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Beyond Warm Glow: The Risk-Mitigating Effect of Corporate Social Responsibility (CSR)

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Abstract

Corporate social responsibility (CSR) positively impacts relationships between firms and customers. Previous research construes this as an outcome of customers' warm glow that results from supporting firms' benevolence. The current research demonstrates that beyond warm glow, CSR positively impacts firms' sales through mitigating their customers' perceptions of purchase risk. We demonstrate this effect across three conditions in which customers' perceived risk of purchase is heightened, using both secondary data and two lab experiments. Under conditions of greater purchase risk (i.e., recessions, a service context, and longer-term consumer commitments), CSR positively impacts both sales and customer purchase intentions to a greater extent than in conditions of lower purchase risk. In addition to measuring purchase risk as the mediating process behind these effects, we demonstrate that the effect of CSR on sales is stronger for those CSR activities that signal a stakeholder orientation.

Keywords Corporate social responsibility (CSR) · Risk mitigation · Customer orientation · Benevolence

Research on corporate social responsibility (CSR) suggests that socially responsible activities can positively impact customer attitudes and lead to increased purchase intentions, willingness to pay higher prices, and enhanced loyalty (e.g., Creyer and Ross 1996; Mohr et al. 2001; Sen and Bhattacharya 2001). Most frequently, researchers have explained these effects as customers' desire to reward good deeds from

companies. Under such an account, the 'warm glow' that comes from helping others motivates customers to purchase goods or services from that firm, independent of other relevant attributes, such as quality or product performance (Giebelhausen et al. 2016; Peloza and Shang 2011). More recently, however, researchers have uncovered a halo effect (e.g., Kim and Choi 2018; Jin and Lee 2019) whereby CSR activities that are unrelated to the firm's products (such as charitable donations) alter customers' perceptions of product performance (Chernev and Blair 2015; Peloza et al. 2015).

Although this halo effect can impact customers' perceptions of product performance, the process through which this effect occurs remains unclear. Chernev and Blair (2015) suggest that a moral undertone is required and found that the effect is not present when customers view a firm's CSR as being motivated by self-interest. However, other research indicates that the majority of customers expect firms to be at least somewhat self-serving in their CSR investments, and that customers are willing to reward firms even if they perceive certain self-serving motivations (e.g., Mohr et al. 2001). Thus, our study hypothesizes an alternative, parallel

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route to benevolence¹ and its associated warm glow to examine how CSR can affect customers' perceptions of product quality/performance and subsequent purchases. Namely, we propose that CSR serves a purchase risk mitigation function for customers. We base this prediction on signaling theory and the potential for CSR to signal customer stewardship on the part of a firm. Furthermore, we propose that this signal manifests into having greater confidence in the performance of products from firms that invest in CSR, which in turn leads to increased purchases.

Our empirical examination spans multiple contexts and methods. Our first study utilizes secondary data, demonstrating that there is a greater impact of CSR on sales during a recession relative to periods of economic expansion.² We use the recessionary context for two reasons. First, it represents a context wherein benevolence, and the utility that customers receive from the warm glow associated with CSR, is likely to be given a lower priority than such attributes as quality. Second, because the purchase risks associated with making a poor decision are higher for customers who are facing financial constraints, the recessionary context allows us to directly test our risk mitigation hypothesis. Our two lab studies examine the risk mitigation hypothesis in controlled lab settings, which allow us to directly measure the risk-mitigating effect of CSR and establish causality. Our results indicate that the risk reduction effect of CSR is particularly impactful in service contexts, where customers are less able to directly predict performance a priori, and also in conditions where consumers are asked to make longer-term commitments, thereby increasing the potential for a possible product/service failure.

While past literature has examined the impact of CSR on financial risk and return, our research proposes an additional separate dimension that specifically examines customer patronage intentions based on risk-related perceptions of product performance. Indeed, past research has shown that announcements of CSR activities produce positive abnormal stock returns (Naughton et al. 2018) and the cost of capital (and thus risk) is lower for those firms known for their CSR (Sharfman and Fernando 2008). However, previous research typically also has construed this risk mitigation effect to be a protection mechanism for firms so they can offset costs associated with negative events, such as chemical spills (e.g., Godfrey 2005; Peloza 2006). Complementing this work on the investor stakeholder, in the current study we illustrate how CSR can impact risk perceptions for customers.

Specifically, we illustrate how customers interpret the signal from CSR to infer there is a lower risk associated with their purchases. We provide evidence of a complementary value creation role of CSR, quite different from studies that solely have focused on how investors interpret the information value of CSR based on the traditional asset pricing model. We also address calls from previous researchers who note that relatively few studies have examined the mediating process between CSR and financial performance, and further, that understanding these mediating processes are essential for understanding how CSR actually creates business value (e.g., Peloza and Shang 2011). Table 1 offers a brief but representative literature review that demonstrates our positioning within the broader CSR literature and shows the mechanism by which CSR impacts a firm's bottom line.

Finally, our research provides guidance to marketers who are under pressure to demonstrate positive outcomes from investments in CSR. Most notably, marketers can utilize CSR as a way to reduce risk in those contexts where risk is more salient. We also offer guidance on how marketers can best execute CSR, by investing in initiatives that are more likely to signal a customer orientation. Perhaps most counter intuitively, we provide evidence that CSR can provide value for firms by supporting sales during recessionary periods where pressures to cut CSR investments are the greatest.

CSR as a Signal of Customer Orientation and Benevolence

We employ signaling theory to explain the effects of CSR. Signaling theory was first introduced as a mechanism to reduce information asymmetry between two parties in labor markets where job candidates influenced the perceptions of prospective employers by distinguishing themselves as "high quality" candidates on their job applications and communicating the costly signal of a rigorous higher education (Spence 1978). Since this particular seminal work, signaling theory has been used in a wide variety of contexts (for a complete synthesis, see Connelly et al. 2011a). Moreover, signaling theory has been used specifically to explain the effects of CSR activities (e.g., Hur et al. 2014; Su et al. 2016; Connelly et al. 2011b). For example, customers and other stakeholders may have difficulty ascertaining the extent to which a firm's products and processes are sustainable, high quality, or dedicated to societal welfare, so firms will use CSR as a signal to reduce such information asymmetry (Connelly et al. 2011b). Customers only know the true value of products or services after they purchase and use them. Thus, until the customer experiences the product in actual use, they will have less information than the firm about how that product will perform. Firms, therefore, use costly signals to convey to their prospective customers that their

¹ Benevolence may be defined as the preservation and enhancement of the welfare of people (Schwartz and Bardi 2001).

² We do not imply that firm sales increase during recessions. Rather it is the effect of CSR on sales (i.e., the effect size of CSR) that increases during that time.

Table 1 Literature review

Citation	Relationship	Mechanism	Data source	Theoretical framework	Industry	Methodology
Our study	CSR sales	Risk reduction	Primary data from a lab experiment KLD, compustat	Signaling theory	Various	Mixed method
Rezaee and Tuo (2019)	CSR disclosure earnings	N/A	GRI sustainability reports, compustat, and CRSP	Voluntary disclosure theory	Various	Propensity score matching and OLS regression
Miller et al. (2018)	CSR ROA	Reputation	Federal Financial Institutions Examination Council's (FFIEC) website	Reputation literature, including recency bias	Banking	Panel regression
Brown et al. (2017)	CSR Financial performance (ROA and Tobin's Q)	Political activism	KLD, The Center for Responsive Politics, and Compustat	Unidentified	Regulated and non-regulated industries	General least squares reduction
Oh et al. (2017)	CSR Idiosyncratic risk	Advertising	KLD and compustat	Unidentified	"Sinful"—e.g., tobacco, alcohol, gaming, firearm, military, and nuclear power industries	Panel regression
Lins et al. (2017)	CSR Financial returns	Trust (posited, not empirically tested)	MSC I ESG stats database, compustat and CRSP	Social capital	Various excluding financial firms	Difference-in-difference regression
Habel et al. (2016)	CSR perceived price fairness; perceived costs	Warm glow; extra charge	Primary data gathered from five experiments	Distributive justice	N/A	Field and lab experiments
Kang et al. (2016)	CSR and CSI-performance	N/A (Firm perspective for undertaking CSR)	KLD and compustat	Economic theory (model)	Various	Structural panel vector autoregressive
Mishra and Modi (2016)	CSR shareholder performance	N/A	Compustat, CRSP, and KLD	Stakeholder theory	Various	Seemingly unrelated regression
Chernev and Blair (2015)	CSR Perceived product performance	Warm glow effect	Primary data	Halo effect	N/A	Experimental design
Casado-Díaz et al. (2014)	CSR Abnormal returns	N/A	Spanish stock market	Information theory	Various	Event study
Jayachandran et al. (2013)	CSR Tobin's Q	Firm Legitimacy (theorized, but not tested)	KLD and COMPUSTAT	Diagnosticity theory (for negativity bias)	Various	Hierarchical linear modeling (HLM)

products have a higher value than other options and thus are more worthy of consideration.

