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Kent Walker Zhou Zhang Bing Yu

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The angel-halo effect

How increases in corporate social responsibility and irresponsibility relate to firm performance

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Kent Walker

University of Windsor, Windsor, Canada

Zhou Zhang

University of Regina, Regina, Canada, and

Bing Yu

Meredith College, Raleigh, North Carolina, USA

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Abstract

Purpose – This paper aims to examine how increases in corporate social responsibility (CSR) and corporate social irresponsibility (CSiR) relate to firm performance. Further, this paper investigates how increases in CSR (CSiR) while CSiR (CSR) is present relate to three measures of firm performance: profitability, management efficiency and market valuation.

Design/methodology/approach – Using over 10,000 observations from 2009-2013 and combined data from Sustainalytics and Compustat, this paper examines how increases in either CSR or CSiR relate to firm performance.

Findings – The paper finds that increased CSR significantly relates to increased firm performance in all three measures, and that increased CSiR significantly relates to decreased profitability only. Furthermore, increased CSR when CSiR is present relates to increased efficiency and market valuation. Finally, increased CSiR when CSR is present relates to increased profitability and efficiency. The results suggest that CSR dominates the relationship to firm performance, as it was positively related to all three measures of firm performance, and when CSR and CSiR exist simultaneously, CSR has a dominant positive effect.

Research limitations/implications – The study sample consists of US firms only from 2009-2013, thus the generalizability of the results to other countries and periods is unknown.

Practical implications – The results demonstrating differing effects based on the measure of firm performance suggest that managers should be specific with which measures are used to gauge the impact of CSR and CSiR. In addition, managers would be wise to invest in CSR, as the results suggest that they can improve profitability, efficiency and market value. Even further, the empirically identified angel-halo effect suggests that investments in CSR may counter any potential negative effects from CSiR. Finally, the latter results suggest that firms can “get away” with some degree of CSiR when CSR is present.

Originality/value – By examining changing levels of CSR and CSiR independently and conjunctly across various measures of firm performance, this paper found a dominating role for CSR, which is labeled as the angel-halo effect.

Keywords Corporate social responsibility, Angel-halo effect, Corporate social irresponsibility, Devil-horn effect, Financial and firm performance

Paper type Research paper



Introduction

We live in a world of increasing paradox; consider the following examples. Wealth in the stock market has reached an all-time high, yet the number of homeless people, and most alarmingly children, living in homeless shelters is also at an all-time high. Where there is an obesity epidemic in developed countries and millions of starving people in developing countries. Where we have more knowledge and technology than ever before matched with increasing social inequality and uncertainty. We have a growing need for government involvement to regulate financial markets and greenhouse gas emissions, yet increasing animosity toward governments across the world with large-scale growth in militias, protests and civil disobedience. Where more than 50 million displaced people across the world (the most since the Second World War) are fleeing persecution in their countries, yet neighboring countries are hardening laws to make it harder for people to enter their countries.

These larger, societal paradoxes also manifest within corporations. In this paper, we investigate the paradox of corporate social responsibility (CSR) and corporate social irresponsibility (CSiR), where corporations exhibit both types of behavior simultaneously. CSR is defined as voluntary corporate actions that firms engage in to positively respond to stakeholder interests and improve social conditions (Carroll, 1979; Mackey *et al.*, 2007; McWilliams and Siegel, 2001; Silberhorn and Warren, 2007; Wood, 1991). While many researchers focus on the phenomenon of CSR, an important related aspect concerns CSiR, which is a conceptually distinct construct (Godfrey *et al.*, 2009; Kotchen and Moon, 2012; Muller and Kräussl, 2011; Tench *et al.*, 2012). CSiR is defined as “the set of corporate actions that negatively affects an identifiable social stakeholder’s legitimate claims (in the long run)” (Strike *et al.*, 2006, p. 852).

