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## **CORPORATE SOCIAL RESPONSIBILITY AND LIKELIHOOD OF FINANCIAL DISTRESS**

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### **ABSTRACT**

Does doing good to society make firms less likely to have financial trouble? This paper looks at the benefit of corporate social responsibility (CSR) and examines whether firms' CSR engagement affects their chance of falling into financial distress. After analyzing a broad U.S. database spanning 25 years from 1991 to 2015, we find that CSR engagement indeed reduces the likelihood of firms falling into financial distress, and the results are statistically robust and economically significant. Further, we find the impact of CSR on the likelihood of financial distress is more pronounced in economic downturns and for firms with high levels of international involvement. Collectively, our result suggests that CSR lowers financial distress risks by improving firm-stakeholder relationships, which enhances our understanding of the stakeholder view of CSR with longitudinal approach and contextual consideration of firms.

### **INTRODUCTION**

Over the last few decades, corporate social responsibility (CSR) has been explored extensively by both practitioners and researchers as a strategic priority for business entities. Massive corporate resources have been invested into CSR related activities, ranging from reducing pollution to cutting energy and water consumption levels. According to the Report on U.S. Sustainable, Responsible, and Impact Investing Trends (2018), the market size of CSR investment reached a historical high of \$12 trillion, an increase of 38% from 2016. Socially irresponsible firms, on the other hand, were punished by consumers as well as investors. For example, the 2010 Deepwater Horizon spill of British Petroleum brought the total costs to around \$65 billion up to 2018. Recently, Volkswagen lost 20% of its market value overnight due to its emission test cheating scandal and Facebook stock dropped roughly 20% over data privacy controversies. Doing good to society has become a common practice for business entities.

Does doing good to society benefit the business entities as well? Extensive academic research has explored the financial rewards of companies' CSR engagement. Most of the early studies investigated the direct link between CSR activities and financial performance (Feldman, Soyka, & Ameer, 1997; Jiao, 2010; Orlitzky, Schmidt, & Reynes, 2003; Nelling & Webb, 2009) with mixed empirical results. Later research further investigated the channels through which CSR influences firm value and provided various explanations (Kim, Park, & Wier, 2012; El Ghoul, Guedhami, Kwok, & Mishra, 2011; Servaes & Tamayo, 2013; Lins, Servaes, & Tamayo, 2017; Bae, El Ghoul, Guedhami, Kwok, & Zheng, 2018).

Despite the stream of publications on CSR, limited research examined how CSR activities affect firms' risk profile (e.g. Jo & Na, 2012; Hsu & Chen, 2015). The lack of attention was mostly salient concerning CSR and firms' financial risk. This omission is important because whether firms' CSR influences financial risk, especially financial distress, provides an alternative channel to examine firm value. According to the trade-off theory of capital structure (Kraus & Litzenberger, 1973; Scott, 1976; Kim, 1978), financial distress is very costly to the firm. Worrying about financial distress constrains firms' ability to raise capital and take advantage of tax shield benefits, thus lowering the total value of the firm. In other words, if more CSR engagement reduces firms' chance of falling into financial distress, then this effect indirectly increases firm performance. In addition, investigating the influence of CSR on firms' chances of falling into financial distress has significant economic implications. Firms subject to large costs of financial distress could make strategic changes for improvement by increasing CSR investments. In particular, investment institutions with relatively small risk tolerance, such as pension funds, could focus more on the CSR features of their security products.

To fill this gap in the literature, this study explores the direct impact of CSR on firms' likelihood of falling into costly financial distress. Current literature holds divided views on this question. *Shareholder expense view* argues that CSR is a diversion from maximizing shareholder value and therefore suboptimal CSR investments waste financial resources and increase firms' chances of falling into financial distress (Pagano & Volpin, 2005; Cronqvist, Heyman, Nilsson, Svaleryd, & Vlachos, 2009; Masulis & Reza, 2015). On the other hand, the *stakeholder view* gives credit to the benefit of contract maintenance by CSR and suggests CSR engagement reduces the likelihood of financial distress (Servaes & Tamayo, 2013; Lins et al., 2017; Bae et al., 2018). Similarly, benefits of CSR include ease of financing and lower litigation risk (El Ghouli et al. 2011), both of which help reduce firms' probability of falling into costly financial distress. Both shareholder expense view and stakeholder view offer valid arguments and empirical tests will reveal which one dominates the effect and receives better support from the data. We believe it important to reconcile both perspectives and suggest that CSR may exert impact on financial distress differently depending on economic conditions and firms' international market involvement.

Based on a sample of 11,840 U.S. firm-year observations from 1991 to 2015, we find that more CSR engagement significantly reduces firms' chance of falling into financial distress. After controlling the potential reverse causality and omitted variable issues, we find the main effect unaffected. Therefore, our results suggest that stakeholder view of CSR can better explain the impact of CSR on firms' financial distress when using longitudinal research designs and considering contextual evolution of firms in terms of international involvement.

This study contributes to the literature in several ways. First, our study explores a new channel through which CSR could affect firm value. By showing strong and consistent evidence on the relation between CSR and financial distress outcome, we provide a new piece of evidence supporting the positive role played by CSR (El Ghouli et al., 2011; Servaes & Tamayo, 2013; Lins et al., 2017; Bae et al., 2018). Second, consistent with prior research on CSR and firm risk (McGuire, Sundgren, & Schneeweis, 1988; El Ghouli et al., 2011; Hsu & Chen, 2015), our results add value to existing research by showing firms with high CSR score have lower financial risks especially during economic downturns and when firms engage with international stakeholders.

