CORPORATE SOCIAL RESPONSIBILITY AS A REMEDY FOR MORAL HAZARD?

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January 2014

ABSTRACT

This study examines whether corporate social responsibility (CSR) acts as a remedy for moral hazard in the workplace. To obtain exogenous variation in employees' propensity to engage in moral hazard, we exploit a natural experiment provided by large increases in state-level unemployment insurance (UI) benefits between 1992 and 2012 in the U.S. Higher UI benefits render the threat of termination less effective and hence increase employees' incentives to shirk. Using a difference-in-differences methodology, we find that companies react to increases in UI benefits by increasing their employee-related CSR. This finding supports the view that CSR is a valuable resource that allows companies to motivate their employees against engaging in moral hazard. We further provide evidence that the increase in CSR is larger for companies operating in industries that are more labor intensive, more competitive, and subject to higher levels of stakeholder dissatisfaction.

Keywords: moral hazard; shirking; corporate social responsibility; competitive strategy; difference-in-differences; unemployment insurance.

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*Both authors contributed equally. We thank Emily Bianchi for valuable comments and suggestions. We also thank Brandon Legried for excellent research assistance.

INTRODUCTION

It is often argued that employees are a firm's most valuable asset and a key source of competitive advantage (e.g., Coff, 1997). For example, Jack Welch—former CEO of General Electric and named "Manager of the Century" by Fortune magazine—argues that "[a]ny company trying to compete must figure out a way to engage the mind of every employee" (Buckingham and Coffman, 1999, p. 273). A primary difficulty in managing employees is moral hazard. Moral hazard arises in situations where the interests of employees and the firm are misaligned, and employees' effort is imperfectly observed. In such situations, employees have an incentive to exert inefficiently low levels of effort. Situations of moral hazard at the workplace come in many flavors. They include counterproductive employee behavior at both the executive and non-executive levels, such as employee absenteeism (Markham and McKee, 1991), employee theft (Dickens et al., 1989), and the inclination to enjoy the "quiet life" (Bertrand and Mullainathan, 2003).

A large literature in economics as well as management and organization theory has recognized the issue of mitigating moral hazard problems at the workplace. Broadly speaking, the economics literature focuses on the design of *monetary incentives*, suggesting that tying worker compensation directly to the firm's outcome via performance pay can help align the interests of employees and the firm (Holmstrom, 1979). Despite the popular acceptance of its benefits, performance pay is far from a panacea: these programs often show a rather weak link between pay and performance due to concerns about inequality and overconfidence (e.g., Larkin, Pierce, and Gino, 2012; Zenger, 1992).

The management and organization theory literature focuses on the *nurturing mechanisms* that improve workers' motivations and *constraining mechanisms* that reduce the unobservability of employees' efforts. On one hand, by nurturing the relationship to their employees, firms are better able to attract a higher-quality workforce, foster employees' commitment to organizational values and practices, and retain talented employees (e.g., Albinger and Freeman, 2000; Greening and Turban, 2000; Huselid, 1995; Peterson, 2004; Pfeffer, 1994; Sheridan, 1992; Turban and Greening, 1996; Vogel, 2005). On the other hand, by implementing modern organizational control techniques and processes (Pierce, Snow, and McAfee, 2013), and by building a cohesive team that enforces social norm and sanctions against social loafing (Coleman, 1988), firms are better able to monitor employees' behavior.

As this brief overview illustrates, the question of how to alleviate moral hazard at the workplace has spurred a large literature. Yet, very little is known about the role of Corporate Social Responsibility (CSR) as a potential remedy. This void in the literature is surprising given the substantial investments made by firms in employee-related CSR programs (Caligiuri, Mencin, and Jiang, 2013) and the growing literature on the drivers and performance outcomes of CSR activities. CSR programs have become commonplace (Flammer, 2013a), and many managers view CSR activities as important. Yet it has been difficult to document tangible benefits associated with these programs (see the review of Margolis et al., 2007). One way to overcome the latter is by better causally identifying the effect of CSR on performance indicators (Flammer, 2013b; Servaes and Tamayo, 2013). Another approach is to separately examine the role of the various stakeholders in shaping firms' CSR investments (Margolis and Walsh, 2003). Among others, these stakeholder groups include regulatory institutions (e.g., Toffel, Short, and Ouellet, 2013), the community (e.g., Tilcsik and Marquis, 2013), activists (e.g., Zhang and Luo,

2013), as well as the media (e.g., Luo, Meier, and Oberholzer-Gee, 2013). This paper focuses on employees—one set of internal stakeholders and arguably the firms' most valuable asset—and asks the question of whether and under which conditions firms employ CSR programs to mitigate moral hazard problems.

To examine this question, we exploit a natural experiment in the form of exogenous increases in state-level unemployment insurance (UI) benefits that were implemented in 31 U.S. states between 1992 and 2012. Empirically, we use a difference-in-differences methodology and compare the difference in CSR for firms in states that experience large increases in UI benefits ("treated firms") with the corresponding difference for firms that are not affected by the increase in UI benefits but are otherwise similar ("control firms"). UI benefits induce higher levels of moral hazard among workers by reducing the threat of termination (Shapiro and Stiglitz, 1984). Accordingly, large increases in UI benefits ("treatments") provide a sharp exogenous shift in employees' incentives to engage in moral hazard. We find that following the large increases in UI benefits, treated firms increase their employee-related CSR engagement—as measured by the employee-related CSR scores from the Kinder, Lydenberg, and Domini (KLD) database—by about 22% to 45% compared to control firms. This finding is robust to a large battery of robustness checks, such as alternative definitions of "large" increases in UI benefits, accounting for state-level economic conditions, as well as time-varying industry effects. We also examine the dynamics of the treatment and find no evidence for pre-existing trends. Instead, we find that the increase in employee-related CSR occurs within 12 to 24 months after the treatment. Overall, our results suggest that companies counter moral hazard induced by the increase of UI benefits by improving their employee-related CSR.