While researchers have long studied CSR (Bragdon and Marlin, 1972; Hart, 1995; Porter and van der Linde, 1995; Russo and Fouts, 1997), CSiR is a less explored area (Muller and Kräussl, 2011; Lioui and Sharma, 2012; Oikonomou *et al.*, 2012; Tench *et al.*, 2012), and the balance between the two distinct constructs and the relationship to firm performance is even less understood. Taken together, numerous studies have found positive relationships between CSR activities and firm performance (Brammer and Millington, 2008; Griffin and Mahon, 1997; Hillman and Keim, 2001; Wang *et al.*, 2008), and a number of studies have found negative relationships between CSiR activities and firm performance (Baron *et al.*, 2011; Lioui and Sharma, 2012; Muller and Kräussl, 2011; Oikonomou *et al.*, 2012). Few studies have investigated the simultaneous occurrence of both CSR and CSiR (exceptions include Strike *et al.*, 2006; Tang *et al.*, 2015), and we are unaware of any studies that have examined how increases in CSR (CSiR) when CSiR (CSR) is present relate to firm performance.

In this paper, we combine two data sets, one that provides information on CSR and CSiR, Sustainalytics, and one that provides financial data, Compustat. In the end, we use over 10,000 US firm-quarter observations from 2009-2013 to examine how increases in CSR and CSiR relate to various measures of firm performance, and how they interact in their relationship to firm performance.

The research question addressed is how do increases in CSR (CSiR) while CSiR (CSR) is present relate to various measures of firm performance. In addressing this research question, we make the following contributions to the literature. First, we examine how increasing levels of CSR and CSiR relate to various measures of firm performance both independently and when they occur simultaneously.

Second, we empirically demonstrate that CSR and CSiR are separate, non-symmetrical concepts based on their differing effects on firm performance. More importantly, we introduce a new theoretical concept labeled the angel-halo and/or devil-horn effect, where angel-halo refers to CSR being rewarded even when CSiR increases. Thus, previous CSR creates an angel-halo where a corporation continues to be rewarded even when exhibiting CSiR. In contrast, the devil-horn effect refers to CSiR being punished even when CSR increases. Thus, previous CSiR creates devil-horns where a corporation continues to be punished even when exhibiting CSR. Thus, we extend the literature from the conventional question: Does it pay to be good? To more innovative angles: Does it pay to be good even when also being bad? Or, do you pay for being bad even when also being good? Our results clearly demonstrate the existence of an angel-halo effect where firms tend to benefit from their CSR even when CSiR is present, and even further, when CSiR is present and increasing.

Third, we use three alternative measures of firm performance that are broken into accounting-based measures (return on assets [ROA] and turnover ratio) and a market-based measure (Tobin's Q). Thus, we explain how corporate behaviors can have, or not have, differing effects and implications on firm performance. This demonstrates that the relationship between CSR, CSiR and firm performance may be more complicated than previous studies suggest, especially when CSR and CSiR are both present and changing within an organization.

This paper proceeds as follows: First, we review the literature examining the relationship between CSR, CSiR and firm performance. Second, we develop hypotheses and empirical predictions. Third, we delineate our data, variables and methodology. Fourth, we describe and discuss our results. Finally, before concluding, we discuss our implications for academics and practitioners and the limitations to this study.

Corporate social responsibility and irresponsibility, and firm performance

Although researchers have been examining the relationship between CSR and firm performance for decades (summed up nicely by [Margolis and Walsh, 2003](#); [Orlitzky et al., 2003](#)), the direction of the relationship remains unclear. Correspondingly, there have been calls for a deconstruction of CSR and its relationship to firm performance, as it has become clear that a one-size-fits-all theoretical approach aiming to explain the relationship is neither feasible nor advisable ([Barnett, 2007](#)). More specific to this paper, researchers have also called for a deconstruction of CSR and CSiR, where they are not viewed as a zero-sum game but as separate constructs that can occur simultaneously ([Strike et al., 2006](#); [Tench et al., 2012](#)).

In studying CSiR, a number of studies have demonstrated that it is an important phenomenon in its own right ([Chatterji and Toffel, 2010](#); [Griffin and Mahon, 1997](#); [Lange and Washburn, 2012](#); [Mattingly and Berman, 2006](#)). Most researchers investigating CSiR follow a net approach by subtracting it from the total score of CSR ([Wang and Choi, 2013](#)), where, for example, a firm might receive points for employee engagement but lose points for a lack of diversity, leading to an overall CSR score. However, CSR and CSiR are distinct from each other ([Chatterji et al., 2009](#)), and they do not "necessarily covary in opposite directions" ([Mattingly and Berman, 2006](#)). For example, [Kotchen and Moon \(2012\)](#) show that irresponsible behavior has strong *positive* effects on CSR adoption, and that firms often perform responsible and irresponsible actions simultaneously.

