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ORIGINAL PAPER

Changes in Corporate Social Responsibility and Stock Performance

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Abstract
We study the relationship between corporate social performance and financial performance by comparing the portfolio returns of firms with changes in corporate social responsibility (CSR) intensity. Using an extensive US sample from the MSCI ESG database, we find that improvement in the overall CSR is generally value enhancing. The relationship varies with CSR dimensions. More importantly, the relationship shifts differently for various CSR dimensions during the crisis period when trust in the society is low and financial resource is limited. Improvement in environment, human rights, and product characteristics shows higher financial returns during the financial crisis period, whereas the value enhancement of improvement in employee relations is more pronounced during the non-crisis period.

Keywords Corporate social responsibility (CSR) · Corporate social performance (CSP) · Financial performance · Social capital

JEL Classification G10 · G11 · M14

Introduction

Business ethics is an important topic that has received much attention from business practitioners and academic researchers. According to Lewis (1985), business ethics is "moral rules, standards, codes, or principles which provide guidelines for right and truthful behavior in specific situations."

One central question in this field is how managers can manage a firm with appropriate attention to ethical concern and corporate social responsibility (CSR). CSR can be regarded as an obligation of the business society to all its stakeholders (Gössling and Vocht 2007), and has become increasingly important. Today more and more managers incorporate CSR into their management agenda and provide corporate responsibility report to the public. A recent study conducted on over 1000 top business executives in the world reveals that 93% of the CEOs believe that sustainability is crucial to the success of their businesses, and 81% of the CEOs agree that the sustainability reputation of their companies is important to consumer purchasing decisions.[1] KPMG reports that 75% of the 4900 global companies that were surveyed undertake the practice of corporate responsibility reporting.[2] Meanwhile, due to the increasing awareness of CSR issues by investors, socially responsible investing has

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[1] See The UN Global Compact-Accenture CEO Study on Sustainability 2013. https://www.unglobalcompact.org/docs/news_events/8.1/UNGC_Accenture_CEO_Study_2013.pdf.

[2] See The KPMG Survey of Corporate Responsibility Reporting 2017. https://assets.kpmg.com/content/dam/kpmg/xx/pdf/2017/10/kpmg-survey-of-corporate-responsibility-reporting-2017.pdf.

become popular practice in the investment society (Renneboog et al. 2008).[3]

The literature has two opposing views on whether managers should take CSR into account in making managerial decisions. Freeman (1984) argues that the management of a corporation should be held accountable for the welfare of its stakeholders, which include not only its stockholders, but also its employees, customers, suppliers, communities, etc. According to this so-called stakeholder theory, a positive relationship between firms and their stakeholders helps improve firm value, which ultimately benefits their stockholders. Proponents of the stakeholder theory believe that the goal of firm value maximization can be consistent with the practice of CSR, such as environmental protection, employee relations improvement, and human rights promotion (Macintosh 1999; Deng et al. 2013). However, this view contradicts the argument made by Friedman (1970) that the sole goal of corporate management is to maximize stockholders' interests and thus CSR activities essentially cost stockholders instead of benefiting them (see also Aupperle et al. 1985; Waddock and Graves 1997). Jensen (2001) argues that the stakeholder theory lacks a precise objective function. Because of the inherent conflict of interest among different stakeholders, this theory empowers managers to use valuable firm resources to be engaged in CSR that helps to build up their personal reputation instead of maximizing firm values (see Jensen and Meckling 1976; Benabou and Tirole 2010; Masulis and Reza 2015).

The opposing views predict different relationships between corporate social performance (CSP) and financial performance. Preston and O'Bannon (1997) propose a typology of these relationships. The social impact (trade-off) hypothesis proposes that better CSP leads to improvement (deterioration) in financial performance. The available funding (managerial opportunism) hypothesis, on the other hand, claims that good financial performance causes better (worse) CSP. The positive and negative synergy hypotheses argue that CSP and financial performance are synergistic. Many studies in the business ethics or finance literature focus on whether CSP has a financial payoff. One main concern is that CSR activities may negatively impact stockholders' wealth. Although stockholders' welfare includes more than pecuniary benefits, financial return is still of most importance to investors. On the other hand, being socially responsible may result in a win-win situation that not only enhances other stakeholders' welfare but also benefits stockholders. The relationship between CSP and financial performance can be complex and can change with CSR dimensions or external environments. Empirically, the literature has reported mixed evidence. Some authors find a positive relation (Orlitzky 2001; Flammer 2015; Ferrell et al. 2016). Others demonstrate a negative relationship (Hillman and Keim 2001; Moore 2001; Kruger 2015). Still other authors report no significant relationship (Seifert et al. 2003; Makni et al. 2009). Bowman and Haire (1975) show an inverted "U" relationship, i.e., an intermediate level of CSP will maximize firm value.

This paper contributes to the business ethics and finance literature by examining the relationship between CSP and financial performance from a different perspective. Existing studies compare financial returns of firms with different *levels* of CSP in the cross-section. If a firm maintains a certain level of CSP, its impact should have been reflected in the firm value. Thus, evidence obtained by comparing the performance of firms with different levels of social performance in the cross-section may not identify the effect of CSP on financial performance. In this paper, we examine the relation between CSP and financial performance by comparing the portfolio returns of firms that have experienced changes in CSP over time. Specifically, we study the portfolio returns of firms that experience changes in different CSR dimensions, including community, diversity, employee relations, environment, human rights, and product characteristics. If CSP is positively related to financial performance, we should expect the portfolio of firms with improvement in CSP in the past to have better financial performance in the future. On the other hand, if managerial engagement in CSR reflects an agency problem between managers and stockholders, we should anticipate the portfolio of firms which commit more resources to CSR to subsequently underperform financially.

Most studies on the valuation of CSR assume a stationary relation between CSP and financial performance. Some researchers, however, suggest that the value of CSP is likely to be revealed during adverse market conditions or when the firm suffers a negative event. Godfrey et al. (2009) and Shiu and Yang (2017) indicate that CSR activities offer an insurance-like protection, so firms engaging more in CSR activities receive less negative judgments from their shareholders in the face of adverse events. Lins et al. (2017) find that stocks of high-CSR firms performed better than those of low-CSR firms during the 2008–2009 financial crisis, and that firm-specific social capital, which is built up via the engagement in CSR, pays off when trust in the society is low. Consistent results are also found in Nofsinger and Varma (2014). On the other hand, Koh et al. (2014)

[3] For example, in 2012, 11.3% of the $33.3 trillion assets under professional management in the U.S. are invested according to the concept of socially responsible investing. From 1995 to 2012, assets engaged in sustainable and responsible investing practice increased by 486%, while the growth rate of total assets under professional management is only 376% during the same period. See the 2012 Report on Sustainable and Responsible Investing Trends in the United States.
http://www.ussif.org/files/Publications/12_Trends_Exec_Summary.pdf.

indicate that the value enhancement of CSR is constrained if firms do not obtain pragmatic legitimacy, e.g., when firms are financially unhealthy. Wang and Qian (2011) show that firms' engagement in prosocial activities may result in punishment from stakeholders if firms have a poor financial position. These studies predict different impacts of CSR practice on financial performance during the crisis period when financial resource is limited and trust in the society is scarce and suggest that the relationship may change with market conditions. Our paper contributes to the business ethics literature by studying the relationship between CSP and financial performance during the crisis and non-crisis periods. We investigate whether companies can establish their social capital by engaging in CSR activities during the crisis period when financial resource is limited and obtain better financial performance. Furthermore, we separately examine the value of each of the CSR dimensions, including environment, employee relations, community, diversity, human rights, and product characteristics.

Using risk-adjusted stock returns as a measure of financial performance, we find that in general firms with improvement in CSR have better financial performance. However, the relation changes with different CSR dimensions. Specifically, firms with improvement in environment or human rights earn positive risk-adjusted returns, which are significantly higher than those with deterioration in the corresponding CSR dimensions. Firms with improvement in employee relations or product characteristics show positive risk-adjusted returns. However, we find mixed evidence that firms with deterioration in these two dimensions also earn positive risk-adjusted returns.

Splitting the sample into financial crisis and non-crisis periods provides much interesting insight. Improvements in environment or human rights are value enhancing during both the crisis and non-crisis periods. On the other hand, firms with improvement in product characteristics outperform those with deterioration during the crisis period, but during the non-crisis period, firms with deterioration in product characteristics have higher risk-adjusted returns. Firms with deterioration in employee relations outperform those with improvement during the financial crisis, while these two groups of firms do not perform differently during the non-crisis period. This finding supports Koh et al.'s (2014) argument that the value generation of CSR is constrained if firms perform poorly financially, and is also consistent with Wang and Qian's (2011) results that firms' engagement in prosocial activities may result in punishment from stakeholders if firms have a poor financial position. Our evidence shows that the relation between financial performance and CSP in employee relations and product characteristics changes with market conditions. Furthermore, we demonstrate that improvement in environment, human rights, and product characteristics during the crisis period is better rewarded than during the non-crisis period, whereas the value enhancement of improvement in employee relations is more pronounced during the non-crisis period. Our overall results suggest that the relationship between CSP and financial performance shifts with market conditions and depends on particular CSR dimensions.

Our findings are robust to a battery of sensitivity tests, including an alternative measure of financial performance (Tobin's Q), a potential reverse causation problem, alternative sample periods, controls for potential confounding effects from other dimensions, and controls for changes in the definition of strengths and concerns in the CSR dimensions in the database over time.

The remainder of this paper is organized as follows. "Literature Review and Hypothesis Development" reviews literature and develops our hypotheses. "Data" describes the data. "Empirical Methodology" presents the empirical methodology. Empirical results are presented in "Empirical Evidence". Robustness checks are conducted in "Robustness Checks" and conclusions are provided in "Conclusions".

Literature Review and Hypothesis Development

The literature has reported mixed empirical evidence on the relationship between firm value and CSR. A number of authors show a positive relation (Orlitzky 2001; Simpson and Kohers 2002; van Beurden and Gössling 2008). Contrary to the argument of agency theory, Ferrell et al. (2016) demonstrate that firms with less concern of agency problem are engaged more in CSR practices. Furthermore, researchers document a positive relation between financial performance and specific CSR dimensions, such as corporate governance (Bebchuk et al. 2009), environmental performance (Derwall et al. 2005; Statman and Glushkov 2009), and employee satisfaction (Jiao 2010; Edmans 2011). Wang et al. (2018) show that mandatory CSR disclosure helps to improve the quality of financial information disclosure and constrain earnings management. Several studies indicate that firms with higher CSR performance face lower cost of capital and are financially less constrained (Sharfman and Fernando 2008; Goss and Roberts 2011). A number of researchers also find that the practice of CSR offers an insurance-like protection that reduces firm risk (Godfrey et al. 2009; Jo and Na 2012). Chih et al. (2010) indicate that financial firms engage more CSR activities to enhance their competitive advantages when the market becomes more competitive.