## LITERATURE REVIEW

### Financial Distress

Financial distress and its impact on firm value were introduced by Modigliani and Miller (1958, 1963), where they argue that corporate value is irrelevant to the capital structure or indebtedness in a *perfect* capital market. However, with the presence of tax advantage of debt and bankruptcy cost, capital structure significantly affects firm value in the imperfect market. The tradeoff theory (Kraus & Litzenberger, 1973; Scott, 1976; Kim, 1978) argues that firms' optimal debt ratio is reached by trading off between tax shield benefits and cost of financial distress. This theory establishes the link between financial distress and firm value: costly financial distress lowers firms' debt capacity to take advantage of the benefits of tax shield, thus reducing total firm value.

Financial distress occurs when a company cannot meet its financial obligations to its credits. Based on the tradeoff theory, it is crucial for companies to develop operational strategies to either lower the financial distress costs or, as investigated by this paper, lower the probability of falling into costly financial distress. As suggested by the existing literature, financial distress could impose dead-weight costs on firms, both directly (including legal, administrative, and advisory fees associated with bankruptcy) and indirectly (decline in business operation, lower morale in work force, etc.). Although the direct cost of financial distress might be negligible, ranging from 1% to 5% of total firm value (Warner, 1977; Weiss, 1990; Lubben, 2000), the indirect cost has been identified to be substantial. Altman (1984) documents indirect cost of financial distress to be 11% to 17% of firm value based on the decline in sales of bankruptcy companies. Opler and Titman (1994) also observe substantial loss in market share and market value of equity for highly leveraged firms. In addition, Shleifer and Vishny (1992) specify that distressed firms could be forced into selling assets at huge discounts rather than fair market value. Financial distress could also lead to undesired higher cost of financing, losses of key customers, suppliers, and trained workforce, among others. Given the catastrophic effect of financial distress, companies always put strategic priorities on reducing the likelihood of financial stress (Altman & Hotchkiss, 2005). Businesses are finding that being socially responsible can be great for the bottom line, as well as good for employee morale. It would be great if the same good behavior also reduced a firm's chance of falling into financial distress.

### Shareholder Expense View of CSR

According to the definition proposed by the World Business Council for Sustainable Development in "Corporate Social Responsibility: Meeting Changing Expectations", CSR is the continuing commitment of a business to behave ethically and contribute to sustainable economic development, working with employees, their families, the local community and society at large to improve their quality of life. Socially responsible firms have higher engagement in CSR investments and devote more corporate resources into CSR activities than firms that are not responsible.

Shareholder expense view suggests that firms invest in nonproductive CSR activities to benefit stakeholders but at the expense of shareholders. For example, an opportunistic manager voluntarily pursuing stringent pollution standards can boost the manager's reputation as a socially

responsible citizen. However, such investments are not necessary and will harm the competitiveness of the firm (Deng, Kang, & Low, 2013). These CSR engagements do not financially benefit the firms, rather they waste precious resources. According to Ullmann (1985) and Aupperle, Carroll, and Hatfield (1985), derailed from the traditional financial management goal of maximizing shareholder value, CSR investments waste precious financial resources, which could have been invested into profitable projects or solved debt constraint problems. The shareholder perspective suggests firms with higher CSR are financially disadvantaged compared to others, which could potentially increase financial risks. If an exogenous shock takes place and exposes firms into potential shortage of debt payment, firms with high CSR engagement may have even less financial flexibility to make the payment, thus exposing itself to financial distress. Many empirical studies support the shareholder expense view. Di Giuli and Kostovetsky (2014) show that increase in CSR ratings is achieved at the direct expense of firm value, including negative stock returns and declines in return on assets. Bhandari and Javakhadze (2017) show that CSR distorts firm-level capital allocation efficiency and the distortion is also reflected in firm performance. Accordingly, we hypothesize a positive relationship between a firm's CSR and likelihood of falling into financial distress.

*Hypothesis 1a: ceteris paribus, CSR increases firms' probability of falling into financial distress.*

### **Stakeholder View of CSR**

The shareholder expenses view has been challenged in subsequent research of stakeholder theory. According to contract theory (Coase, 1937), a firm is a nexus of contracts between shareholders and stakeholders (including suppliers, customers, investors, employees, among others). CSR represents an investment in intangible assets such as firm reputation and human capital with an expectation for return with strengthened relationships with stakeholders. Based on the stakeholder view (Jones, 1995; Donaldson & Preston, 1995; Freeman, 1984), companies should consider the interests of a broader group of stakeholders and align the interests between stakeholder and shareholders. Stakeholder view implies that CSR engagements are important in obtaining necessary resources and support from stakeholders (Jones, 1995). A growing literature has supported the benefits of CSR from the stakeholders' perspective. For instance, Sharfman and Fernando (2008) specify that CSR investments reduce the probabilities of expected financial, social, or environmental crisis that could adversely influence firm's cash flows. Godfrey, Merrill, and Hansen (2009) point out CSR investments generate moral capital or goodwill which can provide "insurance-like" protection to preserve financial performance. Lins et al. (2017) find that CSR pays off when level of trust in firms suffers a negative shock in the crisis period.

