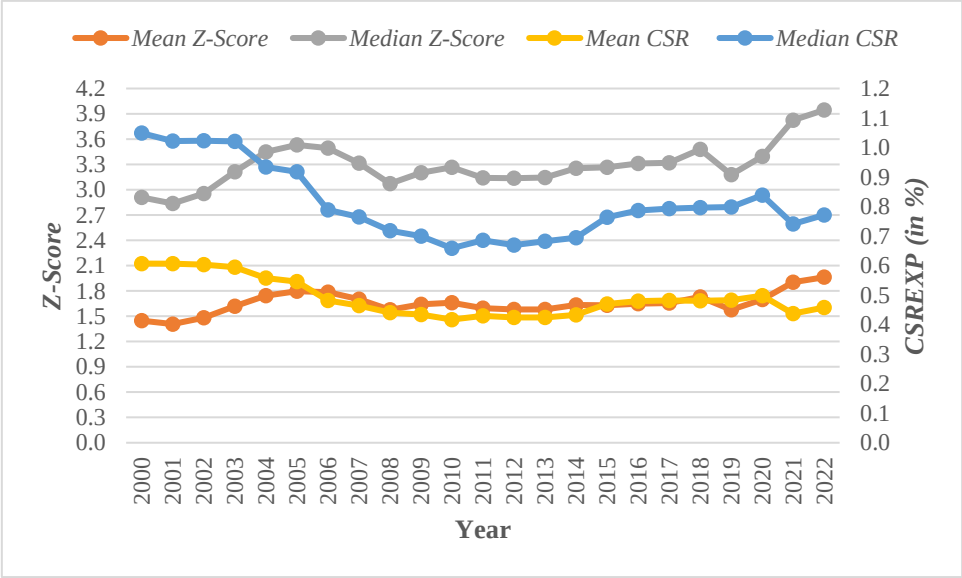

Figure 1: Trend for mean and median *ZSCORE* and CSR expenditure

This figure plots the mean and median values of *ZSCORE* and *CSREXP* (in %) for CSR companies over the sample period from 2000 to 2022. The left (right) hand side axis represent the scale for mean and median *ZSCORE (CSREXP). ZSCORE* is estimated by following Altman (1968). *CSREXP* is defined as the summation of social-and-community, environment-related and employee-welfare expenses incurred by a company expressed as a percentage of the company's total assets.

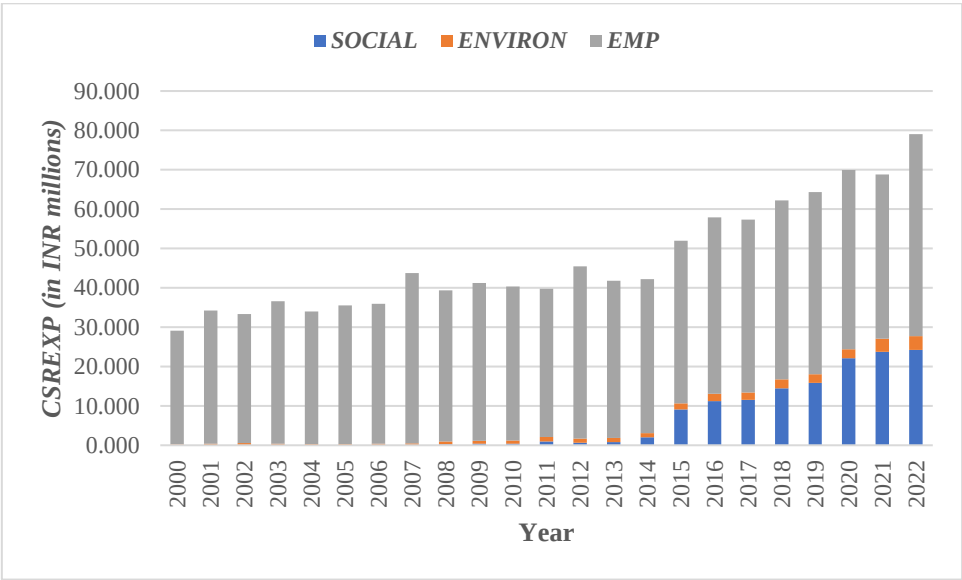

Figure 2: Trend for mean component-wise CSR expenditure

This figure plots the mean values of CSR expenditure for CSR companies over the sample period from 2000 to 2022. *SOCIAL*, *ENVIRON*, and *EMP* is the mean CSR expenditure made towards social-and-community, environment, and employee-welfare related activities, respectively.

Table 1: Descriptive statistics

This table presents sample distribution by industry and year. *CSREXP* is the sum of social-and-community, environment-related and employee-welfare related expenses made by a company scaled by the total assets. *ZSCORE* is calculated by following Altman (1968). Column (1) reports the number of observations. Columns (2) and (3) report mean *ZSCORE* and median *ZSCORE*, and Columns (4) and (5) report mean *CSREXP* and median *CSREXP*. *ZSCORE* is winsorized at the 1st and 99th percentile, and value of *CSREXP* is in percentage. The sample period is from 2000 to 2022.

	(1)	(2)	(3)	(4)	(5)
		ZSCORE		*CSREXP*	
	N	Mean	Median	Mean (In %)	Median (In %)
Panel A: This panel presents the distribution of the sample by industry.					
Accommodation and Food service activities	527	0.864	0.825	0.775	0.654
Administrative and support service activities	73	1.904	1.784	0.983	0.656
Agriculture, Forestry and Fishing	300	1.962	1.890	0.456	0.200
Arts, entertainment, and recreation	53	1.082	1.359	0.555	0.481
Construction	2,075	1.042	1.075	0.235	0.134
Education	43	0.735	0.857	0.287	0.176
Electricity, gas, and air conditioner	224	0.909	0.986	0.196	0.101
Human health and social work	261	1.319	1.373	0.552	0.440
Information and communication	1,701	1.313	1.304	0.533	0.315
Manufacturing	19,734	1.806	1.780	0.512	0.354
Mining and quarrying	280	1.521	1.590	0.471	0.260
Other service activities	22	1.311	1.271	0.779	0.504
Professional, scientific, and technical	167	0.900	0.934	0.472	0.267
Public administration and defence	7	1.878	1.933	0.498	0.625
Transportation and storage	447	1.901	1.843	0.472	0.233
Wholesale and retail trade	2,711	1.667	1.613	0.324	0.176

Panel B: This table presents descriptive statistics. *ZSCORE* is calculated by following Altman (1968). *OSCORE* is measured by following Ohlson (1980). *ZMSCORE* is computed by following Zmijewski (1984). *CSREXP* is defined as the summation of social and community expenses, environment, and employee-welfare related expenses made by a company scaled by the total assets. *CSR Amount* is the total amount spent on all CSR activities undertaken by a firm, *Social-and-community*, *Environment*, and *Employee-welfare* are the amount spent on social-and-community, environment, and employee-welfare related CSR spending, respectively. *lnMB* is the natural logarithm of the market value of equity divided by the book value of equity, *STKRET* is the average of the monthly stock return calculated over a year, *STKVOL* is the total stock return volatility, *FIRMSIZE* is the natural log of the book value of total assets, *DEP* is the total depreciation scaled by the total assets, *LEV* is long term borrowings scaled by total assets, *CASH* is cash and cash equivalent defined as a ratio of the total assets, *LOSS* is an indicator variable that is equal to one if a firm suffers from a loss in a given financial year and zero otherwise, and *QUICK* is the quick assets scaled by current liabilities. All continuous variables are winsorized at the 1st and 99th percentile. The sample period is from 2000 to 2022.