By contrast, consistent with the agency theory, several researchers show that firms engaged in CSR suffer more from agency problems and are associated with lower shareholder value (Hillman and Keim 2001; Kruger 2015). Moore (2001), for instance, finds a negative contemporaneous

relationship between social and financial performance in the U.K. supermarket industry. Cheng et al. (2014) show that investment in CSR activities declines as managerial ownership or monitoring increases. Hong et al. (2012) argue that instead of doing well by doing good, firms do good only when they do well, and they show that financially less constrained firms are more likely to be engaged in CSR activities. A related argument is made by Lys et al. (2015), who indicate that firms are more likely to be engaged in CSR activities in the current period when managers anticipate better financial performance in the future and better CSR performance does not itself lead to good financial performance. Di Giuli and Kostovetsky (2014) find that Democratic-leaning firms spend more money on CSR than Republican-leaning ones and investment in CSR is negatively related to future stock returns and ROA. Hong and Kacperczyk (2009) demonstrate that sin stocks offer positive abnormal returns. Meanwhile, other authors do not find a significant relation between financial performance and CSR (McWilliams and Siegel 2000; Seifert et al. 2003).

Most existing research studies the relationship between CSP and financial performance by comparing firms with different *levels* of CSP. However, if a firm has a stable CSR intensity, the market should have incorporated the effect of CSP into its stock price. Therefore, evidence obtained by comparing the performance of firms with different CSP levels may not be able to identify the effect of CSP on financial performance. In this paper, we investigate the relation by comparing the portfolio returns of firms that have experienced changes in CSP over time. Khan et al. (2016) study future financial performance of firms that experience changes in residual CSR scores. They compare the impact of changes in material and immaterial sustainability investments on firm performance. We examine the relationship between financial performance and changes in CSR for different CSR dimensions. If the agency theory provides the primary explanation, we should find a negative relation between change in CSR intensity and firm value. On the other hand, a firm's financial performance should be positively related to improvement in CSR if the stakeholder theory plays a dominant role. Therefore, we test the following:

Hypothesis 1: Under the stakeholder theory, we predict a positive association between corporate social performance and financial performance.

Hypothesis 2: Under the agency theory, we predict a negative association between corporate social performance and financial performance.

Godfrey et al. (2009) and Shiu and Yang (2017) indicate that CSR activities offer an insurance-like protection, so firms engaging more in CSR receive less negative judgments from their shareholders in the face of adverse events. Similarly, Lins et al. (2017) argue that the value of social capital created through CSR practices matters the most during the crisis period when trust in the society is low. Nofsinger and Varma (2014) show that socially responsible mutual funds outperform conventional funds during the crisis period, but not during the non-crisis period. They indicate that investors of socially responsible mutual funds are willing to accept lower returns during non-crises in exchange for higher returns during market crises. Similar evidence is also found in socially responsible bond funds (Henke 2016). On the other hand, Koh et al. (2014) show that the value enhancement of CSR is constrained when firms are not financially healthy. If companies can quickly establish social capital by engaging in CSR activities, we may anticipate a stronger relationship during the crisis period when trust in the society is scarce. However, CSR practices may be less rewarded during crisis period because firms' financial resource is limited. Therefore, the relationship between CSP and financial performance may change during crisis and non-crisis periods. Hence, we test the following:

Hypothesis 3: The relationship between corporate social performance and financial performance during the crisis period may change from that during the non-crisis period.

Data

We use the MSCI ESG (formally known as KLD Research & Analytics) database to determine a firm's social performance. MSCI ESG has been widely used in the literature to measure a firm's CSR intensity (e.g., Di Giuli and Kostovetsky 2014). The number of firms covered in the MSCI ESG database has significantly increased over time. From 1991 to 2000, MSCI ESG covered all firms of the S&P 500 and Domini Social index. In 2001, MSCI ESG expanded to cover firms of the Russell 1000 index and in 2002 added firms of the Large Cap Social index. In 2003, all firms of the Russell 2000 and the Broad Market Social index are added into the MSCI ESG database. The average number of firms covered in the database is 653 during 1991–2000, 1107 in 2001, 1108 in 2002, and 2,941 during 2003–2012.[4] MSCI ESG measures the performance of CSR in thirteen dimensions. The first seven dimensions are community, corporate governance, diversity, employee relations, environment, human rights, and product characteristics. Within each dimension, MSCI ESG establishes a list of strengths and concerns (see the Appendix for the list for year 2012 as

[4] Detailed information about the number of firms covered by the database over time is available from the authors upon request.

an example) and uses them as criteria to measure a firm's social performance. For each strength (concern), MSCI ESG assigns a score of one for the presence of that strength (concern) in the evaluated firm and zero otherwise. For instance, employee involvement is one of the strength criteria listed in employee relations. The evaluated firm will get a score of one in employee involvement if the firm fulfills the criterion and zero otherwise. Similarly, employment health & safety is one of the concerns listed in employee relations. The evaluated firm gets a score of one if MSCI ESG sees the presence of that concern in the company and zero otherwise. The last six dimensions indicate if firms are involved in controversial businesses, including alcohol, gambling, tobacco, firearms, military, and nuclear power. For each dimension, a firm gets a score of one if its operation is involved in the indicated controversial business and zero otherwise.

To measure CSP, we follow El Ghoul et al. (2011) and Kempf and Osthoff (2007) by considering the following six dimensions: community, diversity, employee relations, environment, human rights and product characteristics. We exclude corporate governance from the CSR analysis. According to Servaes and Tamayo (2013), "corporate governance is about the mechanisms that allow the principals (shareholders) to reward and exert control on the agents (the managers)," whereas CSR "deals with social objectives and stakeholders other than shareholders." Because this study focuses on the relationship between CSP and financial performance, we do not include corporate governance in our measure of CSP. The impact of corporate governance on firm value is also well researched in the corporate governance literature. Firms involved in the six dimensions of controversial businesses are fundamentally different from other firms in terms of CSR and thus are excluded from our study. Hong and Kacperczyk (2009) find that stocks involved in the controversial businesses usually outperform the market because they have been neglected by norm-constrained investors. Studies on the relationship between CSR and firm performance usually separate regular businesses from firms involved in the controversial businesses (e.g., Galema et al. 2008; Lins et al. 2017).[5] In this study, we focus on the general relationship between CSR and financial performance, so we exclude firms involved in the controversial business from our analysis. Because MSCI ESG may have a firm on its list but does not examine its performance in all CSR dimensions, we exclude those firms from our analysis if they do not receive any strength and concern indicator in the dimension that we examine (Statman and Glushkov 2009). To control for the variation in the number of strengths and concerns considered by MSCI ESG over the sample years, for each CSR dimension, we standardize each firm's strength (concern) scores by dividing its strength (concern) scores by the total number of strengths (concerns) considered by MSCI ESG in the same year. The standardized strength and concern scores range between zero and one. We then subtract the standardized concern score from the standardized strength score to obtain the firm's social performance.

Table 1 summarizes the number of strengths (S) and concerns (C) considered by MSCI ESG from 1991 to 2012. We use the notations "COM", "DIV", "EMP", "ENV", "HUM", and "PRO" to represent the dimensions of community, diversity, employee relations, environment, human rights, and product characteristics, respectively. As shown in Table 1, the number of strengths and concerns considered by MSCI ESG varies over the sample period. Taking the dimension of community as an example, in 2012, there are 2 (1) strengths (concerns) considered by MSCI ESG, compared to 7 (4) strengths (concerns) in 2009. The number of strengths and concerns also differs among dimensions. In 2012, while there are 9 (9) strengths (concerns) considered in environment, only 2 (4) strengths (concerns) are examined in human rights.

Table 1 also presents the average performance of CSR of the sample firms in each dimension. The performance of CSR ranges between -1 and 1 by construction, with -1 (1) meaning the firm receives scores of one in all concerns (strengths) and zero in all strengths (concerns). We find that the average social performance changes over time and in most cases does not deviate from zero greatly. For example, the average performance of employee relations in 1991 and 2012 is equal to 0.02 and 0.16, respectively, and in 2010 it is -0.2. Among these dimensions, we do not find a significant change in the average social performance during the financial crisis of 2008. Table 1 shows some improvement in the performance of community, diversity, employee relations, human rights, and product characteristics during the last three years. We also find a great variation in CSP among the dimensions considered. For instance, while firms overall have positive performance in community, the average performance in environment is negative in most years in the sample.

Eccles and Serafeim (2013) show that the importance of different CSR dimensions varies with industries. Thus, it is possible that firms in certain industries pay attention and engage more in certain CSR dimensions. Due to the variation in CSR across industries, we adjust for heterogeneity by constructing an industry-adjusted MSCI ESG performance measure. The industry-adjusted scores allow us to identify firms that improve or deteriorate relative to their peers of the same industry in different CSR dimensions. Specifically, for each year and each dimension, we compute the average performance for each industry and subtract it from

[5] Other researchers have also specifically studied the CSR aspect of companies involved in the controversial business. See, e.g., Jo and Na (2012), and Oh et al.(2017).

Table 1 Summary of MSCI ESG data

Year	COM		DIV		EMP		ENV		HUM		PRO	
	S/C	Average	S/C	Average	S/C	Average	S/C	Average	S/C	Average	S/C	Average
1991	4/4	0.26	7/4	0.14	6/3	0.02	6/6	− 0.05	0/2	− 0.53	5/4	− 0.01
1992	4/4	0.27	7/4	0.16	6/4	0.01	6/6	− 0.06	0/2	− 0.54	5/4	− 0.02
1993	4/4	0.28	7/5	0.01	6/4	0.02	6/6	− 0.07	0/2	− 0.54	5/4	− 0.02
1994	6/4	0.18	7/5	0.01	5/4	− 0.05	6/6	− 0.07	2/5	− 0.23	5/4	− 0.02
1995	6/4	0.19	8/5	0.04	5/4	− 0.05	6/6	− 0.04	2/3	− 0.18	5/4	− 0.06
1996	6/4	0.19	8/5	0.06	5/4	− 0.05	5/6	− 0.01	1/3	0.15	5/4	− 0.07
1997	6/4	0.19	8/5	0.08	5/4	− 0.03	5/6	− 0.01	1/3	− 0.16	5/4	− 0.09
1998	6/4	0.13	8/5	0.09	5/5	0.02	5/6	− 0.02	1/4	− 0.22	5/4	− 0.10
1999	6/4	0.11	8/5	0.10	5/5	0.03	5/7	− 0.03	1/4	− 0.23	5/4	− 0.12
2000	6/4	0.10	8/5	0.10	5/5	0.04	5/7	− 0.03	2/5	− 0.19	5/4	− 0.14
2001	6/4	0.06	8/5	0.12	5/5	− 0.04	5/7	− 0.05	2/5	− 0.18	5/4	− 0.20
2002	6/4	0.04	8/5	0.08	6/5	0.02	5/7	− 0.02	3/4	− 0.25	5/4	− 0.21
2003	6/4	0.02	8/5	0.01	7/5	− 0.13	5/7	− 0.04	3/4	− 0.25	5/4	− 0.22
2004	6/4	0.03	8/5	− 0.02	7/5	− 0.13	5/7	− 0.09	3/4	− 0.24	5/4	− 0.21
2005	7/4	− 0.03	8/5	− 0.02	7/5	− 0.14	5/7	− 0.05	3/4	− 0.23	5/4	− 0.23
2006	7/4	− 0.02	8/5	− 0.02	7/5	− 0.14	6/7	− 0.05	3/4	− 0.22	5/4	− 0.24
2007	7/4	− 0.06	8/5	− 0.02	7/5	− 0.12	6/7	− 0.04	3/4	− 0.23	5/4	− 0.24
2008	7/4	− 0.07	8/5	− 0.02	7/5	− 0.12	6/7	− 0.02	3/4	− 0.22	5/4	− 0.24
2009	7/4	− 0.07	8/5	− 0.02	7/5	− 0.12	6/7	− 0.02	3/4	− 0.21	5/4	− 0.24
2010	4/1	0.03	7/4	− 0.30	6/3	− 0.20	6/7	0.17	2/3	0.11	3/4	− 0.17
2011	4/1	0.11	7/4	− 0.29	6/3	− 0.15	6/7	0.19	2/3	0.27	3/4	0.00
2012	2/1	0.55	4/3	− 0.16	9/5	0.16	9/9	0.07	2/4	0.51	3/5	0.16