In concert with the two syntheses of the CSR literature (Peloza and Shang 2011; Zerbini 2017), we provide two paths through which CSR can signal greater perceived value to customers. One path suggests that a company's pro-social behavior signals benevolence—an act that is appreciated by customers and indeed may strengthen their product evaluations (Chernev and Blair 2015). The value under this path is analogous to the warm glow that charity donors receive from helping others in need (Peloza and Shang 2011). An alternative path is through customers' interpretation of CSR processes as a signal of customer stewardship, enhancing perceptions that the firm invests in value chains aimed at providing goods and services to better serve their customers. Thus, CSR may indicate to customers that such companies are particularly dedicated to customer welfare.

Unlike benevolence, a customer stewardship perspective implies that such a signal will reduce the risk of purchase since customers will believe that the customer-oriented firm that makes these products has a strong disinclination to provide inferior products or services (Hellofs and Jacobson 1999; Kirmani and Rao 2000). Further still, this conceptualization does not depend on the moral standings of customers, or on the value those customers place on warm glow.

Many types of perceived risk, including functional, financial, physical, psychological, and social, have been identified in the past literature (e.g., Janakiraman et al. 2016). We define purchase risk as the probability of loss or the expectations of negative utility that a customer faces when making a wrong choice for a purchase (Mandel 2003). For instance, a customer may perceive there is a risk when buying a product that is of uncertain quality or that a product may not match her or his needs. A customer-oriented firm has incentives to provide higher quality products and an even greater disincentive to not provide sub-par products (Erdem and Swait (1998) make a similar argument for strong brands and the costs associated with poor quality). Hence, from a customer orientation perspective, customers will perceive a firm's CSR activities as a signal of commitment to meeting their needs. The current research thus posits that such a signal helps establish the positioning of the firm as customer-oriented, which in turn reduces purchase risk for both current and future customers.

Signaling theory also posits that signals can be of varying strengths and value (Bergh et al. 2014). For instance, Connelly et al. (2011b) suggest that the signaling process will be more effective if the receiver is actually looking for the signal. In our context, because the expected probabilities of loss (i.e., the expectations of making a wrong choice) are higher when there is greater uncertainty, we propose that the risk mitigation signal provided by CSR will be stronger when the probability, consequence or importance of loss is

higher, such as when (a) customers are resource-constrained as in during recessions, (b) there is a greater quality uncertainty a priori such as for services (compared to products), or (c) the consumer is asked to make a longer-term commitment to a provider.

In sum, we predict that CSR as a signal from a firm to its customers increases the perceived value of that firm's product/service offerings leading to greater overall sales for the firm (e.g., Kang et al. 2016). For this reason, we formally hypothesize a positive relationship between CSR and sales over time. Further, we posit an additional pathway to performance that is not explained by the 'warm glow' effect. Taken together, we thus offer the following two hypotheses:

H₁ CSR positively affects firm sales.

H₂ The effect of CSR on sales is mediated through a reduction in perceived risk for customers.

Study 1

To test our risk mitigation hypotheses, we first look at firm sales during recessions. The recession environment is important to study because it represents a time of greater risk for customers. Apart from producing a greater customer focus on risk aversion (e.g., Levy 2003), a recession also provides an opportunity to test our risk mitigation hypotheses against an effect that is driven by customer warm glow. This effect occurs because during recessionary periods, customers place lower priorities on CSR activities that do not create tangible (and immediate) performance or cost benefits for the customer, such as a reduction in energy usage (Flatters and Willmoth 2009).

In times of economic uncertainty, overall value—defined as quality versus price (Zeithaml 1988)—becomes critically important. Previous research has demonstrated that when customers' ability to buy becomes restricted due to recession realities, they may postpone purchasing, reduce quantity, or make other trade-offs when making spending decisions (Lamey et al. 2007; Green and Peloza 2011). Importantly, spending becomes less habitual and more thoughtful due to increased purchase risks. For instance, customers are known to prefer private labels to national brands during recessions since they often find the utilitarian value of private labels are quite similar to those of national brands (e.g., Lamey et al. 2007). When customer wealth is imperiled, purchases become more deliberate and thoughtful. Under such conditions, customers are more likely to make use of additional signals, such as CSR, as indicators of product/service value to avoid making erroneous choices and wasting precious resources (both time and money). Thus, the following hypothesis is offered:

H₃ The effect of CSR on sales increases during recessionary periods.

We further examine our underlying process by distinguishing between CSR that is typically associated with the warm glow from benevolence (such as a donation to a charity, which is external to a firm) and process-oriented investments in CSR (which is related to internal firm practices and products). A recession essentially motivates consumers to lower their standard of living. Under such conditions, the customer appreciates a firm's CSR activities that provide direct value to them more than simply benevolent activities intended for the general good of society. Further, CSR attributes embodied in the functioning and processes of the firm (such as employee relations and diversity) imply that the particular firm is committed to ethical practices within its internal operations (thereby catering to the needs of the company's internal stakeholders) even during difficult times. Hence, customers may assume that the firm will also take care of its customers'—arguably one of a firm's most important stakeholders—needs as well.

While both benevolent and process-oriented (PO) CSR may help enhance a firm's reputation and signal higher product quality (and to that extent reduce purchase risk), PO-CSR will additionally reduce such risks of purchase by signaling the firm's commitment to current stakeholders, including its customers. Similar to recent research on the halo effect (e.g., Kim and Choi 2018; Jin and Lee 2019), this commitment may be translated into a lower probability of the firm providing inferior products or services (which further translates to lower probabilities of loss for the customer and hence lower risk). Conversely, benevolent CSR signals a warmer, more ethical, and more compassionate firm by altruistically donating to charities (e.g., Aaker et al. 2010); however, it may not impact perceptions of product performance. In fact, some of the literature (e.g., Luchs et al. 2010) suggests that brands embodying benevolent CSR are likely to be perceived as underperforming in their strength-related attributes (for instance, the effectiveness of an organic shampoo in cleaning hair). Hence, during recessions, when customers' aversion to loss is heightened (e.g., Ailawadi et al. 2001), the effectiveness of PO-CSR should be greater. Overall, we thus hypothesize:

H₄ The effect of process-oriented CSR on sales is greater than that of Benevolent-CSR during recessionary periods.

Method (Study 1)

Sample

To construct the sample, we matched accounting data from COMPUSTAT (which collects financial information for all

US listed companies from 10K/10Q disclosures) with annual social responsibility data from KLD and the BAV metrics survey. Following Tavassoli et al. (2014), we used annual brand metrics from the US BAV metrics survey since we wanted to control for the effects of brand value on sales. Specifically, we want to explain variance in sales above and beyond what could be caused by the effect of CSR on brand value. The time series unit of analysis for our study is the fiscal year since KLD data are only available annually. Our final sample consists of data for 137 publicly traded companies, across 19 industries, during a 9-year period between 2007 and 2015, producing a total of 801 firm-year observations. Our available data are unbalanced panel because not all companies appeared in KLD for the duration of our sample and not all brands are included in every annual edition of the BAV survey. We addressed the missing data issue through list-wise deletion.

Measures

Dependent Variable *Firm Sales* We used firm sales (Item Sale in COMPUSTAT) as our outcome variable of interest.³

Independent Variables *Corporate Social Responsibility (CSR)* We obtained the CSR scores from the KLD database, which to the best of our knowledge, is the most widely used measure for CSR in the marketing literature. Kinder, Lydenberg, Domini & Co., Inc. (KLD) applies a series of social screens, each composed of several individual, objective measures of a corporation's social responsibility. KLD tracks hundreds of firms and provides an expert score for CSR performance for each of seven CSR categories (see Table 5 in Appendix 1 for a detailed explanation of each category). We used all seven categories reported by KLD that reflected the firms' relationships with their various primary and secondary stakeholders. These stakeholders include customers, employees, financial community, and the society at large. For each of these seven categories, KLD offers a count rating of a firm's strengths (i.e., positive initiatives) and concerns (i.e., controversies). Following prior research, we assumed all strength indicators as being CSR (e.g., Kashmiri and Mahajan 2010; Kotchen and Moon 2011), the mean of which provides a measure of the overall CSR.