	(1)	(2)	(3)	(4)	(5)
	Mean	Median	25th percentile	75th percentile	Std Dev
ZSCORE	1.671	1.647	1.029	2.318	1.082
O-Score	-2.877	-2.954	-3.830	-2.095	1.237
ZM-Score	-2.876	-2.897	-3.936	-1.903	1.489
CSREXP (in %)	0.477	0.308	0.133	0.636	0.508
CSR Amount (INR million)	50.157	7.000	1.500	31.100	187.337
Social-and-community (INR million)	7.661	0.000	0.000	0.200	48.996
Environment (INR million)	1.432	0.000	0.000	0.000	21.611
Employee-welfare (INR million)	41.063	5.900	1.300	26.100	160.851
lnMB	0.106	0.067	-0.619	0.797	1.040
STKRET	0.370	0.089	-0.247	0.676	0.968
STKVOL	0.641	0.579	0.468	0.685	0.389
FIRMSIZE	7.850	7.724	6.565	9.027	1.746
DEP	0.029	0.026	0.015	0.039	0.019
LEV	0.277	0.267	0.126	0.406	0.182
CASH	0.012	0.001	0.000	0.004	0.035
LOSS	0.158	0.000	0.000	0.000	0.364
QUICK	0.952	0.706	0.451	1.082	0.982

Panel C: This panel reports Pearson (Spearman) correlation coefficients in the above (below) the diagonal. Significant coefficients (at the 5 % level) are indicated by *.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
ZSCORE (1)		-0.497*	-0.434*	0.263*	0.200*	0.192*	-0.152*	-0.052*	0.076*	-0.335*	0.142*	-0.404*	0.299*
ZM-Score (2)	-0.539*		0.867*	-0.203*	-0.217*	-0.099*	0.200*	-0.002	0.100*	0.872*	-0.117*	0.272*	-0.438*
O-Score (3)	-0.471*	0.875*		-0.140*	-0.262*	-0.077*	0.400*	-0.406*	0.160*	0.754*	-0.094*	0.247*	-0.391*
CSREXP (4)	0.201*	-0.181*	-0.115*		0.192*	0.060*	-0.137*	-0.002	0.294*	-0.169*	0.058*	-0.081*	0.039*
lnMB (5)	0.195*	-0.206*	-0.253*	0.163*		0.333*	-0.363*	0.249*	-0.024*	-0.152*	0.009	-0.151*	0.074*

STKRET (6)	0.144*	-0.079*	-0.050*	0.021*	0.284*		0.033*	0.003	0.022*	-0.053*	0.013*	-0.165*	0.042*
STKVOL (7)	-0.128*	0.165*	0.309*	-0.058*	-0.318*	0.055*		-0.569*	0.013*	0.172*	-0.026*	0.135*	-0.025*
FIRMSIZE (8)	-0.034*	0.001	-0.411*	-0.042*	0.247*	-0.015*	-0.404*		-0.071*	0.044*	-0.051*	-0.050*	-0.144*
DEP (9)	0.036*	0.089*	0.152*	0.220*	-0.013*	0.003	0.052*	-0.093*		0.156*	-0.038*	0.039*	-0.098*
LEV (10)	-0.334*	0.855*	0.756*	-0.161*	-0.142*	-0.028*	0.144*	0.046*	0.138*		-0.129*	0.205*	-0.461*
CASH (11)	0.139*	-0.215*	-0.263*	0.059*	0.118*	-0.008	-0.112*	0.134*	-0.051*	-0.221*		-0.075*	0.139*
LOSS (12)	-0.428*	0.318*	0.277*	-0.058*	-0.149*	-0.136*	0.130*	-0.050*	0.053*	0.230*	-0.052*		-0.196*
QUICK (13)	0.140*	-0.319*	-0.296*	0.006	0.027*	0.008	-0.004	-0.122*	-0.056*	-0.363*	0.253*	-0.097*	

Panel D: The total sample is divided into two subsamples based on CSR percentages of below (low-CSR) and above (high-CSR) sample median CSR. This panel reports the mean and median values of variables for the two subsamples and results from the test of difference-in-means and difference-in-medians. Statistical significance at the 1%, 5%, and 10% level is indicated by ***, **, and *, respectively.

	(1)	(2)	(3)	(4)	(5)	(6)	(7) = (2) – (5)	(8) = (3)- (6)
	Low CSR Firms (Below Sample Median)			High CSR Firms (Above Sample Median)			Difference-in-Means	Difference-in-Medians
ZSCORE	14318	1.434	1.416	14307	1.909	1.874	-0.475***	-0.458***
O-Score	13599	-2.665	-2.704	13540	-3.087	-3.104	0.422***	0.401***
ZM-Score	13807	-2.651	-2.739	13700	-3.106	-3.178	0.455***	0.439***
CSREXP	14318	0.001	0.001	14307	0.008	0.006	-0.007***	-0.005***
lnMB	14318	-0.107	-0.141	14307	0.319	0.272	-0.426***	-0.413***
STKRET	14318	0.353	0.058	14307	0.386	0.124	-0.033***	-0.066***
STKVOL	14318	0.685	0.605	14307	0.596	0.553	0.089***	0.052***
FIRMSIZE	14318	7.791	7.607	14307	7.908	7.830	-0.117***	-0.223***
DEP	14318	0.025	0.022	14307	0.033	0.030	-0.008***	-0.008***
LEV	14318	0.306	0.297	14307	0.248	0.233	0.057***	0.064***
CASH	14318	0.009	0.001	14307	0.014	0.001	-0.006***	0.000***
LOSS	14318	0.185	0.000	14307	0.130	0.000	0.055***	0.000***
QUICK	14318	0.956	0.698	14307	0.949	0.716	0.007	-0.018***

