# Access to Finance and Corporate Social Responsibility
## Evidence from a Natural Experiment

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## ABSTRACT

We provide causal evidence that investments into CSR are affected by firms' prior financial performance. To establish causality, we make use of the exogenous variation in firm-level financial constraints induced by the passage of the AJCA of 2004. We further examine the sensitivity of CSR investments to financial constraints.

## INTRODUCTION

The concept of corporate social responsibility (CSR), which has been defined as firms' responsibility for their impact on society (Williamson, Stampe-Knippel, & Weber, 2014), has evolved from an idea that was perceived as inconsistent with shareholder value creation (e.g., Friedman, 1970; Jensen, 2002) to a central component in firms' strategy (Hawn & Ioannou, 2014; Porter & Kramer, 2011). In recent decades, CSR has received a significant amount of attention in the academic literature, with numerous studies examining the relationship between CSR investments and firm financial performance. Despite being voluminous, this literature has thus far produced equivocal results (Margolis, Elfenbein, &Walsh, 2007). A general challenge for the literature is the potentially endogenous nature of the relationship between CSR investments and firm financial performance due to factors such as reverse causality. Stronger financial performance might be caused by investments into CSR or, alternatively, higher CSR investments might stem from better firm performance. The complex relationship between these elements is illustrated by the conclusion in a review by Margolis et al. (2007) that the correlation between CSR investments and firm performance can largely be explained by firms' prior financial performance, a finding in line with that of other (meta-) studies (e.g. Krüger, 2009; Orlitzky, Schmidt, & Rynes, 2003). More importantly, the effect of financial performance on CSR investments is stronger than the reverse. Although this is an imperative finding for a better understanding of the complex relationships between CSR and firm performance, it is one that "tend[s] to get overlooked" (Margolis et al., 2007: 24). In this paper, we provide causal evidence that changes in firms' cost of financing affect subsequent CSR investments.

To overcome the serious challenge of endogeneity, we make use of an exogenous variation in firms' cost of internal financing that was generated by the passage of the American Jobs Creation Act (AJCA) of 2004. The act provided a significant and one-off reduction in tax-related costs to profits repatriated from foreign subsidiaries back to the U.S.-based parent firm (the tax rate was lowered to 5.25 percent from the standard 35 percent). As Foley, Hartzell,

Titman, and Twite (2007) state, U.S. firms have significant amounts of cash accumulated in their foreign subsidiaries, mainly as a result of the high tax-related costs associated with repatriating funds to U.S. parents. Signing the AJCA into law induced an exogenous variation in firms' internal costs of financing, which allows us to test for a causal relationship between a reduction in firms' internal cost of finance and their investments into CSR. Thus far, the AJCA has been used as an exogenous shock to test for the causal impact of lower internal costs of financing on, for example, firms' investment decisions (Dharmapala, Foley, & Forbes, 2011; Faulkender, & Petersen, 2012) or profitability of foreign acquisitions (Edwards, Kravet, & Wilson, 2015).

We empirically test the relationship between financial performance and CSR investments with a sample of firms listed in the Standard & Poor's 1500 stock market index (S&P 1500) as well as in the Kinder, Lydenberg, Domini & Co. (KLD) social performance database, which we use to measure CSR. Information on firms' repatriation activity is not readily available in databases and had to be collected manually from thousands of firm filings. We use a difference-in-difference (DiD) approach to isolate the effect of the act on firms' CSR investments. The results clearly indicate that reductions in firms' internal cost of financing lead to increases in CSR investments. We also provide causal evidence that the effect of reduced internal cost of financing differs based on firms' level of financial constraints prior to the act. Unconstrained firms increased their investments into CSR, whereas constrained firms decreased their CSR investments in absolute terms and relative to firms that were unconstrained.