Benevolent CSR We defined this variable as the mean of CSR strength ratings related to altruistic endeavors of the firm, or those that are external to the firm itself. These include community, human rights, and environmental

³ We also used market share as an alternate outcome of interest and show that our results are robust. We thank an anonymous reviewer for this helpful suggestion.

investments (for a detailed explanation of each category, see Table 5 in Appendix 1).

Process-oriented CSR We defined this variable as the mean of CSR strength ratings related to *internal* firm endeavors that do not have a goodwill connotation attached, but may serve to signal an overall stewardship approach by the firm. These included product, diversity, governance and employee relations.

Recessionary Period We considered the years 2008 and 2009 as the recessionary period for this study on the basis that these years showed a negative change in gross GDP (e.g., Gregg and Wadsworth 2010; Kashmiri and Mahajan 2010).

Control Variables (Firm Level) We used seven controls to capture the ability and willingness of firms to engage in CSR during and outside of recession periods.

Brand Value Studies have shown that brand value is a strong indicator of a firm's financial performance (e.g., Srinivasan et al. 2010). Brands may also affect the amount and type of CSR that a firm engages in, hence leading to endogeneity. Further, we are interested in observing the risk reducing propensity of CSR more than the quality-enhancing aspect, although the two may be somewhat related. Whereas higher quality can represent a value-add for customers, risk reduction is about mitigating loss. Overall, we wanted to control for the quality signal established by brands to show the additional risk reducing mechanism of CSR. We thus controlled for brand value by using the overall brand asset metric constructed by BAV Consulting as our measure. The Y&R BAV model is based on the assumption that brand value is a multidimensional construct that can be assessed through customer perception measurements (Mizik and Jacobson 2008). In the case of multi-brand firms, we took the mean of brand value.

CSR History We considered the number of years that a firm has been part of the KLD database as a control for that firm's history of social responsibility practices. This accounts for any managerial emphasis on CSR practices. It is expected that a firm that has consistently engaged in CSR may continue to do so for the foreseeable future since they may consider CSR as a way of doing business instead of simply an investment.

Firm Size We calculated firm size as the natural logarithm of a firm's total assets. The inclusion of size as a control allows us to account for efficiencies of scale that a firm may enjoy across its CSR activities, which may in turn impact that firm's propensity to engage in CSR as well as the resources that firm has to drive greater sales.

Financial Leverage Firm financial leverage is the ratio of long-term book debt to total assets (Thomas 2002). Financial leverage may determine the financial slack a firm possesses, which may then impact its ability and

willingness to continually engage in CSR throughout the recession.

Liquidity Firm liquidity measures a company's ability to pay both its short-term and long-term obligations. It is calculated as the ratio of the firm's current total assets to its current total liabilities. Like leverage, liquidity also may determine the financial slack the firm possesses, which may affect its propensity to engage in CSR through the recession.

R&D Spending R&D spending was obtained as a line item (Item XRD) in COMPUSTAT. Following Rothenberg and Zyglidopoulos (2007) who stated that R&D-intensive firms are more likely to engage in CSR, we included R&D spending as a control. Since we already controlled for firm assets (to account for firm size), we used an absolute measure of advertising and R&D spending instead of a measure relative to a firm's total assets (e.g., Luo and Bhattacharya 2009).

Advertising Spending Advertising spending was obtained as an expense (Item XAD) in COMPUSTAT. Following McWilliams and Siegel (2001), who showed that advertising can often be a substitute for CSR in terms of building reputation, and thus, firms may choose to do one instead of the other, we included advertising spending as a control. Once again, we used the absolute expense measure since we already had incorporated firm size in our model. Taken together with our controls for R&D spending and brand value, ad spending should also serve to control for the unobserved effect of CSR visibility (in that the CSR efforts of a more reputable company that spends more on advertising should be more visible).

Hirschman Herfindahl Index (HHI) We also controlled for HHI, which is an indicator of the amount of competition between firms in an industry. It is calculated as the sum of the squares of the market shares of firms within a particular industry, where market share is measured as the sales of a firm divided by the total sales of all firms within the same industry.

We report the correlation matrix and descriptive statistics of the variables in our study in Table 2.

Model Development

Our data set included both cross-sectional and temporal dimensions, and as such, calls for applying suitable panel data techniques for analysis. We tested our hypotheses using GLS random-effects regression with cluster robust standard errors. This approach is preferred to a fixed-effects estimator since in our case we are investigating the impact of a certain period of time (in this case, the recession). Further, CSR scores for a particular firm are 'sticky' and generally do not show much variance across time. Variance inflationary factors and condition indices statistics were well below standard cutoffs, which indicated no problems with multicollinearity.

Table 2 Study 1 correlations and descriptive statistics

Variable	Mean	S.D	1	2	3	4	5	6	7	8	9	10	11	12
1. Sales	4.11	6.78	1.00											
2. Brand value (rating)	0.31	0.42	0.252	1.00										
3. CSR (rating)	0.25	0.21	0.356	0.419	1.00									
4. Benevolent CSR (rating)	0.19	0.20	0.151	0.109	0.382	1.00								
5. Process-oriented CSR (rating)	0.12	0.13	0.022	0.183	0.757	0.252	1.00							
6. R&D expenditures (\$100 M)	1.54	2.38	0.419	0.194	0.438	0.314	0.231	1.00						
7. Advertising expenditures (\$100 M)	1.03	1.32	0.265	0.332	0.485	0.255	0.495	1.00						
8. Financial leverage	0.25	0.38	-0.115	-0.003	-0.161	-0.141	-0.147	-0.071	1.00					
9. Liquidity (ratio)	1.63	0.89	-0.203	-0.051	-0.077	-0.077	-0.028	0.170	-0.088	1.00				
10. Firm size	9.78	2.08	0.297	0.077	0.578	0.463	0.407	0.425	0.506	-0.277	1.00			
11. CSR history	15.60	5.12	0.346	0.400	0.430	0.047	0.327	0.032	0.156	-0.090	0.110	1.00		
12. Recessionary environment	0.42	0.81	-0.158	0.034	-0.111	-0.226	-0.040	-0.017	-0.020	0.013	-0.057	-0.058	1.00	

Bold correlations are significant at $p = 0.05$ (2-tailed)

We used the following full model specification to test Hypothesis 1:

$$\begin{aligned}
 \text{Sales}_{i,t} = & \alpha_0 + \alpha_1 \text{CSR}_{i,t} + \alpha_2 \text{Firm Size}_{i,t} + \alpha_3 \text{CSR History}_{i,t} \\
 & + \alpha_4 \text{R\&D}_{i,t} + \alpha_5 \text{Advertising}_{i,t} + \alpha_6 \text{Financial Leverage}_{i,t} \\
 & + \alpha_7 \text{Financial Liquidity}_{i,t} + \alpha_8 \text{Recessionary Year}_t \\
 & + \alpha_9 \text{Brand Value}_{i,t} + \alpha_{10} \text{CSR}_{i,t} * \text{Recessionary Year}_t \\
 & + \alpha_{11} \text{HHI}_t + \varphi_i + \varepsilon_{i,t}
 \end{aligned}
 \tag{1}$$

In Eq. (1), i indicates the firm, t refers to time (year), and φ_i and $\varepsilon_{i,t}$ are the random error terms that represent all the unobserved influences on sales. In our model, we controlled for firm size, financial leverage, liquidity ratio, CSR history, advertising and R&D expenditures that would potentially influence both the willingness and the ability of that firm to invest in CSR and/or potentially influence the sales of that firm. To test our first hypothesis, we excluded the interaction term. We also controlled for unobserved industry effects by including HHI in our model.

Addressing Heterogeneity Concerns If data are perfectly homogeneous, then pooling across industries and time is not an issue, and the OLS estimator becomes the BLUE (best linear unbiased estimator). This is probably not the case and we expected to observe differences across industries (and perhaps even across time). However, when computing the main effect, our use of the HHI also acts as a proxy for industry fixed effects. Further, our need to observe the effects for a particular denomination of time (recession) makes the random-effects estimator best suited for our purpose.