Likewise, by studying the financial sector during the financial crisis and recession from 2007 to 2010, [Herzig and Moon \(2013\)](#) propose that CSR can precede CSiR, CSiR can exist in the absence of CSR or they can exist simultaneously. Accordingly, in this section, we provide separate hypotheses for CSR, CSiR and for their interactive effects on firm performance.

Although the literature has not reached a definitive consensus on the relationship between CSR and firm performance, two major literature reviews, one narrative ([Margolis and Walsh, 2003](#)) and one meta-analysis ([Orlitzky et al., 2003](#)) found that the literature tends to suggest a positive relationship. Numerous studies have empirically demonstrated how benefits can be obtained, including:

- efficiency improvements;
- reductions in regulatory costs;
- new market access;
- improved firm reputation;
- reduced employee turnover;
- increased customer satisfaction; and
- the ability to charge premium prices ([Ambec and Lanoie, 2008](#); [Bansal and Bogner, 2002](#); [Bansal and Clelland, 2004](#); [Dean and Brown, 1995](#); [Fauchaux et al., 1998](#); [Galbreath, 2010](#); [Hart, 1995](#); [Hart and Ahuja, 1996](#); [Hillman and Hitt, 1999](#); [Miles and Covin, 2000](#); [Porter and van der Linde, 1995](#); [Rooney, 1993](#); [Russo and Fouts, 1997](#)).

Consistent with this literature, we predict that:

H1. Increasing levels of CSR will be positively related to firm performance.

Conversely, the literature has tended to demonstrate that CSiR is related to decreased firm performance. Costs from CSiR include damaged stakeholder relationships, tainted corporate reputations ([Muller and Kräussl, 2011](#)), increased financial risk ([Lioui and Sharma, 2012](#); [Oikonomou et al., 2012](#)), negative stock market returns ([Baron et al., 2011](#)) and increased severity of market reactions during disasters ([Muller and Kräussl, 2011](#)). Consistent with this literature, we predict that:

H2. Increasing levels of CSiR will be negatively related to firm performance.

The next hypothesis represents our main conceptual contribution to the existing CSR literature, as we examine the combination of CSR and CSiR and ask the question: When a firm exhibits CSR and CSiR simultaneously, what is the relationship to firm performance? To help us navigate the uncharted waters, we theorize angel-halo and devil-horn effects. In particular, an angel-halo effect exists when previous CSR continues to be rewarded even when the firm exhibits CSiR. In contrast, a devil-horn effect exists when previous CSiR continues to be punished even when the firm exhibits CSR. Clearly, the conceptualizations of an angel-halo or devil-horn effect in the simultaneous occurrence of CSR and CSiR are contrasting.

We predict an angel-halo effect (as opposed to a devil-horn effect), where CSR has a stronger positive effect on firm performance than the negative effect of CSiR. That is, when a firm increases their CSiR, as long as CSR is present, we still expect a positive

effect on firm performance. Further, when a firm increases their CSR, even with CSiR present, we still expect a positive effect on firm performance.

We make this prediction for two reasons: First, for many stakeholders, CSiR is often difficult to identify because of a lack of information or mixed evidence from corporate practices such as green-washing (Walker and Wan, 2012). In contrast, a firm is likely to advertise and promote its CSR. Thus, corporations may effectively increase stakeholder awareness on their CSR while hiding or downplaying their CSiR (Walker and Wan, 2012). Similarly, we also suspect that the level of detail reported by Sustainalytics on CSiR is not common knowledge and companies may actively seek to hide or confuse the matter. With greater awareness about CSR than CSiR, we predict a greater effect for CSR on firm performance when CSiR is present.