We next investigate the underlying mechanisms. In particular, we find that the increase in CSR is larger for companies operating in industries that are more labor intensive, more competitive, and subject to higher levels of stakeholder dissatisfaction. These findings suggest that companies increase their CSR in order to 1) improve employees' productivity, 2) differentiate themselves from their competitors, and 3) decrease employees' dissatisfaction associated with firms' stigmatized image. Moreover, we find no evidence suggesting a tradeoff between investments in employee-related CSR and external stakeholder engagement (i.e., we do not observe a contemporaneous decrease in CSR related to other stakeholders).

In the following sections, we develop our theoretical arguments, describe the empirical methodology, and present the results. The last section concludes and discusses several implications of our findings.

THEORY

Moral hazard and unemployment insurance benefits

In economic theory, a necessary condition for moral hazard is the presence of information asymmetry, i.e. a situation where one party has more information than another. Moral hazard occurs when the party with more information has an incentive to behave in a way that is detrimental to the party with less information.

Moral hazard typically arises in so-called principal-agent relationships, where one party (the "agent") acts on behalf of another party (the "principal"). In this setup, the agent has more information about her actions than the principal does, because the principal cannot perfectly monitor the agent. If the interests of the agent and the principal are misaligned, the agent may

have an incentive to act in a way that is detrimental to the principal.

Going back to the seminal work of Holmstrom (1979), the principal-agent framework is commonly used to conceptualize the employee-employer relationship. The employee (the agent) is hired by the employer (the principal) to act in the employer's best interest, that is, to provide a high level of effort. However, if the employer cannot perfectly monitor the employee's effort, the latter has an incentive to "shirk" by providing low effort.[1]

Shapiro and Stiglitz's (1984) equilibrium unemployment model extends the employee-employer relationship à la Holmstrom (1979) into a general equilibrium model with a labor market. This setup can be used to derive theoretical predictions for the relationship between UI benefits and moral hazard.

To illustrate their model, let us first assume that there is no unemployment and that all companies pay market-clearing wages. Under these assumptions, workers optimally choose to shirk. To create a disincentive for shirking, firms pay wages in excess of market-clearing (the so-called "efficiency wages"). But since all firms do this, the market wage itself is pushed up and, as a result, wages are raised above the market-clearing level, thus creating unemployment in equilibrium.

Given the risk of being unemployed, employees choose not to shirk when the cost of being fired and not finding a job is larger than the benefit of shirking. Accordingly, firms can prevent shirking through the threat of firing. When employment protection institutions such as UI benefits are in place, this threat of firing becomes less effective.[2] Therefore, other things

[1] In Holmstrom's (1979) model, effort is not observable, but output is. Output is assumed to have a stochastic component so that the employer cannot infer effort from observing output. For example, if output is high, it could be that 1) effort was high or 2) effort was low but the company was lucky.

[2] Our conceptualization of UI benefits is the same as in Shapiro and Stiglitz's (1984) who note that "[i]n our model, the existence of unemployment benefits reduces the 'penalty' associated with being fired" (p. 434).

being equal, employees tend to provide less effort and shirk more, the more generous the unemployment insurance is.

Relationship between moral hazard and corporate social responsibility

The above framework implies that there are three potential levers that can be pulled to mitigate moral hazard: (1) the alignment of incentives between employees and the firm; (2) the attractiveness of outside jobs; and (3) information asymmetry. In what follows, we argue that CSR initiatives have an impact on all three levers.

First, CSR programs may align incentives between firms and employees by appealing to their general justice perception (Colquitt et al., 2001) and by altering employees' identification with the firm (Tajfel and Turner, 1979). Employees draw clues from the firm's CSR engagement about whether the managers and the firm are fair-minded on an individual, group, and universal level (Aguilera et al., 2007), and evaluate whether the firm's attitudes fit with individuals' identity (Kim et al., 2010). If they fit, the employees develop a sense of belonging, and their future actions are oriented towards reinforcing this identification. Thus, when firms are engaged in CSR initiatives that their employees value, their incentives become more aligned. In other words, identification serves as an important supplement to monetary compensation in motivating employees (Akerlof and Kranton, 2005). In line with this argument, several empirical studies show that by implementing employee-related CSR programs, firms are better able to attract a higher-quality workforce, foster employees' commitment to organizational values and practices, and retain talented employees (Albinger and Freeman, 2000; Greening and Turban, 2000; Turban and Greening, 1996). Relatedly, Edmans (2011, 2012) shows that companies with higher job satisfaction earn higher abnormal returns compared to their peers.

Second, CSR programs may differentiate firms from their competitors and hence reduce the attractiveness of other employers. The literature on identity argues that identification is based not only on defining the social category that a person identifies with, but also and perhaps more importantly, on the category that a person does *not* identify with (Albert and Whetten, 1985; Ashforth and Mael, 1989). The affiliation of members towards the in-group is reinforced by the rivalry identity from the out-group. Thus, CSR programs divide firms into two categories—those that are socially-minded and those that are not—and hence reduce the substitutability between different companies. The notion that CSR differentiates firms echoes well with the view of "CSR as a resource" and the argument that differentiation through CSR is likely to work better for firms that are similar along other dimensions such as firms competing in the same product market (Flammer, 2013c).

Third, some elements of CSR programs act as a disciplining device, and implementing them may reduce information asymmetry between employees and employers. For example, employee involvement programs create a fairer work environment (Brockner, 2006; Freeman and Kleiner, 2000) as well as opportunities for the management and employees to work together. Through closer interactions, the managers are better able to understand workers' motivation, ability, and effort levels, which alleviates the risk of shirking. Also, firms may employ technological solutions such as surveillance to improve workplace safety, and the same technology can be used towards enhancing the firm's monitoring ability (Pierce, Snow, and McAfee, 2013).

In sum, all three arguments suggest that CSR may help mitigate moral hazard. This motivates the following hypothesis:

Hypothesis 1. An exogenous increase in unemployment insurance benefits leads to an increase in employee-related CSR.