However, as Baltagi et al. (2008) point out, the homogeneity restriction is frequently rejected although when n is much larger than t , as it is in our case, it has been common practice to pool the cross-sectional and time series information. In the presence of heterogeneity of the slope coefficients, pooling the observations is appropriate (e.g., Angrist 2004). In fact, the literature interprets the pooled slope coefficient as an average treatment effect since the individual treatment effects can be heterogeneous. Baltagi (2001) and Wooldridge (2015) point out that the standard random-effects estimator consistently estimates the average of the heterogeneous slope coefficients. Thus, our overall β coefficients value would refer to the average coefficient. This means that a unit increase in CSR will produce on average a β increase in sales.

We also performed joint poolability tests for all the variables in our hypothesis testing model, using both Chow and Roy-Zellner poolability tests and following Schiavo and Vaona (2008), who detailed a method for the joint estimation of a multi-predictor Roy-Zellner test. We could not reject the Chow test (wherein the null hypothesis is that the slope

of a regressor) is the same, regardless of individual for all k regressors). This provides evidence of the sample being poolable. Further, our use of cluster-adjusted robust standard errors also helped us to address this concern.

Addressing Endogeneity Concerns Endogeneity is an issue wherein a regressor and the structural error are correlated. We further tested for this issue by regressing CSR on all other covariates and including the residual as a regressor in the sales equation. Since the parameter estimate for the residual was not significant ($p=0.220$), we concluded that statistically endogeneity is not a concern. However, theoretically, as in most marketing studies, it can be argued that endogeneity may still be present. As such, there may be omitted variables that may influence both the regressor(s) and the dependent variable(s). For example, it is possible that a certain managerial emphasis (or proficiency) influences both CSR and sales. For this reason, we use the Gaussian copula method (Park and Gupta 2012), which avoids the problem of having weak instruments (Rossi et al. 2014).

Copulas address endogeneity issues and are a convenient instrument-free method (Park and Gupta 2012). Copulas construct the joint distribution function that describes the dependence between the random variables (i.e., the “endogenous” component of a regressor) and the error term for the focal equation. For identification using Gaussian copulas, it is necessary that the endogenous variables be non-normally distributed (Park and Gupta 2012). We confirmed the non-normal distribution of firm sales using a Shapiro–Wilk test. It should also be noted that the Gaussian copula method is robust for the misspecification of the dependence structure between the endogenous regressor and the structural error (i.e., the type of copula, whether Gaussian or not) (Park and Gupta 2012).

We utilized Gaussian copulas to address any endogeneity concerns. Unlike traditional methods used to correct for endogeneity, this approach does not require that instrumental variables isolate the exogenous variation in the endogenous regressor (e.g., Burmester et al. 2015). Additional regressors must be included for any independent variable that is potentially endogenous with the outcome. These are commonly denoted as $C_{X_i} = \varphi^{-1}(H(X_{it}\beta_{it}))$ where φ^{-1} is the inverse of the normal cumulative distribution function and $H(\bullet)$ represents the empirical distribution of the endogenous variable X . In practice, we estimated: $y_i = x_{i1}\beta_1 + x_{i2}\beta_2 + x_{i3}\beta_3 + \mu$ wherein x_{i3} is the inverse normal CDF of x_{i1} , (i.e., the copula term plugged into the equation is estimated). Since x_{i3} is a generated regressor, OLS estimation does not lead to the correct standard error for this coefficient (Pagan and Ullah 1988). To get that correct error, we performed a bootstrap analysis with 1000 iterations. Effects for the endogenous regressor using copulas may be compared to OLS or any

other model. For more details regarding robustness checks, see Appendix 2.

Alternate Pathways to Risk: CSR may also mitigate risk by increasing trust (Dupire and M’Zali 2018) or by increasing the reputation of the firm (e.g., Gürhan-Canli and Batra 2004). While such pathways may indeed be important, for the purposes of this paper, we ruled out the reputation account both theoretically and empirically. First, we controlled for brand value (which is a proxy for firm reputation, as we only considered mono-brand firms). Theoretically, we did not expect any difference in the effects of benevolent and process-oriented CSR on firm reputation. With regards to trust, we believe that process-oriented firms are indeed regarded as being more trustworthy. Customers may feel that these firms should be able to provide high quality products and take care not to diminish the goodwill of their customers. Hence, through a customer orientation signal, CSR may build more trust in both the firm and its offerings.

Analysis, Results, and Discussion (Study 1)

As shown in Table 3, our analysis (model 1c) demonstrates that CSR is positively and significantly related to sales ($\beta=0.018$ $p<0.05$). The findings from Model 1d also demonstrate that the effect of CSR on sales is strengthened during recession ($\beta=0.029$ $p<0.05$). This supports Hypothesis 1. The interaction is depicted in Fig. 1a.

As shown in Table 4, we find a similar significant effect for both process-oriented CSR and benevolent CSR on sales during periods of economic growth ($\beta=0.030$ $p<0.05$ for benevolent CSR and $\beta=0.032$ $p<0.05$ for process-oriented CSR). In addition, the moderating effect of recession on process-oriented CSR is positive and significant, while its effect on benevolent CSR is not significant ($\beta=0.024$ $p<0.05$ and $\beta=0.021$ $p>0.05$, respectively).⁴ This supports Hypothesis 2.⁵ The interaction is shown in Fig. 1b.

⁴ Post hoc tests based on individual CSR groups revealed that only product, environment, and community engagement CSR categories were significant. Both product and environment-related CSR showed a significant interaction with recessions, while all three were significant during non-recessionary periods. In combination, the three non-significant categories of PO-CSR (i.e., employee relations, corporate governance, and diversity) also showed a small, but still significant, effect.

⁵ The effect of benevolent CSR is, however, only marginally significant (i.e., at $p<0.1$), implying a partial mechanistic pathway through benevolence as well.

Table 3 Study 1 detailed results

Independent variables	Model 1a Firm sales _t	Model 1b Firm sales _t	Model 1c Firm sales _t	Model 1d Firm sales _t
CSR _t			0.018* (0.008)	0.014* (0.012)
CSR _t × Recessionary environment (1)				0.029* (0.0013)
Brand value _t		0.126*** (0.017)	0.007 (0.014)	0.030 (0.020)
Advertising expenditures _t		0.231*** (0.019)	0.081*** (0.021)	0.212*** (0.031)
Research and development expenditures _t		0.137 (0.028)	0.118*** (0.021)	0.149*** (0.032)
Financial leverage _t		-0.019 (0.014)	-0.012 (0.014)	-0.001 (0.022)
Liquidity _t		-0.005 (0.020)	-0.057*** (0.010)	0.019 (0.014)
Firm size _t		0.843*** (0.028)	0.842*** (0.030)	0.838*** (0.030)
CSR history _t		0.128 (0.086)	0.109** (0.037)	0.204* (0.084)
Herfindahl index _t	0.081*** (0.020)	0.044* (0.019)	0.014 (0.015)	0.069*** (0.021)
Recessionary environment	-0.057*** (0.006)	-0.036*** (0.006)	-0.006* (0.003)	-0.053*** (0.012)
C_CSR			0.022 (0.055)	0.023 (0.055)
Constant	0.018 (0.104)	-0.085 (0.091)	-0.105** (0.037)	-0.095 (0.085)
Observations	801	801	801	801
Adjusted R-square	4.92%	58.85%	64.28%	65.38%
Wald χ^2	103.82***	849.74***	1246.19***	1262.48***

All coefficients are standardized. C_CSR is the copula estimate

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$. Standard errors are in shown in the parentheses

Study 2A

The objective of Study 2a is threefold. First, we utilized a controlled lab environment to more directly assess the underlying process behind our risk mitigation hypothesis, including measuring risk directly. Second, we examined the roles of risk and benevolence as a parallel explanation behind our effects. Third, we enhanced generalizability by testing our risk mitigation hypothesis using a different conceptualization of risk to complement the use of recessionary data in Study 1. Namely, we utilized firm CSR activities in categories defined as either a good or a service.⁶ It allows us to manipulate the degree to which customers are

able to judge a priori the performance associated with their purchases. Research demonstrates that customers are less able to directly observe performance for services due to the simultaneity of production and consumption, intangibility, and non-standardization (Mittal 1999; Murray and Schlacter 1990). Therefore, if our underlying process is correct, CSR and its risk-mitigating properties will be more compelling in contexts where customers are evaluating services instead of physical goods.

Method (Study 2a)

Participants

Participants were 218 undergraduate students ($M_{age} = 21.6$ years; 48% female) who took part in the study in exchange for credit in an introductory marketing class at a large public university.

⁶ Casado-Díaz et al. (2014) had previously found that CSR differentiates a firm more in a services context. However, they look at it from a stock market perspective wherein the stakeholder of interest is the shareholder and not the customer. Further, they do not distinguish between the twin mechanisms of benevolence and risk reduction.