Second, researchers have noted extensive benefits to firm performance related to CSR, including efficiency improvements, reductions in regulatory costs, new market access, improved firm reputation, reduced employee turnover, increased customer satisfaction and the ability to charge premium prices (Ambec and Lanoie, 2008; Bansal and Bogner, 2002; Bansal and Clelland, 2004; Dean and Brown, 1995; Faucheux *et al.*, 1998; Galbreath, 2010; Hart, 1995; Hart and Ahuja, 1996; Hillman and Hitt, 1999; Miles and Covin, 2000; Porter and van der Linde, 1995; Rooney, 1993; Russo and Fouts, 1997). Conversely, researchers have compiled a less extensive list of the costs of CSiR (Baron *et al.*, 2011; Lioui and Sharma, 2012; Muller and Kräussl, 2011; Oikonomou *et al.*, 2012). While this may reflect a research bias in favor of CSR over CSiR, the numerous potential benefits to CSR seem to outweigh the potential costs to CSiR. This is not to say that there are no costs to CSiR (indeed see our second hypothesis), only that when both CSR and CSiR are present, the varied benefits to CSR may outweigh the negative implications of CSiR on firm performance.

Accordingly, if a corporation participates in both CSR and CSiR, we predict an angel-halo effect where the overall effect of firm performance is positive.

H3. If a firm engages in both CSR and CSiR, the impact of CSR dominates, leading to a positive relationship to firm performance.

Data and methods

Data

We compile data from two sources. The first data set is Sustainalytics, which provides information for our measures of CSR and CSiR. Sustainalytics is one of the world-leading research companies specializing in Environmental, Social and Corporate Governance (ESG) data. They collect information from primary and secondary sources as well as specialized data providers.

For any given firm, Sustainalytics provides detailed ratings on up to 148 items. Each item is assigned a value ranging from 0 and 100, with a higher value representing better performance. Sustainalytics also provides item weighting based on specific sectors and industries. Sustainalytics aggregates the weighted score of its individual scores to calculate the total ESG score. The weighted score addresses common criticisms of other data sets such as KLD, by acknowledging the differing circumstances in different industries (Surroca *et al.*, 2010). Therefore, one key benefit of using Sustainalytics is that its weighting scheme gives users the flexibility to create customized ESG scores based on individual items and corresponding weights. This benefit allows us to decompose the ESG information into CSR and CSiR.

Although Sustainalytics updates CSR and CSiR values on a monthly basis, Compustat updates financial information quarterly and annually. Therefore, if changes in CSR and CSiR have an impact on firm performance, then we would observe the change on a quarterly basis in Compustat data. We calculated quarterly changes in CSR and CSiR by taking the differences of CSR and CSiR scores between two consecutive quarters, and then merging them with the Compustat data. Following prior literature, we exclude financial companies (SIC code between 6000 and 6999) because financial firms are in a highly regulated industry and they exhibit substantially different firm-level characteristics compared to non-financial firms. We classify industries based on the two-digit SIC code and we removed industries with less than 15 observations. Our final sample contains 11,896 firm-quarter observations during the period of 2009 to 2013.

Variables

Corporate social responsibility and irresponsibility. Our measures of CSR and CSiR were constructed using rating data in Sustainalytics under five types of stakeholders – Employees (items S.1.*), Suppliers (S.2.*), Customers (S.3.*), Communities (S.4.*) and Environment (E.*). The items related to controversies or incidents (including items S.1.7, S.2.3, S.3.3, S.4.3, E.1.12, E.2.2 and E.3.2) are used to construct the aggregate CSiR variable, and the remaining items are used to construct the aggregate CSR variable. We compute the CSR and CSiR value as the sum of the weighted average of the raw scores divided by their weights. This calculation transforms the CSR and CSiR ratings into a 0-100 scale and it facilitates comparisons across different industries. To make the interpretation more intuitive, we calculate CSiR as 100 minus the weighted adjusted CSiR scores, where 0 represents no CSiR incidents and 100 represents the worst CSiR incidents. More specially, CSR and CSiR variables are defined as follows:

$$CSR = \frac{\sum(CSR \text{ items raw scores} \times Weight)}{\sum Weight} \quad (1)$$

$$CSiR = 100 - \frac{\sum(CSiR \text{ items raw scores} \times Weight)}{\sum Weight} \quad (2)$$

We measure the change of CSR and CSiR status as follows: CSR_UP equals to 1 if the change in CSR from the previous quarter for any given firm is positive, and 0 otherwise; CSiR_UP equals to 1 if the change in CSiR is positive, and 0 otherwise. To test the angel-halo and devil-horn effects, we generated interaction terms CSR_UP × CSiR and CSiR_UP × CSR to access the moderating effects.

