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Firm litigation risk and the insurance value of corporate social performance

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Abstract

This paper advances the risk management perspective that superior social performance enhances firm value by serving as an *ex ante* valuable insurance mechanism. We posit that good social performance is more valuable as an insurance mechanism for firms with higher litigation risks. Moreover, value generation of corporate social performance (CSP) depends on whether a firm has gained pragmatic legitimacy (i.e., a firm's financial health) and moral legitimacy (i.e., whether or not a firm operates in a socially contested industry) among its stakeholders. We find that the value of CSP as insurance against litigation risk is practically significant, adding 2 to 4 percent to firm value. But CSP is less likely to create value if the firm is in financial distress or is operating in socially contested industries.

Keywords:

corporate social performance, insurance value, risk management, firm valuation models, legitimacy

INTRODUCTION

While the assertion is not without controversy, recent developments in business and society seem to suggest that a corporation's social performance (CSP) is positively associated with its financial performance (CFP) (e.g., Berman *et al.*, 1999; Hillman and Keim, 2001; Orlitzky, Schmidt, and Rynes, 2003; Waddock and Graves, 1997). Many studies suggest that an important mechanism that links CSP with CFP is that CSP improves a firm's reputation and brand image. But relatively little attention has been paid to another potential linkage—CSP can function as an insurance mechanism that mitigates the decline in firm value when a firm encounters negative developments (Fombrun, Gardberg, and Barnett, 2000; Godfrey, 2005; Husted, 2005; Schnietz and Epstein, 2005).

The general argument as to how CSP might work as an insurance mechanism is that it can build positive moral capital among various stakeholders.¹ Moral capital is defined as the outcome of the process of assessment, evaluation, and imputation by stakeholders of a firm's CSP, which can help temper stakeholders' negative judgments and their sanctions when adverse developments materialize (Godfrey, 2005). However, prior research on CSP from the risk management perspective has mostly taken an *ex post* perspective, discussing and examining *ex post* value loss as a result of the negative events (e.g., Bansal and Clelland, 2004; Godfrey, Merrill, and Hansen, 2009; Klein and Dawar, 2004; Schnietz and Epstein, 2005). Godfrey *et al.* (2009), for instance, use a sample of firms that had experienced negative legal or

¹ 'Stakeholders' refers to any group or individual who can affect, or is affected by, the achievement of the organization's objectives. As in previous studies, this typically includes employees, customers, shareholders, suppliers, and the community (Freeman, 1984).

regulatory action and examine the effectiveness of their prior CSP as an insurance mechanism. They show that a firm's CSP is associated with smaller decreases in firm value as a result of the negative events.

But such *ex post* insurance benefits are only half of the picture. It remains unclear whether the insurance characteristics of CSP are valuable even when no negative event has taken place. Just as an insurance policy's effectiveness in insuring against certain risks does not always justify its purchase *ex ante* (otherwise, everyone should buy all available insurance policies), the fact that superior CSP may eventually help mitigate loss from negative events does not necessarily provide sufficient financial justification for a firm's spending to ensure good CSP *ex ante*. Questions about whether and when CSP is likely to enhance *ex ante* firm value, therefore, remain unanswered by prior research in this area.

The aims of this study are twofold. The first is to establish the insurance value of CSP by assessing whether or not firms facing high levels of litigation risk are more likely *ex ante* to benefit from CSP as an insurance mechanism. The fundamental argument is that the extent to which CSP enhances firm value depends on the probability that the firm will use the 'insurance' in the future which, in turn, depends on the firm's risk exposures. If a firm is at high risk of experiencing negative events, it has a greater need for insurance protection and, thus, is more likely to benefit from CSP to the extent that it functions as an insurance mechanism. In particular, for firms operating in a litigious industry, they are likely to benefit more from CSP, as the likelihood of the firm incurring severe litigation cost is higher and the insurance protection from CSP would decrease the overall severity of sanctions from stakeholders if litigation occurs (Godfrey *et al.*, 2009). This study, therefore, adopts the risk management perspective on CSP by identifying CSP as an insurance mechanism and sets out to demonstrate how and to what extent CSP creates more value for firms at significant risk of litigation.

The second aim of the study is to look into the limits on CSP's value enhancement. Building on organizational legitimacy literature, we argue that because stakeholders' perceptions of a firm's CSP are critical for any value generation of CSP, the extent to which CSP can enhance firm value will depend on the extent to which the firm can gain legitimacy among its stakeholders (Suchman, 1995). Two types of legitimacy are relevant for this discussion: pragmatic legitimacy and moral legitimacy. Pragmatic legitimacy is established based on the audience's self-interest. It reflects stakeholders' utility calculations. Moral legitimacy is established based on social normative approval, reflecting stakeholders' positive evaluations of the firm and its activities in terms of social welfare, defined by the audience's socially constructed value system (e.g., Aldrich and Fiol, 1994; Suchman, 1995). A firm's financial performance and business success affect pragmatic legitimacy, and its moral legitimacy depends more on the nature of the business. Specifically, stakeholders will not value a firm's CSP much if it does not fulfill its more basic responsibility of meeting the financial needs of its stakeholders (pragmatic legitimacy), and they may also discount it if the firm is operating in industries such as alcoholic beverages, tobacco, firearms, and gambling (hereafter termed 'socially contested' industries) (moral legitimacy).

This explains why the same amount of investment in CSP may not generate equal returns for different firms (Barnett, 2007; Barnett and Salomon, 2012; Rowley and Berman, 2000). With a few notable exceptions (e.g., Barnett and Salomon, 2006, 2012; Hull and Rothenberg, 2008; Wang and Choi, 2013), previous research has largely overlooked the contingency factors that cause variability in the CSP-CFP relationship. Understanding the underlying drivers of whether, how, and when particular firms may earn positive financial returns from CSP is critical and this subject deserves further examination in order to aid managerial resource allocation decisions (Barnett, 2007).

Empirically, we test these ideas using a data set of about 3,000 U.S. publicly listed firms over a 17-year period, from 1991 to 2007. For our empirical model, rather than using an *ad hoc* model of firm valuation, we adopt the residual income model that is deeply rooted in scholarly work in economics, finance, and accounting (e.g., Edwards and Bell, 1961; Ohlson, 1995; Peasnell, 1982; Preinreich, 1938). The residual income model provides a strong theoretical basis and motivation for the empirical model specifications. Despite its sophisticated derivation, the model is parsimonious in that it incorporates fundamental firm financial information and additional firm characteristics with ease. That formulation allows us to better evaluate the economic value of CSP.

THEORY AND HYPOTHESIS DEVELOPMENT

CSP as an insurance mechanism

Stakeholder theory highlights the importance of a firm's relationships with a broad set of stakeholders (Freeman, 1984). Most previous research that has examined the relationship between CSP and CFP has often implicitly assumed that the value of CSP lies in certain incremental efficiency gains it facilitates. Along these lines, it has been argued that outstanding CSP enhances the corporate reputation (Fombrun, 1996), generates greater consumer support (Lev, Petrovits, and Radhakrishnan, 2010; Luo and Bhattacharya, 2006; Sen and Bhattacharya, 2001), deepens employee commitment

(Greening and Turban, 2000), promotes legitimacy in the community (Fombrun *et al.*, 2000), and develops better governmental relationships (Campbell, 2007; Wang and Qian, 2011). Compared to these efficiency enhancement mechanisms, the risk management function of CSP is less discussed and has few empirical investigations (Pelozo, 2006).