Table 2: Baseline regression results and robustness tests

This table presents the main analysis and the robustness tests, where the dependent variable is the financial distress risk which is measured by *ZSCORE* wherein *ZSCORE* is calculated by following Altman (1968). The independent variable is the *lnCSR*, which is the natural log of *CSREXP*, which is calculated as the total amount spent on CSR activities undertaken by a firm, scaled by total assets. *lnMB* is the natural log of the market value of equity divided by the book value of equity, *STKRET* is the average of the monthly stock return calculated over a year, *STKVOL* is the total stock return volatility, *FIRMSIZE* is the natural log of the book value of total assets, *DEP* is the total depreciation scaled by the total assets, *LEV* is total borrowings scaled by total assets, *CASH* is cash and cash equivalent defined as a ratio of the total assets, *LOSS* is an indicator variable that is equal to one if a firm suffers from a loss in a given financial year and zero otherwise, and *QUICK* is the quick assets scaled by current liabilities. All continuous variables are winsorized at the 1st and 99th percentile. The sample period is from 2000 to 2022. Statistical significance at the 1%, 5%, and 10% level is indicated by ***, **, and *, respectively. *t*-Statistics (in parentheses) are calculated based on heteroscedasticity-robust standard errors clustered by firm and year.

	(1) Baseline Regression	(2) Controlling for industry-by-year FE	(3) Controlling for CSR^2	(4) Fama-MacBeth regression	(5) Newey-west errors	(6) Manufacturing firms	(7) Non-manufacturing firms
lnCSR	0.118***	0.118***		0.108***	0.118***	0.087***	0.169***
	(9.642)	(9.091)		(14.960)	(22.705)	(6.030)	(8.037)
CSREXP			0.503***				
			(7.918)				
CSREXP²			-0.132***				
			(-4.944)				
lnMB	0.108***	0.110***	0.109***	0.095***	0.108***	0.100***	0.114***
	(7.660)	(7.467)	(7.599)	(15.600)	(15.660)	(5.582)	(5.047)
STKRET	0.063***	0.064***	0.063***	0.099***	0.063***	0.067***	0.062**
	(3.999)	(3.864)	(3.997)	(6.821)	(8.712)	(4.210)	(2.393)
STKVOL	-0.135**	-0.136**	-0.131**	-0.314***	-0.135***	-0.132**	-0.152**
	(-2.388)	(-2.306)	(-2.309)	(-5.174)	(-4.719)	(-2.088)	(-2.302)
FIRMSIZE	-0.040***	-0.041***	-0.040***	-0.045***	-0.040***	-0.043***	-0.031**
	(-4.128)	(-3.961)	(-4.175)	(-7.666)	(-9.939)	(-3.598)	(-2.192)
DEP	1.520**	1.458**	1.689**	1.567***	1.520***	1.998**	0.825
	(2.293)	(2.172)	(2.562)	(5.470)	(4.750)	(2.484)	(0.661)
LEV	-1.344***	-1.345***	-1.344***	-1.383***	-1.344***	-1.569***	-0.874***
	(-13.763)	(-12.898)	(-13.912)	(-18.269)	(-36.818)	(-13.710)	(-6.689)
CASH	1.935***	1.933***	1.945***	2.910***	1.935***	1.605***	2.085***
	(7.622)	(7.376)	(7.617)	(8.262)	(13.211)	(4.583)	(5.132)
LOSS	-0.946***	-0.948***	-0.951***	-0.925***	-0.946***	-0.922***	-0.979***
	(-25.681)	(-23.308)	(-25.417)	(-31.367)	(-54.122)	(-19.743)	(-19.995)
QUICK	0.060***	0.060***	0.061***	0.048***	0.060***	0.089***	0.039**
	(3.536)	(3.121)	(3.586)	(3.346)	(7.161)	(3.887)	(2.083)
Constant	2.296***	2.329***	1.412***	2.369***	2.296***	3.098***	2.393***
	(14.765)	(15.780)	(9.805)	(18.000)	(32.805)	(20.664)	(11.284)
N	28,625	28,625	28,625	28,625	28,625	19,734	8,891
Adj-R²	0.366	0.367	0.365	0.377 (R2)		0.347	0.349
Industry FE	YES	-	YES	YES	YES	YES	YES
Year FE	YES	-	YES	YES	YES	YES	YES
Industry-Year FE	-	YES	-	-	-	-	-

Table 3: Endogeneity Tests

This table presents results from the fixed-effect regression, endogenous treatment effect model, and 2SLS Estimation Model in which the main dependent variable is the financial distress risk which is measured by *ZSCORE* wherein *ZSCORE* is calculated by following Altman (1968). *lnCSR*, is the natural log of *CSREXP*, calculated as the total amount spent on CSR activities undertaken by a firm, scaled by total assets. *lnMB* is the natural log of the market value of equity divided by the book value of equity, *STKRET* is the average of the monthly stock return calculated over a year, *STKVOL* is the total stock return volatility, *FIRMSIZE* is the natural log of the book value of total assets, *DEP* is the total depreciation scaled by the total assets, *LEV* is total borrowings scaled by total assets, *CASH* is cash and cash equivalent defined as a ratio of the total assets, *LOSS* is an indicator variable that is equal to one if a firm suffers from a loss in a given financial year and zero otherwise, *QUICK* is the quick assets scaled by current liabilities, *CF* is cash flow from operating activities scaled by total assets, *SD_CF* is the standard deviation of *CF*, using data for the trailing five years, *FIRMAGE* is the number of years a firm exists from the date of incorporation, and *TREATED* is one for firms that meet the threshold net worth, sales, or profits, above which they are mandated to spend certain minimum amount on CSR activities. IV_1 is the number of years for which a firm appears in our data, and IV_2 is the annual mean industry CSR expenditure to total assets (in %), calculated by excluding the firm itself. All continuous variables are winsorized at the 1st and 99th percentile. The sample period is from 2000 to 2022. Statistical significance at the 1%, 5%, and 10% level is indicated by ***, **, and *, respectively. *t*-Statistics (in parentheses) are calculated based on heteroscedasticity-robust standard errors clustered by firm.

