Does Corporate Social Responsibility Reduce the Costs of High Leverage? Evidence from Capital Structure and Product Markets Interactions*

Kee-Hong Bae**
Schulich School of Business, York University, North York, ON M3J 1P3, Canada

Sadok El Ghoul
University of Alberta, Edmonton, AB T6C 4G9, Canada

Omrane Guedhami
Moore School of Business, University of South Carolina, USA

Chuck C.Y. Kwok
Moore School of Business, University of South Carolina, USA

Ying Zheng
School of Business, Bryant University, USA

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** Corresponding author: Kee-Hong Bae, 4700 Keele Street, Toronto, Ontario M3J 1P3, Canada, Tel: 416-736-2100 ext: 20248, Fax: 416-736-5687, kbae@schulich.yorku.ca

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ABSTRACT

Research on capital structure and product markets interactions shows that high leverage is associated with substantial losses in market share due to unfavorable actions by customers and competitors. We examine whether corporate social responsibility (CSR) affects firms' interactions with customers and competitors and reduces the costs of high leverage. We find that CSR reduces losses in market share when firms are highly leveraged. By reducing adverse behavior by customers and competitors, CSR helps highly leveraged firms keep customers and guard against rival predation. Our results support the stakeholder value maximization view of CSR.

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I. INTRODUCTION

Research on capital structure and product markets interactions documents significantly negative effects of high leverage on product market performances (Opler and Titman, 1994; Campello, 2003, 2006). For instance, high leverage leads to substantial losses in market share due to unfavorable actions by customers and competitors. Customers are reluctant to purchase from highly leveraged firms because these firms may renege on implicit contracts with customers by discontinuing product support or reducing product quality (Titman, 1984; Maksimovic and Titman, 1991; Matsa, 2011; Kini et al., 2017). Competitors may undertake predatory attacks such as capital-intensive promotion activities (e.g., negative advertising campaigns, deep price discounts) against highly leveraged firms. As highly leveraged firms have difficulty accessing capital and face high cost of capital, they have less ability to withstand predatory attacks from competitors and can be forced to surrender substantial market share (Telser, 1966; Bolton and Scharfstein, 1990; Chevalier, 1995).[1]

While the costs of high leverage imposed on product market performances are well documented, little attention is paid to the mechanisms that can mitigate high leverage costs. In this paper, we fill this gap in the literature. We argue that corporate social responsibility (CSR) can mitigate the negative impact of high leverage on product market performances. Our study offers insights into the potentially important role of CSR in reducing the costs of high leverage due to a firm's conflicts with its stakeholders such as customers and competitors.

It is well documented in marketing and economics literature that socially responsible

[1] In this paper, we follow Freeman (1984) and define stakeholders as "any group or individual who can affect or is affected by the achievement of the organization's objectives" (Freeman, 1984, p. 40). Accordingly, we classify both customers and competitors as stakeholders.

consumers, when matched with CSR firms, are loyal, robust to negative information to these firms, and are willing to pay a higher price (See the review in Kitzmueller and Shimshack, 2012). Modeling CSR as product differentiation strategy, Albuquerque, Koskinen, and Zhang (2017) develop a theory that CSR firms face less price-elastic demand and can charge higher prices, *ceteris paribus*. Thus, these firms' cash flows become less volatile over the business cycle, which allows higher optimal leverage for CSR firms. We further hypothesize that CSR firms can better withstand negative consequences of high leverage, as they face less unfavorable reactions from stakeholders in response to high leverage. In short, we hypothesize the costs of high leverage are low for CSR firms.

Specifically, there are at least two reasons to expect low costs of high leverage for CSR firms. First, CSR is associated with a halo effect that increases trust between a firm and stakeholder groups, which should pay off during tough times (Hong and Liskovich, 2015; Lins et al., 2017). The halo effect of CSR provides a highly leveraged firm with insurance-like protection that tempers negative actions from customers and reduces competitors' incentives to exploit a highly leveraged firm's weak financial position. For instance, customers tend to have a better perception of high CSR firms, and are more confident that they will not break customers' implicit contracts when they are financially weak. Second, high-CSR firms are perceived to have lower levels of risk (e.g., lower litigation risk) and have a wider investor base (Waddock and Graves, 1997; Hong and Kacperczyk, 2009; El Ghoul et al., 2011).[2] These firms thus have better access to financing and lower cost of capital (Merton, 1987; Heinkel et al., 2001; Gao et al., 2017), which mitigates the

[2] Waddock and Graves (1997) argue that firms attempting to shift costs to external stakeholders through socially irresponsible actions face a higher likelihood of future explicit claims. Hong and Kacperczyk (2009) document that "sin" firms (i.e., tobacco, alcohol, and gaming firms) face a higher risk of litigation.

costs imposed on the firm by predatory attacks from competitors.

Testing our hypothesis requires measuring two main variables: high leverage cost and CSR. Following Campello (2006), we use the sensitivity of industry-adjusted sales growth to high leverage as a measure of high leverage cost. A more negative coefficient represents a higher leverage cost. We employ the Fama–French (1997) 48-industry classification to compute industry-adjusted sales growth. Industry-adjusted sales growth measures "the firm's sales growth relative to that of its industry rivals in a given year; this roughly gauges a firm's market share growth" (Campello, 2006, p. 148).[3] We obtain firms' CSR scores from MSCI ESG STATS, which is the most extensive database on firms' CSR practices and has been widely used in recent finance studies on CSR (e.g., Bae et al., 2011; El Ghoul et al., 2011; Deng et al., 2013; Servaes and Tamayo, 2013; Di Giuli and Kostovetsky, 2014; Krüger, 2015; Hong and Liskovich, 2015; Lins et al., 2017; Jung et al., 2016). Using a sample of 2,739 U.S. firms over the 1996 to 2012 period, we find that CSR mitigates the costs of high leverage. Specifically, a one-standard-deviation increase in a firm's relative-to-rival CSR score reduces highly leveraged firms' losses in industry-adjusted sales growth by 1.1%, which is equivalent to recouping 70% of the costs of high leverage (1.6%). Our main evidence is robust to using alternative proxies for CSR and leverage.

Identifying the causal effects of CSR on high leverage costs is challenging, as both CSR and high leverage costs are subject to endogeneity.[4] Both CSR and high leverage costs could be driven by unobserved firm-specific factors. For instance, firms with deep pockets or low cost of capital

[3] Our main evidence remains unaffected when we use the growth rate of market share instead of sales growth rate.

[4] Previous studies (e.g., Opler and Titman, 1994; Campello, 2006) address endogeneity in the relation between leverage and sales growth. In addition to addressing the endogeneity of the high-leverage variable, we tackle endogeneity arising from the CSR variable.

tend to invest more in CSR and these firms can withstand competition in distress, rather than CSR causally enhancing firms' competitiveness. Endogeneity could also come from reverse causality: a reduction in sales can force a firm to incur debt to cover expenses, while high-CSR firms somehow borrow less. We use two identification strategies to establish the causal effect of CSR on high leverage costs.[5] First, we use regression of discontinuity design (RDD), which allows us to create "locally" exogenous variation in CSR by making use of shareholder-sponsored CSR proposals that pass or fail by a small margin (Cuñat et al., 2012; Flammer, 2015a). Such close-call CSR proposals should be akin to random assignment of CSR to companies and allow for clean inference on the effect of CSR on high leverage costs. Second, we introduce a set of shocks that influence the costs of high leverage but are exogenous with respect to firms' CSR. Evidence of a more pronounced relationship between CSR and high leverage costs under those exogenous shocks should suggest that endogeneity biases do not drive our main results. We employ two sets of exogenous shocks: the reduction in import tariffs (Frésard, 2010; Valta, 2012) and exogenous economic and political conditions (Campello, 2003; Baker et al., 2015). The endogeneity test results consistently show that CSR causes a decrease in high leverage costs.

We next examine whether CSR reduces the costs of high leverage through the customer channel, the competitor channel, or both. We call the costs of high leverage due to unfavorable actions by customers and competitors *customer-driven costs* and *competitor-driven costs*,

[5] In our main analyses, we also mitigate endogeneity concerns by using the relative measurement method (Opler and Titman, 1994; Campello, 2003, 2006). Because peer firms' performance is beyond a focal firm's control, relative-to-peer measures are less likely to be endogenous. We also follow Campello (2006) and measure high leverage costs using long-term debt, which is less sensitive to short-term performance, and we use two-year lags between our high leverage and CSR measures and sales growth.

respectively. We expect a stronger effect of CSR on sales growth when customer-driven costs are higher—for example, when product specialization are higher or when highly leveraged firms produce consumer goods. Similarly, we expect the effect of CSR to be more pronounced when competitor-driven costs are higher—for example, when competitors are financially robust (Campello, 2003; Campello and Fluck, 2006) or when highly leveraged firms are in highly concentrated industries (Opler and Titman, 1994). Our results are consistent with these predictions, suggesting that the mitigating effects of CSR on the costs of high leverage operate through both the customer and competitor channels.

Our study makes contributions to at least two literatures. First, to the best of our knowledge, our study is the first to investigate the role of CSR in the unique setting of capital structure and product market interactions. While prior studies on capital structure and product market performances focus on the negative consequences of high leverage policies,[6] ours provides a mechanism to mitigate such negative effect of high leverage. Furthermore, our study allows us to identify specific channels through which CSR affects firm value. In related work, Deng et al. (2013) examine the effect of CSR on firm value in the setting of mergers, as the merger approval and integration processes are also influenced by various stakeholder groups. Our study builds on and extends their work by identifying how CSR influences two specific stakeholder groups, namely customers and competitors. We show that CSR reduces the adverse behavior of customers and competitors when firms are highly leveraged. This evidence on the risk management role of CSR

[6] For example, Chevalier (1995) finds that prices fall following leveraged buyouts (LBO) in local markets where competitors have low leverage, suggesting that low leverage rivals prey on LBO firms. Matsa (2011) finds that highly leveraged supermarket firms tend to degrade their products' quality. Kini et al. (2017) show that firms with higher financial leverage experience a greater probability of a product recall, as well as more frequent and severe recalls.

improves our understanding of the mechanisms through which CSR influences firm value.