From a risk management perspective, CSP could serve as a buffer against loss and, thus, safeguard a firm's assets (Fombrun *et al.*, 2000). Good corporate social practices have been proposed as an essential element of corporate risk management to the extent that they help identify emerging problems, prevent fraud, preserve the corporate reputation, and minimize any penalties when transgressions occur (Francis and Armstrong, 2003). Moral capital generated through superior CSP can protect relational assets against loss by moderating stakeholders' negative assessments (Godfrey, 2005). When facing accusations, firms with good CSP records can draw on the reservoirs of goodwill accumulated through their social initiatives. For example, being associated with a well-regarded firm may discourage employees from rogue behavior. Showing concern for customers and conveying favorable messages may reduce the threat of negative reactions from investors and analysts. The community, the media, partner firms, and even social activists may be more tolerant of a firm with a reputation for good CSP (Fombrun *et al.*, 2000).

Consistent with these arguments, Bansal and Clelland (2004) have noted that in the event of a crisis, the moral capital accumulated through CSP can help decouple any illegitimate activity from the rest of the organization. Klein and Dawar (2004) have shown that CSP affects consumers' attributions of blame when there is a product crisis. They conclude that CSP may be able to mitigate negative brand evaluations. In a study of the influence of corporate philanthropy and corporate crime on firm reputation, Williams and Barrett (2000) find that a firm's reputation can be diminished by regulatory violations, but the decline in reputation is significantly less for a firm known for corporate philanthropy. More recently, Godfrey has led a study of 178 negative legal/regulatory actions against firms during the 1993 to 2003 period, which found that such events do, in general, reduce firm value, but that the decline is smaller for firms that actively engage in activities generally considered socially responsible, especially those targeted at secondary stakeholders (such as the community in general) (Godfrey *et al.*, 2009).

Corporate social activities can also help protect firms against negative events whose causes are purely external. Blacconiere and Patten (1994) study the market's reaction to firms in the chemical industry in response to a chemical leak at Union Carbide. They found that firms that had made more extensive environmental disclosures in their financial reports *prior to* the leak experienced less negative reactions than firms with less extensive disclosures. Schnietz and Epstein (2005) have shown that a reputation for social responsibility helped protect a firm's stock price in the general decline associated with the collapse of World Trade Organization talks in Seattle in 1999.

So prior scholarly work has shown that CSP can be effective as an insurance mechanism, but the fact that positive moral capital can provide insurance-like protection does not imply that corporate social activities can positively contribute to firm value *ex ante*. When a firm buys fire insurance, the amount of the insurance payout when fire damage has occurred depends on the causes and nature of the fire, and this will determine *ex post* the value of having taken out the insurance. In contrast, the *ex ante* view seeks to determine whether the same fire insurance is valuable when no fire damage has yet occurred. The *ex ante* value of fire insurance depends on estimates of the likelihood of fire damage occurring, the probable extent and nature of the damage, the firm's likely role in any fire, and the cost of the policy.² As such, the effectiveness of the insurance (the *ex post* view) is clearly distinct from the value of holding it (the *ex ante* view). The *ex ante* insurance value of CSP also can differ from firm to firm. As insurance, CSP presumably creates more value for firms at greater risk.

Litigation risk and the ex ante insurance value of CSP

The insurance value of a firm's CSP is determined by the extent to which the firm needs such insurance, so it increases with a firm's risk exposure. In today's litigious business environment, firms face increased litigation risks. For listed American firms, even a sudden or substantial stock price drop can precipitate shareholder lawsuits (Alexander, 1991; Lowry and Shu, 2002; Tucker, 1991). An error in financial statements, a failure to disclose material information, or even a substantial adjustment in asset carrying values, all could potentially trigger a lawsuit (Francis, Philbrick, and Schipper, 1994).

² While the fire insurance analogy is useful to illustrate the distinctions between *ex ante* and *ex post* perspectives of CSP insurance value, the insurance properties of CSP differ from traditional insurance policies (such as fire insurance) in several manners. While an active market is commonly available for traditional insurance policies, no such market exists for firms to trade on the insurance aspects of CSP. This is because, unlike traditional insurance policies, CSP as insurance is not contractible: the insurance properties of CSP rest on stakeholder goodwill rather than explicit contracts. Consequently, the timing, costs, and benefits of the insurance properties of CSP cannot be established in the same ways as traditional insurance policies. Similarly, unlike traditional insurance policies, the insurance properties of CSP cannot be enforced in the court of law.

The potential costs involved in a lawsuit (legal fees, time allocated to the lawsuit, the opportunity costs of executives distracted from their main operational tasks, reputation costs, settlement costs) are usually substantial. Lowry and Shu (2002) studied lawsuits related to the underpricing of initial public offerings (IPOs) in the U.S. and found that the settlement payments, one of the most publicized costs of litigation, averaged \$3.3 million and represented 11 percent of the total proceeds raised. Firms making IPOs and their underwriters often intentionally underprice the issue to decrease the probability of litigation as well as any damages in the event of a suit (Lowry and Shu, 2002). Focusing on 827 class actions settled from 1996 to 2006, Simmons and Ryan (2007) showed that the average (inflation adjusted) settlement increased over time—in 1996 to 1999 it was \$16.3 million, but by 2006 it had increased significantly to \$180.7 million. Even after excluding settlements of more than \$1 billion, the average settlement amount in 2006 was still at an all-time high of \$45 million (cf. 1996 to 2005 average of \$22.6 million). The total costs of litigation to firms involved are, of course, much higher than these direct settlement payments.

Just as IPO underpricing may be an effective insurance mechanism in certain circumstances, in a more general setting, moral capital accumulated through corporate social practices may also represent a form of insurance against losses from future litigation. One element of total litigation cost is any punishment received from stakeholders. That amount is likely to be influenced by the attributions those stakeholders hold with respect to the firm (Godfrey, 2005). It seems reasonable that stakeholders should be more willing to give the benefit of the doubt to a firm that actively engages in corporate social activities, and this should reduce the severity of their sanctions. They may even forgive unscrupulous acts to a certain extent (Godfrey *et al.*, 2009). As such, the costs of CSP can be conceived as an investment in insurance against litigation, and given the high litigation costs involved, such insurance may be very valuable to a firm.

Industries vary widely in terms of the level of litigation risk their firms face. The clustering of litigation among certain industries has been widely documented (e.g., Cornerstone Research, 2011; PricewaterhouseCoopers, 1999; Rogers and Van Buskirk, 2009). Firms in high-tech industries tend to face higher litigation risks because they derive more of their value from growth options than from tangible assets. And indeed, firms in high-tech industries have been found to suffer a disproportionately large amount of litigation relative to other industries (e.g., Field, Lowry, and Shu, 2005; Johnson, Kasznik, and Nelson, 2001; Johnson, Nelson, and Pritchard, 2007). Firms in industries with high litigation risks should be more likely to benefit from CSP as an *ex ante* defense strategy.

Hypothesis 1: Ceteris paribus, the positive relationship between CSP and firm value is stronger for firms in industries with higher levels of litigation risk.