Panel A: This panel reports the results from the Diagnostic Tests of the Two-Stage Least Squares Regression

Post estimation Test of Endogeneity
H_0 = *Variables are exogenous*
Robust regression F (1, 2696) = 7.763 (p = 0.005)

Test of Weak Instruments
H_0 = *Instruments are weak*
F (2, 2696) = 89.956 (p = 0.000)

Test of Over-Identifying Restrictions
H_0 = *Instruments are valid*
Sargan's χ^2*(p-value)* = 0.013 (0.906)
Basmann's χ^2*(p-value)* = 0.013 (0.906)

	(1)	(2)	(3)	(4)	(5)
Panel B: Endogeneity Tests	Fixed-Effects Regression	Endogenous Treatment Effects Model		2SLS Regression	
		First-Stage	Second-Stage	First-Stage	Second-Stage
lnCSR	0.142***				0.281***
	(14.915)				(4.613)
TREATED			0.382***		
			(6.621)		
lnMB	0.138***	0.330***	0.125***	0.268***	0.068***
	(12.762)	(24.877)	(11.239)	(15.810)	(3.381)
STKRET	0.040***		0.050***	-0.051***	0.070***
	(6.859)		(5.575)	(-5.830)	(8.530)
STKVOL	-0.079***	-3.110***	-0.212***	-0.184***	-0.103***
	(-3.064)	(-12.198)	(-4.868)	(-6.160)	(-2.938)
FIRMSIZE	-0.058***		-0.103***	-0.070***	-0.034***
	(-5.133)		(-20.438)	(-5.900)	(-3.683)
DEP	1.459***	-6.093***	3.404***	13.474***	-0.808
	(2.795)	(-8.995)	(9.341)	(14.990)	(-0.714)
LEV	-1.508***		-1.448***	-1.251***	-1.127***
	(-24.845)		(-34.401)	(-13.480)	(-10.171)
CASH	0.706***		1.636***	1.441***	1.710***
	(4.001)		(10.064)	(4.640)	(6.446)
LOSS	-0.525***		-0.821***	-0.097***	-0.933***
	(-29.853)		(-28.995)	(-3.180)	(-32.355)
QUICK	0.031***	0.050***	0.089***	-0.058***	0.071***
	(3.385)	(3.298)	(9.845)	(-4.300)	(5.192)
CF		2.502***			
		(11.574)			
SD_CF		-1.509***			
		(-8.181)			
FIRMAGE		0.003***			
		(4.347)			
IV_1				0.043***	
				(13.280)	
IV_2				-0.525*	
				(-1.770)	

Constant	3.252***	1.381***	2.133***	-4.119***	2.995***
	(30.855)	(8.520)	(29.884)	(-27.650)	(10.321)
N	28,625	21,573	21,573	28,592	28,592
Adj-R^2	0.278 (R^2)	-	-	0.258	0.343
Industry FE	YES	YES	YES	YES	YES
Year FE	YES	YES	-	YES	YES

Table 4: Difference-in-difference analysis (To be added)

Table 5: Alternative measures of financial distress risk

This table presents the additional analysis, where the dependent variable is the financial distress risk which is measured by alternative measures of financial distress risk namely *O-Score*, *ZM-Score*, and *Revised ZSCORE* wherein *O-Score* is measured by following Ohlson (1980), *ZM-Score* is computed by following Zmijewski (1984) and revised *ZSCORE* is calculated by following Altman (2017). The independent variable is the *lnCSR*, calculated as the natural log of *CSREXP*, estimated as the total amount spent on CSR activities undertaken by a firm, scaled by total assets. *lnMB* is the natural log of the market value of equity divided by the book value of equity, *STKRET* is the average of the monthly stock return calculated over a year, *STKVOL* is the total stock return volatility, *FIRMSIZE* is the natural log of the book value of total assets, *DEP* is the total depreciation scaled by the total assets, *LEV* is total borrowings scaled by total assets, *CASH* is cash and cash equivalent defined as a ratio of the total assets, *LOSS* is an indicator variable that is equal to one if a firm suffers from a loss in a given financial year and zero otherwise, and *QUICK* is the quick assets scaled by current liabilities. All continuous variables are winsorized at the 1st and 99th percentile. The sample period is from 2000 to 2022. Statistical significance at the 1%, 5%, and 10% level is indicated by ***, **, and *, respectively. *t*-Statistics (in parentheses) are calculated based on heteroscedasticity-robust standard errors clustered by firm and year.

	(1)	(2)	(3)
	OSCORE	*ZMSCORE*	*Revised ZSCORE*
lnCSR	-0.018***	-0.031***	0.065**
	(-2.981)	(-8.049)	(2.555)
lnMB	-0.041***	-0.080***	0.772***
	(-5.166)	(-11.885)	(9.903)
STKRET	-0.026***	-0.037***	0.069**
	(-4.672)	(-5.857)	(2.093)
STKVOL	0.062**	0.052**	-0.269*
	(2.183)	(2.165)	(-1.997)
FIRMSIZE	-0.369***	-0.008	0.042**
	(-67.351)	(-1.701)	(2.131)
DEP	0.500	-1.147***	-5.270***
	(1.329)	(-3.834)	(-3.509)
LEV	5.914***	5.547***	-4.584***
	(92.032)	(117.606)	(-27.923)
CASH	-0.777***	-0.625***	7.904***
	(-5.280)	(-5.845)	(10.450)
LOSS	0.297***	0.382***	-1.805***
	(10.416)	(17.668)	(-27.390)
QUICK	-0.127***	-0.020***	0.778***
	(-12.045)	(-3.025)	(19.068)
Constant	-1.358***	-4.500***	6.706***
	(-12.984)	(-57.160)	(19.533)
N	27,139	27,507	28,624
Adj-R^2	0.788	0.760	0.572
Industry FE	YES	YES	YES
Year FE	YES	YES	YES

Table 6: Crises and Insolvency and Bankruptcy Code period

This table presents results obtained from the estimation of OLS regression model, wherein the dependent variable is *ZSCORE* in all the cases, which is estimated by following Altman (1968). The independent variable is the *lnCSR*, calculated as the natural log of *CSREXP*, estimated as the total amount spent on CSR activities undertaken by a firm, scaled by total assets. *lnMB* is the natural log of the market value of equity divided by the book value of equity, *STKRET* is the average of the monthly stock return calculated over a year, *STKVOL* is the total stock return volatility, *FIRMSIZE* is the natural log of the book value of total assets, *DEP* is the total depreciation scaled by the total assets, *LEV* is total borrowings scaled by total assets, *CASH* is cash and cash equivalent defined as a ratio of the total assets, *LOSS* is an indicator variable that is equal to one if a firm suffers from a loss in a given financial year and zero otherwise, and *QUICK* is the quick assets scaled by current liabilities. All continuous variables are winsorized at the 1st and 99th percentile. The sample period is from 2007 to 2009 (Global Financial Crisis), 2020 to 2022 (Covid-19 crisis), 2000 to 2016 (Pre-IBC), and 2017 to 2022 (Post-IBC). Statistical significance at the 1%, 5%, and 10% level is indicated by ***, **, and *, respectively. *t*-Statistics (in parentheses) are calculated based on heteroscedasticity-robust standard errors clustered by firm and year.