Firm performance. We use three alternative measures to evaluate firm performance from different aspects. Two are accounting-based: *ROA* (net income divided by total assets) and *asset turnover ratio* (sales revenue divided by total assets), and one is market-based: *Tobin's q* (market value of equity plus book value of debt, divided by book value of total assets).

Three variables reflect different aspects of firm performance. Specifically:

- ROA measures accounting profitability;
- asset turnover ratio reflects a company's management efficiency and whether the firm is using its assets effectively in generating sales; and
- Tobin's Q is a snapshot of the market value of the firm relative to its book value, where a higher Tobin's Q indicates a higher growth opportunity for the firm.

Control variables. Following prior CSR literature, we include many common determinants of firm performance. First, *size* is measured as the log of total assets. Second, *profit margin* is measured as earnings before interest and taxes divided by sales. Third, *debt* is measured as long-term debt divided by total assets. Fourth, *liquidity* is measured as cash divided by total assets. Fifth, *tangibility* is measured as net property, plant and equipment divided by total assets. Sixth, research and development (*R&D*) is measured as R&D expense divided by total assets. Finally, we also include industry and quarterly dummies to control for the fixed industry and time effects. The industry dummy is coded using the two-digit SIC code, while the quarterly dummy is created by the total quarters during our sample period.

Methodology

We run the following regression model to examine the impact of increase in CSR and CSiR, as well as their moderating effects on firm performance:

$$\begin{aligned}
 Performance_{i,t} = & \alpha + \beta_1 Size_{i,t-1} + \beta_2 Debt_{i,t-1} + \beta_3 Liquidity_{i,t-1} + \beta_4 Tangible_{i,t-1} \\
 & + \beta_5 RD_{i,t-1} + \beta_6 PM_{i,t-1} + \beta_7 CSR_UP_{i,t-1} + \beta_8 CSiR_UP_{i,t-1} \\
 & + \beta_9 CSR_UP \times CSiR_{i,t-1} + \beta_{10} CSiR_UP \times CSR_{i,t-1} \\
 & + Quarterly\ Dummies + Industry\ Dummies + \varepsilon_{i,t}
 \end{aligned} \quad (3)$$

Where i and t represent firm i at t th quarter, respectively. The dependent variable firm performance is measured by three variables defined above: ROA, total assets turnover ratio and Tobin's Q. To avoid the impact of outliers biasing the regression results, we winsorize all variables at the 1 and 99 per cent tails. We also perform a robustness check by running a fixed firm effects regression, and the results remain qualitatively the same.

Results

Table I presents descriptive statistics for the dependent and explanatory variables used in the study. Our data indicate that, on average, 27.1 per cent of the firms increase their CSR, whereas 20.1 per cent of the firms increase their CSiR, relative to the level in the previous quarter. Table II presents the correlations among key variables. We find that the correlations among our control variables are less than 35 per cent, and thus, multicollinearity is not a concern.

Table III presents the results for the impact of increases in CSR and CSiR across the three measures of firm performance. $H1$ predicts that increases in CSR will be positively related to firm performance. Results are consistent with this hypothesis in all three financial measures. Specifically, increasing CSR is positively and significantly related to ROA, asset turnover and Tobin's Q. $H2$ predicts that increases in CSiR will be negatively related to firm performance. We find marginal support for this hypothesis.