This table presents the numbers of strengths (S) and concerns (C) evaluated by MSCI ESG from 1991 to 2012 and the average standardized social performance of firms in the sample. "COM", "DIV", "EMP", "ENV", "HUM", and "PRO" represent the dimension of community, diversity, employee relations, environment, human rights, and product characteristics, respectively

the performance of companies with the same SIC code.[6] We obtain industry-adjusted MSCI ESG performance for sample firms from 1991 to 2012. Then, for each year from 1992 to 2012, we measure changes in CSP by subtracting the industry-adjusted MSCI ESG score in the previous year from the industry-adjusted score in the current year and rank the differences in performance from high to low. Firms with the highest change in performance are those with the most improvement in the engagement of CSR activities. Likewise, firms with the lowest performance difference are those with the most deterioration in CSP. For each dimension and each year, we construct the up (down) portfolio with firms whose performance differences are ranked within the top (bottom) 20% among all firms. We construct the up-down portfolio by going long in the up portfolio and short in the down portfolio. Furthermore, we construct the up (down) portfolio of overall social responsible performance by identifying firms that are in at least two up (down) portfolios but not in any of the down (up) portfolios. "ALL" is used to denote the overall social performance.

Using annual data from COMPUSTAT, we estimate the mean of total assets, market value, net income, revenue, debt ratio, and return on equity (ROE) of firms in the up and down portfolios for each year during 1992–2012.[7] That is, we examine the financial data of the companies in the year when the portfolios are constructed.

Table 2 presents the average, standard deviation, and median of the aforementioned mean of financial variables over the period from 1992 to 2012. We conduct a paired t-test to see if there are significant differences in these financial variables between firms in the up and down portfolios. We find that for most dimensions there is no significant difference in the total assets, market value, sales revenue, financial leverage, or profitability between firms in the up and down portfolios. However, firms in the up portfolio of

[6] We use the SIC-based industry classifications of Moskowitz and Grinblatt (1999).

[7] The data of market value before 1997 is not available from COMPUSTAT, so the statistics of market value are based on the data for the period of 1998–2012.

Table 2 Summary statistics of firms in the up and down portfolios

	Total assets ($ million)	Market value ($ million)	Net income ($ million)	Revenue ($ million)	Debt ratio	ROE
ALL						
Up						
Average	34,314	20,270	972	14,316	0.61	0.13
S.D.	29,306	8856	631	6034	0.04	0.24
Median	25,107	18,093	814	12,787	0.59	0.14
Down						
Average	38,837	24,190	997	15,398	0.61	0.07
S.D.	41,191	14,708	576	8314	0.07	0.28
Median	22,674	18,060	976	12,961	0.61	0.11
COM						
Up						
Average	57,732	32,937	1391	18,446	0.66	0.16
S.D.	54,446	12,108	1108	9700	0.05	0.10
Median	37,704	31,114	1022	17,646	0.67	0.16
Down						
Average	61,559	31,577	1446	18,396	0.67	0.13
S.D.	44,868	12,550	1038	8661	0.07	0.12
Median	49,501	29,300	1226	16,878	0.67	0.15
DIV						
Up						
Average	36,999	19,131	781	11,963	0.60	0.13
S.D.	25,009	11,629	437	4120	0.06	0.13
Median	34,803	17,698	841	12,256	0.60	0.12
Down						
Average	25,201*	17,213	626	10,373	0.58	0.04*
S.D.	16,542	11,689	518	5061	0.05	0.16
Median	19,890	14,118	598	9,031	0.59	0.07
EMP						
Up						
Average	26,943	17,494	677	12,010	0.59	0.02
S.D.	25,612	8234	706	6514	0.06	0.25
Median	20,270	18,091	621	10,261	0.59	0.11
Down						
Average	27,503	16,473	620	11,938	0.59	0.06
S.D.	21,191	7645	548	5270	0.05	0.18
Median	22,242	13,498	582	9,588	0.59	0.09
ENV						
Up						
Average	23,730	20,324	925	13,679	0.62	0.07
S.D.	22,374	10,815	803	7045	0.03	0.18
Median	15,972	19,885	674	12,597	0.61	0.10
Down						
Average	29,844	21,912	944	15,635	0.62	0.15
S.D.	35,529	8766	632	6013	0.06	0.18
Median	19,231	21,625	914	15,549	0.62	0.13
HUM						
Up						
Average	110,002	60,031	3349	40,935	0.60	0.13
S.D.	199,560	26,299	3145	30,448	0.10	0.15
Median	35,253	55,030	1870	30,679	0.57	0.16

Table 2 (continued)

	Total assets ($ million)	Market value ($ million)	Net income ($ million)	Revenue ($ million)	Debt ratio	ROE
Down						
Average	130,173	43,645	2073*	30,192	0.61	0.18
S.D.	177,532	24,922	1817	25,394	0.12	0.07
Median	32,536	38,472	1534	29,164	0.60	0.18
PRO						
Up						
Average	48,089	22,283	1116	16,468	0.63	0.16
S.D.	42,160	7332	788	7267	0.06	0.32
Median	27,305	22,226	969	15,978	0.62	0.16
Down						
Average	52,129	28,441	1194	17,701	0.62	0.09*
S.D.	45,123	9559	548	6308	0.06	0.29
Median	41,976	24,782	1137	18,966	0.63	0.13

This table shows summary statistics of sample firms in the up and down portfolios. For each year between 1992 and 2012, the mean of total assets, market value, net income, revenue, debt ratio, and return on equity (ROE) in the up/down portfolios is estimated. The table presents the average, standard deviation (S.D.), and median of the aforementioned mean financial variables over the sample period 1992–2012. Paired *t*-test is conducted to examine if significant differences exist in the financial variables between firms in the up and down portfolios

***, **, and * indicate statistical significance at the 0.01, 0.05, and 0.10 levels, respectively

"diversity" show significantly higher ROE than the corresponding firms in the down portfolio. The average ROE's of the up and down portfolios of diversity are equal to 0.13 and 0.04, respectively. The total asset of the up portfolio of "diversity" is also significantly higher than that of the down portfolio by $11.80 billion. Furthermore, the up portfolio of "product characteristics" has an average ROE of 0.16, which is significantly higher than that of 0.09 for the down portfolio. We also find that the up portfolio of "human rights" has significantly higher net income than the down portfolio, with an average value of $3349 million and $2073 million, respectively.

Empirical Methodology

Social Performance and Financial Performance

We use stock returns to measure a company's financial performance because market-based measurements relate more closely to stockholders' wealth. We follow Kempf and Osthoff (2007) by using a portfolio approach. Specifically, after constructing the up and down portfolios, we use monthly stock returns in the following year to compute the equal-weighted portfolio returns. Monthly stock returns are obtained from the Center for Research in Security Prices. We then examine if the risk-adjusted returns of the up, down, or up-down portfolio are significantly different from zero. The up-down portfolio is formed by the strategy that goes long in the up portfolio and short in the down portfolio. If engagement in CSR has a positive impact on financial performance, we should expect to see the up portfolio to have a positive risk-adjusted return. On the other hand, if engagement in CSR reflects an agency problem between managers and stockholders, an improvement in CSR, which requires commitment in firm resources, should lead to deterioration in financial performance. A superior performance of up-down portfolio suggests that firms with improvement in CSR outperform those with deterioration in CSR.

To estimate abnormal portfolio returns, we run regressions of monthly portfolio returns based on the four-factor model of Carhart (1997) as follows:

$$R_t - R_t^f = \alpha + \beta_1\left(R_t^m - R_t^f\right) + \beta_2 SMB_t + \beta_3 HML_t + \beta_4 MOM_t + \varepsilon_t, \quad (1)$$

where R_t represents the portfolio return in month t, R_t^f stands for the risk-free rate, and R_t^m represents the return of the market portfolio. *SMB*, *HML*, and *MOM* denote the size, book-to-market, and momentum factors, respectively. The risk-free rates, excess market returns, and *SMB*, *HML*, and *MOM* factors are obtained from Kenneth French's website. Our focus is on the α coefficient, which is a measure of abnormal return.

Social Performance and Financial Performance during Crisis and Non-crisis Periods

Several studies suggest that social capital matters predominately during adverse market conditions or when a firm suffers from a negative event (Godfrey et al. 2009; Nofsinger and Varma 2014; Lins et al. 2017). On the other hand, Koh et al. (2014) indicate that the value enhancement of CSR is constrained when firms are not financially healthy. These arguments predict different relationships between CSP and financial performance during a crisis period. We employ the following specification to study the relationship separately during the non-crisis and crisis periods:

$$R_t - R_t^f = \left[\alpha^{NC} + \beta_1^{NC}\left(R_t^m - R_t^f\right) + \beta_2^{NC} SMB_t + \beta_3^{NC} HML_t + \beta_4^{NC} MOM_t\right] \times I_t^{NC} + \left[\alpha^{C} + \beta_1^{C}\left(R_t^m - R_t^f\right) + \beta_2^{C} SMB_t + \beta_3^{C} HML_t + \beta_4^{C} MOM_t\right] \times I_t^{C} + \varepsilon_t, \quad (2)$$

where I_t^C (I_t^{NC}) is a dummy variable equal to 1 if month t is in a crisis (non-crisis) period, and 0 otherwise. According to the National Bureau of Economic Research, the recession during the recent financial crisis is from December 2007 to June 2009. Since the portfolio is updated on a yearly basis, we compare the returns of the up and down portfolios from January 2008 to December 2009 to examine the relation during the crisis period.

Empirical Evidence

Baseline Regression Results

We run regressions on the monthly returns of the up and down portfolios on the Carhart (1997) four factors. We apply the Newey and West (1987) correction to all regressions in order to control for possible conditional heterogeneity and autocorrelation. To investigate the difference in performance between the up and down portfolios, we form an up-down portfolio by going long in the up portfolio and short in the down portfolio.

Table 3 presents the regression results of the Carhart four-factor model. In the top panel for the overall social responsible performance (ALL), the up portfolio has a significantly positive risk-adjusted return of 0.40% per month, whereas the risk-adjusted return of the down portfolio is not significantly different from zero. The evidence provides some support for the argument that improvement in CSR is positively related to financial performance in the future. Since the overall CSR measure is composed of several dimensions, each of which may have separate implications for a firm's financial performance, we take a closer look at the relation by comparing the performance of the up, down, and up-down portfolios of each social performance dimension.