DATA AND METHODOLOGY

Data and variable definitions

Unemployment insurance benefits

From an empirical perspective, identifying the causal effect of moral hazard on companies' CSR policies is challenging because i) moral hazard is not observable, and ii) empirical measures of moral hazard are likely endogenous with respect to CSR.[3] This paper overcomes both challenges. Specifically, we exploit a natural experiment in the form of large increases in state-level unemployment insurance (UI) benefits. Such large increases provide exogenous variation in employees' outside option, or equivalently in employees' incentives to engage in moral hazard.

The UI system in the U.S. provides temporary income to eligible workers who become unemployed through no fault of their own and meet the eligibility requirements under the relevant state law. The UI system dates back to 1935 when the government enacted the Social Security Act, a social welfare legislative act which created the Social Security system. Through this act, the government effectively encouraged individual states to adopt unemployment insurance plans, resulting in state-specific UI regimes which differ in, e.g., the amount and

[3] Several studies in economics use the number of calories consumed by workers as a measure of effort and hence as a proxy for moral hazard (e.g., Foster and Rosenzweig, 1993, 1994). Yet—even if these data were available for a large sample of U.S. public companies—a regression of CSR on effort would be subject to endogeneity concerns, as unobservable firm characteristics may drive a spurious relationship between the two. For example, it could be that untalented managers do a poor job at eliciting employees' effort, while at the same time they overspend on CSR. Accordingly, finding a correlation between CSR and effort would not warrant a causal interpretation.

duration of UI benefits. (For more details, see U.S. Department of Labor, 2013.) As UI benefits account for a significant source of income for unemployed workers, changes in UI benefits provide a substantial and exogenous shock to employees' incentives to engage in moral hazard.

The data on UI benefits are available at the state level for all U.S. states from 1937 to 2012 and are obtained from the U.S. Department of Labor's "Significant Provisions of State UI Laws". These publications provide detailed information on UI benefits (e.g., maximum weekly benefit amount, maximum duration, etc.) for each state and year. To measure an employee's outside option, we follow Agrawal and Matsa (2013) and compute the product of the maximum benefit amount and the maximum duration allowed.

The typical change in UI benefits is small and economically unimportant. To circumvent this limitation, we consider only "large" increases in UI benefits, i.e. UI benefits changes that are above a certain threshold. Specifically, we qualify an UI benefits increase as large if it is at least five times larger than the average annual increase in the same state across all years. The choice of the threshold is immaterial for our analysis. In robustness checks, we show that our results also hold if we consider alternative thresholds such as increases that are four or six times the average, or absolute cutoffs such as a 15% increase.

Since the objective of this paper is to study how increases in moral hazard affect CSR, and given that CSR data from the Kinder, Lydenberg, and Domini (KLD) database are available from 1991 to 2012, we only consider UI benefits increases that occurred as of 1992. Dropping events occurring in 1991 is due to the difference-in-differences specification that requires at least one year of CSR data in the year preceding the first treatment (see the methodology below). During the relevant sample period, there are 31 large increases in UI benefits ("treatments"). These events correspond to an average increase in UI benefits by about 19%. Accordingly, the

treatments considered in this study provide sharp exogenous increases in moral hazard faced by U.S. companies. Table 1 lists the state and year of each of the 31 treatments.

Firm-level data

Firm-level data are obtained by matching Standard & Poor's Compustat with the KLD database. Compustat contains accounting data as well as industry codes (SIC codes) and information on the company's location.

The CSR data are obtained from the KLD database. KLD is an independent social choice investment advisory firm that compiles ratings of how companies address the needs of their stakeholders. Over time, KLD's coverage has expanded considerably. Until 2000, the data cover companies in the S&P 500 Index and the Domini 400 Social Index. In 2001, coverage was extended to companies in the Russell 1,000 Index. In 2003, it was further extended to companies in the Russell 2,000 Index (see KLD, 2010).[4] KLD ratings are widely used in CSR studies (e.g., Berman et al., 1999; Deckop, Merriman, and Gupta, 2006; Hillman and Keim, 2001; Waddock and Graves, 1997).

The KLD database contains social ratings of companies along several dimensions including community, diversity, employee relations, environment, human rights, product quality, corporate governance, and whether firms' operations are related to alcohol, firearms, gambling, tobacco, nuclear power, and military contracting. As we aim to investigate whether CSR provides a remedy for moral hazard, we focus on those KLD components that are related to the company's employees. More specifically, we construct an employee-related KLD-index by

[4] The change in coverage is unlikely to induce any selection bias in our analysis since we use a difference-in-differences methodology with a matched control group (i.e., we rely on within-firm differences and match control firms contemporaneously).

summing up KLD strengths pertaining to employee relations and diversity.[5] In auxiliary analyses, we also consider dimensions that are related to other stakeholders.

Methodology

To examine whether an increase in moral hazard affects CSR, we use a difference-in-differences methodology based on the 31 large UI benefits increases identified in Table 1 ("treatments"). Specifically, we compare the difference in employee-related KLD-index before and after the treatment for firms in states that experience large increases in UI benefits ("treatment group") with the corresponding difference for firms that are not affected by the UI benefits increase but are otherwise similar ("control group"). In the following, we describe how the treatment and control groups are constructed.

Treatment group. The treatment group consists of all firms located in a state that experiences a large increase in UI benefits, plus have coverage in Compustat and the KLD database at least one year before and one year after the increase.[6] The 31 large UI benefits increases yield a sample of 364 treated firms that fulfill these criteria.

Control group. To construct a sample of firms that are similar to the treated firms (except for the increase in UI benefits), we match each treated firm to a control firm on the basis of

[5] In addition to CSR strengths, the KLD data also contain a list of CSR concerns. Accordingly, an alternative approach is to construct a "net" KLD-index by subtracting the concerns from the strengths. However, recent research suggests that this approach is methodologically questionable. Because KLD strengths and concerns lack convergent validity, using them in conjunction fails to provide a valid measure of CSR (e.g., Mattingly and Berman, 2006). For this reason, our analysis relies on the composite index of KLD strengths (see, e.g., Kacperczyk, 2009).