Recently, company behavior toward the community has received increasing scrutiny by the media. CSR engagement could mitigate information asymmetry problems as firms signal their social responsibility and attract coverage from news media and financial analysts. The increased disclosure coupled with firms' signal of reputation and responsibility give socially responsible firms easier access to capital market and cheaper financing. Specifically, El Ghouli et al. (2011) find that firms with better CSR scores exhibit cheaper equity financing. Hsu and Chen (2015) find socially responsible firms have better credit ratings and lower credit risk. Goss and Roberts (2011) find cheaper bank loans for socially responsible firms. Lastly, Gu, Bosworth, and Wang (2016) showed that CSR is more valuable to firms under unfavorable financial market conditions and

these firms respond with more CSR engagement.

Based on the above evidences, we argue that firms with higher CSR engagement will have less risk of encountering financial difficulty, and better financing opportunities to recover and avoid costly financial distress. Therefore, we hypothesize a negative relationship between firms' CSR and likelihood of falling into financial distress:

*Hypothesis 1b: ceteris paribus, CSR reduces firms' probability of falling into financial distress.*

### **Business Cycle and International Involvement**

According to shareholder expense view, CSR investments drained precious financial resources from firms, thus making them more vulnerable during the economic downturns when external credit is harder to obtain, such as the technology bubble burst (2000-2002) and financial crisis of 2008. During these economic downturns, the liquidity tightening can threaten the viability of firms, especially firms that are financially weak because of their CSR engagements. We believe it essential to investigate the impact of CSR on firms' likelihood of financial distress under different macroeconomic situations, specifically in the economic downturns (2000-2002, 2008) and economic expansion periods (the years immediately preceding the two downturns, namely 1997-1999, 2007), to provide deeper understanding of the impact of CSR on firms' financial distress.

While shareholder expense view expects firms with higher CSR have higher likelihood of falling into financial distress in the economic downturns than in the expansion period (Pagano & Volpin, 2005; Cronqvist et al., 2009; Masulis & Reza, 2015), stakeholder view argues for the exact opposite (Servaes & Tamayo, 2013, Lins et al., 2017; Bae et al., 2018). For example, Lins et al. (2017) reports that high CSR firms earned significantly higher stock returns than low CSR firms during the 2008-2009 financial crisis, when the overall economy faced a severe crisis of confidence. This is in line with the insurance-based view of CSR (e.g., Fombrun, Gardberg, & Barnett, 2000; Godfrey, 2005; Pelozo, 2006), which argues that CSR investments build up social capital and provide firms not only easier access but also a broader base of resources during challenging macroeconomic situations. Therefore, it is expected that in the economic downturn periods, CSR firms could take advantage of the resources they built up and are less likely to fall into financial distress.

*Hypothesis 2: ceteris paribus, the effect of CSR on lowering firms' probability of falling into financial distress is more pronounced in economic downturn period than in expansion period.*

In addition, according to stakeholder view, more international involvement of CSR firms is associated with an even broader base of available resources provided by stakeholders compared to CSR firms with less international involvement (Husted & Allen, 2006; Crilly, 2011). Therefore, we further investigate whether the impact of CSR on financial distress is subject to influence by firms' international involvement. Specifically, we explore if the effect of CSR engagement on lowering likelihood of financial distress is more pronounced for internationally involved firms. To measure international involvement, we consider both firms' assets and sales that are classified as foreign and calculate the involvement ratio of foreign to total assets and total sales. Firms are grouped into "high international involvement" and "low or no international involvement" if the

ratio is above or below the sample median.

Compared to low international involvement firms, the stakeholders of highly international involved firms come from both domestic and foreign markets and are thus subject to different systematic risks. When the financial situation worsens in the domestic market, firms with no or low foreign involvements may not get much help since domestic stakeholders themselves may also experience financial troubles. Firms with higher international involvements, on the other hand, benefit from their international stakeholders who are less likely to be affected by the domestic trouble. Additionally, from the ease of market financing perspective, international firms with CSR engagement are subject to disciplines of multiple capital markets, thus having higher levels of information transparency. As a result, these socially responsible firms can obtain easier financing from international markets. Based on these arguments, if the stakeholder view and ease of financing view of CSR dominate the empirical results, then we should observe:

*Hypothesis 3: ceteris paribus, the effect of CSR on lowering firms' probability of falling into financial distress is more pronounced in firms with high international involvement than those with low or no international involvement.*

## METHODOLOGY

We construct the data by merging Compustat North America (industry affiliation and financial data) with MSCI ESG STATS (Corporate social responsibility data) for the time period of 1991-2015. When testing Hypothesis 3, we also merge MSCI ESG STATS with Compustat Global to get the foreign segment data. Following the common practice of empirical study, we exclude highly regulated industries: financial institutions (SIC codes 6000-6999) and utilities (SIC codes 4900-4999). All financial variables are winsorized at the 99<sup>th</sup> percentile. The final sample consists of 11,840 U.S. firm-year observations.

### Financial Distress

We follow Atanassov and Kim (2009) and constructed two financial distress variables: *distress1* (=1 if the company has a positive, above-industry median EBITDA/TA in the previous year and drops more than 50% in EBITDA in the distress year; =0 otherwise); and *distress2* (=1 if the company has a positive, above-industry median EBITDA/TA in the previous year and EBITDA falls to the bottom quartile of its industry in the distress year; =0 otherwise).