Organizational legitimacy and the legitimacy of CSP

So far this discussion has relied on the argument that a firm obtains moral capital (a source of insurance value) by engaging in CSP and that the value of this moral capital varies with the level of risk, for example litigation risk, against which it might need to insure itself. However, in order for CSP to generate moral capital at all, the firm must meet certain basic conditions by passing some legitimacy tests. Both pragmatic and moral legitimacy may affect stakeholders' evaluations of the motives behind a firm's prosocial activities (e.g., Suchman, 1995). The extent to which a firm's CSP is valuable will depend on whether it has pragmatic and moral legitimacy in the eyes of its stakeholders. Pragmatic legitimacy is interpreted in this study in terms of a firm's financial position. Moral legitimacy, however, is thought to be influenced by whether or not a firm operates in a socially contested industry.³

Pragmatic legitimacy and financial distress risk

Pragmatic legitimacy is based on self-interest and reflects the utility calculations of a firm's stakeholders (Suchman, 1995). A firm's financial position is, thus, expected to affect its pragmatic legitimacy. Firms in strong financial positions are in a better position to have pragmatic legitimacy, since such legitimacy is typically obtained by directing tangible rewards to their stakeholders, including granting their employees better compensation, providing their shareholders higher dividends, and delivering better value to their customers (Suchman, 1995). Academic research has confirmed the general wisdom that a firm's long-run survival and profitability depend on its ability to satisfy the needs of its various stakeholders (Clarkson, 1995). Firms can maximize their effectiveness only when the fundamental needs of their stakeholders are met (Donaldson and Preston, 1995).

Financially distressed firms can less easily maintain pragmatic legitimacy in the eyes of their stakeholders. Here, 'financial distress' refers to a low cash flow state in which a firm incurs losses without being insolvent

³ Firms in highly litigious industries do not necessarily operate in socially contested industries. The clustering of high and low litigation risk industries is not based on whether firms in those industries face more or less moral hazard, rather, the classification is based on the industries' litigation history.

(Purnanandam, 2008). Financially distressed firms send strong signals of the failure of their current strategies. Stakeholders have expectations about firms in financial distress that are different from those they apply to firms that are solvent. Stakeholders expect profitable firms to contribute more to society and reward those that do so, but they expect a firm that performs poorly to apply its limited resources to improving business operations instead of diverting them to various types of social activities. Thus, if a poorly performing firm actively engages in prosocial activities, such behavior may even attract punishment instead of rewards from its stakeholders (Wang and Qian, 2011).

Moreover, a financially distressed firm may have already lost customers, valuable suppliers, and key employees because they are concerned about its long-term survival. Customers may be reluctant to do business with distressed firms (Opler and Titman, 1994). When Apple Inc. had financial difficulties in the mid-1990s, software developers were reluctant to develop new application software for Macintosh computers which, in part, caused a 27 percent decline in unit sales (Purnanandam, 2008). As a firm's stakeholder base contracts when the firm is in financial distress, the audience for its prosocial activities and, thus, the moral capital it can potentially gain, will be constrained.

Indeed, a firm in financial distress may not be able to provide consistent service or product quality to its customers, job security to its employees, or dividends to its shareholders (Schnietz and Epstein, 2005). This can eventually affect the self-interested calculations of its audiences and decrease its pragmatic legitimacy in the eyes of its stakeholders (Suchman, 1995). In such circumstances, engaging in prosocial activities obviously conflicts with a firm's more salient responsibilities, such as bottom line performance and solvency. Spending resources on socially responsible causes will be unlikely to generate much moral capital in such circumstances or provide compelling evidence of prudent stewardship in the eyes of stakeholders. With little pragmatic legitimacy, firms in financial distress are less likely to benefit from CSP.

Hypothesis 2: Ceteris paribus, the positive relationship between CSP and firm value is weaker for firms at greater risk of financial distress.

Moral legitimacy and whether or not a firm operates in a socially contested industry

Moral legitimacy is based on normative approval and reflects stakeholders' evaluations of a firm's activities in terms of whether it is sincerely trying to improve overall social welfare (Aldrich and Fiol, 1994; Suchman, 1995). Moral legitimacy rests on stakeholders' judgments about whether a given activity is 'the right thing to do.' Godfrey (2005) has also noted that whether corporate social activities can generate moral capital depends heavily on the stakeholders' evaluations of the firm's motives. If socially responsible activities are viewed as a genuine manifestation of the firm's intentions and can improve overall social welfare, there will be greater moral capital generated. If, however, the socially responsible activities are viewed as an ingratiating attempt to win favor, the firm is less likely to gain and may even generate a negative moral evaluation (Godfrey, 2005).

In the context of this article, we consider that for firms operating in socially contested industries such as alcoholic beverage, tobacco, firearms, and gambling, their CSP activities are more likely to be perceived by stakeholders as lacking a moral basis. It is hard to convince most stakeholders that operating in those socially contested industries is 'the right thing to do.' Any socially responsible activities conducted by firms in those industries may be perceived as 'blood money' to either atone for past sins or to compensate for current practices that are negatively regarded. Godfrey cites tobacco companies that try to offset their negative product image through generous philanthropy (Godfrey *et al.*, 2009) and suggests that stakeholders may view CSP engagement by such firms as hypocritical, making it more difficult to convince them that the firm sincerely cares about social welfare. Klassen and McLaughlin (1996) have shown that environmental awards result in significant share price increases and that those increases are larger for firms in historically 'clean' industries than for those in socially contested industries. The pursuit of CSP by firms in socially contested industries may be less likely to build moral legitimacy, so CSP is less likely to generate value for those firms.

Hypothesis 3: Ceteris paribus, the positive relationship between CSP and firm value is weaker for firms operating in socially contested industries.

METHODS

Data and sample

Kinder, Lydenberg, Domini & Co., Inc. (KLD) and Compustat were the two major data sources for this study. Data from KLD were used to quantify a firm's CSP. While far from perfect, KLD data are widely used in business and social research and are considered to be the best available for compiling a comprehensive measure of CSP (e.g., Barnett and Salomon, 2012; Choi and Wang, 2009; Graves and Waddock, 1994; Hillman and Keim, 2001; Waddock and Graves, 1997). Information on firms' CSP was analyzed for the 17-year period from 1991 to 2007. It was then merged with Compustat data on financial performance and other firm-level variables. After merging the data, a final sample of 3,029 firms and 15,504 firm-year observations was available to test the hypotheses.

Variable definitions and measures

The dependent variable, *firm value*, was measured as price of the firm's equity. Following the methods pioneered by Choi and Wang (2009) and Hillman and Keim (2001), an aggregate measure of *CSP* was designed to incorporate the community relations, diversity, employee relations, environment, and product dimensions of the KLD data. Each dimension was standardized to make the scores directly comparable across dimensions and over time (Mattingly and Berman, 2006). The KLD index evaluates each of the five dimensions in terms of 'strengths' and 'concerns.' The weaknesses were subtracted from the strengths to arrive at a net score for each dimension.

Following the lead of prior studies (e.g., Ali and Kallapur, 2001; Francis *et al.*, 1994; Matsumoto, 2002) SIC codes 2833–2836 (biotechnology), 3570–3577 and 7370–7374 (computers), 3600–3674 (electronics), and 5200–5961 (retailing) were selected as representing industries characterized by a high level of *litigation risk*. Prior studies have identified these industries as high risk based on their actual incidences of securities litigation. *High litigation risk* took a value of '1' if a firm's primary industry belonged to one of those industries and '0' otherwise.

Pragmatic legitimacy and moral legitimacy were quantified using a firm's financial condition and its membership in a socially contested industry, respectively. Altman's *Z*-score was used to measure the likelihood of a firm experiencing financial distress or bankruptcy (Miller and Reuer, 1996). It measures the probability of bankruptcy within the next two years, where a higher *Z*-score means better financial health. A firm was classified as having a high distress risk if its *Z*-score was lower than 2.7 (or 3.0).⁴ *High distress risk* took a value of '1' for such firms and '0' otherwise. *Socially contested industry* was a dummy variable created to indicate firms in the alcoholic beverage, firearms, defense, gambling, forestry, mining, or tobacco industries. Such firms were coded '1' with all others coded '0'.