[6] UI regulations apply at the state of location (as opposed to the state of incorporation). Following common practice in the literature, we use the state of location provided in Compustat (e.g., Bebchuk and Cohen, 2003; Coval and Moskowitz, 1999; Ivković and Weisbenner, 2005). Doing so raises two measurement issues. First, the state of location in Compustat is the state where the company's headquarters are located. If some of the company's facilities are located in a different state, then employees at those facilities are subject to a different legal regime. Nevertheless, such mismeasurement would merely attenuate our results and hence go against us finding any effect. Second, Compustat only records the state of location for the latest available year. Fortunately, headquarters relocations are fairly rare. For example, Pirinsky and Wang (2006) find only 118 relocations in a sample of more than 5,000 firms.

geography-, industry- and firm-level characteristics using the following procedure.

First, since the treatments are at the state level, matching control firms based on the same U.S. state is not possible. Instead, a natural approach is to require that control firms be located in one of the neighboring states. Arguably, local economic conditions (e.g., GDP growth at the state level, unemployment, etc.) are comparable across neighboring states, which mitigates concerns that our results might be driven by differences in economic conditions.[7]

Second, we require that the control firm operates in the same 2-digit SIC industry. This criterion ensures that the firms' operations are comparable and that matched control firms face similar industry conditions and business opportunities.

Third, out of the remaining candidates (i.e., companies located in neighboring states and operating in the same 2-digit SIC industry), we select the nearest neighbor on the basis of six firm-level characteristics: size, return on assets, market-to-book ratio, leverage ratio, cash holdings, and employee-related KLD-index, all computed in the year preceding the UI benefits increase.[8] The nearest neighbor is the firm with the lowest Mahalanobis distance to the treated firm across these six matching characteristics.[9]

This matching procedure ensures that control firms are as similar as possible to the treated firms ex ante. In particular, using the employee-related KLD-index as a matching

[7] In robustness checks, we consider a more extreme variation of this criterion where we require that the treated and control firms be located at the state border, i.e. on either side of the border but less than 100 miles apart.

[8] The first five characteristics are obtained from Compustat. Size is the natural logarithm of the book value of assets; return on assets is the ratio of operating income before depreciation to the book value of assets; market-to-book ratio is the ratio of the market value of assets (the book value of total assets plus the market value of equity minus the sum of the book value of equity plus deferred taxes and investment tax credit) to the book value of assets; leverage is the ratio of long-term debt to the book value of assets; cash holdings is the ratio of cash and short-term investments to the book value of assets. All five characteristics are winsorized at the 5th and 95th percentiles of their empirical distribution. These five characteristics are commonly used in the economics and finance literature to construct a set of comparable firms (see, e.g., Almeida et al., 2012; Fresard and Valta, 2012; Lemmon and Roberts, 2010; Villalonga, 2004).

[9] Formally, the Mahalanobis distance δ between treated firm i and candidate firm j is given by $\delta = [(\mathbf{X}_i - \mathbf{X}_j)' \, \mathbf{\Sigma}^{-1} \, (\mathbf{X}_i - \mathbf{X}_j)]^{½}$, where $\mathbf{X}$ is a (6 × 1) vector containing the six matching variables and $\mathbf{\Sigma}$ is the (6 × 6) covariance matrix of these six variables. See Flammer (2013c) for a similar methodology.

characteristic ensures that treated and control firms have similar employee-related CSR strengths prior to the treatment. Using measures of profitability (return on assets) and growth opportunities (market-to-book ratio) rules out concerns that the treated firms may be more profitable or face more promising investment opportunities. Using size, leverage ratio, and cash holdings further addresses the possibility that differences along these characteristics may affect future investments in employee-related CSR (e.g., through the ease of raising capital). In sum, the control firms provide a counterfactual for what would happen at the treated firms absent any increase in moral hazard. Since each treated firm is matched to one control firm, the final sample consists of 728 companies (364 treated firms and 364 matched control firms).

To illustrate the similarity between treated and control firms, Table 2 reports descriptive statistics for the six matching characteristics. For each characteristic, the table reports means, medians, 25th and 75th percentiles for both the 364 treated firms and the 364 matched control firms. In the last two columns, the table further reports the *p*-value of the difference-in-means test and the difference-in-medians test, respectively. As is shown, treated and control firms are very similar along all these characteristics. In particular, the null of equal means and medians cannot be rejected (with *p*-values ranging from 0.16 to 0.82). Overall, the statistics in Table 2 confirm that control firms are very similar to treated firms, and hence likely provide a reliable counterfactual of how treated firms would behave absent the increase in UI benefits.

For each treated firm and each matched control firm, we compute the difference in the firm's average employee-related KLD-index in the four years following the UI increase minus the firm's average employee-related KLD-index in the four years preceding the UI increase.[10] We denote this difference by ΔKLD_{it}, where i indexes the company and t indexes the year of the

[10] The sample of treated and control firms is constructed by requiring that each firm has KLD coverage at least in the year before and the year after the treatment. In cases where KLD data are not available for the full four years before or after the treatment, the respective average is computed on the basis of the non-missing years.

UI benefits increase. While we focus on four years before and after the increase in the baseline specification, we show that our results are not sensitive to the choice of the treatment window. In the results section, we show that our results are robust if instead we use 1, 2, or 3 years before and after the treatment.

Having computed ΔKLD_{it} for the treated and matched control firms, we can measure the effect of UI benefits increases on employee-related CSR by estimating the following regression:

$$\Delta\ KLD_{it} = \alpha_t + \beta \times UI\ Benefits\ Increase_{it} + \boldsymbol{\gamma}'\mathbf{X}_{it} + \varepsilon_{it}\ ,$$

where α_t are year fixed effects, *UI Benefits Increase* is a dummy variable (treatment dummy) that equals one for treated firms and zero for matched control firms, **X** is the vector of control variables which includes the six characteristics used to construct the matched control group (all computed in the year preceding the UI benefits increase), and ε is the error term. We cluster standard errors at the firm level. (We obtain similar results if instead we cluster standard errors at the 2-digit SIC industry or at the state level.) The coefficient of interest is β which measures the difference in ΔKLD between treated firms and matched control firms (i.e., the difference-in-differences). In other words, it measures the effect of increases in UI benefits on the employee-related KLD-index accounting for contemporaneous changes in the employee-related KLD-index at otherwise similar firms that do not experience such UI benefits increases.