Second, our study contributes to the debate on whether CSR is value-enhancing or value-destroying. The value-enhancing view holds that CSR increases shareholder welfare by improving firm–stakeholder relationships. Research that substantiates this view finds that firms with high customer awareness, high employee satisfaction, and fewer agency problems command higher valuations (Servaes and Tamayo, 2013; Edmans, 2011; Ferrell et al., 2016). Stakeholder-oriented firms exhibit higher innovation and long-term performance (Flammer and Kacperczyk, 2016), and benefit from lower cost of debt (Gao et al., 2017). CSR improves investors' perception of a firm's trustworthiness and thus mitigates market underreaction to earnings news (Jung et al., 2016). The adoption of close-call CSR proposals increases firm value by increasing labor productivity and sales growth (Flammer, 2015a). High-CSR firms undertake value-enhancing mergers and acquisitions (Deng et al., 2013), and they perform better during the 2008–2009 financial crisis (Lins et al., 2017). By contrast, the value-decreasing view holds that CSR activities are manifestations of agency problems. Studies supporting this view find that CSR activities reduce shareholder wealth by increasing opportunistic managers' ability to misuse corporate resources for their private gain (Friedman, 1970; Pagano and Volpin, 2005; Cronqvist et al., 2009; Masulis and Reza, 2015). Using the setting of capital structure and product market interactions, our study contributes to the debate by supporting the stakeholder value maximization view of CSR.

Our study proceeds as follows. Section 2 describes our sample, the main variables, and our empirical design. Section 3 presents the results. Section 4 concludes.

II. SAMPLE, MAIN VARIABLES, AND EMPIRICAL DESIGN

A. Sample Construction

The sample selection process begins with all U.S. firms in Compustat over the 1988 to 2012

period. For industry classification, we employ the Fama–French (1997) 48-industry groups. We omit observations that have negative total assets and sales, missing equity, or a long-term debt-to-asset ratio less than 0 or greater than 1. We next eliminate firm-years with asset or sales growth greater than 200% to control for outliers. We further exclude observations with a missing Fama–French (1997) 48-industry classification and observations from financial institutions, utilities, and industries that are not clearly defined (i.e., industries coded "almost nothing"). Based on the resulting sample, we compute both the absolute value and the industry-year mean of our main financial variables. To ensure that the industry-year mean is not biased toward outliers, we require that each industry-year contain at least four firms. These filters yield 123,667 firm-year observations representing 13,919 firms.

Next, we merge the Compustat sample with data from MSCI ESG STATS (formerly known as KLD STATS), which tracks firms' CSR ratings since 1991. Based on the MSCI ESG STATS data, we calculate the adjusted CSR scores and their industry-year means. We require a minimum of four CSR observations for each industry-year. Firm-years with missing values for variables in our main regression are excluded. The final sample comprises an unbalanced panel of 16,390 U.S. firm-year observations representing 2,739 firms over the 1996 to 2012 period.[7]

Table 1 presents the sample distribution by industry (using the Fama–French 48-industry classification) and year. Firms belonging to the Business Services (12.31%), Retail (8.93%), and Electronic Equipment (7.95%) categories dominate the sample. Turning to the distribution by year,

[7] For each firm-year observation, the number of CSR strength components in the human rights area is zero from 1991 to 1993 and, thus, CSR scores defined as described in Section 2.2 are missing during this period. Because the CSR data for our purposes start in 1994 and we lag these data two years in the baseline regression, our final sample starts in 1996.

the number of sample firms is steady at slightly over 300 per year over the 1996 to 2002 period before increasing to 622 in 2004 and 1,600 in 2005. The number of firms per year is then fairly stable at around 1,600 over the 2005 to 2012 period. Changes in the distribution by year are due to increased CSR coverage.

B. Main Variables

a. Corporate Social Responsibility

To measure a firm's CSR activities, we rely on MSCI ESG STATS. Information used to construct firms' CSR ratings comes from government agencies, non-governmental organizations, global media publications, annual reports, regulatory filings, proxy statements, and company disclosures. MSCI ESG STATS coverage has expanded over time. Over the 1991 to 2000 period, it covered the S&P 500 and Domini Social Index. Since 2000, additional indexes have been included in its coverage, with the Russell 1000 Index added in 2001, the Large Cap Social Index added in 2002, and both the Russell 2000 Index and the Broad Market Social Index added in 2003.

MSCI ESG STATS tracks seven CSR areas: community, diversity, employee relations, environment, human rights, product characteristics, and corporate governance. Within each of these areas, a number of strength and concern factors are assigned a value of 0 or 1 (see Appendix A). For each firm-year, we calculate the scores for each CSR area by subtracting the number of concerns from the number of strengths. We then obtain the firm's raw CSR score, *CSR_NET*, by summing the scores across all areas except corporate governance.[8] This simple summation approach is widely used in the literature (El Ghoul et al., 2011; Jiao, 2010; Bae et al., 2011).

[8] We exclude the corporate governance component to ensure that our CSR measure is not simply a proxy for governance effects. However, our results continue to hold when we include corporate governance, as shown in robustness tests.

However, Deng et al. (2013) note that comparing raw CSR scores can be problematic because the number of strengths and concerns in an area varies considerably over time. For example, in the employee relations area, the "Health and safety" factor is not available until 2003. To address this issue, we follow Deng et al. (2013) and construct our main CSR measure, *CSR*, by dividing the raw strength and concern scores of each area by the number of factors in that area-year and then taking the difference between the adjusted strength and concern scores for that area. Appendix B provides detailed variable definitions.

b. The Costs of High Leverage

In a study revisiting Opler and Titman's (1994) finding that high leverage has a detrimental effect on relative-to-rival product market performance, Campello (2006) shows that in equilibrium, the negative product market effect of leverage arises only when leverage is sufficiently high. He finds that excessive indebtedness leads to unfavorable actions by customers and competitors, whereas moderate indebtedness is associated with improved relative-to-rival sales performance. We follow Campello (2006) and capture the costs of high leverage using the sensitivity of sales to high leverage. Specifically, we run the following model:

$$SALES\_G_{i,t} = a + \lambda_1 HLEV_{i,t-2} + \lambda_2 SIZE_{i,t} + \sum_{k=1}^{2} \lambda_{3k} PROFIT_{i,t-k} + \sum_{k=1}^{2} \lambda_{4k} INVESTMENT_{i,t-k} + \sum_{k=1}^{2} \lambda_{5k} SELLEXP_{i,t-k} + \varepsilon_{i,t}, \quad (1)$$

where *i* indexes firms and *t* indexes years. Sales growth, *SALES_G*, is assumed to reflect the actions of customers and competitors. We should observe a decrease in sales growth if customers abandon the firm or if the firm faces predation by competitors. *HLEV* is a dummy variable that takes a value of 1 if the firm's long-term debt ratio is in the top three deciles of the overall sample in a given year. We use long-term debt in constructing our high leverage measure to mitigate concerns about reverse causality from sales growth to leverage because long-term debt is less likely to be adjusted

in response to short-term performance (Campello, 2006). We further attempt to mitigate endogeneity by using a two-year lag between the high leverage measure and sales growth (Campello, 2006). The coefficient on *HLEV*, λ_1, captures the costs of high leverage, with a more negative value indicating higher costs.

The above model controls for several variables that are correlated with both sales growth and leverage, as their omission would lead to biased coefficients on *HLEV*. Our first control is firm size, *SIZE*, which is equal to the natural logarithm of total assets. Large firms tend to have higher debt capacity. At the same time, large firms tend to be mature firms, which grow at a slower pace. The second control variable is profitability, *PROFIT*, computed as operating earnings plus depreciation over total assets. High leverage may indicate that a firm cannot generate sufficient revenue to cover expenses. However, high leverage may discipline management (Jensen, 1986) and increase profitability, which can affect future sales growth through the firm's ability to retain earnings. Our third control variable is capital investment, *INV*, which is equal to capital expenditures over total assets. While a firm's capital investment depends on its debt burden, it contributes to future sales growth. The final control variable is the ratio of advertising and selling expenses to total sales, *SELLEXP*. Higher selling expenses should be positively related to future sales but are also correlated with leverage (Chevalier and Scharfstein, 1996). All control variables are winsorized at the 1% and 99% levels to mitigate the influence of outliers. The reported *t*-statistics are based on standard errors that are heteroskedasticity-consistent and allow for clustering at the firm level. Appendix B provides detailed variable definitions.

C. Empirical Design

To examine the effect of CSR on the costs of high leverage, we augment the costs of high leverage model in Equation (1) by adding two terms: the interaction between *HLEV* and our proxy

for CSR and the standalone CSR measure. The regression is as follows:

$$SALES\_G_{i,t} = b + \beta_1 CSR_{i,t-2} \times HLEV_{i,t-2} + \beta_2 HLEV_{i,t-2} + \beta_3 CSR_{i,t-2} + \beta_4 SIZE_{i,t} + \sum_{k=1}^{2} \beta_{5k} PROFIT_{i,t-k} + \sum_{k=1}^{2} \beta_{6k} INVESTMENT_{i,t-k} + \sum_{k=1}^{2} \beta_{7k} SELLEXP_{i,t-k} + \varepsilon_{i,t}. \quad (2)$$

In (2), β_1 measures the effect of *CSR* on the costs of high leverage. A positive (negative) value indicates that CSR activities reduce (increase) the costs of high leverage.