Firm valuation model

We adopt the residual income model to examine the *ex ante* CSP value. The conceptual foundation of the residual income model is that firms create wealth by generating earnings in excess of their cost of capital. It has a long tradition (see Edwards and Bell, 1961; Ohlson, 1995; Peasnell, 1982; Preinreich, 1938).⁵ The residual income model provides theoretical foundations that incorporate both firm fundamental and non-fundamental information in the value function. So, in stark contrast to previous scholarly work on the relationship between CSP and CFP, it provides a conceptual motivation to incorporate CSP into the valuation function and assess its valuation effects in a more structured manner.⁶ We describe the basic intuitions underlying the residual income model below, as it is relatively new to the management literature.

The residual income model rests on three assumptions (Ohlson, 1995). The first is that a firm's value (the price of its equity) is equal to the present value of expected dividends:

⁴ A *Z*-score below 2.7 indicates there is a good chance that the firm will be in distress within the next two years, while a *Z*-score between 2.7 and 3.0 indicates a firm is on alert.

⁵ Biddle, Bowen, and Wallace (1997) trace the residual income model's conceptual foundations as far back as Hamilton (1777) and Marshall (1890).

⁶ For ease of subsequent expositions and clarity, hereafter we replace *b* with *BVE* to represent book value of equity, and we replace *x* with *EARN* to represent earnings.

$$P_t = \sum_{\tau=1}^{\infty} \frac{E_t [d_{t+\tau}]}{(1+r)^\tau} \quad (1)$$

where P_t is the firm's share price at time t , d_t is net dividend paid at time t , r is the discount rate, and $E_t[\cdot]$ is the expected value operator, conditional on the information available at time t .

The second assumption is the clean surplus accounting relation:

$$b_t = b_{t-1} + x_t - d_t \quad (2)$$

where b_t is the book value of equity at time t , and x_t is earnings for the period $t-1$ to t . Substituting the clean surplus accounting relation, Equation (2), into the discounted dividend model yields

$$P_t = \sum_{\tau=1}^{\infty} \frac{E_t [b_{t+\tau-1} + x_{t+\tau} - b_{t+\tau}]}{(1+r)^\tau} \quad (3)$$

Rewriting Equation (3) after some algebraic manipulations yields

$$P_t = b_t + \sum_{\tau=1}^{\infty} \frac{E_t [x_{t+\tau} - r \cdot b_{t+\tau-1}]}{(1+r)^\tau} - \frac{E_t [b_{t+\infty}]}{(1+r)^\infty} \quad (4)$$

As $\tau \rightarrow \infty$, the final term in Equation (4) becomes zero. The 'residual income' or 'abnormal earnings' is then defined as $x_t^a = x_t - r \cdot b_{t-1}$. That is, residual income represents earnings minus a capital charge for the invested capital. The share price can then be expressed as the sum of book value and the present value of future residual income:

$$P_t = b_t + \sum_{\tau=1}^{\infty} \frac{E_t [x_{t+\tau}^a]}{(1+r)^\tau} \quad (5)$$

The third assumption specifies that residual income has the following information dynamics:

$$x_{t+1}^a = \omega x_t^a + v_t + \epsilon_{1,t+1} \quad (6a)$$

$$v_{t+1} = \gamma v_t + \epsilon_{2,t+1} \quad (6b)$$

where v_t is information on future residual income not in current residual income. The disturbance terms, $\epsilon_{i,t}$, are unpredictable and have zero mean. ω and γ are fixed persistence parameters that fall between zero and one.

Combining Equations (5), (6a), and (7) yields the following valuation function:

$$P_t = b_t + \alpha_1 x_t^a + \alpha_2 v_t \quad (7)$$

where $\alpha_1 = \omega/(1+r-\omega)$ and $\alpha_2 = (1+r)/[(1+r-\omega)(1+r-\gamma)]$. Expressing Equation (7) in terms of earnings and book value of equity rather than residual income,

$$P_t = (1-k) b_t + k (\varphi x_t - d_t) + \alpha_2 v_t \quad (8)$$

where $k = r \cdot \omega$, ranging between zero and one, and $\varphi = (1-r)/r$.

The information dynamics underlying the residual income model provide a conceptual foundation critical to incorporating CSP in firm valuation. If CSP, v_t , creates value for the firm, it should increase the firm's future residual

income, X_{t+1}^a , as described in Equations (6a) and (6b). This should increase the firm's current share price, P_t . Thus, the residual income model allows examining the financial market's *ex ante* valuation of a firm's CSP, *incremental* to fundamental accounting information. Note that when only fundamental accounting information is considered, the final term in Equation (8), $\alpha_2 v_t$, drops out of the model.

Following the lead of many prior studies, empirically, the value of a firm's equity value can be expressed as a function of its fundamentals (book value of equity, BVE , and earnings, $EARN$)⁷ and other information that are not already in current residual income,

$$P_t = \beta_0 + \beta_1 BVE_t + \beta_2 EARN_t + \alpha_2 v_t \quad (9)$$

One elegant feature of the residual income valuation model is that it is deceptively simple. Book value of equity and earnings (BVE_t and $EARN_t$) are two summary measures of a firm's entire financial situation. That means there will be no omitted variable problem relating to financial information,⁸ so there is no need to separately control for variables such as research and development (R&D) expenditure, advertising, or other expenses already incorporated in $EARN_t$.⁹ In addition, given that the main variables (P_t , BVE_t , and $EARN_t$) are expressed on a per share basis, firm size is normalized in the model. The leverage effects on firm valuation are captured by the discount rate, r , which is embedded within the coefficients β_1 , β_2 , and α_2 . Similarly, β_2 embeds the price-to-earnings characteristics that reflect investors' assessments of the firm's growth opportunities, so there is little need to separately control for firm growth. Any other characteristics developed over the firm's life cycle that affect its ability to create wealth, hence, residual income, are also directly modeled without having to explicitly specify and empirically proxy for them. This makes the residual income model a rich, theoretically sound, yet highly parsimonious, representation of firm value. The formulation can be implemented with a minimum of modifications (or control variables) to investigate the value of a firm's CSP.

To derive the base empirical model, Equation (9) was modified by including a measure of CSP at the end of the prior year (CSP_{it-1}), and industry and year dummies were added to control for industry and time-specific differences in market valuation that are not already captured by $EARN$ and BVE .¹⁰ Specifically, industry dummies control for industry-wide factors that can affect firm value, while year dummies control for economy-wide factors. Formally,

$$P_{it} = a + b_1 BVE_{it} + b_2 EARN_{it} + b_3 CSP_{it-1} + \sum IND + \sum YEAR + e_{it}, \quad (10)$$

where P_{it} is the equity value (per share) of firm i at the end of fiscal year t , BVE_{it} is the book value of its equity (per share), and $EARN_{it}$ is its earnings per share.

Equation (10) was estimated separately for groups of firms high or low in terms of litigation risk, distress risk, and association with a socially contested industry. The advantage of this approach is that it allows the independent variables to have differential influence on firm value in the high and low groups. Compared to an interaction approach, this subgroup analysis allowed fundamental information (BVE and $EARN$) and other information (CSP , industry, and year

⁷ For ease of subsequent expositions and clarity, hereafter we replace b with BVE to represent book value of equity, and we replace x with $EARN$ to represent earnings.

⁸ To the extent that a researcher is interested in a specific financial characteristic and its effect on firm valuation, he/she would simply include the financial characteristic separately in Equation 9 and exclude it from either BVE or $EARN$, depending on whether the financial characteristic is a balance sheet or income statement item. For example, if a researcher is interested in the specific effects of R&D on firm valuation, he/she can exclude R&D from $EARN$ and include R&D spending separately in the valuation function. In this study, we are not interested in how specific financial characteristics influence firm value and, hence, we did not need to decompose the two summary measures (BVE and $EARN$) into their finer components.