While large UI benefits increases provide plausibly exogenous variation in moral hazard, there are two potential identification concerns. In the following, we describe both concerns in turn and explain how we address them.

Changes in economic conditions. While there has been no significant modification in the basic structure of the UI system since its creation, a number of factors can lead to changes in UI

benefits over time. In particular, economic conditions such as a state's economic growth and unemployment rate can play an important role for UI benefits adjustments. Accordingly, a potential concern is that changes in UI benefits may correlate with changes in local economic conditions, which in turn may affect our results. For example, it could be that a state increases UI benefits because the local companies are doing well. At the same time, if the local companies are more profitable, they can afford to treat their employees well and hence invest in employee-related CSR. Nevertheless, this concern is minimized for four reasons. First, in their discussion of the political economy of UI legislations, Agrawal and Matsa (2013, pp. 452-453) emphasize that very often large changes in UI benefits are unrelated to economic conditions. In particular, they emphasize the role of non-economic factors such as haggling and logrolling within legislative bodies.[11] Second, as discussed above, we require that matched control firms be located in states neighboring the treated firm's state, i.e. states that are likely exposed to similar changes in economic conditions. Third, we show that our results are robust if we further require that treated and control firms be located at the state border, that is, on either side of the border but less than 100 miles apart. Arguably, companies located at such close proximity face virtually identical economic conditions despite being subject to different state legislations. Fourth, we show that our results are robust if we explicitly control for changes in (state-level) GDP growth and unemployment rate.

Reverse Causality. A related concern pertains to reverse causality. More precisely, it could be that increases in UI benefits reflect a firm's choice, as firms may lobby for improved UI benefits. In particular, firms that treat their employees well—such as companies that have increased their employee-related CSR—may also be inclined to show support for their

[11] For example, they discuss New York's increase in UI benefits by 36% in 1990, the first increase in five years. The long delay and eventual large adjustment were tied to political haggling over unrelated issues (*New York Times*, 1989).

employees' well-being in case of unemployment and hence lobby for an increase in UI benefits. Under this scenario, our results would be driven by reverse causation. To rule out this concern, we examine the potential (reverse) effect of employee-related CSR on UI benefits by studying the dynamics of the treatment effect. If our results are driven by reverse causation, the increase in UI benefits should have an "effect" already before the year of the treatment. When we examine the dynamics of the treatment effect, we find no evidence for such pre-existing trend, which is inconsistent with reverse causation (see the results section).

RESULTS

Main results

The main results are presented in Table 3. In all regressions our dependent variable is the change in employee-related KLD-index four years after compared to four years before the treatment. In Model 1, we only include the UI benefits increase dummy as explanatory variable in the regression. In Model 2, we also include year fixed effects. In Model 3, we further include firm-level controls (size, return on assets, market-to-book ratio, leverage ratio, cash holdings, and employee-related KLD-index, all measured in the year preceding the UI benefits increase). Finally, in Model 4, we use a median (mean absolute deviation) regression in lieu of ordinary least squares (OLS). For each specification, we report the coefficient on the UI benefits increase dummy and its standard error in parentheses. As can be seen, the coefficient on the UI benefits increase dummy is very stable across all specifications. More specifically, it lies between 0.167 and 0.350 and is always highly significant. This implies that, in the four years following the increase in UI benefits, companies increase their employee-related social performance by about

0.2 to 0.4 KLD strengths—which means that companies are introducing an additional 0.2 to 0.4 employee-related CSR initiatives. This effect may seem small in absolute terms, however it is quite sizable in relative terms—since the average number of employee-related KLD strengths prior to the treatment is 0.77 (see Table 2), this implies that companies' employee-related CSR engagement increases by about 22% to 45%. This finding is supportive of Hypothesis 1, according to which an increase in UI benefits leads to an increase in employee-related CSR.

In order to provide more perspective on the effect of UI benefits increases on companies' employee-related CSR, Figure 1 plots the evolution of the employee-related KLD-index in the treatment and control groups four years before and after the treatment. More precisely, each point in the figure depicts the average employee-related KLD-index among all firms in the particular group. This figure offers three main insights. First, we observe an upward trend in the data in both the control and treatment groups. This is consistent with previous evidence showing that companies are increasing their CSR activities over time (see, e.g., Flammer, 2013a), and stresses the importance of using a control group—not accounting for changes in employee-related CSR at the control group would inflate the effect of UI benefits increases on the employee-related KLD-index. Second, in the four years prior to the treatment, it appears that there is no difference in the employee-related KLD-index. Lastly, following the treatment, the two curves diverge: treated firms increase their employee-related KLD-index substantially more compared to matched control firms.

In order to understand whether the difference between the two curves is significant on a year-by-year basis, we provide the corresponding differences-in-means (with standard errors in parentheses) in Table 4. As is shown, the differences in the employee-related KLD-index are small and insignificant in the four years preceding the treatment. The difference is significant at

the 5% level one year after the treatment. In subsequent years, it further increases in magnitude and becomes significant at the 1% level. This pattern suggests that companies start improving their employee-related CSR in the first year following the increase in UI benefits. However, it is only after two years that the effect becomes substantial and highly significant. Arguably, companies may need some time to decide upon and put in place the appropriate CSR program.

Finding no significant difference in the years preceding the treatment indicates that there is no pre-existing trend in the data. This rules out reverse causality concerns according to which employee-related CSR would increase first, and only later states would increase UI benefits (e.g., if companies that have increased their employee-related CSR lobby for better UI benefits).

Finally, the dynamic pattern in Table 4 shows that the results in our baseline specification are not sensitive to the treatment window of four years before and after. In untabulated regressions, we further confirm that the results are indeed robust to using 1, 2, or 3 years before and after the treatment.

Robustness checks

We conduct several robustness checks to address potential concerns. These robustness checks are presented in Table 5. In the following, we briefly discuss each of them. The underlying specification is the one used in Model 3 of Table 3, unless otherwise specified.