	(1)	(2)	(3)	(4)	(5)
	Global Financial Crisis	Covid-19 Crisis	Excluding crisis period	Pre-IBC period	Post-IBC period
lnCSR	0.094***	0.166***	0.111***	0.102***	0.152***
	(6.253)	(10.640)	(9.096)	(8.290)	(10.671)
lnMB	0.060**	0.124***	0.108***	0.098***	0.121***
	(2.231)	(7.296)	(7.313)	(5.936)	(7.348)
STKRET	0.096***	0.041***	0.068***	0.059***	0.076**
	(3.567)	(5.834)	(3.288)	(3.318)	(2.522)
STKVOL	-0.307***	-0.015	-0.137**	-0.148**	-0.064
	(-3.414)	(-0.131)	(-2.213)	(-2.284)	(-0.748)
FIRMSIZE	-0.018	-0.037*	-0.043***	-0.037***	-0.041***
	(-1.148)	(-1.957)	(-4.159)	(-3.139)	(-3.158)
DEP	1.876**	0.219	1.666**	2.078***	0.266
	(2.110)	(0.298)	(2.293)	(2.925)	(0.310)
LEV	-1.672***	-1.039***	-1.355***	-1.474***	-1.097***
	(-17.576)	(-6.839)	(-12.423)	(-13.061)	(-9.535)
CASH	5.846***	1.401***	2.025***	2.402***	1.440***
	(3.568)	(6.131)	(6.685)	(7.758)	(5.699)
LOSS	-0.843***	-0.918***	-0.959***	-0.899***	-1.013***
	(-5.620)	(-10.964)	(-22.592)	(-23.978)	(-14.645)
QUICK	0.007	0.114***	0.053**	0.028*	0.111***
	(0.300)	(4.914)	(2.617)	(1.647)	(5.363)
Constant	2.143***	2.532***	2.309***	2.196***	2.526***
	(7.238)	(4.071)	(15.672)	(14.850)	(7.882)
N	3,550	5,034	20,041	18,940	9,685
Adj-R^2	0.315	0.368	0.371	0.358	0.384
Industry FE	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES

Table 7: Firm life cycle stages

This table presents the results of the impact of different stages of the firm life cycle on the relationship between CSR and financial distress risk using OLS results, wherein the dependent variable is *ZSCORE* in all the cases, which is estimated by following Altman (1968). The independent variable is the *lnCSR*, calculated as the natural log of CSREXP, estimated as the total amount spent on CSR activities undertaken by a firm, scaled by total assets. The sample is divided into three subsamples based on the life cycle stage of the firm. A firm is in the young (old) stage when it lies in the lower 25% (higher 25%), and in the mature stage when it lies in between the top and bottom 25% of the distribution. *INCORP* is estimated as the number of years counted from the date of incorporation of the firms, *RE/TE* is defined as the total retained earnings scaled by the total equity, and *RE/TA* is estimated as the total retained earnings scaled by the total assets. *lnMB* is the natural log of the market value of equity divided by the book value of equity, *STKRET* is the average of the monthly stock return calculated over a year, *STKVOL* is the total stock return volatility, *FIRMSIZE* is the natural log of the book value of total assets, *LEV* is total borrowings scaled by total assets, *CASH* is cash and cash equivalent defined as a ratio of the total assets, *LOSS* is an indicator variable that is equal to one if a firm suffers from a loss in a given financial year and zero otherwise, and *QUICK* is the quick assets scaled by current liabilities. All continuous variables are winsorized at the 1st and 99th percentile. The sample period is from 2000 to 2022. Statistical significance at the 1%, 5%, and 10% level is indicated by ***, **, and *, respectively. *t*-Statistics (in parentheses) are calculated based on heteroscedasticity-robust standard errors clustered by firm and year.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
		INCORP			*RE/TE*			*RE/TA*	
	Young	Mature	Old	Young	Mature	Old	Young	Mature	Old
lnCSR	0.131***	0.112***	0.099***	0.095***	0.079***	0.027	0.091***	0.060***	0.074***
	(6.749)	(6.909)	(4.005)	(5.392)	(5.748)	(1.387)	(5.414)	(4.383)	(3.827)
lnMB	0.117***	0.087***	0.132***	0.030	0.177***	0.253***	0.027	0.192***	0.281***
	(5.328)	(4.410)	(4.740)	(1.348)	(10.343)	(11.181)	(1.323)	(11.232)	(14.198)
STKRET	0.076***	0.065***	0.047***	0.068***	0.045***	0.049***	0.074***	0.042***	0.045***
	(4.987)	(6.088)	(2.982)	(4.207)	(4.642)	(3.377)	(4.671)	(4.566)	(3.274)
STKVOL	-0.089	-0.111***	-0.219***	-0.053	-0.025	-0.257**	-0.049	0.013	-0.146*
	(-1.618)	(-2.649)	(-2.710)	(-1.111)	(-0.779)	(-2.393)	(-0.996)	(0.439)	(-1.764)
FIRMSIZE	-0.046***	-0.030**	-0.048**	-0.093***	-0.144***	-0.122***	-0.049***	-0.117***	-0.076***
	(-3.135)	(-2.470)	(-2.498)	(-6.366)	(-11.624)	(-6.700)	(-3.788)	(-10.941)	(-5.555)
DEP	-1.295	1.634*	6.886***	-1.739*	1.980**	7.379***	-0.984	0.529	5.126***
	(-1.230)	(1.696)	(5.464)	(-1.649)	(2.495)	(6.716)	(-0.864)	(0.691)	(5.218)
LEV	-0.922***	-1.320***	-1.969***	-0.482***	-1.051***	-1.942***	-0.362***	-0.642***	-1.594***
	(-7.028)	(-12.439)	(-14.807)	(-3.983)	(-10.760)	(-13.756)	(-3.036)	(-6.543)	(-11.222)
CASH	2.105***	1.917***	1.310***	2.453***	0.884***	1.075***	2.586***	0.686*	0.745***
	(3.712)	(5.548)	(2.987)	(4.534)	(2.668)	(3.484)	(3.955)	(1.800)	(2.829)
LOSS	-1.161***	-0.959***	-0.595***	-1.002***	-0.584***	-0.443***	-0.929***	-0.545***	-0.423***
	(-24.389)	(-21.793)	(-13.396)	(-24.631)	(-20.000)	(-8.549)	(-24.571)	(-18.521)	(-7.132)
QUICK	0.025	0.088***	0.120***	-0.001	0.085***	0.054***	-0.012	0.036*	0.043***
	(1.359)	(4.367)	(4.654)	(-0.068)	(4.676)	(2.927)	(-0.568)	(1.884)	(3.007)
Constant	2.475***	2.041***	2.350***	2.044***	2.576***	2.766***	1.592***	2.084***	2.534***
	(9.458)	(13.199)	(10.272)	(9.850)	(17.769)	(13.961)	(7.896)	(15.554)	(13.409)
N	7,762	13,929	6,934	7,164	14,310	7,147	7,165	14,312	7,147
Adj-R^2	0.367	0.356	0.422	0.318	0.324	0.452	0.281	0.264	0.344
Industry Effects	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year Effects	YES	YES	YES	YES	YES	YES	YES	YES	YES