Table 4 Study 1 benevolent/process-oriented CSR results

Independent variables	Model 1c Firm sales _t	Model 1d Firm sales _t
Benevolent CSR _t	0.030(0.010)**	0.11(0.08)
Process-oriented CSR _t	0.032(0.095)**	0.025(0.06)***
Brand value _t	0.093(0.017)**	0.091(0.017)***
Process-oriented _t *Recessionary environment _t		0.024(0.011)*
Benevolent CSR _t *Recessionary environment _t		0.021(0.013)
Advertising expenditures _t	0.228(0.028)***	0.10(0.05)*
Research and development expenditures _t	0.134(0.027)***	0.135(0.027)***
Financial leverage _t	0.006(0.020)	0.005(0.020)
Liquidity _t	0.001(0.014)	0.003(0.014)
Firm size _t	0.833(0.027)***	0.837(0.027)***
CSR history _t	0.125(0.080)	0.129(0.081)
Recessionary environment _t	-0.034(0.069)***	-0.059(0.014)***
Herfindahl index _t	0.012(0.012)	0.048(0.019)*
C_ Benevolent CSR _t	0.007(0.008)	0.008(0.06)
C_ Process-oriented CSR _t	0.009(0.011)	0.06(0.012)
Constants	-0.069(0.085)	-0.068(0.086)
Observations	801	801
Adjusted R-square	69.11%	70.59%
Wald χ^2	1578.88	1547.05

All coefficients are standardized. C_Process-oriented CSR and C_Benevolent CSR are the copula estimates
 *** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$. Standard errors in parentheses

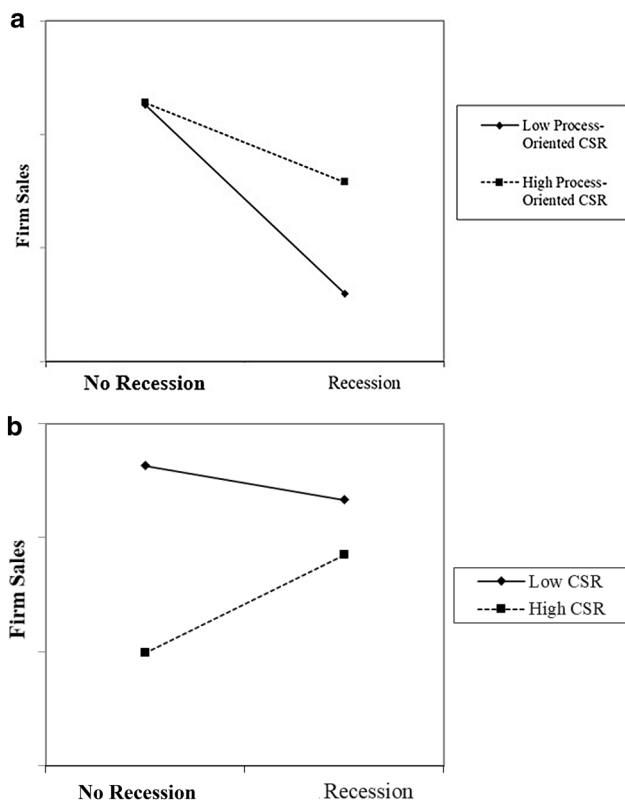


Fig. 1 a Interaction of recession and CSR on firm sales. b Interaction of recession and process-oriented CSR on firm sales

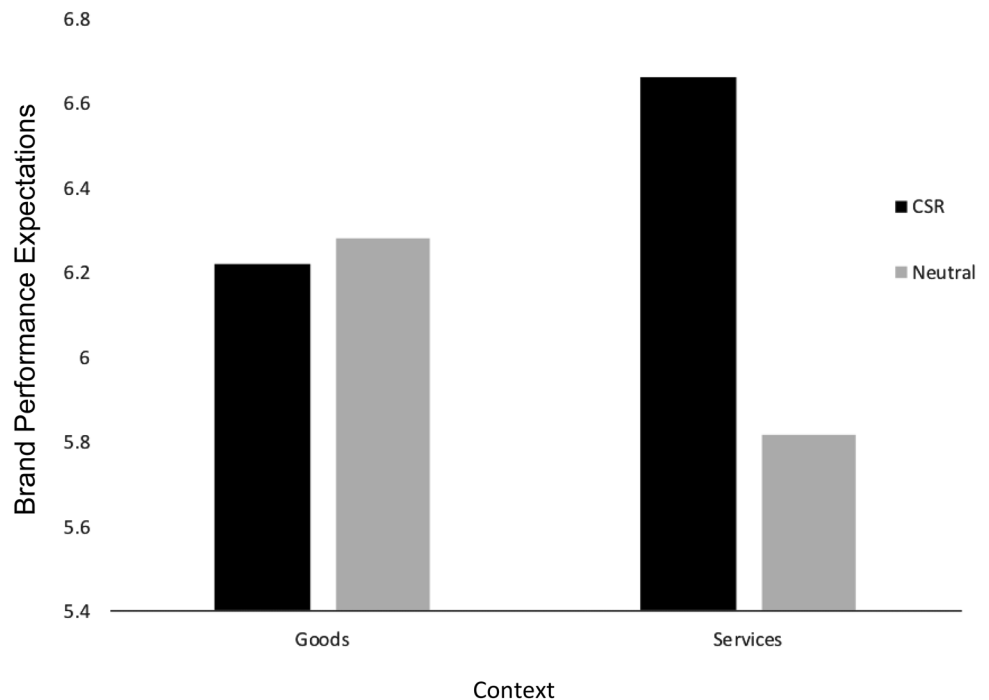
Procedure

Study 2a utilizes a 2 (Socially Responsible Behavior: Yes vs. No) \times 2 (Category: Good vs. Service) between-subjects design. Following the protocol of Chernev and Blair (2015) we manipulated CSR by providing detail about socially responsible activities in the CSR condition and withholding this information in the neutral condition. We manipulated product category by describing a fictitious grocer who operated using either a physical store or an online interface/delivery service (see Appendix 3).

Measures

The key dependent measure was product performance expectations. It utilized a three-item measure (adapted from Boulding and Kirmani (1993); $\alpha = 0.94$). Arguably, if participants believe one product to outperform the other, they will be more likely to purchase the former, all else being equal. Perceived risk was also measured using a three-item scale (adapted from Laroche et al. 2004; $\alpha = 0.85$). We also collected benevolence (adapted from Ellen et al. 2006; $\alpha = 0.93$). See Appendix 4 for a list of items in all measures.

Fig. 2 Study 2A results



Analysis, Results, and Discussion (Study 2a)

Manipulation Check

We measured the participants' perceptions of the social responsibility of the firm, along with the degree to which the participants understood the goods/services distinction between the two conditions. CSR was measured by asking participants the degree to which the firm does not/does support the communities in which it operates using a 1–7 scale, and category was measured by asking participants how much the company sells only through a physical building vs. online on a 1–7 scale. As expected, those in the CSR condition viewed the firm as being more socially responsible ($M_{\text{CSR}} = 6.16$) than those in the neutral condition ($M_{\text{NEUTRAL}} = 5.63$; $F(1, 217) = 10.74$, $p = 0.001$). Participants also viewed the delivery service as operating online ($M_{\text{SERVICES}} = 4.56$) versus operating in a physical location ($M_{\text{GOODS}} = 2.62$; $F(1, 217) = 88.86$, $p < 0.001$). Thus, our manipulations were successful.

Hypothesis Testing

A 2 (Socially Responsible Behavior: Yes vs. No) \times 2 (Category: Goods vs. Services) ANOVA on product performance expectations revealed the predicted interaction ($F(1, 217) = 10.93$, $p = 0.006$). As anticipated, in the services condition, where customers' ability to predict performance a priori is lower, participants reported more positive performance expectations when presented with the socially

responsible firm ($M = 6.66$) as opposed to the non-CSR firm ($M = 5.82$; $t(107) = 3.74$, $p < 0.001$). No differences in performance expectations emerged in the goods condition between the socially responsible firm ($M = 6.22$) and the non-CSR firm ($M = 6.28$; $t(107) = 0.26$, $p = 0.79$), as shown in Fig. 2. This further supports Hypothesis 1.⁷

Further analysis examined mediation via bootstrapping. We tested a model wherein perceived risk and benevolence were included as parallel mediators of the effect of CSR on brand performance, using 5000 bootstrapping samples (Hayes 2013, Model 15). The independent variable was the CSR condition, the dependent variable was the measure of performance expectation, and mediators were the measures of perceived risk and benevolence. As per our theorizing, we expected that CSR would be particularly impactful in the service context of our goods/services moderator, where customers would be more likely to rely on CSR as a signal of corporate motivations to invest in customer relationships.