Alternative definitions of treatments. So far, we coded an increase in UI benefits as "large" if it is at least five times larger than the average increase in the specific state. To ensure that our results are not sensitive to the choice of the cutoff, we re-estimate the baseline specification using different cutoffs. Specifically, in Models 1 and 2, the cutoff is four and six times, respectively, the average UI benefits increase in the state. As is shown, the coefficient on

the UI benefits increase dummy remains positive and significant regardless of the cutoff. It is interesting to note that the coefficient is smaller for the fourfold cutoff (0.220) and larger for the sixfold cutoff (0.391), in comparison to the coefficient of 0.317 for the fivefold cutoff. This pattern suggests that the increase in employee-related CSR is monotonic in the extent to which employees' incentives to engage in moral hazard increase. Finally, in Model 3, we show that our results are robust if we use a fixed cutoff of 15% (i.e., an increase in UI benefits is coded as large if it is at least 15%). The coefficient on the treatment dummy is 0.305, similar to the coefficient for the other thresholds. In untabulated regressions, we have further verified that our results also hold if we use cutoffs of 10% and 20%. Overall, our findings are not sensitive to the way we construct the treatment group.

Time-varying industry effects. In Model 4, we include industry-year fixed effects to account for any time-varying industry effects that would affect both companies' employee-related CSR and UI benefits. For example, it could be that labor unions in specific industries lobby for both an increase in UI benefits and, at the same time, pressure companies to improve their employee relations. Alternatively, it could be that some industries become more competitive over time, which could influence both companies' decision to invest in employee-related CSR and states' UI benefits. In both cases, our results could be spurious since they would be driven by omitted industry trends. To rule out such concerns, we re-estimate our baseline specification including industry-year fixed effects (where industries are partitioned according to 2-digit SIC codes). As can be seen, the coefficient on the UI benefits increase dummy is very similar to the coefficient in our baseline specification. This indicates that our results are not affected by time-varying industry effects.

Controlling for changes in economic conditions. A potential concern is that changes in local economic conditions may be driving both employee-related CSR and increases in UI benefits. For example, it could be that a particular region experiences a boom and, as a result, can afford to increase UI benefits. At the same time, since the local companies are more profitable, they can afford to improve their employee-related CSR. As discussed in the methodology section, this concern is very much minimized since we require that matched control firms be located in neighboring states that are likely subject to similar economic conditions. We further address this concern in Model 5 by explicitly controlling for changes in economic conditions at the state level. Specifically, we control for GDP growth and changes in unemployment rate.[12] As is shown, the coefficient on the treatment dummy is very similar to our baseline estimate.

State border comparisons. To further address the concern that changes in local economic conditions may affect our results, we conduct an additional robustness check in which we require that treated and matched control firms be in close geographic proximity. Specifically, we restrict the sample to treated and control firms that are located on either side of the state border, but less than 100 miles apart.[13] Arguably, companies located at such close proximity face virtually identical economic conditions despite being subject to different legal regimes. As is shown in Model 6, while this additional requirement decreases the sample size considerably, it has little impact on the coefficient of the treatment dummy.

[12] The data on state-specific GDP growth are obtained from the U.S. Bureau of Economic Analysis. State-level unemployment rates are obtained from the U.S. Bureau of Labor Statistics.

[13] To measure the geographic distance between two companies, we use the ZIP code information from Compustat. We then obtain the latitude and longitude of each ZIP code from ZIPCodeDownload.com and compute the great-circle distance (in miles) between them (see Coval and Moskowitz, 1999, p. 2053).

Auxiliary analysis: Mechanisms through which CSR provides a remedy for moral hazard

The core tenet of our theory is that companies can counter moral hazard by improving their employee-related CSR. In this section, we refine our analysis and test plausible mechanisms that may be underlying this relationship.

Internal versus external stakeholders. Our results indicate that companies increase their employee-related CSR following an increase in UI benefits. This increased attention to their internal stakeholders may come at the expense of their external stakeholders (e.g. consumers, community, and the environment) as companies presumably have limited amount of resources available for CSR initiatives. Accordingly, we may expect the increase in employee-related CSR to be accompanied by a decrease in CSR related to the firm's external stakeholders.

We empirically assess this hypothesis in Models 1 to 3 of Table 6. Specifically, we re-estimate our baseline specification in equation (1), replacing the dependent variable with the KLD dimensions pertaining to the environment, consumers, and community, respectively. As with our main dependent variable, we add up all KLD strengths pertaining to each particular stakeholder group. As is shown, the proposed substitution effect is not supported by the data. In fact, companies increase their attention to internal *and* external stakeholders (albeit the treatment effect for the latter is not significant). This finding suggests that by also attending to their external stakeholders—or at least by not decreasing their attention to them—companies can provide an overall work environment that is conducive to employees working hard.

Labor intensity. Our findings suggest that CSR serves as a means to prevent employees from engaging in moral hazard. As more labor-intensive firms rely more heavily on human capital, they are likely more exposed to the adverse effect of moral hazard. Accordingly, we

expect that employee-related CSR as a tool against moral hazard is especially valuable to labor-intensive firms. It follows that the impact of UI benefits increases on employee-related CSR should be stronger for companies in labor-intensive industries.

We examine this mechanism in Model 4 of Table 6 by interacting the treatment dummy with a dummy variable indicating whether the company operates in an industry whose labor intensity lies above the median across all industries ("High Labor Intensity"). Following Agrawal and Matsa (2013), we define labor intensity as the ratio of labor and pension expenses to sales (from Compustat) and compute the average across all companies in the same 3-digit SIC industry. As is shown, we find that the treatment effect is indeed significantly larger for companies in labor-intensive industries.

Product market competition. By nurturing employees' identification with the firm and aligning their incentives, CSR programs may help improve employees' motivation and productivity. In particular, in a fierce competitive environment, it is vital for firms to minimize inefficiencies and maintain high labor productivity (e.g., Alchian, 1950; Friedman, 1953; Stigler, 1958). Accordingly, the value of employee-related CSR as a remedy for moral hazard is likely higher for companies operating in competitive industries. Hence, we would expect that the increase in employee-related CSR is stronger for firms in relatively more competitive industries (for a similar argument, see Flammer, 2013c).