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Table I.
Descriptive statistics

Descriptive statistics	Mean	SD	Median	N
Size	8.819	1.208	8.712	11,173
ROA	0.015	0.033	0.015	11,168
Q	1.391	1.321	1.023	11,039
Turnover	0.232	0.178	0.184	11,170
Debt	0.237	0.183	0.220	11,096
Liquidity	0.876	18.291	0.381	11,155
Tangible	0.302	0.244	0.219	11,143
PM	0.035	7.907	0.135	11,142
RD	0.006	0.013	0.000	11,190
CSR_UP	0.271	0.445	0.000	10,432
CSiR_UP	0.201	0.401	0.000	10,432
CSR	22.749	15.015	18.977	11,190
CSiR	4.326	8.248	5.751	11,190

Table II.
Correlation matrix

Variables	ROA	Turnover	Q	Size	Debt	Liquidity	Tangible	RD	PM	CSR_UP	CSiR_UP
ROA	1										
Turnover	0.1478*	1									
Q	0.2687*	0.1482*	1								
Size	-0.0262*	-0.1273*	-0.3794*	1							
Debt	-0.1710*	-0.1803*	-0.2932*	0.1452*	1						
Liquidity	-0.1174*	-0.0307*	0.2473*	-0.0514*	-0.0207*	1					
Tangible	-0.1114*	-0.1738*	-0.2324*	0.2040*	0.2736*	-0.0264*	1				
RD	-0.0328*	-0.1204*	0.3294*	-0.2135*	-0.2433*	0.1916*	-0.3114*	1			
PM	0.1277*	0.0138	-0.1630*	0.0394*	0.0118	-0.9249*	0.0133	-0.1707*	1		
CSR_UP	0.0217*	-0.0054	0.0097	0.0919*	-0.0384*	0.0225*	0.002	0.0197*	-0.0181*	1	
CSiR_UP	0.0025	0.0019	0.0073	0.0362*	0.0111	0.0268*	0.0258*	-0.0154	-0.0225*	0.2971*	1

Note: *Denotes 10% significance**Table III.**
Regression results
for increasing levels
of CSR and CSiR

Variables	Dependent variables		
	ROA	Turnover	Q
CSR_UP	0.001 (2.00)**	0.008 (2.67)***	0.065 (2.95)***
CSiR_UP	-0.001 (1.76)*	-0.004 (1.08)	-0.042 (1.28)
Size	-0.00 (6.57)***	-0.018 (17.33)***	-0.320 (39.78)***
Debt	-0.026 (18.56)***	-0.101 (13.19)***	-1.332 (22.40)***
Liquidity	-0.005 (14.10)***	-0.066 (32.02)***	0.102 (6.37)***
Tangible	-0.006 (3.80)***	-0.049 (5.76)***	-0.087 (1.31)
RD	-0.082 (3.69)***	-0.776 (6.48)***	20.682 (22.23)***
PM		-0.154 (16.68)***	2.646 (36.72)***
Constant	0.046 (14.51)***	0.466 (26.73)***	3.918 (28.20)***
Adjusted R ²	0.16	0.62	0.48
N	10,283	10,263	10,155

Notes: *Significant at 10%; **significant at 5%; ***significant at 1%

Although our results show that CSiR is negatively related to firm performance for all three financial measures, only the results for ROA are significant.

Next, we test the angle-halo effect. Table IV presents the results for increasing levels of CSiR when CSR is present, tested in the interaction term $CSiR_UP \times CSR$. Our regression results suggest that when CSR is present, increasing CSiR is positively associated with firm performance in ROA and asset turnover ratio, but not Tobin's Q. *H3* predicts that when both CSR and CSiR are present, the impact of CSR will dominate, leading to a positive relationship to firm performance. Overall, our results are consistent with this hypothesis, where in two of three financial measures, we find a positive relationship to firm performance.

Table V presents the results for increasing levels of CSR when CSiR is present, tested in the interaction term $CSR_UP \times CSiR$. Results suggest that when CSiR is present, increasing CSR is positively associated with firm performance in asset turnover ratio and Tobin's Q, but not ROA. Thus again, overall, our results are consistent with *H3*,

Table IV.
Regression results
for increasing levels
of CSiR when CSR is
present

Variables	Dependent variables		
	ROA	Turnover	Q
CSiR_UP	-0.003 (3.22)***	-0.015 (2.80)***	-0.052 (1.21)
CSiR_UP \times CSR	0.000 (3.28)***	0.001 (3.58)***	0.001 (1.02)
Size	-0.001 (7.04)***	-0.019 (17.52)***	-0.320 (38.63)***
Debt	-0.026 (18.53)***	-0.101 (13.17)***	-1.335 (22.45)***
Liquidity	-0.005 (14.04)***	-0.066 (31.95)***	0.103 (6.41)***
Tangible	-0.006 (3.88)***	-0.049 (5.84)***	-0.089 (1.34)
RD	-0.084 (3.76)***	-0.784 (6.54)***	20.704 (22.24)***
PM		-0.154 (16.68)***	2.647 (36.72)***
Constant	0.048 (14.93)***	0.474 (27.20)***	3.956 (28.45)***
Adjusted R^2	0.16	0.62	0.48
N	10,283	10,263	10,155