Empirical research also employed other measures in defining financial distress. Besides the definition mentioned above, Hoshi, Kashyap, and Scharfstein (1990) assume a firm is approaching distress when the coverage ratio falls below one. Based on Altman (1968), Taffler (1983, 1984) develops a popular Z-score model used by banks and industrial firms in the United Kingdom. According to Taffler's model, a firm is in distress if it has a minimum of one year of negative Z score after two consecutive years of positive Z scores. We follow Atanassov and Kim's (2009) definition due to several reasons. First, this measure focuses on the financial distress that brings negative and costly consequences, especially substantial drop in operating performances. In the business world, not all financial distresses are created equal. Wruck (1990) argues that financial distress could be beneficial because it provides firms with incentives to change poor governance

structure and forces firms to restructure by refocusing on their operations and altering organizational strategies. By employing Atanassov and Kim's (2009) definition, we are able to filter out the non-costly (or beneficial) financial distress conditions. Second, unlike Z-score which is designed for specific industries, Atanassov and Kim's (2009) approach applies to all industries and is not subject to substantial losses of data (since EBITDA and total asset are widely available). Third, *distress1* and *distress2* are complementary in the sense that *distress1* focuses on the deteriorating performances within a firm and *distress2* incorporates relative performances compared to the industry. Based on the above reasoning, Atanassov and Kim's (2009) definition of financial distress fits our research purpose the best because we explore if CSR engagements could lower firms' probability of falling into costly financial distress.

### **Corporate Social Responsibility**

Following mainstream studies on this subject, we use MSCI ESG STATS database to measure CSR. The dataset is tracked by an independent firm specializing in researching and consulting firms' CSR activities. The sources of CSR activity ratings in MSCI ESG STATS come from government agencies, non-governmental organizations, global media publications, annual reports, regulatory filings, proxy statements and company disclosures. The coverage of the database has expanded over time. For the early period before the year 2000, MSCI ESG STATS covers S&P 500 and the Domini Social Index. After 2000, more firm samples from other indexes are included in the database, including the Russell 2000 Index and the Broad Market Social Index. The broad dataset allows us to take the longitudinal approach to explore the constant efforts of firms' CSR.

There are two main categories built in MSCI ESG STATS: qualitative issue areas and controversial business issues. Qualitative issue areas cover community, diversity, employment, environment, human rights, product and corporate governance. Controversial businesses include alcohol, gaming, firearms, military, nuclear and tobacco. Within each area, a number of concerns and strengths are addressed (each concern or strength is assigned 0 or 1). The variable of interest employed in this study (*CSR*) compiles the netting numbers of strengths and concerns in qualitative issue areas. The same dataset and variable measurement have been employed in most of the empirical studies on corporate social responsibilities, such as in Lins et al. (2017) and Bae et al. (2018).

### **Control Variables**

Prior studies have explored possible factors that contribute to financial distress and these factors are controlled for in our empirical study. According to the coverage shortfall criterion, three broad reasons can lead to financial distress: industry downturn, high interest payment and poor firm performance (Asquith, Gertner, & Scharfstein, 1994). Andrade and Kaplan (1998) bring forward four factors: Industry performance, firm leverage, short-term interest rate changes, and firm performance. Accordingly, control variables employed in our study incorporate characteristics of firm level (*firm leverage*, *R&D ratio*, *sales growth*, *firm size*, *firm age*), industry level (*industry performance*) and macroeconomic level (*libor volatility*, *libor change*) factors.

In this study, *firm leverage* is measured as total debt divided by total assets. In addition, we consider R&D plus advertising expenses (*R&D ratio*) as another important factor because higher



intangible assets represent less collateral available to the firm, which contribute to financial distress. *Sales growth* reflects firm's sales growth from the previous year. *Firm size* and *firm age* are controlled for because firms with larger size could enjoy stronger coinsurance benefits and older surviving firms have more experience to cope with financial distress, both of which lower financial distress risks. *Industry performance* is estimated using mean industry ratio of EBITDA over sales. Interest rate change is measured by both standard deviation of 3-month London Interbank Offered Rate (*libor volatility*) and year end change of 3-month Libor rate (*libor change*).

### Empirical Model

Based on the feature of dependent variable (financial distress), we employ the following Probit model to test whether CSR engagement increases or decreases a firm's likelihood of falling into financial distress after controlling all the well-documented factors that contribute to the distress:

$$\begin{aligned} \text{distress1 (or distress2)}_{i,t} &= \alpha + \beta_1 \text{CSR}_{i,t} + \beta_2 \text{firm leverage}_{i,t} + \beta_3 \text{R\&D ratio}_{i,t} + \beta_4 \text{sales growth}_{i,t} \\ &+ \beta_5 \text{firm size}_{i,t} + \beta_6 \text{firm age}_{i,t} + \beta_7 \text{industry performance}_{i,t} + \beta_8 \text{libor volatility}_{i,t} \\ &+ \beta_9 \text{libor change}_{i,t} + \varepsilon_{i,t} \end{aligned}$$

In the model, *i* indexes firm and *t* indexes year. In all specifications, we control for the industry and year fixed effects. All control variables are winsorized at the 1% and 99% levels to mitigate the influence of outliers. Reported standard errors are heteroscedasticity-consistent and allow for clustering at the firm level.