We empirically assess this mechanism in Model 5 of Table 6. Specifically, we re-estimate our baseline specification in equation (1), interacting the UI benefits increase dummy with a dummy variable indicating whether the company operates in an industry where product market competition is above the median across all industries ("High Competition"). We measure competition by using the Herfindahl-Hirschman Index (HHI) of industry concentration at the 2-

digit SIC level.[14] Consistent with the above argument, we find the treatment effect is significantly larger for companies operating in more competitive industries.

Stakeholder dissatisfaction. Our arguments suggest that employee-related CSR helps create a stimulating work environment in which employees are less likely to engage in moral hazard, thus incentivizing them to work hard. Such incentives can be provided by increasing employees' satisfaction as well as by decreasing their dissatisfaction. The latter is particularly relevant in stigmatized industries that are more likely to be associated with stakeholder dissatisfaction, such as "dirty" industries.

We examine this mechanism in Model 6 of Table 6, where we interact the UI benefits increase dummy with a dummy variable indicating whether the company operates in a high-polluting industry. To identify high-polluting industries, we use the toxic release inventory (TRI) data provided by the U.S. Environmental Protection Agency (EPA). It identifies seven industry sectors that account for over 90% of all disposal and other releases of TRI (EPA 2013, p. 17).[15] Consistent with the above argument, we find the treatment effect is significantly stronger for companies operating in high-polluting industries.

DISCUSSION AND CONCLUSION

The concept of moral hazard is one of the most important analytical tools in economics. It has been successfully applied to understand a variety of phenomena in the context of product

[14] HHI is defined as the sum of the squared market shares of all companies in the same industry. We compute market shares using sales data from Compustat. Note that HHI is a measure of concentration, and hence an inverse measure of competition.

[15] The seven sectors are metal mining (NAICS 212), electric utilities (2211), chemicals (325), primary metals (331), paper (322), food, beverages, and tobacco (311 and 312), and hazardous waste management (5622 and 5629). To match NAICS codes to SIC codes, we use the NAICS-SIC concordance table of the U.S. Census Bureau.

insurance, banking, and healthcare, to name a few (see Baker, 1996). This study examines the problems of moral hazard in employment relations and how CSR as a strategic management tool can act as a remedy for moral hazard in the workplace.

To obtain exogenous variation in the propensity to engage in moral hazard, we exploit a natural experiment provided by large increases in state-level UI benefits that occurred between 1992 and 2012 in the U.S. Using a difference-in-differences methodology, we find that companies react to increases in UI benefits by increasing their engagement in employee-related CSR. This finding supports the view that CSR is a valuable resource that allows companies to motivate their employees against engaging in moral hazard. We further examine the mechanisms through which CSR may mitigate moral hazard. In particular, we find evidence suggesting that companies increase their CSR in order to 1) improve employees' productivity, 2) differentiate themselves from their competitors, and 3) decrease employees' dissatisfaction associated with firms' stigmatized image.

This study contributes to our understanding of moral hazard and employment relations in at least four ways. First, it contributes to the economics literature on moral hazard by identifying a management practice—increasing employee-related CSR—that does not rely on monetary incentives (Akerlof and Kranton, 2005). Second, while the management and organization theory literature has long emphasized the human side of worker motivation in mitigating moral hazard, providing empirical evidence has proven challenging due to the unobservability of moral hazard. By exploiting a natural experiment that introduces exogenous variation in moral hazard, we are able to directly assess whether and the extent to which firms use management practices to deal with shirking. Third, by identifying the relations between a firm's CSR investments and employee moral hazard, we echo the recent call to study CSR in the fields of human resource

management and organizational behavior (Morgeson et al., 2013), and add to the few but notable studies that have examined how employee-related CSR improves long-term financial performance of firms (e.g., Edmans, 2011, 2012). Fourth, to the best of our knowledge, it is the first paper that examines how companies adjust their CSR in response to changes in UI benefit programs. Unemployment insurance is one of the largest social insurance programs in the U.S. (Nicholson and Needels, 2006). A large literature on UI benefits has focused on the impact of such programs on unemployment duration and their social welfare implications (e.g., Chetty, 2008; Meyer, 1990; Moffitt, 1985). Much less is known about the effect of UI programs on the *employed* (exceptions are Ichino and Riphahn, 2005; Kugler and Pica, 2008; Scoppa, 2010). Thus, our findings that firms increase employee-related CSR following large increases in UI benefits have potentially important policy and welfare implications.

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Figure 1. Evolution of employee-related KLD-index in control and treatment groups