Our paper makes important contributions to multiple streams of literatures. First, we contribute to recent empirical studies on the direction of causality in the relationship between CSR and financial performance. We add to this stream of literature by providing causal evidence that improved financial performance (lower internal costs of financing) affects firm-level CSR investments. The results of our study indicate the need for future studies on the domain of CSR and financial performance to account for firm-level financial constraints. Second, our study adds to the literature that directly addresses the impact of CSR investments on firms' financial constraints. Cheng, Ioannou, and Serafeim (2014) show that financial constraints are sensitive to CSR investments in the respect that higher spending correlates with relaxed financial constraints. In contrast, we provide causal evidence for the reverse relationship and, more importantly, for a multidirectional effect. Reduction in financial constraints increases CSR investments, but the effect differs depending on a given firm's level of financial constraints. Initially constrained firms decrease their CSR investments, whereas unconstrained firms increase CSR investments. Third, we contribute to the literature on the strategic use of CSR as a signaling instrument (e.g., Cheng et al., 2014; Jones & Murrell, 2001). The empirical setting in our work allows us to study how firms react when the need to use CSR as a signal diminishes.

## HYPOTHESES

Although the body of literature dealing with the effect of CSR on firm financial performance is impressive, little attention has been paid to the reverse but equally important effect of firm financial performance on CSR. Margolis et al. (2007) conclude in their previously mentioned meta-analysis that CSR investments are largely driven by past financial performance. This direction of the relationship is corroborated by arguments that more successful firms possess enough slack resources to undertake these investments (Preston & O'Bannon, 1997). Moreover, successful firms can be pressured to invest more into CSR by their being subjected to

the attention of a larger public audience (Margolis & Walsh, 2003) and to a higher level of media focus (Zyglidopoulos, Georgiadis, Carroll, & Siegel, 2012).

The use of CSR as a signaling instrument that reduces information asymmetries between firms and stakeholders (Fisman Heal, & Nair, 2006) has recently received increased attention in the literature. As a consequence of existing information asymmetries, firms face unfavorable terms for raising capital. A way to overcome this is to use CSR as a signal of strong stakeholder relations and/or low firm risk (Bénabou & Tirole, 2010; Cheng et al., 2014; El Ghoul, Guedhami, Kwok, & Mishra, 2011; Sharfman & Fernando, 2008). Hence, we hypothesize that:

> *Hypothesis 1: Investments into CSR are affected by a change in the firm's internal costs of financing.*

In the context of our research, we relate theories of signaling and information asymmetries to firms' CSR investments. Specifically, we hypothesize that the strength of financial constraints affects firms' investment in CSR. We build upon theoretical arguments and empirical evidence from Cheng et al. (2014), who show that firms' CSR investments reduce financial constraints. Using a similar signaling framework, we argue that financially constrained firms invest more into CSR relative to unconstrained firms to reduce information asymmetries and to improve their access to finance. In contrast, we expect unconstrained firms to have less of a need to use CSR as a signaling instrument, as these firms already have sufficient funds to finance projects with an expected positive value. We summarize this in the following hypothesis:

> *Hypothesis 2: Firms that were financially constrained prior to the act will have decreased their CSR investment as a result of the positive shock to their cost of internal financing.*

## METHODOLOGY

Establishing a causal relationship between financing constraints and firms' CSR investments is challenging due to the issue of endogeneity. To overcome this, we employed a DiD estimation method and made use of the exogenous variation in financing costs induced by the AJCA. In order for the DiD estimator to be unbiased, the shock (the policy change) must be uncorrelated with unobserved factors contained in the error term of the estimation. It is unlikely that the passage of the act is correlated with firms' investments into CSR; the act was passed independently of firms' investments into this area. We did, however, expect the act to be correlated with firms' financial constraints, since the rationale behind the AJCA was to decrease internal costs of financing. To account for this correlation when investigating the existence of a causal link between financial constraints and CSR, we included a measure of financial constraints in the estimation equation.

We followed Faulkender and Petersen (2012), who argue based on two reasons that when using the AJCA as a shock it is imperative to control for both the firm's possibility to repatriate and the firm's actual decision to repatriate. First, the decision to repatriate is endogenous and needs to be instrumented. Second, in order to identify treatment and control groups correctly, we needed to distinguish firms that could not repatriate—for example, because they did not have any foreign earnings—from firms that could repatriate but chose not to and from firms that did repatriate.