Notes: *Significant at 10%; ** significant at 5%; *** significant at 1%

Table V.
Regression results
for increasing levels
of CSR when CSiR is
present

Variables	Dependent variables		
	ROA	Turnover	Q
CSR_UP	0.001 (1.28)	0.005 (1.57)	0.031 (1.36)
CSR_UP \times CSiR	0.000 (0.77)	0.000 (2.07)**	0.006 (3.27)***
Size	-0.001 (6.49)***	-0.018 (17.25)***	-0.326 (39.26)***
Debt	-0.026 (18.50)***	-0.100 (13.08)***	-1.322 (22.22)***
Liquidity	-0.005 (14.10)***	-0.066 (32.01)***	0.103 (6.39)***
Tangible	-0.006 (3.83)***	-0.049 (5.80)***	-0.091 (1.37)
RD	-0.081 (3.67)***	-0.773 (6.45)***	20.717 (22.28)***
PM		-0.154 (16.62)***	2.653 (36.83)***
Constant	0.045 (14.54)***	0.461 (27.37)***	3.868 (28.76)***
Adjusted R^2	0.16	0.62	0.48
N	10,283	10,263	10,155

Notes: *Significant at 10%; ** significant at 5%; *** significant at 1%

where in two of three financial measures, we find a positive relationship to firm performance.

Discussion

We developed and tested three hypotheses in this paper; in this section, we discuss each of them in turn. The first investigated how increases in CSR related to firm performance. Results were consistent with our hypotheses in all three measures of firm performance. Within our five-year (2009-2013) study based on quarterly financial data that occurred immediately after the Great Recession in 2007-2008, it appeared that increases in CSR were positively related to higher profitability (ROA), improved efficiency (asset turnover) and improved market valuation (Tobin's Q). Such improvements are consistent with past literature (Ambec and Lanoie, 2008; King and Lenox, 2001; Margolis and Walsh, 2003; Orlitzky *et al.*, 2003). However, to our knowledge, this is the first study to demonstrate that increasing levels of CSR are related to profitability, efficiency and market value. This suggests a dominating role for CSR on firm performance. Given that our study took place four years after the Great Recession, CSR may have had a particular influence on firm performance in a highly competitive and constrictive environment. In addition, our longitudinal study examined a post-recessionary environment (2009-2010), followed by a period of slow but substantial regrowth (2011-2013). Of interest is that regardless of the macro economic cycle, CSR was related to all three measures of firm performance.

The second hypothesis examined the relationship between changes in CSiR and firm performance. Results were consistent with the hypothesis for ROA alone, and only marginally so. Our results suggest that higher CSiR will hurt profitability, and opposite to the positive impacts of CSR. However, CSiR is not significantly related to management efficiency or market value. This suggests that CSiR does not represent a poor use of assets, nor an inability to generate sales from these assets, and that the market may not significantly punish CSiR, even though it has a significant negative effect on profitability.

Examining the results for CSR and CSiR together, we found that CSR played a dominant role on firm performance (positively significant in all three measures of firm performance), whereas the influence of CSiR was only marginally significant under ROA (and non-significant for the other two measures of firm performance). Furthermore, consistent with the predicted angel-halo effect, when both CSR and CSiR were present, regardless of which one was increasing, CSR had a controlling positive effect. That is, of the six possible relationships (CSR increasing while CSiR is present and vice versa, for three measures of firm performance), four had a positive relationship to firm performance. Taking all the results together, CSR appears to dominate the relationship to firm performance as compared to CSiR. In relation to our conceptualization of an angel-halo or devil-horn effect, clearly we find evidence of an angel-halo effect. That is, firms tend to benefit financially from their CSR even when CSiR is present, and going even further, our data demonstrate that the relationship still exists when CSiR is present and increasing.