## FINDINGS

### Summary Statistics

Table 1 presents the sample distribution by the two-digit SIC code industry. As the table shows, the most heavily represented industry division is manufacturing (53.46%, SIC code: 20-39), followed by services division (18.12%, SIC code: 70-89). Table 2 reports the descriptive statistics of variables, including subsamples of high CSR firms (firms with positive net scores of CSR ratings) and low CSR firms (firms with zero or negative net scores of CSR ratings). The mean differences in distress between high CSR and low CSR groups are statistically significant, suggesting that high CSR firms are less likely to fall into financial distress than low CSR firms. We find no significant difference in firm leverage between the two groups. Other than that, high CSR firms show distinct firm-level and industry-level characteristics from low CSR firms. In general, we observe that high CSR firms invest less in R&D and advertising; have slower sales growth; are associated with worse performing industries; and are larger and more mature in age.

As suggested by the pairwise correlations of variables (not reported due to space limit), both distress variables (*distress1* and *distress2*) are negatively correlated with CSR variable. This result also provides preliminary support for hypothesis 1b, which predicts that high CSR firms are associated with lower likelihood of financial distress.

Table 1. Sample Distribution by Industry

| Industry                                       | Two Digit SIC | Freq. | Percent% | Cum%  |
|--|---------------|-------|----------|-------|
| Division A. - Agriculture, Forestry, & Fishing | (01-09)       | 48    | 0.4      | 0.97  |
| Division B. - Mining                           | (10-14)       | 630   | 5.33     | 5.73  |
| Division C. - Construction                     | (15-17)       | 195   | 1.65     | 7.37  |
| Division D. - Manufacturing                    | (20-39)       | 6273  | 53.02    | 60.35 |
| Division E. - Transportation & Pub. Utilities  | (40-49)       | 825   | 6.98     | 67.32 |
| Division F. - Wholesale Trade                  | (50-51)       | 441   | 3.72     | 71.05 |
| Division G. - Retail Trade                     | (52-59)       | 1125  | 9.51     | 80.55 |
| Division I. - Services                         | (70-89)       | 2260  | 19.09    | 99.64 |
| Division K. – Non-classifiable Establishments  | 99            | 43    | 0.36     | 100   |
| Total  |               | 11840 | 100      |       |

Table 2. Descriptive Statistics, CSR vs. Non-CSR Firms

| Variable                    | Full Sample |          |         | CSR Firms |          |         | Non-CSR Firms |         |         | P-value |
|-----------------------------|-------------|----------|---------|-----------|----------|---------|---------------|---------|---------|---------|
|                             | N           | Mean     | Median  | N         | Mean     | Median  | N             | Mean    | Median  |         |
| <i>Distress1</i>            | 11840       | 0.06     | 0.00    | 3934      | 0.05     | 0.00    | 7906          | 0.06    | 0.00    | 0.00    |
| <i>Distress2</i>            | 11840       | 0.13     | 0.00    | 3934      | 0.11     | 0.00    | 7906          | 0.14    | 0.00    | 0.00    |
| <i>CSR</i>                  | 11840       | 0.18     | 0.00    | 3934      | 2.81     | 2.00    | 7906          | -1.13   | -1.00   | 0.00    |
| <i>Firm leverage</i>        | 11840       | 0.50     | 0.49    | 3934      | 0.52     | 0.51    | 7906          | 0.49    | 0.48    | 0.00    |
| <i>R&amp;D ratio</i>        | 11840       | 0.07     | 0.02    | 3934      | 0.08     | 0.04    | 7906          | 0.06    | 0.01    | 0.00    |
| <i>Sales growth</i>         | 11840       | 0.09     | 0.08    | 3934      | 0.08     | 0.07    | 7906          | 0.10    | 0.08    | 0.00    |
| <i>Firm size (raw)</i>      | 11840       | 10175.33 | 1813.19 | 3934      | 19570.61 | 4842.38 | 7906          | 5500.27 | 1307.91 | 0.00    |
| <i>Firm age (raw)</i>       | 11840       | 25.87    | 20.00   | 3934      | 29.80    | 24.00   | 7906          | 23.91   | 19.00   | 0.00    |
| <i>Industry performance</i> | 11840       | 0.01     | 0.12    | 3934      | -0.02    | 0.12    | 7906          | 0.02    | 0.12    | 0.00    |
| <i>Libor volatility</i>     | 11840       | 0.28     | 0.17    | 3934      | 0.28     | 0.19    | 7906          | 0.28    | 0.17    | 0.00    |
| <i>Libor change</i>         | 11840       | -0.18    | 0.00    | 3934      | -0.23    | -0.07   | 7906          | -0.16   | 0.00    | 0.00    |

### Impact of CSR on Financial Distress

Our main results on the empirical relationship between CSR and financial distress are reported in Table 3. Models 1 and 2 report the Probit regression results and highlight the impact of CSR on two financial distress variables (*distress1* and *distress2*). We find that both models show negative correlations between CSR and probability of financial distress, and Model 2 is significant at 1% level. The multivariable model results are consistent with hypothesis 1b, which indicates that CSR investments could mitigate financial distress risks when all the other factors are controlled for. Thus, out of the two competing hypotheses 1a and 1b, hypothesis 1b is supported by our data analysis. Specifically, our results support the stakeholder view and suggest CSR reduce firms' probability of financial distress.