We indeed find the relation to vary with social performance dimensions. For environment, the risk-adjusted return of the up-down portfolio is 0.32% per month, which is significantly different from zero at the 10% level, suggesting a positive relation between environmental investment and financial performance. This is consistent with findings in Derwall, et al. (2005) and Jiao (2010). Similarly, improvement in human rights is found to be positively related to financial performance. The up portfolio of "human rights" has a positive risk-adjusted return of 0.49% per month, which is significant at the 10% level, and the up-down portfolio has an excess return of 0.98% per month, which is significant at the 5% level. When companies are involved in human rights violation, such as child labor, human exploitation or bad working conditions, their reputations and brand images are damaged. As consumers become concerned about buying products or services from firms involved in human rights violation, more and more companies incorporate human rights as part of their corporate social responsibility. Socially conscious consumers may be more willing to buy products or services from firms with good human rights reputation, which can lead to better financial performance as our result indicates.

As for employee relations, both the up and down portfolios have significantly positive risk-adjusted returns, equal to 0.28% and 0.29% per month, respectively. The up-down portfolio has a negative alpha but not significantly different from zero. The evidence that the up portfolio has significantly positive risk-adjusted returns is consistent with the results in the literature that companies with high employee satisfaction have better financial performance (Edmans 2011). However, we find that deterioration in employee relations does not necessarily decrease company value. Similar to employee relations, both the up and down portfolios in product characteristics have significantly positive risk-adjusted returns, but their difference is insignificant. For community and diversity, the risk-adjusted returns of the up, down, and up-down portfolios are not significantly different from zero.

In summary, we find some support that an improvement in the overall CSR is positively associated with financial performance in the future. However, the relation varies with CSR dimensions. CSR activities in environment and human rights are value enhancing. In the dimensions of employee relations and product characteristics, while an improvement in CSP is positively associated with financial performance, deterioration does not decrease company value. We do not find a significant relation between financial performance and CSP in the community and diversity dimensions.

Table 3 Performance of equally weighted returns of the up, down, and up-down portfolios based on Carhart four-factor model

	Alpha	(Rm–Rf)	SMB	HML	MOM	Adj R^2
ALL						
Up	0.0040***	0.9598***	0.1486***	0.4188***	− 0.2343***	0.82
	(2.72)	(28.60)	(2.66)	(6.04)	(− 3.66)	
Down	0.0025	1.0489***	0.2094***	0.3936***	− 0.1504***	0.82
	(1.55)	(23.38)	(3.46)	(5.40)	(− 3.92)	
U–D	0.0015	− 0.0891**	− 0.0608	0.0252	− 0.0838	0.04
	(0.84)	(− 2.01)	(− 0.78)	(0.34)	(− 1.14)	
COM						
Up	0.0021	0.9849***	0.0736**	0.4765***	− 0.0546	0.87
	(1.61)	(34.65)	(1.97)	(8.52)	(− 1.26)	
Down	0.0015	1.0625***	− 0.0067	0.5413***	− 0.1480***	0.86
	(1.14)	(26.35)	(− 0.13)	(8.08)	(− 2.66)	
U–D	0.0006	− 0.0777*	0.0802	− 0.0648	0.0935**	0.09
	(0.39)	(− 1.92)	(1.61)	(− 1.28)	(2.41)	
DIV						
Up	0.0002	1.0685***	0.1940***	0.4307***	− 0.1875***	0.87
	(0.18)	(38.35)	(3.17)	(6.18)	(− 3.49)	
Down	0.0006	1.1008***	0.3607***	0.2662***	− 0.1977***	0.87
	(0.40)	(28.15)	(7.44)	(4.25)	(− 6.31)	
U–D	− 0.0004	− 0.0323	− 0.1668***	0.1645**	0.0102	0.11
	(− 0.26)	(− 0.83)	(− 3.01)	(2.45)	(0.20)	
EMP						
Up	0.0028**	1.0235***	0.3293***	0.4077***	− 0.2641***	0.89
	(2.40)	(27.61)	(7.04)	(7.70)	(− 6.73)	
Down	0.0029**	1.1033***	0.2582***	0.4600***	− 0.2168***	0.89
	(2.38)	(35.76)	(4.77)	(9.59)	(− 6.84)	
U–D	− 0.0001	− 0.0798**	0.0711*	− 0.0523	− 0.0473	0.02
	(− 0.07)	(− 1.99)	(1.83)	(− 1.29)	(− 1.44)	
ENV						
Up	0.0029	1.0224***	0.1392**	0.6018***	− 0.1840*	0.78
	(1.61)	(22.75)	(2.41)	(6.57)	(− 1.96)	
Down	− 0.0003	1.0876***	0.0967	0.5611***	− 0.1183**	0.77
	(− 0.14)	(17.80)	(1.33)	(6.04)	(− 2.44)	
U–D	0.0032*	− 0.0652	0.0424	0.0407	− 0.0657	0.01
	(1.74)	(− 1.27)	(0.55)	(0.56)	(− 0.72)	
HUM						
Up	0.0049*	1.0688***	0.0816	0.4183***	− 0.1512***	0.62
	(1.78)	(13.06)	(0.92)	(4.21)	(− 3.66)	
Down	− 0.0050	1.1564***	0.0554	0.5879***	− 0.1067	0.55
	(− 1.42)	(11.34)	(0.51)	(5.04)	(− 1.12)	
U–D	0.0098**	− 0.0876	0.0263	− 0.1696	− 0.0444	− 0.01
	(2.54)	(− 0.85)	(0.18)	(− 1.10)	(− 0.44)	
PRO						
Up	0.0031**	1.0530***	0.0991	0.4456***	− 0.2216***	0.83
	(1.96)	(20.48)	(1.13)	(5.10)	(− 5.31)	
Down	0.0038***	1.0189***	0.1777***	0.4284***	− 0.1878***	0.84
	(2.76)	(22.60)	(3.42)	(5.60)	(− 4.06)	
U–D	− 0.0007	0.0341	− 0.0786	0.0172	− 0.0338	0.02
	(− 0.39)	(0.60)	(− 1.03)	(0.20)	(− 0.58)	

This table presents results of regressions on the monthly returns of the up, down, and up-down (U–D) portfolios from 1993 to 2013 based on the Carhart four-factor model. For each dimension, the up (down) portfolio is constructed with firms whose rankings of performance differences in the previous year are within the top (bottom) 20% among all firms. The up-down portfolio is formed by the strategy that goes long in the up portfolio and short in the down portfolio. Rm and Rf, respectively, denote the market return and the risk-free rate. SMB, HML, and MOM represent the size, book-to-market, and momentum factors. To con-

Table 3 (continued)

trol for heterogeneity and autocorrelation, the Newey and West (1987) correction is applied to all regressions. The *t*-statistics are presented inside the parentheses

***, **, and * indicate statistical significance at the 0.01, 0.05, and 0.10 levels, respectively

Table 4 Performance of equally weighted returns of the up, down, and up-down portfolios based on CARHART four-factor model with separation of non-crisis and crisis periods

	Non-crisis alpha	*t*-statistics	Crisis Alpha	*t*-statistics	Adj R^2
ALL					
Up	0.0029**	2.09	0.0079**	2.14	0.84
Down	0.0022	1.28	0.0051	1.03	0.84
U–D	0.0007	0.39	0.0028	0.58	0.15
COM					
Up	0.0010	0.86	0.0034	0.72	0.88
Down	0.0008	0.57	0.0043	0.67	0.86
U–D	0.0002	0.15	− 0.0010	− 0.09	0.09
DIV					
Up	− 0.0005	− 0.43	0.0000	0.01	0.88
Down	− 0.0007	− 0.44	0.0033	1.12	0.88
U–D	0.0002	0.11	− 0.0032	− 0.76	0.10
EMP					
Up	0.0020	1.55	0.0031	0.65	0.90
Down	0.0018	1.39	0.0106**	2.56	0.90
U–D	0.0002	0.12	− 0.0075*	− 1.73	0.03
ENV					
Up	0.0015	0.80	0.0119*	1.81	0.80
Down	− 0.0001	− 0.09	− 0.0004	− 0.06	0.80
U–D	0.0016	0.99	0.0123**	2.11	0.07
HUM					
Up	0.0040	1.32	0.0115*	1.74	0.62
Down	− 0.0050	− 1.60	− 0.0046	− 0.54	0.57
U–D	0.0090**	2.31	0.0161**	2.22	− 0.00
PRO					
Up	0.0015	1.07	0.0049	1.37	0.85
Down	0.0043***	3.01	− 0.0038	− 0.83	0.85
U–D	− 0.0028*	− 1.68	0.0087**	1.99	0.02

This table presents results of regressions on the monthly returns of the up, down, and up-down (U–D) portfolios from 1993 to 2013 based on the Carhart four-factor model with the separation of non-crisis and crisis periods. The period of January 2008–December 2009 is defined as the crisis period. For each dimension, the up (down) portfolio is constructed with firms whose rankings of performance differences in the previous year are within the top (bottom) 20% among all firms. The up-down (U–D) portfolio is formed by the strategy that goes long in the up portfolio and short in the down portfolio. To control for heterogeneity and autocorrelation, the Newey and West (1987) correction is applied to all regressions

***, **, and * indicate statistical significance at the 0.01, 0.05, and 0.10 levels, respectively

Non-Crisis and Crisis Periods

Table 4 presents the regression results based on the Carhart four-factor model when the non-crisis and crisis periods are separated. The risk-adjusted returns of the up portfolios of the overall social responsible performance (ALL) are equal to 0.29% and 0.79% per month during the non-crisis and crisis periods, respectively, both of which are significantly different from zero at the 5% level. The down portfolio, on the other hand, does not outperform the market in either period. This suggests that improvement in CSR is value enhancing regardless of the market condition. Furthermore, the risk-adjusted return of the up portfolio during the crisis period is higher than that during the non-crisis period.

Table 4 also presents returns of the up, down, and up-down portfolios for each CSR dimension. We find that the relation between CSP and financial performance changes with market conditions. For employee relations, for instance, during the non-crisis period, neither the up nor the down portfolio has superior performance. During the crisis period, however, the risk-adjusted return of the down portfolio is significantly higher than that of the up portfolio. This finding accords well with economic intuition. During the financial crisis, some companies may reduce their commitment to employee relations in order to improve financial performance. For example, firms may lay off employees or cut employee benefits during the financial crisis in order to reduce expenses or improve the bottom line. Our results suggest that firms, which are less committed to employee relations, have higher risk-adjusted returns during economic downturns. This finding is also consistent with Koh et al.'s (2014) argument that the value generation of CSR is constrained if firms have poor financial performance. Similarly, Wang and Qian (2011) show that firms' engagement in prosocial activities may result in punishment from stakeholders if firms have a poor financial position.[8]

As for product characteristics, the up portfolio has better financial performance than the down portfolio during the crisis period. The risk-adjusted returns of the up-down portfolio is 0.87% per month, which is significant at the 5% level. A reverse pattern is found during the non-crisis period. The

[8] In an untabulated analysis, however, we find that such effect is at most temporary. Firms with decreasing commitment to employee relations do not have higher stock returns than those with improvements in employee relations two years after the crisis. The result is available from the authors upon request.

up-down portfolio yields a risk-adjusted return of -0.28% per month, which is significant at the 10% level. Furthermore, we find that the risk-adjusted return of the up-down portfolio during the crisis is significantly higher than during the non-crisis period. During the crisis period when society trust is low, firms with more reliable and safe products or services may be perceived as more trustworthy. These firms' products or services therefore may be in greater demand during the crisis period, thereby leading to better financial performance. The non-unidirectional relation between financial performance and CSR at the employee relations and product characteristics dimensions as reported in the preceding section can be attributed to the changing relations in response to market conditions.