⁹ We acknowledge that previous research typically controls for a firm's investment in R&D and advertising intensity while examining the relationship between CSP and CFP (McWilliams and Siegel, 2000). Including these controls was appropriate in those studies because their model specifications differed both conceptually and empirically from the residual income model adopted here. However, as a robustness check, additional analyses were conducted controlling for those factors. Consistent with the conceptual foundations of the residual income model, the evidence remained consistent with the main results. Please refer to the section on sensitivity testing for details.

¹⁰ We adopted the Fama-French 49 industry classification commonly used in accounting and finance for our industry controls. This scheme is based on four-digit SIC codes. A full list of the classification can be accessed on Kenneth French's Web site (http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/Data_Library/det_49_ind_port.html).

fixed effects) to influence firm value differently in firms high and low in litigation risk and distress risk and involved or not involved in a socially contested industry.¹¹

An important aspect of this research design is that it assumes CSP can influence firm value *via* multiple channels (e.g., insurance/risk management and reputation enhancement, among others). The coefficients estimated for Equation (10) for the high and low risk groups represent the total effects of CSP on firm value for each group, irrespective of the underlying mechanisms. In order to tease out the insurance effects, the analysis focused on whether CSP predicts firm value differently in the high and low risk groups and in the manner predicted by the hypotheses.

Two complementary empirical analyses were applied in the testing. In both, Equation (10) was estimated separately for each group. The predicted change in firm value was then calculated based on a one standard deviation change in the CSP variable and expressed as a percentage of the mean (or median) share price for the relevant group. The significance of any firm value difference between the groups was then tested statistically. These were termed the ‘economic effect tests.’ The second analysis tested whether the estimated coefficients were significantly different between the two groups of firms. These were the ‘coefficient tests.’

The economic effect tests were intended to provide evidence of the economic significance of the value of CSP, as well as evidence of whether its economic effects are significantly different among groups in a manner consistent with the study’s predictions. The coefficient tests provided evidence about whether or not CSP enhances firm value and whether the value generation differs among groups as predicted. Thus, the two approaches complement one another and allow conclusions about both the economic and statistical significance of any differences.

RESULTS

Descriptive statistics and a correlation matrix are presented in Table 1. Consistent with the valuation model, a firm’s equity book value (*BVE*) and earnings per share (*EARN*) were highly correlated with a firm’s equity value (*P*), as would be expected. In general, there was a significant positive correlation between a firm’s equity value and its CSP, providing preliminary evidence that CSP enhances firm value.

Table 1. Descriptive statistics and correlation matrix

| Variables | Mean | S.D. | P_t | BVE_t | $EARN_t$ | High litigation risk _t | Z-score _t | Socially contested industry _t |
|--|-------|-------|----------|----------|----------|-----------------------------------|----------------------|--|
| P_t | 31.62 | 21.17 | | | | | | |
| BVE_t | 11.93 | 9.06 | 0.59*** | | | | | |
| $EARN_t$ | 1.25 | 1.84 | 0.66*** | 0.55*** | | | | |
| High litigation risk _t | 0.35 | 0.48 | -0.14*** | -0.24*** | -0.19*** | | | |
| Z-score _t | 14.90 | 57.79 | 0.10*** | 0.02* | 0.07*** | -0.03*** | | |
| Socially contested industry _t | 0.02 | 0.15 | 0.05*** | 0.00 | 0.04*** | -0.11*** | -0.01 | |
| CSP_{t-1} | -0.01 | 2.60 | 0.02** | -0.12*** | -0.03*** | 0.13*** | 0.04*** | -0.03*** |

N = 15,504; ***indicates significance at the $p \leq 0.001$ (** $p \leq 0.01$, * $p \leq 0.05$) level of confidence.

¹¹ The estimated effects of the independent variables were indeed different in the high and low litigation risk and distress risk groups and between firms operating in socially contested industries and the rest. This confirms the appropriateness of the design choice. However, as a robustness check, an interaction term approach was also applied to test the propositions, yielding qualitatively consistent evidence and conclusions. Please refer to the sensitivity tests section for details.

Table 2 reports the coefficients of the baseline model estimating the impact of CSP on firm value. In Model 1, both the equity book value and earnings per share showed positive and significant relationships with equity value, consistent with the theoretical predictions. In Model 2, the coefficient of CSP was positive and significant at the 0.1 percent level, suggesting that investment in social activities enhances firm value. In terms of economic significance, a one standard deviation increase in CSP is associated with a 5.08 percent (5.94%) increase in mean (median) equity value.

Table 2. Base model of the impact of CSP on firm value

| Variables | (1) Base | (2) CSP |
|----------------------------------|----------------------|----------------------|
| BVE _t | 0.806*** (0.016) | 0.827*** (0.016) |
| EARN _t | 5.572*** (0.076) | 5.508*** (0.076) |
| CSP _{t-1} | | 0.618*** (0.046) |
| Constant | 13.502*** (2.889) | 13.197*** (2.873) |
| Year dummies | Y | Y |
| Industry dummies | Y | Y |
| Observations | 15,504 | 15,504 |
| Adjusted R-squared | 0.557 | 0.562 |
| Valuation effects [#] : | | |
| Mean | | 5.08% |
| Median | | 5.94% |

Standard errors in parentheses

*** indicates significance at the $p \leq 0.001$ level of confidence (two tailed).

Valuation effects are calculated based on a one standard deviation change in CSP as a percentage of the mean or median share price of the relevant group.

Hypothesis 1 predicts that the positive relationship between CSP and firm value is stronger for firms in highly litigious industries. Table 3 reports the results from the modeling based on industry litigation risk. Models 2 and 4 show that CSP had a positive and significant relationship with firm value, but the magnitude of the effect varies. Specifically, the estimated coefficient of the CSP for firms in high litigation industries is significantly greater than that for firms in low litigation industries. In terms of economic importance, among firms in high litigation industries, a one standard deviation increase in CSP is associated with an increase of 6.78 percent (8.31%) in mean (median) firm value. In contrast, a one standard deviation increase is associated with an increase of only 3.95 percent (4.55%) in mean (median) firm value

among firms in low litigation industries. These differences in CSP valuation are statistically significant at the 0.1 percent level. Therefore, Hypothesis 1 is supported.

Table 3. The impact of CSP on firm value: partitioned by industry litigation risk

| Variables | High litigation risk | | Low litigation risk | |
|-----------------------|------------------------------|---------------------|-------------------------|----------------------|
| | (1) Base | (2) CSP | (3) Base | (4) CSP |
| BVE _t | 0.934*** (0.033) | 0.936*** (0.033) | 0.785*** (0.018) | 0.806*** (0.018) |
| EARN _t | 6.171*** (0.146) | 6.102*** (0.145) | 5.308*** (0.088) | 5.252*** (0.088) |
| CSP _{t-1} | | 0.754*** (0.078) | | 0.508*** (0.056) |
| Constant | 9.305** (3.112) | 8.337** (3.087) | 14.728*** (3.328) | 14.459*** (3.314) |
| Year dummies | Y | Y | Y | Y |
| Industry dummies | Y | Y | Y | Y |
| Observations | 5,375 | 5,375 | 10,129 | 10,129 |
| Adjusted R-squared | 0.544 | 0.552 | 0.567 | 0.570 |
| Valuation effects#: | | | | |
| Mean | | 6.78% | | 3.95% |
| Median | | 8.31% | | 4.55% |
| Tests of differences: | <i>Economic effect tests</i> | | <i>Coefficient test</i> | |
| | Mean | Median | CSP coefficient | |
| High less low | 2.83% ^a | 3.77% ^a | 0.246* | |

Standard errors in parentheses

*** indicates significance at the $p \leq 0.001$ (** $p \leq 0.01$, * $p \leq 0.05$) level of confidence (two tailed).

Valuation effects are calculated based on a one standard deviation change in CSP as a percentage of the mean or median share price of the relevant group.