Although CSR engagements cost firms' financial resources, such activities build up relationships with firms' stakeholders and lower the likelihood of financial distress. This reward from doing good to society is especially important to firms with higher financial distress risk. Our finding is consistent with Gu et al. (2016) and Lins et al. (2017). Our findings provide practical implications to firms that have higher tendency to fall into financial distress. For example, firms that are subject

to economic volatility (tourism industry), firms that maintain high level of debt are shown to be more likely to be financially distressed. For these firms, engaging in corporate social activities could potentially guard themselves from financial vulnerability. In contrast, for firms that are less subject to financial distress and at the same time are highly involved in corporate social activities, their supervisors should watch the potential “channeling resource” behaviors.

### **Robustness Tests**

To address the potential issue in regression tests, we further examine whether the relationship between CSR and financial distress is driven by endogeneity problems as follows. First, reverse causality could occur because firms which are less likely to fall into financial distress are often those who have sufficient capital to invest in CSR activities in the first place. Second, CSR investments and financial distress could both be driven by unobserved firm-specific factors. For example, managers who are interested in undertaking CSR investments are risk takers (since CSR is not considered regular invested items in most firms). These managers are also more likely to take risky investment programs which could lead to financial distress. To resolve these potential problems, we employ industry median CSR score and year median CSR score as instrumental variables. We predict that these two instrumental variables have a positive impact on CSR because a firm tends to imitate industry peers’ CSR practices. In addition, CSR practices tend to be sticky. These two instruments are closely correlated with the firm-specific CSR but are unlikely to impact the firm distress probability. Models 3 and 4 of Table 3 show the regression results of Instrumental Variable Probit (ivprobit) models. The main finding is shown to be even more pronounced. CSR score is negatively associated with financial distress proxies at 1% level. The results lend further support to Hypothesis 1b and show that the effect of CSR on reducing likelihood of financial distress survived the endogeneity test.

We also conduct several other robustness tests (not reported due to space limit). One is lagging financial distress variable one year to test the effect of current year CSR to the financial distress of next year. By doing this, we address the concern of current year accounting data reported in early or middle of the next year. The empirical results are qualitatively similar when using the lagging data. Second, we also experiment with new CSR variables based on ASSET4 ESG (Environmental, Social, and Governance) dataset. ASSET4 is a Thomson Reuters business which collects corporate social responsibility data. The database provides fewer observations than MSCI ESG STATS. Therefore, we use it for the robustness test instead of main study. The empirical test results are consistent with what is shown in Table 3. Overall, our main finding of CSR engagement reducing a firm’s likelihood of falling into costly financial distress is robust and not affected by endogeneity, accounting report delay, or alternatively measurements of CSR. The results lend further support to the stakeholder view of CSR and supports the benefits provided by CSR to firms that tend to be financially distressed.

Table 3. Probit Model of Financial Distress and CSR

This table reports the Probit regression results regarding the impact of CSR on financial distress. The dependent variables are *distress1* and *distress2*. The independent variables are listed in the table. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

| Variables                   | Probit Model            |                         | Probit Model with Instruments |                         |
|-----------------------------|-------------------------|-------------------------|-------------------------------|-------------------------|
|                             | (1)<br><i>distress1</i> | (2)<br><i>distress2</i> | (3)<br><i>distress1</i>       | (4)<br><i>distress2</i> |
| <i>CSR</i>                  | -0.0150<br>(0.0123)     | -0.0375***<br>(0.0079)  | -0.1298***<br>(0.0372)        | -0.0922***<br>(0.0223)  |
| <i>firm leverage</i>        | -0.1538*<br>(0.0906)    | 0.3081***<br>(0.0613)   | -0.1593*<br>(0.0893)          | 0.2864***<br>(0.0610)   |
| <i>R&amp;D ratio</i>        | 2.9578***<br>(0.3018)   | 0.3074***<br>(0.0766)   | 2.9800***<br>(0.2927)         | 0.3333***<br>(0.0774)   |
| <i>sales growth</i>         | -4.2199***<br>(0.3080)  | -0.5773***<br>(0.1184)  | -4.0961***<br>(0.3146)        | -0.6444***<br>(0.1187)  |
| <i>firm size</i>            | -0.2209***<br>(0.0202)  | -0.2075***<br>(0.0124)  | -0.1520***<br>(0.0313)        | -0.1671***<br>(0.0178)  |
| <i>firm age</i>             | -0.0546<br>(0.0415)     | 0.1487***<br>(0.0261)   | -0.0390<br>(0.0409)           | 0.1543***<br>(0.0259)   |
| <i>industry performance</i> | -0.2386***<br>(0.0522)  | 0.6572***<br>(0.0671)   | -0.2509***<br>(0.0510)        | 0.6413***<br>(0.0679)   |
| <i>libor volatility</i>     | -6.0483<br>(5.6050)     | 10.6814***<br>(3.2884)  | -4.0694<br>(3.8919)           | -4.4501*<br>(2.4957)    |
| <i>libor change</i>         | 0.9266<br>(1.1471)      | 1.6074**<br>(0.6681)    | 0.6992<br>(1.0631)            | 1.4023*<br>(0.7487)     |
| Constant                    | 0.0874<br>(0.2165)      | -0.3971***<br>(0.1342)  | -0.4011<br>(0.2594)           | -0.4856***<br>(0.1532)  |
| Observations                | 11,840                  | 11,840                  | 11,840                        | 11,840                  |