Two possible reasons for the dominating effect of CSR over CSiR on firm performance include the ability of firms to emphasize their CSR and downplay, hide or green-wash their CSiR, and the varied potential benefits to CSR compared to the more limited potential costs of CSiR. Related to the former, our results suggest that firms can "get away" with CSiR, in that it was not significantly related to measures of management efficiency or market performance. Further, when exhibiting both CSR and CSiR, the angel-halo enables firm to

continue to benefit in two of three measures of firm performance. Related to the latter, our results showed that CSiR had only a marginally significant negative effect on ROA, whereas CSR had a significant positive effect on all three measures of firm performance. This supports the argument that there are varied benefits to CSR (evidenced in profitability, asset turnover and Tobin's Q), and more limited costs to CSiR (ROA only).

Implications

Theoretical implications

We have two main theoretical implications. First, by examining changing levels of CSR and CSiR independently and conjunctly, we found a dominating role for CSR. Not only are increasing levels of CSR related to various measures of firm performance, but it has an overwhelming positive influence on firm performance in the presence of CSiR. Thus, we find strong support for the existence of an angel-halo effect.

Second, by examining multiple measures of firm performance, we found differing effects. Thus, academics must be mindful of which measures of firm performance they use when examining the relationships between CSR, CSiR and firm performance. Furthermore, perhaps the best course of action is to always use multiple measures, as we try to understand the complexity of the influence of social behaviors on firm performance. Investigating the relationships of CSR and CSiR on various measures of firm performance may also aid in understanding the strategic implications of corporate social behaviors (Bhattacharyya, 2010; Galbreath, 2009).

Practical implications

We have three main managerial implications. First, our results suggest that managers should be very specific as to which benefits they seek from their responsible or irresponsible behavior, and which measures of firm performance to use to gauge CSR or CSiR. For example, our results suggest the increases in CSiR significantly reduce ROA only, but do not hurt asset turnover or Tobin's Q in a pronounced way.

Second, managers would be wise to invest in CSR, as our results suggest that they can improve profitability, efficiency and market value. These are very different and important financial benefits. Even further, investing in CSR may counter any potential negative effects from CSiR. Managers may particularly relate to the concept of an angel-halo effect and find solace in knowing that investments in CSR appear to pay off in multiple ways, and continue to pay off even when CSiR is present and increasing.

Third, our results tend to suggest that firms can "get away" with some CSiR in two ways. First, while profits (specifically ROA) may be affected by CSiR, management efficiency (asset turnover) and market valuation (Tobin's Q) were unaffected in our study. Second, as long as CSR is present, the angel-halo effect identified in this study allows for some CSiR.

Limitations

Our study has two main limitations, both related to the generalizability of our main finding, the angel-halo effect. First, our results were based on a sample of US firms. Therefore, to what extent our findings on the angel-halo effect could be generalized to firms in other countries was beyond the scope of this study and is worthy of future exploration. For example, researchers have noted that the consciousness of CSR is less developed in China than in developed countries, suggesting that we might not find evidence of the angel-halo effect (Yang and Crowther, 2012). Second, our sample period covers 2009 to 2013, during which the economic recovery was slow and weak, and was venerably impacted by several

macro shocks, such as the US sovereign debt rating downgrades by S&P in August 2011 and the European sovereign debt crisis in 2011-2012. Whether the angel-halo effect observed in our paper persists in a normal economic environment is an important question to pursue in future research.

Conclusion

In this study, we found that increasing levels of CSR are related to improved profitability, efficiency and market value, and that increasing levels of CSiR are marginally related to decreased profitability. Our research question asked how do increases in CSR (CSiR) while CSiR (CSR) is present relate to various measures of firm performance? We found that increasing levels of CSR when CSiR is present are related to improved efficiency and market value, and that increasing levels of CSiR when CSR is present are related to improved profitability and efficiency.

Our results are clear in demonstrating varied benefits to firm performance from CSR, and an angel-halo effect, where CSR “outweighs” CSiR. In a world of paradoxes, the results from this study suggest that CSR is rewarded, even when it exists simultaneously with CSiR.

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Corresponding author

Kent Walker can be contacted at: kentwalk@uwindsor.ca

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