One main concern with the model described by Equations (1) and (2) is endogeneity bias. First, both CSR and high leverage could reflect unobserved firm characteristics such as corporate culture. Second, deteriorating sales performance could induce a firm to increase debt to cover expenses. To mitigate such concerns, in our main analyses, we adopt the relative measurement method (Opler and Titman, 1994; Campello, 2003, 2006), whereby regression variables are determined in part by other firms' performance. Given that other firms' performance is outside a focal firm's control, relative-to-peers variables are less likely to be endogenous. Specifically, we measure *SALES_G*, *CSR*, and the control variables relative to their industry-year means, and we construct *HLEV* such that a firm is considered highly leveraged if, in a given year, its relative-to-mean leverage ratio is in the top three deciles. Moreover, as with *HLEV*, we use a two-year lag between *CSR* and sales growth. In additional tests, we address potential endogeneity by using RDD and difference-in-difference approaches.

Table 2 provides descriptive statistics for the key variables (before industry-year adjustments) used in Equations (1) and (2).

III. RESULTS

In Section 3.1, we provide evidence first on the costs of high leverage and then on the role of

CSR in mitigating the costs of high leverage. In Section 3.2, we address endogeneity concerns. In Section 3.3, we examine the extent to which the effect of CSR on the costs of high leverage is driven by the customer and competitor channels. Finally, in Section 3.4, we check the robustness of our results to alternative measures of high leverage and CSR.

A. CSR and the Costs of High Leverage

In this section, we first establish that the effect of high leverage on product market performance as measured by sales growth is negative. We then examine whether CSR mitigates this negative effect. Model 1 of Table 3 reports the results of regressing Equation (1) using ordinary least squares (OLS). The coefficient on the high-leverage dummy is significantly negative, indicating that high leverage is associated with reduced sales growth. Specifically, we find that firms with high leverage experience 1.6% lower relative-to-rival sales growth than other firms. The magnitude of this estimate is close to the -1.9% documented by Campello (2006) for a sample that ends before 2000. Because 90% of our sample observations correspond to the 2000 to 2012 period, our findings indicate that the costs of high leverage documented by Campello (2006) have persisted over the last decade.

Models 2 and 3 of Table 3 report the results of estimating Equation (2) using OLS and firm fixed effects, respectively. Model 2 regresses sales growth on *CSR*×*HLEV, HLEV,* and *CSR* after including the control variables and shows that CSR attenuates the costs of high leverage. Specifically, the coefficient estimate on *CSR*×*HLEV* is significantly positive at 0.025, suggesting that a one-standard-deviation increase in the CSR score increases a highly leveraged firm's relative-to-industry sales growth two years ahead by 1.2%. Recall that in Model 1, the coefficient estimate on *HLEV*, the proxy for high leverage costs, is -0.016. The effect of CSR is thus economically substantial, reducing the negative effect of high leverage on sales growth by 75%

(0.012/0.016). Model 3 shows that CSR mitigates the costs of high leverage even after considering firm fixed effects. Taken together, the results indicate that firms face lower costs of leverage if they adopt CSR, consistent with the risk management role of CSR.

Interestingly, we find that the standalone CSR term loads significantly negatively on sales growth. Note that the standalone CSR term captures the effect of CSR when firms have lower leverage and are financially healthy. Its negative coefficient suggests that the risk management benefit of CSR is limited and indeed outweighed by the costs of CSR investment when firms maintain low leverage and are financially healthy. We interpret these findings as evidence that CSR investment is like an insurance product. Firms pay insurance premiums in the form of CSR investment costs when they are financially healthy, and they receive the benefits of CSR insurance when they are in distress.

There are alternative interpretations of our results. One might argue that the negative effect of CSR on sales growth is a manifestation of agency problem with CSR investment and the positive interaction effect indicates the disciplining effect of high leverage, which curbs the agency problem and attenuates the negative effect of CSR. While plausible, the negative coefficient on the standalone CSR term is not robust when using the RDD and difference-in-difference approaches shown in Sections 3.2.1 and Section 3.2.2, respectively.

Another interpretation is that poor governance drives high leverage and low sales growth at the same time, and the manager uses CSR to cover up bad governance. This interpretation assumes a negative correlation between governance quality and CSR scores. In our dataset, we find a positive correlation between governance quality, which we capture with the adjusted score in the corporate governance area in MSCI ESG STATS, and our overall CSR score. In addition, in unreported tests, we control for governance index and its interaction with high leverage dummy in

our baseline model. We find that the coefficient estimates on CSR and its interaction with high leverage dummy remain unchanged, suggesting that bad governance is not driving our main results.

Yet another interpretation of our findings is that reduced sales growth in the presence of high leverage reflects efficient downsizing. Because firms with high leverage have to submit to the scrutiny of capital markets (Jensen, 1986), highly leveraged firms tend to shut down or otherwise divest themselves of unprofitable product lines. However, even unprofitable product lines could be of value to certain customers; for example, a low-price brand may be welcomed by low-income individuals. In this case, a high-CSR firm that cares about social welfare might choose to continue an unprofitable product line, resulting in worse firm performance. In other words, CSR prevents efficient downsizing, resulting in less sensitive changes in sales growth in the presence of high leverage. This alternative interpretation predicts that by impeding efficient downsizing, CSR negatively affects the performance of highly leveraged firms. Contrary to this prediction, in untabulated results we find that CSR helps highly leveraged firms increase stock returns and improve operating performance. These results suggest that rather than negatively affecting firm performance by impeding efficient downsizing, CSR positively affects firm performance by reducing the costs of high leverage.

B. Endogeneity

Our main results show that CSR reduces the costs of high leverage. However, this evidence is subject to potential endogeneity problems arising from the *HLEV* and *CSR* variables. We use two identification strategies to establish the causal effect of CSR on high leverage costs in the following subsections.[9]

[9] We implement several additional tests to further mitigate endogeneity concerns (Internet Appendix, Table A1). First, we employ the 2SLS approach. We use two instruments for CSR: 1) *BLUE* (following Deng et al., 2013), which is a

a. Regression of Discontinuity Design (RDD)

For our model to be free of endogeneity, we would need to randomly assign firms to groups with different levels of CSR and then observe the costs of high leverage across the groups. While such randomization is not available to the researcher, the RDD approach of Flammer (2015a) and Cuñat et al. (2012) allows us to create "locally" exogenous variation in CSR by making use of shareholder-sponsored CSR proposals that pass or fail by a small margin. The idea is that a firm that marginally passes a CSR proposal (e.g., 50.1%) should not be systematically different from a firm that marginally fails a similar CSR proposal (e.g., 49.9%) and, thus, such close-call CSR proposals should be akin to random assignment of CSR to companies and allow for clean inference on the effect of CSR on high leverage costs.

We gather information on CSR proposals from RiskMetrics and SharkRepellent databases. RiskMetrics traces shareholder proposals by S&P 1,500 companies and an additional 400–500 widely held companies from 1997 to 2011. SharkRepellent covers around 4,000 companies in the Russell 3000 index over the 2005 to 2012 period. To ensure that the proposals in our sample are related to CSR, we retain only those proposals identified by the type "SRI" (socially responsible initiative) in RiskMetrics or "Social/Environmental Issues" in SharkRepellent. Note that while the RDD approach can be implemented by restricting the sample to those proposals that pass or fail by a small margin, discarding all non-close proposals yields a small number of observations. An

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dummy variable equal to 1 if a firm is headquartered in a Democratic state and 0 otherwise and 2) one-year lagged CSR. These instruments are relevant because "blue companies" are more likely to "go green" (Di Giuli and Kostovetsky, 2014) and firms' CSR policies tend to be sticky. To instrument for *HLEV*, we use two-year lagged values in the spirit of Campello (2003). Second, we use the system GMM approach developed by Blundell and Bond (1998). Nevertheless, the 2SLS and firm fixed effects model both consistently support our main evidence.

alternative approach suggested by Flammer (2015a) is to include polynomials that approximate a continuous relationship between the outcome variable and the CSR proposal vote. We conduct our RDD analysis using both approaches. Specifically, we run the following model:

$$SALES\_G_{i,t} = \pi_1 HLEV_{i,t-2} \times CSR_{PASSED}{}_{i,t-2} + \pi_2 HLEV_{i,t-2} + \pi_3 CSR_{PASSED}{}_{i,t-2} + P_l(v_{i,t}, \gamma_l) + P_r(v_{i,t}, \gamma_r) + Z_{i,t} + \varepsilon_{i,t}\,, \quad (3)$$

where *SALES_G*, *HLEV*, and the control variables contained in *Z* are defined as before; CSR_{PASSED} is a dummy equal to 1 if the CSR proposal is adopted and 0 otherwise; $P_l(v_{i,t}, \gamma_l)$ is a flexible polynomial function for observations on the left-hand side of the majority threshold γ (i.e., 50%); $P_r(v_{i,t}, \gamma_r)$ is a flexible polynomial function for observations on the right-hand side of the majority threshold γ; and v is the percentage of votes on the CSR proposal. Similar to our baseline model, we use a two-year lag between CSR_{PASSED} and the outcome variable, sales growth. Standard errors are clustered at the firm level to account for within-firm dependence across observations.