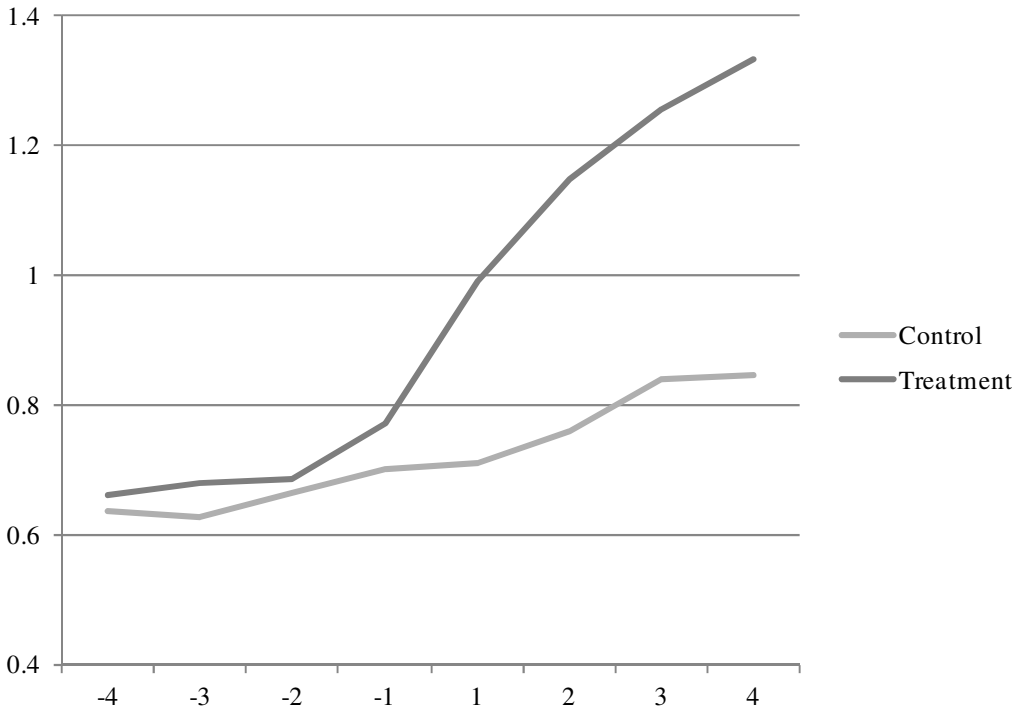

Table 1. Treated States

State	Year
District of Columbia	1992
Michigan	1992
Mississippi	1992
Michigan	1993
Florida	1994
Washington	1994
Delaware	1996
Texas	1996
Alaska	1997
Michigan	1997
Florida	1998
Louisiana	1998
Missouri	1998
New York	1999
Minnesota	2000
Kentucky	2001
Louisiana	2001
Missouri	2001
Utah	2001
Virginia	2001
California	2002
Massachusetts	2003
Michigan	2003
Virginia	2003
New Mexico	2004
Arizona	2005
District of Columbia	2005
Missouri	2008
Alaska	2009
Louisiana	2009
Tennessee	2011

Table 2. Summary statistics for treated and matched control firms

		Observations	Mean	Std. Dev.	25th Pctl.	50th Pctl.	75th Pctl.	*p*-value Diff. Means	*p*-value Diff. Medians
Size	Treated	364	7.951	1.533	6.904	7.838	8.990	0.534	0.182
	Matched	364	7.891	1.391	7.003	7.825	8.711		
Return on Assets	Treated	364	0.129	0.081	0.079	0.125	0.182	0.603	0.374
	Matched	364	0.130	0.078	0.083	0.130	0.187		
Market-to-book	Treated	364	1.868	1.053	1.116	1.461	2.243	0.156	0.554
	Matched	364	1.678	0.816	1.079	1.431	1.988		
Leverage	Treated	364	0.245	0.175	0.081	0.257	0.362	0.200	0.555
	Matched	364	0.264	0.164	0.142	0.268	0.373		
Cash	Treated	364	0.131	0.161	0.022	0.060	0.172	0.213	0.183
	Matched	364	0.108	0.135	0.020	0.057	0.144		
KLD (Employees)	Treated	364	0.772	1.116	0.000	0.000	1.000	0.360	0.823
	Matched	364	0.701	0.985	0.000	0.000	1.000		

Table 3. The effect of UI benefits on employee-related CSR

Dependent Variable:	Δ KLD (Emp.)	Δ KLD (Emp.)	Δ KLD (Emp.)	Δ KLD (Emp.)
	Model 1	Model 2	Model 3	Model 4
Treatment	0.349***	0.350***	0.317***	0.167***
	(0.065)	(0.062)	(0.058)	(0.038)
Control Variables	No	No	Yes	Yes
Year Fixed Effects	No	Yes	Yes	Yes
Regression Type	OLS	OLS	OLS	Median
R-squared	0.05	0.14	0.21	0.08
Observations	728	728	728	728

All tests two-tailed. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Table 4. Treatment dynamics

Treatment (Year –4)	0.028
	(0.093)
Treatment (Year –3)	0.052
	(0.086)
Treatment (Year –2)	0.022
	(0.090)
Treatment (Year –1)	0.071
	(0.094)
Treatment (Year +1)	0.280**
	(0.127)
Treatment (Year +2)	0.391***
	(0.117)
Treatment (Year +3)	0.415***
	(0.125)
Treatment (Year +4)	0.486***
	(0.124)

All tests two-tailed. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Table 5. Robustness

	Alternative Definitions of Treatments			*Industry Effects*	*Identification*	
	UI Benefits Increase > 4 × Cutoff	*UI Benefits Increase > 6 × Cutoff*	*UI Benefits Increase > 15%*	*Industry-Year Fixed Effects*	*Controlling for GDP Growth and Unemployment Rate*	*Companies at State Border (< 100 miles)*
Dependent Variable:	Δ KLD (Emp.)	Δ KLD (Emp.)	Δ KLD (Emp.)	Δ KLD (Emp.)	Δ KLD (Emp.)	Δ KLD (Emp.)
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Treatment	0.220***	0.391***	0.305***	0.329***	0.320***	0.332***
	(0.053)	(0.065)	(0.067)	(0.061)	(0.060)	(0.118)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry-Year Fixed Effects	No	No	No	Yes	No	No
R-squared	0.18	0.21	0.20	0.58	0.21	0.33
Observations	942	564	586	728	728	114

All tests two-tailed. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Table 6. Mechanisms

	Other CSR Dimensions			*Interaction with Cross-Sectional Characteristics*		
Dependent Variable:	Δ KLD Environment	Δ KLD Consumers	Δ KLD Community	Δ KLD (Emp.)	Δ KLD (Emp.)	Δ KLD (Emp.)
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Treatment	0.033	0.030	0.041	0.221***	0.207***	0.249***
	(0.024)	(0.020)	(0.027)	(0.068)	(0.062)	(0.057)
Treatment × High Labor Intensity				0.254**		
				(0.123)		
Treatment × High Competition					0.172*	
					(0.072)	
Treatment × High Pollution						0.279**
						(0.136)
Control Variables	Yes	Yes	Yes	Yes	Yes	Yes
Year Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.08	0.09	0.08	0.21	0.21	0.21
Observations	728	728	728	728	728	728

All tests two-tailed. * $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.