Table 8: Mandatory CSR period, explain-only firms, mandated amount and components of CSR

This table presents results obtained from the estimation of OLS regression model. The dependent variable is *ZSCORE*, wherein it is estimated by following Altman (1968). The main explanatory variable is represented by *X*, which is one of *lnCSR*, *lnSOCIAL*, *lnENVIRON*, or *lnEMP*, where *lnCSR* is the natural log of *CSREXP*, which is the amount spent on CSR activities scaled by total assets, *lnSOCIAL*, *lnENVIRON*, and *lnEMP* are the natural log of the amount spent on social-and-community, environment, and employee-welfare related CSR spending, scaled by total assets, respectively. *POST2014* is one for 2015-2021 and zero for 2000-2014, *EXPLAIN* is one for firms that spend less than the minimum mandated amount on CSR activities, and *MANDATED* is one if firms spend more than the minimum mandated amount on CSR activities. *lnMB* is the natural log of the market value of equity divided by the book value of equity, *STKRET* is the average of the monthly stock return calculated over a year, *STKVOL* is the total stock return volatility, *FIRMSIZE* is the natural log of the book value of total assets, *DEP* is the total depreciation scaled by the total assets, *LEV* is total borrowings scaled by total assets, *CASH* is cash and cash equivalent defined as a ratio of the total assets, *LOSS* is an indicator variable that is equal to one if a firm suffers from a loss in a given financial year and zero otherwise, and *QUICK* is the quick assets scaled by current liabilities. All continuous variables are winsorized at the 1st and 99th percentile. The sample period is from 2000 to 2022. Statistical significance at the 1%, 5%, and 10% level is indicated by ***, **, and *, respectively. *t*-Statistics (in parentheses) are calculated based on heteroscedasticity-robust standard errors clustered by firm and year.

	(1)	(2)	(3)	(4)	(5)	(6)
		Sample consists of mandatory CSR period only				
	X = lnCSR *Y = ZSCORE*	*X = lnCSR* *Y = ZSCORE*	*X = lnCSR* *Y = ZSCORE*	*X = lnSOCIAL* *Y = ZSCORE*	*X = lnENVIRON* *Y = ZSCORE*	*X = lnEMP* *Y = ZSCORE*
X	0.105***	0.144***	0.133***	0.147	-0.002	0.098
	(8.090)	(9.484)	(9.095)	(5.966)***	(-0.080)	(8.903)***
X × POST2014	0.032**					
	(2.247)					
POST2014	0.326***					
	(3.578)					
X × EXPLAIN		-0.009				
		(-0.357)				
EXPLAIN		0.135				
		(0.999)				
X × MANDATED			0.068**			
			(2.908)			
MANDATED			0.540***			
			(3.877)			
lnMB	0.106***	0.111***	0.089***	0.185	0.119	0.114
	(7.420)	(6.849)	(4.447)	(8.942)***	(2.105)**	(7.842)***
STKRET	0.064***	0.075**	0.072**	0.097	0.064	0.062
	(3.949)	(3.149)	(3.022)	(3.956)***	(2.283)**	(3.949)***
STKVOL	-0.138**	-0.115	-0.013	-0.456	-0.027	-0.136
	(-2.449)	(-1.301)	(-0.153)	(-4.087)***	(-0.197)	(-2.385)**
FIRMSIZE	-0.040***	-0.051***	-0.058***	-0.098	-0.041	-0.038
	(-4.153)	(-4.792)	(-4.886)	(-5.765)***	(-1.044)	(-3.923)***
DEP	1.475**	0.536	-0.022	2.785	-3.383	1.767
	(2.226)	(0.642)	(-0.028)	(2.485)**	(-1.003)	(2.747)**
LEV	-1.344***	-1.098***	-1.048***	-1.100	-1.281	-1.390
	(-13.737)	(-11.249)	(-10.412)	(-7.159)***	(-3.666)***	(-15.081)***
CASH	1.915***	1.452***	1.492***	0.952	2.921	2.006
	(7.569)	(6.182)	(6.409)	(4.290)***	(3.195)***	(8.017)***
LOSS	-0.943***	-0.967***	-0.981***	-0.682	-0.891	-0.952
	(-25.666)	(-17.807)	(-21.052)	(-8.285)***	(-5.365)***	(-25.198)***
QUICK	0.059***	0.112***	0.109***	0.101	0.166	0.061
	(3.457)	(6.251)	(5.917)	(6.754)***	(2.183)**	(3.504)***
Constant	2.230***	2.638***	2.569***	3.602	1.054	2.193
	(14.564)	(10.829)	(10.138)	(12.646)***	(2.213)**	(14.459)***
N	28,625	12,507	10,024	7,323	1,520	28,408
Adj-R^2	0.366	0.392	0.391	0.401	0.334	0.364
Industry FE	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES

Table 9: Corporate governance mechanisms

This table presents results obtained from the estimation of OLS regression model in which dependent variable is *ZSCORE*, wherein it is estimated by following Altman (1968). *lnSOCIAL*, *lnENVIRON*, and *lnEMP* are the natural log of the amount spent on social-and-community, environment, and employee-welfare related CSR spending, scaled by total assets, respectively. All regressions include control variables as in the main regression model but are not shown here for brevity. All continuous variables are winsorized at the 1st and 99th percentile. The sample period is from 2000 to 2021. Statistical significance at the 1%, 5%, and 10% level is indicated by ***, **, and *, respectively. *t*-Statistics (in parentheses) are calculated based on heteroscedasticity-robust standard errors, which is clustered by firm and year.

Panel A: This panel presents the results obtained from the analysis while controlling for different ownership types in India. Variable *X* is one of the variables, *Domestic promoters, Foreign promoters, Institutional investors, or Foreign institutional investors. Domestic promoters, Foreign promoters, Institutional investors*, and *FII* represent proportion of equity shares held by domestic promoters, foreign promoters, institutional investors, and foreign institutional investors, respectively.