Table 4 reports the results. Models 1 to 4 restrict the sample to CSR proposals that pass or fail within a bandwidth of +-10%, +-7.5%, +-5%, and +-2.5%, respectively, around our majority threshold of 50%. We find that the interaction term *CSR_PASSED*×*HLEV* loads significantly positively on *SALES_G*. This finding suggests that the passage of CSR proposals is associated with a significant decrease in high leverage costs. Models 5 to 8 use the full sample of CSR proposals. In Model 5, we follow Flammer (2015a) and use polynomials of order three on the left- and right-hand sides of the majority threshold without the inclusion of control variables. We find that the interaction term CSR_{PASSED}×*HLEV* loads significantly positively on *SALES_G*, with a significant coefficient estimate of 0.265. In Model 6, we further add the control variables to Model 5. As pointed out by Flammer (2015a, p. 2558), "if the outcome of the vote is truly random, including these controls should not affect the coefficient on the pass dummy … since all predetermined

characteristics should be orthogonal to the assignment of pass versus fail." We find that the coefficient estimate on $CSR_{PASSED} \times HLEV$ in Model 6 is close to that in Model 5 in both magnitude and significance level, supporting that our experiment is randomized. Models 7 and 8 repeat the previous analyses using polynomials of order four (Cuñat et al., 2012). Again, we find positive and significant estimates on $CSR_{PASSED} \times HLEV$. Taken together, the RDD results show that endogeneity does not drive our main results on the mitigating effect of CSR on high leverage costs.

b. Exogenous Shocks

In this set of endogeneity tests, we introduce a set of exogenous shocks to our model. These shocks influence the costs of high leverage but are exogenous with respect to firms' CSR. Evidence of a more pronounced relationship between CSR and high leverage costs under exogenous shocks that magnify the costs of high leverage would suggest that endogeneity problems are not driving our main results. We employ a quasi-natural experiment as follows. A firm establishes its CSR policy two years before a base year. In the base year, the firm experiences an exogenous business shock. Because the firm's CSR precedes the exogenous shocks, it is not likely to be affected by these shocks. However, the exogenous shocks can influence the costs of high leverage. Building on this argument, we predict that the mitigating effect of CSR on the costs of high leverage is magnified after the advent of the exogenous shock.

We focus on two sets of exogenous shocks. First, we use the reduction in import tariffs (e.g., Frésard, 2010; Lileeva and Trefler, 2010; Valta, 2012). A tariff cut can increase stakeholders' sensitivity to high leverage, thus increasing the costs of high leverage. Bernard et al. (2006) show that lower trade barriers attract intensified competition from foreign rivals. Indeed, import tariff reductions are exogenous shocks that shift the competitive landscape of industries (Frésard, 2010). With reduced import tariffs, foreign rivals face lower costs of entering U.S. product markets, and

therefore introduce a variety of goods and services to the U.S. markets (Valta, 2012). In this case, customers are more sensitive to high leverage, because in a more competitive environment they have more choices and do not have to stick with the original products regardless of the financial conditions of the firm. Competitors are also more reactive to a highly leveraged firm because the expanded pool of rivals increases the probability of predation.

Following prior studies, we use the industry-level import tariff data compiled by Feenstra (1996), Feenstra et al. (2002), and Schott (2010). These data cover the U.S. manufacturing industries (2000–3999 SIC range) over the 1972 to 2005 period. Following common practice (Frésard, 2010; Lileeva and Trefler, 2010; Valta, 2012; Flammer, 2015b) we define the "shock" when the reductions of tariff rates[10] exceed a certain threshold. In particular, we consider industry-years with a tariff reduction at least twice the average annual change in the same industry.[11] To identify the relation between CSR and high leverage costs after tariff shocks, we employ a difference-in-difference regression,[12] similar to Frésard (2010) and Valta (2012):

[10] The *ad valorem* tariff rate is computed as the duties collected by U.S. Customs divided by the free-on-board value of imports.

[11] The alternative choices of threshold (2.5, or 3 times) do not qualitatively influence our results, and thus are not reported for brevity.

[12] The sample period of the difference-in-difference regression is 1996–2012. The end of sample period is set later than the end of tariff data (2005) to allow time for the main effect to emerge. However, the results are qualitatively similar if the sample period is changed to end at 2005.

$$SALES\_G_{i,t} = \alpha_i + \gamma_1 Post\_reduction_{j,t} \times CSR_{i,t-2} \times HLEV_{i,t-2} + \gamma_2 CSR_{i,t-2} \times HLEV_{i,t-2} + \gamma_3 Post\_reduction_{j,t} \times HLEV_{i,t-2} + \gamma_4 Post\_reduction_{j,t} \times CSR_{i,t-2} + \gamma_5 HLEV_{i,t-2} + \gamma_6 CSR_{i,t-2} + \gamma_7 Post\_reduction_{j,t} + \gamma_8 SIZE_{i,t} + \sum_{k=1}^{2} \gamma_{9k} PROFIT_{i,t-k} + \sum_{k=1}^{2} \gamma_{10k} INVESTMENT_{i,t-k} + \sum_{k=1}^{2} \gamma_{11k} SELLEXP_{i,t-k} + \varepsilon_{i,j,t}. \quad (4)$$

where *i*, *j* and *t* denote firm, industry and year. α_i is a vector of firm fixed effects. $Post\_reduction$ is a dummy equal to one if the tariff reduction has taken place in industry *j* by time *t* (Valta, 2012). Again, *SALES_G*, *CSR*, *HLEV*, and the control variables are defined as before. Similar to our main model, standard errors are clustered at the firm level.

The difference-in-difference result is reported in Table 5. The regression automatically treats all firm-years in industries that have not experienced a reduction in tariff as a control group. The coefficient of interest is the three-way interaction among $Post\_reduction$, *CSR*, and *HLEV* (γ_1), which represents the difference in CSR–high leverage costs sensitivity between firms that have experienced tariff reduction and those in the control group. In the difference-in-difference model, we find the estimate of the three-way interaction is 0.074, positive and significant at the 5% level. This finding implies that after the tariff shock, firms' CSR policy reduces extra stakeholder-related costs that could occur to highly leveraged firms in an exogenously modified competitive environment. This difference-in-difference result ensures that our main finding cannot be fully influenced by the endogeneity problems.

The second set of shocks we consider are exogenous economic and political conditions. During an economy-wide downturn, the viability of a highly leveraged firm becomes more uncertain, increasing unfavorable actions from both customers and competitors. Following

Campello (2003), we use changes in the unemployment rate and GDP. An increase in the unemployment rate or a decrease in GDP represents a negative shock to aggregate demand that adversely affects the product market environment, thus magnifying the costs of high leverage. We also use an annual policy uncertainty index from Baker et al. (2015). Greater policy uncertainty puts upward pressure on the cost of financing (Baker et al., 2015; Pástor and Veronesi, 2013), limiting the ability of highly leveraged firms to withstand attacks from competitors. We therefore expect the costs of high leverage to be greater under higher policy uncertainty.

To test the idea that the effect of CSR on the costs of high leverage is conditioned by the exogenous economic and political environment, we mainly rely on the two-step procedure of Campello (2003), who examines how continuous exogenous condition variables affect the main relation (the relation between CSR and high leverage costs in our setting). The results (Internet Appendix, Table A2) show that the effect of CSR on high leverage costs is more pronounced under bad exogenous conditions, lending further support to our main finding that CSR reduces the costs of high leverage.

C. Channels through which CSR Reduces the Costs of High Leverage

The analyses so far present evidence on the combined effect of CSR on the costs of high leverage. The literature shows that customers and competitors each contribute to a decline in the performance of highly leveraged firms. In this subsection, we test whether this finding extends to our setting—that is, whether the effect of CSR on high leverage costs operates through both customers and competitors.

a. Customer Channel

If CSR reduces high leverage costs driven by customers, the effect of CSR should be stronger when customer-driven costs are higher. Research shows that customer-driven costs are higher

under higher product specificity (Opler and Titman, 1994). When a customer purchases a specialized product, a large portion of the price paid is for implicit claims such as future servicing. However, because highly leveraged firms are likely to break implicit customer contracts, customers have incentives to avoid high-specificity products. We use two proxies for the degree of product specificity. First, following Titman and Wessels (1988), we use R&D expenditures. We classify a firm as a high-R&D (low-R&D) intensity firm in a given year if its R&D-to-sales ratio is greater (smaller) than 0.1% two years before the base year (Opler and Titman, 1994). We treat missing R&D as zero because firms that do not report their R&D expenditures tend to be those not engaged in R&D activities. High R&D expenditures suggest that the firm is likely to produce more specialized products. Second, we use product differentiation. Customer-driven costs are also likely to be higher for firms that produce differentiated goods or services than for firms that produce standardized goods because differentiated products or services are associated with implicit terms. To classify goods as standardized versus differentiated or services, we follow Giannetti et al. (2011) and Rauch (1999) and partition the sample into industries with standardized goods versus industries with differentiated goods or services.[13]

Table 6 presents the results. Models 1 and 2 show that the coefficient on *CSR*×*HLEV* is significantly positive at 0.035 for firms with high R&D intensity but insignificantly negative at -0.003 for firms with low R&D intensity. Models 3 and 4 show that the coefficient on *CSR*×*HLEV* is significantly positive at 0.032 for the differentiated or service subsample but is insignificantly

[13] According to Giannetti et al. (2011) and Rauch (1999), industries with differentiated goods or services have SIC2 codes 25, 27, 30, 32, 34, 35, 36, 37, 38, 39, 41, 42, 44, 45, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 59, 61, 64, 65, 73, 75, 78, and 79, while industries with standardized goods have SIC2 codes 12, 14, 20, 22, 23, 24, 26, 28, 29, 31, and 33.

positive at 0.009 for the standardized subsample. These results imply that CSR mitigates customer-driven leverage costs as captured by measures of product specificity.

The mitigating effect of CSR on high leverage costs is also likely to be stronger when customers are more sensitive to firms' CSR activities. Lev et al. (2010) argue that corporate charitable contributions are more likely to influence sales for firms producing consumer rather than industrial goods. While consumer purchases are influenced by social forces and psychological factors, industrial purchases are formalized and follow well-defined procedures (Corey, 1991), and a firm's image is thus likely to play a more important role for consumers than for industrial buyers. Building on this argument, we predict that customers of consumer goods are more sensitive to the CSR activities of highly leveraged firms. We follow the methodology of Lev et al. (2010) to define high- and low-customer-sensitivity industries.[14]

Models 5 and 6 of Table 6 report the results. We find, consistent with Lev et al. (2010), that the influence of CSR is strong and significant for firms in high-customer-sensitivity industries but not for firms in low-customer-sensitivity industries. These results again suggest that CSR reduces customer-driven costs.

To summarize, we find that that CSR reduces high leverage costs for firms in which customer-driven costs are likely to be high, particularly for firms that produce high-specificity products and consumer goods.