### Impact of CSR on Financial Distress in Business Cycle

In different macroeconomic environments, CSR's impact on firms' financial distress may vary. Table 4 presents the impact of CSR on financial distress in economic downturns and expansion periods. The economic downturn periods are defined as technology bubble burst period (2000-2002) and financial crisis (2008). The expansion periods refer to the years immediately preceding the two bust periods (1997-1999, 2007). As discussed in section 2, stakeholders tend to provide various supports in the economic downturns for CSR firms, while the need for such help is not as urgent in economic expansion periods. Therefore, we would expect a more pronounced impact during the downturn periods. The results shown in Table 4 are consistent with our prediction. Models 1 and 2 suggest that high CSR firms experience less likelihood of falling into costly financial distress during the downturn periods. On the contrary, CSR does not help much to reduce financial distress in expansion periods since the coefficients are insignificant in models 3 and 4. Hence, our regression results support Hypothesis 2, which states that the effect of CSR on lowering firms'

probability of falling into financial distress is more pronounced in economic downturn period than in expansion period.

Table 4. Probit Model of Financial Distress and CSR: Economic Downturns vs. Expansions

This table reports the Probit regression results regarding the impact of CSR on financial distress in economic downturns and expansions. The dependent variables are *distress1* and *distress2*. The independent variables are listed in the table. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

| Variables                   | (1)<br>Downturns       |                        | (4)<br>Expansions      |                        |
|-----------------------------|------------------------|------------------------|------------------------|------------------------|
|                             | <i>distress1</i>       | <i>distress2</i>       | <i>distress1</i>       | <i>distress2</i>       |
| <i>CSR</i>                  | -0.4014***<br>(0.1017) | -0.2927***<br>(0.0610) | -0.2269<br>(0.2144)    | -0.0088<br>(0.0683)    |
| <i>firm leverage</i>        | 0.0609<br>(0.3396)     | 0.2383<br>(0.2300)     | 0.7012<br>(0.8513)     | 0.5850**<br>(0.2798)   |
| <i>R&amp;D ratio</i>        | 2.4171**<br>(0.9849)   | 3.2275***<br>(0.6254)  | -6.4892<br>(9.5128)    | 1.1931<br>(0.9509)     |
| <i>sales growth</i>         | -2.8333***<br>(0.4505) | -1.8573***<br>(0.2758) | -4.4639***<br>(1.0584) | -0.5169*<br>(0.2864)   |
| <i>firm size</i>            | -0.1157*<br>(0.0638)   | -0.1036***<br>(0.0373) | -0.2132<br>(0.1550)    | -0.1519***<br>(0.0481) |
| <i>firm age</i>             | -0.2722*<br>(0.1439)   | 0.0018<br>(0.0837)     | -0.0666<br>(0.2860)    | 0.0767<br>(0.1014)     |
| <i>industry performance</i> | 0.0728<br>(0.4635)     | 0.7401**<br>(0.3047)   | 0.5185<br>(1.0245)     | 1.0112***<br>(0.3825)  |
| <i>libor volatility</i>     | 0.2748<br>(0.7863)     | 2.3204***<br>(0.4056)  | 16.2162<br>(10.3375)   | 1.8852***<br>(0.4987)  |
| <i>libor change</i>         | 0.0038<br>(0.1555)     | 0.5413***<br>(0.0821)  |                        |                        |
| Constant                    | -0.8692<br>(0.6230)    | -1.0009***<br>(0.3548) | -4.3415*<br>(2.2665)   | -1.4090***<br>(0.4530) |
| Observations                | 1,709                  | 1,709                  | 1,313                  | 1,313                  |

### Impact of International Involvement on CSR and Financial Distress

Business involvement in foreign countries not only helps CSR firms to obtain a broader base of stakeholder resources but also gives firms access to international capital markets since they are subject to international supervisions. Consequently, with the same CSR engagements, firms with higher international involvement will be less likely to fall into costly financial distress, as discussed in Hypothesis 3. Table 5 presents how the impact of CSR on financial distress varies with the level of international involvement. We reported the regression results for firms with high international involvement and low or no international involvement according to their proportion of sales that comes from foreign segments. High (low or no) international involvement refers to

firms with ratio above (below) the median of the entire sample. As shown in the table, Models 1 and 2 suggest that highly international involved firms with CSR efforts exhibit a strong ability to avoid financial distress. However, there are no significant relationships shown in CSR firms with low or no international involvement as reported in Models 3 and 4. Regression results using foreign assets to separate high vs. low or no international involvement subsamples are similar but not reported due to space limit. The empirical evidences support Hypothesis 3. This part of the analysis supports the importance of incorporating contextual differences of firms (such as international involvement) into consideration when examining the impact of CSR on firms' chances of falling into financial distress.