	(1) *X = Domestic promoters*	(2) *X = Foreign promoters*	(3) *X = Institutional investors*	(4) *X = FII*	(5) *X = Domestic promoters*	(6) *X = Foreign promoters*	(7) *X = Institutional investors*	(8) *X = FII*	(9) *X = Domestic promoters*	(10) *X = Foreign promoters*	(11) *X = Institutional investors*	(12) *X = FII*
lnSOCIAL	0.195***	0.142***	0.126***	0.127***								
	(5.366)	(10.084)	(7.794)	(8.380)								
lnSOCIAL× X	-0.001	0.001*	0.003***	0.005***								
	(-1.471)	(1.704)	(2.654)	(3.387)								
lnENVIRON					-0.014	-0.007	0.008	0.009				
					(-0.148)	(-0.273)	(0.289)	(0.341)				
lnENVIRON × X					0.000	0.002	-0.003	-0.008***				
					(0.152)	(0.674)	(-1.355)	(-2.640)				
lnEMP									0.172***	0.089***	0.079***	0.082***
									(6.564)	(7.580)	(6.174)	(6.794)
lnEMP × X									-0.001***	0.002***	0.003***	0.005***
									(-3.087)	(2.756)	(3.454)	(3.244)
X	-0.004	0.009	0.015*	0.032***	0.002	0.019	-0.014	-0.051***	-0.004	0.012***	0.013**	0.028***
	(-0.835)	(1.628)	(1.858)	(2.833)	(0.221)	(0.914)	(-1.034)	(-2.776)	(-1.456)	(2.627)	(2.452)	(2.761)
Control Variables	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Constant	3.708***	3.450***	3.382***	3.325***	1.476*	1.527***	1.720***	1.630***	2.558***	2.289***	2.145***	2.223***
	(8.672)	(10.147)	(9.615)	(9.970)	(1.815)	(3.344)	(3.342)	(3.261)	(13.915)	(18.713)	(16.440)	(17.669)
N	7,302	7,302	7,302	7,302	1,489	1,489	1,489	1,489	27,372	27,372	27,372	27,372
Adj-R^2	0.407	0.404	0.406	0.406	0.337	0.340	0.339	0.340	0.373	0.366	0.367	0.366
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Panel B: This panel presents the results obtained from the analysis while controlling for various board characteristics. Variable *X* is one of the variables, *Large board, Board independence, Busy board, and Attendance*, where *Large board* is one (zero) if the board size is greater (smaller) than the sample median board size, *Board independence* is the proportion of the number of independent directors to the total number of directors on board, *Busy board* is one if three or more directors on the board are also present on the board of other companies, and *Attendance* is one if at least 50% of the directors attend half of the board meetings held during a year and zero otherwise.

	(1) *X = Large board*	(2) *X = Board independence*	(3) *X = Busy board*	(4) *X = Attendance*	(5) *X = Large board*	(6) *X = Board independence*	(7) *X = Busy board*	(8) *X = Attendance*	(9) *X = Large board*	(10) *X = Board independence*	(11) *X = Busy board*	(12) *X = Attendance*
lnSOCIAL	0.126***	0.116	0.128***	0.136***								
	(6.763)	(1.310)	(6.295)	(8.027)								
lnSOCIAL× X	0.029	0.055	0.005	0.017								
	(1.181)	(0.332)	(1.056)	(0.890)								
lnENVIRON					-0.019	-0.024	0.047	0.037				
					(-0.537)	(-0.362)	(1.106)	(1.229)				
lnENVIRON × X					0.085**	0.099	-0.012	0.022				
					(2.071)	(0.802)	(-1.128)	(0.682)				

lnEMP									0.085***	0.103***	0.090***	0.095***
									(5.889)	(3.137)	(5.554)	(6.756)
lnEMP × X									0.021	-0.016	0.002	-0.002
									(1.144)	(-0.278)	(0.528)	(-0.125)
X	0.262	0.214	0.029	0.148	0.520*	0.593	-0.095	0.236	0.134	-0.209	0.004	-0.000
	(1.444)	(0.192)	(0.800)	(1.050)	(1.923)	(0.673)	(-1.356)	(1.102)	(1.208)	(-0.596)	(0.159)	(-0.002)
Control Variables	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Constant	5.238***	5.094***	5.132***	4.396***	2.149***	2.195***	1.961***	2.850***	2.855***	2.982***	3.131***	2.579***
	(18.474)	(5.926)	(16.693)	(12.181)	(3.418)	(2.821)	(3.052)	(4.943)	(11.083)	(9.544)	(10.167)	(16.386)
N	6,110	6,110	6,050	5,892	1,089	1,089	1,053	987	20,416	20,416	20,009	19,150
Adj-R^2	0.417	0.416	0.417	0.428	0.387	0.383	0.375	0.402	0.390	0.390	0.392	0.402
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES	YES

Table 10: Cost of debt and credit ratings

This table presents results obtained from the estimation of OLS regression model in which dependent variable is the cost of debt (*KD*) in Columns (1)-(3) and credit ratings (*CRTNG*) in Columns (4)-(6). The main explanatory variable is represented by *X*, which is one of *lnSOCIAL*, *lnENVIRON*, or *lnEMP*, where *lnSOCIAL*, *lnENVIRON*, and *lnEMP* are the natural log of the amount spent on social-and-community, environment, and employee-welfare related CSR spending, scaled by total assets, respectively. *FIRMSIZE* is the natural log of the book value of total assets, *LEV* is total borrowings scaled by total assets, *EBIT/TA* is the ratio of earnings before interest and taxes scaled by total assets, *CF* is cash flow from operating activities scaled by total assets, *lnMB* is the natural log of the market value of equity divided by the book value of equity, *lnSALES* is defined as the natural log of the total sales, *GOVT (FII)* is the proportion of shares held by the government (foreign institutional investors), *COVERAGE* is defined as the ratio of earnings before interest and taxes plus interest expenses scaled by the interest expenses, *OPINC*, which is the operating income estimated as the earnings before interest and taxes scaled by total sales *RND* is the research and development expenses scaled by total assets, *CAPEX* is the capital expenditure incurred divided by total assets, *SD_CF* is the standard deviation of *CF*, using data for the trailing three years. All continuous variables are winsorized at the 1st and 99th percentile. The sample period is from 2000 to 2022. Statistical significance at the 1%, 5%, and 10% level is indicated by ***, **, and *, respectively. *t*-Statistics (in parentheses) are calculated based on heteroscedasticity-robust standard errors clustered by firm and year.