Hypothesis 2 predicts that firms are less likely to benefit from CSP if they lack pragmatic legitimacy, that is, if they are in financial distress. Tables 4, 5 provide the results partitioned by distress scores at the 2.7 and 3.0 levels, respectively. In Panel A, using an Altman's Z-score of 2.7 as the cutoff point, the coefficient of the CSP for non-distressed firms was

larger than that for distressed firms, and the difference was statistically significant at the 0.1 percent level. Similar results are shown in Panel B using a 3.0 Z-score as the cutoff point. The test of differences was also significant at the 0.1 percent level. In terms of economic significance, a one standard deviation increase in CSP increases the mean (median) equity value of non-distressed firms by about 2.3 percent (2.5%) more than for distressed firms. Both differences are statistically significant at the 1 percent level or better, supporting Hypothesis 2.

Table 4. The impact of CSP on firm value: partitioned by distress score (Altman Z-score) using 2.7 as the cutoff

| Variables | Financially distressed | | Financially non-distressed | |
|----------------------------------|------------------------------|---------------------|----------------------------|----------------------|
| | (1) Base | (2) CSP | (3) Base | (4) CSP |
| BVE _t | 1.055*** (0.021) | 1.060*** (0.021) | 0.660*** (0.022) | 0.686*** (0.022) |
| EARN _t | 2.870*** (0.099) | 2.858*** (0.099) | 7.240*** (0.113) | 7.173*** (0.112) |
| CSP _{t-1} | | 0.288** (0.072) | | 0.692*** (0.056) |
| Constant | -0.048 (7.253) | -1.415 (7.249) | 12.914*** (3.096) | 12.936*** (3.075) |
| Year dummies | Y | Y | Y | Y |
| Industry dummies | Y | Y | Y | Y |
| Observations | 4,495 | 4,495 | 11,009 | 11,009 |
| Adjusted R-squared | 0.650 | 0.651 | 0.554 | 0.560 |
| Valuation effects [#] : | | | | |
| Mean | | 2.90% | | 5.22% |
| Median | | 3.57% | | 6.08% |
| Tests of differences: | <i>Economic effect tests</i> | | <i>Coefficient test</i> | |
| | Mean | Median | CSP coefficient | |
| Distress less non-distress | -2.32%** | -2.50%** | -0.404*** | |

Standard errors in parentheses; *** indicates significance at the $p \leq 0.001$ ($** p \leq 0.01$) level of confidence (two tailed). A score below 2.7 indicates that there is a good chance the firm will be in distress within the next two years.

Valuation effects are calculated based on a one standard deviation change in CSP as a percentage of the mean or median share price of the relevant group.

Table 5. The impact of CSP on firm value: partitioned by distress score (Altman Z-score) using 3.0 as the cutoff

| Variables | Financially distressed | | Financially non-distressed | |
|----------------------------|---------------------------------|---------------------------------|----------------------------------|----------------------------------|
| | (1) Base | (2) CSP | (3) Base | (4) CSP |
| BVE _t | 1.040 ^{***} (0.020) | 1.047 ^{***} (0.020) | 0.669 ^{***} (0.024) | 0.694 ^{***} (0.024) |
| EARN _t | 3.133 ^{***} (0.095) | 3.120 ^{***} (0.095) | 7.387 ^{***} (0.119) | 7.316 ^{***} (0.118) |
| CSP _{t-1} | | 0.304 ^{***} (0.066) | | 0.708 ^{***} (0.058) |
| Constant | -0.146 (6.373) | -1.418 (6.367) | 13.111 ^{***} (3.169) | 13.253 ^{***} (3.146) |
| Year dummies | Y | Y | Y | Y |
| Industry dummies | Y | Y | Y | Y |
| Observations | 5,276 | 5,276 | 10,228 | 10,228 |
| Adjusted R-squared | 0.650 | 0.651 | 0.553 | 0.559 |
| Valuation effects#: | | | | |
| Mean | | 2.99% | | 5.27% |
| Median | | 3.63% | | 6.12% |
| Tests of differences: | <i>Economic effect tests</i> | | <i>Coefficient test</i> | |
| | Mean | Median | CSP Coefficient | |
| Distress less non-distress | -2.28% ^{***} | -2.49% ^{***} | -0.405 ^{***} | |

Standard errors in parentheses; *** indicates significance at the $p \leq 0.001$

A score between 3.0 and 2.7 indicates a firm on alert, and below 2.7 indicates there is a good chance that the firm will be in distress within the next two years.

Valuation effects are calculated based on a one standard deviation change in CSP as a percentage of the mean or median share price of the relevant group.

Hypothesis 3 predicts that firms are less likely to benefit from CSP if they lack moral legitimacy. That is, firms in socially contested industries are less likely than others to benefit from CSP. Table 6 reports the results from modeling partitioned by socially contested industry. CSP showed a significant positive effect for firms not operating in socially contested industries, but no statistically significant effect for firms operating in socially contested ones. Both the economic effects and the coefficients of the CSP were significantly larger for firms not involved in socially contested industries, consistent with Hypothesis 3.

Table 6. The impact of CSP on firm value: partitioned by industry social contestability

| Variables | Contested industries | | Non-contested industries | |
|--------------------------------------|------------------------------|---------------------|--------------------------------|----------------------|
| | (1) Base | (2) CSP | (3) Base | (4) CSP |
| BVE _t | 0.502*** (0.099) | 0.479*** (0.101) | 0.821*** (0.016) | 0.842*** (0.016) |
| EARN _t | 6.692*** (0.518) | 6.704*** (0.518) | 5.518*** (0.077) | 5.449*** (0.076) |
| CSP _{t-1} | | -0.603 (0.420) | | 0.640*** (0.046) |
| Constant | 5.437 (18.089) | 3.291 (19.514) | 13.332 ^a (2.877) | 12.984*** (2.859) |
| Year dummies | Y | Y | Y | Y |
| Industry dummies | Y | Y | Y | Y |
| Observations | 381 | 381 | 15,123 | 15,123 |
| Adjusted R-squared | 0.579 | 0.580 | 0.557 | 0.563 |
| Valuation effects#: | | | | |
| Mean | | -3.88% | | 5.29% |
| Median | | -4.22% | | 6.18% |
| Tests of differences [^] : | <i>Economic effect tests</i> | | <i>Coefficient test</i> | |
| | Mean | Median | CSP Coefficient | |
| Irresponsible less non-irresponsible | -9.17%*** | -10.40%*** | -1.243*** | |

Standard errors in parentheses

*** indicates significance at the $p \leq 0.001$ level of confidence (two tailed).

Valuation effects are calculated based on one standard deviation change in CSP as a percentage of the mean or median share price of the relevant group.

[^]Since the CSP coefficient for socially contested industries was not significant, to be more conservative, the statistical tests of differences are based on CSP's economic effects and the coefficients of socially non-contested industries versus zero, rather than against the negative economic effects and coefficients of socially contested industries.

Sensitivity tests

Supplementary analyses were performed to test the robustness of the main results. To facilitate comparison with the results of prior CSP studies, a hierarchical regression analysis was first performed by including CSP, industry litigation risk, distress risk, and the socially contested industry dummy in the same model. Rather than dummy coded measures, continuous measures of distress risk were used. The results are presented in Table 7. Corporate social performance showed a consistently significant and positive relationship with firm value. Also, as shown in Model 7, the interaction effects between CSP, litigation risk, distress risk, and a socially contested industry were consistent with the main findings.