Since the underlying assumption of the AJCA is that it is financially constrained firms

that should benefit from the foreign dividend clause of the act, it is imperative to account for the level of financial constraints that firms faced in the years prior to the passage of the AJCA. We measured financial constraints based on the Whited and Wu (2006) (WW) index. To isolate the effect of the act on investments into CSR for constrained relative to unconstrained repatriating firms, we interacted the measure that distinguishes between firms that could and did and firms that could but did not repatriate with our measure of financial constraints. As main measures of financial constraints, we used *Fin Constraints (cont)* and *Fin Constraints (cutoff)*, which are based on the WW index. The empirical specification is the following:

$$
\begin{aligned}
CSR = \ &\beta_0 \Pr(AJCA)_{it} + \beta_1 [AJCA_{it} - \Pr(AJCA)_{it}] + \beta_2 [AJCA_{it} \\
&- \Pr(AJCA)_{it}] * Fin\ Constraints + \beta_3 X_{it} + \lambda_i + \mu_t + \epsilon_{it}
\end{aligned} \tag{1}
$$

Effectively, $\beta_2$ captures the sole effect of loosened financial constraints for the constrained relative to the unconstrained firms. The effect for the unconstrained firms is captured by $\beta_1$. In order to ensure that changes in CSR were not caused by factors other than the act, we included a control measure of financing constraints for the years after the AJCA (2004 through 2007): *Fin Constraints Post*. The variable is 0 for the years prior to the act and equal to the measure of financial constraints for all years thereafter. By including the ex post measure *Fin Constraints Post*, we isolated the effect of the act while controlling for the effect of belonging to either the constrained or unconstrained group after the act.

## DATA AND VARIABLES

The final sample consists of the 908 firms that are listed in the S&P 1500 index as of 2001 and that are also covered in the KLD database. For a firm to be included in the final dataset, we required full information on all control variables, which we sourced from Compustat. Information on firms' repatriation activity was hand collected from firms' public filings with the Securities and Exchange Commission (SEC). The sample is an unbalanced panel with data for 5,331 firm-year observations for the period from 2001 through 2007.

### Dependent Variables

As dependent variable and a measure of firms' CSR, we used *Total CSR*, which we calculated as the difference between a firm's sum of strengths and sum of concerns as assigned by KLD, whose dataset is widely used to measure CSR (Cheng et al., 2013; Flammer, 2015; Waddock & Graves, 1997). Despite some criticism related to the structure of its data (Rowley & Berman, 2000), it has been labeled "the largest multidimensional CSP (corporate social performance) database available to the public" (Deckop, Merriman, & Gupta, 2006: 334). The dataset is very useful for studying changes in firms' CSR, since it applies consistent rating criteria from year to year. Most importantly, KLD is the only database of CSR ratings with a broad coverage that is available from 2001, the start of the empirical setting of this paper.

### Independent Variables

To access, download, and structure the thousands of forms that companies file with the SEC, we built upon a Python crawler that systematically searched the Edgar database for firms

listed in the S&P 1500 index. To identify firms that discussed the act, we programmed a parser that looped through (or searched) the firm filings and extracted passages where the AJCA was mentioned. Since the act had several different provisions, we manually read the extracted passages and assessed whether the repatriation of foreign earnings was in accordance with the foreign dividend clause of the AJCA. Based on the firms' discussion of the act in their 10-K filings, we constructed the dummy variable *AJCA*, which is 1 from the year in which a firm repatriates and 0 for prior years. Although the AJCA was passed in October 2004, further regulations were added throughout 2005 (Faulkender & Petersen, 2012). We therefore searched firm filings for discussions of the AJCA's provision on the repatriation of foreign earnings for the years 2004, 2005, and 2006. Out of the 908 firms in our final sample, 253 firms repatriated under the AJCA's provision.

The precise classification of firms as constrained or unconstrained is difficult, as financial constraints cannot be directly observed. We used the WW index as a measure of firm financing constraints. We constructed the WW index using the parameters estimated by Whited and Wu (2006). All of the WW index's values were negative. For ease of interpretation of the econometric estimation and separation of the groups, we transformed the variable so that it was on a continuum between 0 and 1 using an empirical cumulative density function (ECDF). From the ECDF, we constructed our continuous measures of financing constraints for the period before the act (*Fin Constraints (cont)*) and the period after the act (*Fin Constraints Post (cont)*).