The results support parallel mediation. First, concerning our focal process of risk, we find that risk mediates the effect of CSR on performance expectations, and that this effect is moderated by the goods/services context in which customers encounter the CSR information. The index of moderated mediation demonstrates a difference between the two context conditions (95% CI 0.004, 0.444). Turning to the effects within each context, we find a significant mediation

⁷ We also test this relationship using secondary data (see Table 6 in Appendix 5) and obtain similar results.

of risk in the services context (IE = 0.248, SE = 0.113, 95% CI 0.063, 0.506), but no significant effect in the goods context (IE = 0.076, SE = 0.059, 95% CI -0.018, 0.213). This supports our prediction that CSR serves a risk reduction mechanism for customers and that this risk reduction is particularly salient in those contexts where performance is less predictable a priori.

Examining our parallel mediation through benevolence, we included our benevolence measure in the same model. Analyses reveal a significant parallel mediation process in both the services (IE = 0.136, SE = 0.080, 95% CI 0.025, 0.334) and the goods contexts (IE = 0.252, SE = 0.091, 95% CI 0.094, 0.447), and further, context did not moderate the impact of benevolence (95% CI -0.300, 0.078).

Collectively, these analyses provide sound support for the previous benevolence effect from CSR, but also an additional, parallel risk reduction effect provided by CSR. By highlighting the importance of CSR in reducing perceived risk and increasing confidence in product performance expectations, particularly in contexts where customers have less of an ability to predict performance a priori, this moderated mediation supports our theorizing that CSR does serve a risk reduction role for customers.

Study 2B

Study 2b had two objectives. First, we provide further evidence of our effects in support of our second hypothesis by generalizing into a different product category and introducing a new conceptualization of risk. Specifically, we examine the context of fitness memberships and vary our concept of risk by varying the length of time a customer is asked to make a commitment (1 month versus 1 year). A greater commitment from the customer comes with a greater monetary cost and increased variability in performance over time, and thus greater risk (Folkes 1988). Second, we more directly connect our concept of risk reduction to consumer purchase by using a behavioral intention as our dependent variable. Namely, we examine consumer intentions for trial as a proxy for purchase, given that the relatively high involvement purchase process would typically follow incremental consumer involvement and commitment (Vaughn 1980). If our hypothesis is correct, consumers should be more likely to engage in purchase-related behavior (trial) under conditions of greater risk when the firm has a reputation for CSR.

Method (Study 2b)

Participants

Participants were 160 undergraduate students ($M_{\text{age}} = 20.7$ years; 51% female) who took part in the study in exchange for credit in an introductory marketing class at a large public university.

Procedure

Study 2b utilizes a 2 (Socially Responsible Behavior: Yes vs. No) \times 2 (Consumer Commitment: Short-term vs. Long-term) between-subjects design using the same manipulation of CSR as in Study 2a. We manipulated consumer commitment by describing a promotion from a fitness center that offered a discount on the purchase of either a 1-month or 1-year membership (see Appendix 3).

Measures

The key dependent measure was intention to try the gym (adapted from White and Peloza (2009); $\alpha = 0.96$). See Appendix 4.

Analysis, Results, and Discussion (Study 2b)

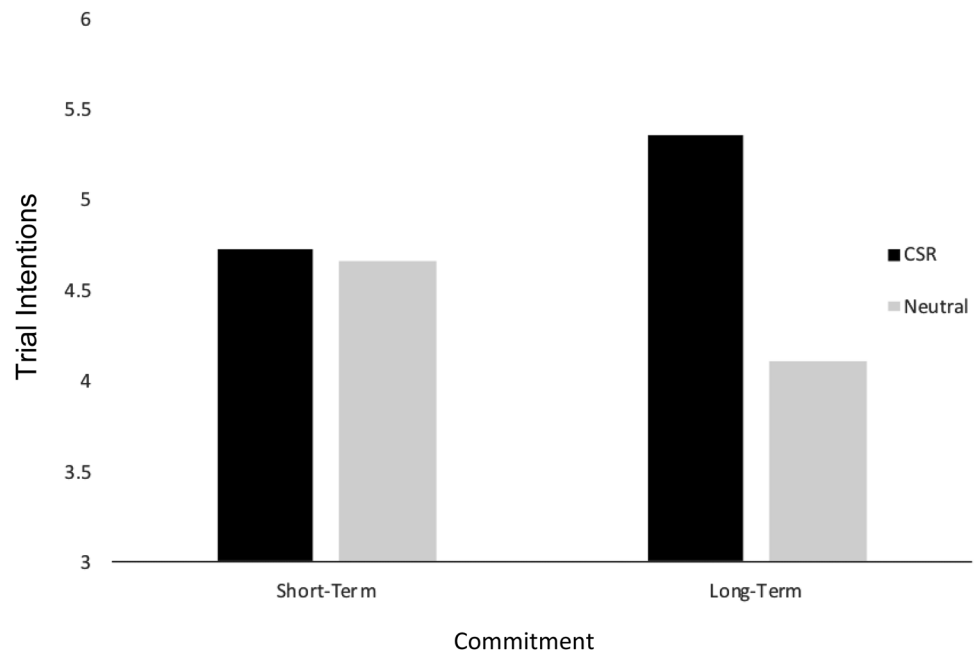
Manipulation Check

Like Study 2a, those in the CSR condition viewed the firm as more socially responsible ($M_{\text{CSR}} = 5.72$) than did those in the neutral condition ($M_{\text{NEUTRAL}} = 5.00$; $F(1, 158) = 20.11$, $p < 0.001$). Thus, our manipulations were successful.

Hypothesis Testing

A 2 (Socially Responsible Behavior: Yes vs. No) \times 2 (Consumer Commitment: Long-term vs. Short-term) ANOVA on trial intentions revealed the predicted interaction ($F(1, 156) = 13.57$, $p = 0.043$). As anticipated, for the long-term commitment condition, where consumers' risk is heightened, participants reported increased trial intentions when presented with the socially responsible firm ($M = 5.36$) as opposed to the non-CSR firm ($M = 4.11$; $t(77) = 3.18$, $p = 0.002$). No differences in intentions emerged in the short-term condition between the socially responsible firm ($M = 4.73$) and the non-CSR firm ($M = 4.66$; $t(79) = 0.19$, $p = 0.85$), as shown in Fig. 3. Thus, further supporting Hypothesis 2 and using a purchase-related dependent variable, when participants were asked for a longer-term commitment (i.e., higher risk), they reported higher intentions when the firm was known for CSR than when the firm was neutral.

Fig. 3 Study 2B results



Discussion

While previous research has provided evidence of the positive impact of CSR on customer behaviors, such as satisfaction (Luo and Bhattacharya 2006), purchase intentions (Oh et al. 2016), willingness to pay price premiums (Bhattacharya and Sen 2004), and word-of-mouth intentions (Hoefler and Keller 2002), the process by which CSR impacts customers has often been construed as a warm glow value that customers receive as a result of helping others (Peloza and Shang 2011). This view is potentially problematic for marketers because customers often may not favor benevolent CSR activities over other decision-making criteria, such as price or quality (Auger et al. 2008). Although recent research suggests the possibility of a more direct link between CSR and financial performance, the process by which this effect takes place is still benevolence-based and relies on the inference that the firm is morally driven (Chernev and Blair 2015). Thus, the first contribution of the current research is to formally demonstrate an explicit link between benevolence and performance expectations (which then leads to increased sales), as well as a parallel link that operates outside of benevolence. Beyond CSR creating a warm glow, our findings reveal that CSR acts as a signal that companies are customer-oriented and make an effort to maintain stakeholder relationships through inculcating CSR practices in firm processes, thereby reducing risk for customers.

In addition, our first study highlights that in recessions, when customers' face financial stress and are less inclined to make purchase decisions based on benevolence or warm glow, CSR still has a positive impact on sales. This effect

on sales is over and above any effect that CSR has on building the reputation of the brand itself. Customers, especially when faced with financial constraints, tend to prioritize their own needs and satisfaction and make purchase decisions based on how they would benefit personally rather than societal interests (Flatters and Wilmott 2009; Green and Peloza 2011). Thus, one would expect that CSR would be less important during economic contractions.