Table 5. Probit Model of Financial Distress and CSR: International Involvement

This table reports the Probit regression results regarding the impact of CSR on financial distress for firms with high level of international involvement and firms with low or no involvement. The dependent variables are *distress1* and *distress2*. The independent variables are listed in the table. \*, \*\*, and \*\*\* indicate significance at the 10%, 5%, and 1% levels, respectively.

| Variables                   | (1)                                  | (2)                    | (3)                                       | (4)                    |
|-----------------------------|--------------------------------------|------------------------|---|------------------------|
|                             | High Involvement<br><i>distress1</i> | <i>distress2</i>       | Low or No Involvement<br><i>distress1</i> | <i>distress2</i>       |
| <i>CSR</i>                  | -0.1069***<br>(0.0287)               | -0.0491***<br>(0.0157) | 0.0734<br>(0.0802)                        | -0.0144<br>(0.0294)    |
| <i>firm leverage</i>        | 0.2865<br>(0.1858)                   | 0.0999<br>(0.1221)     | 0.4011<br>(0.3952)                        | 0.2063<br>(0.1727)     |
| <i>R&amp;D ratio</i>        | 1.2751**<br>(0.5935)                 | 1.1669***<br>(0.3860)  | 3.1267***<br>(0.8486)                     | 2.0954***<br>(0.5005)  |
| <i>sales growth</i>         | -3.4179***<br>(0.5217)               | -0.9064***<br>(0.2519) | -4.5583***<br>(0.6538)                    | -2.8063***<br>(0.3397) |
| <i>firm size</i>            | -0.0853*<br>(0.0469)                 | -0.1952***<br>(0.0247) | -0.6555***<br>(0.1512)                    | -0.2150***<br>(0.0449) |
| <i>firm age</i>             | -0.3016***<br>(0.0766)               | -0.0632<br>(0.0518)    | -0.2544<br>(0.1859)                       | -0.0087<br>(0.0721)    |
| <i>industry performance</i> | 0.2372<br>(0.8443)                   | 2.0126***<br>(0.3923)  | -2.1328<br>(1.6026)                       | 3.2083***<br>(0.7527)  |
| <i>libor volatility</i>     | -7.4725**<br>(3.1303)                | -0.5913<br>(2.1368)    | 0.5366<br>(7.7669)                        | -6.4068**<br>(2.9464)  |
| <i>libor change</i>         | -1.3426***<br>(0.4786)               | -0.0814<br>(0.3417)    | -0.3064<br>(1.0938)                       | -1.0288**<br>(0.4704)  |
| Constant                    | -0.2681<br>(0.5941)                  | -0.3011<br>(0.3668)    | 0.7514<br>(1.6153)                        | -0.0113<br>(0.5537)    |
| Observations                | 3,816                                | 4,226                  | 2,252                                     | 2,607                  |

Overall, these results provide further managerial implications to firms with high probability of falling into financial distress. If a firm is exposed to economies that constantly experience crises, this firm may get more protection by engaging in corporate social activities. In addition, our

findings lend further support to the perspective of international diversification. Specifically, multinational corporations with better landscape of diversification might be less affected by financial distress. In another word, firms with businesses mainly operated in single economies could be better protected by engaging in socially responsible activities.

## CONCLUSION AND DISCUSSION

In this article, we explore whether corporate social responsibility (CSR) engagement affects firm's chances of falling into costly financial distress. Because of the potential impacts by macroeconomic, industry, and firm characteristics on firm performance, we tackled this question by assessing firms' CSR efforts over a long period of time and incorporated multi-level factors into consideration.

Our empirical tests reveal that CSR engagements reduce the likelihood of firms falling into financial distress, and the effects are more pronounced during economic downturn periods and for firms with high levels of international involvement. These results suggest that CSR plays an important role for firms to lower the chance of falling into financial distress. Our results are statistically robust by adjusting for potential reverse causality and omitted variable issues. In addition, by adopting observations from 1991 to 2015, we observe firms' behavior over different economic periods, including both downturn and expansion periods, thus providing a longitudinal view of how CSR matters to firms' financial distress. To our knowledge, no other study has used a longitudinal approach to examine the impact of CSR on firms' financial distress. Our research sheds light on the challenge proposed by Godfrey et al. (2009) about how CSR activities play a role in an economy-wide crisis. Furthermore, our research incorporates firms' level of international involvement into consideration to provide a meaningful refinement of the existing approach. Our results are supportive of the stakeholder view of CSR.

Our results add value to practitioners by looking at specific strategic tactics firms can explore to enhance shareholder value and to cope with adverse and unpredictable disturbances. Business entities always try to balance between "doing good" and "doing well" since most of the time the two won't be achieved at the same time. CSR engagement activities do drain corporate resources, but they also build social capitals for firms (Lins et al. 2017) and provide a safety net in unfavorable financial market conditions (Godfrey et al. 2009). Therefore, business entities should maintain CSR engagement, at least within their financial capability, for long-term oriented strategy. These engagement activities are especially important for firms with lower financial stability, in controversial business, and/or facing public and media scrutiny.

Our findings also suggest the importance of taking a longitudinal approach and taking firm-unique resources and capabilities into consideration when examining the impact of CSR on firm financial distress. With data permission, observing a single firm's decades of CSR activities and financial performance and risk would be interesting. Also, pairwise comparison of firms with similar financial backgrounds but opposite approaches for CSR will reveal strong evidence for CSR's effects on firm performance. We believe future research can broaden literatures and theories in this field.

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