## RESULTS

Table 1 contains the results of our estimations based on Equation 1. In it, we used *Fin Constraints (cont)* as a continuous measure of financing constraints. To further understand what drives our results, we decomposed *Total CSR* into its two main components: the sum of CSR strengths (*CSR Strengths*) and the sum of CSR concerns (*CSR Weaknesses*). This gave us further insight into the actions taken by firms with regards to CSR.

In column (1), the effect of the act on firms' *Total CSR* is statistically significant and negative for firms that repatriated and were financially constrained relative to unconstrained firms (as indicated by the coefficient $-1.430$ on $\beta_2(cont)$). This is in contrast to the effect for the unconstrained and repatriating firms, which on average increased their *Total CSR* by 1.040. The magnitude of the coefficient is economically significant when compared to the *Total CSR* mean of $-0.388$ for the unconstrained firms.

Columns (2) and (3) show the results of our tests to ascertain if the effects differ between *CSR Strengths* and *CSR Weaknesses*. The significant and positive coefficient on $\beta_1$ in column (2) indicates that on average, firms repatriating under the act increased their *CSR Strengths* by 1.017 units. The negative and highly significant coefficient $-1.779$ on the interaction term $-\beta_2(cont)$ indicates that constrained firms decreased their *CSR Strengths* relative to the unconstrained firms. The results in column (2) are very similar to the ones in column (1), suggesting that the variation in *Total CSR* is driven by the firms' *CSR Strengths*. We find further support for this claim in the insignificant coefficients on $\beta_1$ and the interaction term in column (3), where the dependent variable is *CSR Weaknesses*.

To isolate the net effect of the act for the financially constrained firms, we summed the coefficients on $\beta_2(cont)$ and $\beta_1$. The net effect for the constrained firms is negative when using both *Total CSR* and *CSR Strengths*. However, it is statistically significant only for the latter. The results suggest that constrained firms decrease their CSR investments as a result of the shock to

their cost of internal financing in both relative and absolute terms when our measure of CSR is *CSR Strengths* instead of *Total CSR*.

## CONCLUSION

In this paper, we made use of the exogenous variation in firms' cost of internal financing that was induced by the AJCA in 2004. The passage of this act allowed us to test for a causal link between firm financial performance and CSR investments. Our empirical specification and use of the DiD methodology allowed us to overcome the issues of endogeneity (unobserved heterogeneity and reverse causality) that often plague research on CSR. Furthermore, to account for the self-selection bias that stems from the endogenous decision of firms to repatriate, we used an instrumental variable approach and the predicted probability of firms to repatriate as an instrument. We later used this instrument to correctly specify and compare different groups of firms with one another.

Our results clearly indicate a causal relationship between firms' financial performance and investments into CSR. We have also shown that the effect of access to cheaper financing differs based on the level of financial constraints that firms faced before the reduction. Firms that were unconstrained increased their investments into CSR, whereas firms that were constrained decreased their CSR investments.

We interpret our results for the constrained firms as being broadly consistent with the strategic use of CSR as a means of signaling good relations with stakeholders and low firm risk. Previously constrained firms decreased their CSR in the period following the act, as their need for signaling diminished.

## REFERENCES AVAILABLE FROM AUTHOR(S)

**Table 1 Main Results including Financial Constraints**

| | (1) Total CSR | (2) CSR Strengths | (3) CSR Weaknesses |
|---|---|---|---|
| Pr(AJCA) | 1.872*** | 1.62*** | –0.259 |
| | (0.37) | (0.32) | (0.25) |
| $\beta_1$ | 1.040*** | 1.017*** | –0.023 |
| | (0.29) | (0.22) | (0.21) |
| $\beta_2(cont)$ | –1.430*** | –1.779*** | –0.349 |
| | (0.54) | (0.42) | (0.09) |
| Log(Total Assets(MV)) | –0.365** | –0.204* | 0.161* |
| | (0.14) | (0.11) | (0.09) |
| MVA/BVA | –0.002 | –0.051 | –0.049 |
| | (0.06) | (0.04) | (0.04) |
| Pre Invest Profit/BVA | 1.339** | 0.878** | –0.461 |
| | (0.60) | (0.41) | (0.42) |
| Fin Constraint Post (cont) | –0.397 | –0.693*** | –0.296 |
| | (0.30) | (0.23) | (0.22) |
| *Observations* | 5331 | 5331 | 5331 |

Clustered standard errors in parentheses. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$