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[14] According to Lev et al. (2010), high-customer-sensitivity industries are those with 4-digit SIC ranges [0,999], [2000,2399], [2500,2599], [2700,2799], [2830,2869], [3000,3219], [3420,3429], 3523, [3600,3669], [3700,3719], 3751, [3850,3879], [3880,3999], 4813, [4830,4899], [5000,5079], [5090,5099], [5130,5159], [5220,5999], [6000,6999], [7000,7299], and [7400,9999]. The remaining industries are classified as low-customer-sensitivity industries.

b. Competitor Channel

If CSR reduces the high leverage costs driven by competitors, the effect of CSR should be stronger when competitor-driven costs are higher. We expect competitor-driven costs to be high when highly leveraged firms face competitors that are financially robust. The rationale is that financially healthy competitors can afford to charge lower prices in an attempt to drive a highly leveraged firm out of the market (Campello, 2003; Campello and Fluck, 2006). Following prior research, we proxy for the financial condition of a firm's competitors using the industry-average level of debt. We classify an industry as a high-debt (low-debt) industry in a given year if its average long-term debt ratio is above (below) the overall sample median two years before the base year. We also expect competitor-driven sales losses to be more severe in highly concentrated industires where strategic interactions among competitors are strong (Opler and Titman, 1994). Concentration can proxy for the gains associated with driving out a weakened competitor (Bolton and Scharfstein, 1990). For example, competitors can benefit by raising share prices, which is most likely upon bankruptcy announcements in concentrated industries (Lang and Stulz, 1992). To measure industry concentration, we use the four-firm concentration ratio (FFC) (Opler and Titman, 1994) and the Herfindahl-Hirschman index (HHI). We follow Opler and Titman (1994) and classify an industry as highly (less) concentrated if its four-firm concentration ratio is above (below) 0.4 (Opler and Titman, 1994) or its HHI is above (below) the overall sample median two years before the base year.

Table 7 presents the results. In Models 1 and 2 of Table 7, we find that the coefficient on *CSR*×*HLEV* is significantly positive for the low-debt industry subsample (0.035, *t*-statistic = 2.60) but insignificantly positive for the high-debt industry subsample (0.010, *t*-statistic = 0.86). Models 3 and 4 report the results for the subsamples partitioned by median FFC, while Models 5 and 6

present the results for the subsamples partitioned by median HHI. Consistent with our predictions, we find that firms from financially robust industries observe a more pronounced effect of CSR on high leverage costs. Specifically, the coefficient on *CSR*×*HLEV* is as large as 0.035 with a *t*-statistic of 2.60 for highly leveraged firms that face financially robust competitors, while it is only 0.010 with a *t*-statistic of 0.86 for firms that face competitors with a weaker financial position. Similarly, we find that the coefficients on *CSR*×*HLEV* load significantly positive for firms in industries with high concentration, while insignificant for firms in industries with low concentration. These results together suggest that the mitigating effect of CSR on high leverage costs also operates through the competitor channel.

D. Robustness Tests

In this subsection, we check whether our main results are robust to using alternative measures of *HLEV* and *CSR*. Recall that following Opler and Titman (1994), our primary measure of high leverage is a dummy equal to 1 if a firm's leverage ratio in a given year is in the top three deciles of the sample. To address concerns that the three-decile cutoff is arbitrary, we follow Opler and Titman (1994) and assign a value of 1 to top-decile firm-year observations and 0 to bottom-decile observations. Comparisons based on this definition are made between extremely high-leveraged firms and extremely low-leveraged firms, and thus the results should be more pronounced. As can be seen in Models 1 and 2 of Table 8, the coefficients on *HLEV* and *CSR*×*HLEV* are two to three times those in the baseline models (-0.036 compared to -0.016; 0.068 compared to 0.021).

Next, recall that we construct our primary high-leverage measure using long-term debt because it is less subject to adjustment and hence should be more exogenous than short-term debt (Campello, 2006). However, Opler and Titman (1994) use the total debt ratio, which also incorporates short-term debt. Accordingly, we check whether our main results hold after replacing

the long-term debt ratio with the total debt ratio. The results reported in Models 3 and 4 of Table 8 show that although the significance level declines, CSR continues to reduce the costs of high leverage.

In Models 5 and 6, we lag *CSR* and *HLEV* by three years rather than two to examine whether the full effects of high leverage take more time to emerge and, if so, whether the benefits of CSR persist long enough to reduce high leverage costs. This test is inspired by Campello (2006). The results show that the costs of high leverage are decreasing in horizon, but the benefits of CSR are nonetheless similar (2.4% at a three-year lag versus 2.1% at a two-year lag).

Turning to alternative proxies for CSR, we first adopt different adjustments in computing our CSR measure. In Model 7 of Table 8, we use *CSR_NET* (El Ghoul et al., 2011; Jiao, 2010; Bae et al., 2011), the net strengths and concerns score for the six areas we consider. In Model 8, we follow Jo and Harjoto (2012) and adjust *CSR_NET* by the total number of strength and concern factors. Next, given that simple aggregation of the six areas does not account for the relative importance of each area, following Goss and Roberts (2011) we use principal component analysis to determine the weight of each dimension. Model 9 reports results using a measure of CSR based on the first principal components. We also address concerns related to whether all six of the areas considered affect firm value. Hillman and Keim (2001) suggest that the CSR areas directly related to primary stakeholders—community, diversity, employee relations, environment, and product characteristics—have a greater effect on firm value. Accordingly, in Model 10, we construct our CSR measure on the basis of these five primary stakeholder-related areas. Finally, while we exclude the corporate governance issue area from our primary measure of CSR to rule out the possibility that our results are driven by governance effects, in Model 11 we report results using a CSR measure based on all seven CSR areas to facilitate comparison with other studies (e.g., Deng

et al., 2013). We find that all of the alternatively defined CSR variables generate results in line with CSR reducing high leverage costs.

In additional tests that are untabulated, we first examine whether our main finding is affected by ownership changes of the CSR database. The CSR database was originally maintained by KLD before it was acquired by RiskMetrics Group in 2009 and then sold to MSCI Inc. in 2010. Because several factors were added or dropped in 2010 following these ownership changes, we re-run our analysis for the 1996 to 2009 period and find qualitatively similar results. We also re-run our baseline model using different industry specifications, including the Fama–French 5-, 10-, 12-, 17-, 30-, and 38-industry classifications, 3- and 4-digit SIC code classifications, as well as 10-K Text-based Fixed Industry Classification (FIC-100) developed by Hoberg and Phillips (2010) and Hoberg and Phillips (2016). We find consistent results that CSR leads to lower costs of high leverage.

IV. CONCLUSION

Departing from traditional research on agency conflicts between shareholders and bondholders, a growing body of research on the costs of high leverage finds that two players—customers and competitors—can exert a significantly negative impact on the value of highly leveraged firms. In this paper we examine whether corporate social responsibility influences the behavior of these players favorably and thus mitigates the costs of high leverage.

Using a large sample of 16,390 firm-year observations representing 2,739 firms, we find that CSR reduces the costs of high leverage as captured by a loss in sales growth. CSR appears to provide a risk management benefit. We further find that CSR helps highly leveraged firms keep customers and guard against rival predation, which suggests that the effect of CSR operates through both customer and competitor channels.

Our study highlights the role of previously unexplored mechanisms through which CSR influences firm value and the strategic importance of CSR as a risk management instrument. Our study also contributes to the debate on whether "doing good" can help a firm "do well." Future research could further our understanding of the effect of CSR on firm value by extending our analysis to a wider set of stakeholders such as employees, suppliers, the community, and the government.

Appendix A. Six CSR areas in MSCI ESG STATS used in our analysis

	Concerns	Strengths
Community	Investment controversies Negative economic effect Indigenous peoples relations Tax disputes Other concerns	Charitable giving Innovative giving Non-U.S. charitable giving Support for housing Support for education Indigenous peoples relations Volunteer programs Other strengths
Diversity	Controversies Non-representation Other concerns	CEO Promotion Board of directors Work/life benefits Women and minority contracting Employment of the disabled Gay and lesbian policies Other strengths
Employee relations	Union relations Health and safety concern Workforce reductions Retirement benefits concern Other concerns	Union relations No-layoff policy Cash profit sharing Employee involvement Retirement benefits strength Health and safety strength Other strengths
Environment	Hazardous waste Regulatory problems Ozone-depleting chemicals Substantial emissions Agricultural chemicals Climate change Other concerns	Beneficial products and services Pollution prevention Recycling Clean energy Communications Property, plant, and equipment Other strengths
Human rights	South Africa Northern Ireland Burma concern Mexico Labor rights concern Indigenous peoples relations Other concerns	Positive record in South Africa Indigenous peoples relations strength Labor rights strength Other strengths
Product characteristics	Product safety	Quality

	Marketing/contracting concern	R&D/innovation
	Antitrust	Benefits to economically disadvantaged
	Other concerns	Other strengths

Notes: We consider six CSR areas from MSCI ESG STATS to construct firms' *CSR* and *CSR_NET* (as defined in Appendix B): community, diversity, employee relations, environment, human rights, and product characteristics. This table lists the specific strength and concern factors that MSCI assesses in each area.