Table 7. Hierarchical regression analysis of CSP on firm value

| Variables | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
|---|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| BVE _t | 0.806*** (0.016) | 0.827*** (0.016) | 0.833*** (0.016) | 0.830*** (0.016) | 0.833*** (0.016) | 0.832*** (0.016) | 0.829*** (0.016) |
| EARN _t | 5.572*** (0.076) | 5.508*** (0.076) | 5.452*** (0.076) | 5.455*** (0.076) | 5.453*** (0.076) | 5.450*** (0.076) | 5.453*** (0.076) |
| CSP _{t-1} | | 0.618*** (0.046) | 0.604*** (0.046) | 0.509*** (0.057) | 0.583*** (0.047) | 0.627*** (0.046) | 0.512*** (0.059) |
| High litigation _t | | | 0.396 (0.478) | 0.245 (0.481) | 0.416 (0.478) | 0.387 (0.478) | 0.267 (0.480) |
| Socially contested industry _t | | | 5.678** (1.808) | 5.725** (1.807) | 5.616** (1.808) | 5.496** (1.808) | 5.488** (1.807) |
| Distress risk _t | | | -0.019*** (0.002) | -0.019*** (0.002) | -0.018*** (0.002) | -0.019*** (0.002) | -0.018*** (0.002) |
| High litigation _t * CSP _{t-1} | | | | 0.278** (0.096) | | | 0.262** (0.097) |
| Distress risk _t * CSP _{t-1} | | | | | -0.001+ (0.001) | | -0.001* (0.001) |
| Socially contested industry _t * CSP _{t-1} | | | | | | -1.320*** (0.348) | -1.221*** (0.349) |
| Constant | 13.502*** (2.889) | 13.197*** (2.873) | 12.157*** (2.866) | 12.100*** (2.866) | 12.264*** (2.867) | 12.095*** (2.865) | 12.161*** (2.865) |
| Year dummies | Y | Y | Y | Y | Y | Y | Y |
| Industry dummies | Y | Y | Y | Y | Y | Y | Y |
| Observations | 15,504 | 15,504 | 15,504 | 15,504 | 15,504 | 15,504 | 15,504 |
| R-squared | 0.559 | 0.564 | 0.567 | 0.567 | 0.567 | 0.567 | 0.567 |
| F-statistic (ΔR-squared) | | 180.7*** | 31.85*** | 8.358** | 3.836+ | 14.41*** | 8.457*** |

Note: Standard errors in parentheses

*** indicates significance at the $p \leq 0.001$ (** $p \leq 0.01$, * $p \leq 0.05$, + $p \leq 0.10$) level of confidence (two tailed).

Distress risk is measured as the negative of the Z-score such that a larger number indicates greater risk of distress.

Another potential concern relates to endogeneity, where CSP might be endogenously determined by various firm factors. A two-stage least squares (2SLS) analysis was conducted to address this issue.¹² In the first stage, a firm's lagged share price, current ratio, debt ratio, size, R&D intensity, advertising intensity, and age were included along with industry average CSP and industry and year dummies to predict a firm's CSP. Industry average CSP served as the instrumental variable (e.g., Ghoul *et al.*, 2011; Wang, Choi, and Li., 2008).¹³ In the second stage, the predicted CSP from the first-stage estimation replaced the CSP variable in Equation (10), and all the main analyses of Tables 3-7 were reestimated. The evidence remained consistent with that from the main tests, leading to qualitatively identical conclusions.¹⁴

While our litigation risk measure is a well accepted and commonly used in several disciplines, it remains a crude measure. To alleviate concerns that the findings may be compromised by its crudeness, information on securities class action suits filed since 1996 (the start of the Private Securities Litigation Reform Act of 1995 (PSLRA)) until the end of the sample period in 2007 was collected by hand. The high litigation group consistently had more class actions than the low litigation group in every year from 1996 to 2007. This suggests that the original measure of litigation risk successfully captured its essence of litigation risk. Additional analysis was also conducted using this alternative measure, and the results remained consistent with the reported findings and conclusions.

Another potential concern is that our findings may be driven by high litigation risk industries being more profitable than low litigation risk industries. Following the slack resources arguments (e.g., Seifert, Morris, and Bartkus, 2004), high litigation risk industries may have better financial performance, which simultaneously leads to a higher CSP. If this were the case, the positive moderating effect of litigation risk on the CSP-CFP relationship found might be spurious. In addition to specifically incorporating such causality concerns in our research design (discussed earlier), our descriptive statistics reported in Table 1 provide additional evidence against this argument. Specifically, high litigation risk industries are found to be less profitable (both in terms of accounting, *EARN*, and market performance measures, *P*) and have higher CSP than low litigation risk firms. Additional analysis further shows that this pattern is also observed for the years before, during, and after CSP is measured (i.e., t-1, t, and t+1), all significant at the 0.01 percent level. Thus, the slack resource arguments are less likely to explain our findings on the insurance value of CSP.

Since the environmental dimension of the CSP measure may be specific to some socially contested industries (especially forestry and mining), two additional robustness checks were conducted. In the first, the models were reestimated after excluding the environmental dimension from the CSP measure. The difference between firms operating in socially contested industries and the rest remained significant. In the second test, the forestry and mining firms were excluded from the socially contested industries variable and, again, the results remained consistent with the main findings.

Another test used Tobin's Q as the dependent variable but, again, the results were largely consistent with what has been presented. Firms at greater risk of litigation were still more likely to benefit from the insurance value of CSP, and CSP was still less likely to create value for firms without pragmatic legitimacy.

Further tests explicitly including R&D spending and advertising intensity as control variables (McWilliams and Siegel, 2000) again generated evidence consistent with the main conclusions. A final sensitivity test involved correcting the standard errors for the panel data which, again, yielded qualitatively consistent conclusions. Overall, the supplementary analyses demonstrated the robustness of the results.

DISCUSSION

The central purpose of this study was twofold. First, it was designed to advance the risk management perspective in CSP research by analyzing the value of CSP as an insurance mechanism from an *ex ante* perspective. The results show that the insurance value indeed varies with the level of risk firms are exposed to—firms facing greater risk stand to benefit more

¹² Since correlated unobserved firm heterogeneity is one of the potential causes of endogeneity, this concern was addressed concurrently as well.

¹³ The theoretical justifications of industry average CSP as a valid instrument come from DiMaggio and Powell's (1983) argument that organizations tend to become more similar over time by adopting similar organizational practices through institutional isomorphism. Following this argument, it is reasonable to expect that the social activities of industry peers influence a focal firm's social behavior. However, it is unlikely that the social activities of other firms in the same industry have a direct impact on the focal firm's subsequent financial performance. We also examined the strength of this instrument using a first-stage F-test (regressing the endogenous variable on the instrument only) prior to the 2SLS analysis (Stock, Wright, and Yogo, 2002). The first-stage F-statistic is 1,644.9, significantly above the critical value of 8.96 proposed by Stock *et al.* (2002), indicating that industry-level CSP serves as a strong instrument in our 2SLS analyses.

¹⁴ Using the lagged endogenous variable as an alternative instrument also yielded qualitatively consistent evidence. For brevity, the two-stage least square results are not reported here, but they are available upon request from the authors.

from CSP. The study also examined the limits to value generation through CSP: for a firm to benefit fully from CSP, it must have gained pragmatic and moral legitimacy from its stakeholders by being financially sound and not operating in a socially contested industry.