For environment, the risk-adjusted return of the up-down portfolio is positive in both periods, but is significant at the 10% level only during the crisis period. The abnormal return of the up-down portfolio during the crisis period is also higher than that during the non-crisis period at the 10% significance level. It suggests that improvement in environment is value enhancing, especially during the financial crisis. For human rights, the up-down portfolio earns a significantly positive risk-adjusted return of 1.61% at the 5% level during the crisis period, which is higher than the corresponding return of 0.90% during the non-crisis period. This result suggests that improvement in human rights may enhance firm value especially during the financial crisis. As for community and diversity, the risk-adjusted returns of the up-down portfolios are positive during the non-crisis period and negative during the crisis period, but they are statistically insignificant in either period.

In sum, improvement in CSR is in general value enhancing, regardless of the market conditions. However, the relation between CSR and financial performance changes with CSR dimensions and market conditions. The practice of CSR in environment, human rights, and product characteristics matters predominantly during the crisis period. Our finding is consistent with the argument made by Godfrey et al.(2009) and Shiu and Yang (2017) that CSR activities offer an insurance-like protection and firms engaging more in CSR activities receive less negative judgments from their shareholders in the face of adverse events. The pattern for employee relations is, however, reversed. We find that firms with deterioration in employee relations have better financial performance during the crisis period.

Robustness Checks

This section reports additional tests for the robustness of our findings to an alternative financial measure, potential reverse causation problems, an alternative sample period, possible confounding effects from other dimensions, and potential problems caused by changes in the number of strengths and concerns used in the MSCI ESG database over time.

Alternative Measure of Financial Performance

One concern about our results is that the risk-adjusted returns may reflect companies' cost of equity capital instead of future cash flows due to CSR practices. That is, a positive (negative) risk-adjusted return can reflect a higher (lower) cost of equity capital which is not captured by the Carhart risk factors, instead of a value enhancement (deterioration) caused by social performance. The literature, however, does not support this explanation. For example, Derwall et al. (2011) find that the high risk-adjusted returns of socially responsible stocks are caused by the market's slow reaction to the positive impact of CSR activities on firms' future cash flows (see also Borgers et al. 2013). Their evidence is also consistent with Edmans (2011) that strong employee relations are associated with positive earnings surprises and abnormal returns surrounding earnings announcements. Also, El Ghoul, et al. (2011) show that firms with higher CSR scores have lower cost of equity capital.

However, to address this concern, we use Tobin's Q as an alternative measure of financial performance and run the following model with year-fixed effects on firms in the up, down, and middle of the portfolios (Cai et al. 2012):

$$\Delta TobinQ_{i,t+1} = \beta_0 + \beta_1 \Delta Asset_{i,t} + \beta_2 \Delta DebtRatio_{i,t} + \beta_3 \Delta \frac{CapExp}{Asset}_{i,t} + \beta_4 \Delta \frac{R\&D}{Asset}_{i,t} + \beta_5 \Delta SalesGrowth_{i,t} + \beta_6 \Delta ROA_{i,t} + \beta_7 UP_{i,t} + \varepsilon_{i,t+1} \quad (3)$$

where Δ denotes change from base year $t-1$, *TobinQ* denotes Tobin's Q, *Asset* is book value of total assets, *DebtRatio* is determined by total debt over total assets, *CapExp/Asset* is capital expenditure over book value of total assets, *R&D/Asset* is R&D expenses over book value of assets, *SalesGrowth* denotes the growth rate of sales revenue, *ROA* is determined by operating income over total assets, and *UP* is a dummy variable that equals one if the firm is in the up portfolio and 0 otherwise.

Estimation results are reported in Table 5. We can see that the coefficient of the *UP* variable in the "ALL" regression is 0.1026, which is significantly greater than zero. This suggests that firms with an improvement in the overall CSR perform better financially as measured by Tobin's Q than other firms. The coefficients of the *UP* variable are significantly positive for the employee relations and environment dimensions, positive but insignificant for community, human rights, and product characteristics, and negative without statistical significance for diversity. These results suggest that for all dimensions except diversity, firms with an improvement in CSP in general perform better financially than other firms, and the evidence is statistically significant in

Table 5 Tobin's Q and corporate social performance

	ΔTobin's Q						
	All	COM	DIV	EMP	ENV	HUM	PRO
Constant	− 0.2032	− 0.3202	− 0.0850	− 0.0097	− 0.3157**	0.0609	− 0.3481**
	(− 1.43)	(− 1.62)	(− 0.58)	(− 0.05)	(− 2.11)	(0.47)	(− 2.32)
ΔAsset	− 0.0213***	− 0.0116***	− 0.0208***	− 0.0216***	− 0.0153***	− 0.0079	− 0.0150***
	(− 4.17)	(− 2.89)	(− 4.02)	(− 3.36)	(− 4.26)	(− 1.55)	(− 2.85)
ΔDebt ratio	− 0.0325	1.0455*	− 0.1460	0.0586	− 0.0742	0.3553	0.8006
	(− 0.09)	(1.86)	(− 0.39)	(0.08)	(− 0.24)	(0.54)	(1.03)
Δ(Cap Exp/asset)	− 1.8731**	0.0702	− 1.5572	− 1.2024	− 1.4871	− 3.9942*	− 1.1742
	(− 2.01)	(0.04)	(− 1.64)	(− 0.53)	(− 1.40)	(− 1.87)	(− 0.84)
Δ(R&D/asset)	3.3907***	1.1269	3.1249**	3.8345***	2.7012**	7.0479	3.9053
	(2.90)	(1.36)	(2.23)	(2.61)	(2.17)	(1.26)	(1.54)
ΔSales	0.0100**	0.0841	0.0102***	0.0216	0.3529**	0.0088	0.2895
Growth	(2.52)	(0.48)	(2.79)	(1.40)	(2.05)	(0.05)	(1.03)
ΔROA	1.0796**	4.1710***	0.7180	2.6107***	0.9820	4.4916***	4.2718*
	(2.22)	(2.73)	(1.54)	(2.68)	(1.13)	(3.23)	(1.86)
UP	0.1026*	0.0808	− 0.0117	0.0997*	0.1137***	0.1118	0.0686
	(1.88)	(1.36)	(− 0.21)	(1.75)	(3.24)	(1.18)	(1.07)
Adj R^2	7.72%	17.00%	8.73%	8.79%	13.65%	16.80%	13.14%
N	6304	1031	4996	2101	1,730	389	1,575

This table presents the results of the model with year-fixed effects: $\Delta TobinQ_{i,t+1} = \beta_0 + \beta_1 \Delta Asset_{i,t} + \beta_2 \Delta DebtRatio_{i,t} + \beta_3 \Delta \frac{CapExp}{Asset}_{i,t} + \beta_4 \Delta \frac{R\&D}{Asset}_{i,t} + \beta_5 \Delta SalesGrowth_{i,t} + \beta_6 \Delta ROA_{i,t} + \beta_7 UP_{i,t} + \varepsilon_{i,t+1}$

Where Δ denotes change from base year $t - 1$, *TobinQ* denotes Tobin's Q, *Asset* is book value of total assets, *Debt Ratio* is determined by total debt over total assets, *CapExp/Asset* is capital expenditure over book value of total assets, *R&D/Asset* is R&D expenses over book value of assets, *SalesGrowth* denotes growth rate of sales revenue, *ROA* is determined by operating income over total assets, and *UP* is a dummy variable that equals to one if firm is in the up portfolio and 0 otherwise. All t-statistics are computed using the White heteroscedastic-consistent variance estimates and are shown in the parentheses

***, **, and * indicate statistical significance at the 0.01, 0.05, and 0.10 levels, respectively

two dimensions (employee relations and environment). This finding is broadly consistent with our results reported in the preceding section when stock returns are used as a measure of financial performance (see Table 3).

We further investigate the relationship between CSP and Tobin's Q during the non-crisis and crisis periods by running the following model with year-fixed effects on all firms in the up, down, and middle of the portfolios:[9]

$$\begin{aligned}\Delta TobinQ_{i,t+1} = {} & \beta_0 + \beta_1 \Delta Asset_{i,t} + \beta_2 \Delta DebtRatio_{i,t} + \beta_3 \Delta \frac{CapExp}{Asset}_{i,t} \\ & + \beta_4 \Delta \frac{R\&D}{Asset}_{i,t} + \beta_5 \Delta SalesGrowth_{i,t} + \beta_6 \Delta ROA_{i,t} \\ & + \beta_7 Crisis_t + \beta_8 UP_{i,t} + \beta_9 UP_{i,t} \times Crisis_t + \varepsilon_{i,t+1}, \end{aligned} \quad (4)$$

where $Crisis_t$ is a dummy variable that equals one if year $t + 1$ is during the crisis period and zero otherwise.

Estimation results are presented in Table 6. We are interested in β_7, β_8, and β_9, namely, the coefficients of the variables *Crisis*, *UP*, and $UP \times Crisis$. Economically, β_7 measures how a firm's Tobin Q changes during the crisis period relatively to the non-crisis period, β_8 shows the impact of CSP on Tobin's Q for firms in the up portfolio during the non-crisis period, and β_9 captures the additional effect of CSP on Tobin's Q for firms in the up portfolio during the crisis period relative to the non-crisis period. Notice that the full impact of CSP on Tobin's Q for firms in the up portfolio during the crisis period is measured by the sum of the coefficients ($\beta_8 + \beta_9$). The last row of Table 6 presents the estimate of this sum and its associated t-statistic.

We find that the coefficient of the *Crisis* variable is negative for all regressions, and is statistically significant for the overall social performance (ALL) and for the dimensions of diversity, employee relations, and human rights. These results imply that firms during the crisis period in general underperform those during the non-crisis period. The coefficient of the *UP* variable is positive for all regressions except that for the diversity dimension. Furthermore, this parameter is statistically significant for the overall social performance (ALL) and for the environment

[9] Here we consider year-fixed effects except when year $t + 1$ is 2008 or 2009, which is defined as the crisis period.