Appendix B. Variable definitions and data sources

Variable	Definition	Source: Authors' calculations based on
Panel A. Corporate social responsibility variables		
CSR_NET	Raw CSR score, computed based on six CSR areas in MSCI ESG STATS: community, diversity, employee relations, environment, human rights, and product characteristics. Within each of these areas, various strength and concern factors are assigned a value of 0 or 1. For each firm-year, we calculate a score for each CSR area that is equal to the number of strengths minus the number of concerns. We then sum the scores of the six areas.	MSCI ESG STATS
CSR	Adjusted CSR score, computed based on six CSR areas in MSCI ESG STATS: community, diversity, employee relations, environment, human rights, and product characteristics. For each firm-year, we divide the raw strength and concern scores of each area by the number of factors in that area. We then take the difference between the adjusted strength and concern scores for that area.	As above
CSR$_{PASSED}$	Dummy variable equal to 1 if, in the given year, the CSR proposal is adopted, and 0 otherwise.	RiskMetrics& SharkRepellent
Panel B. High-leverage variables		
HLEV	High-leverage dummy variable equal to 1 if, in the given year, the firm's long-term debt ratio (= long-term debt/total assets) is in the top three deciles of the overall sample (across industries and over time).	Compustat data
Panel C. Outcome variable		
SALES_G	Sales growth, equal to (*SALES* – *SALES* in previous year)/*SALES* in the previous year. *SALES* is total sales.	Compustat data
Panel D. Other variables		
SIZE	Natural logarithm of total assets.	As above
PROFIT	Profitability, equal to (operating earnings + depreciation)/total assets.	As above
INVESTMENT	Investment, equal to capital expenditures/total assets.	As above
SELLEXP	Selling expenses, equal to (advertising + selling, general, & administrative expenses)/total sales.	As above

Post_reduction	Dummy variable equal to one if the tariff reduction has taken place in industry *j* by time *t* (Valta, 2012). Tariff reduction is defined as a "shock" when the reductions of import tariff rates exceed a certain threshold. In particular, we consider industry-years with a tariff reduction at least twice the average annual change in the same industry.	Feenstra (1996), Feenstra et al. (2002), and Schott (2010)
Firm R&D Intensity	A firm is classified as a high-R&D (low-R&D) intensity firm in a given year if its R&D-to-sales ratio is greater (smaller) than 0.1% two years before the base year	Opler and Titman (1994)
Product Differentiation	Product differentiation refers to industries that produce differentiated or services (or standardized) products. Industries with differentiated goods or services have SIC2 codes 25, 27, 30, 32, 34, 35, 36, 37, 38, 39, 41, 42, 44, 45, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 59, 61, 64, 65, 73, 75, 78, and 79, while industries with standardized goods have SIC2 codes 12, 14, 20, 22, 23, 24, 26, 28, 29, 31, and 33.	Giannetti et al. (2011) and Rauch (1999)
Customer Sensitivity	High (low) customer sensitivity refers to industries in which the predominant customer is a consumer (industrial buyer). High customer sensitivity industries have the SIC4 ranges [0,999], [2000,2399], [2500,2599], [2700,2799], [2830,2869], [3000,3219], [3420,3429], 3523, [3600,3669], [3700,3719], 3751, [3850,3879], [3880,3999], 4813, [4830,4899], [5000,5079], [5090,5099], [5130,5159], [5220,5999], [6000,6999], [7000,7299], and [7400,9999]; the remaining industries are defined as low customer sensitivity industries.	Lev et al. (2010)
Industry Debt Level	An industry is classified as a high-debt (low-debt) industry in a given year if its average long-term debt ratio is above (below) the median of the overall sample two years before the base year.	Campello (2003) and Campello and Fluck (2006)
Industry Concentration (FFC)	An industry is classified as highly (less) concentrated if its four-firm concentration ratio is above (below) 0.4 two years before the base year.	Opler and Titman (1994)
Industry Concentration (HHI)	An industry is classified as highly (less) concentrated if its HHI is above (below) the overall sample median two years before the base year.	Compustat data
Panel E. Other variables (internet appendix)		
IV1_BLUE	Instrument for CSR equal to 1 if a firm's headquarters is in a blue state and 0 otherwise. Blue states are those whose residents vote predominantly for the Democratic party's presidential candidate.	270towin.com
IV2_CSR	Instrument for *CSR*, defined as one-year lagged *CSR*.	MSCI ESG STATS
IV1_HLEV	Instrument for *HLEV* defined as one-year lagged *HLEV*.	As above

IV2_HLEV	Instrument for *HLEV* defined as two-year lagged *HLEV*.	As above
PU	Policy uncertainty, equal to the raw policy uncertainty index from Baker et al. (2015) weighted by year (or quarter) and then scaled by 100. The raw policy uncertainty index contains three components: count of newspaper articles containing key terms related to political uncertainty; the dollar effect of tax provisions set to expire in the near future; and dispersion in the economic forecasts of CPI and government spending.	Baker et al. (2015)

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Table 1. Sample distribution by industry and year

Panel A. Sample distribution by industry

#	Industry	N	%
1	Agriculture	51	0.31
2	Food products	417	2.54
3	Candy & soda	45	0.27
4	Beer & liquor	101	0.62
5	Tobacco products	29	0.18
6	Recreation	102	0.62
7	Entertainment	228	1.39
8	Printing & publishing	204	1.24
9	Consumer goods	401	2.45
10	Apparel	344	2.10
11	Healthcare	200	1.22
12	Medical equipment	579	3.53
13	Pharmaceutical products	708	4.32
14	Chemicals	578	3.53
15	Rubber & plastic products	111	0.68
16	Textile	26	0.16
17	Construction materials	390	2.38
18	Construction	254	1.55
19	Steel works	280	1.71
20	Fabricated products	5	0.03
21	Machinery	827	5.05
22	Electrical equipment	288	1.76
23	Automobiles & truck	365	2.23
24	Aircraft	155	0.95
25	Shipbuilding & industrial metal mining	40	0.24
26	Defense	50	0.31
27	Precious metals	3	0.02
28	Non-metallic & industrial metal mining	72	0.44
29	Coal	59	0.36
30	Petroleum & natural gas	828	5.05
32	Communication	599	3.65
33	Personal services	248	1.51
34	Business services	2,017	12.31
35	Computers	757	4.62
36	Electronic equipment	1,303	7.95
37	Measuring & control equipment	442	2.70
38	Business supplies	370	2.26
39	Shipping containers	75	0.46

Panel A. Sample distribution by industry

#	Industry	N	%
40	Transportation	348	2.12
41	Wholesale	608	3.71
42	Retail	1,463	8.93
43	Restaurants, hotels & motels	359	2.19
46	Real estate	61	0.37
	Total	16,390	100.00

Panel B. Sample distribution by year

Year	N	%
1996	340	2.07
1997	340	2.07
1998	331	2.02
1999	327	2.00
2000	322	1.96
2001	333	2.03
2002	345	2.10
2003	589	3.59
2004	622	3.79
2005	1,600	9.76
2006	1,619	9.88
2007	1,565	9.55
2008	1,575	9.61
2009	1,612	9.84
2010	1,678	10.24
2011	1,656	10.10
2012	1,536	9.37
Total	16,390	100.00

Notes: This table presents the Fama–French (1997) 48-industry and fiscal year distributions for our sample of 16,390 firm-year observations representing 2,739 unique firms.

Table 2. Descriptive statistics

	N	Mean	SD	Minimum	Q1	Median	Q3	Maximum
$SALES\_G_t$	16,390	0.08	0.22	-0.98	-0.01	0.07	0.16	1.95
CSR_{t-2}	16,390	-0.14	0.48	-3.00	-0.40	-0.17	0.09	3.83
$HLEV_{t-2}$	16,390	0.29	0.45	0.00	0.00	0.00	1.00	1.00
$SIZE_t$	16,390	7.30	1.58	1.07	6.15	7.22	8.33	12.72
$PROFIT_{t-1}$	16,390	0.08	0.14	-2.66	0.05	0.09	0.13	0.38
$PROFIT_{t-2}$	16,390	0.08	0.14	-3.57	0.05	0.09	0.14	0.38
$INVESTMENT_{t-1}$	16,390	0.05	0.06	0.00	0.02	0.04	0.07	0.40
$INVESTMENT_{t-2}$	16,390	0.06	0.06	0.00	0.02	0.04	0.07	0.40
$SELLEXP_{t-1}$	16,390	0.31	0.45	0.02	0.13	0.24	0.38	10.72
$SELLEXP_{t-2}$	16,390	0.31	0.44	0.02	0.13	0.24	0.38	10.72

Notes: This table reports the descriptive statistics for the key variables (before industry-year adjustments) used in Equations (1) and (2).

Table 3. CSR and the costs of high leverage

	OLS	OLS	Firm Fixed Effects
	(1)	(2)	(3)
$CSR_{t-2} \times HLEV_{t-2}$		0.025***	0.021***
		(3.28)	(2.57)
$HLEV_{t-2}$	-0.016***	-0.015***	-0.026***
	(-3.86)	(-3.85)	(-4.42)
CSR_{t-2}		-0.010**	-0.014**
		(-2.11)	(-2.48)
$SIZE_t$	-0.000	0.000	0.051***
	(-0.02)	(0.19)	(7.85)
$PROFIT_{t-1}$	0.064***	0.064***	-0.022
	(3.11)	(3.13)	(-0.90)
$PROFIT_{t-2}$	-0.006	-0.006	-0.020
	(-0.29)	(-0.27)	(-0.82)
$INVESTMENT_{t-1}$	0.323***	0.324***	-0.023
	(3.75)	(3.78)	(-0.26)
$INVESTMENT_{t-2}$	0.111	0.112	-0.135
	(1.39)	(1.40)	(-1.37)
$SELLEXP_{t-1}$	0.000	0.000	0.040***
	(0.00)	(0.01)	(2.62)
$SELLEXP_{t-2}$	0.018	0.019	0.054**
	(1.17)	(1.18)	(2.52)
CONSTANT	-0.009**	-0.009**	-0.061***
	(-2.37)	(-2.44)	(-4.87)
N	16,390	16,390	16,390
R-squared	0.012	0.013	0.019