	(1)	(2)	(3)	(4)	(5)	(6)
	X = lnSOCIAL	*X=lnENVIRON*	*X=lnEMP*	*X = lnSOCIAL*	*X=lnENVIRON*	*X=lnEMP*
	Y = KD	*Y = KD*	*Y = KD*	*Y = CRTNG*	*Y = CRTNG*	*Y = CRTNG*
X	-2.332**	-0.455	-2.055***	1.727**	2.633	2.124***
	(-2.503)	(-0.860)	(-3.255)	(2.144)	(1.660)	(2.999)
FIRMSIZE	1.042	0.076	-0.895	13.782***	13.469***	11.712***
	(0.312)	(0.060)	(-0.518)	(14.785)	(3.675)	(14.222)
LEV	-57.671***	-17.300*	-43.922***	18.081**	-29.571	-6.471
	(-10.018)	(-1.834)	(-9.758)	(2.476)	(-1.533)	(-1.314)
EBIT_TA	-13.836	-16.889	-16.079**			
	(-1.535)	(-1.523)	(-2.663)			
CF	42.679	14.390***	27.525	11.702	-28.014	7.932
	(1.134)	(3.678)	(1.461)	(1.071)	(-1.120)	(0.980)
lnMB	1.800	0.648	1.492			
	(1.108)	(0.926)	(1.685)			
LN_SALES	-0.004	-0.271	1.501			
	(-0.001)	(-0.233)	(0.706)			
GOVT	-0.000	0.000	-0.000			
	(-1.218)	(1.333)	(-0.190)			
FII	-0.438*	-0.351***	-0.246			
	(-1.899)	(-3.079)	(-1.515)			
COVERAGE				-0.069***	-0.123*	-0.077***
				(-3.936)	(-1.796)	(-5.823)
OPINC				-13.869	-42.060	-2.698
				(-0.726)	(-1.585)	(-0.302)
SD_CF				5.724	-2.623	1.905
				(0.222)	(-0.089)	(0.207)
RND				172.117	214.441	142.579
				(1.099)	(0.470)	(1.225)
CAPEX				50.827**	67.399	49.540***
				(2.836)	(1.523)	(4.506)
Constant	-10.201	7.089	7.132	-104.167***	-47.539*	-75.100***
	(-1.132)	(1.267)	(1.354)	(-7.348)	(-1.732)	(-7.001)
N	3,300	249	5,640	4,851	664	11,841
Adj-R^2	0.031	0.117	0.035	0.181	0.318	0.201
Industry Effects	YES	YES	YES	YES	YES	YES
Year Effects	YES	YES	YES	YES	YES	YES

Table 11: Financial flexibility

This table presents the results for CSR, financial distress, and different levels of leverage, where the dependent variable is the financial distress risk which is measured by *ZSCORE* wherein *ZSCORE* is calculated by following Altman (1968). The independent variable is the *lnCSR*, which is the natural log of *CSREXP*, which is calculated as the total amount spent on CSR activities undertaken by a firm, scaled by total assets. *lnMB* is the natural log of the market value of equity divided by the book value of equity, *STKRET* is the average of the monthly stock return calculated over a year, *STKVOL* is the total stock return volatility, *FIRMSIZE* is the natural log of the book value of total assets, *DEP* is the total depreciation scaled by the total assets, *LEV* is total borrowings scaled by total assets, *CASH* is cash and cash equivalent defined as a ratio of the total assets, *LOSS* is an indicator variable that is equal to one if a firm suffers from a loss in a given financial year and zero otherwise, and *QUICK* is the quick assets scaled by current liabilities. All continuous variables are winsorized at the 1st and 99th percentile. The sample period is from 2000 to 2022. Statistical significance at the 1%, 5%, and 10% level is indicated by ***, **, and *, respectively. *t*-Statistics (in parentheses) are calculated based on heteroscedasticity-robust standard errors clustered by firm and year.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
					LEVERAGE				
	Low	Medium	High	Low	Medium	High	Low	Medium	High
lnSOCIAL	0.186***	0.147***	0.072***						
	(6.416)	(8.751)	(3.265)						
lnENVIRON				0.040	0.026	-0.063			
				(1.019)	(0.993)	(-1.252)			
lnEMP							0.138***	0.083***	0.069***
							(6.997)	(5.954)	(4.001)
lnMB	0.262***	0.185***	0.021	0.110	0.169***	0.018	0.201***	0.119***	-0.043**
	(8.333)	(7.410)	(0.494)	(1.521)	(2.905)	(0.181)	(8.459)	(7.080)	(-2.111)
STKRET	0.088***	0.108***	0.125***	0.133**	0.044	0.047	0.044**	0.070***	0.104***
	(2.877)	(5.990)	(3.844)	(2.184)	(1.271)	(1.066)	(2.573)	(6.983)	(7.139)
STKVOL	-0.813***	-0.437***	0.047	-0.392**	0.277	-0.456	-0.281***	-0.127***	-0.075
	(-4.459)	(-3.264)	(0.168)	(-2.157)	(1.535)	(-1.398)	(-3.857)	(-3.324)	(-1.453)
FIRMSIZE	-0.101***	-0.093***	-0.129***	-0.001	0.009	-0.151*	-0.015	-0.041***	-0.086***
	(-4.531)	(-5.004)	(-3.795)	(-0.011)	(0.226)	(-1.882)	(-1.091)	(-3.762)	(-6.385)
DEP	6.664***	2.000*	0.410	-10.529**	-3.103	4.727	4.175***	1.543*	0.149
	(4.067)	(1.662)	(0.223)	(-2.342)	(-0.890)	(0.983)	(3.576)	(1.817)	(0.140)
LEV	-1.042	-1.351***	-1.508***	-1.431	-1.256**	-1.886**	-1.366***	-1.347***	-1.683***
	(-1.440)	(-6.603)	(-3.921)	(-0.979)	(-2.175)	(-2.387)	(-3.593)	(-9.307)	(-9.436)
CASH	1.307***	0.022	-0.473	3.586***	1.422	-0.379	2.201***	1.147***	0.434
	(4.061)	(0.052)	(-0.434)	(3.729)	(0.704)	(-0.047)	(7.253)	(3.037)	(0.572)
LOSS	-0.571***	-0.579***	-0.836***	-0.491*	-0.690***	-1.163***	-0.965***	-0.928***	-0.898***
	(-5.449)	(-9.430)	(-7.990)	(-1.840)	(-4.088)	(-6.318)	(-12.495)	(-26.057)	(-24.143)
QUICK	0.064***	0.202***	0.309**	0.078	0.348**	0.415**	0.012	0.159***	0.222***
	(3.632)	(6.270)	(2.484)	(1.116)	(2.442)	(2.050)	(0.889)	(6.734)	(5.923)
Constant	3.885***	3.884***	2.357***	2.155***	-0.292	2.497**	2.455***	1.985***	2.363***
	(9.385)	(9.806)	(3.054)	(3.046)	(-0.504)	(2.088)	(11.282)	(12.762)	(11.274)
N	2,181	3,762	1,380	361	763	396	7,126	14,214	7,068
Adj-R^2	0.361	0.379	0.362	0.269	0.250	0.337	0.342	0.301	0.359
Industry FE	YES	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES	YES