Our findings, counterintuitively, reveal the opposite. These results also demonstrate that CSR can be considered as an important investment for firms, especially during higher-risk contexts when the stakes of making a wrong purchase are greater for customers. At a time when customers are actively seeking information regarding value before purchasing, the signal of customer stewardship from CSR becomes even more salient. These results show that in some ways, the effect of CSR is similar to that of other market-based assets, such as brands, or marketing actions, such as advertising, which increases perceived quality and reduces purchase risk, thereby increasing firm sales.

Similar to previous research examining benevolence, our research highlights the differential impact of different types of CSR. Our findings reveal that both process-oriented and benevolent CSR activities lead to greater sales. The results for benevolent CSR complement the findings of Chernev and Blair (2015), who found that perceptions of an altruistic motive are necessary for a benevolence halo. In the current research, however, the benevolence effect of CSR is complemented by the signal of a stewardship position toward stakeholders through process-oriented CSR investments. These satisfy customers' desire for a more self-serving form of value. Namely, customers seek a lower degree of risk

associated with a purchase and greater confidence in product performance expectations. Overall, this study also supports the findings of prior studies showing a link between CSR and risk wherein CSR is embedded within the product itself (such as in organic food, e.g., Koo 2018) or in industries that may carry a high degree of consumer risk (e.g., Pomeroy and Dolnicar 2009).

Another contribution stems from our multi-method approach. Using both secondary data and controlled lab environments, we explicitly depict the underlying risk mitigation mechanism between CSR and consumer preference. By manipulating the degree to which customers are able to judge *a priori* the quality or performance of a given purchase, we show that CSR and its risk-mitigating properties are even more compelling in contexts of greater uncertainty. Using the recessionary, services and longer-term commitment contexts, and their underlying uncertainty for customers, our identification of the risk mitigation properties that CSR addresses facilitates a greater understanding of the mediating processes by which CSR can actually create firm value.

Finally, we also categorize individual CSR dimensions into two broad dimensions—process-oriented (PO) CSR and benevolent CSR. Similar to other CSR scholars (e.g., Godfrey et al. 2009; Chang et al. 2014) who found heterogeneous effects of CSR efforts directed at different stakeholders, we find that while both dimensions of CSR have an effect on sales (or more generally, on firm performance), PO-CSR has the stronger effect under conditions of higher purchase risk.

Managerial Implications

Our results show that CSR activities are indeed related to higher sales during recessions and other situations that customers associate with higher levels of risk. For existing customers, CSR may, therefore, provide an additional cue that re-affirms the ‘correctness’ of their product/service choice, thereby giving them greater confidence in their purchase. To the extent that customers interpret CSR as a signal of higher relative value, these actions will tend to increase future demand and reduce existing customer churn. Hence, managers can use strategic investments in CSR as a signal to customers that the firm is committed to its customers and offers high quality products and services. While all types of CSR are observed to have a positive effect overall, particularly process-oriented CSR (or that CSR which is internally focused on a firm’s products and practices) was shown to be indicative of that firm’s predilection toward customer stewardship and it had the greatest impacts during times of higher risk.

Our use of the recessionary context is particularly informative for marketing practice. During times of recession many firms reduce investment in both CSR activities and the communication of those activities as a way to cope with reduced revenues (Grusky et al. 2011). The results presented herein, however, suggest that this practice may induce even further economic damage to firm revenues by eliminating an important risk reduction signal sent to customers who are often more attuned to marketplace risks.

Limitations and Future Research

Our research has several limitations that could also serve as fruitful avenues for future research. First, we use Hirschman–Herfindahl Index (HHI) as a control (which serves as an industry fixed effect since it is constant within an industry for a year) and hence ‘control out’ industry-related differences in the value of CSR. However, one may expect CSR to be of greater value in such controversial industries such as tobacco and gambling (where CSR may be effectively employed to offset past irresponsibility), or of lower value in industries where engaging in CSR is commonplace and may be a cost of competition (for instance, in the pharmaceutical industry). Future research could explore idiosyncrasies in the customer environment, such as industry effects, that can conceivably moderate or impact the results presented here.

Secondly, our data consist of CSR scores, which are representative of a firm’s CSR investments, but do not contain actual CSR expenses. Thus, we cannot control for the variable costs of CSR investment using our data. This makes it difficult to draw definite conclusions regarding financial outcomes that incorporate actual costs, such as firm profits or ROI. Future research should investigate whether actual CSR and its related communication expenses produce different outcomes or only serve to bolster our findings further. One can then compare the effectiveness of CSR for achieving higher financial returns compared to other marketing activities, such as advertising and research and development.

Third, our results may suggest a path that can empirically explain the results in the earlier literature the role of CSR and firm financial risk (e.g., Oikonomou et al. 2012; Luo and Bhattacharya 2009). If customers appreciate the efforts of the firm during recessions and are then in turn loyal to that firm, it would help that firm achieve more stable cash flows (i.e., have less variance in its cash flows and hence lower firm-specific/ idiosyncratic risk) and further still, essentially safeguard that firm against a recession. Similarly, to the extent that CSR differentiates a firm from its competitors, it will lower the exposure of the firm to systematic risk

(which affects the entire industry). In our study, we found that it is PO-CSR and not benevolent-CSR that primarily drives the effect on sales during recessions. Future research might then compare the possibly differing roles these categories might have on both idiosyncratic (firm specific) and systematic risk.

Finally, while we control for past CSR performance as a proxy for whether CSR is an integral part of a firm's activities, future research can more deeply explore the various related factors that may also impact these results. For example, some firms consider CSR as a more central facet to operations than others do, and so some firms are born out of sustainability while others adopt their CSR positioning over time (Aguinis and Glavas 2013). Factors such as these can impact customers' perceptions of CSR and thus warrant further detailed exploration.

Compliance with Ethical Standards

Conflict of interest All authors declare that they have no conflict of interest.

Appendix 1

See Table 5.

Table 5 KLD categories

CSR dimension	Definition
Environment	KLD rates this dimension as the organizational efforts toward managing a firm's environmental impact through pollution prevention, recycling, clean energy, etc. Strengths and concerns in each area are coded as 1 if present and 0 if not present with respect to this dimension. These categories fall under the category of benevolent CSR.
Product	KLD rates this dimension as organizational efforts toward maintaining quality and R&D innovation. Strengths and concerns in each area are coded as 1 if present and 0 if not with respect to this dimension. These items fall under process-oriented CSR. The last item, providing products to the economically disadvantaged, falls under benevolent CSR.
Diversity	KLD rates this dimension as related to the diversity of top management (Chief Executive Officer and Board of Directors), work/life benefits, presence of women and minority contracting, employment of the disabled, gay and lesbian-inclusive policies, etc. Strengths and concerns in each area are coded as 1 if present and 0 if not with respect to this dimension. These categories fall under process-oriented CSR.
Corporate governance	KLD rates this dimension as making organizational efforts toward limiting the compensation of top management and board members, transparent reporting, disclosure of political involvement, leadership in policy development, etc. Strengths and concerns in each area are coded as 1 if present and 0 if not with respect to this dimension. These categories fall under process-oriented CSR.
Employee relations	KLD rates this dimension as undertaking organizational efforts toward improving union relationships, profit sharing, generating employee involvement, providing retirement benefits, improving health and safety records, etc. Strengths and concerns in each area are coded as 1 if present and 0 if not with respect to this dimension. These categories fall under process-oriented CSR.
Community engagement	KLD rates this dimension as undertaking organizational efforts toward charitable giving, support for housing and education, volunteers, programs, etc. Strengths and concerns in each area are coded as 1 if present and 0 if not with respect to this dimension. These categories fall under benevolent CSR.
Human rights	KLD rates this dimension as related to human rights violations, support of controversial regimes, having a positive record in South Africa, freedom of expression and speech, etc. Strengths and concerns in each area are coded as 1 if present and 0 if not with respect to this dimension. These categories fall under benevolent CSR.

Appendix 2: Robustness Checks (Study 1)

Model-Free Evidence

We performed a series of robustness checks to ensure the validity of our results. First, we obtained model-free evidence to test the validity of our findings and data. We observed that the average difference in advertising spending between recessionary and non-recessionary years was (–) \$52.15 million. These data are consistent with the past literature (e.g., Srinivasan et al. 2011) that found that firms will reduce advertising spending during recessions. The average growth in advertising expenses during non-recessionary periods is \$17.99 million. Interestingly, we found that mean growth in CSR scores is practically non-existent during recession (0.01) compared to periods of GDP growth (0.15). We also found that the correlation between CSR and sales is stronger during recession (0.40) than it is during non-recession (0.34).