Table 6 Tobin's Q and corporate social performance with separation of non-crisis and crisis periods

	ΔTobin's Q						
	All	COM	DIV	EMP	ENV	HUM	PRO
Constant	− 0.2038	− 0.3274	− 0.0845	− 0.0098	− 0.3121**	0.0657	− 0.3413**
	(− 1.44)	(− 1.64)	(− 0.58)	(− 0.05)	(− 2.08)	(0.51)	(− 2.27)
ΔAsset	− 0.0220***	− 0.0117***	− 0.0216***	− 0.0220***	− 0.0155***	− 0.0088*	− 0.0153***
	(− 4.27)	(− 2.93)	(− 4.13)	(− 3.42)	(− 4.34)	(− 1.74)	(− 2.88)
ΔDebt ratio	− 0.0162	1.0534*	− 0.1345	0.1099	− 0.0424	0.4215	0.8278
	(− 0.05)	(1.91)	(− 0.36)	(0.16)	(− 0.13)	(0.64)	(1.06)
Δ(Cap Exp/Asset)	− 1.8308*	0.0868	− 1.5234	− 1.1389	− 1.4111	− 4.2980**	− 1.1527
	(− 1.96)	(0.04)	(− 1.59)	(− 0.50)	(− 1.32)	(− 2.02)	(− 0.82)
Δ(R&D/Asset)	3.4202***	1.1417	3.1582**	3.8319***	2.7408**	6.8239	3.9582
	(2.93)	(1.38)	(2.25)	(2.61)	(2.19)	(1.22)	(1.57)
ΔSales	0.0099**	0.0862	0.0101***	0.0210	0.3491**	0.0249	0.2800
Growth	(2.48)	(0.49)	(2.74)	(1.37)	(2.01)	(0.14)	(1.00)
ΔROA	1.0878**	4.1792***	0.7253	2.6280***	0.9995	4.4387***	4.3427*
	(2.24)	(2.74)	(1.56)	(2.70)	(1.14)	(3.18)	(1.90)
Crisis	− 0.4954***	− 0.2678	− 0.6669***	− 0.6061***	− 0.1999	− 0.6796***	− 0.2650
	(− 3.40)	(− 1.28)	(− 4.34)	(− 2.61)	(− 1.27)	(− 4.32)	(− 1.58)
Up	0.1406**	0.1007	− 0.0064	0.1043	0.1006**	0.0814	0.0246
	(2.48)	(1.46)	(− 0.10)	(1.63)	(2.54)	(0.73)	(0.33)
Crisis*Up	− 0.1012	− 0.0865	− 0.0294	− 0.0125	0.0849	0.1930	0.2078
	(− 0.73)	(− 0.63)	(− 0.25)	(− 0.09)	(0.99)	(1.05)	(1.55)
Adj R^2	7.60%	17.03%	8.57%	8.74%	13.62%	16.33%	13.17%
N	6304	1031	4996	2101	1730	389	1575
Up+Crisis*Up	0.0395	0.0142	− 0.0358	0.0918	0.1854**	0.2744*	0.2324**
	(0.31)	(0.12)	(− 0.37)	(0.73)	(2.48)	(1.85)	(2.05)

This table presents the results of the model with year-fixed effects: $\Delta TobinQ_{i,t+1} = \beta_0 + \beta_1 \Delta Asset_{i,t} + \beta_2 \Delta DebtRatio_{i,t} + \beta_3 \Delta \frac{CapExp}{Asset}_{i,t} + \beta_4 \Delta \frac{R\&D}{Asset}_{i,t} + \beta_5 \Delta SalesGrowth_{i,t} + \beta_6 \Delta ROA_{i,t} + \beta_7 UP_{i,t} + \beta_8 Crisis_t + \beta_9 UP_{i,t} \times Crisis_t + \varepsilon_{i,t+1}$,

where Δ denotes change from base year $t - 1$, *TobinQ* denotes Tobin's Q, *Asset* is book value of total assets, *Debt Ratio* is determined by total debt over total assets, *CapExp/Asset* is capital expenditure over book value of total assets, *R&D/Asset* is R&D expenses over book value of assets, *SalesGrowth* denotes growth rate of sales revenue, *ROA* is determined by operating income over total assets, *UP* is a dummy variable that equals to one if firm is in the up portfolio and 0 otherwise, and $Crisis_t$ is a dummy variable that equals one if year $t + 1$ is during the crisis period and zero otherwise. All t-statistics are computed using the White heteroscedastic-consistent variance estimates and are shown in the parentheses

***, **, and * indicate statistical significance at the 0.01, 0.05, and 0.10 levels, respectively

dimension, indicating that firms in the up portfolio for the overall social performance and for environment have better financial performance than other firms during the non-crisis period.

The coefficient of $UP \times Crisis$ is negative for the overall social performance, and for the community, diversity and employee relations dimensions, and is positive for the environment, human rights and product characteristics dimensions, but without statistical significance. We investigate the full impact of CSP on Tobin's Q for firms in the up portfolio during the crisis period, which is captured by the sum of the coefficients of UP and $UP \times Crisis$ ($\beta_8 + \beta_9$). The last row of Table 6 reports a positive estimate for all regressions except the diversity dimension. Furthermore, the full impact is significantly positive for the environment, human rights and product characteristics dimensions, implying that firms with improvements in these three dimensions financially outperform other firms during the crisis period, consistent with the findings in Table 4.

In summary, we find significant evidence that improvements in environment, human rights, and product characteristics are better rewarded during the crisis period. On the other hand, the value enhancement of improvement in community, diversity and employee relations, is insignificant during the crisis period. Our evidence may suggest that the positive impacts of social capital on financial performance when trust in the society is low can be offset by the negative impacts of CSR practices during the crisis

Table 7 Performance of the up, down, and up-down portfolios in the year when the portfolio is constructed

	Panel A: Carhart four-factor model				
	Alpha		t-statistics		Adj R^2
Up	0.0020		1.02		0.81
Down	0.0047**		2.46		0.80
U–D	− 0.0003		− 1.21		0.01
	Panel B: with separation of crisis and non-crisis periods				
	Non-crisis alpha	*t*-statistics	Crisis alpha	*t*-statistics	Adj R^2
Up	0.0021	1.17	− 0.0029	− 0.34	0.83
Down	0.0033	1.60	0.0035	0.67	0.81
U–D	− 0.0012	− 0.55	− 0.0064	− 1.00	0.06

This table presents results of regressions on the monthly returns of the up, down, and up-down (U–D) portfolios of ALL in year *t* when the up, down, and up-down portfolios are constructed. The abnormal returns of the Carhart four-factor model and the four-factor model with the separation of Crisis and Non-Crisis periods are provided in Panels A and B, respectively. To control for heterogeneity and autocorrelation, the Newey and West (1987) correction is applied to all regressions

***, **, and * indicate statistical significance at the 0.01, 0.05, and 0.10 levels, respectively

period when financial resource is limited. The dominating factor can change such that the relationship between CSP and financial performance shifts differently for different CSR dimensions during the crisis period.

Reverse Causation

"Empirical Evidence" shows that firms with improvement in CSR are more likely to have higher risk-adjusted returns in the future. In other words, firms do well by doing good. However, it is also possible that firms with more engagement in CSR are already relatively more successful ones, or firms may be more likely to do good when they do well (e.g., Hong et al. 2012; Lys et al. 2015).

To check for such a possibility, we run regressions of monthly portfolio returns in the same year when the up, down, and up-down portfolios are constructed. If firms indeed do good when they do well, we should expect that firms in the up (down) portfolio to have superior (inferior) financial performance in the same year, and the up portfolio to outperform the down portfolio. In Table 7 Panels A and B, we report the risk-adjusted returns of the Carhart four-factor model for the full sample and the model with the separation of crisis and non-crisis periods, respectively.

In Panel A, the risk-adjusted return of the up portfolio is not significantly different from zero, whereas the risk-adjusted return of the down portfolio is significantly positive. This is in contrast to the pattern found in Table 3 where future financial performance of firms with improvement in CSR is significantly positive and higher than that of firms with deterioration in social performance. Compared to the results in Table 4 that future risk-adjusted returns of the up portfolio are significantly positive and higher than that of the down portfolio, the risk-adjusted returns of the up and down portfolios in Panel B are not significantly different from zero and the returns of the up portfolio are not higher than that of the down portfolio. Therefore, we do not find significant evidence that firms do good when they do well in our sample.

Subsample Analysis

To check if our findings hold in alternative sample periods, we consider the subsample period of 2004–2013 and conduct the same regression analysis on the monthly portfolio returns as we did previously.[10] We select the subsample period of 2004–2013 for the following reasons. First, in 2001 MSCI ESG expanded to cover firms of the Russell 1000 index and in 2002 added firms of the Large Cap Social index. In 2003, all firms of the Russell 2000 and the Broad Market Social index are added into the MSCI ESG database. Due to the expansion of the database during the period 2001–2003, the observations in the early years are less comparable to those in the later years. Second, the database after 2003 covers the largest number of firms, allowing us to draw conclusions based on a larger dataset. Finally, the period before 2004 does not include the financial crisis period, thus preventing us from separating the effects for crisis and non-crisis periods. Table 8 presents the regression results.

In Table 8, the risk-adjusted return of the up portfolio of ALL is positive and significantly different from zero, which is consistent with the preceding finding. Similarly,

[10] The portfolio is constructed based on changes in social performance in 2003–2012. We compare the returns of the up and down portfolios in the subsequent years, i.e., 2004–2013.

Table 8 Performance of the up, down, and up-down portfolios based on Carhart four-factor model for subsample period from 2004 to 2013

	Alpha	Adj R^2	Non-crisis alpha	Crisis alpha	Adj R^2
ALL					
Up	0.0054***	0.90	0.0040**	0.0079**	0.92
Down	0.0022	0.90	0.0017	0.0051	0.91
U–D	0.0033	0.19	0.0024	0.0028	0.29
COM					
Up	0.0015	0.94	0.0003	0.0034	0.94
Down	0.0013	0.89	− 0.0001	0.0043	0.89
U–D	0.0002	0.04	0.0003	− 0.0010	0.04
DIV					
Up	0.0021**	0.96	0.0020	0.0000	0.96
Down	0.0011	0.95	− 0.0010	0.0033	0.96
U–D	0.0010	0.03	0.0030	− 0.0032	0.04
EMP					
Up	0.0032***	0.94	0.0009	0.0031	0.95
Down	0.0026*	0.93	0.0009	0.0106**	0.94
U–D	0.0006	− 0.02	0.0000	− 0.0075*	0.12
ENV					
Up	0.0051**	0.87	0.0033*	0.0119*	0.88
Down	− 0.0005	0.89	0.0005	− 0.0004	0.89
U–D	0.0056**	0.09	0.0028	0.0123**	0.12
HUM					
Up	0.0031	0.75	− 0.0001	0.0115*	0.75
Down	− 0.0072	0.66	− 0.0068	− 0.0046	0.67
U–D	0.0103**	0.01	0.0068	0.0161**	0.02
PRO					
Up	0.0041***	0.93	0.0024	0.0049	0.94
Down	0.0020	0.91	0.0029*	− 0.0038	0.92
U–D	0.0021	0.00	− 0.0005	0.0087*	0.04

This table presents results of regressions on the monthly returns of the up, down, and up-down (U–D) portfolios for the period of 2004–2013 based on the Carhart four-factor model with and without the separation of non-crisis and crisis periods. The period of January 2008–December 2009 is defined as the crisis period. For each dimension, the up (down) portfolio is constructed with firms whose rankings of performance differences in the previous year are within the top (bottom) 20% among all firms. The up-down (U–D) portfolio is formed by the strategy that goes long in the up portfolio and short in the down portfolio. To control for heterogeneity and autocorrelation, the Newey and West (1987) correction is applied to all regressions. ***, **, and * indicate statistical significance at the 0.01, 0.05, and 0.10 levels, respectively

improvement in both environment and human rights is value enhancing. Consistent with the preceding evidence when the full sample period is used, the relation between CSP at employee relations and financial performance is not unidirectional. When the non-crisis and crisis periods are separated, the risk-adjusted returns of the up-down portfolios of environment, human rights, and product characteristics are significantly positive during the crisis period. On the other hand, the portfolio of firms with deterioration in employee relations outperforms that of firms with improvement during the financial crisis. Overall, our finding is robust to alternative sample periods.