Previous research on CSP has predominantly focused on its value creation role and on how it can improve a firm's financial performance through enhanced reputation, eliciting better customer and employee support, and so on (e.g., Fombrun, 1996; Lev *et al.*, 2010; Sen and Bhattacharya, 2001; Wang and Qian, 2011). Its insurance potential has been less explored (Fombrun *et al.*, 2000). This work has shown how its insurance potential varies according to the risks to which a firm is exposed. Importantly, the present study allows CSP value to arise from multiple channels while teasing out the insurance value of CSP. This extends the understanding of CSP's value protection mechanism in light of all the sources of CSP value.

Previous research has focused on examining the *ex post* effectiveness of CSP as an insurance mechanism in mitigating loss from negative events (Godfrey *et al.*, 2009), but this study has validated a general model that elucidates the conditions in which stakeholders are likely to value CSP as an insurance mechanism *ex ante*. It focused on the perception of firm risks before the (negative) event actually takes place. As such, the study takes into account *ex ante* risk assessments regarding CSP investment, which have not sufficiently been previously addressed by strategic management scholars (Ruefli, Collins, and Lacugna, 1999). Husted (2005) has emphasized that the *ex ante* perspective is clearly different from the *ex post* focus—CSP needs to be like an insurance policy that is there when you need it (Klein and Dawar, 2004).

On a broader level, the results of this study contribute to resolving a long-standing debate in CSP research over whether or not firms should divert their scarce cash, time, energy, and other resources to improving their CSP and whether excelling in social performance hurts or benefits a corporation financially (e.g., Friedman, 1970; Godfrey, 2005; Orlitzky *et al.*, 2003; Waddock and Graves, 1997). These results show that, in general, good CSP can generate positive firm value, and such value enhancement is not trivial economically. But it brings greater value to financially sound firms, firms that do not operate in socially contested industries, and firms that are exposed to higher risks of litigation.

There has been limited systematic, theoretical analysis of the firm- and industry-level conditions under which firms benefit most from their prosocial corporate practices (Barnett, 2007; Rowley and Berman, 2000). Only recently have researchers started looking into the factors influencing the CSP and CFP relationship from the perspective of CSP directly creating a positive image and reputation (Barnett and Salomon, 2012; Hull and Rothenberg, 2008; Wang and Qian, 2011). Although Godfrey and his coauthors (2009) have examined CSP as a risk management mechanism, they took the *ex post* view, examining factors affecting the effectiveness of CSP in mitigating value losses when negative events have already occurred. To our knowledge, no previous study has examined the role of CSP as a risk management mechanism from an *ex ante* perspective. This enquiry has shown that the *ex ante* insurance value of CSP should depend on a firm's risk exposure. Firms benefit more from the insurance value of good CSP if they are more likely to use the 'insurance' in the future. This works well for firms that operate in industries with high litigation risk, where the probability that they will be sued is higher than in other industries.

For firms to benefit from CSP, it is necessary for them to gain stakeholders' support by achieving pragmatic legitimacy and moral legitimacy. Firms need to satisfy stakeholders' basic needs and gain practical legitimacy with those stakeholders beforehand (Clarkson, 1995; Wang and Qian, 2011). The positive relationship between CSP and CFP is moderated by a firm's financial distress risk such that a firm is more likely to benefit from CSP when it is not in financial distress. Stakeholders' support comes only after the firm has provided them hope of a viable future. In addition, for firms operating in socially contested industries, their CSP practices are more likely to be viewed by stakeholders as lacking a moral basis, and the firms may be interpreted as hypocritical and treated with skepticism. Without moral legitimacy, CSP is less likely to bring a firm benefits. The value of CSP depends on stakeholders' perceptions and their interpretations of a firm's prosocial practices.

These results have other strong practical implications as well. First of all, they suggest that the insurance value arising from CSP is economically significant, adding from 2.8 percent to 3.8 percent to firm value (cf. an overall increase in firm value of 2.9% to 8.3% from CSP through all channels). Managers of high-risk firms should actively engage in prosocial activities. The more likely a firm is to need the 'insurance' in the future, the more it will benefit from prosocial activities and the more it should engage in them beforehand. Managers must monitor their firms' risk levels and invest in prosocial corporate activities accordingly.

In addition, managers can feel better assured that CSP and financial performance are not contradictory (Friedman, 1970); rather, they complement each other. To capture the value of good stakeholder relations, managers must realize that their firms need to be in good financial condition, otherwise stakeholders will not be able to appreciate their prosocial efforts,

and the value of their investments will be limited. Also, investment in good CSP by firms operating in socially contested industries may be in vain, as stakeholders are less likely to appreciate their efforts.

A number of suggestions for future research stem from the limitations of the current study. First, while we have been careful in our research design and additional analyses consistently show that the insurance value of CSP documented is not because of high litigation risk firms having better performance than low litigation risk firms, we cannot entirely eliminate such possibilities. As such, our study calls for future research to further establish the robustness of CSP insurance value in the presence of litigation risk. Similarly, other than the potential risk of litigation, there are, of course, many other types of risk a firm may face. Future research might profitably explore CSP's insurance value in the presence of some of these other types of risk.

This study has demonstrated that high-risk firms are more likely to benefit from good CSP as an insurance mechanism, but it did not explicitly address the costs of CSP investment. While a firm's market value represents the expected future benefits net of costs and, thus, implicitly incorporates the costs of prosocial activities, future research might fruitfully consider measuring CSP expense directly using, for example, a survey methodology.

It should also be acknowledged that insurance protection mechanisms cannot be reduced solely to corporate social practices. Corporate social performance is only one among many dimensions that stakeholders use to determine a firm's reputation and moral capital. A broader spectrum of firm activities should be exploited to create a safety net as part of a company-wide risk management strategy. This should, of course, begin with mechanisms that will prevent or minimize the occurrence of negative events. Firms still need to put in place good internal control systems and other conventional financial risk management tactics, such as using derivative securities, diversifying their investment portfolios, and so on, to fit the varying nature and degree of their risk exposure. Future research might fruitfully examine the interrelationships among CSP and other such risk management mechanisms. Are they, for example, more likely to be substitutive or complementary? And future research might also look into the insurance value of each dimension of stakeholder relations and examine which type of prosocial corporate activity is most valuable and/or effective in mitigating risk exposure. CSP is a multidimensional construct that encompasses a large and varied range of corporate behaviors (Carroll, 1979; Rowley and Berman, 2000). Different aspects of CSP are differently motivated and may, accordingly, have different implications for CFP (Brammer and Millington, 2008).

The results of this study provide the first evidence that stakeholders understand and value the insurance aspect of CSP. Further research is required to improve our understanding of other factors and conditions that will determine CSP's value to a particular firm. This naturally leads to a more ambitious and challenging future research avenue: establishing the optimum level of investment in corporate social activities that maximizes firm value, perhaps *via* both risk management and reputation enhancement channels. Such research would help inform managers about how to best balance their firms' investments in improving CSP given their specific circumstances. Moreover, the outcomes of such proposed research would help establish benchmarks to enable empirical examination of potential over- or underinvestment in CSP.

CONCLUSIONS

Overall, the results of this study suggest that CSP can enhance firm value by functioning as an insurance mechanism. But its value-enhancing effects vary depending on a firm's litigation risk. Pragmatic and moral legitimacy are essential if CSP is to be of any value to the firm. This study has documented the fact that CSP has *ex ante* insurance value over and above its value derived from other channels and that the contribution is economically significant. Taking firm and industry features into consideration may enable managers to develop a richer understanding of the financial performance impact of their prosocial investments. It is hoped that this study may serve as an important step toward a better understanding of the relationship between corporate social behavior and financial performance from the risk management perspective and beyond.

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