Notes: This table reports the results for the costs of high leverage (Model 1) and the effect of CSR on the costs of high leverage using OLS (Model 2) and firm fixed-effect model (Model 3). The dependent variable is industry-adjusted sales growth (*SALES_G*). The main variables of interest are industry-adjusted CSR (*CSR*) and a dummy variable equal to 1 if the firm's long-term debt-to-assets ratio is in the top three deciles of the overall sample in the given year (*HLEV*). Additional variable definitions are provided in Appendix B. All of the control variables are adjusted to their industry-year means and are winsorized at the 1% and 99% levels to mitigate the influence of outliers. To ensure that the industry-year mean is not biased toward outliers, we require that each industry-year contain at least four firms. The sample period is 1996 to 2012. The reported *t*-statistics are based on standard errors that are heteroskedasticity-consistent and allow for clustering at the firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 4. Endogeneity tests: Regression of discontinuity design (RDD)

	Bandwidth around Majority Threshold				All Obs. (order = 3)		All Obs. (order = 4)	
	-10; +10	-7.5; +7.5	-5; +5	-2.5; +2.5	no controls	with controls	no controls	with controls
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
$CSR\_PASSED_{t-2} \times HLEV_{t-2}$	0.238***	0.201**	0.256**	0.662***	0.265***	0.223***	0.268***	0.232***
	(3.37)	(2.42)	(2.12)	(27.24)	(3.29)	(2.61)	(3.73)	(2.89)
$HLEV_{t-2}$	-0.138**	-0.116	-0.209**	-0.651***	-0.275***	-0.220***	-0.277***	-0.229***
	(-2.16)	(-1.60)	(-2.16)	(-22.27)	(-3.56)	(-2.71)	(-4.10)	(-3.07)
CSR_PASSED_{t-2}	-0.036	-0.036	-0.068	0.165***	0.251	0.220	0.318	0.258
	(-0.47)	(-0.37)	(-0.44)	(4.26)	(1.11)	(1.03)	(1.20)	(1.03)
N	102	67	37	18	1,527	1,527	1,527	1,527
R-squared	0.316	0.390	0.335	0.991	0.007	0.029	0.009	0.029

Notes: This table reports the RDD regression results. The dependent variable is industry-adjusted sales growth (*SALES_G*). *CSR_PASSED* is obtained from RiskMetrics and SharkRepellent and is a dummy variable equal to 1 if a CSR proposal is adopted and 0 otherwise. *HLEV* is a dummy variable equal to 1 if in the given year, the firm's long-term debt-to-assets ratio is in the top three deciles of the overall sample. Additional variable definitions are provided in Appendix B. Models 1 to 4 restrict the sample to close-call CSR proposals that pass or fail within a margin of +-10%, +-7.5%, +-5%, and +-2.5% of the majority threshold. Models 5 to 8 use the full sample of CSR proposals. Models 5 and 6 (7 and 8) control for polynomials of order 3 (4) on the left and right sides of the majority threshold without and with control variables, respectively. All of the control variables are adjusted to their industry-year means and are winsorized at the 1% and 99% levels to mitigate the influence of outliers. The sample period is 1999 to 2014. Reported *t*-statistics are based on standard errors that are heteroskedasticity-consistent and allow for clustering at the firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 5. Endogeneity tests: Exogenous shock of import tariff reduction

	Difference-in-difference
	(1)
$Post\text{-}reduction_t \times CSR_{t-2} \times HLEV_{t-2}$	0.074**
	(2.13)
$CSR_{t-2} \times HLEV_{t-2}$	-0.044
	(-1.42)
$Post\text{-}reduction_t \times HLEV_{t-2}$	-0.041
	(-0.83)
$Post\text{-}reduction_t \times CSR_{t-2}$	-0.067**
	(-2.04)
$HLEV_{t-2}$	0.023
	(0.46)
CSR_{t-2}	0.043
	(1.35)
$Post\text{-}reduction_t$	0.060*
	(1.88)
$SIZE_t$	0.050***
	(5.12)
$PROFIT_{t-1}$	-0.109***
	(-2.69)
$PROFIT_{t-2}$	-0.039
	(-0.96)
$INVESTMENT_{t-1}$	-0.295*
	(-1.92)
$INVESTMENT_{t-2}$	-0.145
	(-0.93)
$SELLEXP_{t-1}$	0.075***
	(3.79)
$SELLEXP_{t-2}$	0.047*
	(1.84)
CONSTANT	-0.088**
	(-2.44)
Firm Fixed Effect	Yes
N	5,880

Notes: This table reports the difference-in-difference regression by introducing the exogenous shock of import tariff reduction. The dependent variable is industry-adjusted sales growth (*SALES_G*). *Post_reduction* is a dummy equal to 1 if the tariff reduction has taken place in industry *j* by time *t* (Valta, 2012). The main variables of interest are industry-adjusted *CSR* and *HLEV*, a dummy variable equal to 1 if, in the given year, the firm's long-term debt-to-assets ratio is in the top three deciles of the overall sample. Additional variable definitions are provided in Appendix B. The difference-in-difference model includes firm fixed-effect. All of the control variables are adjusted to their industry-year means and are winsorized at the 1% and 99% levels to mitigate the influence of outliers. The sample period is 1996 to 2012. Reported *t*-statistics are based on standard errors that are heteroskedasticity-consistent and allow for clustering at the firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 6. CSR and the costs of high leverage: Customer channel

	Firm R&D Intensity		Product Differentiation		Customer Sensitivity	
	High	Low	Differentiated or Service	Standardized	High	Low
	(1)	(2)	(3)	(4)	(5)	(6)
$CSR_{t-2} \times HLEV_{t-2}$	0.035***	-0.003	0.032***	0.010	0.029***	0.007
	(3.52)	(-0.20)	(2.86)	(0.88)	(3.16)	(0.51)
$HLEV_{t-2}$	-0.013**	-0.042***	-0.017**	-0.017*	-0.023***	-0.028***
	(-2.23)	(-4.48)	(-2.40)	(-1.73)	(-3.28)	(-3.07)
CSR_{t-2}	-0.020***	0.001	-0.010	-0.013	-0.007	-0.019*
	(-3.16)	(0.16)	(-1.29)	(-1.35)	(-1.10)	(-1.95)
$SIZE_t$	0.011***	0.050***	0.051***	0.029**	0.042***	0.060***
	(4.32)	(5.25)	(6.56)	(2.30)	(4.85)	(6.05)
$PROFIT_{t-1}$	0.021	-0.003	-0.011	-0.062	0.030	-0.066**
	(0.79)	(-0.07)	(-0.44)	(-0.78)	(0.78)	(-1.96)
$PROFIT_{t-2}$	0.022	-0.073*	0.007	-0.068	-0.044	-0.015
	(0.84)	(-1.88)	(0.24)	(-0.92)	(-1.16)	(-0.47)
$INVESTMENT_{t-1}$	-0.053	0.151	-0.189**	-0.305	0.061	-0.102
	(-0.39)	(1.29)	(-2.14)	(-1.54)	(0.62)	(-0.77)
$INVESTMENT_{t-2}$	0.031	-0.125	-0.005	-0.399*	-0.019	-0.223*
	(0.30)	(-0.96)	(-0.05)	(-1.71)	(-0.14)	(-1.66)
$SELLEXP_{t-1}$	0.043***	-0.122***	0.072***	0.086***	0.105***	-0.032
	(2.71)	(-3.72)	(4.32)	(3.29)	(5.32)	(-1.30)
$SELLEXP_{t-2}$	0.011	0.036	0.068**	0.028	0.032	0.056*
	(0.55)	(1.08)	(2.22)	(0.87)	(1.30)	(1.95)
CONSTANT	-0.016**	-0.082***	-0.065***	0.004	-0.041***	-0.092***
	(-2.23)	(-5.25)	(-4.59)	(0.15)	(-2.73)	(-4.24)
N	8,653	7,737	10,969	3,267	7,520	8,870
R-squared	0.026	0.022	0.023	0.062	0.046	0.015

Notes: This table reports the results from re-running our analysis on the effects of CSR on high leverage costs using subsamples split by characteristics related to customer-driven costs of high leverage. All regressions include firm-fixed effect. The dependent variable is industry-adjusted sales growth (*SALES_G*). The main variables of interest are industry-adjusted *CSR* and *HLEV,* a dummy variable equal to 1 if, in the given year, the firm's long-term debt-to-assets ratio is in the top three deciles of the overall sample. Additional

variable definitions are provided in Appendix B. All of the control variables are adjusted to their industry-year means and are winsorized at the 1% and 99% levels to mitigate the influence of outliers. In Models 1 and 2, we proxy for the degree of product specialization using R&D expenditures. A firm is classified as a high-R&D (low-R&D) intensity firm in a given year if its R&D-to-sales ratio is greater (smaller) than 0.1% two years before the base year (Opler and Titman, 1994). In Models 3 and 4, differentiated or services (standardized) refers to industries that produce differentiated or services (standardized) products. Following Giannetti et al. (2011) and Rauch (1999), industries with differentiated goods have SIC2 codes 25, 27, 30, 32, 34, 35, 36, 37, 38, and 39, while industries with standardized goods or services have SIC2 codes 12, 14, 20, 22, 23, 24, 26, 28, 29, 31, 33, 41, 42, 44, 45, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 59, 61, 64, 65, 73, 75, 78, and 79. In Models 5 and 6, high (low) customer sensitivity refers to industries in which the predominant customer is a consumer (industrial buyer). Following Lev et al. (2010), high customer sensitivity industries have the SIC4 ranges [0,999], [2000,2399], [2500,2599], [2700,2799], [2830,2869], [3000,3219], [3420,3429], 3523, [3600,3669], [3700,3719], 3751, [3850,3879], [3880,3999], 4813, [4830,4899], [5000,5079], [5090,5099], [5130,5159], [5220,5999], [6000,6999], [7000,7299], and [7400,9999]; the remaining industries are defined as low customer sensitivity industries. To ensure that the industry-year mean is not biased toward outliers, we require that each industry-year contain at least four firms. The sample period is 1996 to 2012. The reported *t*-statistics are based on standard errors that are heteroskedasticity-consistent and allow for clustering at the firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 7. CSR and the costs of high leverage: Competitor channel