Possible Confounding Effect from Other Dimensions

To examine if the preceding results are influenced by possible correlations in the changes of different CSR dimensions, we conduct a robustness check by excluding the effects from other dimensions. Specifically, for each dimension, we construct the up (down) portfolio by including firms whose social responsibility changes are ranked within the top (bottom) 20% among all firms but excluding firms that are also in the up (down) portfolios of any other dimensions. The regression results are presented in Table 9. The patterns are in general similar to what we show previously. CSP at environment and human rights is value enhancing. Improvement in employee relations increases firm value, although mixed evidence is found that firm value is also positively related to deterioration in employee relations. The results for the other CSR dimensions, however, are not statistically significant, which may be caused by the smaller sample sizes due to the exclusion of firms that are in the up or down portfolios of multiple dimensions.

Adjustment for Factor Changes

As shown in Table 1, the number of strengths and concerns considered by MSCI ESG for each social responsibility dimension changes over time. We conduct a robustness test by controlling for the changes in the strength and concern factors. Specifically, we construct portfolios as in "Data" but exclude monthly returns during those years if their portfolios are constructed in the years with a change in the number of strengths or concerns. The regression analysis based on the four-factor model is presented in Table 10. Consistent with the preceding results, both the up and down portfolios of employee relations and product characteristics have superior performance. Firms with improvement in human rights have positive risk-adjusted stock returns, which are significantly higher than the returns of firms with deterioration. Overall, our basic conclusions remain the same after the consideration of changes in the number of strengths and concerns in the MSCI ESG database over time.

Table 9 Performance comparison with adjustment of confounding effects from other dimensions

	Alpha	(Rm–Rf)	SMB	HML	MOM	Adj R^2
COM						
Up	0.0016	1.0352***	0.0322	0.5646***	− 0.0570	0.77
	(0.76)	(20.42)	(0.48)	(8.84)	(− 1.24)	
Down	− 0.0004	1.0893***	− 0.0809	0.6690***	− 0.0796	0.80
	(− 0.24)	(20.77)	(− 1.21)	(9.69)	(− 1.62)	
U–D	0.0020	− 0.0541	0.1131	− 0.1044	0.0226	0.02
	(0.70)	(− 0.85)	(1.62)	(− 1.28)	(0.41)	
DIV						
Up	− 0.0003	1.0769***	0.2011***	0.4673***	− 0.1708***	0.82
	(− 0.23)	(30.37)	(2.67)	(5.44)	(− 2.62)	
Down	0.0016	1.0882***	0.4127***	0.2460***	− 0.1973***	0.83
	(0.85)	(23.68)	(6.43)	(3.53)	(− 5.67)	
U–D	− 0.0019	− 0.0112	− 0.2116***	0.2213**	0.0265	0.10
	(− 0.93)	(− 0.20)	(− 3.21)	(2.40)	(0.38)	
EMP						
Up	0.0030**	1.0309***	0.3911***	0.4057***	− 0.2568***	0.86
	(2.22)	(23.25)	(5.39)	(6.22)	(− 6.87)	
Down	0.0034**	1.1177***	0.2743***	0.5213***	− 0.2323***	0.86
	(2.24)	(33.50)	(4.78)	(9.44)	(− 5.51)	
U–D	− 0.0004	− 0.0868*	0.1168*	− 0.1155*	− 0.0245	0.03
	(− 0.22)	(− 1.68)	(1.76)	(− 1.86)	(− 0.49)	
ENV						
Up	0.0030	1.0883***	0.1796***	0.6930***	− 0.1641	0.72
	(1.32)	(18.40)	(2.77)	(6.66)	(− 1.53)	
Down	− 0.0018	1.1119***	0.1228*	0.5900***	− 0.0452	0.69
	(− 0.74)	(14.28)	(1.82)	(5.38)	(− 0.80)	
U–D	0.0048**	− 0.0236	0.0568	0.1030	− 0.1189	0.02
	(2.08)	(− 0.38)	(0.76)	(1.07)	(− 1.08)	
HUM						
Up	0.0094**	0.9244***	0.3463***	0.3662***	− 0.2602***	0.38
	(2.01)	(10.59)	(2.63)	(3.37)	(− 4.02)	
Down	− 0.0077	1.1499***	− 0.0479	0.5233***	− 0.0741	0.33
	(− 1.61)	(7.25)	(− 0.28)	(3.04)	(− 0.61)	
U–D	0.0142**	− 0.2386	0.4401**	− 0.1631	− 0.1949	0.02
	(2.08)	(− 1.34)	(2.14)	(− 0.81)	(− 1.46)	
PRO						
Up	0.0028	1.0999***	0.1850*	0.4905***	− 0.2340***	0.79
	(1.27)	(16.34)	(1.85)	(4.68)	(− 4.03)	
Down	0.0024	1.0454***	0.2389***	0.5459***	− 0.1560***	0.76
	(1.46)	(18.88)	(2.99)	(6.07)	(− 3.57)	
U–D	0.0004	0.0546	− 0.0540	− 0.0555	− 0.0781	0.00
	(0.15)	(0.59)	(− 0.50)	(− 0.36)	(− 1.10)	

This table presents results of regressions on the monthly returns of the up, down, and up-down (U–D) portfolios from 1993 to 2013 with the adjustment of possible confounding effects from other dimensions. For each dimension, the up (down) portfolio is constructed with firms whose rankings of performance differences in the previous year are within the top (bottom) 20% among all firms but firms that are in the top (down) portfolios of any other dimensions are excluded. The up-down portfolio (U–D) is formed by the strategy that goes long in the up portfolio and short in the down portfolio. The regression is based on the Carhart four-factor model. Rm and Rf respectively denote the market return and risk-free rate. SMB, HML, and MOM represent the size, book-to-market, and momentum factors. To control for heterogeneity and autocorrelation, the Newey and West (1987) correction is applied to all regressions. The *t*-statistics are presented inside the parentheses

***, **, and * indicate statistical significance at the 0.01, 0.05, and 0.10 levels, respectively

Table 10 Performance comparison with adjustment of changes in strengths/concerns

	Alpha	(Rm–Rf)	SMB	HML	MOM	Adj R^2
COM						
Up	0.0022	0.9813***	0.0722*	0.4871***	− 0.0606	0.87
	(1.51)	(30.68)	(1.92)	(8.20)	(− 1.39)	
Down	0.0020	1.0238***	− 0.0306	0.5235***	− 0.1639***	0.87
	(1.58)	(37.04)	(− 0.64)	(7.90)	(− 2.94)	
U–D	0.0001	− 0.0425	0.1028**	− 0.0364	0.1033***	0.09
	(0.06)	(− 1.26)	(2.08)	(− 0.69)	(2.64)	
DIV						
Up	0.0006	1.0680***	0.1843***	0.4524***	− 0.1882***	0.88
	(0.48)	(33.50)	(3.05)	(6.32)	(− 3.50)	
Down	0.0017	1.0722***	0.3664***	0.2478***	− 0.2060***	0.87
	(0.94)	(26.46)	(7.04)	(3.81)	(− 6.43)	
U–D	− 0.0011	− 0.0042	− 0.1820***	0.2046***	0.0178	0.14
	(− 0.59)	(− 0.10)	(− 3.37)	(3.04)	(0.35)	
EMP						
Up	0.0046***	1.0160***	0.3120***	0.3928***	− 0.2898***	0.91
	(3.44)	(24.69)	(6.64)	(6.67)	(− 8.17)	
Down	0.0038**	1.1026***	0.2387***	0.4718***	− 0.2029***	0.90
	(2.41)	(32.52)	(3.86)	(8.93)	(− 5.53)	
U–D	0.0008	− 0.0866**	0.0732*	− 0.0790*	− 0.0869***	0.05
	(0.59)	(− 2.09)	(1.79)	(− 1.86)	(− 3.78)	
ENV						
Up	0.0022	1.0353***	0.1959***	0.6041***	− 0.1672	0.80
	(1.14)	(21.72)	(2.66)	(6.15)	(− 1.65)	
Down	− 0.0011	1.0962***	0.2202***	0.5001***	− 0.0704	0.78
	(− 0.51)	(15.23)	(3.27)	(4.81)	(− 1.35)	
U–D	0.0033	− 0.0609	− 0.0243	0.1039	− 0.0967	0.03
	(1.62)	(− 1.12)	(− 0.29)	(1.29)	(− 1.00)	
HUM						
Up	0.0089***	1.0862***	0.0841	0.2889**	− 0.1416**	0.70
	(3.38)	(13.03)	(1.07)	(2.55)	(− 2.43)	
Down	− 0.0015	1.1813***	− 0.0516	0.5318***	− 0.1537	0.67
	(− 0.37)	(9.15)	(− 0.36)	(3.68)	(− 1.23)	
U–D	0.0103**	− 0.0951	0.1357	− 0.2429	0.0121	0.03
	(2.20)	(− 0.67)	(0.81)	(− 1.23)	(0.09)	
PRO						
Up	0.0031*	1.0470***	0.1002	0.4445***	− 0.2261***	0.82
	(1.81)	(18.67)	(1.12)	(4.91)	(− 5.27)	
Down	0.0034**	1.0144***	0.1749***	0.4321***	− 0.1880***	0.83
	(2.31)	(20.58)	(3.30)	(5.53)	(− 4.09)	
U–D	− 0.0003	0.0325	− 0.0747	0.0124	− 0.0382	0.00
	(− 0.16)	(0.53)	(− 0.95)	(0.14)	(− 0.66)	

This table presents results of regressions on the monthly returns of the up, down, and up-down (U–D) portfolios from 1993 to 2013 while excluding monthly returns in those years if their portfolios are constructed in years with a change in the number of strengths/concerns. The regression is based on the Carhart four-factor model. For each dimension, the up (down) portfolio is constructed with firms whose rankings of performance differences in the previous year are within the top (bottom) 20% among all firms. The up–down (U–D) portfolio is formed by the strategy that goes long in the up portfolio and short in the down portfolio. Rm and Rf respectively denote the market return and risk-free rate. SMB, HML, and MOM represent the size, book-to-market, and momentum factors. To control for heterogeneity and autocorrelation, the Newey and West (1987) correction is applied to all regressions. The *t*-statistics are presented inside the parentheses

***, **, and * indicate statistical significance at the 0.01, 0.05, and 0.10 levels, respectively

Conclusions

We study the relationship between corporate social performance and financial performance by comparing the portfolio returns of firms with changes in corporate social responsibility (CSR) intensity. Overall, we provide supporting evidence that corporate social performance is positively related to financial performance, but the relationship varies with CSR dimensions and shifts during non-crisis and crisis periods. Improvement in environment, human rights, and product characteristics is better rewarded during the crisis period, whereas the value enhancement of good employee relations is stronger during the non-crisis period. Our results are robust to a battery of sensitivity tests, including an alternative measure of financial performance, a potential reverse causation problem, an alternative sample period, additional control for potential confounding effects from other CSR dimensions, and control for the changes in the number of strengths and concerns used in MSCI ESG database over time.