Alternate Measure of Performance

Since signaling theory can be argued to explain the shifts in market preferences, we also estimate the model using market share (relative sales within an industry) instead of absolute sales. Market share is the percentage of an industry or a market's total sales that is earned by a particular firm over a specified time (e.g., Ferrier et al. 1999). To measure market share, we simply take the ratio of the sales of a single firm to

the total sales of all firms within its industry, wherein industry definitions use SIC (Standard Industry Classification) codes at the 4-digit level. As seen in Table 7 in Appendix 6, the results in this instance are quite similar.

Bayesian Estimations

Third, we fit a panel Bayesian model to estimate our parameters of interest. Bayesian analysis provides inferences that are conditional based on the data and are exact, without having any reliance on asymptotic approximation. Small sample inference proceeds in the same manner as if one had a large sample (McNeish 2016). Since we only observed two years of recession (resulting in a smaller sub-group of firm-recession years), we checked the robustness of our inferences using a hierarchical Bayesian model. Following Ruppert et al. (2003), we fit a hierarchical Bayes random-intercept model using a Gibbs sampling algorithm to our longitudinal panel data set. The more efficient MCMC procedure for our Bayesian model was the Gibbs sampling compared to Metropolis–Hastings (MH). In keeping with standard Bayesian hierarchical modeling (e.g., Rossi et al. 2012), we utilized uninformed priors to estimate the coefficients using the following prior structure. We used normal priors for the regression coefficients and group levels identified by the ID variable (gvkey) and inverse-gamma priors for the variance parameters. We further noted from post-estimates that autocorrelation was not a concern and that our MCMC procedure had converged with an efficiency of 48%. The estimates of posterior means and posterior standard deviations are similar to the estimates and standard errors determined from our random-effects model, providing an enhanced confidence in our results.

Missing Values

Fourth, we used additional methods to account for missing values in advertising or R&D spending other than list-wise deletion. Following Ivanov et al. (2013), we set advertising and R&D expenses to zero if it was missing or not reported in COMPUSTAT. Since Generally Accepted Accounting Principles (GAAP) require all firms with “material” R&D or advertising expenditures to recognize and disclose these items in their financial statements, ours was a reasonable assumption to make, and we did not observe any substantive changes to our core results.

Future Performance

Finally, we estimated our parameters using one period lagged CSR (and other IVs). This may partially account

for the reverse causality (which should, however, have been addressed through our use of Gaussian copulas) as well as allow us to observe whether there is a longer-term impact of CSR (or whether the effect of CSR on performance requires some time to take place). We still found the substantial conclusions to remain unchanged.

Appendix 3: Materials for Study 2A and Study 2B

Study 2A

Goods/CSR

Nature's Bounty is opening its doors in a location here in {location}! The grocery store is part of a small, regional chain that has operated in some neighboring states for several years, and then recently decided to make the move into {location}. The store will offer a full range of groceries and other products, including fresh produce, meat, dairy and a bakery with fresh baked goods produced every morning. The store will be located close to campus in order to address what the store manager, Chad Green, feels is an underserved market. "The student population doesn't have a lot of choices at the moment. We aim to bring in a new attitude and standard of service and we think customers will be very happy with our store."

As part of the approach to any store opening, the retailer makes an effort to become a contributing member of the community. The store will donate a percentage of each sale to a local charity, and it was recently ranked among the top 100 companies to work for in the country. Green explains, "Social responsibility is part of our DNA. We want our customers, employees and other partners to feel good about doing business with us and our investment in communities is a big part of that."

Service/No CSR

Nature's Bounty is bringing its service to {location}! The online grocery delivery service has operated in some neighboring states for several years, and recently decided to make the move into {location}. The service will offer a full range of groceries and other products including fresh produce, meat, dairy and a bakery with fresh baked goods made every morning. The company will deliver to the campus area to address what store manager Chad Green feels is an underserved market. "The student population doesn't have a lot of choice at the moment. We aim to bring in a new attitude and standard of service and we think customers will be very happy with our store."

Study 2B

New You Fitness is now open in {location}. It's more than a gym. The New You approach is a science-based, technology-driven path to personal health. Built from the inside out, it considers the entire range of habits that comprise a healthy lifestyle. High quality, modern facilities, and equipment combined with an expert staff will give you just what you need to get into shape. You'll have access to a range of fitness classes including pilates, cycling, yoga, interval training, cross-fit and more, all in a fitness program that is tailored to meet your personal health goals.

Short-Term

As part of their new opening, New You Fitness is offering {school} students as special new year discount. You can try New You for month for only \$19. That's a big discount off the normal monthly rate. After that, you can decide if you want to purchase a membership and choose from one of our member packages.

Longer Term

As part of their new opening, New You Fitness is offering {school} students as special new year discount. You can try New You for 1 year for only \$219. That's a big discount off the normal yearly rate. After that, you can decide if you want to purchase a membership and choose from one of our member packages.

Appendix 4: Measures for Study 2A and Study 2B

Performance Expectations (adapted from Boulding and Kirmani (1993); $\alpha=0.94$):

Considering Nature's Harvest compared to other options, I expect the company to provide... (1 = much lower than average; 7 = much higher than average).

- Quality
- Reliability
- Dependability

Risk (adapted from Laroche et al. (2004): $\alpha=0.85$):

When I think about buying from Nature's Harvest.... (1 = strongly agree; 7 = strongly disagree).

- There is a good chance a mistake will be made
- The purchase will cause me problems
- The purchase is risky

Benevolence (adapted from Ellen et al. (2006): $\alpha=0.93$):
Nature's Harvest is... (1 = strongly agree; 7 = strongly disagree).

- A company that truly cares for people
- A company that puts the interests of others first
- A company with a heart

Trial Intentions (White and Pelozo (2009): $\alpha=0.96$):

The gym is scheduling an Open House to give people a chance to tour their facility and meet some of the staff. How likely would you be to go visit the gym during that Open House?

- Highly unlikely/highly likely
- Highly unwilling/highly willing
- Highly not inclined/highly inclined

Appendix 5

See Table 6.

Table 6 Effects of CSR on services

Independent variables	Model 1a Firm sales _t	Model 1b Firm sales _t
CSR _t	0.026 (0.012)*	0.032 (0.012)**
CSR _t × services (1)		0.253 (0.076)***
Brand value _t	0.047 (0.021)*	0.046 (0.021)
Services	-0.433 (0.289)	-0.483 (0.290)
Advertising expenditures _t	0.217 (0.033)***	0.221 (0.032)***
Research and development expenditures _t	0.151 (0.032)***	0.157 (0.032)***
Financial leverage _t	-0.014 (0.023)	-0.027 (0.023)
Liquidity _t	-0.035 (0.014)*	0.041 (0.014)**
Firm size _t	0.848 (0.029)***	0.845 (0.030)***
CSR history _t	0.194 (0.084)**	0.199 (0.084)*
Herfindahl index _t	0.068 (0.022)***	0.070 (0.021)***
C_CSR	-0.066 (0.089)	0.011 (0.020)
Constant	0.105 (0.037)**	-0.065 (0.089)
Observations	801	801
Adjusted R-square	68.36%	68.46%
Wald χ^2	1251.66	1257.75***

All coefficients are standardized. C_CSR is the copula estimate. We used Fama-French industry definitions (Fama and French 2008) to identify the service industries

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$. Standard errors are shown in parentheses

Appendix 6

See Table 7.

Table 7 Effect of CSR on market share during recessions

Independent variables	Model 1 Market share _t
CSR _t	0.469*** (0.074)
CSR _t × Recessionary environment (1)	0.285* (0.129)
Brand value _t	0.021 (0.081)
Advertising expenditures _t	0.118* (0.055)
Research and development expenditures _t	−0.037 (0.071)
Financial leverage _t	0.131*** (0.039)
Liquidity _t	−0.119 (0.067)
Firm size _t	−0.074 (0.046)
CSR history _t	−0.145 (0.074)
Recessionary environment	0.079 (0.119)
C_CSR	0.023 (0.055)
Constant	0.594 (0.579)
Observations	801
Adjusted R-square	26.77%
Wald χ^2	113.66***

All coefficients are standardized. C_CSR is the copula estimate

*** $p < 0.001$, ** $p < 0.01$, * $p < 0.05$. Standard errors are in shown in the parentheses

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