	Industry Debt Level		Industry Concentration (FFC)		Industry Concentration (HHI)	
	Low	High	High	Low	High	Low
	(1)	(2)	(3)	(4)	(5)	(6)
$CSR_{t-2} \times HLEV_{t-2}$	0.035***	0.010	0.022***	0.031	0.019*	0.015
	(2.60)	(0.86)	(2.67)	(0.73)	(1.73)	(1.11)
$HLEV_{t-2}$	-0.011	-0.041***	-0.027***	0.013	-0.038***	-0.021**
	(-1.16)	(-5.07)	(-4.47)	(0.44)	(-4.23)	(-2.52)
CSR_{t-2}	-0.019**	-0.006	-0.017***	-0.008	-0.022***	-0.005
	(-2.55)	(-0.68)	(-2.76)	(-0.39)	(-2.90)	(-0.53)
$SIZE_t$	0.056***	0.049***	0.050***	0.063	0.061***	0.063***
	(5.65)	(5.50)	(7.45)	(1.62)	(6.10)	(6.89)
$PROFIT_{t-1}$	-0.035	-0.065	-0.022	-0.067	-0.086**	-0.011
	(-1.13)	(-1.51)	(-0.85)	(-1.08)	(-2.03)	(-0.41)
$PROFIT_{t-2}$	0.015	-0.137***	-0.018	0.049	-0.132***	0.091***
	(0.54)	(-3.17)	(-0.69)	(0.63)	(-3.45)	(3.63)
$INVESTMENT_{t-1}$	-0.308**	0.118	-0.025	-0.206	0.145	-0.250***
	(-2.46)	(0.96)	(-0.26)	(-0.73)	(0.95)	(-2.63)
$INVESTMENT_{t-2}$	-0.104	-0.154	-0.130	0.233	-0.241	0.056
	(-0.84)	(-1.13)	(-1.27)	(0.85)	(-1.53)	(0.48)
$SELLEXP_{t-1}$	0.089***	-0.125***	0.040**	0.415***	0.036*	0.045***
	(4.74)	(-4.44)	(2.57)	(3.38)	(1.66)	(2.62)
$SELLEXP_{t-2}$	0.058**	0.006	0.050**	0.510***	0.029	0.116***
	(2.41)	(0.24)	(2.34)	(3.54)	(1.16)	(4.46)
CONSTANT	-0.063***	-0.078***	-0.060***	0.103	-0.040**	-0.104***
	(-3.28)	(-4.63)	(-4.47)	(1.08)	(-2.22)	(-5.55)
N	8,823	7,567	15,260	1,130	8,175	8,215
R-squared	0.043	0.022	0.019	0.085	0.027	0.029

Notes: This table reports the results from re-running our analysis on the effects of CSR on high leverage costs using subsamples split by characteristics related to the competitor-driven costs of high leverage. All regressions include firm-fixed effects. The dependent variable is industry-adjusted sales growth (*SALES_G*). The main variables of interest are industry-adjusted *CSR* and *HLEV,* a dummy variable equal to 1 if, in the given year, the firm's long-term debt-to-assets ratio is in the top three deciles of the overall sample.

Additional variable definitions are provided in Appendix B. All of the control variables are adjusted to their industry-year means and are winsorized at the 1% and 99% levels to mitigate the influence of outliers. In Models 1 and 2, we proxy for the financial condition of a firm's competitors using the industry-average debt level: an industry is classified as a high-debt (low-debt) industry in a given year if its average long-term debt ratio is above (below) the median of the overall sample two years before the base year (Campello, 2003; Campello and Fluck, 2006). In Models 3 and 4, we classify an industry as highly (less) concentrated if its four-firm concentration ratio is above (below) 40% (Opler and Titman, 1994) the overall sample median two years before the base year. In Models 5 and 6, we classify an industry as highly (less) concentrated if its HHI is above (below) the overall sample median two years before the base year. To ensure that the industry-year mean is not biased toward outliers, we require that each industry-year contain at least four firms. The sample period is 1996 to 2012. The reported *t*-statistics are based on standard errors that are heteroskedasticity-consistent and allow for clustering at the firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 8. Robustness checks

	$HLEV_{t-2}$						CSR_{t-2}				
	Top Decile		Total Debt		Lag 3 Years		CSR_NET_{t-2}	Adjusted CSR	PCA	No HUM	Add CGOV
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
$CSR_{t-2} \times HLEV_{t-2}$		0.068***		0.019**		0.024**	0.005***	0.020***	0.010***	0.023***	0.021***
		(3.13)		(2.09)		(2.53)	(2.65)	(2.66)	(2.73)	(2.85)	(3.10)
$HLEV_{t-2}$	-0.036***	-0.034***	-0.028***	-0.029***	-0.010**	-0.010**	-0.026***	-0.023***	-0.021***	-0.023***	-0.015***
	(-3.42)	(-3.20)	(-3.99)	(-4.07)	(-2.30)	(-2.26)	(-4.41)	(-3.98)	(-3.17)	(-4.19)	(-3.78)
CSR_{t-2}		-0.029**		-0.012**		-0.009	-0.003**	-0.020***	-0.007***	-0.015**	-0.007
		(-2.48)		(-2.25)		(-1.54)	(-2.30)	(-3.36)	(-2.61)	(-2.51)	(-1.53)
$SIZE_t$	0.015***	0.016***	0.050***	0.050***	0.000	0.000	0.051***	0.051***	0.064***	0.043***	0.000
	(3.98)	(4.22)	(7.73)	(7.69)	(0.18)	(0.32)	(7.82)	(7.91)	(8.95)	(7.01)	(0.07)
$PROFIT_{t-1}$	0.025	0.025	-0.020	-0.020	0.078***	0.078***	-0.022	-0.022	-0.053*	-0.009	0.064***
	(0.79)	(0.77)	(-0.82)	(-0.84)	(3.61)	(3.61)	(-0.91)	(-0.90)	(-1.93)	(-0.40)	(3.12)
$PROFIT_{t-2}$	0.008	0.007	-0.021	-0.021	-0.009	-0.009	-0.020	-0.019	-0.085**	-0.011	-0.006
	(0.23)	(0.22)	(-0.86)	(-0.88)	(-0.37)	(-0.36)	(-0.83)	(-0.79)	(-2.56)	(-0.45)	(-0.28)
$INVESTMENT_{t-1}$	0.494***	0.491***	-0.020	-0.021	0.271***	0.272***	-0.024	-0.022	-0.153	-0.039	0.324***
	(2.98)	(2.98)	(-0.22)	(-0.23)	(2.89)	(2.91)	(-0.27)	(-0.25)	(-1.40)	(-0.43)	(3.77)
$INVESTMENT_{t-2}$	0.035	0.043	-0.133	-0.134	0.125	0.127	-0.136	-0.133	-0.154	-0.131	0.111
	(0.21)	(0.25)	(-1.36)	(-1.36)	(1.45)	(1.47)	(-1.38)	(-1.35)	(-1.38)	(-1.41)	(1.38)
$SELLEXP_{t-1}$	0.001	0.001	0.040***	0.040***	-0.037**	-0.037**	0.040***	0.040***	0.003	0.042***	0.000
	(0.03)	(0.02)	(2.66)	(2.66)	(-2.47)	(-2.45)	(2.61)	(2.64)	(0.11)	(2.80)	(0.01)
$SELLEXP_{t-2}$	0.022	0.023	0.053**	0.053**	0.062***	0.062***	0.053**	0.054**	0.041*	0.050**	0.019
	(0.64)	(0.67)	(2.51)	(2.50)	(3.74)	(3.74)	(2.51)	(2.54)	(1.65)	(2.41)	(1.18)
CONSTANT	-0.005	-0.006	-0.062***	-0.061***	-0.012***	-0.012***	-0.061***	-0.065***	-0.100***	-0.059***	-0.009**
	(-0.58)	(-0.70)	(-4.92)	(-4.85)	(-2.96)	(-2.98)	(-4.84)	(-5.11)	(-6.31)	(-4.73)	(-2.39)
N	3,980	3,980	16,390	16,390	13,387	13,387	16,390	16,390	11,078	17,450	16,386
R-squared	0.022	0.025	0.019	0.019	0.014	0.015	0.020	0.020	0.020	0.017	0.012

Notes: This table reports the results for our main analyses on the costs of high leverage and the effect of CSR on the costs of high leverage using alternative definitions of *HLEV* and *CSR*. All regressions include firm-fixed effect. The dependent variable is industry-adjusted sales growth (*SALES_G*). The main variables of interest are industry-adjusted *CSR* and *HLEV,* a dummy variable equal to 1 if, in the given year, the firm's long-term debt-to-assets ratio is in the top three deciles of the overall sample. Additional variable definitions

are provided in Appendix B. All of the control variables are adjusted to their industry-year means and are winsorized at the 1% and 99% levels to mitigate the influence of outliers. Models 1 and 2 assign a value of 1 to top-decile firm-year observations and 0 to bottom-decile observations. Models 3 and 4 replace the long-term debt ratio with the total debt ratio. Models 5 and 6 lag both *CSR* and *HLEV* by three years to reflect the alternative definitions shown in Campello (2006). In Model 7, we use *CSR_NET*. In Model 8, we follow Jo and Harjoto (2012) and adjust *CSR_NET* by the total number of strength and concern factors. Model 9 creates a comprehensive measure of *CSR* by adopting principal component analysis. In Model 10, we exclude the human rights area (Hillman and Keim, 2001). In Model 11, *CSR* is computed based on all seven areas in MSCI ESG STATS to facilitate comparison with other CSR studies (e.g., Deng et al., 2013). To ensure that the industry-year mean is not biased toward outliers, we require that each industry-year contain at least four firms. The sample period is 1996 to 2012. The reported *t*-statistics are based on standard errors that are heteroskedasticity-consistent and allow for clustering at the firm level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.