Appendix

See Table 11.

Table 11 Strengths and concerns considered in MSCI ESG data in year 2012

Dimension	Strengths	Concerns
Community	Innovative giving Community engagement	Community impact
Diversity	Board of directors—gender Women & minority contracting Employment of Underrepresented groups Other strength	Workforce diversity Board of directors—gender Board of directors—minorities
Employee relations	Union relations Cash profit sharing Employee involvement Employee Health & Safety Supply chain labor standards Compensation & benefits Employee relations Professional development Human capital management	Union relations Employee health & safety Supply chain Child labor Labor-management relations
Environment	Environmental opportunities Waste management Packaging materials & waste Climate change Environmental management systems Water stress Biodiversity & land use Raw material sourcing Other strength	Regulatory compliance Toxic spills & releases Climate change Impact of products & services Biodiversity& land use Operational waste Supply chain management Water management Other concern
Human rights	Indigenous peoples relations strength Human rights policies & initiatives	Support for controversial regimes Freedom of expression & censorship Human rights violations Other concern
Product characteristics	Quality Social opportunities Access to finance	Product quality & safety Marketing & advertising Anticompetitive practices Customer relations Other concerns
Governance	Reporting quality Corruption & political instability Financial system instability	Reporting quality Governance structures Controversial Investments Business ethics Other concerns

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References

Aupperle, K. E., Carroll, A. B., & Hatfield, J. D. (1985). An empirical examination of the relationship between corporate social responsibility and profitability. *Academy of Management Journal, 28,* 446–463.

Bebchuk, L., Cohen, A., & Ferrell, A. (2009). What matters in corporate governance? *Review of Financial Studies, 22,* 783–827.

Benabou, R., & Tirole, J. (2010). Individual and corporate social responsibility. *Econometrica, 77,* 1–19.

Borgers, A., Derwall, J., Koedijk, K., & Horst, J. T. (2013). Stakeholder relations and stock returns: On errors in investors' expectations and learning. *Journal of Empirical Finance, 22,* 159–175.

Bowman, E., & Haire, M. (1975). A strategic posture toward corporate social responsibility. *California Management Review, 18,* 49–58.

Cai, Y., Jo, H., & Pan, C. (2012). Doing well while doing bad? CSR in controversial industry sectors. *Journal of Business Ethics, 108,* 467–480.

Carhart, M. M. (1997). On persistence in mutual fund performance. *Journal of Finance, 52,* 57–82.

Cheng, I.-H., H. Hong, & K. Shue. (2014). Do managers do good with other people's money? *Working Paper*, Princeton University.

Chih, H.-L., Chih, H.-H., & Chen, T.-Y. (2010). On the determinants of corporate social responsibility: International evidence on the financial industry. *Journal of Business Ethics, 93,* 115–135.

Deng, X., Kang, J.-K., & Low, B. S. (2013). Corporate social responsibility and stakeholder value maximization: Evidence from mergers. *Journal of Financial Economics, 110,* 87–109.

Derwall, J., Guenster, N., Bauer, R., & Koedijk, K. (2005). The eco-efficiency premium puzzle. *Financial Analysts Journal, 61,* 51–63.

Derwall, J., Koedijk, K., & Horst, J. T. (2011). A tale of value-seeking versus profit-driven investors. *Journal of Banking and Finance, 35,* 2137–2147.

Di Giuli, A., & Kostovetsky, L. (2014). Are red or blue companies more likely to go green? Politics and corporate social responsibility. *Journal of Financial Economics, 111,* 158–180.

Eccles, R. G., & Serafeim, G. (2013). The performance frontier. *Harvard Business Review, 91,* 50–60.

Edmans, A. (2011). Does the stock market fully value intangibles? Employee satisfaction and equity prices. *Journal of Financial Economics, 101,* 621–640.

El Ghoul, S., Guedhami, O., Kwok, Chuck C. Y., & Mishra, Dev R. (2011). Does corporate social responsibility affect the cost of capital? *Journal of Banking and Finance, 35,* 2388–2406.

Ferrell, A., Liang, H., & Renneboog, L. (2016). Socially responsible firms. *Journal of Financial Economics, 122,* 585–606.

Flammer, C. (2015). Does corporate social responsibility lead to superior financial performance? A regression discontinuity approach. *Management Science, 61,* 2549–2568.

Freeman, R. E. (1984). *Strategic Management: A Stakeholder Approach*. Pitman.

Friedman, M. (1970). The social responsibility of business is to increase its profits. *New York Times Magazine, 13*(32–33), 122–124.

Galema, R., Plantinga, A., & Scholtens, B. (2008). The stocks at stake: Return and risk in socially responsible investment. *Journal of Banking and Finance, 32,* 2646–2654.

Godfrey, P., Merrill, C., & Hansen, J. (2009). The relationship between corporate social responsibility and shareholder value: An empirical test of the risk management hypothesis. *Strategic Management Journal, 30,* 425–445.

Goss, A., & Roberts, G. S. (2011). The impact of corporate social responsibility on the cost of bank loans. *Journal of Banking and Finance, 35,* 1794–1810.

Gössling, T., & Vocht, C. (2007). Social role conceptions and CSR policy success. *Journal of Business Ethics, 74,* 363–372.

Henke, H.-M. (2016). The effect of social screening on bond mutual fund performance. *Journal of Banking and Finance, 67,* 69–84.

Hillman, A., & Keim, G. (2001). Shareholder value, stakeholder management, and social issues: What's the bottom line? *Strategic Management Journal, 22,* 125–139.

Hong, H., & Kacperczyk, M. (2009). The price of sin: the effects of social norms on markets. *Journal of Financial Economics, 93,* 15–36.

Hong, H., J. D. Kubik, & J. A. Scheinkman. (2012). Financial constraints on corporate goodness, *Working Paper*, Princeton University.

Jensen, M. C. (2001). Value maximization, stakeholder theory, and the corporate objective function. *Journal of Applied Corporate Finance, 14,* 8–21.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics, 3,* 305–360.

Jiao, Y. (2010). Stakeholder welfare and firm value. *Journal of Banking and Finance, 34,* 2549–2561.

Jo, H., & Na, H. (2012). Does CSR reduce firm risk? Evidence from controversial industry sectors. *Journal of Business Ethics, 110,* 441–456.

Kempf, A., & Osthoff, P. (2007). The effect of socially responsible investing on portfolio performance. *European Financial Management, 13,* 908–922.

Khan, M., Serafeim, G., & Yoon, A. (2016). Corporate sustainability: First evidence on materiality. *Accounting Review, 91,* 1697–1724.

Koh, P.-S., Qian, C., & Wang, H. (2014). Firm litigation risk and the insurance value of corporate social performance. *Strategic Management Journal, 35,* 1464–1482.

Kruger, P. (2015). Corporate goodness and shareholder wealth. *Journal of Financial Economics, 115,* 304–325.

Lewis, P. V. (1985). Defining "Business Ethics": Like nailing jello to a wall. *Journal of Business Ethics, 4,* 377–383.

Lins, K., Servaes, H., & Tamayo, A. (2017). Social capital, trust, and firm performance during the financial crisis. *Journal of Finance, 72,* 1785–1823.

Lys, T., Naughton, J., & Wang, C. (2015). Signaling through corporate accountability reporting. *Journal of Accounting and Economics, 60,* 56–72.

Macintosh, J. (1999). The issues, effects, and consequences of the Berle-Dodd debate, 1931–1932. *Accounting, Organizations and Society, 24,* 139–153.

Makni, R., Francoeur, C., & Bellavance, F. (2009). Causality between corporate social performance and financial performance: Evidence from Canadian firms. *Journal of Business Ethics, 89,* 409–422.

Masulis, R., & Reza, S. W. (2015). Agency problem and corporate philanthropy. *Review of Financial Studies, 28,* 592–636.

McWilliams, A., & Siegel, D. (2000). Corporate social responsibility and financial performance: Correlation or misspecification? *Strategic Management Journal, 21,* 603–609.

Moore, G. (2001). Corporate social and financial performance: An investigation in the U.K. supermarket industry. *Journal of Business Ethics, 34,* 299–315.

Moskowitz, T. J., & Grinblatt, M. (1999). Do industries explain momentum? *Journal of Finance, 54,* 1249–1290.

Newey, W. K., & West, K. D. (1987). A simple, positive semi-definite, heterogeneity and autocorrelation consistent covariance matrix. *Econometrica, 55,* 703–708.

Nofsinger, J., & Varma, A. (2014). Socially responsible funds and market crises. *Journal of Banking and Finance, 48,* 180–193.

Oh, H., Bae, J., & Kim, S.-J. (2017). Can sinful firms benefit from advertising their CSR efforts? Adverse effect of advertising sinful firms' CSR engagements on firm performance. *Journal of Business Ethics, 143,* 643–663.

Orlitzky, M. (2001). Does firm size confound the relationship between corporate social performance and firm financial performance? *Journal of Business Ethics, 33,* 167–180.

Preston, L. E., & O'Bannon, D. (1997). The corporate social-financial performance relationship. A typology and analysis. *Business and Society, 36,* 419–429.

Renneboog, L., Horst, J. T., & Zhang, C. (2008). Socially responsible investments: Institutional aspects, performance and investor behavior. *Journal of Banking and Finance, 32,* 1723–1742.

Seifert, B., Morris, S. A., & Bartkus, B. R. (2003). Comparing big givers and small givers: Financial Correlates of Corporate Philanthropy. *Journal of Business Ethics, 45,* 195–211.

Servaes, H., & Tamayo, A. (2013). The impact of corporate social responsibility on firm value: The role of customer awareness. *Management Science, 59,* 1045–1061.

Sharfman, Mark, & Fernando, Chitru. (2008). Environment risk management and the cost of capital. *Strategic Management Journal, 29,* 569–592.

Shiu, Y.-M., & Yang, S.-L. (2017). Does management in corporate social responsibility provide strategic insurance-like effects? *Strategic Management Journal, 38,* 455–470.

Simpson, W. G., & Kohers, T. (2002). The link between corporate social and financial performance: Evidence from the banking industry. *Journal of Business Ethics, 35,* 97–109.

Statman, M., & Glushkov, D. (2009). The wages of social responsibility. *Financial Analysts Journal, 65,* 33–46.

van Beurden, P., & Gössling, T. (2008). The worth of values - A literature review on the relation between corporate social and financial performance. *Journal of Business Ethics, 82,* 407–424.

Waddock, S. A., & Graves, S. B. (1997). The corporate social performance-financial performance link. *Strategic Management Journal, 18,* 303–319.

Wang, H., & Qian, C. (2011). Corporate philanthropy and corporate financial performance: The roles of stakeholder response and political access. *Academy of Management Journal, 54,* 1159–1181.

Wang, X., Cao, F., & Ye, K. (2018). Mandatory corporate social responsibility (CSR) reporting and financial reporting quality: Evidence from a quasi-natural experiment. *Journal of Business Ethics, 152,* 253–274.